Inodaya
Hospitals

NURSING PROCEDURE MANUAL

Inodaya Hospitals

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AMENDMENT SHEET

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I. VISSION

II. MISSION

III. QUALITY POLICY

IV. PHILOSOPHY OF NURSING

The Hospital believes that every patient is a person with unique characteristics and has the need to be understood, accepted, respected, loved, and cared for, irrespective of caste, creed, religion and social status; thus providing care from womb to tomb, respecting the individuality of **an** ill person.

The Nursing Service Department of **INH** recognizes that the primary purpose of nursing is to provide the highest quality of nursing care services and to give special attention to vulnerable groups like mother and child, geriatrics, alcoholics and those mentally ill.

We believe that quality nursing care is provided best by team work and maintaining a cordial relationship with all.

We believe that the lifelong learning, ongoing staff development programmes for staff nurses is essential to maintain and increase competence in nursing practice.

We believe that members of Nursing Service should exhibit not only professional skills but also an attitude and character upholding the dignity of person with humanness and compassion, for patients and their family.

In brief, the nursing service department of the hospital is to administer high quality, cost effective care to patients and families, provide health promotion programmes to all people, maintain a

supportive environment for education of professional nurses and promote career development of nursing employees.

V. OBJECTIVES OF THE NURSING SERVICE DEPARTMENT:

1. To provide effective, skilful comprehensive care meeting the needs of every patient.
2. To give right information prior to the procedures /investigations
3. To promote clinical research activities and to provide scientifically proven efficient care.
4. To train the young nurses for leadership and help them to grow in the values and demands of nursing profession.

VI. NURSING

Introduction

Nursing is a call to service. Nursing is a skill which includes ministration to the sick, care of the whole patient, care of the patients' environment, health education and health service to the individual, family and society for the prevention of disease, maintenance of physical wellbeing and promotion of health. Basic nursing care is the unique function of the nurse.

Definition

According to WHO,

Nursing encompasses autonomous and collaborative care of individuals of all ages, families, groups and communities, sick or well and in all settings. It includes the promotion of health, the prevention of illness, and the care of ill, disabled and dying people.

VII. PROFESSIONAL GOOD MANNERS (ETIQUETTES) FOR NURSES

Etiquette is a code of good manners that a nurse should follow. The Nurse is an important member of the health team that must work in cooperation and harmony for the care of the sick. For a smooth functioning and a good interpersonal relationship, you as a nurse should follow certain essential good manners:

1. You should be courteous to all. Be gentle and polite in your talk.
2. You should greet your seniors, co-workers, your clients etc., with appropriate words and according to the time of the day, e.g., good morning, good evening.
3. You should address the seniors with proper title, e.g. Sir, Madam, Sister, Mister etc.,
4. Stand up when people of higher rank enter your room.
5. Stand up when answering questions to those in higher rank.
6. Open the door for the seniors and stand aside for them to pass.
7. Excuse yourself when overtaking a senior person.

8. Stand aside and give way to seniors when you cross them on the ways, e.g. in the corridors, on the staircases etc.,
9. Maintain silence wherever and whenever necessary, e.g .I.C.U's, wards, study room and dormitories.
10. Keep your dress neat and tidy (uniform arranged and the hair put up)
11. While on duty never use any form of jewelers that may interfere with work. You are permitted to wear only a pair of simple ear studs which do not project over the ear lobe and a wrist watch. Use of nail polish and mehandi discouraged.
12. Obey seniors without arguing.
13. Help the seniors to carry a heavy load if you find them on the way.
14. Say "Thank you" when someone is doing a favour for you, and also when someone corrects you.
15. Get prior permission from the sister in-charge before you take any article from any department.
16. Do not delay the answers to the questions. Give the answer immediately and appropriately. Look at the person while talking.
17. Be punctual always.
18. Avoid thumb sucking and nail biting.
19. In an assembly or conference hall or hospital vehicle let the seniors take the seat first.
20. Keep eye contact and sit face to face when listening to someone.
21. Say "Excuse me" even if you hurt others accidentally.
22. Never let others` secrets go out of you and avoid gossip.
23. Always keep the door open after getting into a room and close the room when you get out of the room, if so desired.
24. Knock at the door and wait for the answer before you enter into other's room.
25. Do not cover the mouth while talking to others. Cover your mouth when you cough or sneeze.
26. Excuse yourself before you interfere with others engaged in talking or doing some work.
27. You should not give and receive any gifts or present especially from the patients and their relatives.

VIII. THE QUALITIES OF AN EXCELLENT NURSE

Qualities of a Good Nurse

A nurse is one among the most responsible individuals in the hospital. If you want to make a career in this devoted profession, then you should know about the qualities of a good nurse.
These days, nursing is one of the most in-demand careers. A nurse is an integral part of the health care profession. There are a number of institutes all over the world, which offer different courses in nursing. Nursing profession is not just a great way of making money. It is considered as a holy profession, serving the human being. This profession demands skill, hard work and devotion. To become a good nurse, a person should have the qualities such as compassion, interpersonal skill, presence of mind and commitment. Let's know more about the qualities of a good nurse.

Prayer: Axis around which everything rotates. Nurse needs God at every step she takes, every word she speaks, every thought she thinks, and God needs the nurse for his healing work.

Knowledge: A good nurse should be highly well qualified and trained. She/he should have a sound knowledge of the nursing profession, obtained from a reputed institute. He/she should always be ready to learn more.

Communication: As a nurse is frequently in contact with the patients, one should have excellent communication skills. These include speaking as well as listening skills. The nurse should be able to openly talk with the patients and their family members in order to understand their needs and expectations.

Observation: Watchfulness is an important quality of a good nurse. He/she should be alert every moment about the condition of a patient. He/she should be able to notice a minor change in the patient's health status. E.g.: Slow respiration, cyanosis or tenderness on the pressure points.

Emotionally stable: A good nurse should have an emotional stability. Nursing is a very stressful job. The nurse should be mentally strong and should not get disturbed by the unpleasant talk or complaints. One should maintain social relationship with all.

Confident: Good presence of mind is crucial in the nursing profession. In any critical condition or medical emergency, should be confident enough to take the correct decisions.

Empathy: Kindness and empathy are qualities every nurse should possess. The nurse should be calm and kind to the patients, even if they are aggressive. The nurse should understand the pains and suffering of patients.

Generous: A good nurse should be flexible about his/her working hours and responsibilities. Nursing is a time demanding profession. Medical emergencies can occur at any time. Nurses often have to extend their duty hours, work in overnight shifts, or work on weekends too. They should not complain about it.

Enduring: A good nurse should have a strong physical endurance. One should be able to perform a number of taxing maneuvers, stand up for a long period of time or lift heavy objects/people on a daily basis. A nurse should follow principles of good body mechanics; so that one's heath is not affected

Obedient: A nurse should have a respect for people and rules. One should be devoted to the profession, should be aware of different cultures and traditions and confidentiality requirements of the patients.

Cheerful: A nurse should be active and cheerful. One's presence should make the patient relaxed and comfortable. The nurse's pleasant appearance can reduce the patient's stress and pains and voice should be soft and gentle.

Love: Everyone needs, and desires love; a nurse needs to love her patients and all with whom she works. Love is the key which makes service accessible.
Devotion to duty: Foremost concern is the patient. Friendship is outside the duty hours. Don't waste time waiting for friends. Punctuality is important; being at right place at the right time.
Patience: Nurse should be patient with her patients. Avoid being getting angry with the patient as patients are weak, bodily ill, frustrated and so may get angry – But nurse cannot lose patience.
Perseverance: Every nurse will surely strive to be a good nurse. Whatever is taught or corrected should remember and put in practice. Do not use short cuts for any nursing procedure. The good, loving, praying nurse with help of the divine healer will persevere in her effort for goodness.
Sympathy/Empathy – Compassion: These two words mean to feel with the person in his/her difficulties, sorrows, pain and even joy. Empathy leads one to action.
Honesty: Means to be truthful always. Sincerity should be the hallmark of a nurse.

Tactfulness: Tact is a keen sense of how to treat people so as to avoid giving offence. A tactless nurse might tell patient "things are very bad with you, you would die soon". But a tactful nurse might say, "Things are not so good with you, but trust in God leave yourself in His hands!

Impartiality: Nurse not only, should serve all patients but she must serve them with equal attention and care. Some patients may be pleasant, kind, grateful for the services. Others may be rude, unpleasant, always complaining. A good nurse will give the unpleasant ones as much care and attention as to a kind and grateful patient.

Politeness: 'Please' and 'thank you' are the sweetest words in any language. It costs nothing to say them, but their constant use can bring big returns. The nurse also makes mistake – bump into people – drop things. Let the word 'sorry' spring readily from her lips.

Gratitude: All will be grateful to the nurse but the nurse also needs to be grateful. First she should be grateful to God for her life, strength, parents, education and this special call to help others. The nurse needs to be grateful to her patients because they are the ones who gave her the opportunity to serve as a nurse.

Adaptability: A nurse is trained to do certain things with certain facility in a certain ward. But whenever one is needed in some other ward should be ready to give her service

Humility: A nurse must be humble enough to take suggestions made to improve as we all need to study till the end of our life. Whenever a correction is received should say "sorry or thank you"

Forgiving: Everyone gets hurt, everyone is offended. It could be accidental or deliberate – But worse and more dangerous is bitterness in the heart. Forgiveness is nobility and it is the virtue of a nurse.

Hope: A smiling joyful nurse will be full of hope. The hope filled nurse never despair or give up. She will carry on working wherever she is, whatever circumstances are'

Consoling / comforting: Patient is a person with feeling and so is the nurse. When patient is sad and depressed because of the illness and pain, it is the duty of a nurse to cheer up perhaps with a joke, a prayer etc.

Gentleness: It is the way the patient is treated. Her success is the essence of gentleness, serenity and optimism.

Physical fitness: She must be fit to do her work. So eat well whatever is provided with gratitude. She should avoid anything that may harm her health/life etc.

A nurse with these qualities is like an angel for the patients and they in turn can rely on such a committed, prompt and skilled nurse for their well-being.

IX. POLICIES

Department:

1. There are three duty shifts for the nurses i.e. 7.30 AM to 01.30 PM (MORNING SHIFT), 1.30 PM to 8.00PM(EVENING). Night duty shift is 8.00pm Hrs to 8.00am Hrs with one hour of rest.
2. Every day attendance is marked in the morning and afternoon before joining the duty. Those who are on continuous duty, sign the register after the duty.
3. All nurses on shift duty should join together and leave the ward together.
4. On every shift the staff should report to the ward15mts early to hand over and take over the patients and equipment's.
5. Handing over and taking over should be done with diligence. One who takes over should see and hear the patient. Take over promptly medicine cupboard, any special procedure done to the

patient, discharges, case sheets of the patients, and commonly used instruments like sphygmo-manometer, stethoscope, T.P.R tray etc for their working condition.

6. Senior nurse takes over the patients and junior nurse starts the routine work after reading the night instructions.
7. Inform the ward In- charge before leaving the ward.
8. Before starting the night shift all the night shift nurses work for half day to know the patients, check the medicine and equipment's.
9. After signing the attendance record, all has to report to the respective wards immediately.
10. **Off duty: weekly off (means month 4 offs).**
    Leave: Permission is obtained from the Nursing Superintendent before applying the leave. Staff Nurses take the signature of ward in-charge and ward in-charges submit personally to the Nursing Superintendent.
11. Loss of pay leave is given only in case of marriage for 15 days inclusive of her leave.
12. Leave is marked in the register by the office staff and not by the nurses.
13. After completion of leave inform the Nursing Superintendent before joining the duty.
14. Yearly 12 CLS, it cannot be taken together more than 3 days.
15. SL 12 per year, (it can be availed at a time based on condition) CLs& SLs cannot be taken together. (in case of not availing in the particular year it will be carry forward to next year.
16. ELS 15 per year, if it is not availed in the particular year it will be carry forward to next year.
17. **Uniform**: Uniform is Mint green color pant & shirt. Closed shoes with or without back buckle with low heels. Nail polish, flowers on the head, bangles are discouraged. Nurses are permitted to wear only a pair of simple ear studs which do not project over the ear lobe and a wrist watch.
18. Every nurse should have pocket articles like – red and blue pen, pencil with eraser, small scale, small pair of scissors, measuring tape, mask and small note book. Hair is tied neatly up as a bun (Conda).
19. Uniform should be clean and tidy, with identity card. On uniform, walk briskly with dignity.

Ward:

1. Greet the In-charge of the ward and all patients
2. Read the night report and give instructions clearly
3. Doctor's prescription should be started within 15mts of admission
4. Interim bill is done daily and the patient is asked to pay
5. All the bedridden patients: Back care to be given every 2 hourly.
6. Consent from the patient is taken in the ward for surgery or other major procedures.
7. Ward in-charge has to sign the records finally before sending the case sheet to the O.T and Billing.
8. Medicine to be out of reach of children and psychiatric patients.
9. All nurses should know the name, place, diagnosis and treatment of all patients in their respective ward.
10. Receive the phone call by greeting and saying your name and ward and give the information politely.
11. Private Wards: Give the information to the consultant (Outside doctor) as soon as the patient gets admitted to the ward.
12. Every month ward inventory to be checked – Linen, drugs, other items
13. On discharge the case sheet has to be checked, completed and signed on the back of the Activity form, before sending to the billing and the care taker is send to pay the bill. The departure date and time to be written clearly in the nurse's record. Check all the articles in the room and patient unit.

14. Hand over all the medicines to the patient with proper explanation as well as all the diagnostic reports.
15. Patients' case sheet with discharge summary to be send to the M.R.D within 24 hours.
16. Do not give diagnostic films (M.R.I, C.T. Scan and x-ray) to the party of the deceased but send to the M.R.D along with the case sheet in case of MLC or death.

X. PATIENT UNIT

Patient unit is a place where patient takes rest, food, has his/her investigation, observation, diagnosis, treatment and knows about his/her sickness. So it is our duty to provide a safe, comfortable, well lighted, ventilated, clean and complete unit to the patient. It can be in a general ward, semi-private/ private.

The requirements in a patient Unit: Patient cot with mattress, pillow and needed bed linen.

1. Table / bedside locker on the right side of the patient
2. Stool/chair
3. Fan, light and windows
4. Wash basin, toilet and bathroom near to the patient unit.

Objectives:

1. To make the patient safe and comfortable
2. To teach the patient the importance of cleanliness, orderliness, ventilation and brightness.
3. To make everything convenient for the patient.

Daily care of the unit:

1. Daily morning bed making
2. Daily dusting the entire unit. Ask the care taker to empty the locker; clean it and teach them to rearrange their things in order.
3. Arrange the unit with only what is required for the patient.
4. Sweeping, swabbing the unit in the morning
5. Emptying the waste bag daily morning and whenever it is filled
6. Toilet and bathroom cleaning daily morning and whenever it is dirty
7. Flush the toilet and sprinkle phenyl 4 times a day (before 6 AM, by 12 MD, 4 PM, 8 PM)
8. Maintain discipline in the unit by controlling the visitors, avoid unpleasant and unnecessary noise of music and ring tone of mobile.
9. Prevent infection by keeping the units clean, instructing the visitors not to sit on the patient bed, not to keep their bag, luggage etc. on the bed.
10. Avoid keeping any open food stuffs on the locker.
11. Ward sweeping twice a day
12. Swabbing the ward, once a day and whenever required.
13. Swabbing the verandah and common places three times a day
14. Rearranging the bed in the noon by 3 pm
15. Provide safe drinking water for the patients
16. Often visit the patient unit for any timely need.

XI. FUNDAMENTALS OF NURSING

Definition: A bed is an article of furniture to sleep, to take rest or to place a patient for physical examination.

TYPES OF BED

a. OPEN BED

Is used to designate the hospital bed when it is about to be occupied by a patient. Fold backward upper end of bed cloths about 1/3 of the length of bed.

Purposes:

1. To provide comfort for patient
2. To maintain a clean environment
3. To reduce transmission of micro organisms
4. To stimulate and refresh patient
5. To observe and promote mobilization
6. To provide a neat appearance to ward
7. To prevent soiling of bed linen

Articles:

1. Dry Duster-1
2. Wet Duster-1
3. Chair/stool
4. Clean Linen-2 bed sheets, pillow case and draw sheet,
5. Bucket (to carry soiled linen)
6. Kidney tray-1
7. Draw mackintosh

Procedure of stripping and remaking of open bed

1. Remove wrist watch and wash hands.
2. Switch off fans
3. Assess patient's general condition.
4. Explain the procedure to the patient.
5. Assist the patient to sit on the stool/chair comfortably nearby his bed. (if not contra-indicated)
6. Make an assessment to know whether there is any need for change of linen
7. Keep bucket at the foot end of the cot.
8. If bed is adjustable type, keep the bed flat and lower the side rails.
9. Remove unnecessary equipment from patient unit[under the mattress and pillow
10. Stand on right side of the cot.
11. Strip off tucked linen from all sides.
12. Remove blanket from foot end if there is one shake it and place it on the stool.
13. Remove towels, dust them, and place them neatly on the stool.
14. Take pillows, hold free end downwards and dust pillows before placing on the stool.
15. If pillow case is dirty remove it and send to laundry.
16. Fold the top sheet away from your body without touching the floor and gently shake it & place it over the stool
17. Follow the same method for draw sheet and bottom sheet.
18. Dust the mackintosh and roll tightly and keep over the stool. Do not fold it
19. Dust mattress with wet and then dry duster from head to foot end and bed frame.
20. Turn the mattress after patient leaves the bed.
21. Place bottom sheet on the middle of the bed making sure that the central crease is in the middle and covering the left upper quadrant of the mattress.
22. Unfold it and spread straight over the mattress allowing 12 -18 inches to tuck under the top of the mattress and leaving just enough to tuck at the foot end.
23. Tuck it securely at the top on the near side, make a mitered corner

24. Tuck at the foot end, secure the corner as before
25. Pull tight at the center and tuck it securely and then tuck sheet in along the side; with palms down and hands straight in front.
26. Place the draw mackintosh approximately 15 inches from the top and place draw sheet over it 10" from the top of the mattress (keep 3-4" above the mackintosh) and tuck in along the side.
27. Go on the opposite side; tuck in each article of linen separately as on the first side. Avoid folds and wrinkles before spreading top sheet. If there are two nurses both can perform simultaneously.
28. Place the top sheet on the middle of the bed making sure that the central crease is in the middle of the bed and covering the lower right quadrant of the mattress.
29. Unfold it with the top edge even with the top of the mattress.
30. Tuck in at the foot end and make mitered corners allowing the sides to hang free.
31. Replace pillows with free ends facing against the entrance
32. Keep blanket only if necessary but the top edge is covered with the top edge of the bed sheet to prevent rubbing on the chin of the patient while using.
33. Clean inside and outside of locker, arrange with minimum belongings
34. Encourage patients relatives to keep their beddings in a separate drawer and ensure safety of valuables
35. See that the entire patient unit is clean and order.
36. Help the patient to sit comfortably or lie down on the bed.
37. Put on the fan and provide adequate ventilation and lighting.
38. Replace article after washing and drying.
39. Wash hands after completing the procedure.

b. OCCUPIED BED

Definition: Making a comfortable bed with patient in bed.

Purpose:

1. To provide comfort for patients who are confined to bed due to their disease condition
2. To provide comfort for patients on imposed bed rest for therapeutic reasons

Articles: Same as open bed.

Procedure:

1. Switch off fan.
2. Remove watch and wash hand.
3. Assess patient general condition.
4. Explain procedure to patient.
5. Assemble articles needed and arrange them in the order of use.
6. Assess need for change of linen.
7. Keep bucket at the foot end of the bed.
8. Place stool at the side of bed.
9. If bed is adjustable type, keep the head ends in lowest position removing all pillows except one.
10. Slide down the side rails.
11. Remove unnecessary equipment from patient unit.
12. Stand on right side of the cot.
13. Loosen the tucked linen from all sides.
14. Remove blanket from the foot end and gently shake it and place it folded on stool.

15. Turn patient on his side away from you, with back facing nurse and reposition the pillow under his head.
16. Instruct patient to hold on side rails of the bed. One nurse has to support patient and speak to the patient.
17. Fanfold the draw sheet towards the patient and push as close to the patient as possible. Dust the rubber sheet and roll it under the draw sheet. Fanfold the bottom sheet to the patient carefully under the rubber sheet. Dust the mattress and cot.
18. Place the clean folded bottom sheet in position on the mattress lengthwise and unfold the sheet making sure that the central fold lies in the middle of the bed, leaving rest of the fold against the patient.
19. Tuck the head end. Make mitered corner at the top and bottom. Then tuck in sides as the closed bed.
20. Bring the rubber sheet back into place over the newly spread bottom sheet and tuck it tightly under the mattress or a new rubber sheet is used.
21. Place the clean draw sheet in position and tuck in.
22. Turn the patient back over the folded linen towards you
23. Go to the opposite side, if there is no one to assist. If there are 2 nurses simultaneously tuck in.
24. Remove dirty and put them in the bucket.
25. Straighten the bottom sheet, rubber sheet and draw sheet and tuck each separately and firmly as on the other side.
26. Replace the top sheet as in closed bed, providing privacy for the patient, stand on one side. Place the clean top sheet over the patient. Hold the top of the clean sheet with one hand and with the other, draw the soiled top sheet from underneath towards the foot of the bed. Tuck in the bottom and make corners after removing the soiled one from the bed.
27. Change pillow case if necessary and place pillow in position and leave the patient comfortable.
28. Leave the unit in order.
29. Remove dirty linen and other articles. Place dirty linen in the laundry. Clean and wash hands.

c. POST-OPERATIVE BED

Definition: Preparing a hospital bed to receive patients who have undergone surgical procedure.

Purposes:

1. To provide a safe, clean, comfortable bed and unit for a post- operative patient.
2. The unit should be prepared to meet the emergency.
3. To be able to remove soiled linen and place clean linen quickly and easily.

Articles:

1. Patients unit with central oxygen and suction system, N.I.BP monitor, B.P. apparatus, Stethoscope.
2. On the locker –mouth wash tray, temperature tray, feeding cup with water, kidney tray.
3. Bed making articles as per open bed.
4. Additional mackintosh and draw sheet may be used according to the site of the operation to protect the bed.

d. AMPUTATION BED

Articles and procedure same as open bed.

1. Same as to open bed
2. Sand bags to immobilize the stump.

e. BURNS / EXTENSIVE WOUNDS/ SKIN INFECTIONS

Articles are same as open bed and extra articles are:

Bed cradle - to take away the weight of the linen from the patient's body.

To prevent soiling of the bed.

For therapeutic purposes

NOTE:

1. Mattress should be turned every when patient leaves the bed.
2. Bed ridden patient should be transferred to a trolley and the mattress should be turned once in 15 days
3. Alfa beds should be cleaned every 15 days, both sides.

CHAPTER – I
ASSESSMENT AND MONITORING

1.1 Vital Signs

A. Definition:

Vital signs are otherwise called as cardinal signs. These are the indicators or health status, as these indicate the effectiveness of circulatory, respiratory, neural and endocrine body functions.

These include the physiological measurements of **temperature, pulse, respirations, blood pressure, papillary reaction, pain assessment and oxygen saturation.** Though pain was considered as the fifth vital sign (1999), literature suggests that pain more symptomatic and cannot be identified as a sign (2005).

B. Acceptable ranges of vital signs:

1. **Temperature: 36° - 38°**

Variations in Temperature	
Below 36° C	Hypothermia
Above 38° C	Pyrexia
Above 41° C	Hyperpyrexia

2. **Pulse: 60 – 100 beats per minute**

Variations in Temperature	
Below 60 beats per minute	Bradycardia
Above 100 beats per minute	Tachycardia

3. **Respirations: 12 – 16 breaths per minute**

Variations in Respiration	
Below 12 breaths per minute	Bradypnea
Above 20 breaths per minute	Tachypnea
Total cessation of breathing	Apnea
Increase in the depth and rate of respiration	Hyperpnoea

Respiratory rhythm:	
Rhythmic waxing and waning if respirations from very deep to very shallow breathing and temporary apnea	Cheyne Stokes respiration
Respiratory volume:	12-16 breaths
Over expansion of lungs characterized by rapid and deep breaths	Hyper ventilation
Under expansion of lungs characterized by shallow respirations	Hypo ventilation
Respiratory ease or effort:	
Difficult and labored breathing	Dyspnea
Inability to breathe when lying down	Orthopnea

4. Blood pressure: 100 - 140/60 - 90 mmHg

Variations in blood pressure	
Below a systolic of 90 mm Hg and a diastolic of 60mm Hg.	Hypotension
Above a systolic of 140 mm Hg and a diastolic of 90jmm Hg.	Hypertension

5. Oxygen saturation: Above 95% Oxygen

Variations in oxygen saturation	
Below 70%	Hypoxia

6. Pain (WONG BAKER PAIN SCLAE) No pain (is indicated by a 0 on a 10-point scale)

Score	**Variations in pain**
0	No pain
1, 2, 3	Mild pain
4, 5, 6	Moderate pain
7, 8, 9 and 10	Severe Pain

7. Pupillary reaction: 3 – 7 mm, accommodating and equality reacting to light in both right & left eye.

Variations in Pupillary reactions				
Description	**Right**	**Left**	**Both**	**Description**
Constricted pupils in cases such as inflammation of iris or result from drugs such as morphine, pilocarpine.				Miosis
Enlarged pupils may indicate injury or glaucoma or result from certain drugs such as atropine.				Mydriasis

Unequal pupils may result from a central nervous system disorder (traumatic brain injury as in the case of basilar fracture).				Anisocoria
Dilated pupils on the affected side of the lesion.				Ipsilateral
Dilated pupils on the opposite side of the lesion.				Contralateral

C. When to take vital signs

- Upon admission.
- On a routine basis.
- Before and after any invasive procedure/surgery.
- Before during and aft3er administration of medications that affect cardiovascular, respiratory, endocrinal, circulatory and temperature control functions.
- Any deterioration of patient's general condition.
- Before and after nursing intervention that may influence vital signs.
- When patient reports any non- specific symptoms of physical distress.
- Prior to medical emergency call MET to confirm MET score.
- Specific time of the day & comment with the circadian rhythm to support the diagnosis or assess the prognosis.

Observation of Temperature

A. Definition

Temperature is a measurement of the average kinetic energy of the molecules in an object or system and can be measured with a thermometer or a calorimeter. It is a means of determining the internal energy contained within the system. Body temperature is the difference between the amount of heat produced by body process and the amount of heat lost to the external environment.

{Heat produced} –{Heat lost}= body temperature.

B. Purposes

1. To evaluate the progress and recovery of the patient from illness.
2. To diagnose relevant conditions.
3. To ensure fitness of patient prior to procedures/surgeries.
4. To assess the patient response to medication and treatment.

C. Equipment:

1. A tray containing a bottle of disinfectant both lined with soft material (alcohol swab/ tissue paper/ cotton).
2. Thermometer (electronic thermometer, tympanic thermometer).

D. Procedure:

D.1.Axillary Temperature

S. No	Action	Rationale
1.	Explain the procedure to the patient. Also find out if the patient has had a wash.	To ensure that the patient understands the procedure and give consent. Body wash just before taking axillary temperature can alter the reading.
2.	Perform hand hygiene.	To prevent cross infection.
3.	Place the patient in a comfortable position.	To relieve apprehension.
4.	Read mercury level while gently rotating thermometer at eye level. Shake it until reading lowers mercury level to 35.6°	Thermometer reading must be below patient's actual temperature before reading.
5.	Dry axilla with towel.	Moisture may alter the temperature.
6.	Place the thermometer in axilla so that the bulb of thermometer is well in contact with the skin, while the patients hand is held across chest.	Ensures proper contact with the blood vessels in the axilla.
7.	Wait for 5 minutes.	To record the temperature accurately.
8.	Remove the thermometer, clean from stem to bulb and read at eye level. Add 1° F for 0.3° C for axillary temperature.	Reduces transmission of micro organisms to the bulb.

S. No	Action	Rationale
9.	Shake gently so that mercury level falls below 95°F or 35°C for axillary temperature.	Keep it ready for re-use.
10.	*Place the thermometer in disinfectant solution.	To reduce cross-infection.
11.	Discard used tissue paper/cotton balls.	Reduce transmission of microbes.
12.	Record temperature on the graph sheet of TPR record.	Provides proper data for clinical data analysis.

Indications for auxiliary temperature:

- Neonates, infants, toddlers, and children, intubated and sick patients.
- Patients with oral inflammation or wired jaws.
- Patients recovering from oral surgery.
- Those who cannot breathe through their nose, irrational patients, and those for whom other temperature sites are contra indicated.
- Mentally challenged or compromised individuals.
- All contraindications for oral temperature.
- If the patient has own the thermometer, it can be washed with soap and water and re-placed back in its case.

D.2. Oral Temperatures

S. No	Action	Rationale
1.	Explain the procedure to the patient. Also find out if the patient has taken cold or hot food or fluids or has smoked. If so, the nurse should wait for 30minutes.	To ensure that the patient understands the procedure and give consent. Any of these practices may alter the temperature recording.
2.	Perform hand hygiene.	To prevent cross infection.
3.	Place the patient in a comfortable position (sitting or lying down).	To relieve apprehension.
4.	Read mercury level while gently rotating thermometer at eye level. Shake it until reading lowers mercury level to 3506° C.	Thermometer reading must be below patient's actual temperature before reading.
5.	Ask client to open mouth and gently place thermometer under tongue in posterior sublingual pocket lateral to center of lower jaw.	Ensure proper contact with the blood vessels in the mouth.
6.	Wait for 3 minutes.	To record the temperature accurately.
7.	Remove the thermometer, clean from stem to bulb and read at eye level.	Reduces transmission of micro organisms to the bulb.

S. No	Action	Rationale
8.	Shake gently so that mercury level falls below 95°F or 35° C.	Keeps it ready for re-use.
9.	Place the thermometer in disinfectant solution.	To reduce cross-infection.
10	Discard used tissue paper/cotton balls.	Reduce transmission of microbes.
11.	Record temperature on the graph sheet of TPR record.	Provides proper data for clinical data analysis.

Contraindications for oral temperature:

- Patient with a history of convulsions or cough.
- Mouth breathers.
- Patients with injury or inflammation of the oral cavity.
- Patients who are not able to hold the thermometer under the tongue.
- Pediatrics and neonates

D.3. Tympanic Temperature

Monitoring of the ear temperature is also known as tympanic membrane temperature. This is a way of measuring the body temperature inside the ear. It is a small digital device that is snugly placed inside the external auditory meat us which is capable of sensing the body temperature. Within a span of few second the device records the temperature and it can be directly read from the display. Children may like this way of checking their temperature because it is so quick.

E. Supportive documents

Primary documents.

- Clinical chart, nurse's notes.

Related documents:

- Intake/Output (I/O) Chart, Neurological chart, Blood Transfusion chart.
- The average normal oral temperature is 98.6° F. An oral temperature is). to 1° F (0.6° C) lower than a rectal or ear (tympanic) temperature.
- An rectal temperature is to 1° F (0.6° C) lower than an oral temperature.
- One degree Fahrenheit is added in case of axillary temperature and decreased in case of rectal temperature to equalize with oral temperature. This practice may be subject to institution policy.

OBSERVATION OF PULSE

A. Definition:

It is the palpable bounding of blood flow noted at various points on the body. Observation of pulse is the checking of presence, rate, rhythm, and volume of blood when it exerts on the wall of the artery against a bone. It is an indicator of circulatory status.

B. Purposes:

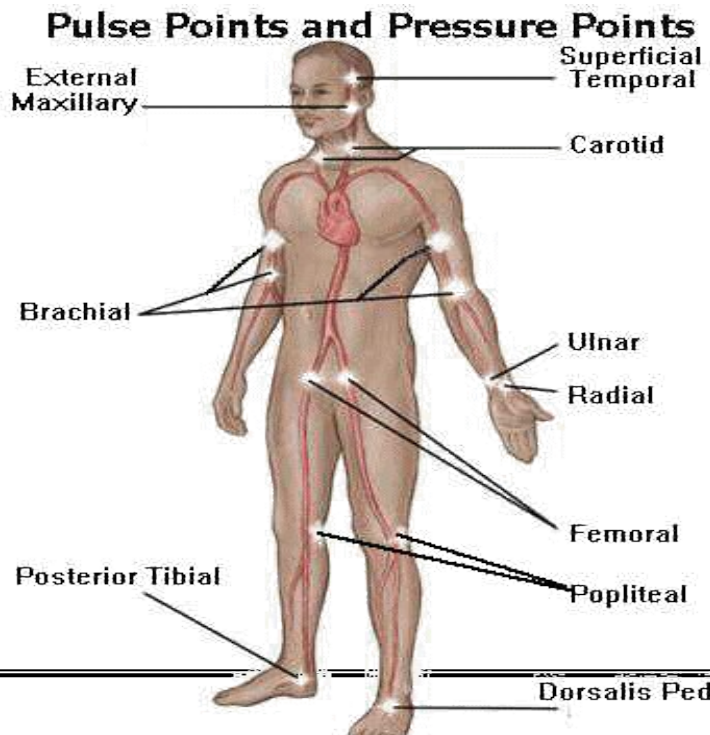
1. To determine the number of heart bests occurring per minute.
2. To establish baseline data for subsequent evaluation.
3. To gather information about the heart's rhythm and pattern of beats.
4. To evaluate amplitude, (or strength) of pulse.
5. To assess heart's ability to deliver blood to the various organs.
6. To assess response of the heart to cardiac medications, activity, blood volume, gas exchange.
7. To assess the vascular status of limbs.
8. To compare the equality of peripheral pulses on each side of the body.
9. To monitor and assess the patients at risk for alterations in pulse.

Equipment:

1. A watch that has a second hand.
2. A pen with red ink.
3. A stethoscope.

Pulse points

- Temporal artery
- Facial artery
- Carotid artery
- Apical pulse
- Brachial artery
- Radial artery
- Femoral artery
- Popliteal artery
- Posterior tibial artery
- Dorsalis pedis



Pulse points	Site/Location	Indications
Temporal	Over temporal bone of head, above and lateral to eye.	Easily accessible site used to assess pulse in children
Carotid	Along medical sternocleidomastoid muscle in neck.	Easily accessible used during physiological shock or cardiac arrest when other sites are not palpable.
Apical	Fourth to fifth intercostal space at left mid-clavicular line	Site used to auscultate for apical pulse. This is the point of maximal impulse.
Brachial	Groove between biceps and triceps muscle at anti-cubital fossa.	Site used to assess status of circulation to lower arm. Site used to auscultate blood pressure.
Radial	Radial or thumb side or fore arm at wrist.	Common site used to assess character of pulse peripherally and assess status of circulation to hand.
Ulnar	Ulnar side of fore arm at wrist.	Site used to assess character of circulation to hand and also used to perform an Allen's test.
Femoral	Below inguinal ligament, midway between symphysis pubis and anterior superior iliac spine.	Site used to assess character of pulse during physiological shock or cardiac arrest when other pulses are not palpable: used to assess status of circulation to leg.
Popliteal	Behind knee in Popliteal fossa.	Site used to assess status of circulation to lower leg.
Posterior tibial	Posterior and inferior to the medical malleolus	Site used to assess status of circulation to foot.
Dorsalis Pedi's	Along top of foot between extension tendons of great and first toe.	Site used to assess patient's with: Femoral catheter On Intra-Aortic Balloon Pump On Thrombo Embolytic Deterrent (TED) stocking Traction Plaster of Paris splinting Immediate post-operative period within 48 hours Diabetics Fracture of lower limbs S/P Cath (femoral) i.e. PTCA/CAG

C. Procedure

S. No.	Action	Rationale
1	Wash and dry hands.	To prevent cross infection.
2	Encourage the patient to relax and not speak. Also find out if the patient has been ambulated, or done any such activity within the previous 15minutes.	Activity and anxiety can elevate heart rate. These activities may alter pulse rate.
3	Explain and discuss the procedure with the patient.	To ensure that the patient understands the procedure and gives his/her valid consent.
4	Where possible measure the pulse under the same conditions each time.	To ensure continuity and consistency in recording.
5	Place the index, middle and ring finger along the appropriate artery and apply light pressure until the pulse is felt.	The fingertips are sensitive to touch. Practitioners should be aware that the thumb and the forefinger have pulses of their own and therefore these maybe mistaken for the patient's pulse.
6	Press gently against the peripheral artery being used to record the pulse.	The radial artery is usually used as it is often the most readily accessible.
7	The pulse should be counted for 60 seconds.	Sufficient time is required to detect irregularities or other defects.
8	If the apical pulse is going to be checked, explain to the patient and expose the sternum and the left of the chest. Place the diaphragm of the stethoscope over the point of maximal impulse (PMI) at the left 5^{th} inter costal space, medial to the mid-clavicular line. If the heart beat is regular, count for 30 seconds, and multiply by two. If irregular, auscultate for one full minute.	It provides a more accurate assessment.
9	Record the pulse rate on appropriate document with appropriate character	To monitor differences and detect trends; any irregularities should be informed to the appropriate senior nursing and medical teams.

D. Supportive documents: Clinical chart, nurse's notes.

Note: In children less than 2 year of age the pulse should not be measure this way.

OBSERVATION OF RESPIRATION

A. Definition:

Monitoring the involuntary process of inspiration of oxygen and expiration of carbon-di-oxide of a person; Respirations constitute inspiration, expiration and a pause, Respiration is the mechanism the body uses to exchange gases between atmosphere and blood (external respiration) and the blood and the cell (internal respiration).

B. Purpose:

1. To determine a baseline respiratory rate for comparisons.
2. To monitor changes in oxygenation or in respiration.
3. To evaluate the patient's response to medications or treatments that affects the respiratory system.

C. Equipment:

1. A watch that has a second's hand.

D. Procedure:

S. No.	Action	Rationale
1	Observe the pattern: rate, rhythm, volume and effort of respiration.	Very slow or rapid breathing may be a sign of hypoxia or any underlying change. eg: sepsis
2	Encourage the patient to place his hand over the abdomen or chest or place nurses hand directly over patient's upper abdomen.	Sufficient time is required to detect irregularities or other defects.
3	Observe complete respiratory cycle (one inspiration and one expiration).	Rate is accurately determined only after the nurse had viewed respiratory cycle.
4	After the cycle is observed look at the seconds in the watch and begin to count rate from 0, 1, 3,	Timing begins with count of one.
5	If rhythm is regular count the number of respirations in 30 seconds and multiply by two. If it is irregular, less than 12, or greater than 20, count for one full minute.	Respiratory rate is equivalent to number of respirations per minute. Suspected irregularities require assessment for at least one minute.
6	Observe for signs of respirator effort: • Nasal flaring. • Pursed lips. • Use of accessory such as the shoulder or the neck muscle (strenocleidmastiod or scalene).	These signs may show that the patient is making an effort in breathing and may indicate changes in the respiratory status before other observations (e.g. oxygen saturation).
7	Record the respiratory rate on appropriate documentation.	To monitor differences and detect trends any irregularities should be brought to the attention of the appropriate senior nursing and medical teams.

E. Supportive documents

Clinical chart, nurses notes.

MEASUREMENT OF BLOOD PRESSURE

A. Definition:

Blood Pressure is the force exerted on the wall of a blood vessel by blood as it is pumped around the body by the force of ventricular contraction.

Systolic blood pressure: Pressure of the blood as a result of contraction of ventricles

Diastolic blood pressure: It is the pressure when the ventricles are at rest.

Pulse pressure: It is the difference between the systolic and diastolic pressure and represents the volume output of the left ventricle.

B. Indications:

1. To determine the patient's blood pressure at initial assessment as a base for subsequent evaluation.
2. To monitor fluctuations in blood pressure.
3. To assess the cardiac status.
4. To identify and monitor changes resulting from a disease process and medical/surgical therapy.
5. To determine patients hemodynamic status.

C. Equipment:

2. A well maintained sphygmomanometer. (Poorly maintained equipment leads to inaccurate readings.
3. Stethoscope

D. Procedure

S. No.	Action	Rationale
1	Wash hands and dry hands.	To prevent cross infection.
2	Prepare the patient for the procedure	Gain consent and co-operation. Ensure patient is comfortable. Factors such as a recent meal, full bladder and cigarette smoking can affect blood pressure. Ideally they should have rested 5-15 minutes pre-procedure.
3	Ask the patient if he or she has ingested caffeine of has smoked within 30 minutes prior to measurement.	These activities may alter the blood pressure.
4	Allow the patient to rest for 5 minutes either supine or seated in a quiet room with comfortable temperature.	To ensure that an accurate reading is obtained.
5	Comfortably position the patient sitting with the arm supported on the table at heart level or lying down with the arms resting on the bed and has the palm of the hand facing	Tense muscles can raise diastolic pressure hence the need to support the limb.

S. No.	Action	Rationale
	upwards. Position the knee slightly flexed (Popliteal BP checking).	
6	They should instruct to keep their feet flat.	Crossing of feet may increase the blood pressure.
7	Remove tight clothing from the limb to be used and support the limb.	To obtain correct reading.
8	Apply the correct sized sphygmomanometer cuff 2.5cm above the antecubital fossa directly over the patient's skin, and in level with the heart.	The wrong positioning of the cuff can lead the inaccuracies of 0.8mm Hg/cm above or below hear level. The cuff should be large enough to nearly/completely encircle arm. Too small a cuff raises blood pressure artificially.
9.	Ensure the lever of mercury meniscus in the manometer is at the nurse's eye level.	Having the sphygmomanometer at eye level prevents errors in recording values.
10.	Locate the radial or brachial artery and inflate the cuff until the pulse can no longer be felt. Deflate and wait 15-30 seconds before proceeding.	This identifies and estimated values of systolic pressure. It helps to eliminate errors caused by auscultatory gap. (A gap occurring when korotkoff sounds disappear after k5 and reappear after a gap of 5-40mm Hg).
11	Palpate the brachial artery and place the stethoscope gently over the brachial artery. Inflate the cuff to 30 mm Hg above the estimated systolic pressure determined from the previous step.	The pressure of the inflated cuff will prevent blood flow through the artery. Light pressure on the stethoscope maintains full skin contact but when excessive it distorts/lengthens Korotkoff sounds.
12.	The cuff is deflated at a rate of 2-3 mm Hg per second and the Korotkoff sounds are listened for. Korotkoff I minus when sound first heard is equal to systolic value. Kortkoff V minus when last sound is heard is equal to diastolic value.	If deflation is too slow venous congestion and arm pain can result and a false low reading obtained. When deflation is too fast the reading are inaccurate. The markings on the sphygmomanometer are at 2mm Hg intervals so rounding up/down to 5mm Hg factors leads to errors which could give rise to inappropriate or inconsistent treatment. Korotkoff I and V are used to ensure uniformity in the use of sounds in all readings.
13.	Record the systolic and diastolic pressures in the nurses' chart and on the vitals record.	Only compare readings after completing the procedure to reduce the risk of being

S. No.	Action	Rationale
	Document and arm used and patient's position. Compare with previous readings. Inform the appropriate personnel of any irregularities.	influenced by previous readings. Documentation of arm used and position ensure that there are no variances in future recordings.
14.	When BP has to be read from a continuous cardiac monitor, do the following. The cuff has to be tied constantly. These cuff needs to be changed from one arm to another second hourly. Set the monitor to read the BP as per patient condition. E.g.: if the monitor is set to read the BP every 10 minutes, the cuff gets inflated automatically every 10 minutes and BP is read from the monitor.	Cardiac monitor is used to continuously monitor the BP of acutely ill patient. The cuff is rotated from arm to arm to prevent venous return impedance and pain.

Contra Indications

- The arm has intra venous infusion/transfusions.
- The arm injured or diseased.
- The arm has a shunt of fistula for renal dialysis.
- On the same side of the body where a female patient has had radical mastectomy.

E. Supportive documents

- Clinical chart, nurses notes.
- If using a digital sphygmomanometer, follow manufacturer's instructions but pay attention to points 1 and 7 of procedure.
- All sphygmomanometers should be calibrated on an annual basis.
- Cuff with should be 20% more than upper arm diameter or 40% of circumference and 2/3rds of arm length. Use a cuff that covers 80% of the upper arm.

ASSESSMENT OF OXYGEN SATURATION

A. Definition:

Oxygen saturation is the measurement of oxygen attached to the hemoglobin cell in the circulatory system. The normal SpO_2 is 90 to 100%.

B. Indications:

1. To monitor the adequacy of arterial hemoglobin saturation.
2. To comply with mandated regulations or recommendation by authoritative group.

C. Equipment:

1. Oxymeter probe.
2. Acetone or nail polish remover.

D. Procedure

S. No.	Action	Rationale
1	Determine need to measure patient's oxygen saturation: a) Note risk factors b) Assess signs and symptoms such as altered respiratory rate, depth and rhythm; adventitious breath sounds: cyanotic appearance of nail beds, lips, mucous membranes, and skin, restlessness, irritability, confusion; reduced level of consciousness; labored or difficult breathing.	Certain conditions place patients at risk for decreased oxygen saturation. (Acute or chronic compromised respiratory function, after general anesthesia, conscious sedation, traumatic injury to chest wall, ventilator dependence, changes in supplemental oxygen therapy). Physical signs and symptoms may indicate abnormal oxygen saturation.
2	Assess for factors that normally influence measurement of SpO_2 such as oxygen therapy. Hemoglobin level and the temperature.	Ensure nurse to assess oxygen saturation accurately. Peripheral vasoconstriction related to hypothermia can interfere with SpO2.
3	Determine previous SpO2.	Provides basis for comparison, assessment of current status and evaluation of interventions.
4	Perform hand hygiene.	Prevents transmission of micro-organisms.
5	Explain procedure to patient.	Promotes patient's co-operation and increases compliance.
6	Assess the appropriate site, (digit, ear lobe).	The site must have adequate local circulation and be free of moisture.
7	If nail polish is applied, remove it using acetone or nail polish remover.	Ensure accurate reading.
8	Attach sensor probe to monitoring site. Explain to the patient that he/she will feel like a clothespin on the finger but will not hurt.	The presence of spring tension on the digit may not be expected.
9	Turn on oximeter. Observe pulse wave form or intensity display and audible beep. Correlate oximeter pulse rate with patient's radial pulse.	Pulse wave form display enables detection of valid pulse or presence of interfering signal. Differences require re-evaluation of oximeter sensor probe placement and reassessment of pulse rates.
10	Leave probe in place until oximeter read out reaches constant value. Read SpO2 on digital display. Record.	Reading may take 10-30 seconds depending on the site selected.
11	If continuous SpO2 monitoring is planned, preset SpO2 alarm limits and volume.	To avoid frightening patient's and visitors.
12	Assess skin integrity and re-locate the sensor	Spring tension in the sensor probe can

S. No.	Action	Rationale
	probe every four hours.	cause irritation and lead to disruption of skin integrity.
13	Discuss finding with the patient as needed.	Promotes participation in care and better understanding of health status.
14	If intermittent or spot checking SpO2 measurements are planned, remove probe and turn oxymeter power off, store probe in appropriate location.	Batteries can be depleted if the oxymeter is left on. Sensor probes are expensive and vulnerable to damage.
15	Compare patient's SpO2 measurements are planned, remove probe and turn oxymeter power off, Store probe in appropriate location.	Comparison reveals abnormality.
16	Correlate SpO2 with SaO2 obtained from arterial blood gas measurements (if available).	Documents reliability of non-invasive assessment.
17	Correlate SpO2 reading with data obtained from respiratory rate, depth, and rhythm assessment.	Measurements assessing ventilation, perfusion, and diffusion are interrelated.
18	Record SpO2 Value on nurses notes or vital signs flow sheet indicating type and amount of oxygen therapy used by patient during assessment. Also document any signs and symptoms of desideration in narrative form.	The monitor differences and detect trends; any irregularities should be informed to the appropriate senior nursing and medical teams.

E. Supportive documents

Clinical chart, nurses notes.

OBSERVATION OF PUPILLARY REACTION

A. Definition:

Observation of pupils construction and dilatation in response to light and accommodation.

B. Indications:

1. To establish baseline data for subsequent evaluation.
2. To assess the eye structure and visual acuity.
3. To monitor patients neurological status.
4. To identify the deviation from normal.

C. Equipment:

1. Pen torch.

D. Procedure

S. No.	Action	Rationale
Direct and consensual reaction to light		
1.	Partially darken the room	To ensure accurate papillary reaction.
2.	Wash hands and dry hands.	To prevent cross infection.
3.	Explain and discuss the procedure with the patient.	To ensure that the patient understands the procedure and give his/ her valid consent.
4.	Ask the patient to look straight ahead.	Easy visibility.
5.	Using a pen torch approach from the side, shine a light on the pupil.	To assess the reaction of pupils to light.
6	Observe the response of the illuminated pupil. It should constrict (direct response).	To make an assessment.
7.	Shine the light on the pupil again, and observe the response of the other pupil. It should also constrict (consensual response).	To make an assessment.
Reaction to accommodation		
8.	Hold a pen light about 10cm from the bridge of the patient's nose	
9.	Ask patient to look at the top of the pen torch and then at a distance, behind the pen torch. Alternate the gaze from near too far.	To assess accommodation.
10.	Observe the pupillary response. They should constrict when looking at the near object (pen torch) and dilate when looking at the object afar off.	Provides base line data for further comparison.
11.	Next, move the pen torch towards the patients' nose. The pupils should converge.	To make an assessment.
12.	To record normal assessment of the pupils, use the abbreviation PERRLA (Pupils Equally Round and React to Light and Accommodation).	
13.	Document the findings with the time and complete nurses signature on the GlasCow coma scale and on the nurses char or where ever applicable.	To monitor differences and detect trends; any irregularities should informed to the appropriate senior nursing and medical teams.

E. Supportive documents

Clinical chart, nurses notes.

Glasgow Coma Scale.

1.2 Measurement Of Capillary Blood Glucose

Policy: INODAYA hospital's policy for monitoring capillary blood glucose (CBG) states that, CBG is monitored for all diabetic patients and patients and frequency of monitoring as per patient condition.

The procedure shall only be carried out by a registered nurse.

A. Definition:

Monitoring a patient's' blood glucose provides an accurate indication of how the body is controlling glucose metabolism. In short term management, monitoring can prevent hypoglycemia and ketoacidosis, in the long term it can significantly reduce the risk of complications which affect the vascular and neural pathways by helping to maintain near – normal glucose levels.

B. Purpose:

1. Helps to monitor immediate and daily levels of blood glucose control and dose adjustments.
2. Detects hypoglycemia and hyperglycemia.
3. Assists in the safe management of hyperglycemia.
4. Indicates the effectiveness of therapy.
5. Determines the effect of daily activities such as physical activity and food intake on blood glucose.

C. Equipment

1. Blood Glucose monitor.
2. Test strips.
3. Single use safety lancets.
4. Gloves.
5. Alcohol swab / a cotton ball saturated with surgical sprit.
6. Dry cotton balls.
7. Alcohol swab.

D. Procedure

S. No.	Action	Rationale
1	Before taking the device to the patient, the monitor needs to be checked for the following: (a) The glucose strip should be checked if it has the same number as the glucose chip. (b) One pack of test strips is open and has not been left exposed to the air and that they are within the date of expiry.	To ensure accuracy of the result. The quality control checks have to be carried out in order to ensure the safety of the patient.
2.	Explain the procedure to the patient.	The patient should be aware of the procedure in order to allay his / her anxiety, and to be able to cooperate in

S. No.	Action	Rationale
		the procedure.
3.	Ask the patient to sit down or lie down.	To ensure the patients safety.
4.	Wash your hands and put on gloves.	To minimize the risk of cross infection and contamination.
5.	Clean the finger tip with alcohol swab and allow it to evaporate before pricking.	To remove the pathogens form the skin surface.
6.	After the cleaned area is dry, using a single use lancet prick the lateral aspect of finger tips. Wip away the 1st drop	If not dried before pricking, alcohol can derange the glucose values. Lateral aspect is selected result because it may contain large amount of serous fluid
7.	Take a blood sample from the side of the finger using the lancet, ensuring the site of the piercing is rotated. Avoid frequent use of the index finger and thumb. The finger may bleed without assistance, or may need assistance by "milking" to form a droplet of blood which is large enough to cover the test pad.	The side of the finger is used as it is less painful and easier to obtain a hanging droplet of blood. The site is rotated to reduce the risk of infection from multiple stabbing, and to prevent the areas from becoming toughened and to reduce pain.
8.	Apply the blood to the testing strip. Some test strips are hydrophilic and are dosed/ filled from the side and are not dropped directly onto the strip.	The window on the test strip allows verification of correctly dosed strip.
9.	Dispose of lancet in a puncture proof container.	To reduce the risk of needle stick injury.
10.	Once the result is shown, read the result accurately and note it down.	To ensure the accuracy of the result.
11.	Dispose of waste appropriately. Remove gloves and dispose.	To reduce the risk of cross infection.
12.	Make the patient comfortable and observe the site of test for bleeding. If bleeding is present apply dry cotton to the puncture site.	To apply pressure so as to stop the bleeding and to provide comfort
13.	Wash and dry hands.	To prevent cross infection.
14.	Record the result in the nurses' notes and in appropriate record (diabetic chart). If hypoglycemia or hyperglycemia is noticed immediately inform the medical team and provide appropriate intervention. Follow up in 2 hours if so.	To monitor differences and detect trends: any irregularities should be informed to the appropriate senior nursing and medical teams.

E. Supportive documents

Clinical chart, nurses notes. Note: Factors affecting Blood Glucose Monitoring

1. Hyperlipidemia may elevate readings.

2. Hematocrit values, abnormal hematocrit values result in false blood glucose reading. Higher than normal levels of hematocrit in the body may impair diffusion of the sampled through the test strip or delay the process involved in the meter's calculation of blood glucose levels, therefore high hematocrit values will yield falsely low blood glucose results. Low hematocrit levels will yield a falsely high blood glucose results.
3. Dialysis treatment may elevate readings.
4. Intravenous infusion of ascorbic acid (Vitamin C) may depress readings.

1.3 Measurement of Central Venous Pressure (Foot scale Method)

Policy: INODAYA hospital's policy for monitoring of Central venous pressure (CVP) states that, CVP shall be monitored for all Hemodynamically unstable patients and those with dehydration. The procedure shall only be carried out by the registered staff nurse or physician under aseptic precautions.

A. Definition

Central venous pressure is measuring the pressure of blood returning or filling the right atrium via a central vein with 3-way connector. It indicates blood volume, vascular tone and cardiac function.

B. Purpose

1. To obtain accurate reading of arterial blood pressure.
2. To provide an estimate of fluid balance and aid in treatment of fluid imbalance.
3. To evaluate relationship between circulating blood volume and pumping action of heart.

C. Equipment

1. Foot scale.
2. IV line (if not present).
3. Drip stand (IV stand)

D. Procedure

S. No	Action	Rationale
1.	Explain the procedure to the patient.	The patient should be aware and understand the procedure and give his/her valid consent.
2.	Wash and dry hands.	To minimize the risk of cross – infection.
3.	Place the patient in a supine position.	To prevent inaccurate readings.
4.	Raise the IV the perpendicular to access site.	To allow fluid from the I.V line to enter into the patient's right atrium.
5.	Adjust the 3 way connector such that the fluid line is stopped and patient line is opened.	To allow air to enter into the patient's line.
6.	Allow air to fill the patient line. The fluid level in the patient's line begins to	The pressure of the patient's line now equals the pressure of the right atrium.

	oscillate.	
7.	Place the foot ruler at the chest level, midaxillary line of the patient and read the meniscus level of fluid in the tubing.	To measure the CVP accurately
S. No	**Action**	**Rationale**
8.	Ensure that the air is flushed out of the I.V line and I.V flow is continued.	To restore infusion via the intravenous catheter.
9.	Position the patient comfortably.	To prevent discomfort and ensure cooperation for the procedure.
10.	Replace the articles. Wash hands.	To minimize the risk of cross infection.
11	Record the CVP measurement appropriately. (CVP monitoring flow chart). Normal pressure is 8-12cms of water.	To monitor differences and detect trends; any irregularities should be informed to the appropriate senior nursing and medical teams.

E. Supportive documents

Clinical chart, nurses notes.

Note: Factors affecting CVP measurement.

1. Inra thoracic pressure.
2. Vascular tone.
3. Obstruction.

1.4 Assessment of Intracranial Pressure

Policy: INODAYA hospital's policy for monitoring of intracranial pressure (ICP) states that, ICP shall be monitored for all neurology patients with a written instruction from the treating physician under strict aseptic precautions. The Procedure shall only be carried out by specially trained personnel or under the supervision of the intensivist on duty only.

A. Definition:

It is the procedure of monitoring pressure in ventricles, subarachnoid space, subdural space, epidural space and brain tissue using pressure transducer, Intracranial pressure, (ICP) is the hydrostatic force, measured in the brain, i.e. the total pressure exerted by the 3 components: brain tissue, blood and Cerebro Spinal fluid (CSF).

The following will be assessed initially, before monitoring the ICP.

1. HOB (Head of Bed) is at the ordered height.
2. HOB control is Locked Out.
3. No air bubles are noted in the system.
4. All connectors in the system are tight.
5. Position of the transducer is at the "Foramen of Monoroe".
6. Dressing is intact.

B. Procedure

S. No.	Action	Rationale
1	Wash hands.	To remove possible bacteria from the skin.
2.	Wear gloves (follow aseptic technique while handling the ICP line)	To prevent cross contamination.
3.	Assess the patient's condition.	To detect the any changes in the patient's condition and manage as required.
4.	Arrange the appropriate cable and transducer for the monitoring.	To avoid the wrong readings.
5	Attach the transducer to the system stopcock (preferred site) and to the bedside monitor pressure cable. Configure the monitor to display ICP with the appropriate label/ scale.	To avoid the wrong readings.
6.	Zero the system to atmospheric pressure by turning off the transducer stopcock to the drainage of system and opening it to air. Press "Zero" on the bedside monitor pressure module.	
7.	Adjust the system stopcock to the Monitoring only position for ICP monitoring. (Patient stopcock will be in the Drainage position.)	

Note: The Null position is not recommended for ICP monitoring, as pressure measured with the stopcock in the Null position will be a reflection of a blended pressure from both the patient and the drainage bag and will result in inaccurate ICP readings.

C. Supportive documents

Clinical chart, nurses notes.
ICU flow sheet

1.5 Assessment of level of Consciousness using Glasgow Coma Scale

Policy: The Level of consciousness monitoring shall be done for all patients suffering from neurological problems and or whenever there is a change in alertness or orientation of a patient.

A. Definition:

Glasgow coma scale is a standardized scoring system used to assess the level of consciousness in patient. The Glasgow Coma Scale (GCS) allows the nurse to evaluate a patient's neurological status over a period of time. The higher the score, the more improved or normal is the level of functioning. It is objective and provides a reliable and easy-to-use measure of the level of consciousness.

Normal 10 - 15
8 means Coma
GCS 3 means Serious

B. Purposes:

1. To assess patients with suspected or confirmed brain injury.
2. To assess the level of consciousness in any patient who has altered sensorium
3. To follow the prognosis of patients who have been admitted with altered levels of sensorium
4. To grad the severity of impaired consciousness in patients with traumatic head injuries or intra carnial surgeries.

C. Equipment

1. Glasgow coma scale from.
2. Pen torch.
3. Knee hammer.
4. Tray.

D. Procedure

S. No.	Action	Rationale
1	Keep the patient in a comfortable position.	To evaluate responses accurately.
2.	Score response in the Glasgow coma Scale Sheet.	Grades the conscious level of the patient.
	Eye Opening	**E**
	Spontaneous Eyes open spontaneously without stimulation.	4
	To speech Eyes open to verbal stimulation.	3
	To pain	2

S. No.	Action	Rationale
	Eyes open with painful stimuli	
	No response No eye opening regardless of level of stimulation.	1
	Best Verbal Response	**V**
	Oriented Able to give accurate information regarding time, person and place.	5
	Confused Able to answer in sentences using correct language, but cannot answer orientation questions appropriately.	4
	Inappropriate words Uses incomprehensible words in a random or disorganized fashion.	3
	In comprehensible sounds Makes unintelligible sounds.	2
	None No verbal response despite verbal or other stimuli.	1
	Best Motor Response	M
	Obeys commands Obeys and can follow simple commands.	6
	Localizes to pain Purposeful movement to remove painful stimuli.	5
	Flexion – withdrawal Withdraws extremity form source of pain.	4
	Flexion-abnormal Decorticate posturing (flexion of arms, hyperextension of legs) spontaneously.	3
	Extension DE cerebrate posturing (limbs extended and internally rotated) spontaneously.	2

S. No.	Action	Rationale
	None No response to stimuli.	1
3.	Add total score at bottom of sheet during each assessment.	Vague terms can be easily misinterpreted. Accurate re cording will enable continuity of assessment.
4	Document scores accurately. 1. Score response on Glasgow coma scale ➢ Maximum Score: 15 ➢ Minimum Score : 03 ➢ Score less than 8 indicates coma. 2. The minimum score response on GCS, if patient is on Ventilator or Tracheotomy is 2T/15 (or) 2VT/ 15.	Avoids duplication and enhances continuity of care.

E. Supportive documents

Clinical chart, nurse's notes, Glasgow coma scale.

1:6 Recording Electrocardiograms

Policy: Electrocardiogram is performed on patients with cardiac illness. chest pain and in others who are suspected of having cardiac pathology .it can be recorded by a cardiologist or registered nurse. It is repeated after a cardiac intervention /recurrence of symptoms &signs.

A: Definition:

An electrocardiogram is the graphic representation of the electrical current of the conduction system. Electrical currents generated and transmitted through the heart also can be monitored and amplified with an instrument called the electrocardiogram. these impulses are graphically represented as electrocardiography.

The electrocardiogram (ECG) is obtained by placing electrodes in standard positions on the skin of the chest wall and extremities. The electrodes may be connected to the ECG machine in several ways usually through a clip attached to the adhesive –tabbed electrode.

With the four extremity electrodes in place the first six leads can be recorded: lead I, II, III, AVR AVL, and AVF. The standard left six pericardial or V leads are attached as fallows; V1: 4^{th} intercostal space, right sterna border; V2; 4^{th} intercostal space. Left sterna border; V3 Diagonally between V2 and V4; v4; V5 intercostal space, left maxillary line; V6: 5^{th} intercostal space maxillary line. The right pericardial leads placed on the right side of the chest are the mirror opposite of the left leads. Recording of the electrical current following between two electrodes is made on a graph paper or displayed on a monitor. The standard ECG is composed of the 12 leads or 12 different views, although it is possible to record 15 to 18 leads.

B. Purposes:

1. To recognize the normal rhythm of the heart –normal sinus rhythm.
2. To diagnose dysrhythmias conduction abnormalities chamber enlargement, and myocardial is-chemia injury of infarction.

3. As a routine investigation (Master heath check up's pre –employment check-up annual check –up)
4. To rule out abnormalities prior to surgical investigations.
5. To identify changes in the cardiac rhythm.
6. To follow up after a cardiac surgery.
7. For continuous monitoring of the cardiac status.
8. To detect electrolyte imbalance. (e.g.Hyperkalemia, Hypo kelemia ect.)
9. To evaluate effects of treatment .(Administration of cardiac drugs)

C: Equipment:

ECG machine with limb leads e.g. LA V1

1. Electrodes
2. Tissue paper
3. Electro conductive gel
4. ECG machine
5. Front open gown
6. Gallant blade.

D: Procedure:

S.No	Action	Rationale
1.	Wash hands with bactericidal soap and water or bactericidal hand rub and dry	To minimize risk if infection
2.	Explain to the patient that the ECG is to be taken and that it is not a painful procedure .Explain that it will be important in diagnosis.	To endure that the patient understand the procedure and he gives his/her valid consent
3.	Female patients to remove all tight fitting clothing around the chest. Asst patient to put on a open loose gown	This is done tom place the electrodes over the chest area
4.	Ensure that the patients is comfortably positioned in supine	To ensure optimal recording and comfort of the patient
5.	Clean the skin surface off dead cells with soap and water and dry well. If necessary prepare skin by clipping hairs or use clean gauze to remove the sweat and oil on the skin	To ensure a good grip and there four good contact between electrical artifacts.
6.	Apply the electrodes as described use adequate	To obtain the ECG recording from

S.No	Action	Rationale
	ECG gel to provide better conductivity.	vertical and horizontal planes.
7.	Connect the electrodes to the lead wires prior to placing them on the chest .peel the backing off the electrode and check to make sure the centre is moist with electrodes gel. Locate the appropriate lead placement sites and apply the electrodes to the skin securing it in place with light pressure avoid electrical inferences with the patens	To ensure the correct polarity in the ECG.
8.	Ensure that the leads are not puling the electrodes or lying over each other	To reduce electrical artifact and to obtain good ECG reading
9.	Ask patient to relax and to refrain from movement.	To obtain the normal optimal recording by reduction of artifact from muscular
10.	Encourage the patient to breathe normally and not to talk while the ECG is being taken.	Speaking can alter the recording.
11.	Check that the calibration is 10mm/mV.	To ensure standard recording to aid interpretation.
12.	Commence the recording	To obtain the ECG.
13.	In the case of an artifact or poor recording check electrodes and connection.	To ensure optimal recording.
14.	During the procedure give reassurance to the patient.	To ensure that patient feels informed and reassured
15.	If necessary record a rhythm strip utilizing leads II and V1	To assist with interpretation if there has been any acute rhythm disturbances. It also ensure steady baseline.
16.	Detach the ECG printout and label with patients name, hospital number, date and time.	To ensure that the ECG is labeled with the correct pastime's name , date and time
17.	Inform the patient that the procedure is over and help remove the leads. Wipe off the extra gel from the patients' arm and chest, using tissue paper gently.	To endure that the patient is relaxed and that the leads are removed .to clean the skin.
18.	Inform the nursing or medical staff that the ECG has been taken	To enable the relevant nursing and medical staff to use ECG data in the plan of care.
19.	Mount the ECG recording in the appropriate	To monitor difference and detect

S.No	Action	Rationale
	documentation (ECG folder). Inform the medical team and intervene appropriately if changes are noticed,	trends; any reregulation should be brought to the attention of the appropriate senior nursing and medical team.

E: Supportive documents

Clinical chart, nurses note – record the time date and findings of the ECG taken. Also make a note of the patient's level of consciousness and cooperation.

Change the electrodes every 24to 48 hours or as per institution policy.

If the patient is sensitive to the electrodes, use hypoallergenic electrodes

1.7 Assessment and interpretation of Arterial Blood Gas (ABG)

Policy: INODAYA HOSPITAL'S policy for monitoring of arterial blood gas (ABG) states that, ABG shall be monitored for all critically ill thermodynamically unstable patients on invasive and non –invasive ventilation. ABG sample can be collected by the intensivists /registered nurse.

SAMPLE COLLECTION FOR ARTERIAL BOLLED GAS (MANUAL)

A: Definition

An arterial blood gas (ABG) is blood that is performed using blood from an artery .it involves puncturing an artery with a thin needle and syringe and drawing a small volume of blood. The most common puncture site is the radial artery at the wrist. But sometimes the femoral artery in the groin. Or other sites are used.

B: Purposes

1. To diagnosis and evaluate respiratory diseases.
2. To effectively assess the oxygen delivery system of the drugs.
3. To assess the elimination of carbon dioxide from the blood.
4. The acid –base component of the test is used to diagnosis and evaluates metabolic conditions that cause abnormal blood PH.
5. To monitor patient on oxygen.
6. Patient under artificial ventilation, monitoring the levels of arterial carbon dioxide and oxygen allow assessment of respiratory adequacy so that the rate or death of ventilation, the ventilator dead space, or airway pressure can be changed to preserve the patient's optimal physiologic balance.
7. The measurement of arterial blood PH and carbon dioxide pressure with subsequent calculation of the concentration of bicarbonate (HCO_3) , especially in combination with analysis of serum electrolytes , aids in the diagnosis of many others diseases .

C: Equipment

- Heparinized 2ml syringe and needle
- Alcohol swab
- A set of pair disposable gloves
- Inj. Xylocaine 2%
- 2ml disposable syringe
- Adhesive tape
- Dry Gauge piece
- **STEPS IN ALLENS'S TEST**
- The hand is elevated and the patient is asked to make fist for about 30seconds.
- Pressure is applied over the ulnar and the radial arteries so as to occlude both of them.
- still elevated, the hand is then opened .it should appear balanced (pallor can be observing at the finger nails)
- Ulnar pressure is released and the color should return in 7seconds.
- inference: Ulnar artery supply to the hand id sufficient and it is safe cannulate /prick the the radial
- If color does not return or returns after 7-10sensonds, the test is considered negative and the ulnar artery supply to the hand is not sufficient. The radial artery therefore cannot be safely pricked cannulated.

D: Procedure

S. No	Action	Rationale
1.	Explain the procedure to the patient.	To ensure that the patient understand the procedure.
2.	Arrange the articles near to the patient side.	To ensure that all the equipment is ready and to conserve the time.
3.	Assess the coagulation profile of the patient	To prevent the cross complication.
4.	Wash the hands and were the gloves	To prevent the cross infection.
5.	Perform Allen's test	To confirm the patency of the ulnar artery circulation and assess lateral circulation to the hand in the event of radial artery damage.
6.	The patient's arm may be positioned using a rolled or folder towel.	To hyperextend the radial or brachial site
7.	Locate and palpate the radial artery with middle and index fingers of the non-dominant hand.	To assess the pulsation and ensure the radial artery to optimum site for puncture
8.	Line the needle up with the artery, bevel side up. The needle is at a 45-60 degree angle to the skin surface and is advanced into the artery.	To ensure proper insertion and rapid insertion may result in trauma though puncture.
9.	Enter the artery and allow the syringe to fill spontaneously.	The artery pressure causes blood to pulsate spontaneously back into the syringe
10.	Withdraw the needle and apply firm pressure over the puncture site with a dry sponge for 5minutes.	To prevent hematoma formation and excessive bleeding.
11.	Immediately seal syringe with cap and roll tilt syringe gently to ensue heparin mixing.	To prevent entry of oxygen from the atmosphere into the syringe, thereby preventing an increasing in pao2. To prevent the clotting of blood
12.	Prepare arterial samples by holding syringe upright position.	To ensure the correct volume of blood mixes with the heparin present in the syringe To remove air bubbles from the sample.
13.	Send the sample to nearest blood gas analyzer and document result.	To obtain accurate result as soon as possible.
14.	Document the procedure. collect the ABG report and paste it in the appropriate in the clinical chart	To monitor difference and detect trends; any irregularities should be brought to the attention of the appropriate senior m=nursing and medical teams.

E: Supportive documents

Clinical chart, nurse notes.

SAMPLE COLLECTION FOR ARTERIAL BLOOD GAS (Arterial Catheter)

A: Definition

An arterial cannula is a inserted and secured in a peripheral or central in a peripheral or central artery. An artery cannula is generally inserted into a peripheral artery, most commonly the radial or dorsalis pedis.

B: Purposes

- To evaluate the adequacy of ventilation, acid –base (pH and PaCo2), and oxygenation (PaO2 and SaO2) status, and the oxygen –carrying of the blood (PaCo2, HbO2, Hb, and dyshemaglobins).
- To quality the patient's response to therapeutic intervention and/or diagnosis evaluation (e.g., oxygen therapy ,exercise testing
- To monitor severity and progression of a documented diseases process.

C: Equipment

- Bactericidal alcohol hand scrub.
- A pair of sterile gloves.
- Sterile swabs.
- Sterile disposable syringe (5ml /10ml)
- Blood sampling bottles or ABG syringe with heparin.
- Alcohol swabs or Chlorhexidine in 70% alcohol swabs.

D: Procedure

S.No	Action	Rationale
1.	Explain the procedure to the patient.	To ensure that the patient understand the procedure.
2.	Obtain needed equipment.	To endure that the all the equipment is ready and to conserve the time
3.	Wash hands with bactericidal soap and water pr bactericidal alcohol hand scrub.	To minimize the risk of cross infection.
4.	Check the three way tap is closed to port.	To prevent back flow of blood spillage.
5.	Press silence in the arterial monitor for the duration of sampling if needed.	To prevent the disturbance to the patient and the unit caused by the alarms.
6.	Were sterile gloves. And follow aseptic technique throughout the procedure.	Ti minimize the risk of cross infection To prevent contamination of hands with blood.
7.	Remove the cap from three way Stopcock and clean the parts with a swab soaked in Chlorhexidine in 70% alcohol /alcohol swab and allow drying.	To ensure asepsis and easy access for withdrawal of blood.
8.	Connect a5ml sterile syringe to the port turn three ways –stopcock off to patient and slowly withdraw the appropriate volume of blood. 1. Peripheral artery cannula –Take 3ml and discard. 2. Femoral artery cannula – Take 5ml and discard.	To prevent the infection. More than 3ml of blood withdraw from the peripheral artery cannula may not be appropriate.
9.	Turn three way –stopcock to the half-closed	To ensure that appropriate sample size is

S.No	Action	Rationale
	position, quickly remove syringe ,and replace with heparinized syringe	obtained for the specific procedure.
10.	Open the three way – stopcock to the syringe and intra –arterial catheter and obtain arterial bold gas sample.	To collect the sample for analysis.
11.	Close the three ways –stopcock to the syringe and remove syringe containing blood sample.	To enable the syringe to be removed without blood loss, to prevent back flow from artery.
12.	Immediately seal syringe with cap and roll tilt syringe gently to ensure heparin mixing.	To prevent entry of oxygen from the atmosphere into the syringe, thereby preventing an increasing in pao2. To prevent the clotting of blood
13.	Prepare artery sample by holding syringe upright position.	To ensure the correct volume of blood mixes with the heparin present in the syringe.
14.	Turn three way –stopcock onto flush and port apply a sterile swab to the port flush ,squeezing the transducer	The swab will absorb the blood preventing contamination. Blood is cleared from the port, reducing the risk for thrombosis and micro –emboli.
15.	Turn three way stopcock on to the flush and artery, flush cannula by gentle squeezing transducer. As cannula is flushed identify sings of blanching, discoloration complaints of pain.	Blood is cleared from the cannula and artery tubing. To ensue early recognition of proximal or distal embolism
16.	Clean the port with 70%alcohol swab and close it with cap.	To prevent infection.
17.	Check whether pressure infuser cuff is inflated to it with mmHg	To prevent back flow of blood into circuit.
18.	Send the sample to nearest blood gas analyzer and document result.	To obtain accurate as soon as possible.
19.	Check for signs of embolism and intactness of the cannula insertion site. If any inform to the physician immediately and necessary action taken. Document result of the analysis	For early identification of problems. To prevent the major complications.

E: Supportive documents

Clinical chart

Nurses record

Analysis of ABG

A: Definition

Blood gas analysis is often used to identify the specific acid –base disturbance and the degree of compensation that has occurred. Although it is usually based on arterial sample. When an arterial sample cannot be obtained a mixed venous sample may be utilized.

Acceptable ranges

Normal arterial and mixed venous sample blood gases

Parameter	Arterial sample	Venous sample
Ph	7.35-7.45	7.32-7.38
paCO2	35-45mmHg	42-50mmHg
paO2	10-100mmHg	40mmHg
Oxygen saturation	95%-100%	75%
Base excess or deficit	+or-2	+or-2
HCO3	22-26mEq-L	23-27mEq-L

Acid – base disturbances and compensation

Disorder	Initial Event	Compensation
Respiratory Acidosis	↑paCO2↑or normal HCO3↓PH	Kidneys eliminate H+ and retain HCO3-
Respiratory alkalosis	↓PaCO2↓or normal HCO3↓PH	Kidneys conserve+ And excretes HCO3-
Metabolic acidosis	Decreased or normal PaCO2↓,HCO3- PH	Lungs eliminate CO2. Conserve HCO3-
Metabolic alkalosis	↑or normal paCO2↑ HCO3-, PH	Lungs ventilate to ↓paCO2↑ Kidneys conserve to excrete HCO3.

1.8 assessment t of management of pain

Policy:

Pain assessment is nurses 'reasonability done at the time of admission and continued as per patient's need. Pain are to be intervened appropriately, evaluated and documentation as per unit policy.

A: Definition

An unpleasant sensation that can be range from mild localized to agony. Pain has as physical and emotional components. Pain management is an integral component of patient care management by a multi disciplinary.

Classification of pain

Acute pain: defined as pain of recent onset and probable limited duration. It usually has an identifiable cause, limited tissue damage and emotional response. It usually resolves with or without treatment after a damaged area heals.

Chronic pain: defined as pain that exists for more than 3months. It is often associated with major changes in personality, lifestyles and functional ability. It may not have an identifiable cause. It may be non- cancerous or cancerous.

Cancer pain: it maybe acute or chronic; nociceptive and/ or neuropathic. it may be due to tumor progression and its related pathologic process, invasive procedure, toxicity of treatment , infections and physical limitations . It can be sensed at the site of tumor or distant to the site , which is called the referred pain.

Pain by inferred pathologic process: nociceptive or normal pain is subdivided into somatic (musculoskeletal) and visceral (internal organ) pain. Neuropathic pain arises from abnormal or damaged pain nerves. Each of these pathologic processes has different characteristics.

Idiopathic pain: It is a chronic pain in the absences of an identifiable physical or psychological cause or pain perceived as excessive for the extent of organic pathology condition.

Classification of pain by location:

Location	Characteristics	Examples
Superficial or cetaceous : Pain resulting from stimulation of skin	Short duration and localized sharp sensation	Needle stick , small cut or laceration
Deep or visceral: pain resulting from stimulation of internal organs	Diffuse and radiation pain duration varies but usually lasts longer. It may be sharp , dull or unique to organ involved	Angina pectoris
Referred pain : Perception of pain in unaffected areas	Pains is felts in part of body separate from source of pain and may assume any characteristics	Myocardial infarction, which may causes pain in jaw, left arm and left shoulder.
Radiating pain: Sensations of pain extending from initial site of injury to another body part	Pain feels as though it travels down or along body part, it may be intermittent or constant	Low back pain from ruptured intervertbral l disc accompanied by pain radiating nerve irritation

Characteristics and duration

Onset and duration: the nurse asks the following questions to determine onset and duration of pain when did the pain being? How long has it lasted? Does it occur at the same time each day? How often does it reoccur?

Location: the patient is asked to point all areas of discomfort. Pain classified by location may be superficial or coetaneous deep or visceral, referred or radiating and anatomical land marks too. Simple technique involves verbal rating scale, numerical rating scale, or visual analogue scale. (VAS)

Quality: it involves describing the pain as crushing, throbbing, sharp, burning, or dull.

Pain pattern: various factors affect the pattern of pain such as physical movement, coffee ingestion coughing or turning or urination. It also involves pain at the particular time of the day or it is intermittent, constant or a combination which helps to plan interventions to prevent pain from occurring or worsening.

Relief measures: measures such as changing position .using ritualistic behavior (pacing rocking rubbing), eating, meditation, prayer or applying heat or cold particular site. Assessment of relieving factor should also include identification of practitioners (e.g. ., internist orthopedist, acupuncturist, chiropractor or dentist) whose services the patient has used.

Contributing symptoms: depression, anxiety, fatigue, sedation, anorexia sleep disruption spiritual distress, guilt may worsen pain.

B: Pain management

- **Process:**
  - Pain management is done by the multidisciplinary team mentioned above after assessing the patient‘s requirement of the same by the nurse in –charge
  - Ward nurse shall inform the head of the pain management team (anesthesia) in consultation with the treating physician with the patient demographic and clinical details.
  - Concerned team member shall visit the patient with 20min of information received.
  - Treatment shall be started by this multidisciplinary team as per the requirement.
  - Patient shall be frequently monitored as and when required depending on the patient’s conditions by any of the team members.
  - Clinical pharmacist shall monitor the patient after drug administration.
  - Progress of the patient shall be informed to the tea by the nursing staff.
  - All the steps of pain management and patient’s response to the treatment shall be documented in patient’s record

Guidelines

1. Pain is generally managed by a physician/surgeon. Consultation is available from the department of anesthesia for additional help.
2. Pain assessment

a. Indoor patients

a. Assess the patients for comfort in a manner. Screen all patients for pain on admission to the hospital. Thereafter, monitor the patient for pain.
   - At least once every 8hurly.
   - When an intervention or treatment to relive pain is provided.
   - When the patent’s level or location of care changes.

b. If the patient conforms current recent pain at the time of admission record a numeric rating scale 0 to 10 (patient interviewing from) and additional from screening data on the admission history form.

c. Patient unable to rate pain verbally (e.g. ventilator patients) may be able to indicate their level of pain on a visual scale (No pain –maximum pain.

d. Screen patients unable to rate their pain further for nonverbal and physiologic signs opain.

Visual scale
0-No pain
1, 2, 3 –mild pain
4, 5, 6, - moderate pain
7, 8, 9, &10- severe pain

Outdoor patients

a. Screen patient for pain during outpatient visit, as appropriate
b. Pain assessment is required with positive pain
c. Complete the pain assessment in the clinic, unless the follow –up plan includes referral to pain clinical or other resources that will perform the assessment.

3. Recommended intervention

- Non –invasive intervention: transcutaneous electrical nerve stimulation (TENS) ultrasound , ozone therapy , Image, Behavioral , Relaxation , Bio feedback , Hypnosis , Massage, Music , breathing techniques .
- Pharmacologic treatment: the world Health Organization (WHO) three steps analgesic ladders are recommended.

StepI: Non opioids

- Aspirin
- Paracetamol

StepII: weak opioids

- Codeine
- Dihydrocodeine
- Tramadol

StepIII: strong opioids

- Morphine
- Fentanyl
- Pethidine

Techniques of opioids delivery:

- Intravenous intramuscular, epidural, or subcutaneous (patient controlled Analgesia –PCA).
- Assess the effectiveness of pain intervention with two hours after treatment.
- If pain intervention is not effective, notify the physician.

C: Newer Method of opioids drug delivery:

1. Sublingual
2. Continuous subcutaneous infection
3. Transdermal
4. Continuous spinal injection
5. Intraventricular injection

Side effects of opioids:

1. Sedation
2. Constipation
3. Nausea /vomiting
4. Itching
5. Reparatory depression

D: Procedure

S.No	Action	Rationale
1.	Observe the patient noting the physiological sings suggestive of pain e.g. sweating	These are indications of and help the care given to attend on team immediately.

	tachycardia, pallor, facial grimace or flushed appearance.	
2.	Note restlessness immobility and facial expressions.	Continuous pain interferes with recovery by impeding deep breathing, ambulation and mobilization, and nutrition.
3.	Listen to the patient and ascertain the location and nature of pain ,use a pain scale chat	Communication skills are necessary for the effective assessment and alleviation of pain as there may be physical and emotional controlling factors.
4.	Administer the prescribed analgesia and observe the effect	To relive and control pain and to review due to pain.
5.	Try alternative pain relief measures. Changes positions, give attention, information and reassurance. Assist with relaxation and exercises.	To promote comfort and reduce anxiety due to pain
6.	Pain screening on the admission History from within 8hours of admission. Pain assessment, at least once each shift i.e. 8hourly and when there is a change in the patient's conditions or primary caregiver. Discharge instruction regarding pain management on the discharge instruction sheet. For out –patients, document the following with data and time. Pain screening, at every visit as appropriate. patient /family, teaching regarding pain management, on the post anesthesia discharge instruction sheet or procedure flow sheet	To monitor differences and detect trend; any reregulation should be brought to the appropriate senior nursing and medical teams.

E. Supportive documents

Patient /Family /Education

Educate patient /family at the level of their under standard of the following:

a. Hoe and when to request interventions for comfort /symptom relief.
b. Discharge planning addressing pain management whenever by the patient's condition.
    1. Details in the discharge instructions, the interventions patients and families can utilize to manage pain following hospitalization
    2. Provide the mane and telephone number of the individual to contact with problems such as excessive discomfort.
c. The physician note may also include patient education regarding pain management.

Note:

BONICA, the father of pain recommended five "C "rule

1. Communication
2. Collaboration
3. Coordination
4. Cooptation
5. Courtesy

1:9 Admission of Patient to Ward

Policy: any patient for admission must be dealt in a safe, cordial and efficient manner. The room and its entirety as well as the bed must be prepared to receive the patient. All patients will be received by the registered nurse on arrival.

A: Purpose

Provide guidelines for the routine admission of patient in the ward /unit.

B: Procedure

- Check the room for tidiness and completeness before receiving the patient
- Greet patient and relatives on arrival, introduces herself and addresses the patient by name.
- Check admission slip for completeness
  Inform the attending physician and the nursing supervisor and appropriate health team. About the admission
- Prepare and apply IDBAND.
- Obtain patient's height and weight if possible.
- Accompany patient and relatives to the assigned room. place patient comfortably on bed and raise side rails if necessary
- Obtain vital signs and record on the chat along with admission note.+
- Attend patient's personal hygiene as well as changing of the prescribed hospital clothes.
- Orient patient to the ward set-up and routine and explain the call system .phone , TV ,visiting regulations and smoking restriction
  A hospital staff as witness /security and documentation in the nurse notes. Mention if it was yellow or white metal. Avoid suing terms like gold and silver on the patient's chart.
- Home medication taken by the patient must brought to the attention of the attending physician by the admitting nurse who documents same her notes.
- Patient and relatives are instructed not to continue their home medications while admitted in the hospitals. it is either taken back home by the relative or kept in a cupboard until time of discharge.
- Nurse administers the drugs prescribed on the new prescribed chart. Patient's old medicines are also added to the prescribed chart.
- The nurse complete the admission notes, i.e. the nursing process and other required documentation and brings to the notice of the doctor any abnormalities assessed.

C: Documentations

- Vital signs record
- Nurse's assessment form
- Nurse's notes
- Fall risk assessment for vulnerable patients
- Push score it needed

1.10 Transfer of patients

Policy: all the patients will be evaluated &considered for discharge based on the reversal /recovery from the disease process or resolution of the unstable physiologic condition that prompted admission to the unit.

A: Purpose:

- When complex interventions are no longer required.
- To ensure safe transfer of patient from ICU's to general ward /units.

B: Articles needed:

- Patient files &other medical record
- All medications &other belongings of patient
- Medical devices such as pulse ox meter, O2 mask etc.

C: Procedure

- Conform written transfer order &check for the transfer note for revised medication order.
- Inform the attendant &confirm his/her availability.
- Brief the attendant about patient's conditions &reason for his/her transfer.
- Call the area to which the patient is to be transfer to check availability of bed /room.
- Transfer of a patient from an ICU is based on the following criteria:
  - Stable hemodynamic parameters.
  - Stable respiratory status &airway patency.
  - Minimal 02 saturation levels above95%.
  - Intravenous inotropic support, vasodilators& anti- arrhythmic drugs discontinued or in a low doses if required.
  - Cardiac dysrhthmins are controlled.
  - Neurological stability with control seizures.
  - All HD catheters have been removed.
  - Patient with mature tracheotomy who no longer require excessive suctioning.
  - Chronically mechanically ventilated patient whose critical illness has been reversed or re-solved &who are otherwise stable may be transferred to a unit that routinely manages chronically ventilated patients.
  - Brief condition of patient to the shift in-charge and also inform if there is any requirement of oxygen, suction etc.
  - Inform patient's attendants about the transfer.
  - Endure patient's attendants accompanies the patient during transfer to proposed unit.
  - Assemble all belongings of patient including medical records, medications , X ray films , arti-cles like thermometer ,chest binder spirometry etc.
  - Arrange for portable monitor /oxygen cylinder if required.
  - Arrange for mode of transport, wheel chair /trolley /Bed.

- Inform the area if transfer once again before starting from the unit.
- Give full endorsement along with patient's belongings.
- Highlight the special need of the patient or any precautions' to be taken e.g. Potential to fall, pressure sore and /or other disabilities.
- Inform doctor on duty of the receiving unit about the patient's arrival and request to seen the patient.
- Bring back Trolley /wheel chair, any linen, which belongs to his /her unit.

E: Documentations

All transfers must be documented in the nurse's notes7in-house patient transform.

F: Comment

- The health care team & the patient's family must be convinced that there is benefit in keeping their patients in ICU any more as the no longer required any complex intervention.
- A patient may be transferred from an ICU when the course of treatment is medically futile.

G: transfer of un- stable patients

Policy:

Attending physician will determine whether the patient is "medically fit" to be transferred &that the benefit of the transfer outweigh the risks. Document this on the in- house patient transfer form. A doctor and nurse have a to accompany the patient to meet any requirements of advanced cardiac life support.

Transfer to ICU will be accepted at any time of the day as long as staffing levels &bed availability is appropriate to the level of care required.

Purpose:

To endure safe transfer of an unstable patient from one unit to another within the hospital

Articles needed:

- Portable monitor
- Pulse oxymeter
- Portable ventilator if required.
- Intubation tray
- Defibrillator.

Procedure:

- Brief the attendants about patient's conditoons7 reason for transfer.
- Confirm written transfer order & check the brief transfer summery.
- Call the area of transfer to make arrangements for bed /room.
- Brief condition on phone & collect all patient belongings.
- Inform all what needs to be kept ready; ventilator, oxygen, suction, medications etc.
- **Collect the following documents of the patient:**
  - All the available medical record related to patients condition including history/progress notes ect
  - Latest alb results.

- Treatment provided.
- Completed in- house transfer form.
- A photocopy of medical insurance card /ECHS if applicable.
- Notify the receiving unit before leaving the unit.
- Completely hander over the patient along with patient's belongings.

Responsibility of the receiving nurse:

- Endure that the unit is ready with all life saving devices.
- Perform assessment noting patient's condition, patency &location of tube, drains &catheters.
- Note patient's personal belongings.
- The receiving nurse will continue care for the patient following order from the attending physician.

Documentations:

Documentations on patient transfer from &nurse notes,

Comments:

- Before transferring any patient a proper assessment should be made to conform that the diagnosis is appropriate for transferring into another unit.
- Transfers that could cause the patient to receive less than adequate care will not be considered for transferring into another unit

H: transfer criteria: for patients from ICU to ward

Purpose:

To ensure the continuity of next level of care

Policy:

- Patient will be transferred from ICU only when reviewed & ordered by the attending consultant in consulting with the intensivists of that unit.
- The medical officer shifting the fills the In_ house transfer form.
- The nurse will shift the patient as per protocol "transfer Of patients"

Transfer criteria:

Following criteria must be met before transfer:

1. **Respiratory system**
   - Mechanical ventilator support is no longer needed (EXCLUDING CAPA).
   - The patient requires <50% oxygen (02 sat>90% on 50%oxygen).
   - The patient requires physiotherapy to clear secretions no more often than every 3-4 hours.
   - It is unlikely that the patient could have a sudden deterioration of respiratory function requiring immediate endotracheal intubation &mechanical ventilation. PH &pCO2 tension are stable.

2. **Circulatory system:**
   - No needed for vasoactive drugs to support cardiac output or arterial blood pressure
   - The circulation is stable except for required modest volume replacement (pulse rate between 50-100)

- There are no signs of failing tissue perfusion, such as tachycardia, new onset confusion, cool cyanosed extremities, poor capillary refill, metabolic acidosis, increased blood lactate, and poor urine output (0.5ml/kh/h.
- There is no needed for intensive or high –dependency care.

3. **Neurologic system:**
   - The airway & protective reflexes are neurologically functioning, & invasive neurologic monitoring is not required or the patient has a tracheotomy.
   - There is a stable Glasgow come score, seizures are controlled.

4. **Renal system**:
   A. there is no need acute hemodialysis, hemofitraton, of hemodiafiltration.

I. transfer from ER to ICU /CCU/ Cathlab /wards

Purpose:

To establish guidelines for speedy and safe transfer of patient from ER to ICU/CCU/Cath lab/floors

Policy

- Emergency patient are transferred to ICU can be admitted under concerned consultant on call for that day unless the patient belongs to private consultation.
- The ER physician or consultant is responsible for contacting ICU consultant on call under whom the patient is belong admitted.
- Blood tests which are prescribed by the attending ER physician are carries out in the ER department after admission before shifting to ICU and result of the same are to be notified to ICU staff.
- Hepatitis and HIV tests are done for patient being transferred for emergency procedure.
- Universal precautions should be observed by all personnel in ER

Equipment

- ER trolley
- Portable monitor and defibrillator, portable oxygen and portable ventilator if required.
- Emergency drugs, in case of suitable patients.

Procedure

- Admitting ER physician contact the ICU/CCU physician on call to arrange admission to ICU/CCU.
- ER nurse contact the IDP staff (Ext .6400) to arrange bed. Bed number noted on the ER physician sheet.
- ER nurse calls the convened area and gives the report
- ER physician complete the following:
- Medical history on patient progress sheet.
- Admitting diagnosis and orders on physician order sheet
- Medication Order Form.

- Intravenous Oder Form
- Relevant clinical investigations form.
- ER nurse and available nurses accompany the patient to IUU/CCU /floors etc.
- ER physician also accompanies the patient if the patient condition warrants it.
- The ER nurse /doctor completely hand over the patient to ward nurse /doctor with the all documentations.

Documentation:

- ER physician and ER Nurses notes are completed signed.
- Physician order sheet are signed with date and time. Notes and assessment by the ER nurse is completed.
- Registration form and old chart, X-Rays, blood results ECG's must accompany the patient.

1:11 Discharge planning

Policy: The patient will be discharged from the unit safely and with clear understanding of instruction, which are necessary towards his/her, full health recovery.

A: Definition:

Discharge planning is a process involving the development and implementation of a plan to facilitate the transfer of individuals from hospital to an appropriate setting and include the multi disciplinary team the patient and their relatives

B: Aim:

To ensure patient have a safe discharge from hospital.

C. Purposes:

To assist the patient to return to a state of optimal independent living

D. Principles

1. Unnecessary admissions can be avoided.
2. The patient and the caregivers should be actively involved in the process.
3. Discharge should be co ordinate by a named person
4. It should be a multi disciplinary process by which resources to meet the needs of patients and cares are put in place.
5. Patient and relatives understand the discharge panning process, their rights and receive appropriate information to enable them to make informed decisions about their future care.

E. Procedure

S. No	Action	Rationale
1.	The admitting nurse should ensure that a complete assessment of the patient is made and documented in patient‘s care plan.	To identify the physician psychocological and social care needs of the patient and the care givers.
2.	Clarify whether the patient has dependants to identify who is looking after them.	Arrangements any need to be for alternative care or an increase in services.
3.	Ensure that the home address and telephone number of the patient are documented accurately in the plan.	Personal information not have been updated on previous nursing or medical records.
4.	Assess the patient’s ability to carry out activities of daily living at home prior to admission.	To establishes at an early stage whether an occupational therapy /physiotherapist assessment is required.
5.	A discharge panning care plan should be commenced .all the members of the multi team should document in the plan their assessment ,plans and action taken	To facilitate multi disciplinary planning and utilize expertise appropriately.
6.	Formulate a discharge plan conjunction with the patient and corers and involved hospital	To collect information disciplinary and co-ordinate planning.

S. No	Action	Rationale
	and community personnel and agree a discharge date.	
7.	Medical staff is responsible for assessing the patient and medical fitness for discharge and for liaising with other members of the multidisciplinary team regarding arrangements for meeting the patient care	To ensure that both health and social care needs are taken into considerations when formulating discharge plans.
8.	Patient should be given an appropriate supply of medication and where necessary a supply of wound dressing or medical equipments.	To ensure safe and contiguous administration of medication and use of equipment at home.
9.	Inform the patient and care gives the potential side effects of treatment and management.	To alleviate anxiety and to promote patient comfort and safety.
10	Reinforce special instruction to the patient by written materials or giving patient education	To promote an understanding disease and treatment.
11.	The discharge is made based on following the hospital policy.	

Points to be note:

- A written doctor's order is required prior to discharge a patient.
- The nurse confirms the time at which patient to be discharge. (if no discharge order has been written obtain patient's signature AMA(against medical advice) from as patient cannot be help against their wishes. The patient's signature acknowledges self-responsibility for what may happen after their leaving the hospitals.
- The patient and /or their relatives are noticed of the discharge and the process is commenced.
- Patients' un-used extra medicines are returned back to pharmacy and that it is deducted from the bill.
- Ensure discharge summary and medicines are indented from pharmacy
- Billing card is sent to pharmacy for clearance.
- From there it is verified with auditing and taken for final billing.
- Bill is obtained from billing department and explained to patient.
- Explain to the patient and family about homecare, medications, special diet, exercise ect.
- Copies of laboratory tests radiology reports, ect. May made available to the patient prior to discharge.
- Check clothing and valuable list made on admission according to avoid patient leaving personal items.
- Transfer the patient and belongings via wheelchair to the vehicle.
- The nurse will promptly enter the discharge details into the computer and complete the nursing process; he/she will ensure the patient's file is complete and sent back to medical record within 24hours.

- The nurse will inform the housekeeping staff to clean the vacated unit in accordance with hospital, policy specifying any special requirements. (e.g. infected patient) .

F. discharge advice for patient

A. wound care tips

1. Prevent infection
2. Maintain good personal hygiene
3. Avoid moisture
4. Daily dressing
5. Always wash your hand before and after cleaning the wound with anti septic solution
6. It there are any signs of infection (e.g. Fever, pus, any discharge , any redness or pain around the wound) report to the physician immediately.
7. Avoid smoking
8. Encourage patient to include adequate protein, water, vitamins and minerals in their daily diet
9. Consume balanced diet.
10. Follow the prescribed medications.

A. Ostomy care

1. Keeps the skin around the Ostomy clean
2. Maintain good personal hygiene
3. Empty the bag when it is 1/3 to ½ full.
4. Irrigate the bag with clean water and soap after emptying.
5. If there is any skin irritation signs of infection report to the physician
6. Use odour control product inside the bag
7. Avoid gas producing foods
8. Apply gas oxide for skin excoriation.
9. Adequate intake of fluid and diet
10. Wear loose filling clothes when going put.
11. Always carry extra bag, some adhesive while going out.

B. indwelling urinary catheter tips

1. Keep the drainage bag well below the level of your bladder. This prevents back flow of the urine into bladder and allows the urine to drain freely.
2. Anchor the tubing to your leg – to prevent pilling or tension on the catheter.
3. Empty the drainage bag when it is ½ to ¾ full. Remember to wash your hands before and after touching the bag.
4. Ensure that the tubing is free of kinks and flow of urine is unrestricted.
5. Catheter car –keep the catheter insertion site (also called the urinary meatus) clean. A careful cleaning routine will help prevent odor and skin irritation.
6. Cleaning of the catheter site should be performed twice a day and more often if you have buildup of exudates around the site.
7. Contact your physician if any of the following symptoms occur.
   - -Fever over 100.5 degree Fahrenheit and /or chills.
   - -Moderate or severe pain in the kidney (lower back) region.

- -The urine is cloudy or smells bad
- -There is a blood in your urine.
- -If the catheter becomes clogged and there is no urine drainage.

8. If fever or any signs of infection occur the silicon catheter has to be changed.
9. In case of foley's catheter it should be changed once in seven days.

C. Ryle/NG Tube feeding

1. 1 washes your hand with soap and water
2. Place the patient in propped up position.
3. Check the placement of the tube to conform that it's in the stomach. Always do this BEFOUR starting a feeding.
4. Open the feeding port cap at the end of the tube.
5. Gently bend or pinch the tube with one hand. Keep bending or pinching the tube as you slowly pour the food into the feeding syringe with your other hand. This keeps the tube food from flowing through the tube until you have finished measuring it.
6. Fill the feeding syringe with feed.
7. Release the hand is bending or pinching the tube.
8. Hold the feeding syringe straight up. This allows the food to run through the tube by gravity. Adjust the angle of the feeding syringe to control the flow rat of the food.
   If the food flow too slowly or doesn't flow at all, place the plunger in the syringe.
   Gently push the plunger a bit. This can help remove anything that is blocking or clogging the tube. Do not push the plunger all the all the way into the syringe or with force.
9. After the feeding flush the tube with water.
10. Disconnect the feeding syringe and close the feeding port cap of the tube.
    - If there is any difficulty in breathing at the time of feeding stop the feed and report to physician immediately.

E. Care of PEG tube:

1. 1 wash your hands with soap and water
2. Place the patient in propped up position.
3. Check the placement of the tube to confirm that it's in the stomach. Always do this BEFORE starting a feeding.
4. Open the feeding port cap at the end of the tube.
5. Slowly pour the food into the feeding syringe with your other hand. And release the clamp on the tube this keeps the food from flowing through the tube until you have finished measuring it.
6. Flush tube with 30cc of water before any medication is put down the tube at least once a day.
7. Every medication must be liquid from or crushed finely and mixed with water.
8. Note: review medication with nurse or pharmacist to ensure that is ok to crush. Draw up medication in syringe and push into tube.
9. Flush with 30ml of water after each medication.

Seek immediately to physician

1. You have blood coming out of your PEG tube. The hole where your tube goes into your body, or your anus.
2. You have food or medication leaking out or have a lot of drainage coming out from your tube.
3. You have sudden agnominal pain and dizziness.
4. Your PEG tube moves out of place or comes out

F. Procedure of Nebulization and tips for use of Nebulizer in home

1. Place the nebulizer on a sturdy surface that will support its weight. Plug the cord from the nebulizer into a properly grounded (three-prong) electrical outlet.
2. Before using the nebulizer for your treatment , wash your hand with soap and water dry completely
3. Carefully measure medications exactly as you have been instructed and put them into the nebulizer cup
4. If you do measure use a separate, cleaning measuring device for each medication.
5. Assemble the nebulizer cup and mask or mouthpiece
6. Connect the tubing to the aerosol compressor and nebulizer cup.
7. Turn on the nebulizer compressor to make sure it is working correctly. You should see a light mist coming from the back of the tube opposite the mouthpiece.
8. Sit up straight on a comfortable chair. if you are a mask ,position it comfortable and securely on your face.
9. Take slow, deep breath .if possible, hold each breath for2-3 seconds before berthing out .this allows the medications to settle into airways.
10. Continue the treatment until the medication is done (an average of 10minutes). The nebulizer will make a sputtering noise, and the cup will have just a little medication remaining.
11. During the treatment, if the medication sticks to the sides of the nebulizer cup you may shake the cup to the droplets.

G. Tips for Home medication

1. Name of the medication
2. Action of the medicine
3. When to take medication (before food after food, with food)
4. To avoid skip the dos
5. Expected adverse reaction of the medicine and stress about the allergy.
6. Don't take the medicine without water(before food or after food, or with food)
7. When to call the doctor /come to the hospital-when there is unexpected adverse reaction
8. Don't crush the coated tablet.
9. Strength of the medicine.
10. Storage of the medicine.
11. Drug-food interaction.
12. Duration of the medicine.
13. Frequency of the medication.
14. Regular review of medication with a doctor. (NR , sodium , potassium)

H. Tips for care of casts and splints

Splints:

1. Donning and doffing of the splint at regular intervals according to the physician advice.
2. Maintain the cleanliness of the splints

i. Wash with water and dry it under sunlight
ii. **Wipe it disinfectant solution.**

3. Ensure that splint is neither too loose nor too tight.
4. If the splint has any problems. send repair or contact physiotherapist
5. Do not use splint that have been used by others.

Casts:

1. Keep the cast area dry.
2. Do not apply any emollient or oil under the casts.
3. Do not insert any stick or finger inside the casts
4. Pad the edges of the casts.
5. Contact physician if the following occurs.
   - You can't move your figures or toes.
   - You have severe pain or increased pain that think is from swelling ,and your cast fells too tight
   - Your hand or foot fells numb or tingles.
   - You have a lot of swelling below your casts or splint
   - The skin under your cast or splint is burning or stinging and continues itching
   - If any color changes in nails beds.

I. General tips for ROM exercises at home

1. Use good posture while doing ROM exercise
2. Do all ROM exercises smoothly and gently
3. Move your joints slowly
4. Stop ROM exercise if you feel pain.
   Sets aside time to exercises every day
   a. Lock your bed or wheelchair wheels before you start doing your exercises
   b. Ask for help if you think you cannot do an exercises by yourself
   c. Follow your caregiver's order
   d. Rest after an exercises that is very tiring
   e. Always return to your staring positions after finishing each exercises
   f. Do not perform exercises in full stomach
   g. Avoid strenuous exercise if having any respiratory problems

Types of ROM exercises:

1. **Head and Neck exercises**
   a. Chin-to- chest exercises
   b. Head turns exercises
   c. Head tills exercises

2. **Shoulder and Elbow exercises**
   a. Shoulder movement ,up and down exercise
   b. Shoulder movement ,side to side exercises
   c. Shoulder rotation exercise
   d. Elbow bends exercise

3. **Forearm exercises**

a. Palm up, palm down exercises.

4. **Wrist exercises**
   b. Wrist bends exercises
   c. Wrist rotation exercises

5. **Hand and finger exercises**
   a. Finger bends exercises
   b. Finger spreads exercises
   c. Finger-to thumb touches exercises
   d. Thumb –to- palm exercises

6. **Hop and knee exercises: do each exercises**
   a. Hip and knee bends exercises
   b. Leg lifts exercises
   c. Leg movement ,side to side exercises
   d. Leg rotation ,in and out exercises
   e. Knee rotation ,in and out exercises

7. **Ankle and foot exercises**
   a. Ankle bends exercises ankle
   b. Ankle rotation exercises
   c. Toe bends exercises
   d. Toe spreads exercises

J. Tips for manage diabetes in home

1. Use your diabetes meal plan
2. Get 30to 60mints of physical activity
3. Start at a healthy weight by using your meal plan and moving move
4. Ask for help if you fell down
5. Learn to cope with stress
6. Stop smoking
7. Take medicines even when you fell good
8. Feet every day
9. Brush your teeth and floss every day
10. Check your blood glucose (blood sugar)
11. Check your blood pressure if your doctor advice
12. Check HbA1c once in a month
13. If necessary ECG , Doppler foot study can be done according to doctor advice
14. Report changes in your eyesight to your doctor.
    a. Talk with your heath care team about your blood glucose targets. Ask how and when to test your blood glucose and how to use the result to manage your diabetes.
    b. Use this plan as a guide to your self- care
    c. Discuss this how your self- care plan is working for you each time you visit health care team

K. Tips for Administration of insulin

1. Name and type of the insulin
2. Side effect and complications of insulin administration
3. Storage of insulin vials
4. Method of using pen insulin
5. Insulin site (rotation of site)
6. Frequency of insulin administration
7. CBG monitoring
8. Technique of administration in different sites

L. Home tips for maintaining intake and output

1. Strictly adhere to the fluid restriction plan.
2. Encourage the patient to use ounce glass for measuring the intake.
3. Encourage to use the urinals or measuring cup for accurate measurement of out put
4. Maintain the output chart every 2nd hourly or when ever needed.
5. If any signs of mild edema check weight every or whenever necessary in the nearby health facility.
6. In case of any alternative in urine output contact the doctor immediately.
7. If fever or sins of infection occur contact the health care provides immediately.
8. If any damage occurs to the urosac .e.g. markings not visible any leakage, changes the bag.

M. General tops for Diet

1. The diet should be prescribed by the physician e.g. diabetic diet salt restricted diet, balance diet etc.
2. Include all the compounds of food like carbohydrate, protein, fat, vitamins and minerals.
3. Encourage the patient to follow the therapeutic diet prescribed.
4. Avoid heavy meals at bed time.
5. Avoid fatty foods like oily foods.
6. Avoid gas producing food like potatoes, egg ect.
7. Avoid irritating and highly smoked food e.g. highly seasoned food ect.
8. Encourage not to drink water while taking food as it delays digestion and reduces hunger.
9. Encourage the patient to take fiber rich diet for avoiding constipation e.g. wheat, green leafy vegetables etc.
10. Include more fruits and vegetables in diet.

1.12 Patient Discharge Advice health Tips

Wound care

1. Prevent infection
2. Maintain good personal hygiene
3. Avoid moisture
4. Daily dressing
5. Always wash your hand before and after cleaning the wound with anti septic solution
6. If there are any signs of infection (e.g. fever pus , any discharge. any redness or pain around the wound) report the physician immediately
7. Avoid smoking

8. Encourage the patient to include adequate protein water vitamins and minerals in their daily diet.
9. Consume balance diet
10. Follow the prescribed medications

Ostomy care

11 Keep the skin around the ostomy clean
12 Maintain good personal hygiene
13 Empty the bag when it is 1/3 to ½
14 Irrigate the bag with clean water and soap after empting
15 If there is any skin irritation or signs of infection report to the physician
16 Use odour control product inside the bag
17 Avoid gas producing foods
18 Apply zinc oxide for skin excoriation
19 Adequate intake of fluids and diet
20 Wear loose fitting clothes when going out
21 Always carry an extra bag, some adhesive going out.

Indwelling urinary catheter care tips

1. Keep the drainage bag below the level of your bladder. This prevents back flow of urine into the bladder and allows the urine to drain freely.
2. Anchor the tubing to your leg- to prevent pulling or tension on the Catheter
3. Empty the drainage beg when it is ½ to ¾ full. Remember to wash your hands before and after touching the bag
4. Ensure that the tubing is free of kinks and flow of urine is unrestricted.

5. Catheter car –keep the catheter insertion site (also called the urinary meatus) clean. A careful cleaning routine will help prevent odor and skin irritation.
6. Cleaning of the catheter site should be performed twice a day and more often if you have buildup of exudates around the site.
7. Contact your physician if any of the following symptoms occur.
   - -Fever over 100.5 degree Fahrenheit and /or chills.
   - -Moderate or severe pain in the kidney (lower back) region.
   - -The urine is cloudy or smells bad
   - -There is a blood in your urine.
   - -If the catheter becomes clogged and there is no urine drainage.

8 If fever or any signs of infection occur the silicon catheter has to be changed.
9 In case of foley's catheter it should be removed as early as possible.

Ryle/NG Tube feeding

a.

1. 1 washes your hand with soap and water
2. Place the patient in propped up position.
3. Check the placement of the tube to conform that it's in the stomach. Always do this BEFOUR starting a feeding.
4. Open the feeding port cap at the end of the tube.

5. Gently bend or pinch the tube with one hand. keep bending or pinching the tube as you slowly pour the food into the feeding syringe with your other hand. This keeps the tube food from flowing through the tube until you have finished measuring it.
6. Fill the feeding syringe with feed.
7. Release the hand is bending or pinching the tube.
8. Hold the feeding syringe straight up. This allows the food to run through the tube by gravity. Adjust the angle of the feeding syringe to control the flow rat of the food.
   a. If the food flow too slowly or doesn't flow at all, place the plunger in the syringe.
   b. Gently push the plunger a bit. This can help remove anything that is blocking or clogging the tube. Do not push the plunger all the all the way into the syringe or with force.
9. After the feeding flush the tube with water.
10. Disconnect the feeding syringe and close the feeding port cap of the tube.
11. If there is any difficulty in breathing at the time of feeding stop the feed and report to physician immediately.

Care of PEG tube:

1. wash your hands with soap and water
2. Place the patient in propped up position.
3. Check the placement of the tube to confirm that it's in the stomach. Always do this BEFORE starting a feeding.
4. Open the feeding port cap at the end of the tube.
5. Slowly pour the food into the feeding syringe with your other hand. And release the clamp on the tube this keeps the food from flowing through the tube until you have finished measuring it.
6. Flush tube with 30cc of water before any medication is put down the tube at least once a day.
7. Every medication must be liquid from or crushed finely and mixed with water.
8. Note: review medication with nurse or pharmacist to ensure that is ok to crush. Draw up medication in syringe and push into tube.
9. Flush with 30ml of water after each medication.
1. Seek immediately to physician
2. You have blood coming out of your PEG tube. The hole where your tube goes into your body, or your anus.
3. You have food or medication leaking out or have a lot of drainage coming out from your tube.
4. You have sudden agnominal pain and dizziness.
5. Your PEG tube moves out of place or comes out

Procedure of Nebulization and tips for use of Nebulizer in home

1. Place the nebulizer on a sturdy surface that will support its weight. Plug the cord from the nebulizer into a properly grounded (three-prong) electrical outlet.
2. Before using the nebulizer for your treatment , wash your hand with soap and water dry completely
3. Carefully measure medications exactly as you have been instructed and put them into the nebulizer cup
4. If you do measure use a separate, cleaning measuring device for each medication.
5. Assemble the nebulizer cup and mask or mouthpiece
6. Connect the tubing to the aerosol compressor and nebulizer cup.

7. Turn on the nebulizer compressor to make sure it is working correctly. You should see a light mist coming from the back of the tube opposite the mouthpiece.
8. Sit up straight on a comfortable chair. if you are a mask ,position it comfortable and securely on your face.
9. Take slow, deep breath .if possible, hold each breath for2-3 seconds before berthing out .this allows the medications to settle into airways.
10. Continue the treatment until the medication is done (an average of 10minutes). The nebulizer will make a sputtering noise, and the cup will have just a little medication remaining.
12. During the treatment, if the medication sticks to the sides of the nebulizer cup you may shake the cup to the droplets.

Home medication

1. Name of the medication
2. Action of the medicine
3. When to take medication (before food after food, with food)
4. To avoid skip the dos
5. Expected adverse reaction of the medicine and stress about the allergy.
6. Don't take the medicine without water(before food or after food, or with food)
7. When to call the doctor /come to the hospital-when there is unexpected adverse reaction
8. Don't crush the coated tablet.
9. Strength of the medicine.
10. Storage of the medicine.
11. Drug-food interaction.
12. Duration of the medicine.
13. Frequency of the medication.
14. Regular review of medication with a doctor. (NR , sodium , potassium)

Care of casts and splints
Splints:

1. Donning and doffing of the splint at regular intervals according to the physician advice.
2. Maintain the cleanliness of the splints
   a. Wash with water and dry it under sunlight
   b. Wipe it disinfectant solution.
1. Ensure that splint is neither too loose nor too tight.
2. If the splint has any problems. send repair or contact physiotherapist
3. Do not use splint that have been used by others.

Casts:

1. Keep the cast area dry.
2. Do not apply any emollient or oil under the casts.
3. Do not insert any stick or finger inside the casts
4. Pad the edges of the casts.
5. Contact physician if the following occurs.
   a. You can't move your figures or toes.
   b. You have severe pain or increased pain that think is from swelling ,and your cast fells too tight
   c. Your hand or foot fells numb or tingles.

d. You have a lot of swelling below your casts or splint
e. The skin under your cast or splint is burning or stinging and continues itching
f. If any color changes in nails beds.

ROM exercises at home

1. Use good posture while doing ROM exercise
2. Do all ROM exercises smoothly and gently
3. Move your joints slowly
4. Stop ROM exercise if you feel pain.
5. Sets aside time to exercises every day
6. Lock your bed or wheelchair wheels before you start doing your exercises
7. Ask for help if you think you cannot do an exercises by yourself
8. Follow your caregiver's order
9. Rest after an exercises that is very tiring
10. Always return to your staring positions after finishing each exercises
11. Do not perform exercises in full stomach
12. Avoid strenuous exercise if having any respiratory problems
13. Types of ROM exercises.

1. **Head and Neck exercises**

   a. Chin-to- chest exercises
   b. Head turns exercises
   c. Head tills exercises

2. **Shoulder and Elbow exercises**

   a. Shoulder movement ,up and down exercise
   b. Shoulder movement ,side to side exercises
   c. Shoulder rotation exercise
   d. Elbow bends exercise

3. **Forearm exercises**

   a. Palm up, palm down exercises.

4. **Wrist exercises**

   a. Wrist bends exercises
   b. Wrist rotation exercises

5. **Hand and finger exercises**

   a. Finger bends exercises
   b. Finger spreads exercises
   c. Finger-to thumb touches exercises
   d. Thumb –to- palm exercises

6. **Hip and knee exercises: do each exercises**

   a. Hip and knee bends exercises

b. Leg lifts exercises
c. Leg movement ,side to side exercises
d. Leg rotation ,in and out exercises
e. Knee rotation ,in and out exercises

7. **Ankle and foot exercises**

a. Ankle bends exercises ankle
b. Ankle rotation exercises
c. Toe bends exercises
d. Toe spreads exercises

Managing diabetes at home

1. Use your diabetes meal plan
2. Get 30to 60mints of physical activity
3. Start at a healthy weight by using your meal plan and moving move
4. Ask for help if you fell down
5. Learn to cope with stress
6. Stop smoking
7. Take medicines even when you fell good
8. Feet every day
9. Brush your teeth and floss every day
10. Check your blood glucose (blood sugar)
11. Check your blood pressure if your doctor advice
12. Check HbA1c once in a month
13. If necessary ECG , Doppler foot study can be done according to doctor advice
14. Report changes in your eyesight to your doctor.
    a. Talk with your heath care team about your blood glucose targets. Ask how and when to test your blood glucose and how to use the result to manage your diabetes.
    b. Use this plan as a guide to your self- care
    c. Discuss this how your self- care plan is working for you each time you visit health care team

Administration of insulin

1. Name and type of the insulin
2. Side effect and complications of insulin administration
3. Storage of insulin vials
4. Method of using pen insulin
5. Insulin site (rotation of site)
6. Frequency of insulin administration
7. CBG monitoring
8. Technique of administration in different sites

Maintaining intake and output

1. Strictly adhere to the fluid restriction plan.
2. Encourage the patient to use ounce glass for measuring the intake.

3. Encourage to use the urinals or measuring cup for accurate measurement of out put
4. Maintain the output chart every 2nd hourly or when ever needed.
5. If any signs of mild edema check weight every or whenever necessary in the nearby health facility.
6. In case of any alternative in urine output contact the doctor immediately.
7. If fever or sins of infection occur contact the health care provides immediately.
8. If any damage occurs to the urosac .e.g. markings not visible any leakage, changes the bag.

Well balanced /Therapeutic diet

1. The diet should be prescribed by the physician e.g. diabetic diet salt restricted diet, balance diet etc.
2. Include all the compounds of food like carbohydrate, protein, fat, vitamins and minerals.
3. Encourage the patient to follow the therapeutic diet prescribed.
4. Avoid heavy meals at bed time.
5. Avoid fatty foods like oily foods.
6. Avoid gas producing food like potatoes, egg ect.
7. Avoid irritating and highly smoked food e.g. highly seasoned food ect.
8. Encourage not to drink water while taking food as it delays digestion and reduces hunger.
9. Encourage the patient to take fiber rich diet for avoiding constipation e.g. wheat, green leafy vegetables etc.
10. Include more fruits and vegetables in diet.

CHAPTER 2

HYGIENIC NEEDS

2:1 Hair Care

Policy:

The procedure of hair care shall be administered to patients who are immobilizes or unable to meet or requires assistance to meet hair on their own. The physician must be consulted before administering hair wash to patient receiving specialized care and or post operative (head & neck spine ,neurological ect.) hair care shall be administered at least twice every week or as advised by the physician in special ceases

A. Definition

Giving hair wash while the patient is bed ridden.

B: Procedure

1. To clean the hair and scalp of the patient confined to bed for a long period.
2. To improve the condition of the scalp.
3. To enhance the personal hygiene and self –esteem of the patient.
4. To promote healthy hair and prevent hair loss
5. To simulate blood circulation
6. To prevent accumulation of dirt. Lice, dandruff and oil.
7. To prevent infection and itching.
8. To observe the scalp.

C: Equipment

A tray containing

- Shampoo
- Comb
- Small bowl
- Mackintosh trough
- Small mackintosh
- Bath towel
- Spongy towel
- Rag pieces
- Bucket to collect waste water
- Jugs of hot and tepid water
- Basin
- Mug
- Non- absorbent cotton
- Kidney tray
- A pair of clean gloves.

D: Procedure

S. No	Action	Rationale
1.	Explain the procedure to the patient.	To relive the anxiety and to gain cooperation from the patient.
2.	Fold mackintosh to form a trough.	To prevent the linen from getting wet.
3.	Position the diagonally on the bed with head positioned at the edge, and shoulder placed on pillow. Top end of thought is supported by the shoulder and bottom end of though in placed inside iron bucket.	To make the patient comfortable for the procedure.
4.	Loosen hair and remove tangles.	To enable proper washing
5.	Close windows and put off the fan	To prevent patient going into hypothermia.
6.	Plug ears with non-absorbent cotton.	To prevent entry of water in to the ears
7.	Place the sponge cloth on forehead, wet hair in sections.	To enable ease wash.
8.	Ensure that the water does not spill out of trough.	Tom prevents the floor from getting wet.
9.	Apply the shampoo evenly on the hair and scalp.	To spread shampoo in all the areas.
10.	Massage the scalp by using the pads of the hair thoroughly	To promote the circulation.
11.	Scrub the hair along total length and rinse the hair thoroughly	To remove shampoo from the entry hair
12.	Dip hair in basin at the end of the procedure, by placing basin close to the patient's neck rinse hair and squeeze thoroughly.	To remove the shampoo thoroughly.
13.	Fold the mackintosh into the bucket	To prevent the spill of water on the floor.
14.	Cover the hair with bath towel and dry thoroughly	To enhance drying of the hair.
15.	Remove the non- absorbent cotton from the ears and discard into the K- basin,	To promote patient's comfort
16.	Wipe face with towel thoroughly after the bath.	To keep the patient's comfort
17.	Replace the articles .discard dirty water and wash hands	To prevent cross contamination.

S. No	Action	Rationale
18.	Document the procedure, mentioning the condition of the scalp and hair, and patient, response.	To monitor difference and detect trends; to prevent duplication of care

E: Supportive documents

Clinical chart, nurse notes

Note: for patient who can be assisted with hair care the nurse should advocate timely combing of hair and make sure that they are printable

2:2 Eye Care

Policy:

Eye is given to the patients who can't meet hygiene needs and with excessive eye discharges. The procedure shall be performed under strict aseptic precautions. The physician must be consult before administering the eye care to post –ophthalmic surgery and trauma patient. Frequency of eye care shall depend up on the amount of eye discharge of as advice by ophthalmologists

A: Definition

Eye care is the patient of assessing .cleaning or irrigating the and /or the instillation of prescribed coular preparations.

B: Purposes

- To relive pain and discomfort.
- To prevent or treat infection.
- To prevent or treat injury to the eye.
- To detect disease at an early stage.
- To detect drug –induced toxicity at an early stage.
- To prevent damage to the cornea in sedated or unconscious patient.
- To provide instillation of an eye drop or application of an eye ointment.

S**uggested marks to identify patient at high risk of developing exposure related eye problems**.

1. All comatose patients.
2. All patient with absent blink or poor blink reflex- facial palsy, neurological patients like post stroke post neurological interventions ect.
3. Patient with pre- existing eye conditions like proptosisi due to thyroid disease eye disease orbital fractures eye injuries ect.
4. Any patient who develop watering of eyes redness of eyes stickiness of eyelids or eyelashes or diminution of vision.
5. In ICU dryness of air occur due to AC which leads to dryness of eye.

C: Equipment

1. Sterile tray containing
   - Cotton
   - Thumb forceps
   - Bowl
2. Kidney tray
3. Towel
4. Sterlio.9%sodium chloride

D: Procedure

S. No	Action	Rationale
1.	Explain and discuss the procedure with the patient.	To ensure that the patient understands the procedure and gives consent
2.	Assist the patient into the correct position i.e. head well supported and tilted back	Most comfortable position.
3.	Wash hands thoroughly or using bactericidal soap	To reduce the risk of cross infection.
4.	Ensure adequate light source.	To enable maximum observation eyes.
5.	Always treat uninfected or uninflamed eye first	To reduce the risk of cross infection to the other eye.
6.	Take two cotton balls moisture with sterile 0.9% sodium chloride and squeeze the excess solution and outer cantus straight using one single stoke	If the swab ids too wet the solution will run down the patient cheek. This increase the risk of cross- infection and causes discomfort to patient
7.	Using a new swab each time repeat the procedure until all the discharge has been removed	To reduce the risk of cross infection –infection and to clean the eyes thoroughly.
8.	Once both eyelids have been cleaned and died ,make the patient comfortable	To promote comfort
9	Replace the equipments and wash hand	To reduce the cross –infection.
10.	Record the procedure in the appropriate document	For proper documentation and to notify any irregularities to the appropriate senor nursing and medical teams.

E: Supportive documents

1. Institution protocol for preventions and management of exposure related eye problems.
2. Clinical chart, nursing notes

PROTOCOL FOR PREVENTIONS AND MANAGEMENT OF EXPOSURE RELATED EYE PROBLEMS (EXPOSURE KERATITIS)

Back ground

Patient in critical care setting are at risk of exposure related eye problems including serious sight threatening corneal infections. Comatose state reduced or absent blink reflex reduced or absent corneal sensation. Dryness of eyes, presence of infection in other parts of the body and in the critical care setting result in significant risk of exposure related eye problem. Prevention, as always I better than cure.

Protocol for Patient at risk of Exposure Related Eye Problems:

1. To be started on topical lubricants –drops /gels and frequency based on degree of exposure
2. X- taping as appropriate .vertical taping is not advisable as it leads to peeling away of cornea when the eyes are opened
3. Temporary tarnsthapty performed at the bedside or in the operation theater whenever significant risk exists .e.g. Early exposure keratiis.
4. Ophthalmologist consultation in all /ceases
5. Bedside examination with brought torch in all cases at risk twice daily by the in- charge nursing staff and ophthalmic consolation when needed.
6. Do not apply dry gauze directly over eyes as it can take way the cornea.

2:3 Mouth Care

Policy: Mouth car is given to admitted patients who can't meet hygienic needs on own and post-operative patients. Mouth care shall be administrated once every shift every meals. Conscious and oriented patient shall be assisted as reputed.

A: Definition:

Cleaning of the teeth and oral cavity antiseptic solutions

B: Procedure

1. To remove food particles that provides a likely medium for bacterial growth especially in a patient with altered sensorium or after oral sugary.
2. To prevent dental caries ,and tooth decay
3. To improve nutritional status by enchaining appetite.
4. To refresh the mouth of a patient who is confined to bed, critically ill or dehydrated.
5. To stimulate blood circulation of gums ,thus maintaining healthy firmness,
6. To promote aesthetic sense to the patient
7. To stimulate salivation
8. To prevent halitosis.

C: Equipment:

1. A sterile mouth toilet tray containing
   a. Artery clamps-1
   b. Cups 29 one cotton balls, the other for mouth wash solution)
   c. Thumb forceps.
2. K- Basins (2- one to discard the used cotton balls the other for the patient to spit after rinsing the mouth.
3. Swab stick
4. Small mackintosh

5. Face towel
6. Tooth brush (for those patient who will be to brush)
7. Torch
8. Spatula/depressor
9. Emollient
10. Disposable gloves

D: Common antiseptic solutions used:

1. Thymolglycerine
2. 1% soda bicarbonate
3. Borax glycerin
4. Chlorhexadine mouth was solution.

D: Procedure

S. No	Action	Rationale
1	Explain the procedure to patient	To reduce the anxiety and get the co operation from the patient.
2.	Provide privacy.	To prevent unnecessary exposure and to protect the patents dignity.
3.	Bring the patient to the edge of bed .and preferable in semi-fowler if not contraindicated.	For ease of doing the procedure and to prevent the aspiration.
4.	Position pillow according to the comfort of patient.	To promote comfort.
5.	Place a small mackintosh with a face towel on the patient's chest.	To prevent soiling of the patient's gown
6.	Place K-basin close to the chin of the patient	To discard the used gauze easily.
7.	Raise head end of the bed to 45degree	To prevent the aspiration and to promote comfort.
8.	Inspect the patient 's mouth including teeth ,with the help of torch ,spatula and gauze, giving more attention to lips, buccal mucosa, lateral and ventral surfaces of the tongue, floor of the mouth and soft palate .ask the patient about taste changes. Changes in saliva production and composition. Oral discomfort or any problem in swallowing.	The mouth is examined for changes in condition with respect to moisture cleanness, infected or bleeding area, ulcers etc.
9.	Pour antiseptic solution into a cup and soak	To prevent excess solution from going into

S. No	Action	Rationale
	gauze in solution and squeeze out excess solution by using artery clamp and thumb forceps.	the moth and to reduce the risk of aspiration.
10	Us the same clamp to clean the patient's mouth.	To enable easy access in to the mouth and to clean the oral cavity.
11.	Use one clamp to pick up gauze and the other to clean (avoid interchanging of clamps)	To prevent cross contamination.
12.	Clean teeth from incisors to molars using up and down movements. From gums to crown.	To promote the circulation and proper cleanness.
14.	For cooperative and oriented patient tooth brush may be used to clean the teeth	This enables the patient to involve in self care.
15.	Discard used gauze into k-basin	To enhance proper disposal and make the patient conformer.
16.	Clean tongue from inner to outer aspect folding rag piece in such a way that the tip of clamp is completely protected.	To prevent injury and to the tongue.
17	Provide a tumble of water and instruct the patient to tongue his mouth and spit into the K-basin.	Rinsing remove lessened debris and refreshes the mouth.
18.	Position K- basin properly. Allow the patient to rinse mouth the mouth wash solution and silt into the K-basin.	To prevent water from spilling on to the linen. Mouth wash leaves a pleasant taste in mouth.
19.	Lubricate lips using articles and replace equipment. Wash hands.	To prevent the lips from being dry and cracked.
20.	Wipe the face with towel.	To make the patient comfortable.
21	Rinse used articles and replace equipment .wash hands.	To prevent cross contamination.
In ICU:		
Use tooth brush the paste to cleanse in patient who are conscious and well oriented and who will be able to cooperative.		Prevents ventilator associated pneumonia (VAP).
Ensure the presence of two nurses while this technique is carried out. One nurse helps in brushing while the other suctions simultaneously		To prevent aspiration and ensure thorough cleanings is done

S. No	Action	Rationale
22.	Document the procedure and condition of the mouth and patient's response and any abnormalities, like bleeding/inflammation.	To monitor any irregularities and to prevent duplication of care.
2	Provide mouth care six hourly	To maintain hygiene.

E: Supportive documents

Clinical chart, nurses notes

2:4 Nail Care

A: Definition

Care of the figure nails and toenails.

B: Purpose

1. To keep the nail clean.
2. To inspect all surfaces of feet and hands for lesions. Dryness or signs of infection.
3. To trim and to keep them short to prevent injury
4. To prevent accumulation of dirt microorganisms in the nails.

C: Equipments:

1. Basin
2. Wash cloth
3. Bath or face towel
4. Nail cutter with a nail file.
5. Warm water
6. Soap and soap dish
7. Body lotion
8. Clean gloves
9. Kidney tray
10. A bowl with cotton balls
11. Bowl with antiseptic solution.

D: Procedure

S. No	Action	Rational
1	Explain the procedure to the patient	To reduce the anxiety and to gain cooperating
2.	Inspect the surface of fingers, toed feet and nails, to give particular attention to area of dryness, inflammation and cracking. Also inspect areas between toes heels and sloes of feet.	Integrity of feet and nails determines frequency and level of hygiene required. Heels soles and sides of feet are prone to irritation from ill- fitting shoes, dryness ect.
3.	Remove nail enamel from the nail .leave no trace. Use cotton remover to do so.	To prevent the infection as microorganisms can harbor in chipped areas.

S. No	Action	Rational
4.	Fill wash nails with warm water immerse hands in a bowl of warm water for 10to 20 minutes if necessary	Warm water will soften the nails and thickened epithelial cells, also helps to reduce the inflation of skin and promotes local circulation. Ensures easy removal of dead cells.
5.	Place arms in comfortable position.	Prolonged positioning nay cause discomfort.
6.	Cut the figure nails straight across and even using nail clipper.	Cutting straight prevent splitting of nail margins and formation of sharp edges that can irritate lateral margins.
7.	Wipe each fingertip with cotton dipper in anti septic solution	To clean the dirt and microorganisms.
8.	Use a file to smooth the nail edges.	To prevent the irregularity of the nail.
9.	Dry the hands with towel.	To make patient comfortable.
10.	Remove and replace the articles and wash hands	To reduce the risk of cross contamination.
11.	For toe nails. Repeat the steps from 3 to9.	For care of toe nails.

E: Supportive documents

Clinical chart, nurses not

2:5 Back Care

Policy:

Back care is given to admitted patient who can't meet their Owen hygiene needs and patient who have undergone major surgeries, during their post operative period.

A: Definition

Cleansing and massaging the back with special attention to pressure points.

B: Purposes:

1. To assess the skin for hygiene and signs of pressure ulcer.
2. To stimulate circulation
3. To promote rest and sleep.
4. To reduce the risk of developing pressure ulcers.
5. To produce relaxation and relive tension in tissue and muscles.

E: Equipment

1. A clean gown
2. Clean gloves.
3. Towels (bath and sponge),
4. Basin with warm water (check the temperature of the by placing the inner aspect of your wrist or forearm in the water.)
5. Kidney tray.
6. Soap
7. Oil/white paraffin/emollient.

D: Procedure

S.No	Action	Rationale
1.	Assess patient's condition and identify any contraindications for providing back care.	Assessment of the patients' condition must be done prior to staring back care. for certain patient (spinal injury,rib fractures, post operative period after CABG burns patient and any surgeries of the back) back care is contraindicated.
2.	Explain the procedure to the patient	To ensure that the patient under standard the procedure and gives hid/her valid consent.
3.	Wash hands	To prevent infection.
4.	Provide adequate privacy.	To prevent embarrassment to the patient.
5.	Bring the patient to the edges of the bed without dragging. Turn the patient to prone or lateral with back towards nurse.	To reduce friction between the akin and linen. To have proper access to the entire back.
6.	Make sure the fan is turned off	To prevent heat loss via evaporation and conduction.
7.	Make sure mitten with the sponge towel .wet and squeeze out excess water. Wet patient's back from to buttocks. Wet wipes or easy bath wipes may be used for the same.	To moisten the skin so as to help in applying the soap.
8.	Apply soap on the sponge cloth/gloved hand. Apply to back by rotator motion from neck to buttocks.	To clean the skin and to improve circulation.
9.	Wash soap on the sponge cloth. Remove soap from neck to buttocks with brick long stocks. Pay special attention to skin near gluteal creases.	To remove dirt .the skin folds are at higher risk of break down.

S.No	Action	Rationale
10.	Pat dries the skin with bath towel.	To dry the area
11.	Provide a gentle massage over the patient's back, by using emollients. The pattern for massage includes, a. Using your palm, begin in sacral area using smooth, circulation strokes. b. Move your hands up the centre of the back and then over the both the scapula. c. Massage in a circular motion over scapula. d. Move your hands down the sides of the back e. Massage the areas over girth and left iliac crest. f. Apply firm, continuous pressure without breaking contact with the patient skin. g. Repeat the above steps for 3-5 minutes using more emoiiient as necessary. h. Pat dry excess lotion in the towel.	Improve circulation and to provide sense of comfort for the patient.
12.	Do not over an area that already has redness.	Further friction due to massaging can cause breakdown of he skin.
13.	Document the procedure and condition of skin and patient's response. Document any signs of pressure ulcer. If pressure ulcer is present document the stage size of the pressure ulcer and the intervention carried out.	To monitor different and detect trends any irregularities should be brought to the attention off the appropriate senor nursing and medical teams.

Steps in massage:

Steps	Rationale
1. Effleurage/stroking: start with long gliding strokes .use your entire hands or thumb pad. start from sacral region to scapular region and the shoulder(do not apply pressure on the spinal cord)	To improve the blood flow To prevent injury.
2. Petrisage: use gentle pressure to knead or squeeze the muscles. Use thumb and distal pha-langes.	To relive the deeper muscle tension and clear out toxins. Kneading motion is soothing and reliving.
Steps	Rationale
3. Friction: use tips or thumb pads and do circu-latory motion.	To break down knots and to achieve flexible muscles.
4. Cupping: use cupped hands to strike either side of the back /spinal cord.	To percuss the area.
5.Tappotment : use edge of the palm and strike	To stimulates circulation and provides

briskly on either of the back	relaxation to back muscle.

E: Supportive documents

Nurses notes:

Note: back care must be provided during every shift for patient who is bedridden.

For patient who is risk for developing pressure ulcer back massage needs to be provided every two hourly.

2:6 Bath

Policy: INODAYA hospital's policy for hygienic care states that, hygiene care shall be provided for all patients who are unable to meet hygienic needs on their own. The nurse shall assess the patient's ability meet activates of daily (ADL) and decide the level of assistance to be provided to the patient.

A: Definition

Cleaning the body of the patient who is confined to bed and who does not have the physician and/or mental capacity to bathe by himself /herself

B: Purposes

1. To remove transient micro organisms, body secretions, excretions and dead skin cells.
2. To promote a sense of comfort and well-being.
3. To stimulate blood circulation.
4. To provide comfort, relaxation and to induce sleep.
5. To enhance the patient's self esteem.
6. To provide tactile stimulation.
7. To facilitate the head to foot assessment.
8. To remove toxic substances from the body.
9. To prevent pressure sores.
10. To prevent or eliminate bad odour.

C: Equipment

A tray containing

- Sponge towel, bath towel.
- Mackintosh
- A pair of clean gloves
- Wash clothes
- Non- absorbent cotton
- Jugs with hot water and tepid water (water of 110-115 F) 43-45C) for adults and 100to 105 For children.
- Bucket for collection the sued water
- Swab stick
- Kidney tray
- Emoiiient ,cream or oil
- Linen hamper
- Bed pan /urinals (if necessary)
- Gown

D: **Procedure**

S. No	Action	Rationale
1.	Explain the procedure to patient and relatives	To reduce anxiety and to gain cooperation from the patient.
2.	Ensure that the environment is warm and draw the curtains.	To reduce drafts, to provide privacy and proceed dignity of the patient.
3.	Offer urinals or bed pan if needed.	To reduce any disruption during procedure and to prevent any discomfort.
4.	Collect all equipments on a trolley and bring to the bedside	To save time and for easy of doing the procedure.
5.	Wash hands, don disposable gloves and were apron.	To minimize risk of cross infection. To protect the clothing from being wet.
6.	Assist to remove gown without exposing the patient.	To prevent embarrassment to the patient.
7.	Cover completely with top sheet.	To maintain privacy and promote dignity.
8.	Keep bath basin on a stool close to the head end of bed, mix hot and cold water.	Form ease of doing the procedure and to avoid spilling of water on the floor.
9.	Check the temperature of water according to patient's tolerance.	To avoid burns and for patient's comfort
10.	Bring the patient towards the nearer side.	For ease of doing the procedure.
11.	Make a mitten using a wash cloth, dip in water and wipe face.	For cleansing the face.
12.	Use soap as per patient's preference. Otherwise pat dry the face a towel.	Some patients may not like applying soap on their face.
13.	Wipe the body with a wet mitten, apply soap in rotator motion and remove soap using wet mitten. Pat dry using a towel. Starting with the side farthest away from you side. Care needs to be taken not too wet grains/dressings and Iv devices.	To promote patient may well-being and cleanliness and reduce the risk of cross infection.
14.	Wash, rinse and pad dry legs, starting with the side further away from your side roll patient wash back, then using disposable flannel wash sacral area, then using pressure area, cover areas that are not being washed, return patient on their back endure they are covered.	To prevent and treat pressure ulcer ensuring appropriate referrals are made.

S. No	Action	Rationale
	Apply toiletries as required.	
15.	Changes the water and inform the patient you are going to wash around the genitalia, gain verbal consent from the patient, if they are willing to wash this area themselves. Using a separate wipe, wash around the area then dry the area.	Reduce risk of infection and to maintain the safe environment.
16.	If patient is on indwelling catheter, put on your gloves and wash the tubing away from the genital area. Dry tubing and remove the gloves' as per institution policy. When washing this area, remember female patient should draw back the foreskin if uncircumcised when washing the penis.	To reduce risk of infection and to maintain the safe of the patient.
17.	Replace the cloth and change bottom sheet whilst patient is being turned, if they are to reaming in bed. Ensure a minimum of two nurses are present during this procedure.	To reduce unnecessary activity and ensure the safe of the patient.
18.	Dry and comb patient‘s hair as desired.	To enhance patient comfort and promote self esteem.
19.	Remake top bedclothes and help the patient to sit or lie in desired position.	To improve the patient comfort and reduce risk of pressure ulcer.
20.	Remove the all the used articles and linen from the patient side and keep the call bell to easy reach to the patient.	To maintain a safe environment and promote patient independence
21.	Remove the all the aprons and gloves dispose it according to the intuition policy and wash the hands and use alcohol based hand wash	To prevent cross infection.
22.	Document the procedure and condition of skin and patient's response.	To monitor differences and detect trends; to prevent duplication of care.

E: Supportive documents: Clinical chart, nurses notes

2:7 Perineal Care

Policy: INODAYA hospital's policy for patient perineal care states that, perineal care shall be provided for all patients who are unable to meet hygienic needs on their own.. It is provided to all patients who are bedridden and those on indwelling catheter. The nurse shall assess the patient's ability to meet activities living (ADL) and decide the level of assistance to be provided to the patient.

A: Definition

Cleaning of vulva and perineum using disinfectants following aseptic technique

B: Purposes

1 To prevent genitourinary tract infection.

2 To provide comfort and cleanliness.
3 To evaluate condition of the perineum.
4 To prevent infection in high risk patients

C: Indications

1 Patient with indwelling catheter.
2 Patient who have incontinence of urine and stool.
3 Patient having excessive vaginal discharge.
4 Patients who have underwent react or genital surgeries.
5 Following child birth.
6 Patient who are unable to do self care.

D: Equipment

- Sterile perineal care pack containing cup with cotton balls.
- Artery clamp, and thumb forceps.
- Antiseptic solution for cleaning catheter (Betadine)
- Solution to clean perineum (zephiran/soap and water)
- Extra cotton balls.
- Mackintosh.
- A pair of clean gloves.

D: Procedure

S. No	Action	Rationale
1.	Explain the procedure its purpose to the patient.	To ensure that the patient understand the procedure and gives his/her valid consent when conscious.
2.	Collect all equipment.	To save time.
3.	Provide privacy.	To make the patient feel comfortable and treat patient with dignity.
4.	Wash hands with bactericidal hand wash.	To minimize risk of cross infection.
5.	Assist patient to dorsal recumbent position.	Provide easy access to genitalia.
6.	Provide an under pad for the client .drape the client with a draw sheet.	To prevent the anti septic solution from staining the top sheet.
7.	Open perineal pack and pour antiseptic solution.	To minimize risk of cross infection.
8.	Wash hands again	
9.	Wear a pair of clean gloves.	
10.	Clean the Mons pubis with one cotton ball in zigzag motion.	
11.	Separate labia minora with non-dominate	Reduces changes of transmitting

S. No	Action	Rationale
	hand to exposé urethral meatus and vaginal orifice. With dominant hand clean downward from pubic area toward rectum in one smooth stroke.(clitoris to fourchette)	microorganisms to urinary meatus.
12	Clean the labia minora at the father to closer using single strokes.	To prevent cross infection.
13	Clean labia malora from the father to the closer. Watch carefully in skin folds.	Wiping from perineum to rectum reduces changes of transmitting fecal organisms to urinary meatus Skin folds may contain microorganisms.
14	Clean thing using cotton ball for each stroke from the centre to the periphery from the thigh to closer thigh.	To minimize risk of cross infection.
15	Lastly clean the anus in circular motion with cotton ball.	Cleaned last to avoid infection ascending.
16	Dry perineal area thoroughly using front to back method (perineal to rectum)	Retained moisture harbors microorganism.
17	Position patient comfortably	To minimize risk of cross infection.
18	Replace articles and wash hands	To minimize risk of cross infection.
19	Document date, time report if there is any foul smelling discharge, or any other abnormalities to the concerned doctor.	To monitor differences and detect trends; any irregularities should be brought to the attention of the appropriate senor nursing and medical teams.

Note: for Male catheter care

- Retract the skin to expose the gland penis.
- Clean gland penis around urinary meatus with betadine.
- Pull back the fore skin gently over the gland penis (this is done to prevent infection and to pre-vent ulceration of the gland penis)
- Continue steps14to 16 as mentioned above.

E: Supportive documents

Clinical chart, nurses notes.

2:8 Care Of Indwelling Urinary Catheter

Policy: INODAYA hospital's policy for care indwelling urinary catheter states that, it shall be provide for all patient who are unable to meet hygienic needs on their own and performed once in eight hours.

A: Definition

A catheter is a hollow tube that is used to remove fluids from, or instill fluid into , a body cavity , urinary cauterization is the insertion do a specially designed tube into the bladder using aseptic techniques.

B: Purposes

In the male, urinary catheterization may be carried out for the following reasons.

1 To empty the content of the bladder, e.g before of after abdominal, pelvic or rectal surgery and before residual investigations.
2 Ti determine residual urine
3 To allow irrigation of bladder.
4 To bypass an obstruction.
5 To relive retention of urine.
6 To introduce cytotoxic drugs for treatment papillary bladder carcinoma.
7 To enable bladder function tests to be performed.
8 To measure urine output accurately e.g. when a patient is in shock undergoing bone marrow transplantation or perceiving high – dose chemotherapy.
9 To relive incontinence when no other means is practical.

In the female, urinary catheterization is carries out for the nine reasons list above and for two further reasons.

1 To empty the bleeder before childbirth, if through necessary.
2 To avoid complications during the insertion of radioactive material (e.g cesium into the cervix/ womb.

C**: Equipments**

1 Catheter care pack
   a. Non- sterile gloves
   b. Cotton ball
   c. Clean towel
2 Bath blanket.
3 Water proof absorbent pad
4 Warm water and soap

D: Procedure

S.No	Action	Rationale
1.	Explain procedure	Reduce anxiety and promotes co-operation
2.	Screen the bed	Provides privacy.
3.	Perform hand hygiene	To reduces the risk of infection.
4.	Position. Female : dorsal recumbent position Male: supine or fowler's position,	Ensure easy access to perineal tissue
5.	Place under proof pad under client	Protection linen form soiling.
6.	Were gloves	Reduce cross infection.

7.	Remove anchor device to free catheter tubing.	
8.	Assess urethral meatus and surrounding tissue for inflammation, swelling and discharge. Ask client if any burring or discomfort if felt.	Determines presence of local infection and hygiene
9	Clean perineal tissues. Female: use cloth, soap and water, cleanse around urethral meatus and catheter. Cleaning from pubis towards anus, clean labia minor .finally clean around anus dry each area well. Male: while spreading urethral meatus cleanse around catheter first them wipe in circular motion around meatus and glans.	Cleansing moves from area of least to most contamination.
10.	Wipe along the catheter in a circular motion for 10cms.	Reduces presence of secretions or drainages of catheters suffice.
11	In male patient reposition the foreskin.	To prevent paraphomosis.
12.	Secure the catheter to lower abdomen in males and patient in aspect thigh in females.	To prevent accidental pulling of the catheter.
13.	Place and patient in conformable position.	Promote comfort.
14.	Record information in relevant documents.	To provide a point of reference or comparison in the event if later quires.

E: Supportive documents

Clinical chart, nurses notes

2:9 Care Of Patient with Tubes and Drains

A: introduction

Tubes and drains are continually used in patient care. They account for a significant percentages of nosocomial infection and the rate of infection are expected to rise. The cost of tube and drain related infection is significant. Prevention of infection .frequency assessment, meticulous care, and appropriate use of anti-microbial dressing are hey to promoting a positive outcome for patient.

B: Recommendations

1 Importance of good hand hygiene before and after patient care
2 Use of aseptic techniques when caring for and dressing tubes and drains.
3 Importance e of appropriate containment and deposal of drainage.
4 Maintenance of continuous and closed collection system.
5 Implementation of appropriate precautions avoidance of cross contamination by using individual disposal contains for each patient different drains.
6 Correct procedure for disposal of drains such as chest-tube receptacles, active drains and sump drains.

C: Nursing Assessment

1 Assess for presence, existence of, and history of risk factor such as open wound and abrasions; in- indwelling catheter (Foley, peritoneal); wound drainage tubes (t- tubes. Penrose, Jackson, Pratt); endotracheal or tracheotomy tubes; venous of arterial access devices; and orthopedic drains.
2 Motor white blood cunt (WBC). Rising WBC indicates boy's effort to comfort pathogenic; normal values; 4000 to 11000mm. very low WBC (Nuetropenia <1000mm3) indicates severe risk for infection because does not have sufficient WBCs to fight infection

Note: in elderly patients, infection may be present without an increased WBC

Monitor the following for signs of infection

- Redness, swelling, incensed pain, or purulent drainages at incisions. Injured sites. Exit of tubes ,drains or catheters Any suspicious drainage should cultured
- Elevate temperature fever of to 38 c (100.4F) 48hours after surgery is related to surgical stress; after 48hours, fever above 37.7c (99.8f) suggests infection; fever spikes that occur and subside are indicative of wound infection; very high fever accompanied by sweating and chills may indicate septicemia.
- Color of respiratory secretions yellow or yellow –green sputum is indicated of respiratory infection.
- Appearance of cloudy foul – smelling urine with visible sediment is indicative of urinary tract or infection
- Assess nutritional status – weight history of weight a cellular immune response to pathogens and are therefore more susceptible to infection.

D: nursing Intervention

1 Maintain or teach asepsis for dressing changes and wound care, catheter care and handing and peripheral IV and central venous access management.
2 Wash hands and reach other caregivers to wash hands before contact with patient and between procedures with patient. Friction and running water effetely remove microorganisms from hands. Washing between procedures reduce the risk of transmitting pathogens from one area of the body tom another (e,g perineal care or central line care). Use of disposable gloves does not reduce the need for hand washing
3 Limit visitor. This reduces the number of organisms in patient's environment and restricts visitation by individuals with any type of infection to reduce the transmission of pathogens to the potent at risk for infection. The most common modes of transmission sre by direct contacts (touching,) and by droplet (airborne)
4 Encourage intake of protein – and calorie –rich foods, this maintains optimal nutritional status.
5 Encourage fluid intake of 2000ml to 3000 ml of water per day (unless optimal contraindicated). Fluids promote diluted urine and frequent emptying of bladder ; reducing status of urine ,in turn, reduces risk of bladder infection or urinary tract infection(UTI)
6 Encourage coughing and deep breathing; consider sue of incentive spirometery, these measure reduce status of secretions in the lungs and brochehial tee. When stasis occur, pathogens can cause upper respiratory infection in the including pneumonia.
7 Place patient in protective isolation if patient is at very high risk protective isolation is established if white blood cell count indices nuetropenia (500to 1000mm)
8 Skin care – the skin should be kept as clean and dry as possible, it should be routinely observed for erythema, and tenderness, or irritation. Whenever skin integrity is disrupted the patient with

drainage tubes and good site care, careful monitoring for infection in adequate stabilization of the tube /drains, so that it can work properly.

9 Dry gauze dressing are used around and over drainage tubes to protect tube , absorb small amount of drainage assist with tube stabilization, and help to protect from external contamination . One- or two –piece.

10 Ostomy appliances can be used to contain large volumes of drainage. Fenestrated gauzes or drainage sponges.

11 Teach patient or caregiver to wash hands often, especially after toileting, before meals, and before and after administering self –care. Patient and caregiver can spread infection from one part of the body to another, as well as pick up surface pathogens; hand washing reduces these risks.

12 Teach patient or caregiver to wash hands often, especially after toileting, before meals, and before and after administering self –care. Patient and caregiver can spread infection from one part of the body to another, as well as pick up surface pathogens; hand washing reduces these risks.

13 Ensure that all the tubes and drains are labeled with name and date as soon as they are inserted and also documents in the nurses notes.

14 .the tubes are changes according to hospital protocol. (Foley's catheter=7daysor +-10days, silicon catheter – until infection is noted, IV tubing = 24hrs, Venflons= 72hrs, NG tube = 7days, feeding bag=4hrs.

15 Various wound drains have to be recharged after it is emptied and hung below the hip level of the patient to assist in draining along gravity. When the patient is ambulated on a chair, drain is hung to the arm of the chair and should not be placed on the floor.

16 When the patient is on Inter costal drainage, the drain is checked for its functioning by monitoring the fluid Colum oscillations. The drain is emptied as per protocol.

17 Extra ventricular drains are hung at recommended height and emptied as per written doctor's order.

18 Maintain strict output chart, by accurately measuring all the drains the patient is having gauze and are emptied as per unit protocol and written in different columns titled the name of the drains. All the drains are added to get the total for the day.

E. Accidental removal of tubes and drains, catheter and endotracheal tubes

Accidental removal of tubes and drains

1 In case of accidental removal of tubes and drains seal the stomach with sterile gauze and immediately inform the primary consults and the duty doctor.

2 Observe vital parameters.

3 Documentation

Accidental removal of catheter

1 In case of accidental removal of urinary catheter, watch for signs of bleeding ; inform the primary consult and the duty doctor

2 Documentation

Accidental removal of endotracheal tubes

1 Manage airway

2 Restrain or sedate the patient .

3 Inform duty doctor and the primary consultant

4 Prepare for re- intubation or any other emergency procedures.

2:10 Care of patients with Bowel Incontinence

A: Introduction

Pelvic muscles reduction including biofeedback can reduce uncontrolled loss of stool among persons who experience urgency diarrhea as provocative factors for fecal incontinence. Reducing incidence of diarrhea can help reduce bowel incontinence.

B: procedure

1. Cleanse the perineal and perineal skin following each episode of fecal incontinence, when incontinence is frequent, use an incontinence cleansing product specifically designed for this proposes. frequent cleaning with soap and water may compromise perineal skin integrity for and enhance the oil irritation produced fecal leakage
2. Apply mineral oil or petroleum based oilmen to the perineal skin when frequent episodes of fecal incontinence occur. These products from form moisture and chemical barrier to the perineal skin that may prevent or reduce the severity of compromised skin integrity with severe fecal incontinence.
3. Regularly monitor the patients with frequent episode of fecal incontinence and limited mobility to regularly monitor the sacrum and perineal area for pressure ulceration. Limited mobility, particularly when combined with fecal incontinence, increases the risk of pressure ulceration. Routine cleaning, pressure, reduction techniques, and management of fecal and urinary incontinence reduce this risk.
4. Being a pelvic floor reduction or muscle excise program for personal with sphincter incompetence of the pelvic muscles, pelvic muscles relaxation techniques, is a safe and effective treatment for selected persons with fecal incontinence related to sphincter or pelvic floor muscle dysfunction.

2.11 .Digital Evacuation.

Policy: digital evacuation may be performed for a neurogenic bowel or for a patient for whom none of individual pharmacological method has helped in removing the impacted stools. It can be performed in combination with pharmacological therapy or without it. It is performed with a doctor's order or under the supervision of them registered nurse.

A: Deification

Fecal impaction removal is the digital (using the figure) means of braking up and removing a fecal impaction. Or mass of hardened .clay –like stool lodged in the rectum.

B: Causes of fecal impaction

Fecal impaction is the result of extreme constipation. As the patient is unable to expel the stool. It further accumulates into a larger, harder mass that is impossible to pass by normal defection. This accumulated stool can extend up into the sigmoid colon. The loop of large bowel above the rectum. Impaction is most common in inactive elderly people, but there are causes beside inactivity. Among the other causes are.

- Medications ,including antacids that have aluminum as an ingredient: calcium and iron supplements; category of anti- hypertensive drugs known as calcium channel blockers; allergy medicines (antihistamines); such psychotropic medications as antidepressants and tranquilizers; such hormones as estrogen and progestin; and medication to reduce spasms such as those used in treating parking's disease.
- Poor bowel habits; not having regular schedules for evacuating the bowel.

- Inadequate fluid intake
- Diet that is lacking in such fibers as bran ,fruit, and vegetables
- Rectal disorders as rectocele.

C: Precautions

This digital breaking up and remove of impact stool can potentially damage the mucous membrane linings the bowel, and the stimulation to the vague nerve that has endings in the rectum can cause heart irregularities. It is therefore a procedure that is under taken only with extreme caution. Digital evacuation is done upon receiving a physician's order or under a physician's supervision

D:Preparation and procedure

- Explain the procedure to the patient and provide psychological support.
- Position the patient on his or her side, with knees flexed and back toward nurse.
- A waterproof pad is placed under the patient buttocks, and a bedpan to hold any remove stool is kept nearby.
- If the patient require to stand in the n=bathroom near the toilet during this procedure, it is not advisable due to possible adverse reactions and the fact that this can be an exhausting process.
- Wear clean gloves and apply lubricant to the index figure that will be inserted to break up the impaction.
- The nurse massages around the edges of the impaction, gradually working the gloved finger into the mass to break it up.
- The broken- up pieces of stool are dislodged by carefully working them downward toward the end of the rectum.
- During this procedure, the patient should be checked regularly to assure that there are no unto-ward effects such as weakness, diaphoresis or clamminess or changes in pulse rate,
- Digital evacuation for a neurogenic bowel trading:

  *it should be done every day at the same time.
  *encourage the patient himself /herself to do digital evacuation if their lever of injury is at the lumbar level and in incomplete spinal cord injury after a period of 6weeks from their injury.
  *if the injury is complete and at a higher level (cervical, thoracic spinal cord) relative are trained to perform digital evacuation
  *if very hard stool is present then digital evacuation is preceded by softening of stools with laxa-tives. e.g. dulcolax suppository

E: After care

After the disimpaction is complete .it may be necessary to administer an enema or give a suppository to compete the stool removal. The most important aspect of care is the prevention of the reoccurrence of problems with elimination, in neurogenic bowel, every day performance of digital evacuation of stools is mandatory for training their bowel.

F:Complications

- Vagus nerve stimulation, causing cardiac regulations with possible fainting or weakness, is the most serious potential complications.
- Rectal bleeding, the result of trauma to the bowel mucosa, can also occur.

Chapter 3

Sample Collection and Investigations

3.1 Arterial cannula: Taking blood sample

Policy:

The policy for arterial blood sampling states that arterial blood sample shall only be done by the doctor on duty or by a competent registered nurse by performing a peripheral artery puncture. The use of arterial lines shall be strictly limited to conditions where there is a requirement for frequent arterial blood gas analysis. No routine blood sampling shall be done through the arterial line. This procedure shall only be done on receipt of written instructions from the treating physician by specially trained nurse or doctor.

A: Definition

Blood is drawn anaerobically from the patient peripheral artery (radial, brachial, femoral or dorsalis pedis) via a smile percutaneous need puncture, or from an indwelling arterial cannula or catheter for multiple samples.

B: Purposes

- During and following major anesthesia.
- Monitoring of acid base balance and respiratory status in.

1. Acute respiratory failure.
2. Mechanical ventilation
3. The period during and after cardiac – respiratory arrest.
4. Severe sepsis.
5. Shock conditions.
6. Major trauma.
7. Acute renal failure.
8. Acute poisoning
9. Severe diabetic ketoacidosis.
10. Critically ill patients.

C: Equipments

1. Bactericidal alcohol hand scrub.
2. A pair of sterile gloves.
3. Sterile disposable syringe
4. Alcohol swabs or Chlorhexadine in 70% alcohol swabs.

D: Procedure

S. No	Action	Rationale
1	Explain the procedure to the patient.	To ensure that the patient understand the procedure.
2.	Prepare a tray	To ensure that the all the equipment is ready.
3.	Wash hands with bactericidal soap and	To minimize the risk of cross infection.

S. No	Action	Rationale
	water or bactericidal alcohol hand scrub.	
4.	Check the three way tap is closed port.	To prevent back flow of the blood and blood spillage.
5.	Press silence in the arterial monitor for the duration of sampling.	The continual alarm disturbs the patient and the others working in the unit. Alarms of no clinical significance can be minimized.
6.	Wash hands with bactericidal soap and water or bactericidal alcohol hand scrub. Were sterile gloves. And follow aseptic techniques thought the procedure.	To minimize the risk of cross infection. To prevent contamination of hands with blood.
7.	Remove the cap from three- way tap and clean the ports with a swab soaked in Chlorhexidine in70% alcohol /alcohol swab and allow drying.	To ensure asepsis.
8.	Connect a 5ml sterile syringe /appropriate one as per the rest to the port.	To ensure that appropriate sample size is obtained for the specific procedure.
9.	Turn the three way to the artery and port	To prevent the artery going into spasm.
10.	Slowly withdraw the appropriate volume of blood. Discard volumes vary according to arterial cannula placement: Peripheral artery cannula –takes 3ml and discard. Femoral artery cannula takes 5ml and dis-card.	The following volumes of blood are discarding to clear the "dead space "in the catheter.
11	Turn the three –way tap diagonally to close off both artery and flush.	To enable the syringe to be removed without blood loss. To prevent back flow of blood.
12	Remove syringe and discard.	To discard the contaminated sample.
13	Connect ABG syringe	The gas syringe is open to artery in order to withdraw the sample.
14.	Turn three way tap on to artery and port.	To open the syringe directly on to the artery.
15.	Slowly remove the recommended amount of blood.	To prevent artery from going into spasm ensuring the correct volume of blood mixes with the heparin present in the syringe.
16.	Turn three- way stop tap diagonally to close off both the artery and the flush.	To prevent hemorrhage and blood spillage
17	Remove the gas syringe and gently ratite syringe ,cover the syringe with an ABG cap	Send for analysis , and endure that the blood and heparin in the syringe are mixed.

S. No	Action	Rationale
	to prevent contamination with air	
18	Turn the three –way tap onto flush port, apply a sterile swab to the port flush squeezing the actuator.	The swab will absorb the blood preventing contamination; blood is cleared from the port. Reducing the risk for thrombosis and micro –emboli.
19.	Turn the three – way tap onto flush artery flush by gently squeezing the actuator. As cannula is flushed observer digital for signs of blanching, discoloration or complaints of pan from the patient.	Blood is cleared from the cannula and arterial tubing. To ensure early recognition of proximal or distal embolism.
20	Clean port with Chlorhexadine70%alcohol / alcohol swab.	To minimize risk of infection and prevent exsanguinations.
21	Apply the sterile luer lock cap and check in where it is secure	To prevent accurate result as soon as possible.
22.	Check whether pressure infuse cuff is inflated to 300mmHg	To prevent back flow of blood into circuit.
23.	Analyze or send to nearest blood gas analyzer and documentation.	To obtained accurate result as soon as possible.
24.	If any signs of proximal distal embolism. Assess for pain and discomfort at the insertion site, Check intentness of the cannula insertion site. Notify duty doctor of the deviant observation if any. Documentation result of The ABG	

E: Supportive documentations.

Clinical chart, nurses' note

3.2 Central Venous Access device: taking blood sample

Policy: the policy for central venous blood sampling starts that central venous blood sampling shall only be done by the doctor on duty or by a competent registered nurse. This procedure shall only be done on receipt of written instruction from the treating physician by specially trained nurse or doctor.

A: Definition

Central venous access device is one where the catheter is threaded into the central vasculature. A (CVC) tip will always be in the superior vena cava (SVS) or right atrium.

B: Purpose

1. To monitor the CVP in seriously ill patient.
2. For the administration of large amount of intravenous fluid of blood. e.g. cases of shock or major surgery.

3. To provide long access for.
   - Hydrating or electrolyte maintenance
   - Repeated administration of drugs, such as cytotoxic and antibiotic therapy.
   - Repeated transfusion of blood of blood [products,
   - Parental nutrition.
4. To provide long term access for:
   - Repeated specimen collection

C: Equipment

1. Sterile dressing pack
2. Alcohol based hand rub.
3. Blood collecting tubes (vacationers as per the blood tests prescribed).
4. Sterile disposable syringe 10ml
5. Inj; normal saline 0.9 % to flush the cvc after blood collection.
6. Alcohol swabs/ Chlorhexidine swab
7. Pair if sterile gloves or hand care.

Types.

1. The discard method: this is the standard method that is accepted at **INODAYA hospitals** and health city, where the first 6-10 ml of blood is withdraw and discarded. This ensures the removal of heparin or saline solution nut may result in excessive blood remove in small children or those requiring multiple samples.
2. Push – pull /mixing method: a syringe is attached to the catheter; the catheter is flushed with 0.9%sodium chloride. Then 6ml is withdraw and pushed back without removing the syringe; this is repeated three times. This removes any residual solution and reduces exposure to blood and there is no blood wastage. This method supposes that mixing of blood eliminates intravenous fluid and heparin from the catheter lumen. However it might be difficult to obtains enough blood for 3-4 times push –pull and there is a change for heamolysis with the agitation of blood.
3. Re- infusion method: this method is performed by taking the first 6ml of blood .capping off the syringe, taking the samples and then re infusing the blood first taken. it does not result in de-pleted blood volume but there is a risk of blood exposure , the discard syringe should not be confused with the sample for re infusion no- disconnect method using 2 connectors in series the distal aspiration and re infusion the proximal for sampling may also be used.

D: Procedure

S.No	Action	Rationale
1.	Explain the procedure to the client forms to ascertain sample bottles required. Check patient‘s identification using the unique patient identifiers as per hospital policy (UMR No and patient name) never use bed numbers.	To ensure that the client under standard the procedure and gives his/her valid consent. To ensure that the blood sample is taken the correct patient.
2.	Wash hands with soap and water or bactericidal hand rub.	To reduce the risk of cross infection.
3.	Prepare a try or trolley to take to the	To reduce risk of contamination of contents.

S.No	Action	Rationale
	bedside clean hands as above .open sterile pack and prepare equipment's.	
4.	If IV fluid is flow, switch off.	
5.	Where required, disconnect the administration set from the catheter and cover the end of the set with sterile cap.	To reduce the risk of contaminating the end of the administration set.
6.	Clean hands with alcohol based hand hub. Put on sterile glove/hand care. Cleaned the hub thoroughly with a Chlorhexadine based swab or an alcohol swab. Allow to dry.	To minimize the risk of introducing infection into the catheter, and prevent contamination of practioner's hands with blood. To enable the disinfection process to be completed.
7.	In the syringe ample method • Attach a 10 ml syringe to the port. Open the port/ released the clamp and withdraw 5-10 ml blood. • Close the line and remove the syringe. • Attach a new syringe of appropriate size. Not less than 10cc unclamp and with draw the required amount of blood. • Decant blood into sample bottles.	To remove blood heparin and intravenous fluid from the "dead space' of the catheter samples from this 'dead space " are likely to cause inaccuracies in blood tests. To discard contaminated sample and prevent the sample.
8.	Flush with 10ml blood 0.9% sodium chloride, using the push –pause method (i.e. 1ml at a line) still bold is removed and the line will clear	To create turbulence, ensure the removal of all blood in the catheter and prevent occlusion.
9.	Reconnect the administration set. Unclamps the catheter and recommence infusion.	To prevent the catheter from clotting between use.
10.	Ensure that the blood sample have been placed in the correct containers and agitated as necessary to prevent clotting label them with patient name number date of birth et. And send them to the laboratory with the appropriate forms. (to make certain that the apelike correctly).	Avoids confusions.

E: supportive documentations

Clinical chart, nurses notes

Measures to try to dislodge the tip include asking the patient to:

- Cough and breathe deeply
- Roll from side to side
- Raise his/her arms
- Perform the Valsalva maneuver if not asking contraindicated.

Pinch – off syndrome occurs when a central venous catheter inserted via the percutaneous subclavian site is compressed by the clavicle and first rib and aspiration blood becomes difficult. The tip of the catheter may be covered by fibrin sheath. This may be resolved with rapid flushing with 0.9 % sodium chloride or a dilute of heparins. Occasionally this result in persistent withdrawal occlusion and May required a fibrinolytic agent to remove the fibrin. However it may be necessary to take blood from the a peripheral l vein in this cause Note obtaining blood samples from central venous access devices can lead to inaccurate result especially in coagulation values, if the correct method is not flowed to ensure removal of any drug solution prior to sampling

3:3 Peripheral blood sample collection

Policy: the policy for peripheral blood sampling status that peripheral blood sampling shall only be done by the doctor on duty or by a complete registered nurse by performing a peripheral venous puncture. No routine blood sampling shall be done through the central venous line. This procedure shall only be done on receipt of written instructions from the treating physician by specially trained nurse or doctor.

A: Definition

The process of entering a peripheral vein with a needle using aseptic technique. to obtain sample by venipunture for routine lab infestations.

B: Purposes

1. 1 to obtain bold samples.
2. To determine any abnormalities in order to aid in diagnosis

C: Equipment

1. Sterile tray containing
   a. Cotton ball
   b. Clamp bottle
   c. Tourniquet
   d. Spirit/cleaning solution
   e. K- basin
   f. Sterile syringe and needle
   g. Specimen container
2. A pair of sterile glove.

D**: Procedure**

S. No	Action	Rationale
1.	Explain procedure to the patient	To ensure that the patient under standard the procedure and gives their valid consent.
2.	Position the patient comfortably.	
3.	Prepare a trolley or tray	To ensure that all the equipment is ready .
4.	Select and label specimen container	To ensure that the specimen do not get missed.

S. No	Action	Rationale
5.	Wash hand with bactericidal soap and water or bactericidal alcohols hand scrub	To minimize the risk of cross infection
6.	Wear gloves	To prevent infection.
7.	Assess the patient's vein to determine ideal puncture sit. Observe skin for any discoloration or skin lesion.	Select ac=vein that is visible palpable and fixed to the surrounding tissue
8.	Tie tourniquet proximal to the area chosen (tight enough to impede venous flow) 5to 15cm above the site.	A tourniquet when applied increases venous pressure and makes the vein more prominent and easier to entre.
9.	Palpate vein over the puncture site.	To ensure visibility.
10.	Cleanse the puncture site with sprit swab. Wipe in circular motion and allow the skin to dry before performing the facing upwards.	Cleaning the skin reduces the number of micro- organisms.
11	Hold the syringe with the bevel of needle facing upwards.	To ensure the right position of the needle
12	Approach the vein parallel to its direction at 15degree angle; insert the needle to the vein ,supporting hub	To withdraw blood.
13.	As blood appears in syringe , withdraw the plunger of syringe gently with steady suction until the required sample is obtained,	
14	If vacationer is used: Introduce the device into the vein and attach the vacationer into the hub for the required amount of blood to flow into the container.	This works by vacuum system. Using needle with hub enables us to collect large amount of blood for various lab investigations and avoid repeated pricks.
15.	Withdraw the needle once the vacationer are filled with blood.	
16	Release the tourniquet	To release the pressure.
17.	Withdraw the needle by placing dry sterile cotton over the puncture site and apply gentle pressure.	To ensure safety and to prevent bleeding.
18.	Detach the needle and discard into sharp container.	Follow biomedical waste disposal policy of the institution.
19	Transfer the blood sample into the container, label and specimen respective	For analysis

S. No	Action	Rationale
	laboratories.	
20	Make the patient comfortable	
21	Replace the equipment and wash hands.	To prevent infection.
22.	Document the procure and purpose for which sample is collect	To prevent duplication and for continuation of care.

E: Supportive documents

Clinical chart, nurses notes

3:4 Blood Culture

Policy: the policy for blood culture sampling states that blood culture shall only by done by the doctor on duty or by a competent registered nurse under strict aseptic precautions by performing a peripheral vein puncture . This procedure shall only be done on receipt of written instruction from the treating physician.

A: Definition

Collection of blood specimen for culture is a sterile procedure to obtained blood specimen , sterile techniques is used in whole of the procedure.

B: Purposes

1. 1 to identify diseases – causing organisms.
2. To detect the right antibiotics to kill particular microorganisms.

C: Articles needed

A tray containing

1. Sterile blood culture blottle-2 (one for aerobic anther for non- aerobic culture.)
2. Sterile disposable syringe 10ml -2-3
3. Mackintosh
4. Lab request slip
5. Betadine solution
6. Sterilium
7. K- basin
8. sterile gauze and cotton piece
9. sterile gloves
10. sterile towel
11. soap for hand washing

D: Procedure

S.No	Action	Rationale
1.	Check order to obtain laboratory request.	to obtain a base line data

S.No	Action	Rationale
2.	Identify the patient and explain the procedure to the patient	To obtain a consent for procedure
3.	Arrange all the articles needed for procedure near the patient's bedside.	In order to avoid wasting time during procedure.
4.	Provide privacy with screen	To provide comfort.
5.	Wipe hands with Sterilium solution /wash hands with soap and water	To prevent infection.
6.	Place the patient in lying position.	To provide comfort.
7.	Place the mackintosh under patient's arm	To prevent soiling of linen.
8.	Palpate the patient 's vein before drawing the sample	To initiate early access.
9.	Ware sterile gloves.	Aseptic precautions and to avoid contamination of sample.
10.	Clean the patient ;s arm with betadine solution about 2-3 inches around the area of collection	To prevent infection.
11.	Place the sterile towel under the patients arm	To make the environment sterile.
12	Instruct the helper nurse to open the syringe cover	To take the syringe
13.	Instruct the helper nurse to stabilize of the patient arm with without touching the draped cover	To obtain an easy access
14.	Take the syringe and check for its working conditions	To avoid leakage
15	Draw 8-10ml of blood	To send the appropriate amount of sample.
16.	Remove the syringe from the vein after collection	To finish the procedure.
17.	Place a sterile cotton piece folded into and Compress tight over the site.	To avoid bleeding from the site.
18.	Open the sterile blood specimen container without touching the inner surface of the cap, remove needle and expel the blood from the syringe to the container and seal it.	To prevent infection
19.	Label the container with patient's name details and patient's hospital number	To avoid misplacement of samples.
20	Send lab request along with the sample	To do the appropriate test.

S.No	Action	Rationale
21	Transfer the sample immediately to microbiology lab	To avoid in testing
22.	Disposes of the syringe in red and needle as a unit into an appropriate sharps container.	To promote waste management
23	Record the time of the procedure and the sire the samples are taken in the nurse record	To document the procedure for further reference.

Drawing blood culture sample from central line catheter
Procedure

S. No	Action	Rationale
1.	Check order to obtain laboratory request	To obtain a base line date.
2	Explain the patient	To obtain a consent for procedure.
3.	Arrange all the articles needed for procedure near the patient's bedside.	In order to avoid wasting time during procedure.
4	Provide privacy with screen	To provide comfort.
5	Wipe hands with Sterilium solutions	To prevent infection
6.	Wash hands with soap and water	To prevent infection
7	Were glove in both hands	To prevent infection
8.	Place the patient inlaying position	To provide comfort
9.	Place the mackintosh under patient's central line	To prevent soiling of linen
10	Place sterile towel over the mackintosh under patient's central line area	To prevent soiling of linen
11	Instruct the helper nurse to open the syringe cover to take the syringe	to take the syringe
12	take the syringe and check for its working conditions	To avoid leakages
13	Open the bunk of patient central line and clean the opening of the central line with betadine solution	To prevent infection
14	Inset the syringe release adaptor and withdraw and collect 3-3ml of blood and discard the blood , then collect 8-10ml blood for samples collection	To send the appropriate amount of sample.
15	Close the adaptor, remove the syringe from the	To finish the procedure.

S. No	Action	Rationale
	central line after collection and recap the line.	
16	Check line for any leakage	To prevent any leakages of blood
17	Open the syringe blood specimen container without touching the inner surface of the cap remove needle and expel the blood from the syringe into the container and seal it.	
18	Label the container with patient's name details and patient's hospital name	To avoid misplacement of samples.
19	Send to microbiology lab along with the request	To de the appropriate test
20	Transfer the sample immediately	To avoid delay in testing.
21	Dispose of the syringe and needle as per until policy	To promote waste management
22	Record the time of the procedure and the site where the sample ware taken in the nurses record.	To document t the procedure for further reference.

E: Supportive documentations

Clinical cart, nurses notes.

Note do not refrigerate blood culture if there is a delay in transporting to laboratory.

3:5 Collections of Swabs

Policy: swab collection shall be done for detection of specific infection and for surveillance purposes. This procedure requires a written instruction or an approved hospital policy.

WOUND SWAB FOR CULTURE

A: Definition

It is collection of wound exudates /discharge for laboratory examinations.

B: **Purposes**

To identify aerobic and anaerobic organisms present in the wound.

C: Articles

1. Cotton applicators
2. Culture tube or container for transporting the specimen
3. Laboratory requisition form
4. Sterile gloves.

D: Procedure

S.No	Action	Rationale
1.	Check the physician's order	Ensure the right procedure is done on right patient.
2.	Identify the procedure	To ensure that the patient understand the procedure
3.	Explain the procedure to the patient	To ensure that the patient understand the procedure
4.	Screen the bed and provide privacy.	To reduce anxiety
5.	Wash hands with bactericidal soap and water or bactericidal alcohol hand scrub put on sterile gloves.	To minimize the risk of cross infection.
6.	Expose the wound area.	
7.	Using the cotton –tipped applicators, swab and collect as much exudates as possible from the center of the lesion.	Swabbing the surrounding skin alter the findings.
8.	Place the swab immediately in appropriate trans port culture tube and send to laboratory labeled clearly, specifying the anatomic part from where the specimen Was obtained.	Clear labeling aids in accurate reporting of the test.
9.	Male the patient comfortable	
10.	Replace the equipment and wash hands.	To prevent cross infection
11.	Document the procedure and purpose for which sample is collected.	To prevent duplication and for continuation of care.

E: Supportive documents

Clinical chart, nurses notes.

SPUTUM FOR CULTURE

Policy: the sputum sample collection shall be done for patient with instruction for sputum investigation to be carried out. The selection of container shall be done depending on the test to be carried out. The sputum sample can be collected for inspection when required without a written instruction.

A: Definition

It is the collection of coughed out sputum for culture to identify respiratory pathogens.

B: Equipments

1. Sterile specimen container
2. Sputum
3. Tissue paper
4. Sterile glove

5. K –basin
6. Suction catheter (optional)
7. Suction apparatus (optional)

C: Procedure

S.No	Action	Rationale
1.	Check the physician 's order	
2.	Identify the patient	Ensure that the right procedure id done right patient.
3.	Explain the procedure to the patient that the specimen to be taken from sputum, coughed up from back of the throat or lungs.	To ensure that the patient under standard the procedure.
4.	Screen the bed provide privacy	To reduce anxiety
5.	Wash hands with bactericidal soap and water or bactericidal alcohol hand scrub put on sterile gloves.	To minimize the risk of cross infection.
6.	Instruct the patient to take deep breath and then cough out deeply	I help loosen the secretions and obtain adequate specimen.
7.	Explain the patient to cough and spit the sputum into the labeled container without touching the inside of it.	To prevent contamination of the specimen.
8.	Close the container without touching inside of the lid	
9.	Provide the patient tissue paper and a comfortable positions	To promote patient comfort.
10.	Provide mouth care if patient need it or encourage patient to carry out mouth hygiene	Removes unpleasant taste in mouth.
11.	Replace the equipment and wash hands'.	To prevent cross infection.
12.	Document the procedure and purposes for which sample is collected.	To prevent duplication and for continuation of care.
Note: it is preferable to collect early morning sputum before bushing /rinsing the mouth.		

D: Supportive documents

Clinical chart, nurses notes.

3:6 Urine sample collection

Policy: the policy for obtaining g urine specimen states that urine specimen shall be obtained for patient with a written instruction for any urine investigation to be carried out. The selection of contains for urine specimen shall be taken after consideration the type of investigation to be carried out.

A: Definition

The urine specimen collection is a procedure used to obtain a sample of urine from a patient for diagnostic tests.

B: Purposes

Urine samples can be used for many different things.

They can be used detect recent drug use.

- Blood in the urine
- Protein in the urine
- Sugar in the urine for an indication of diabetes
- Diagnosis of urinary tract infection.

E: Equipment

1. Swab saturated with isopropyl alcohol 70%
2. Gate slip
3. Sterile syringe and needle
4. Specimen container
5. Clean glove

D**: Procedure**

S. No	Action	Rationale
1.	Explain and discuss the procedure with the patient.	To ensure that the patient understands the procedure and gives his/her valid consent.
2.	Screen the bed.	To ensure the patient's privacy.
3.	Only if there is no urine in the tubing clamps the tubing below the rubber cuff until sufficient urine collects.	To obtain an adequate urine sample.
4.	Wash hands using bactericidal soap and water or bactericidal alcohol hand rub.	To reduce risk of infection.
5.	Clean the access point with a swab saturated with betadine	To reduces risk of cross- infection
6.	Using sterile syringe and needle aspirate the required amount of urine form the access point. Needle sampling port: insert the needle into the port at an angle 45 degree and aspirate the required amount of urine withdraw the needle. Needless sampling port: insert the syringe firmly into the centre of the sampling port. Aspirate the required amount of urine and disconnect the syringe.	If the catheter bag or tabbing is punctured If causes leakage carrying organisms with it. Specimen collection from the catheter bag may give false result due to organisms proliferating there. To reduce the risk of the needle going straight through the tubing. To reduce the risk of needle stick injury. `

S. No	Action	Rationale
7.	Urine collection for culture investigation: when patient is self voiding: • Midstream urine is collected for obtaining specimen for culture urine after washing the perineum with soap and water. • Sample is sent to microbiology lab immediately.	Contamination of urine with organisms is minimal in midstream urine.
8.	Re clean access point with a swab saturated with 70% isopropyl alcohol.	To reduce contamination of access point and to reduces risk of cross – infection.
9	Place the specimen in a sterile bactericidal soap and water.	To ensure that only organisms for investigation are preserved.
10	Wash and dry hands with bactericidal soap and water	To reduce the risk of cross- infection.
11	Unclamp if necessary	To allow drainage to continue
12.	Make the patient comfortable	
13.	Label the container and dispatch it (with the complete request from) to the laboratory as soon as possible after sample is taken to allow more accurate result from culture.	To ensure the best possible conditions for laboratory tests.
Urine collection for Routine investigation:		
14.	When patient is on catheter • Collect the urine from the urobag. Send the sample immediately to biochemistry lab along with the request	If self voiding • The perineum is cleaned with soap and water urine is collected in clean container and immediately sent to lab. • Send the sample immediately to biochemistry lab along with the request.
Urine collection 24hours urine investigation		
15.	When patient is on catheter • Obtain a5 liters can from the lab • Explain the procedure to the patient. • Empty the urosac and discard the urine and document the time. • From then on, all the urine form the urosac is measured and periodically added into the	If self voiding • Obtain a5liters can from the lab • Explain the procedure to the patient. • Instruct the patient to void, discard the urine after measuring it for filling in the output chart. Document the time of voiding as the start of sample collection time

S. No	Action	Rationale
	can. • Complete the urine collection at the same time it was stated the previous day. • Send the sample immediately to biochemistry lab along the request.	• Instruct the patient to void into the urinal or bedpan and inform the nurses, who in-turn will measure before adding into the 24hrs collection specimen. • Complete the sample collection at the time it was started the previous day by ending with the patient voiding. • Send the sample immediately to biochemistry lab along the request

E: Supportive documents

Clinical chart, nurses notes

3: 7 Assisting with obtaining a papanicolaou (PAP) smear

Policy: Pap smear collection shall be done for detection of cervical pathology. This procedure required a written order and performed by a doctor or by a registered nurse having master's degree qualification in obstetrics and gynecology nursing.

A: Definition

It is cytologic examination of desquamated tissue to differentiate normal anaplastic cells and it is also a widely used cancer screening test.

B: Purposes:

1. To detect cervical and vaginal carcinomas
2. To perform routine screening and diagnosing disorders of reproductive system.

Methods for obtaining pap smear

1. Slide method
2. Liquid method (Thin preparation)

C: Articles needed

1. A glass slide
2. A sterile Ayre's spatula
3. Cusco's speculum
4. A pipette
5. A sterile cotton swab
6. Ether /95% alcohol solution(1:1)
7. Spray fixative
8. A graphite pencil
9. Light source
10. K-y jelly.

D: Procedure

S.No	Action	Rationale
1.	Check the doctor's order.	To obtain specific instruction.
2.	Explain the procedure to the client.	To ensure that the patient under standard the procedure.
3.	For patients who are within the child bearing age this test is to be done 10-20days after the first day of Last menstrual period (LMP) and not when menstruating or bleeding.	To prevent abnormal findings.
4.	Instruct the patient not douche for 2-3 days before the test.	To prevent exfoliation of cells.
5.	Instruct the patient not to use vaginal medication or vaginal contraceptives during the 48hours before the examination .intercourse to be avoided the night before the examination.	To prevent false test result
6.	Instruct the patient to empty her bladder and rectum before examination	To ensure comfort during the procedure.
7.	Collect the following information from the patient: a. Age b. Use of hormones therapy, birth control pills or contraceptive devices. c. Past vaginal surgical repair or hysterec-tomy. d. All medication taken including herbal medication. e. Any radiation therapy. f. Any other pertinent clinical history like previous abnormal PAP smear, signs of in-flammation or bleeding.	To identify whether [patient is adolescent, pregnant or post menopausal women. Hormones and contraceptives devices can alter the flinging. Some medication may alter the test result.
8.	obtain the requirement of the procedure	To conduct a safe and uninterrupted procedure.
9.	Using the graphic pencil, label the ends of the slide with the patient name and the collection site.	To prevent investigation errors.
10	Ask the patient to undress from waist down	To perform the procedure.
11.	Position the patient in a Lithotomy position	To ensure good/ visibility and promotes

S.No	Action	Rationale
	on examination table and drape.	comfort and privacy.
12	Wash hands with bactericidal soap and water or bactericidal alcohol hand scrub put on sterile gloves.	To minimize the risk of cross infection.
13	Lubricate and insert a sterile Cus Cus's speculum.	
14.	a. Endcervical smear: Insert a sterile cotton swab into the cervical os and route it 360degree. Leave the swab in placed for 10-20 seconds. Remove the swab and smear on to a glass slide. Fix it immediately. Fixative must be applied to the slide before drying of the specimen. b. Ectocervical scraping: Insert Aye's spatula into the cervical os rotate or scrape the entire surface at the squamocolumnar junction. Remove the spatula and smear onto a glass slide. Fix it immediately. c. Cervical scraping : Insert the pointed edge of a wooden Ayre spatula into the cervical os and the spatula 360degree. Speared the cervical scraping on a glass slide fix it with an either 95% alcohol solution and dry the slide. A cervix brush sampling device may be used, and it is recommended to be rotated a full 180 degree to improve the sampling for abnormal cervical cells. d. Vaginal pool : Using the blunt side of a wooden Ayre spatula, scrape the vaginal floor behind the cervix, spread the vaginal poor secretion on a glass slide , spry or soak them in fixative and dry the slide. Vaginal fluid is obtained for suspected endometrial cancer or for a hormonal	

S.No	Action	Rationale
	evolution. e. Vulval smear: Using the blunt slide of a wooden Ayre spatula directly scrape the vulvar lesion. Spread the scraping on a glass slide and fix immediately with spray fixative.	
15.	Write the patient's age the reason for the study the LMP ,etc on the requisition form and send the slides to the cytology laboratory.	For documentations and to maintain records.

Note:

1. Smear that dry before fixative is applied cannot be properly interpreted.
2. Do not lubricate the speculum as it may distort cells.
3. Tetracycline or digitalis preparations can affect the appearance of squamous epithelium.
4. Blood mucosa or pus on the slide makes interpretation difficult.
5. A smear taken any time than in the mid menstrual cycle can result in abnormal findings.

E: Supportive documents : Clinical chart, nurses

3:8 .Specimen Transportation

Policy: specimen transportation should be done at the time, right way, to the right laboratory by using pneumatic system.

A: Definition

Transportation of clinical specimen to the laboratories under special attention after safely packing the material

B: Purposes

1. To avoid contamination of the specimen
2. To prevent spillage of specimen
3. To endure specimens collected in appropriate containers.
4. To prevent infection caused by improve handling of specimen.

C: Types of specimens.

1. Blood
2. Cerebrospinal fluid (CSF)
3. Sputum
4. Urine
5. Stool
6. Throat swab
7. Bone marrow
8. Wound swab

D: Types of specimen transportation:

1. Hand – carried transportation
2. The pneumatic tube system

E: Guideline for transportations of specimen

1. Close the container tightly so the its contents do not leak during transpiration
2. Label and date the container appropriate and complete the requisition form.
3. Arrange for immediate transportation of the specimen to the laboratory
4. Missing or inadequate identification.

F: Criteria for rejection of specimens

1. Insufficient quality
2. Specimen collected in an inappropriate container
3. Contamination suspected
4. Inappropriate trans or storage
5. Unknown time delay
6. Heamolysed blood sample.

G: Hand – carries transportation

The specimens that are carries by hand from the place of collection to the laboratory in a specific closed container with proper labeling of the samples

G (a): Specimens carried by hand

1. Blood transfusion components
2. Cerebro spinal fluid (CSF)
3. Histology sample
4. Arterial blood Gas
5. Coagulation samples
6. Urine
7. Routine blood samples
8. Stool
9. Sputum

G (b) Procedure

S.No	Action	Rationale
1.	The samples should be collect in the appropriate containers meant for that particular sample.	To maintain appropriate medium or the sample.
2.	Label the samples with sample name. UMR NO, date time of collection clearly. To be covered with zip lock covers.	To avoid error sin sample identification. `
3.	Keep the sample in the tight closed containers	To prevent spillage and infection.
4	the requisition form should be filled and	Enables cross checking of the samples

	sent along with the samples	collected
5.	Samples to be transported immediately after the collection	To prevent altering the actual concentration of sample

G (c) specimen storage

I. Biopsy sample;

- Send immediately to lab (cytopathology, histopathology) as per the need
- Frozen section samples are analyzed immediately by sending the request along with sample stating "frozen section ".
- Fine needle aspiration samples are sent for cytological study
- Tru- cut needle aspiration studies are sent for cytological study

II. Skin grafts

Spilt thinness skin grafts can be stored by wrapping the skin graft in gauze impregnated with normal saline and labeled with patient's name and hospital number. it is stored in refrigerator (5-7 degree Celsius) up –to one week

I. **Aspirated fluid (Lumbar puncture , thoracentesis and abdominal paracentesis**

- All samples are collected in sterile containers and labeled with date time, patient's name and number.
- Three samples are collected and sent to various labs as per requirement. Always an extra specimen I collected and stored in refrigerator (5-7 degree Celsius) with the patient's label and hospital number. This may be preserved for further investigations purposes as colleting another sample will be difficult.
- Sample is send to appropriate labs with request. Three are hand carried and not sent by pneumatic tube system.

II. **Arterial blood gas analysis**

- Collection in a syringe which is heparinized
- As soon as the arterial blood is draw it is corked with a rubber or wooden cork which doesn't allow the gasses to escape /enter and thereby prevents changes in the blood gas values.
- Transported to the biochemistry lab without delay or analyzed using the ABG machine
- ABG result are immediately pinned up into the patient chart and notified to the intersivists.

H: The pneumatic Tube system

The pneumatic Tube system (PTS) is to facilitate the transport of clinical specimens to the biochemistry, hematology, blood bank, microbiology etc. The PTS is used to transport requisitions and samples between laboratory and wards. Carries must be closed securely at both ends.

Inclusion (can be sent PTS)	Exclusion (NOT to be sent by PTS)
*Blood culture samples may be sent using the PTS.	Any histology samples in formalin or cytology samples.
Ensure that screw type containers are used to collect urine samples to prevent leakage.	Blood and blood components for transfusions.
**urine sputum and other lab samples must be sealed in a zip/lock cover.	Blood of irreplaceable samples such as Cerebro spinal fluid (CFS) and frozen sections

Inclusion (can be sent PTS)	Exclusion (NOT to be sent by PTS)
Routine blood samples can go via the PTS as they use the vacationer	Samples that are known to be bio-hazardous.
Request forms must be sent separately in zip lock cover.	Arterial blood gas analysis.
The system in available 24 hours a day, 7days a week.	Those more than5lilograms.
*validation required for coagulation and bloods culture studies by the laboratory personnel. ** 24hours urine samples should not send thorough the PTS	

H: (a) Procedure for specimen transportation through PTS

S.No	Action	Rationale
1.	Ensure that all contents are correctly labeled and loaded.	To prevent errors in sampling
2.	No items are to be placed in the system unless they are within the carries	To ensure proper lodging of carriers.
3.	Only one carrier is to loaded in the port.	To prevent lodging of carriers
4.	Only entre PTS carriers into the station.	Ensures better functioning
5.	Ensure that the carriers are padded with foam.	To prevent sample spillage.
6.	Endure that the sample that are sent within the zip lock covers are filled with air before sealing.	To ensure safety
7.	Li zip lock covers are not available bubble bags may be used for transfer.	To prevent spillage of sample contents.
8.	Ensure that both the ends of the carriers are securely closed	To ensure cross checking of samples sent
9.	Ensure that all contents are correctly labeled and loaded.	To ensure cross checking of samples sent
10.	No items are to be placed in the system unless they are	Ensure safe and proper method of transport

Note: For urgent samples: during the day time, the laboratory should be notified of urgent samples by telephone .it should also be noted that an “urgent “label be written or stuck on the lab request form.

Chapter -4
Therapeutic needs
4.1 Air way management and Oxygen administration

A. Definition

Airway management involves ensuring that the patient has a patent airway through which effective ventilation can take place.

B. Purpose

An obstruction airway means that the body is deprives of oxygen. If ventilation is not reestablishes, brain death will occur within minutes. The primary purpose of airway management is to provide a continuously open airway along with continuous sources of oxygen. When a patient is critically ill and requires an artificial airway and mechanical ventilation. It is the responsibility of the health care professionals caring for the patient to ensure that the airway is secure.

Another goal of airway management is to provide an artificial airway is as closed to the patient's natural airway as possible. This may mean mechanically performing physiological functions such as humidifying inspired air and removing secretions.

a. Precautions

Airway management is a necessity for any patient who has an artificial airway. if the patient is restless or agitated. It is recommended that activities such as suctioning or endotracheal tube care be postponed until either the patient is clam or a sedative has been given. This is to avoid inadvertent removal of the airway. However, if the patient's respiratory status is unstable, suctioning or repositioning the endotracheal tube should be done if it will stabilize the patient.

D. Description

Air way management consists of much more than just keeping the breathing tube in the correct position. The tube must be ménages so that it allows optimal ventilation with the fewest complications.

E. Humidification

Humidification of inspired air normally takes place in the upper respiratory tract. When this area is bypass by an artificial airway (such as an endotracheal or tracheotomy tube), humidification must be performed out –side the body. If supplemental oxygen is used, it will require humidification to prevent drying and irritation of the respiratory tract and to facilitate removal of secretions. There are humidification devices available that can be attaches to oxygen flow meters or ventilators

OXYGEN THERAPY

A: Definition

Oxygen therapy is the administration of oxygen at concentration greater than that in room air to treat or prevent hypoxia.

B: Purposes

1. To relieve dyspnea
2. To supplement a patient with oxygen safety and effectively.
3. To reverse hypoxemia.`
4. To prevent hypoxia

5. To alleviate anxiety associated with struggle to breath

C: Source of oxygen

1. Therapeutic oxygen is available from two sources
2. Piped in oxygen (central supply)
3. Oxygen cylinders

D: Types of oxygen administration

1. Nasal cannula / prongs method
2. Mask method
3. Venture method

i. Oxygen administration through Nasal cannula :

E. Equipments:

1. Oxygen source
2. Nasal cannula of appropriate size
3. O oxygen connecting tubing
4. Flow meter or regulator
5. Humidifier with distilled /dematerialized water
6. " No smoking sing boar"

F. Procedure:

S.No	Action	Rationale
1.	Explain the procedure to patient	To reduce the anxiety and get the co operation from the patient.
2.	provide e privacy	To prevent unnecessary exposure and to protect the patient's dignity.
3.	Ensure no source of fire near patient	To prevent fire accident
4.	Attach flow meter to oxygen source.	Enables to adjust oxygen flow.
5.	Attach humidifier to flow meter	Prevents drying of nasal mucosa.
6.	Attach nasal cannula to oxygen tubing and connect oxygen tubing to humidifier	To ensure the flow of oxygen.
7	Adjust flow rate as prescribed	To prevent hyper ventilation
8.	Plc tip of cannula into client nares and adjust elastic head band until cannula fits snugly	To secure the tubing
9.	Maintain sufficient slack on oxygen tubing and secure to bed.	To prevent patient discomfort.
10.	Assess patient's response to therapy comfort and function of equipment frequently	To look for any intolerance
11	Record time, method, flow rate and	To ensure patient tolerance to treatment.

	patient comfort.	

ii).Oxygen administration through mask method:

1. Equipment
2. 1oxygrn source
3. Face mask
4. Large bore tubing
5. "No smoking sign board".

Procedure

S.No.	Action	Rationale
1.	Explain the procedure to patient	To reduce the anxiety and get the co operation from the patient.
2.	Provide privacy.	To prevent unnecessary exposure and to protect the patient's dignity.
3.	Ensure no source of fire near patient.	To prevent risk of fire hazard.
4.	Set desire connection of oxygen and adjust flow rate as prescribed	To administer needed oxygen
5.	Place mask on patient face adjust head strap and ensure a tight seal	To fit the mask securely
6.	Initiate oxygen flow	To ensure stuffiest flow of oxygen
7.	Stay with patient to observe response	To identify any discomfort to the patient
8.	Assess patient's comfort and functioning of equipment frequency	To ensure proper functioning
9.	Record patient's response oxygen	To identify effectiveness of humidification
10	Observe signs and symptoms of oxygen toxicity	To prevent further complications

iii. **Oxygen administration through venture method:**

Equipment

1. Oxygen source
2. Flow meter
3. Venture mask for correct concentration
4. Colour adaptor .24%,28%, 31%, 35%, 40%, 60% (if high humidity desired)
5. Compressed air source and flow meter
6. nebulizer with sterile distilled water
7. large bore tubing
8. " no smoking sign board"

Procedure:

S.No	Action	Rationale
1.	Explain the procedure to patient	To reduce the anxiety and get the co operation from the patient.
2.	Provide privacy	Prevent unnecessary exposure and to protect the patient‘s dignity.
3.	ensure no source of fore near patient	To prevent risk of fire hazard.
4	Assess patient respiratory rate and level of consciousness. Determine patient’s latest arterial blood gas values.	Provide a baseline for future assessment.
5.	Connect mask and tubing to oxygen source.	Proper mask function depends on the mixing of sufficient amount and air and oxygen.
6.	Turn on oxygen flow meter and adjust to prescribed rate	To ensure the correct air /oxygen mix oxygen must set at the prescribed flow rate
7.	Check that oxygen is flowing out venturihole in mask	Ensure proper functioning of the venture mask
8	Place venture mask over the patient nose and mouth under the chin	To ensure correct fitting of the mask
9	Adjust elastic strap	To avoid any oxygen leak
10.	If humidity is used connect nebulizer to compressed air.	To maintain humidity of oxygen
11.	Assess patient condition, arterial blood gas and functioning of equipment at regular intervals.	To determine improvement in patient condition.
12	Record time of initiation of therapy ,oxygen concentration	To determine patient comfort with oxygen use.
13	Assess for signs and symptoms of oxygen toxicity.	To prevent complication,.

E: Supportive documents

Clinical chart nurses notes

4: 2 Endotracheal /Tracheal suctioning/ oral suctioning

A: Definition

It is the method of removal of secretions from the tracheobronchial tree with the help of suction apparatus.

B: Indicators:

1. To maintain patient airway free from secretions.
2. To prevent hypoxia.
3. To maintain patency if tubes.

4. To decrees airway resistance.
5. To improve gas exchange.
6. To reduce the risk of infection.

C: Equipments

- K 60suction catheter (size should be lesser than the size of the tracheotomy tube. Use the formula: Internal diameters of the tracheotomy tube divided by two and multiply by three.)
- Closed suction catheter
- Sterile bottled water for rinsing catheter
- 0.9% normal saline
- Suction apparatus (portable or wall suction) with tubing
- A pair of sterile gloves.
- Kidney tray
- Disposal face mask
- Goggles
- Clean gloves
- Disposable apron
- Syringe to instill normal saline

D: Procedure

S. No.	Action	Rationale
1.	Explain the procedure to the patient.	To relive anxiety and to gain co-operation
2.	Gather the equipments on a trolley and take to the bed side.	For ease of doing procedure and to save time.
3.	Position the patient in upright position.	To facilitate removal of secretion.
4.	Wear mask.	To reduce the risk of getting infection.
5.	Administer Nebulization and chest physiotherapy if the secretions are thick.	To loosen the thick tenacious sections.
6.	Check that the suction pressure is set to the appropriate level .(80-120mmHg)	The suction pressure should neither be too high nor too low. Excess pressure may cause damage to the tracheal mucosa and low pressure may not be sufficient enough to remove secretions effectively.
7.	Wash hands with bactericidal soap and water or bactericidal alcohol hand rub.	To reduce the risk of cross contamination.
8.	Wear the disposable apron .clean gloves and goggles.	To prevent self from getting infection.
9.	Hyper oxygenate the patient for three minutes.	Suctioning may cause the patient to develop hypoxia.
10	Open the end of the suction catheter pack and use the pack to attach the catheter to the	To reduce the change of

S. No.	Action	Rationale
	suction tubing .keep the rest of the catheter in the sterile packet.	contamination.
11.	Wear sterile gloves on dominant hand.	To prevent the risk of introducing microorganisms into the stoma site.
12	Turn on the suction source using the non dominant hand.	To dominant hand should be kept sterile.
13.	Instill normal saline into the tube before and during suctioning. (1ml tracheal suctioning and 3ml for ET suctioning.)	TO LOOSEN THE SECRETIONS.
14.	Remove the catheter from the sleeve and introduce the catheter to about one- third of its length until the resistance of the carina is fell or until the patient coughs.	This enables us to determine the depth until .where the catheter has to be inserted.
15.	When resistance is felt .withdraw catheter approximately one centimeter before applying suction placing the thumb over the suction port control and withdraw the remainder of the catheter gently.	Suction enables us to determine the depth until where the catheter has to be inserted.
16.	Do not suction the patient for more than one breath cycle, (10-15 second)	Over suction should be avoided as it can precipitate.
17.	Rinse the suction tubing by dipping its end into the sterile water bottle and Appling suction until the solution has rinsed the tubing through.	To clear the tubing so that proper suction can be applied.
18.	If the patient requires further suctioning repeat the above steps. Allow sufficient time to recover after every suction.	To prevent hypoxia.
19	Repeat the suction until airway is clear. Do not perform more than three suction attempts during one suction episode.	Repeated suctioning helps prevent droplet infection.
20	If closed suctioning technique is used Connect one end of the closed suction catheter top the wall suction apparatus. 1. Hyper oxygenate the patient for 3minutes 2. Unlock and insert the catheter until resis-tance is fell and apply negative pressure by holding on the button while the catheter is withdrawn from trachea. 3. Attach a syringe with sterile water in the port designed to flush the catheter. 4. Lock the end which allows the catheter into the trachea which opens the port to the flush-	Closed suctioning technique helps prevent droplet in Infection.

S. No.	Action	Rationale
	ing syringe .flush the catheter until it is clean.	
21.	Wrap catheter over the dominant hand and pull back glove over the soiled catheter, thus containing catheter glove and then discard.	To prevent contamination.
22.	Keep observing the patient through the procedure	To monitor for any complications.
23.	Administer oxygen immediately if the patient is oxygen dependent.	To provide for adequate oxygen saturation.
24.	Perform oral and nasal suction if required with suction catheter.	To clear secretions from the upper airway.
25.	replace equipment and wash hands	To reduce the risk of cross contamination.
26.	Document the time, color, amount, and consistency of secretion, patient, secretion, and cooperation.	For proper documentation .

E: Supportive documents

Clinical chart, nurses notes.

4:3 Tracheotomy care

A: Definition

It is the method of cleaning the tracheotomy site and changing dressing around tracheotomy tube using aseptic technique.

B: Purposes

1. To keep airway patent by removing secretion and crust formation.
2. To reduce respiratory tract infection.
3. To keep the surrounding skin clean, dry and free infection and irritation.
4. To teach patient and caregivers to take care of tracheotomy at home.
5. To promote aesthetic sense

C: Equipment

1. **Small dressing pack containing**

- K- Basin
- Small cup or gallipots
- Artery clamps(2)
- Thumb forceps
- Cotton balls
- (d) Gauze pieces
- Dressing pads.

Other equipments

- A pair of sterile gloves

- Tracheotomy tube brush
- Extra gauze and cotton pads
- K- 60 catheter
- Suction apparatus (wall suctioning/ portable)
- Cleaning solutions –betadine /normal saline/ hydrogen peroxide (if needed)
- Sterile water
- Clean gloves
- Disposable plastic apron and goggles
- Clanging brush

D: Procedure

S.No.	Action	Rationale
1.	Explain the procedure to patient relatives and obtain their valid consent.	To ensure that the patient under standard and to relive anxiety.
2.	Gather the equipment on a trolley and take to the bed side.	To keep the equipment within easy reach and to save time
3.	Provide privacy	To avoid unnecessary exposure
4.	Place the patient in supine position.	For easy of doing the procedure
5.	Wear disposable apron ,goggle ,and mask	To prevent cross infection.
6.	Wash hands using soap and water or use alcohol rub.	To minimize the risk of infection
7.	Open the dressing pack and pour normal saline into the dressing cup.	Normal saline can be used clean the area
8.	Open up extra gauze and cotton ball packets with and put into the dressing pack without contaminating the articles.	To maintain sterility of the articles.
9.	Wear sterile gloves	To reduce the risk of transferring infection.
10	Apply tracheal sectional if needed.	To remove secretions
11.	Clean around the stoma with 0.9% normal saline using gauze /cotton balls.	To cleanse the area the area around the stoma and reduce the risk of skin breakdown.
12.	Gently remove inner tube and place it in the cup with normal saline.	To clean the inner tube.
13.	Tracheotomy : 1. Clean the stoma with betadine in circular motion. 2. Clean form inner as per to outer aspect. 3. When cleaning a metal tracheotomy the metal tube is cleaned first followed by the ostomy and surround skin.	To prevent infection. To ensure the patient's comfort and to avoid pressure from the tube and skin irritation by tube.

S.No.	Action	Rationale
	4. Impregnate gauze with betadine and apply around the ostomy or use Vase-line gauze for application. 5. Perform tracheotomy dressing twice a day	
14.	Replace tracheotomy tapes if soiled checking that 1-2 fingers can be placed between the tapes and the neck	To secure the tube and ensure that the tapes are not too tight to or too loose thus decreasing the change of necrosis caused by excessive pressure from the tapes.
15.	Clean the inner tube using cleaning brush or pass the gauze piece through the inner tube and remove all the crusted secretions. Allow running water to flow freely through the tube.	To make the tube free of dried secretions.
16.	Hold edge of inner tube and gently insert into outer tube, ensure that the tubes are locked.	To ensure that the tube is secured properly.
17.	Replace articles and wash hands.	To minimize the risk of infection.
18.	Record the time solution used. Cleaning of the inner tube and mention the conditions of the site and about any abnormalities noticed.	For appropriate documentation

Note :if the patient unconscious , or unable to protect the stoma from entry of foreign particles due to other conditions then place wet saline gauze over the stoma.
E: supportive documents : Nurses' record, Intensive care flow chart

4:4 changing the Tracheotomy Tube

A: Definition

The tracheotomy tube is typically changed every 1-4 weeks to prevent mucosa build up. Howe ever with a newly formed tracheotomy ,tube changing should be avoided where possible for the first 5 days to enable the tact to become well established

B: Indication

For difficult or restricted passage of a suction catheter:

Contraindication: coagulopathy.

< 72hours after the first tracheotomy procedure

E: Equipment

- Sterile dressing pack
- Tracheotomy tape /tie

- Cleaning solution such as normal saline
- Lubricating jelly
- Disposable plastic apron

D: Procedure

S.No	Action	Rationale
1.	Explain and discuss the procedure to the patient.	To relive anxiety and to gain cooperation
2.	Gather all the equipment and prepare the dressing trolley.	For saving time and for ease of doing the procedure.
3.	Provide privacy	To make the patient comfortable.
4.	Wash hands or use alcohol hand rub.	To minimize the risk of infection.
5.	Position the patient in a semi- recumbent position with the neck extended.	For providing comfort to the patient to maintain a patient airway. Also extending the neck will make removal and insertion of the tube easier.
6.	Open the dressing pack and open and place the tracheotomy tube dressing into the pack	To reduce the risk of cross infection.
7.	Ware the goggles and apron.	To prevent spash of secretions while doing procedure as patient may cough.
8.	Clean the hands with bactericidal alcohol hand rub.	To minimize risk of cross infection.
9.	Were a pair of sterile gloves	To prevent contamination of the hands with sputum.
10.	Insert the piece of tie through the sliest on the flanges and pass the tie behind the flange next to the stoma.	To prevent the tie from occulting the passage the passage of air into the tracheotomy tube.
11.	If the new tracheotomy tube is cuffed check the cuff by inflating it with air and then fully deflate the cuff.	To check for air leak as it can cause spontaneous deflation.
12.	Insert the introducer or obdurate into the tracheotomy tube	To ensure that it passes through the tube easily and can be remove easily
13	Using the lubricating jelly, lubricate the tube sparingly and place on sterile dressing surface.	This helps easily inserting the tube To maintain the sterility of the tube.
14.	Suction the patient required.	The secretions that have accumulated above the cuff may be aspirated when the cuff is defeated suddenly.
15.	I the tube is in use is cuffed deflate the cuff	To aid removal of the tracheotomy tube

S.No	Action	Rationale
	slowly	otherwise it may cause injury.
16.	Remove the tube from the patient's neck while asking the patient to breathe out.	Conscious expiration relaxes the patient and reduces the risk of coughing. this can result in the unwanted closer of the tracheotomy.
17.	Using the clamp and gauze clean around the stoma site with normal saline gently,	To remove the superficial organisms and crusts. Due to constant moisture in this area, the skin is at risk of breakdown. So, skin, care is essential
18.	Insert a clean tube with introducer in place. Using an up and over action.	This follows the contour of the trachea and will be less traumatic.
19.	Remove the introducer immediately	The patient cannot breathe while the introducer is in place.
20.	Place the inner tube in position.	The inner tube can be changed as necessary when the outer tube is in position, thus minimizing the risk of trauma to the trachea and the stoma.
21	Tie the tape securely at the side of the neck.	The tube must be secured to prevent accidental removal. It must be tied such that it is easily accessible, at the same time, it does not cause discomfort to the patient.
22	Remove the gloves and ask the patient breath out on the palm of your hand.	Flow of air will be felt the tube is in correct position.
23	Make the patient comfortable	This procedure can cause trauma for some patient and it can result in coughing and discomfort .hence the nurse must provide reassurance and comfort.
24.	Replace equipment and wash hands.	To prevent cross contamination.
25.	Clean the soiled tube as per the manufacture 's recommendations	To remove the debris that may occlude the tube and become the source of infection.
26.	Watch for complications such as airway/respiratory compromise, trauma to trachea creation of false passage, hemorrhage and infection.	To identify and treat any complications at the earliest

E: Supportive documents:

1. Nurses notes
2. Progress notes.

4:5 Peripheral Cannula Insertions

A: Definition

A cannula is a flexible tube containing a needle (stylet) which may be inserted into a blood vessel (Phillips 2005; Weller 2005) .cannula are usually placed in the peripheral veins in the lower arm but may also be placed in the veins of the foot (pediatric age group) .however, veins of the lower extremities should not be routinely used in adults due to risk of embolism and thrombophlebitis

B: Indicators.

1. Short –term therapy of 3-5days
2. Bolus injection or short infusions in the outpatient /day care setting

Gauze sizes and average flow rates (using water)

Gauge(G)	Flow rate (ml/min)	General uses
14	350	Used in theater or in the emergency department for rapid infusion of blood or viscous fluids.
16	215	Used in theater or in the emergency department for rapid infusion of blood or viscous fluids.
18	104	Blood transfusions, parental nutrition, stem cell harvesting and cell separation, large volume of fluids.
20	62	Blood transfusion ,large volumes of fluids,
22	35	Blood transfusions ,most medications and fluids
24	24	Medications, short-team infusion,fragile vain and children.

C: Equipment

1. Sterile dressing pack
2. Various gauze sizes of cannula
3. Alcohol based hand rub
4. Alcohol based skin cleaning preparation
5. Extension set
6. Non –sterile well – fitting gloves
7. Hypoallergenic r\tape
8. 5ml syringe
9. 21 G syringe
10. 0. 9% sodium chloride solution 5ml

D: Procedure

S.No	Action	Rationale
1.	Explain and discuss the procedure with	To ensure that the patient under standard

S.No	Action	Rationale
	patient	the procedure and gives consent for the same.
2.	Assemble all the equipments necessary for Cannulation	To make sure that time is not wasted and that the procedure goes smoothly without interruption.
3.	Check all packaging before opening and usage.	To maintain asepsis.
4.	Wash hands using bactericidal soap and water or bactericidal alcohol hand rub before start of the procedure and allow hands dry	To minimize risk of infection.
5.	Check the patient hands for any loss of skin integrity and if need be, cover with a water proof dressing	To minimize the risk of contaminations.
6.	Ensure that the correct lighting, ventilation privacy and position of the patient are ascertained.	To ensure nurse – patient comfort and for adequate illumination during the procedure.
7.	Open the dressing pack and empty all needed equipment into the pack	To create a clean working area.
8.	Support the chosen limb on the pillow assess and select the vein	For patient comfort and easy access
9.	Select the device based on the size of the vein.	To reduce trauma or damage to the vein and to minimize the risk of phlebitis.
10.	Apply tourniquet.	To dilate the veins by obstructing the venous return
11.	Clean the patient‘s skin and the selected vein for least 30seconds using the alcohol based skin cleaning preparation and allow it to dry .DO NOT re- palpate the vein or touch the skin.	To maintain asepsis and remove skin flora.
12	Put on the gloves	To prevent the nurse from ay contamination with blood.

S.No	Action	Rationale
13.	Remove needle guard and inspect the device for any faults.	To detect faulty equipment, (bent or barbed, needles). Do not use the equipment if these are present and report to the concerned company.
14.	Apply manual traction on the skin a few centimeters below the proposed site of insertion.	To anchor and immobilize the skin. To provide counter tension that will facilitate smooth needle entry.
15.	Ensure that the cannula is facing bevel up position and place the device directly over the vein. Slide the cannula through the skin .inserting it at the right angle.	To ensure successful and pain free cannulation.
16.	Wait till the first flash –back of blood is seen in the flash –back chamber of the stylet.	To indicate that the needle is positioned within the vein
17.	Decreasing the angle between the cannula and the skin try to level the device by advancing the cannula into the lumen the vein,.	To stabilize the device and to parent damage to the walls of the vein.
18	Withdraw the stylet slight and wait for second flash back of blood in the shaft of the cannula.	To ensure that the cannula is still within a patent vein. (this is called the hooded technique
19	Maintain slight traction on the surface of the skin using the non- dominant hand, and using the dominant hand slowly advance the cannula off the stylet into the skin.	To make sure that the vein remains immobilized.
20.	Release the tourniquets	To decrease pressure within the vein
21	Apply digital pressure to the vein above the cannula tip and remove the stylet.	To prevent spillage of blood
22.	Dispose the stylet into the appropriate sharps container	To reduce the risk of needle –stick injury
23	Attach the extension set or the administration set flush the cannula with 0.9% sodium chlorines	To check patency.
24.	Observe for any signs of swelling or fluid	To check if the device is positioned correctly.

S.No	Action	Rationale
	leak. ask the patient if any pain or discomfort is present	
25.	Tape the cannula	To ensure that the device remains stable and secure.
26.	Discard the waste in appropriate containers	To ensure safe disposal of waste. to prevent injury to other staff. To prevent re- use of equipment.
27	Document date and time of insertion; site an size of cannula in the nurses notes, label the extension set with date, time, and initial.	To ensure adequate documentation and continuation of care.

E: Supportive Equipments

Clinical chart, nurses notes.

4:6 Transfusions of blood components

A: Definition

Administration of whole blood or any blood – components (plasma, packed, red blood cells or platelets)
Into the blood stream to correct or treat a clinical abnormality

B: Purposes

1. To raise the blood pressure.
2. To supply the constituents of blood in physiological proportions when patient has lost whole blood due to hemorrhage or when certain constituents of blood are decreased due to diseases.
3. To treat anemia.
4. To provide select cellular components as a replacement therapy (e.g., clotting factor platelets, and albumin.

C: Equipment

1. Blood administration set 170-200µm macro – aggregate filters.
2. Equipment for patient's intravenous access requirement (If necessary).
3. Blood procedure to be transfused
4. I.V stand

Note: all blood products that require leukocyte depletion are leuco- depleted at source by the blood.

D: Procedure

S.No	Action	Rationale
1.	Pre- administration check : Ensure that the component has been correctly prescribed, including, any special, requirement such as irradiated or CMV – negative blood and if the patient requires any other medications. e.g. diuretic pre-medication.	Prevention of Incorrect blood components transfused (IBCT) error; ABO incompatibility or non- irradiated CMV – positive product may cause a fatal reaction if transfused. Negative and positive status should always and in full and not as +or – as they may get defaced and be
2.	Confirm that blood has been typed and cross matched. Check ABO group and Rh type on label of container.	Prevention of incorrect blood components transfused (IBCT) error: ABO incompatibility or non- irradiated CMV- positive products may cause a fatal reaction if transfused.
3.	Record the patient's baseline vital signs temperature ,pulse, blood pressure and respirations	To ensure that any transfusion reaction can be immediately identified and managed appropriately due to changes in baseline.
4.	Check the expiry date of the component to be used.	To prevent the administration of outdated /expired blood products.
5.	Conduct a visual inspiration for the component to be used for signs of clumping, discoloration damage or leaks. Inspect the blood for gas bubbles abnormal color or any clots. Note: if there are any discrepancies at this point not proceed until they have been resolved.	Expired or damaged product must not be used To ensure an incorrect blood component transfused (IBCT) event does not occur).
6.	Positively identify the patient by asking him/her to state the following information: a. First name b. Surname c. Date of birth	This id final check of identity prior to transfusion and is absolutely vital in minimizing the risk of incorrect blood component transfused error.
8.	Check that the information on the compatibility label matches the details on the blood component.	

S.No	Action	Rationale
	Note: if there are any discrepancies at this point do not proceed until they have been resolved.	
9.	Where necessary obtain venous access. A large catheter such as 18or 19 gauges is preferred.	To enable transfusion to administered (blood is thicker and sticker than IV fluids)
10	No agent other than 0.9 % saline should be administered through the same lumen as a blood product	Other agent may damage the product components and precipitate transfusion complications
11	Prime the blood administration set with the required product.	It is not necessary to prime the product saline unless there is a concern about device patency. Dextrose should never be used to prime a set or flush the blood administration set following a transfusion as this can cause heamolysis.
12	Set up infusion via a volumetric infusion pump if appropriate.	Some older infusion pumps can damage the red cells. Blood admonition sets for specific infusion pumps must always be used. If none are available the standard blood administration set should be used via gravity and the rate monitored as necessary.
13	Set the desired infusion rate as indicated by the blood product being used and the patient's condition. a. Red – cell administration can range from 5-10 minutes in acute blood loss to the maximum time of 4hours in elderly patient. b. Platelets fresh frozen plasma and cryoprecitate should be transfused over 30-60 minutes and must be completed within 4hours. c. The rate of administrations is indicated by the patient's clinical conditions &	

S.No	Action	Rationale
	dictated by current guidelines of puncturing the blood component.	
14	Take and record the patient's temperature and pulse, blood pressure and respiratory rate every 15 minutes during the first hour, followed by every 30 minutes till the transfusion is completed.	Adverse reactions will often occur during the first 15 minutes of transfusion. Complaints of serious anxiety, transfusion site pain, loin pain, back ache, fever, skin flushing or urticaria could be indicative of a serious transfusion reaction. in such cases the transfusion should be stopped immediately and urgent medical advice sought.
15	Record the start and finish times of each unit. All units must be completed within 4hours of commencing.	Continuation of a transfusion beyond 4 hours increases the risk of transfusion reaction and complications.
16.	Take and record the patient 's vital signs on completion of each init (during multiple transfusion)	This forms a record of the patient 's demonstrate fluid overload in at risk patient .
17.	Record the volume of the product transfusion on the patient's fluid balance chart.	Monitoring of fluid balance can demonstrate fluid overload in at- risk patient.
18.	Carefully file all transfusion documentation in the patient's clinical record. in the line with hospital policy and return information on the final fate of each blood product to the hospital laboratory manager.	To maintain the clinical record for patient safety.
19	Return any unused blood product to the laboratory within the 30minutues of issue.	Unused products may be re- allocated .if returned in time, refer to local guidelines.
20	Keep all empty blood compounds bags in the clinical area until the transfusion is completed .once the transfusion is completed, dispose of in clinical waste.	Access to transfused bags is generally only useful for acute reactions.
21	For patient receiving ongoing transfusion support the blood administration set	Minimize risk from macro aggregates and bacterial contamination.

S.No	Action	Rationale
	should be changed every 12 hours.	

Documentation and reporting

Document all the event right from the consent taking till the post observes of the patient. During blood transfusion monitoring is done with the specific form- blood transfusion monitoring form.

Filled blood transfusion reaction from to be sent to the blood bank with the details of the type of reaction. Time and duration and the discontinuations of the transfusion and the blood waste without transfusion.

Transfusion reaction if identified to be reported and documented.

E: Supportive documents

General Instructions

1. Rate of flow should be slow for the first 10 minutes .if there are no signs reaction. Transfusion rate may be increased to required rate.
2. Rate of flow must be slower for elderly patients and those who have heart disease.
3. If there is any sign of complications stop transfusion immediately. Keep I.V line open by connecting with normal saline and notify physician.
4. Blood administration sets should be changed at least every 12huors of after second

   Unit for a connecting transfusion
5. Platelet transfusion may be administered using a standard blood administration set or a dedicated platelet administration.
6. Platelets should not be administered through an administration set that has been used for red cells or other blood compounds as this May cause aggregation and retention of platelets in the set/ device.
7. DO NOT add medications to be blood /blood components.
8. DO NOT give % dextrose or ringer's solution, ONLY normal saline 0.9%is compatible.
9. DONOT store blood /blood components in ward.
10. At GHHHC the blood bag should be returned within 30 minutes of receiving time.
11. All the sued transfusion set and related waste must go to the RED bag including the unused.

4:7 Blood Donation

A: Definition

Blood donation is carried out when a person voluntarily agrees for blood to be drawn with the Intention of donating it The donated blood may be used for transfusions or it may be separated into individual components to be used as required.

B: Purpose

To define the equipment and procedure for donor phlebotomy and blood collection

C: Articles needed

1. Blood collection bag with anticoagulant

2. Blood collection monitor to weight the during collection.
3. Sterile cotton swab.
4. Tube sealer medicated dressing plastic clamps
5. Emergency drugs and IV fluids.

D: Procedure for blood collection

I. Identification of donor

- The donor is examined for weight and Hb and certified for blood donations.
- The donor is made to lie down comfortably on the blood donor couch.
- The donor is identified by a."Blood donor Number" which is serially assigned.
- The number is affixed on the blood donor card. donor register , and the blood bag and the tubes for sampling purposes
- The date of collection is also written on the blood bag.

II. Inspection of the bag:

The blood collection bag is inspected for any leakage, breaks, turbidity of the anti coagulant, and fungal growth over the bag.

iii) **Vein puncture:**

Procedure:

S.No	Action	Rationale
1.	Blood is drawn from a central vein in the antecubital fossa space that is free from skin lesion. A blood pressure cuff if inflated to 40-60 mm of Hg. this males the vein.	To identify a good vein This makes the vein more prominent
2.	The skin is cleared thoroughly with alcohol swab moving from centre towards periphery.	To maintain cleanness and prevent infection.
3.	The blood bag is placed on the blood concentration monitor	To prevent the blood collection more than350-400ml.
4.	The pressure device is reinflated and the pressure maintained at about 80-100mm Hg	During the venipunture reduce to 40-60mm Hg Once good flow is established.
5.	Blood is collected by a single clean venipunture	To avoid many picks and pain to donor.
6.	The needle and tubing's are anchored using adhesive tape once blood starts to flow freely.	To avoid misplacement
7.	During the proves ,the donor is asked to open and close the fist	To enhance blood flow.
8.	The total volume of blood collected should not be more than 10.5m/kg	To avoid hypovolemia
9.	Once the collection is complete the tube is clamped and the pressure cuff is released and the adhesive tapes are removed	To ease the patient at the earliest.
10	Pressure is applied to the donor site with cotton and donor is asked to fold his	To prevent blood leakage.

	elbows for at least 2min.	
11	The donor couch is lowered and the donor is allowed to rest.	To prevent immediate complications.
12.	The tube is clamped and sealed with electric sealer.	To avoid wastage of blood
13	The bleeding site is re checked and once bleeding is ceased, an adhesive tape is applied firmly over the phlebotomy site	To ensure the bleeding is stopped.

E Post Donation care:

- The donor is made to relax in the refreshment room and kept under observing for at least 15minutes.
- The donor is offered juice and snacks
- The donor has to be continually under observation till he leaves the blood bank.

4:8 Ear Irrigation

Policy

A: Definition

It is the method of washing out the external auditory canal with a steady stream of liquid under pressure.

B: Purposes

1. To relieve congestion, inflammation and pain in the ear.
2. To administer antiseptics
3. To remove foreign bodies, earwax or discharge.
4. To evaluate the vestibular functions.

C**: Equipment**

A tray containing the following articles

1. A small sterile tray having eye dropper or sterile ear syringe (rubber bulb syringe ,ordinary syringe with rubber tip or irrigation can with tubing and rubber tip) and cotton applicators.
2. Warm sterile solution in sterile jug as ordered.
3. Ear medicine if ordered.
4. Lifting forceps.
5. Small protective sheet and towel.
6. Otoscope.

D: procedure

S.No	Action	Rationale
1.	Explain the procedure to the patient.	To relive anxiety and to gain cooperation
2.	Collect the equipment and take to the bedside.	For ease of doing procedure and save time
3.	Provide privacy.	Reduce embarrassment for the patient.
4.	Position the patient in dorsal	Reduces embarrassment for the patient. And to

S.No	Action	Rationale
	recumbent with head near to the edge of the edge of the bed and slightly turn the head to the side in which ear irrigation has to be done.	retain solution in the ear.
5.	Spread the mackintosh/under pads under the patient.	To product the linen from soiling.
6.	wash hands	To prevent contaminating and cross infection.
7.	Don sterile glove	To maintain sterile technique while doing the procedure.
8.	Open the sterile tray and pour the irrigating solution into the solution container or irrigating can.	for use during the procedure
9.	Keep the kidney tray under the ear to be irrigated.	To collect the draining solution form the ear
10	Clean the outer ear with cotton applicators dipped in cleaning solutions.	To ensure that the surrounding areas are clean.
11	Test the temperature of the solution.	The solution should be at room temperature.
12.	Grape the pinnae and pull up and back for adults and down and back for infants /child.	This helps in straightening out the ear canal. Anatomical difference persist between the adults and children
13.	Insert the tip of the syringe or irrigation set1/4 inch or 05cm into the auditory canal	There should be space for the return flow. To prevent trauma to the auditory canal.
14.	Pour the solution into the ear by gently directing the flow of solution into the upper ear and ensure that it does not fall on the tympanic membrane and exert a gentle pressure in case of syringe. If irrigation can is used do not elevate the can more than six inches/15cms.	Pressure on the tympanic membrane can cause damage and lead to deafness.
15.	Continue to irrigate till the ear is clear of discharge.	To ensure that ear is cleaned completely.
16.	Assess the clearances of canal with an otscope.	To check whether the ear is cleaned completely.
17.	Ensure that the patient lies on the side in which the irrigation was done	To drain out any remaining solution.
18.	Dry the ear with sterile cotton applicator.	To ensure clean and dry surface.
19	Instill medicine into the ear (if ordered and insert the cotton loosely)	Therapeutic purposes. To prevent the cotton from absorbing the entire medicine.
20.	Remove the equipment and wash hands with soap and water.	To promote comfort.

S.No	Action	Rationale
21.	Replace the equipment and wash hands with soap and water.	To prevent cross infection.
22.	Record the date, time solution used and conditions of the ear before and after the procedure	To monitor difference and detect trends; any irregularities should be brought to the attention of the appropriate senor nursing and medical teams.

E: supportive documents

Clinical chart, nurses notes.

Note:

If any is used for irrigation, do not use a large syringe as it difficult to control and may exert undue pressure in forcing the fluid into the auditory canal.

4:9 Eye Irrigation

A: Definition

It is the method out the conjunctive sac by a steady stream of liquid under pressure

B: purposes

1. To relieve congestion, inflammation , and pain in the eye
2. To administer medications
3. To provide hot or cold applications to the eye.
4. To remove foreign bodies, chemicals or discharge.
5. To prepare the patient for eye surgery.

C: equipments

A tray of containing eye dropper

1. A small tray containing eye dropper.
2. Syringe
3. Irrigation container
4. Solution container
5. Cotton swab
6. Eye dressings
7. Warm sterile solution in a sterile jug.
8. Eye medicine if ordered.
9. Lifting forceps
10. Small protective sheet
11. Towel
12. Kidney tray.

Solutions that can be used to irrigate the eye:

1. For antiseptic purpose 1%silver nitrate and 3. %boric acid.
2. For cleaning, plan water and normal saline.

D: procedure:

S.No	Action	Rationale
1.	Collect all the articles and take to the	To save time.

S.No	Action	Rationale
	bedside.	
2.	Explain the procedure and purpose to the patient.	To relive anxiety and to gain co- operation
3.	Position the patient in sitting or lying with head inclined toward the eye to be irrigated.	To prevent the solution from flowing into the other eye and contaminating it.
4.	Spread the towel and sheet properly.	To prevent clothes and bed form being wet
5.	Ensure that proper lighting is provided	To enable e proper visualization.
6.	Wash hands	To prevent contamination.
7.	Open the sterile tray and pour the irrigation solution into the container and little on the cotton swabs.	
8.	Plug the ears with little dry cotton	To prevent entry of water into the ears.
9.	Place the kidney tray near the cheek and ask the patient to hold it tightly to the check.	To relive the draining solution.
10	Stand at the head end of the patient.	For ease of doing the procedure.
11	Test the temperature of the solution by pouring a drop on your hand.	The solution should not be too hot. Preferably must be at the body temperature.
12.	Ask the patient to close the eyes and allow a small amount of the solution to run over the eyelids.	To allow time to adjust to the feel of water flow.
13	Separate the eyelids gently with thumb and forefinger of your left hand by exerting pressure on cheek and brow (orbital ridge)	To enable proper washing of the eyes. The patient will be unable to hold the eye open once irrigation starts.
14.	Hold the tip of the eye dropper about 2cms above the eye.	To prevent hurting the eye.
15.	Direct the flow of the solution from inner catnthus to outer canthus of the eye.	To wash away from the lacrimalpunctum and prevent contamination of the other eye.
16.	Ask the patient to look up while irrigating the lower lid and look down while irrigating the inner part of the upper lid and continue to irrigate till the eye is cleared of discharge, chemical or foreign body	To ensure that the whole area including fomices are irrigated.
17.	Dry the lids with sterile dry cotton swabs.	For patient comfort.
18.	Repeat the procedure on the other eye.	For complete irrigation.
19.	Clean and dry the face with a clean towel	For patient comfort.
20.	Perform eye care using sterile cotton ball one for each eye, dipped in saline ,wipe	Therapeutic consideration.

S.No	Action	Rationale
	from inner canthus to outer canthus using one stroke, instill medications and apply dressings if ordered.	
21.	Clean and replace the equipments.	To prevent risk of cross infection.
22.	Wash hands.	To prevent the risk of cross infection.
23.	Record the date and time of procedure solution used, medication instilled and if dressing has been done , condition of the eye before and after the procedure	To monitor differences, detect trends and prevent duplication of care; any irregularities should be brought to the attention of the appropriate senior nursing and medical teams.

Eye care in a patient who is paralyzed or who has no eye response to any stimuli

1. Clean both eyes with cotton ball dipped in saline and wipe from inner canthus to outer canthus .use one cotton ball for each stroke.
2. Tapping of eyes is mandatory in these patients to avoid exposure keratiis.
3. Use X tapping technique for closing eyes after giving eye care.

4:10 Bladder Irrigation

A: Definition

It is the method of washing out bladder with sterile solution is injected and withdrawn through the same catheter.

B: Purposes

1. To clean the bladder and maintain the patency of the urinary catheter by removing decomposed urine, bacteria, pus, mucosa, and blood, clots.
2. To relieves congestion, swelling and pain in the bladder.
3. To instill medications.
4. To restore the normal bladder functions.
5. To arrest hemorrhage and prevent clot formation after surgery
6. To prepare the patient for bladder surgeries.
7. To promote healing
8. To medicate the lining of the bladder for antiseptic irrigation

C: Equipment

- Catheterization set or small dressing pack
- Sterile towel pack
- Pair of sterile gloves
- Irrigation solution (normal saline – 1litre)
- Asepto syringe /toomy's syringe
- Double lumen foley's catheter with drainage tubing and drainage bag position
- Sterile pint solution
- Antiseptic solution
- Kidney tray
- Bath sheet/ protective sheet/ mackintosh
- Adhesive and scissors.

D .solution used

- Normal saline 0.9%
- Boric acid solution 2%

- Sterile water
- Mercury components in low concentration
- Silver preparation in low concentration
- Sodium nitrate 1:8000 to prevent clot formation.
- Acetic acids 1:4000 to treat pseudomonas infection.

E .Temperature of the solution

1. For cleaning purpose – body temperature is enough
2. For other conditions temperature can range from 100-110 F

Procedure

S.No	Action	Rationale
1.	Check the doctor's order	To know the type and amount of solution to be used.
2.	Collect all the articles and take to the bed site	To save time and to prevent cross contamination
3.	Provide privacy.	To prevent drafts and to gain cooperation.
4.	Arrange the irrigation stand nearby if needed.	To be able to conveniently hang the irrigation solution.
5.	Explain the procedure to the patient.	To relive anxiety and to gain cooperation
6.	Provide adequate lighting.	To provide for good visibility.
7.	Place the mackintosh /protective sheet under the patient and drape the patient appropriately.	To prevent soiling of the sheets and to prevent unnecessary exposure of the patient.
8.	Empty the drainage bag	Top get the correct measure of solution in the drainage bag.
9.	Wash hands.	To prevent cross contamination and reduce the changes of infection.
10	Open the sterile dressing pack and pour the cleaning solution in the dressing cup and normal saline in the kidney tray.	To prevent contamination and to keep the solution ready for use.
11.	Do surgical scrub of hands and don sterile gloves.	To prevent contamination while doing the procedure.
12.	Clean the area as for catheterization	To prevent contamination from the resident and transient flora.
13	If open method is sued: Clean the catheter –drainage junction with antiseptic swab	To prevent micro organism from entering through the junction
14.	Disconnect the catheter from drainage tubing and pinch the catheter.	To prevent spillage.
15	Warp the end of the drainage tube with sterile gauze and secure the tubing safety.	To prevent contamination.
16.	Place the tip of Asepto syringe to the	To prevent positive pressure within the aseptic

S.No	Action	Rationale
	container, aspirate solution and expel the air	syringe.
17.	Attach the tip of Asepto syringe to the	To instill the solution.
18.	Instill the solution slowly using slight pressure on the bulb of syringe. Instill about 80-100ml solution at a time.	To prevent trauma to the bladder mucosa.
19.	Remove the syringe and allow the solution to drain by gray into the drainage bag. Do not use suction to withdraw the solution	This can cause trauma to the bladder mucosa.
20	Repeat until the return flow is clear or the amount ordered has been used.	To ensure proper removal of the block.
21	Clean the end of catheter with antiseptic swab and connect the drainage tubing to the catheter	To prevent contamination.
22.	If closed method is used: Hang the solution bottle on irrigation stand at a height of about 6-8 inches above the level of meatus and allow expelling air from the irrigating set.	To allow the solution to flow by gravity.
23.	Don sterile gloves.	To prevent contamination from the hands.
24.	Clean the connection between the small lumen and the lumen plug with antiseptic solution.	To dislodge micro organisms' from the area.
25.	Remove the lumen plug, pinch the lumen and connect the irrigating tubing to the lumen	
26.	for continuous irrigation: Unclamp irrigation tube and adjust the flow rate similar to an iv infusion. Along with urine will continuously flow out of catheter into the drainage bag. the solution	To allow for proper amount of solution to drain into the bladder.
27.	For intermittent irrigation: Clamp the drainages tubing and unclamp the irrigation tube, adjust the flow rate allow a specific amount of solution to flow.	To ensure that proper amount of solution flows into the bladder.
28.	Remove gloves and discard into the kidney tray.	For proper disposable of waste.
29.	Remove mackintosh and change linen if needed.	To avoid discomfort to the patient.
30.	Measurement of urine 1. Empty the urine into the urinal	To calculate the exact amount of urine drained.

S.No	Action	Rationale
	2. Subtract the irrigation solution volume from the total output to calculate the amount of urine drained..	
31.	Observe and measure urine in urosac for Color, amount, consistency and blood clots.	To note for any abnormalities.
32.	Replace the equipment, wash hands.	To prevent infection.
33.	Record time, amount, and kind, of solution, used, character of return flow and response of the patient.	To identify any abnormalities and repot immediately.

Note:

1. Record the time ,treatment given amount kind of solution used and nature of return flow
2. Monitor the amount of urine with drawn
3. Send the specimen to the lab to note the reaction.

G: Supportive documents : Clinical chart, nurse'snotes.

4:11 Urinary Catheterization

A: definition:

Urinary cauterization is the insertion of a specific desired tube into the bladder through the urethra using aseptic technique. For the purpose of draining urine, the removal of clots /debris and the instillation of medication

B: Indications

Male: in the male, urinary cauterization may be carried out for the following reasons.

- To empty the contents of the bladder, e.g. before or after abdominal, pelvic or rectal surgery and before certain investigations.
- To determine residual urine.
- To allow irrigation of the bladder
- To bypass an obstruction
- To relive retention of urine.
- To introduce cytotoxic drugs in the treatment of papillary bladder carcinomas.
- To enable bladder function tests to be performed and for diagnosis procedures.
- To measure urinary output accurately, e.g when a patient is in shock, undergoing bone marrow `transplantation or receiving high –dose chemotherapy.
- To relive incontinence when no other means is practicable.

Female:

- To empty the bladder before childbirth, if though necessary.
- To avoid complication during the insertion of radioactive material (e.g cesium) into the cervix/ womb

C: Equipment

- Sterile catheterization pack containing gallipots, receiver, low-linting swabs, disposable towels.
- Disposable pad.
- Sterile gloves.
- Selection of appropriate catheters
- Sterile anesthetic lubrication jelly.
- Universal specimen container.

- 0.9%sodium chloride or antiseptic solution.
- Bactericidal alcohol hand rubs.
- Hypoallergenic tape or leg strap for tethering.
- Sterile water
- Syringe and needle.
- Disposable plastic apron.
- Drainage bag and stand or holder.

D**: Procedure**

S. No	Action	Rationale
1.	Explain and discuss the procedure with the patient.	To ensure that the patient understand the procedure and gives his valid content.
2.(a)	Screen the bed.	To ensure patient's privacy. To allow dust and airborne organisms to settle before the field is exposed.
(b)	Assist the patient to get into the supine position with the legs extended.	To ensure the appropriate area is easily accessible.
(c)	Do not expose the patient at this stage of the procedure.	To maintain patient's dignity and comfort.
3.	Wash hands using bactericidal soap and water or bactericidal alcohol hand rub	To reduce the risk of infection.
4.	Prepare the trolley, placing all equipment required on the bottom shelf.	The stop shelf acts as a clean working surface.
5.	Take the trolley to the patient bedside, disturbing screen as little as possible.	To minimize airborne contamination.
6.	Open the outer cover of the catheterization pack onto the top shelf of the trolley.	To prepare equipment.
7.	Using an aseptic technique, open the supplementary packs.	To reduce the risk of introducing infection into the bladder.
8.	Remove covering sheet and position a disposable pad under the patient's buttocks and thighs.	To ensure urine does not leak onto bedclothes.
9.	Clean hands with a bacterial alcohol hand rub.	Hands may have become contaminated by handling the outer packs.
10.	Put on sterile gloves.	To reduce risk of cross infection.
11.	Place sterile towels across the patient's thighs and under buttocks.	o create a sterile field
12.	Wrap a sterile topical swab around the penis .retract the foreskin, if necessary and clean the glans penis with 0.9%sodium chloride or an antiseptic solution.	To reduce the risk of introducing infection to the urinary tract during catheterization.
13.	Insert the nozzle of the lubricating jelly	Adequate lubrication helps to prevent urethral

S. No	Action	Rationale
	into the urethra. Jelly may also be inserted using a 10ml syringe. Squeeze the gel into the urethra .remove the nozzle and discard the tube. Massage the gel along the urethra.	trauma. use of a local anesthetic minimizes the discomfort experienced by the patient,
14.	Squeeze the penis behind the glans, raising it until it is totally extended. Maintain grasp of penis until the procedure is finished.	This manoeuvre straightens the penile urethra and facilitates catheterization. Maintaining a grasp of the penis prevents contamination and retraction of the penis.
15.	Squeeze the penis and wait appropriately 5minutes.	To prevent anesthetic gel from escaping. to allow the anesthetic gel to take effect
16.	Place the receiver containing the catheter between the patient's legs. Insert the catheter for 15-25 cm until urine flows.	The male urethra is appropriate 18 cm long
17.	If resistance is felt at the 3external sphincters, increase the traction on the penis slightly and apply steady, gentle pressure on the catheter. Ask the patient to strain gently as if passing urine.	Some resistance may be due to spasm of the external sphincter. Straining gently helps to relax the external sphincter.
18.	Either remove the catheter gently when urinary flow ceases: When urine begins to flow, advance the catheter almost to its bifurcation. Gently inflate the balloon according to the manufacture's direction, with 5-10ml of sterile water through the other port , having ensured that the catheter is draining properly beforehand. Withdraw the catheter slightly and attach to the drainage system. Support the catheter if the patient desires by using a specially designed support or by using a porous tape. Ensure that the catheter does not become taut when patient is mobilizing or when the penis becomes erect. Ensure that the catheter lumen is not occluded by	Advancing the catheter ensures that it is correctly positioned in the bladder. Inadvertent inflation of the balloon in the urethral trauma. To maintain patient comfort and to reduce the risk of urethral and bladder nick trauma . care must be taken in using adhesive tapes as they may interact with the catheter material To avoid pulling of catheter.

S. No	Action	Rationale
	the fixation device or tape. Anchor the catheter to the lower abdomen with a micropore.	
19.	Ensure that the glans penis is clean and then reduce or reposition the foreskin.	Retraction and constriction of the foreskin behind the glans penis (paraphomosis) may occur if this is not done.
20	Make the patient comfortable .ensure that the area is dry.	If the is left wet or moist secondary infection and skin irritation may occur.
21	Measure the amount of urine.	To be aware of bladder capacity for patient who have presented with urinary retention. To monitor renal function and fluid balance, it is not necessary to measure the amount of urine if the patient is having the urinary catheter routinely changes.
22.	Take the a urine specimen for laboratory examination , if required,	
23.	Dispose of equipment according to intuition biomedical waste segregation policy	To prevent environment contamination , yellow is the recognized color for clinical waste
24.	Draw back the curtains.	
25	Record information in relevant documents this should include reasons for catheterization, date and time of catheterization, Catheter type length and size, .amount of water instilled intro the balloon batch number manufacture any problems negotiated during the procedure, a review date to assess the need for continued cauterizations or date of change of catheter.	To provide a pint of reference or comparison in the event if later queries. To provide a pint of reference or comparison in the event if later queries.

Urinary catheterization: Female

S no	Action	Rationale
1	Explain and discuss the procedure with the patient,	To ensure that the patient under standard the procedure and gives his valid consent
2(a)	Screen the bed.	To ensure patient's privacy. To allow dust and air bone organism to settle before the field is exposed.
B	Assist the patient to get into the supine position with knees bent hips flexed and feet resting about 30cm	To enable genital area to be seen

S no	Action	Rationale
	apart.	
C	Do not expose the patient at this stage of the procedure	To maintain the patient‘s dignity and comfort.
3.	Ensure that a good light source is available,	To enable genital area to be seen clearly.
4.	Wash hands using bactericidal soap and water or bactericidal alcohol hand rub.	To reduce risk of cross infection.
5.	Put a disposable apron.	To reduce risk of cross –infection from micro-organisms on uniform.
6.	Prepare the trolley placing, all equipment required on the bottom shelf.	To reserve top shelf clean working surface.
7.	Take the trolley to the patient’s bedside, disturbing screen as little as possible.	To minimize airborne contamination.
8.	Open the outer cover of the catheterization pack and slide the pack of on the top shelf of the trolley.	To prepare equipment
9.	Using an aseptic technique open supplementary packs.	To reduce risk of introducing infection into the urinary tract.
10.	Remove cover that is maintaining the patient’s privacy and position a disposable pad under the patient’s buttocks.	To ensure urine does not leak onto bedclothes.
11.	Clean hands with a bactericidal alcohol hand rub,	Hands may have become contaminated by handling of outer packs, etc.
12.	Put on sterile gloves.	To reduce risk of cross infection.
13	Place sterile towels across the patient’s thighs.	To create a sterile field.
14.	Using low- linting, separate the labia minora so that the urethral meatus is seen. One hand should be used to maintain labia separation until cauterization is	This maneuver provides better access to the urethral orifice and helps to prevent labia contamination of the catheter

S no	Action	Rationale
	completed.	
15.	Clean around the urethral orifice with 0.9% sodium chloride or a antiseptic solution. Using single downward stocks.	Inadequate preparation of the urethral orifice is a major cause of infection following cauterizations. To reduce the risk of cross- infection.
16.	Insert the nozzle of the lubricating jelly into the urethra. Squeeze the gel into the urethra, remove the nozzle and discard the tube. Allow 5 minutes for the gel's antiseptic and anesthetic effect to occur.	Adequate lubrication helps to prevent urethral trauma. Use of a local anesthetic minimizes the patient's discomfort.
17.	Place the catheter in the receiver, between the patient's legs.	To provide a temporary container for urine as it drains.
18.	Introduce the tip of the catheter into the urethral orifice in an upward and backward direction. If there is any difficulty in visualizing the urethral orifice can be palpated in the anterior wall of the vagina. The index figure is then positioned just behind the urethral orifice. This then acts as a guide, so the catheter can be correctly positioned. Advance the catheter until 5-6cm has been inserted.	The direction of insertion and the length of catheter inserted should bear relation to the anatomical structure of the area.
19.	Either remove the catheter gently when urinary flow ceases ,or: a. Advance the catheter 6-8cm b. Inflate the balloon according to the manufacture's direction having ensured that the catheter is adequately by instilling 5-10ml sterile water through the other port. c. Withdraw the catheter slightly and connect it to the thigh. d. Tape the catheter to the inner aspect of the thigh e. Support the catheter if the patient desires, either by using a specially designed support.	This prevents the balloon from becoming trapped the urethral. Inadvertent inflammation of the balloon within the urethra is painful and causes urethral trauma.
20.	Make the patient comfortable and ensure that the area is dry.	If the area is left wet or moist, secondary infection and skin irritation may occur.
21.	Measure the amount of urine	To be aware of bladder capacity for patients who have presented with urinary retention. To monitor

S no	Action	Rationale
		renal function and fluid balance the amount of urine if the patient is having the urine catheter routinely changed
22.	Take a urine specimen for laboratory examination if required.	For further information. See the procedure on collection of a catheter specimen of urine, below
23.	Dispose of equipment in a yellow plastic clinical waste bag and seal the bag before moving the trolley.	To prevent environmental contamination. Yellow is the recognized color for clinical waste.
24.	Draw back the curtains.	
25.	Record information in relevant documents; this should include reasons for catheterization ,date and time for cauterizations, catheter type length and size , amount of water instilled into the balloon , batch number manufacture , any problems negotiated during the procedure and are view date to assess the need for continued cauterizations or date of change of catheter.	To provide a point of reference or comparison in the event of later queries.

Maintenance of out put

1. Measure the exact amount of urine which was drained in the K- basin during catheterization and from the urobag.
2. Document it in the output Colum of the intake and output chart.
3. If bladder irrigation is done then the total output from the urobag is recorded in the output column and the urine drained into another column by subtracting the volume of solution used for bladder irrigation.
4. The urine from the urobag is emptied once in3hours in the wars and hourly in IUCs.
5. When a closed system (urometer) is used urine is measured every hour and tilted back into the urobag. The urobag is completely emptied when it is full.

Removal of catheter:

During removal of the catheter ask the patient to take a deep breath, ensure that sterile water which was instilled during insertion is aspirated following which the tube can be gently pulled out.
Failure to do this may cause injury to the tirgon muscle.

Special instructions

1. Foley's catheter is and urobag is changed once in a week.
2. Silicon urinary catheter is changed once a month or until infection is noted.
3. Date and time of insertion of the catheter is labeled.
4. Do not let the urobag collect urine more than 2/3 rd
5. When patient is on bed, anchor the urobag below hip level, for gravity drain and prevent return flow.
6. When patient is ambulated onto a chair, the urobag is anchored to the arm of the chair below hip level. It should not be left lying on the floor.

7. When patient is allowed to walk around, instruct patient to avoid urobag touch the floor, as it can cause ascending infection.

4: 12 intermittent self Catheterization

A: introduction

Clean intermittent self catheterization is done by the patients with bladder dysfunctions. This may be taught to the patient upon discharge from hospital and will help them to return to normalcy. An in-dwelling or Foley catheter remains in place until a patient is able to void completely and voluntarily. With this technique a single use catheter I introduced for a short period to drain the bladder (5-10minutes). When the bladder is empty. Remove the catheter

B: Indications

1. Neurogenic bladder dysfunction.
2. For long- term management of patient with incompetent bladders.
3. For immediate relief of acute bladder distension.
4. To obtain a sterile urine specimen
5. To assess for residual urine after voiding.
6. To instill a medication.

C: Equipment

- Appropriate sized catheter for male /female patient
- Lubricating gel
- Clean container (e.g. Plastic envelope) for catheter.

D: Procedure

S.No	Action	Rationale
1.	Wash hands using bactericidal soap and water are bactericidal alcohol hand rub.	To reduce risk cross infection
2.	Take up a comfortable position depending on mobility (e.g. sitting on toilet standing with one foot placed toiled seat.)	Top facilitate insertions of intermittent catheter.
3.	Spread the labia	To reduce the risk of introducing infection
4.	Open catheter packing or container if using uncoated catheter water – soluble lubricating gel may be applied to the surface of the catheter. If using coated catheter pre- soak it in water to active the slippery coating.	To prepare catheter and to ease insertion.
5.	Find the urethral opening above the vagina gently insert catheter into the urethra taking care not to touch the part of the catheter entering the body.	To reduce risk of introducing an infection.
6.	Drain the urine into the toilet are	To ensure that the bladder is completely emptied,.

	suitable container when the urine stops flowing slowly remove the catheter and then halting if more urine starts to flow	
7	Before removing the catheter from the urethra put a figure over the funnel end of the catheter and then removes the catheter from the urethra.	To trap urine in the catheter and prevent spillage on the clothing are the floor.
8.	Hold the catheter over the toilet or suitable container and remove finger the funnel end to release the trapped urine.	To prevent spillage on to clothing or the floor
9.	Wash hands with soap and water	To reduce the risk of infection.
10	If this procedure is done therapeutically, documentation may be done in the nurse's chart, mentioning the type of catheter used amount of urine drained ,patient cooperation and an assessment of the perineum and urine	To avoid duplication of care and to promote continuity of care.

Self Catheterization: Male

S .No	Action	Rationale
1.	Wash hands using bactericidal soap and water or bactericidal alcohol hand rub.	To prevent infection.
2.	Stand in front of a toilet a low bench with a suitable container if it is easier.	To catch urine
3.	Cleans glans penis with plain water. If the foreskin cavers the penis it will need to be held back during the procedure	To reduce the risk if infection.
4.	Open catheter packing or container. If Using uncoated catheter water – surface lubricating gel may be applied to the surface of the catheter. If using a coated catheter pre- soak it in water to activate the slippery coating.	To prepare catheter and to ease insertion
5.	Hold penis with the non- dominant hand upwards your stomach.	To prevent trauma to the pennis scrotal junction.
6.	Hold the catheter with the dominate	The prostate gland surrounds the urethra just

S .No	Action	Rationale
	hand. Being careful not to touch the part of the catheter entering the body . And gently insert into the opening of the urethra. Advance the change of felling as the catheter passes through the prostate gland and into the bladder. It may be a little sore on the first few occasions only.	below the neck of the bladder and consists of much firmer tissue. This can enlarge and cause and obstruction. Especially in older men.
7.	Drain the urine into the toilet or suitable container .when the urine stops flowing slowly remove the catheter, halting if more urine starts	To ensure that the bladder is completely emptied.
8.	Before removing the catheter from the urethra put a finger over the funnel end of the catheter and then removes the catheter the catheter from the urethra.	To trap urine in the catheter and prevent spillage on to clothing or the floor.
9.	Hold the catheter over the toilet or suitable container and remove finger from the funnel end to releases the trapped urine.	
1	Wash hands with soap water	To reduce the risk of infection.
11.	If this procedure is done therapeutically documentation may be done in the nurse's chart , mentioning the type of catheter used amount of urine drained ,patient cooperation and an assessment of the perineum and urine,	To avoid duplication of care and to promote continuity of care.

E: Supportive Documentation

Clinical chart, nurse's note

4:13 procedure for the assessment of risk for pressure ulcer development

A: definition

It is the method of assessing the clients who are at risk development pressure ulcers.

B: Procedure

1. To help in early identification of pressure ulcers.
2. To provide intervention to reduce the development of pressure ulcer.
3. To reduce the factors placing the clients at risk.

C: Equipments

- Risk assessment tool(branden scale)
- Documentation record.

D: Procedure

S.No	Action	Rationale
1.	Assess the patient upon admission to the unit.	To provide a baseline date.
2.	Inspect the condition of the skin and examine all the bony prominences, noting the skin integrity.	To identify any early sign of pressure ulcers.
3.	If redness or discoloration is noticed use thumb to gently palpate the area of redness and apply gentle pressure to elicit blanching response.	If blanching response does not occur with pressure , it indicates that a stage 1pressure ulcer is present
4	Observe and remove all the constrictive devices such as braces. Cast, restraints', which can impede blood, flow to the skin.	Improve circulation to the skin can lead to development of pressure ulcers.
5.	Position the patient such that the patient does not lie on tubes and drainage device.	To prevent pressure over the skin and bony prominence and thus prevent pressure ulcers.
6.	Use a validated risk assessment tool or the Braden scale.	To get consistent and reliable data about the client's risk of developing pressure ulcers.
7.	determine the patient's ability to respond meaningful to pressure related discomfort,	Clients who cannot verbalize their discomfort are at higher risk of developing pressure ulcers.
8.	Assess the degree to which the patient skin exposed to moisture	Content moisture over the skin leads to softening of the skin and can cause easy breakdown.
9.	Evaluate the patient's level of activity	The lesser the activity of the patient higher is risk of developing pressure ulcers.
10	Determine the patient ability to change	Patient who are unable to change position. Must be turned every two hourly to relive pressure.
11	Identify the patient .s favorable position.	To provide more comfort to the patient.
12.	Assess the nutritional pattern of the patient (check weight and laboratory values.)	Patient with poor nutritional pattern tend to develop pressure ulcers easily due to lack of necessary nutrients.
13.	Assess the fluid intake of the patient	The skin of developing
14.	Evaluate the presence of friction and shear.	To remove unnecessary friction as this can cause damage to the skin.
15.	Evaluate all the skin components give a score with reference to the Braden scale.	This helps in implementing appropriate interventions as per the client's needs.
16.	Add the scored of all the six components to obtain a total score,	
17	Categorize the client as being at mild moderate might or very high risk for developing pressure ulcers.	

S.No	Action	Rationale
18	Implement intervention according to the risk category identified	
19.	Make referral to dietitian physiothepists or others as needed.	A collaborative approach to patient care is necessary for at risk patient.
20.	Provide assistive devices to prevent the development of pressure	Device like pillows and pressure relieving mattresses are helpful in preventing development of pressure ulcers.
21	Documentation the score the patient in the Braden scale and the nurse's record. Documentation the intervention that have been instituted to reduce the risk of pressure ulcers development	Avoids duplication of care. Report the condition of the patient to the concerned authorities.

E: supportive documents
Clinical chart, nurses notes

INTERGITY RISK ASSESSMENT TOOL

Patient name ---------- **UMR number ----------**

Age/Sex----------

SKIN INTERGITY RISK ASSESSMENT TOOL					Assessment dates			
Sensory perception	**Completely Limited**	**limited**	**lightly limited**	**No Impairment**				

Ability to response meaningfully to pressure related discomfort.	Unresponsive (does not moan finch or grasp) to painful stimuli due to diminished level of consciousness or sedation OR Limited ability to feel pain over most of body surface.	Responsive only to painful stimuli, cannot communicate discomfort except moaning or restlessness OR Has sensory impairment which limited the ability to fell pain or discomfort over1/2 of body	Responds to verbal commands but cannot always communicate discomfort or need to be turned. OR Has some sensory impairment ability to feel pain or discomfort in 1-or 2 extremities.	Responds to verbal commands. Has no sensory deficit which would limit ability to feel or voice pain or discomfort.				
Moisture 1.	**Constantly moist: 2.**	**Very moist :**	**3.occasionally moist:**	**4.rarely moist:**				
Degree to which skin is moisture to moisture.	Skin is kept moist almost constantly by perspiration, urine etc. Dampness is detected every time patient is moved or turned.	Skin is often but not always moist. Linen must be changed at last once a shift.	Skin is occasionally moist, requiring an extra line change appropriately once a day.	Skin is usually dry requires changing at routine intervals.				
Activity 1.	**Bedfast; 2.**	**Chair fast**	**3.walks occasionally**	**4. walks frequently**				

Degree of physical activity	Continued to bed	Ability to walk severely limited or non-existent cannot bear Own weight and /or must be assisted into chair or wheel chair.	Walks occasionally during day, But for every short distance. With assistance spends majority of each shift in bed or chair	Walks outside the room at least twice a day and inside room at least 2 hours during waking hours.				
Mobility 1.	**Completely immo- 2. bile;**	**Very limited:**	**3.slightly limited:**	**4.No limitations:**				
Ability to changed and control body position.	Does not make even slight changes in body or extremity position without as-sistance.	Makes occasionally slight changes in body or extremity position but unable to make frequent or significant changes independently	Makes frequent though slight changes in body or position independentl y	Makes major and frequent changes in position without assistance.				
Nutrition 1.	**Very poor:**	**2.Probably inadequate:**	**3.Adequate:**	**4.Excellent**				
Usual; food intake pattern.	Never eats a com-plete meal .rarely eats more than 1-3 of any food offered .eats 2 serv-ings or less of pat-tern (meat or dairy products) per day. Takes fluids poorly. Does not take a liq-uid dietary supple-ment. OR Is NPO and /or main-	Rarely eats a completed meal and gen-erally only eats / of any food offered. Protein intake includes only services of meat or dairy products per day. Occasion-ally will take a dietary sup-plement OR	East's over half of most meals. Eats a total of servicing of protein (meat, dairy products) Each day occasionally will refuse a meal ,but will usually take a supplement if offered OR Is on tube	Eats most of every meal. Never refuse a meal usually eats a total of or more servings of meat or dairy products. Occasionally eats between meals. Neither does nor required supplementatio n.				

	tained on clear fluid or IVB more than days	Receives less than optimum mount of liq-uid diet or tube feed.	feeding to TPN regimen which probably meets nutrition of needs.					
1.Friction &shear	2.problem	3.Potential problem	4.No apparent problem					
	Requires moderates to maximum assis-tance in moving complete lifting without sliding against sheets are impossible. Fre-quently slides down in bed or chair re-quiring frequent repositioning with maximum assis-tance. Spasticity contracture or agita-tion leads to almost constant friction.	Moves freely to require minimum as-sistance. Dur-ing a move skin probably slides to some extent against sheets, chair restraints, or other devices. Maintains rela-tively good position in chair or bed most or the time but occa-sionally slides down.	Moves in bed and in chair independent ally and has sufficient muscle strength to lift up completely during move. Maintains good position in bed or chair at all times.					
• Mild risk -15-18 • Moderate risk 13-4 • High risk 10-12 • Very high risk less or • Equal to 9		• If risk factors below are present advance to next level of risk. • Risk factors: • Over age 80 • Diastolic pressure below 60. • Existing skin breakdown com-plete wound assessment • Poor dietary intake of pro-teins • Hemodynamic instability e.g. CHF • Fever						
				Total score				

Name of assessing staff nurse:

Intervention guide (correct all co- morbidities simultaneously with interventions

Assess motherly residential and weekly in acute care

Disclaimer: community clients often live at risk by choice : optimal interventions are not always possible

Mild risk (15-18) high	**Moderate risk (13-14)**	**Risk (10-12)**
• Turn q2h mobility score is 2 or less • Maximal remobilization • Protect heels /elbows • Manage moisture / moisturize. • Reduce friction and shear. • Pain control • Pressure reduction surface for bed and chair. • Refer to dietitian if nutrition score is 2 or less if a wound is present. • Refer to physiotherapist • Increase frequently of turning 30 degree with small wedges supplement with small shift of position. • Assess as for moderate risk.	• Turning schedule with 30 degree turns. • Maximal remobilization • Protect heels (heel lift boots if indicated) • manage moisture/moisturize • Reduce friction and shear • Pain control • Pressure reduction surface for bed • And chair • Refer to dietitian • Refer to physiotherapist	• Increase frequently of turning 30 degree with foam wedges-supplement with small shift of position • Assess as for moderate risk. VERY HIGH RISK • As per moderate & high risk • Use pressure RELIEVING surface if Patient has intractable pain. Or severe pain • Additional risk factors (diabetes skin breakdown, 1 turning /relief surface etc.) • No pressure reduction /relief surface is a substitute for turning schedule

4: 14 procedure for using pressure ulcer scale for healing (PUSH) Scale

A: Definition

The method of using the pressure ulcer scale so as to provide an indication of improvement or deterioration in pressure ulcer healing.

B: procedure

1. To observe and measure the pressure ulcer.
2. To categorize the ulcer with respect to surface area. Exudates and types of wound tissue
3. To identify the condition of wound so as to provide appropriate intervention.

C: Equipment

- PUSH scale
- Measuring tape/centimeter ruler
- Documentation record.

D: Procedure

S.No	Action	Rationale
1.	Using the centimeter scale or measuring tape measure the greatest length (head to toe) and the greatest width (side to side) of the pressure ulcers.	The largest measure has to be considered for measuring the pressure ulcer.
2.	Multiply these two measurements (length X width) to obtain an estimate of the surface area in square centimeter and give sub score according to the scale at the reverse of form.	To calculate the area covered by the wound so as to identify any increase or decrease in the size of the wound.
3.	Always use the same method each time the ulcer is measured.	To get consistent and reliable result.
4.	Estimate the amount of exudates from the wound after removal of dressing and before applying any topical agent to the ulcer and give a sub score. Refer to the exudates amount scale at the reverse of form.	To get an accurate idea about the amount of drainage present.
5.	Categorize the amount of drainage as none light, moderate or heavy and give a sub score according to the scale given at the reverse of form.	So, that appropriate scores can be given.
6.	Categorize the tissue tape that is present in the ulcer depending upon the color and nature of the tissue that is present over the wound bed.	To identify the tissue type correctly and give the appropriate score.
7.	Add the sub score to obtain the total score.	To help in placing the patient in the correct category.
8.	Compare the total scores measured over time to provide an indication of the improvement or deterioration in pressure ulcer and interventions performed.	
9.	Record the sub score and the total score in the PUSH scale and mention it in the nurse's record. Record the condition of pressure ulcer and interventions	For proper documentation and reporting to concerned authorities.

S.No	Action	Rationale
	preformed.	

E: supportive documents:

Clinical chart, nurse's notes

F**: References for providing scores.**

Length X Width	**0 0cm²**	**1 <0.3cm²**	**2 0.3-0.6cm²**	**3 0.7-1.0cm²**	**4 1.12-2.0cm²**	**5 2.1-2.0cm²**	**Sub – Score**
		6 3.1-4.0cm²	**7 4.1-8.0cm²**	**8 8.1-12cm²**	**9 12.1-24.0cm²**	**10. >24.0cm²**	
Exudates Amount	**0 None**	**1 Light**	**2 Moderate**	**3 Heavy**			**Sub – Score**
Tissue Type	**0 Closed**	**1 Epithelial Tissue**	**2 Granulation Tissue**	**3 Slough**	**4 Necrotic Tissue**		**Sub – Score**
Total Score							

<u>References for identifying tissue type with sub scores</u>.

4- **Necrotic tissue (Escher):** black brown or tan tissue that adheres firmly to the wound bed or ulcer edges and may be either firmer or softer than surrounding skin.

3- **slough:** yellow or white tissue that adheres to the ulcer bed in strings or thick clump, or mucinous

2- **Granulation tissue**: pink or beef red tissue with a shiny, moist granular appearance.

1 - **Epithelial tissue**: for superficial ulcers, new pink or shiny tissue (skin) that grows in from the edges or as islands on the ulcer surface.

0 - **Closed /resurfaced**: the wound is completely covered with epithelium (new skin).

Management

Skin Care

- Keep the skin clean and dry
- Investigate and manage incontinence
- Do not vigorously rub or massage the patients' skin
- Use a pH appropriate skin cleanser and dry thoroughly to protect the skin from excess moisture
- Use water based skin emollients to maintain skin hydration where possible
- Apply barrier cream
- Do not place the patient on diaper, use under pads preferably

Use chlorhexidine wipes daily ONLY around CVC sites and open wounds/open sternotomies

Redistributing pressure

Prevention strategies should involve the use of pressure relieving devices appropriately chosen for the patient, regular skin inspection and frequently redistributing the pressure by repositioning the patients frequently and safely.

- Adher to turning clock
- Provide the right positioning aids and use of appropriate support surfaces to help reduce friction and shear.

Positioning and repositioning the patient

Patients at risk of pressure injury should be suitably positioned to redistribute pressure, repositioned regularly by minimising shear and friction forces on the skin.

Recommendations:

- For the patient to do so independently if able
- Equipment can be used to promote independent mobility. E.g. overhead bed pole, side rails, walking frame.
- Patient and/or carers may need reminders to reposition
- For patients who are unable to assist moving themselves, it is recommended that they be repositioned every two hours
- Patients in pain are at an increased risk of pressure injury. If pain is managed appropriately they are able to move or be moved at frequent intervals. Monitor the patient's level of pain and ensure appropriate pain relief is provided. Give analgesia five to thirty minutes prior to attending to pressure area care to reduce the patient's pain on moving
- Heels should be suspended off the bed using pillows or gel pads
- Reposition tubes and face masks every two hours for pressure area care. Use barrier dressings
- For high risk patients, limit time spent sitting in bed with head elevated > thirty degrees to no more than two hours due to the increased pressure on the sacrum.

Positions may include: prone, seated in bed, seated in chair, left side lying, right side lying and supine.

Monitor the patient's level of discomfort or pain and ensure appropriate pain relief is provided to support and encourage mobility

Consider smaller more frequent shifts in position of patients who cannot tolerate major changes in body position to redistribute pressure. E.g. Patients with Pulmonary hypertension, On ECMO Support

The patient should be repositioned regardless of the support surface on which they are managed

When transferring, examining or repositioning patients, the use of proper devices and techniques is mandatory.

To prevent shear forces on the sacrum, the head of the bed should be raised in conjunction with a knee block or pillows under the knee

Always check the positioning of the bony prominences and heels when repositioning the patient into any position

Lower the bed head before repositioning

Use slide sheets with every reposition

Consider Physiotherapy consultation for assistance/advice on transferring patients and repositioning

Prevention Strategies for device related

There is a variety of different equipment or medical devices that may be required as a part of a patient's treatment. It is significant to recognise that any foreign object that comes into direct contact with the

patient's integumentary system has the potential to cause PI. Therefore, healthcare workers must be vigilant with their inspection and monitoring of the patients skin, in order to prevent PI's that are device related. The following devices can contribute to the formation of PI's:

- Cervical collars
- Casts and orthotics
- Pressure stockings
- Intermittent calf compressors
- IV tubing and boards
- Tapes
- Pulse oximetry probes
- Monitoring cords
- Endotrachael tubes (CPAP and full vent)
- Non-invasive masks
- Excess linen

Strategies to help prevent device related pressure injuries include

- Repositioning devices as appropriate e.g. oxygen delivery, saturation probes (min 2 hourly), monitoring electrodes
- Protective barriers between the device and the patients skin e.g. hydrocolloid under NGT/oxygen tubing, foam pad under cables.
- Regular repositioning and inspection of the patient to ensure that they are not unintentionally lying on devices
- Use the correct size equipment suitable to the patient's anatomical size. E.g. nasal cannula, IDC.
- Use padding to soften hard surfaces.
- When equipment is secured to the patient using tapes, ensure that they are not applied too tightly and that the applicable tapes are utilised. Ensure where possible that they have some elasticity and stretch.
- Use the minimal amount of strapping or tape to safely secure the device but allow for maximal visualisation of the patient's skin.

Nutrition

- Offer frequent fluids and diet to at risk patients to maintain adequate nutrition and hydration
- High or very high-risk patients should be referred to a dietician
- Nutritional support should be designed to prevent or correct nutritional deficits, maintain or achieve positive nitrogen balance, and restore or maintain serum albumin levels. Nutrients that have received primary interest in the prevention and treatment of pressure injuries include protein, arginine, vitamin C, vitamin A, and zinc.

Moisture

Moisture on the skin increases the risk of pressure injury development. This is also true if the skin is too dry, as it may cause skin to breakdown
Patients who are incontinent of urine and/or faeces should have an adequate evaluation to identify whether a reversible causes exist. Reversible causes include:

- polyuria due to glycosuria/ hypercalcemia

- urinary tract infection
- medications
- change in mental status
- restricted mobility
- faecal impaction

A bowel training program must be instituted for spinal cord injury patients.

Pressure redistributing equipment:

Redistributing equipment are support surfaces that offer redistribution of pressure on which patients are placed to manage pressure load to their integumentary system. They are designed to alternate the area of the body in contact with the support surface and to reduce interface pressure through increasing the body surface area.
It is significant that weight be considered when selecting the right pressure mattress. Patients at high risk of PI, should be nursed on a high grade pressure redistributing mattress. Some options may need to be hired.
For these devices to be effective, there must be minimal layering in between the device and the person. For patients that are very high risk, these devices may allow a decrease in turning frequency overnight to 3-4 hourly to encourage rest patterns, however, this should be assessed on a solitary basis at RCH.
***The following should NOT be used as pressure relieving devices*:**

- Sheepskins
- Doughnut shaped gels – this type of device may impair lymphatic drainage and circulation.
- Water filled gloves under heels – these are not effective as the water filled glove is unable to re-distribute pressure and it only supports a small surface of the heel. .

Important Note
It is important to note that the use of sheets, overlay sheets, pillows and towels potentially alter the pressure relieving qualities of the mattress. Try to avoid using plastic lined continence overlay sheets on air filled pressure relieving devices where possible. A single sheet that can be kept dry and crease free is optimal.

Patients in the Operating Room

The assessment of PI prevention should be evaluated during the preoperative, intraoperative and postoperative phases.

Surgery that lasts longer than two hours has been associated with PI's. As the operation time exceeds this, so does the prevalence of PI's. Anaesthetised patients that are positioned on specialised frames in the prone position, may be at an even higher risk of developing PI's in uncommon areas such as the: chest, iliac crest and face (tip of the nose, chin and forehead).

Literature suggests that PI's that originate in the operating room may not appear for one to four days post operatively. This highlights the significance of prevention and the importance of a thorough integumentary assessment as the patient continues their journey through surgery and during the postoperative period.

Risks for patients undergoing surgery should be determined by:

- Length of the operation
- Increased hypotensive episodes intraoperatively
- Low core temperature during surgery
- Reduced mobility on day one postoperatively
- Prolonged placement of complex equipment E g: neuro surgery head frame

When there is risk of pressure injury development.

- Consider the use of Gel Pads and Perplex boxes for complex theatre cases.
- Patients should be positioned to reduce the risk of pressure injury development during surgery.
- Heels should be completely elevated in such a way as to distribute the weight of the leg along the calf without putting all the pressure on the achilles tendon. The knee should be in slight flexion.
- Hyperextension of the knee may cause obstruction of the popliteal vein, and this could predispose the individual to deep vein thrombosis.
- Pay attention to pressure redistribution prior to and after surgery. Position the individual in a different posture preoperatively and postoperatively than the posture adopted during surgery where possible.
- Patient supports and patient positioning aids, including pressure care devices are utilized at this high risk time.

Postoperative Management

In the postoperative phase, a full integumentary assessment is required. Any altered skin integrity must be documented on the EMR flowsheet and communicated to the multidisciplinary team.

Operative consideration

Although doughnut gels are being phased out in pressure area care, they are still used in RCH theatres mindfully in some cases. Special consideration needs to apply who have had these in place as they may impact lymphatic drainage.

Patients in the Intensive Care Unit

Patients admitted to the Intensive Care Unit (PICU) have a higher incidence of PI's and usually they are more severe. Effective prevention for these patients should be based on correctly identifying them at risk.
The ICU environment includes several main contributing factors:

- Low cardiac output state
- Inotrope and vasoconstrictor use
- Impaired level of consciousness
- Immobility
- Poor peripheral blood flow
- Decreased nutrition

Patients should be repositioned fourth hourly and have existing PI's assessed every second hour. However, if the patient is too haemodynamically unstable with pressure area care and repositioning, an alternative plan should be discussed with the multidisciplinary team.

The Orthopaedic Patient

Patients that have had orthopaedic surgery are considered to be high risk of PI's due to the presence of fixed medical devices and due to their immobility.

Some patients may be in plaster casts, braces, hip spicas and traction. These devices can cause sheering injuries and/OR friction and should be regularly monitored and assessed.

Documentation

All pressure injuries need to be carefully documented. If a pressure injury is identified:

- Determine and document likely causal factors.
- Document Pressure Injury appearance, measurement of the wound size and depth, exudate, odour and stage.
- Notify medical staff and nurse in charge of shift about the pressure injury and inform the patient, family and/or carers about the pressure injury and management plan.
- Document in EMR and handover a detailed description of what is observed and the action taken.
- Document assessment and treatment plan for stages 2 and above pressure injury
- follow incident reporting system and confirm the stage of the pressure injury is included.

Patients should not be positioned directly on an existing pressure injury or body surface that remains damaged or erythematous from a previous damage.

Activity should be increased as soon as patient is able.

For patients with a stage 2 or greater pressure injury or those with a Glamorgan risk score of ten or greater a Pressure Injury Prevention Plan should be commenced on EMR. The wound should be clinically assessed for the most appropriate dressing. Refer to the Wound Care Nursing Clinical Guideline and consult the Stomal Therapy Nurse Consultant for clinical guidance on appropriate assessment and management of the wound if clinically indicated.

The plan will be developed in collaboration with the treating doctor and family
The plan will remain in use and visible on the EMR until the patients braden risk score changes. If the risk score increases a new plan will be implemented as the patient's needs may have changed.

Patient risk should continue to be assessed daily at the commencement of each shift. Once the patient's risk score is reduced, a management plan is no longer required, however it is important that simple preventive measures are maintained.

Consider referring patients with a pressure injury to a dietician, allied health, plastics department for assessment, treatment and ongoing monitoring.

Discharge

Ensure the appropriate measures and equipment are in place in the home prior to discharge by referral to an Occupational Therapist.

Goals of care: Patients who are returning home with considerable changes to their mobility should have goals of care established by the multidisciplinary team in collaboration with the patient and their

caregivers. Particularly those patients receiving palliative care, appropriate goals should be established and included in the patient's management plan. Multiple risk factors and general poor health significantly increases the risk of pressure injuries. Palliative care may have a stronger focus on managing symptoms, comfort and quality of life.

Education: Education of patients, parents and carers is essential in the prevention and management of pressure injuries. Patients and their families should have a clear understanding of the potential impact of a pressure injury and the importance of its prevention, contributing risk factors and strategies that assist in reducing the risk. This is particularly important when patients are in a home care environment or being discharged from an inpatient area. Families and carers of patients discharged with risk factors shall discuss suitable prevention strategies relevant to their patient prior to discharge.

4:15 Use of Anti- Embolic Stocking

A: Definition

Anti embolic stockings also known as graduated elastic compression stockings or thromboembolic deterrent stockings (tedso are used for preventing venous thrombosis i.e deep vein thrombosis (DVT) and pulmonary embolism (PE) among hospitalized patient by promoting venous and the lymphatic flow and reducing venous stasis.

B: Indications

- Major illness such as acute cardiac or respiratory failure.
- Major surgery or abdominal /pelvic surgery which requires prolonged hospitalization.
- Elderly or.
- Immobility or prolonged bed rest
- Active cancer
- Gross varicose veins
- Paralysis of lower limb
- Clotting disorders
- Diabetes, pregnancy , acute infection/ inflammation
- Obese patient
- Previous history of DVT or PE

C: Contraindications

- Severe peripheral artery disease
- Severe peripheral neuropathy
- Vascular disease resulting from congestive heart conditions
- Gangrene
- Pulmonary edema or massive edema of the legs
- Major leg deformity
- Certain types of skin disease e.g . weeping skin lesions
- Recent skin graft

D: process

S.No	Action	Rationale
1.	Assess the patient risk factors for the	To determine the risk for VTE and plan the

S.No	Action	Rationale
	development of venous thromboembolic (VTE)	appropriate interventions.
2.	Assess and identify any contraindication for the patient for wearing the antiemetic stockings.	To ensure that the antiembolic stockings are fitted correctly and to reduce the complications associated with antiembolic stockings.
3.	Explain the procedure and purpose to the patient.	To gain better cooperation from the patient.
4.	Wash hands	To prevent cross – infection.
5.	Place the client supine position. For knee length by placing the tape measure around the calf at the greatest point .for thigh length stockings measure the midthigh at the Greatest pint.	To obtain the correct size as incorrect size causes swelling and bruising to the ankles and can constrict the blood vessels at the ankles.
6.	Ensure that the obtained sizes match the size on the pack of the product.	To make sure that the size is appropriate.
7.	Assess the pedal pulse.	To ensure that the circulation to the feel is present and there is no contraindication.
8.	Open the package and turn the stockings inside out over your hand and arm, place a hand deep enough inside a stocking to grasp the stocking toe.	To make sure that the size correct for the patient.
9.	Using the hand inside the stocking, hold onto the client's toes. invert the stocking with the other hand and pull it over the hand the client toes release the toes.	To properly insert the stockings.
10.	Hold each of the stick and pull if from the client's toes to the heel in one motion.	For easy application of the stockin
11.	Continue to hand each side of the stocking, firmly pull the stocking up by using the thumbs to guide upward over the ankles and up the clients leg.	For easy application of the stockings
12.	Apply the stockings on to the leg ensuring that there are no creases.	Creases can cause impairment of blood flow and skin integrity can be affected.
14.	Check the stocking for proper placement every two hourly or more often if needed	To check complications.
15.	Remove the stockings daily observing for pain, skin, damage, circulation difficulties which may arises as a result of wrinkling at least for 30 minutes.	To give skin care and to assess for pressure score due to the tourniquets effect of the bunched –up stockings combined with the swelling of the leg.
16.	Check the color and tips of the toes.	To ensure that the blood supply is not

S.No	Action	Rationale
	The top band of the stockings must not be turned out.	compromised.
17.	Mobilize the patient as early as possible. if the patient is bedridden , encourage the patient to perform leg exercises.	To improve venous circulation.
18.	Check the pedal pulse in both the legs.	To ensure that the circulation is adequate in both legs.
19.	Teach the patient to elevate the legs while sitting up.	To reduce the limb swelling and promote venous return.
20.	Monitor the signs of DVT or PE like calf or thigh pain, warmth, tenderness, abnormal swelling of the calf, numbness of tingling sensation of the feet , dyspnonea , chest pain or signs of shock coughing up blood	To monitor for signs of DVT and PE
21.	Documentation the use of stockings, skin integrity presence of any venous problem and circulatory status of extremities and quality of the pedal pulses and size and length of stockings.	

Cellulites

1. Tape measure
2. Antiembolic stockings (calf or thigh length)

- Pressure sores to heel

E: supportive documents

Nurse's Record.

4:16 application of Bandages

A: definition

A bandage is a piece of material used either to support a medical device such as a dressing or splint, or on its own to provide support to the body

B: purposes

A bandage can be applied for several reasons

- To secure sterile dressing in place.
- To provide compression which controls edema
- To support joints , ligaments or muscles that have been injured or prevent injury
- To support area which are exposed to excessive or repeated stress
- To provide a compression dressing to a wound to help stop bleeding
- To re- sharp body controls (e.g. amputation stump)

D: GENERAL INSTRUCTIONS

- Bandage to be tightly rolled for effective bandaging
- Prevent contact between two skin surfaces

- Use firm, even pressure throughout
- Finish on superior aspect of site, anchor firmly with adhesive
- Place needed amount of padding between adjoining surfaces. Eg fingers and toes.
- Use bandage of suitable width and length
- Do not start or end bandage directly over the wound or bony prominence.
- Start end with circular turns
- Ensure the need for bandaging

E: Equipment

1. Roller bandage, Adhesive

D: Procedure

S.No	Type of bandage	Technique
1.	**Eye bandage**	Place a twin /tape at the centre of the forehead Using the roller bandage, take two circular turns around the fore head over the tape. Keep an eye pad over the affected eye and cover it by bringing the bandage over the eye and take below and behind the ear. Make anther circular turn over the fore head , taking the bandage over the eye and take it blow and behind the ear end the bandage with two circular turns over the fore head and secure the bandage Tie the tape pulling the bandage away from the unaffected eye.
2.	**Ear bandage**	Secure the roller bandage with two circular turns around the fore head. Place the ear pad over the affected ear Move the roller forward over the affected year and bring it behind the head Make a circular turn around the forehead. continue this until ear is covered End with two circular turns around the forehead and secure the bandage.
3.	**Jaw bandage**	This bandage is applied for the body, to keep the jaw together. Keep the centre of the bandage at the chin and take the upper tails on both sides above pinned and secure the occipital region Take the tails behind the ear and secure them on top of the head
4.	**Skull bandage**	Using both the hands ,place the centre of bandage in the middle of the forehead and carry the rollers to the occipital

		Cross rollers one over the other The roller in inferior portion is brought overhead to the middle of the forehead. The other roller is carried horizontally around the head to the middle of forehead where it crosses over the medial aspect of the head. Carry roller which is beneath the horizontal turn obliquely across the head to the nape of the neck. Carry the roller other roller aging horizontally to the back of the head. Cross rollers one over the other Repeat these turns alternatively, crossing head on each side of medial aspect until the head is covered.
5.	**Shoulder space**	This space may be either descending or ascending The ascending type is most commonly used While applying the bandage, stand at the side which is to be bandaged A pad must be placed in the axilla. The bandage must be anchored with two circular turns around the upper arm near the axilla. It is then carried around the arm and across the chest if the right side is injured. If the left side is injured it is taken across the back and then through the opposite axilla and across the back to injured arm ,where it crosses the previous turns in the middle line Repeat turns overlapping the previous turns, crossing it executive in the midline and ascending towards the shoulder until covered.
6.	**Thumb spica**	Anchor the bandage by two circular turns around the wrist Bring the bandage obliquely across the back of the hand and carry it by quick spiral turns (without overlapping the previous turns) to the tip of the thumb One circular turn is then made (near the tip of the thumb) and the bandage is carried down the thumb by2-3 spica reverse turns,

		followed by figure of 8turns until the base of the thumb , carried over the dorsum of the thumb , to the lateral side of the wrist. Finish with two circular turns at the wrist.
7	**T – binder** **To hold rectal and perineal dressings**	Secure wrist strap in front using adhesive Bring single or double T straps between the patient's legs and secure over waist strap in the middle. Change T binder frequently in case of soiling.
8.	**Abdominal binder** **To support the abdomen following surgery**	Place the binder beneath the patient (thoraco –lumbar region) Pull the shoulder straps tight and secure in front just below the shoulder line Place the patient in a comfortable position.
9.	**Breast binder** **To hold breast dressing**	Encircle chest with binder, overlap and secure in the middle of the chest. Pull the shoulder straps tight and secure in front just below The shoulder line. Place the patient in a comfortable position.

4:17 Bowel Wash

A: definition

Wash out the colon with large quantities of solution

B: purposes

- Before specific surgical /special procedure
- To dilute and remove toxic agents that may be present in large intestine
- To reduce the temperature /hyperpyrexia and heat stroke
- To supply fluid and electrolytes that are absorbed from the e intestine
- To stimulate peristalsis
- To relive inflammation

C: contraindications:

- Bleeding hemorrhoids
- Chronic diarrhea
- Rectal surgeries
- Rectal polyps
- Massive colon carcinoma
- Loose anal splinter

D: Articles needed:

A trolley containing

- Sterile colonic lavage set with tubing
- Sterile rectal tubing
- Vaseline
- Gauze pieces
- Underpad

- Jugs with hot/ tepid water
- K basin -2
- Solutions – plain water /cold water- normal saline
- Bucket
- Bed pan with lid
- Duster
- Perineal toilet tray
- Plastic gown
- Lenin (if needed).

D: procedure:

S.No	Action	Rationale
1.	Check the doctors order assess the general condition, explain the procedure to patient and relatives.	
2	Provides privacy and wash hands	To prevent infection.
3.	Place the under pad	To protect the bed linen
4.	Position patient in left lateral with buttocks close to the edge of the bed.	
5.	Placed k basin on the under pad close to the buttock and place the bucket the floor to receive the back flow.	To receive stool particle.
6.	Mix solution to required temperature (105-110$^{oF)}$	
7.	Connect rectal tube with funnel and tubing , and lubricate to about 4inch	To prevent mucosal injury & helps in smooth insertion
8.	Fill funnel with solution and expel air from the tubing by allowing a small amount of fluid to run into the k basin.	Continuous run of fluid prevent air entry into the colon.
9	Pinch the tube separate patient buttocks and insert the rectal tube to about 4-5 inch while patient takes deep breath	
10.	Do not force tube deeper when fluid does not flow easily	This may injury the mucosa.
11	Fill with 200-300ml fluid each time ‘ raise funnel and allow to fluid to run continuously	
12.	When fluid is gone in, pinch tube before the funnel is completely empty, lower and invert funnel into the bucket and allow the fluid to flow out by gravity, noting characteristics of the return flow.	To prevent air entry
13	Repeat this process till return flow clear	To completely evacuate the bowel
14	Remove rectal tube and place patient comfortable	

15.	Provide bed pan if needed , change linen if soiled	Patient might still continue to have the urge to pass stools.
16.	Replace articles and wash hands	To prevent cross infection
17.	Record time, type and amount of solution used result of procedure, color, consistency, any other abnormality in return flow and any discomfort the patient experienced.	As per nurses standards and for further reference.

E: supportive documents: Nurses record and output chart

4:18 Administration of enema

A: Definition

Introduction soap /other solutions into rectum and sigmoid colon

B: purposes:

1. To remove fecal matter
2. To relive constipation &gaseous distention
3. To prevent involuntary defecation during surgery.
4. To promote visualization of lower GI tract during X ray or endoscopic examination
5. To establish normal bowel function during bowel training program
6. To remove contrast medium used following upper or lower GI X rays
7. To reduce fever or cerebral edema
8. Before delivery , surgery and specific procedures
9. To induce rectal anesthesia
10. To administer nutrients and medications in retention enema
11. To relive retention of urine by reflex stimulation of the bladder

C: Articles Required:

- A tray with enema can with tubing
  - Artery clamp
  - Sterile rectal tube
  - Vaseline
  - Under pad
  - K basin -2
  - Pint measure
  - Bath thermometer
  - 2jug with tepid water
  - Kettle with warm water
  - Bed pan
  - IV stand
  - Clean linen (if needed)
  - Perineal toilet tray (if needed)

D**: contraindication**

- Acute renal failure
- Acute myocardial; infraction and cardiac problems
- Appendicitis

- Obstetrical and gynecological contraindications

E: procedure

S.NO	Action	Rationale
1	Assess the following General condition of the patient ,diagnosis , ability& limitations concerning patient movements m level of consciousness and ability to retain solution , lesion in the rectal region	
2.	Explain the procedure to the patient and provide privacy	
3.	Wash hands	To prevent cross infection
4.	Place the patient in left lateral position	For easy flow of fluid
5.	Buttocks to be positioned close to the edge of the bed.	For easy access
6.	Roll under pad to the opposite side and place the k- basin close to the anus.	To prevent the sheet form getting soiled and to collect and to the leaking solution
7	Attach tubing to the enema can and clamp the tube	Air entry to the rectum may cause discomfort.
8.	Prepare solution by adding one table spoon of soap jelly to none pint of water. prepare 500- 1000ml of solution for an adult &250 ml for children	
9	Check temperature with bath temperature (105-110 $^{\circ}_{F}$)	
10	Attach rectal tube to the tube from the enema can , pour solution into the can	
11	Suspend the enema can on IV stand and adjust height to 18 inches from the bed	Increases height cause increased rate of flow which is discomfort.
12	Lubricate 3-4 inch of the rectal tube ,separate patient buttocks using gauze pieces and insert the rectal tube to a distance of 3-4 inch	
S.NO	**Action**	**Rationale**
13	Open the clamp hold rectal tube in place and allow the fluid to flow	
14	Encourage the patient to take deep breath during administration flow	To reduce discomfort and aid in easy flow.

15	Stop procedure temperature if patient has an urge to defecate , develop abdomen cramps or if the solution level rises in the enema can	
16	Clamp tubing and remove the rectal tube.	
17	Instruct patient to hold solution for 10-15 mins	
18	Position the patient to supine / or assist the patient to toilet /bed pan	
19	Keep the patient dry and comfortable	
20	Clean and replace articles used , wash rectal tube in running water and send to CSSD for sterilization	
21	If enema pouches are us • Clamp the pouch tubing • Cut the tip of the pouch • Apply jelly 3-4 inch on the pouch tubing • Separate the buttocks using gauze piece • Gently insert the pouch tubing Release the clamp, and squeeze the contents of the pouch into the rectum • Gently withdraw the pouch tubing	
22.	Record the time ,type of solution , quantity used and the effects of enema	

4:19 Use of Warming machine

A: Definition

Patient warming system is to prevent or treat hypothermia and to provide warmth to patients' e.g Baer hugger.

B: purposes

The patient warming system should be used in circumstances in which patients may not maintain a state of normothemia.

C: contraindications

- Do not warm patient with ischemic or non per fused limbs. Result in thermal injury.
- A warming blanket should not be used under a patient in combination with a heated surgical table or a hot water mattress.
- Does not use blanket in the presence of flammable anesthesia or highly oxygen enriched environment such as hyperbaric chambers, oxygen tents etc.

D: procedure

S.NO	Action	Rationale
1	The warmer to be set in appropriate	To ensure patient safety.

	temperature based on patient condition and maximum effectiveness.	
2.	Position the warming blanket under, over or around the patient as desired.	To ensure maximum utility
3.	Secure the warming blanket to ensure maximum surface contact.	To prevent the loss of heat
4.	Turn controller to begin warming.	To start the warming process`
5.	Monitor the extremities for pulse and maintain the temperature	To avoid overheating or under heating
6.	Hourly monitor body temperature	To prevent over heating

E. Supportive documents:
Nurses record and Temperature sheet.

4:20 Hot and cold application

HOT APPLICATIONS

I. Hot water bag

A: Definition

It is the process of applying dry heat by measuring of an rubber nag on a specific part of the body

B: purposes

1. To provide comfort and warmth
2. To provide blood circulation
3. To promote suppuration
4. 'to relieve pain and inflammation
5. To relax muscles
6. To promote healing and reduce tissue swelling
7. To decrease joint stiffness
8. To relieve bladder distention
9. To counteract sudden drop in temperature during cold sponging

C: Articles needed

1. Hot water bag
2. Pint measure
3. Flannel cover
4. Duster
5. Hot water in a kettle
6. Bath thermometer

D**: Procedure**

S.NO	Action	Rationale
1	Get doctor's written order and	To obtain co- operation from the patient

S.NO	Action	Rationale
	explain procedure to patient	
2.	Assess area	To obtain a base line date
3	Check hot water bag for any leakage	To prevent spilling and burns on the patient's body
4	Check temperature of water bath thermometer (temperature should be 105-115 degree F for child and 115-125 degree f for adults)	To avoid burns.
5	Keep bag on flat surface	To reduce proper filing
6.	Pour hot water into bag until it is 2-3rd full	To promote effective conduction of heat.
7.	Expel air by permitting water to come to the mouth of the bag and then close	To avoid inflated hot water bag
8	Hold bag upside down to check for leakage.	To check for leakage
9	Wipe outside of bag with duster put into flannel cover and apply to part.	To prevent wetting on patient skin
10	Check tolerance	To avoid burns
11	Check discomfort/burns, redness condition of the skin frequently	To avoid burns
12	Remove bag after about 20-30 minutes	To avoid discomfort
13	Document procedure patient's reaction and effect of procedure	o record the procedure

E: Supportive documents

Clinical chart, nurse notes

II. Infrared therapy

A: Definition

Infrared radiation is a long visible ray of spectrum used therapeutically for production of heat in tissues.

B: purposes

1. To apply superficial heat to a specific area
2. To promote healing of decubitus ulcer , episiotomy
3. To relieve spasm and pain of sprained muscle

4. To improve blood circulation
5. To promote comfort
6. To promote suppuration
7. To relieve congestion in internal organs

C: Equipments

1. 1. Infrared lamp
2. 2. Inch tape.
3. 3. Top sheet
4. 4. Articles for perineal care (if needed)

D: procedure

S.NO	Action	Rationale
1	Expose area to which heat is to applied	To apply the therapy
2.	Drape patient appropriate to avoid exposure	To promote comfort
3	Keep patient's skin clean and dry before using infra red lamp	To avoid contamination
4	Place lamp at a distance 45-55 cm (18-inhc)	To avoid over exposure burns.
5	After 5minute of commencement of treatment ,check condition of patient 's skin for burns redness and discomfort	To avoid burns
6.	After procedure position patient comfortably and	To promote comfort and use the equipment for future use
7	Record time duration and site of exposure and patient response to therapy	To have documentation of the procedure

E: supportive documents

Clinical chart, nurses notes

III. Hot Fomentation :

A: Definition

Process of apply moist heat to the localize part of the body

B: purposes

1. To provide comfort and warmth
2. To promote blood circulation
3. To promote suppuration
4. To relieve pain and inflammation
5. To relax muscles
6. To promote healing and reduce tissue swelling
7. To decrease joint stiffness
8. To relieve bladder distension

C: Equipment

1. A try containing
   - Lotion thermometer
   - Wringer rod
   - Wringer frame
   - Flannel
   - Mackintosh
   - Vaseline
   - Fomentation pad
   - Rag pieces
   - Gauze pieces
   - Bandage
   - K- basin
   - Pins/adhesive
   - Duster
   - Kettle with hot water
   - Basin 2

D: **procedure**

S.NO	Action	Rationale
1.	Check doctor order	to obtain baseline date
2	Explain procedure	To get co- operation
3.	Provide privacy	To provide comfort
4.	Cover patient and expose only specific area	to promote privacy
5	Make patient comfortable	to provide comfort
6	Apply Vaseline over area to be treated	To avoid burns
7	Place fomentation cloth/ pack in wringer ,insert wringer rods and place in basin	To prepare for the procedure
8	Check temperature of water (125-150 degree F)	To avoid burn
9	Pour water on fomentation cloth and wet fully	To have the appropriate effect
10	Hold wringer rods with hands and turn in opposite direction to wring out excess water from pack	To avoid spillage of water on patients body
11.	Remove pad by holding one corner over second basin	To drain excess water

S.NO	Action	Rationale
12	Allow steam to escape for few seconds	To reduce over heat
13	Place directly on area to be treated ,where Vaseline has already been applied	To reduce pain or discomfort
14	Place flannel mackintosh over pad	To avoid direct contract
15	Apply bandage /binder depending upon site and secure with pains or adhesive	To promote comfort.
16	Remove after 10-15 munities	To provide comfort
17	Observe skin for any pallor .extreme redness and pain /discomfort	To avoid burns
18	Remove and reapply as needed for better effect	To reduce pain or discomfort
19	After removing gently dry part	To avoid discomfort
20	Replace articles after cleaning , rinse and dry pads /wringer	To use it for future
21	Document procedure , duration , effect obtained ,patient 's reaction and condition	To record the procedure
22	Report any unwanted reactions immediately	To report to the physician and take immediate action

E: supportive documents

Clinical chart, nurses notes.

IV steam inhalation

A: Definition

Utilization of warm steam by inhalation to relieve lung congestion and help liquefy secretions

B: purposes

1. To liquefy and loosen lung secretions
2. As postoperative exercise
3. As a method of deep breathing and coughing exercise

C: Equipment

1. **Tray with :**
   - Towel
   - Nelson's inhaler in a bowl lined with a towel
   - Inhaler mouth piece sterile
   - Gauze piece sterile
   - Cotton ball
   - Medication like tincture benzoin (if ordered)
   - Ounce glass (if needed)
2. **Other articles:**
   - Sputum cup

- Cardiac table
- Pillows

D: procedure

S.NO	Action	Rationale
1.	Check doctor's order	To obtain a baseline data
2.	Assess patient's condition and ability to move in bed	To obtain co-operation
3.	Explain the procedure to patient	To obtain confidence
4.	Assist patient to sit up. Keep cardiac table or pillow in front. Switch off fan	To provide comfort
5	Place sputum cup within the reach of patient	To spit the sputum
6	Clean inhaler with water ,open sterile inhaler mouthpiece and cover with sterile gauze	To perform a clean procedure
7.	Close spout of inhaler and cotton ball. Pour boiling water up to sport	To avoid escape of vapor
8	Add medicine(tincture benzoin 5ml)ordered	Tom obtain an medicinal effect
9	Closed inhaler with mouthpiece	To provide to the patient
10	Take to bedside	To promote steam inhalation in bed
11	Face spout away from patient and remove cotton ball	To avoid heat
12	Instruct patient to take in deep breath through the mouth and breath out through nose, keeping the mouth over mouth piece	To obtain desirable effect
13	Continue procedure for 15-20minutes. keep patient warm throughout to prevent chilling	To prevent chilling
14	Give chest physiotherapy and encourage patient to bring out sputum	To bring out sputum
15	Replace articles	To use it in future
16	Record time purpose duration .color, consistency and amount of sputum and also patient response to treatment	To document the procedure for reference

E: supportive document

Clinical chart, nurses notes

COLD APPLICATION

Cold compress

A: Definition

Application of moist cold, using piece of gauze to the specific area on the body

B: purposes

1. To reduce body temperature (100 $^{oF)}$
2. To stop epitasis
3. To reduce inflammation and edema
4. Ti relieve pain, burning sensation and irrigation
5. To anesthetize for short period
6. To control hemorrhage
7. To inhibit bacterial growth and thus prevent suppuration
8. To provide comfort

C: Equipment

1. A tray containing
   - Small mackintosh
   - Small towel
   - Gauze piece
   - Non- absorbent cotton
   - Bowl with the ice or cold water
   - K- basins 2
   - Duster
   - Thermometer tray

D: procedure

S No	Action	Rationale
1	Assess the patient 's conditions	To obtain a baseline data
2.	Select gauze /sponge cloth according to indication	To obtain the desired effect
3.	Explain the procedure to the patient	To obtain co- operation
4.	Place mackintosh and towel under the patent's head to protect the pillow	To protect the pillow from soiling
5.	Plug the ear with non- absorbent cotton	To reduce entry of water into the ear
6.	Immerse 3-4 gauze pieces in water and remove excess water by gently squeezing	To remove excess water
7.	Spread and place wet pieces on the forehead.	To reduce temperature
8	After a few minutes , change gauze piece	To obtain the desired effect
9.	Squeeze the piece into k- basin before dipping it again into cold water	To drain excess water
10.	Monitor patient's response	To monitor the effect
11	Discontinue clod compress after 30minutes of application	To avoid chilling
12	Repeat with one hour gap in between if temperatures in between 100-108F	To reduce temperature
13	Replace the equipment once the procedure is over	To use it in future

14.	Record the time, procedure and duration of application, the patient's reaction and the result of procedure. If there is no change in the patient's condition inform in- charge sister	To document the actual effect on the patient.

E: supportive document

Clinical chart, nurses notes

II. ICE CAP

A: Definition

A rubber bag filled with small pieces of ice and salt that serves as a device for cold application

B: purposes:

1. To reduce temperature between 101-101.8 F
2. To relieve inflammation
3. To relieve urinary retention

C: Equipment

1. A tray
    - Towel
    - Small mackintosh
    - Bath towel
    - Ice cap with ice cubes
    - Flannel cover
    - Slat
    - Thermometer tray
    - Duster
    - Things needed for cold compress (if patient has headache along with fever)

D: procedure

S.NO	Action	Rationale
1	Assess the patient's temperatures	To initial the procedure with indication
2	Explain the procedure to the patient	To obtain co- operation
3	Cover pillow with mackintosh and towel	To avoid soling of the pillow
4	Fill 2-3rd of ice cap with ice cubes and expel air before closing cap	To prepare it ready for procedure
5.	Add a pint of salt to ice cubes before closing	To reduce melting of ice
6	Check the leakages	To reduce spillage of water
7	Cover bag with flannel cover after drying with duster	To avoid derect contact with the patinet's skin

S.NO	Action	Rationale
8	Place on desired area	To obtain the desired effect
9.	Start cold compress and continue during the procedure	To promote desired effect
10	Apply for 1-2 hour and then continue with one hour gap in between if temperatures is between 10-101.8F	To reduce temperatures
11.	Observe patient's reaction (bluish skin discoloration ,monitoring or chills	To avoid chilling
12	Recheck the patient's temperature	To monitor status
13	Record the time, duration of ice cap application ,and the patient's reaction and response	To documentation effect of the procedure
14	Replacing the ice cap after emptying and drying it upside down. Once it is dry blow air into it prevents its sides from sticking together.	To use it for the next patient.

E: Supportive documents

Clinical chart, nurses notes

III. Tepid Sponge

A: Definition

Process of sponging with tepid water reduce body temperature evaporation

B: purposes

1. To reduce temperature between 102 and 102.8F

C: Equipment

1. A tray containing
   - Sponge towels
   - Bath towels
   - Equipment for ice cap and clod compress
   - Basins
   - jugs of tepid water
   - Iron bucket
   - Thermometer tray
   - Long mackintosh1
   - Linen to change (sheet and gown)

D: procedure

S.NO	Action	Rationale
1	Check the patient's temperature	To initiate the procedure
2	Explain the procedure	To obtain co- operation
3.	Provide privacy	To obtained co- operation
4	Spread long mackintosh under the patient	To prevent soiling of the linen and pillow

S.NO	Action	Rationale
5.	Remove dress and cover with top sheet	To provide privacy
6.	Place one bath towel over chest and another over public region	To provide comfort.
7	Start clod compress ,ice cap and continue doing the procedure	To reduce temperature
8	pour tap water into basin and wet five sponges towels	To initiate procedure
9.	Take the first wet sponge towel ,dad the patient's face ,squeeze out water into bucket and replace at the edge of basin	To drain excess water
10.	Take the second sponge cloth and wipe distal arm. Start from acromion process , proceed laterally to fingers , and reach axilla , place the towel in axilla	To reduce temperature
11.	repeat the same step for proximal arm	To reduce temperature
12	Wipe the abdomen and back with first sponge cloth ,which was left at the edge of basins	To reduce temperature
13	For the legs , start from the thigh ; proceed laterally to the feet and medially to the groin .keep sponge in the groin	To reduce temperature
14	Take the sponge towel from distal axilla squeeze into bucket and continue the procedure as before	To reduce temperature
15	Check temperature every 15minutes	To monitor the temperature changes
16	Stop the procedure when the temperature reaches 100F or if the patient develops chills or cyanosis	To avoid chills and cyanosis
17	Cheek pulse and observe skin color	To avoid chills and cyanosis
18	Continue the procedure for a maximum of 20-30minutes and then stop ,irrespective of reaction or result	To recued temperature
19	Check TPR at 15minutes ,1/2 hour and 1hur after treatment	To monitor the temperature changes
20.	If the procedure remains the same, repeat the same after one hour	To reduce temperature
21.	Remove the sponge towels dry the patient ,cover with top sheet and	To dry the patient

S.NO	Action	Rationale
	remove bath towels	
22.	replace the wet linen ,dress the patient and position him/her comfortable	To reduce temperature
23	Record the time and duration of procedure, effect on the patient, and vital signs at 15minutes, 30minutes and 1hour after the procedure is completed.	To monitor the temperature
24	Clean and replace the articles	To use it in future
25	If temperatures remains the same institute other measure to bring down temperature	To reduce temperatures

E: supportive Document

Clinical chart, nurses notes.

IV Cold Sponge

A: Definition

Moist cold application using ice water when the patient's temperature is dangerously raised

B: purposes

1. To reduce the temperature of above 103F

C: Equipment needed

1. A tray containing
   - Sponge towels
   - Bath towels
   - Equipment for ice cap and clod compress
   - Basins
   - jugs of tepid water
   - Iron bucket
   - Thermometer tray
   - Long mackintosh1
   - Linen to change (sheet and gown)
2. In addition
   - Ice cubes
   - Hot water
   - Bath thermometer

D: procedure

S.No	Action	Rationale
1.	Asses body temperature	To obtain a baseline data
2.	Explain the procedure	To obtain co- operation
3.	Provide privacy	To obtain co-operation
4.	Check temperature every 15minutes	To monitor the temperature changes

S.No	Action	Rationale
5.	Spread long mackintosh under the patient	To avoid soiling of the linen
6.	Remove dress and cover with top sheet	To initiate the procedure
7.	Place one bath towel over chest and another over public region	To provide comfort
8.	Pour tap water into basin and wet five sponges towels	To initiate the procedure
9.	Start with tepid sponge adding ice cubes gradually	To reduce temperature
10	Place hot water bag at feet	To avoid chills
11	Take the first wet sponge towel dad the patient's face , squeeze out water into bucket and replace at the edge of basin	To reduce temperature
12	Take the second sponge cloth and wipe distal arm, start from acromion process, proceed laterally to fingers, and reach axilla. Place the towel in axilla	To reduce temperature
13	Repeat the same step for proximal arm	To reduce temperature
14	Wipe the abdomen and back with first sponge cloth, which was left at the edge of basin	To reduce temperature
15	For the legs , start from the thigh ; proceed laterally to the feet and medially to the groin .keep sponge in the groin	To reduce temperature
16.	take the sponge towel from distal axilla squeeze into bucket and continue the procedure as before	To reduce temperature
17	Check temperature every 15minutes	To monitor the temperature changes
18	Stop the procedure when the temperature reaches 100F or if the patient develops chills or cyanosis	To avoid chills and cyanosis
19	Cheek pulse and observe skin color	To avoid chills and cyanosis
20	Continue the procedure for a maximum of 20-30minutes and then stop ,irrespective of reaction or result	To recued temperature
21	Check TPR at 15minutes ,1/2 hour and 1hur after treatment	To monitor the temperature changes
22	If the procedure remains the same, repeat the same after one hour	To reduce temperature
23	Remove the sponge towels dry the	To dry the patient.

S.No	Action	Rationale
	patient ,cover with top sheet and remove bath towels	
24	replace the wet linen ,dress the patient and position him/her comfortable	To reduce temperature
25	Record the time and duration of procedure, effect on the patient, and vital signs at 15minutes, 30minutes and 1hour after the procedure is completed.	To monitor the temperature
26	Clean and replace the articles	To use it in future

E: Supportive documents

Clinical chart, nurses notes

IV. Cold pack

A: definition

Wrapping extremities in sponge towels wet with ice – cold water when temperature rises to 104F and above 105F

B: purposes

1. To reduce temperature of above 104F
2. To treat heat stroke and malignant hyperthermia

C: Equipment

1. Long mackintosh
2. Big sheet
3. Bath towels
4. Equipment for ice cap and cold application
5. Bucket of tepid water
6. Bath thermometer
7. Hot water bag

D: Procedure

S.No	Action	Rationale
1.	Assess the patient's condition	to obtain a baseline data
2	Check the doctor's order	To initiate the procedure
3.	Explain the procedure to the patient and relatives	To obtain co-operation
4	Provide privacy	To obtain co-operation
5	Pour tepid water it basin. wet bath towels	To initiate the procedure
6.	Remove top sheet and project bed with long mackintosh and big sheet	To initiate the procedure
7	Remove the patient's clothes	To initiate the procedure

S.No	Action	Rationale
8.	Protect chest .cover with dry bath towel	To initiate the procedure
9	Place wet bath towel over abdomen and pubic region	To reduce temperature
10.	Place compress on forehead ice cap on head and ho water bag at feet	
11	Wrap then hands and legs with wet towel	
12.	Check temperature every 15 minutes	To monitor temperature changes
13	Add ices cubes gradually	To reduce temperature
14	Remove wet towels in turn from the abdomen and wring out water into bucket	To change water
15	Soak towel basin of water to which ice cubes have been added	To reduce temperature
16	Squeeze excess water and apply over the abdomen up to pubic area	
17	Do the same for extremities	
18	Continue procedure for 15 minutes	
19	Check temperature in between	To monitor temperature changes
20	Watch the patient closely for chills or rigor	To avoid chill or rigor
21	After completing procedure ,remove towels and dry the patient thoroughly	To provide comfort
22.	Remove the mackintosh and sheet remove all the equipment and keep the patient comfortable	
23	Dress the patient and cover with top sheet. Remove all the equipment and keep the patient comfortable	
24	Give the time and duration of the procedure and its effects on the patient	To documentation the procedure for future reference
25	Give warm drink if the temperature has come down	Ro maintain fluids.
26	Continue monitoring vital signs for at- least 1hour after the procedure	To monitor temperature changes

E: Supportive Documentation
Clinical chart, nurses note

4:21 Assisting in Emergency Tracheotomy

Policy: this procedure is a life saving procedure an emergency done in the causality and ICUs .in this procedure the nurse ids only assisting the physician

A: Definition

It is the method of assisting in creating an artificial hole the trachea and inserting tracheotomy tube to maintain patient airway

B: purposes

1. To remove upper airway obstruction
2. To remove tracheobronchial secretion
3. To facilitate long term ventilation
4. To prevent aspiration of oral or tracheal secretions in paralysed or unconscious patient

C: Equipment

- Tracheotomy set containing: toothed dissecting forceps, curved mosquito forceps, artery surgical scissor, tracheal dilator, dressing cups, dressing forceps, surgical towel, and kidney tray. Scalpel blade, gauze pieces.
- Injection tray: with xylocains2%.5c and 2cc syringe, needles.

Other equipment:

- A pair of sterile gloves
- Mask
- Normal saline
- Antiseptic solution, spot light, tracheotomy tube of appropriate size.
- Tape to secure tracheotomy tube in place.

D**: procedure**

S.NO	Action	Rationale
1	Explain the procedure to the patient ,if the patient conscious and obtain hid/he valid consent	To relieve the patient 's anxiety and give gain co-operation
2.	Gather the equipment and take to the patient's bedside.	For ease of doing the procedure and to save time.
3	Place the patient supine position with complete extension of the head and neck by placing a sandbag under the shoulder	Proper extension of the neck is essential for correct insertion of the tracheal tube
4.	Remove all the constricting clothing	To expose the area for doing the procedure.
5	Keep oxygen and suction ready to use.	During the procedure there is a risk for the patient to develop hypoxia
6.	Ensure that the light is switched on	For proper visibility
7.	Assist in cleaning the skin with betadine	To minimize chance of infection
8	Assist in administering local anesthesia	To relive pain
9.	Support patient as incision in	For easy insertion of the tube and

S.NO	Action	Rationale
	made and provide with the correct sized tracheotomy tube	To reduce risk of complications
10	Assist in securing the tube by typing with the tape	To keep the tube in place
11	Assist while the tube is being sutured in place	To secure the tube in place
12	Place betadine gauze around the tube	To stabilize the tube and to promote comfort
13	Assist the patient into a comfortable position	To provide comfort
14	Replace equipment and wash hands	To reduce the change of cross infection
15	Record the time size of the tube used and the patient's condition before and after the procedure	For proper documentation

E: Supportive documents
Clinical chart ,nurses notes.

4: 22 Assisting With Chest Tube Insertion

Policy: this procedure is done as therapeutic and done in the ICU and OT for inpatients .in this procedure the nurse will only assist the physician

A: Definition:
Chest drainages is the, insertion of a tube into the pleural space to evacuate air of fluid, or to help regain negative pressure

B: Purposes:

- For pneumothorax
- For hemothorax

C: Equipment

- Tube thoracotomy tray
- Syringe
- Needles/trocar
- Basins/ skin germicide
- Sponges
- Scalpel ,sterile drape, and gloves
- Two large clamps
- Suture material
- Local anesthetic
- Chest tube (appropriate size) ;connector
- Chest drainage system –connecting tubes and tubing, collection bottles or commercial system vacuum pump (if required)
- Sterile water

D: procedure

S.NO	Action	Rationale
1	Reassure the patient and explain the steps of the procedure	Remove all the equipment and keep the patient comfortable
2.	Obtain valid consent	To avoid legal complications
3.	Gather the equipment and take to the bed side	For ease of doing the procedure and to save time
4	Position the patient as for an intercostal nerve block or according to physician preference	The tube insertion site depends on the substance to be drained the
5.	Tell the patient to expect a needle prick and a sensation of slight pressure during infiltration anesthesia	To prepare the risk of infection
6	Prepare the skin using antiseptic solution.	To minimize the risk of infection
7.	Assist in anesthetizing the area using local anesthetic with a short 25G needle. a large needle is used to infiltrate the subcutaneous tissue , intercostal muscles , and parietal pleura	The area is anesthetized to make tube insertion and manipulation relatively painless
8	Assist in inserting needle	To puncture the pleura and determine the pressure of air or blood in the pleura cavity.
9	.The intra cath catheter is inserted through the needle into the pleura space. The needle is removed, and the catheter is pushed several centimeters into the pleura space.	To position the tube in the proper place
10	The tube is sutured in place and covered with a sterile dressing	To prevent dislodgement of the tube and to prevent bleeding
11	The catheter is tapped to the skin	To prevent it from being pushed out of the chest during patient movement or lung expansion
12.	The catheter is attached to a connector /tubing and attached to a drainage system	To maintain the water seal system
13	position the patient comfortable	To promote comfort
14	Replace the equipments and wash hands	To prevent cross contamination
15.	Record the procedure, time. Amount and color of the fluid and condition of patient	To monitor differences and detect trends ;any irregularities should be brought to the attention of the appropriate senor nursing medical teams

E: supportive documentation

Clinical chart, nurses notes

ASISTING WITH REMOVAL FO CHEST DRAIN TUBE

Policy: chest t drain tube will be removed by the ICU DMOs and registrars and assisting by the registered nurse who is privileged to

A: AIM

To remove the chest drain using an aseptic technique and in such a manner as to minimize patient discomfort and ensure no air enters the pleural cavity

B: conditions for removal

1. Cessation of air lock
2. No pneumothorax present on chest X- ray
3. Cessation of drainage -< 100ml drainage in last 12hours
4. Patient hemodynamically stable.
5. Removal prescribed by ICU registrar /consultant

E: Equipment

1. Dressing pack
2. Suture
3. Sterile scissors and metal forceps
4. Opsite
5. Adhesive tape
6. Suture material
7. Suture holder
8. Chlorhexidine skin cleaning solution
9. Sterile gloves
10. Goggles
11. Non- sterile gloves for assistant
12. Under pad
13. Howard Kelly clamps 2

4:23 Assisting With Thoracentesis

A: Definitions

It is the method of insertion of a needle into the pleural space to remove accumulated fluid and air using aseptic technique

B: purposes

1. To remove air and fluid from the pleural cavity
2. To decrease the pressure on the lung tissue
3. To aspirate the pleural fluid for diagnostics studies
4. To perform pleural biopsy

C: Equipment

- A pleural aspiration set containing sponge holding forceps, 5cc syringe and needle, 20cc syringe with leurlock, aspiration needle, small bowls, dissecting forces, artery forceps, specimen bottles, sterile dressing towel, gauze pieces and pads, scalpel blade.

Other equipment

- A pair of sterile gloves
- Disposable mask and apron
- Xylocaine 2%

- Antiseptic solution
- Kidney tray
- Adhesive tape
- Scissors
- Cardiac table
- Tincture benzoin
- Pillows

D**: procedure**

S.NO	Action	Rationale
1.	Explain the procedure to the patient and relatives and obtain their valid consent	To relieve anxiety and to gain cooperation
2	Gather the equipment and take to the patient's bed side	For ease of doing the procedure and to save time
3	Explain to the patient that he should not move during the procedure	Ro reduce the change of injury to the organs
4.	Position the patient comfortably sitting on the edge of bed with the feet Supported and arms and head on pillows over the cardiac table If the patient is unable to assume a sitting position make the patient lie on the unaffected side with the bed elevated to 30to 40 degree angle	Upright position facilities localization of fluid at the base of the chest
5.	Expose the chest	To enable us to perform the procedure
6.	Clean the site with antiseptic solution and assist in administering the local anesthesia.	To reduce the risk of infection
7.	While the needle is being inserted , instruct the patient to hold his breath	Respiratory movement can cause risk of puncture to the vital organs
8.	Once the needle is inserted into the pleural space assist in collecting the specimen in the same sterile container	Foe sending the specimen to the laboratory for investigation
9	Encourage the patient to remain still until the needed amount of fluid is removed and monitor vital signs continuously	To prevent complications
10	After the needle is withdrawn, seal the area with tincture benzoin and apply pressure dressing over the	Pressure dressing prevents risk of bleeding leakage and infection at site

S.NO	Action	Rationale
	site	
11.	Position the patient in bed with affected side up. Instruct the patient to remain the bed for 4to 6 hours after the procedure	This position minimizes the risk of possible fluid leakage.
12	Monitor vitals every half an hour for 4-6 hour or until stable	To check for complication
13.	Observe the patient to perform complication such as shock, fainting, low blood pressure, rapid pulse, rapid respiration, uncontrolled cough, and blood stained frothy sputum, check the breath sounds in all the lungs fields.	Complication may occur because of accidental puncture of vital organs or blood vessels.
14	Instruct the patient to perform deep breathing and coughing exercise. Demonstrate and teach this exercise to the patient.	Deep breathing and coughing promotes lung vessel
15	Replace equipment t and wash hands	To reduce the chance of cross contamination.
16.	Send the labeled specimen to the laboratory	For doing the appropriate investigations
17	Perform a chest X ray if ordered	To look for any fluid accumulation or any other complications
18.	Record the procedure with total amount o fluid withdrawn ,color ,nature, of fluid , and condition of the patient before and after the procedure	For pro[per documentation

E: Supportive documentation
Clinical chart, nurses notes

4: 24 assisting With Arterial Cannulation

A: Definition
Arterial Cannulation is a procedure in which a cannula is inserted and secured in a peripheral or a central artery in order to continuously systematic blood pressure and facilitates frequent arterial blood gas (ABG) and laboratory sampling
It is generally inserted in the peripheral artery, most commonly in the radial or dorsal pedis.

B: Indications
Monitoring of acid bases balance and respiratory status in the following cases:

- Acute respiratory failure

- Mechanical ventilation
- Cardiopulmonary arrest
- Sepsis and shock
- Major trauma
- Severe diabetic ketoacidosis
- Renal failure
- Acute poisoning

C: Articles needed

- Arterial cannula
- 500ml pressure infuser cuff
- Normal saline solution 500ml bag
- Sterile intravenous set
- Transparent dressing
- Antiseptic solution like Chlorhexidine
- 1%lidocaibe injection
- Pressure monitoring system equipment
- Syringes of appropriate sizes
- Sterile gloves

D: procedure

S.No	Action	Rationale
1	Explain the procedure to the patient if the patient is conscious	To make the patient understand the procedure relieve anxiety and gain his cooperation
2..	Prepare the trolley near the patient using aseptic technique	To reduce the risk of infection
3	Perform hand hygiene	To minimize the risk of infection
4	Using aseptic technique ,prepare the infusion set	To reduce the risk of infection
5.	Similarity, connect the transducer set correctly and ensure that all the luer-lock connection are secure.	The equipment may be loose when taken straight from the package, if not checked this can cause disconnection
6.	Connect the transducer to the bag of 500 ml normal saline	To prime the intravenous set and three way tap ports.
7.	Open the roller clamp fully; squeeze the flush device –actuator.	To reduce the changes of air entering and causing embolism.
8	Ensure that the circuit is free of air bubbles	To reduce the chance of air entering and causing embolism
9	Insert the bag into pressure infuser inflate the pressure bag to 300m of Hg.	To prevent back flow of blood into the transducer set by ensuring the pressure is higher that the arterial pressure.
10	Wash hands with alcoholic hand rub	To reduce risk of cross infection
11	Complete the Allen test, if radial artery is used	To ensure that the palmar arch circulation is adequate ,although not completely reliable
12	The practitioner applies gloves	To prevent contamination of hands if blood

S.No	Action	Rationale
		spillage occurs
13	Position the limb correctly with the help of roller pad.	To support the limb.
14.	Prepare the insertion site with an antiseptic solution; place a sterile towel under the appropriate area.	To maintain aseptic of the site of insertion
15.	Assist the practitioner in administering local anesthetic agent to the site	To reduce pain during the procedure. Also vasodilatation due to the local anesthetic agent reduces vasospasm and enables easy Cannulation.
16	Secure the limb flat, it should not be rotated	Any rotation can result in the shift of the desired artery from the normal anatomical position causing difficulties in Cannulation.
17	The hand should be placed in moderate dorsiflexion.	This bring the artery closer to the skin
18.	The cannula is inserted by the practiorner's blood flash back is observed	To ensure that the cannula is in the artery ,
19	Attach transducer set and fully open roller clamp	To commence flush infusion system and prevent back flow of blood
20	Secure the cannula using a transparent dressing and tape the tubing securely	The site must be monitored regularly so, as to identify any dislodgement inflammation or disconnection
21	Clearly label the device as artery with the date	To prevent accidental intra artery injection of drugs
22	Loop the tubing around the thumb and secure it.	To minimize movement of cannula and damage to the vessel.
23	Connect the transducer to monitoring equipment	Allows checking arterial waveform and obtaining continuous blood pressure measurements.
24.	Calibrate the arterial device	The transducer will read an arterial pressure calibrated to atmospheric air which offsets extraneous atmospheric and hydrostatic pressures.
25	Replace equipment's mad wash hands	To prevent cross contamination
26	Documentation the procedure and record the BP in the nurses notes	To maintain a accurate record.

E: Supportive Documentations

1. Nurse's record
2. Progress notes
3. ICU care flow sheet

4:25. Assisting with Central Venous Catheter insertion

Policy: central venous catheter (CVC) will be performed by a physician and assisting by a registered nurse.

A: Purposes:-

1. Administration of IV and electrolytes , potent vasopressors and vesicant medications
2. Administration of TPN
3. Central venous pressure monitoring (as ordered by physician)

In order to monitor CVC values, a central venous catheter (single /double /triple lumen catheter) is inserted into the right atrium of the heart through percutaneous puncture of a vein or by cut down.

Sites foe central line insertions (only)

1. Veins of the antecubital fossa (medial basilic preference)
2. Subclavian vein (75% risk of pneumothorax)
3. Internal jugular vein (site of choice allowing more freedom of movement and fewer complication)
4. Femoral vein (site utilized as a last resort)

B: Types.

- non- tunneled catheters
- implanted port , catheter
- PICC line catheter

C: Insertion /removal

- An open ended venous catheter must be inserted and removed by a physician.
- Placement of a short –term central venous catheter will be confirmed at time of insertion. in an emergency situation ,confirmation of short-= term central venous catheter placement by X –ray is waived.

D: Flushing

Each capped lumen of a multilumen catheter will be routinely flushed weekly with 5mls heparin 10 units/ml

DREESING CHANGE

A: Equipment and materials

1. Cleaning swab
2. Sterile q- tips
3. Dressing tray
4. ‘dressing
5. 2 pair non- sterile gloves

B: procedure

1. wash hands
2. prepare supplies
3. put on gloves
4. remove dressing
5. assess exit site
6. palpate tunnel
7. assess integrity of skin beneath dressing

8. remove gloves , wash hands and put on a new pair of gloves
9. Cleanse exit site, removing cursing as able. If necessary ,soak crushing to allow for non- traumatic removal
10. Clean 10 cm section of catheter that is lies adjacent to the skin
11. Apply new dressing

C: Documentation

1. **Inappropriate documentation (S) chart about**
   Presence, volume and nature of any drainage

- Appearance of exit site.
- Surrounding skin tunnel area ; incision site;
- Specifically chart any vitiations of dressing, giving rationale for variation.

ROUTINE CAP CHANGE, FLUSH AND HEPARINIZATION

A: Equipment and materials:

1. Cleaning swabs
2. Non- sterile gloves
3. 1x20ml syringe of 20ml normal saline for each lumen to be flushed.
4. 1x20mlsyringe injection cap for each lumen

B: procedure:

1. Wash hands
2. Prepare supplies
3. Cleanse connection site
4. Clamp catheter or lumen
5. Remove old intermittent injection cap and attach new intermittent injection cap
6. Inject syringe solution of normal saline intermitted injection cap
7. Inject heparin flush solution into intermittent injection cap.
8. Repeat steps 3-7 for each lumen to be capped and heparinized

C**: complication of central venous cauterizations**

1. Arterial puncture this is immediately recognized by pulsating, bright red blood return. the physician will withdraw the needle and pressure will be applied
2. Air embolism

This occurs when air enters the vascular system during insertion

Signs and symptoms may be:

- Nausea light headedness
- Dyspnea tachypnea
- Substernal pain
- Anxiousness
- Tachycardia
  confusion
- Hypotension
- Serve respiratory difficulty
- Unresponsiveness

4:26 Assisting for Abdominal paracentesis

Policy: The policy for abdomen paracentesis states that:

- A registered nurse shall assist the physician as required during the procedure
- The procedure shall only be done by competent medical personnel and requires an informed written consent from the patient and or the next of kin
- The patient shall be closely monitored for least 4hours after the procedure for any complications

A: Definition

Abdominal paracentesis is a technique used to drain an abnormal collection of ascetic fluid from the abdominal or peritoneal cavity, using an aseptic technique.

B: purposes

1. To withdraw fluid for diagnosis examination
2. To remove ascetic fluid when there is a large accumulation , this causes severe symptoms
3. To administer substances such as cytotoxic drugs or other agent into the peritoneal cavity.
4. To prepare for other procedure like peritoneal dialysis ,ascetic fluid reinfusion and surgery

E: Equipment

A dressing trolley with the following equipment

1. Sterile abdominal paracentesis set containing
   - Forceps
   - Scalpel blade
   - Blade holder
   - Artery clamps
   - Dressing cups 2 with cotton balls and gauze
   - K- basins
   - Trocar with obdurate
   - Sterile towels
1. sterile dressing pack
2. sterile specimen container
3. tincture benzoin
4. inj. Xylocaine 2%
5. needle and syringe 20.22G and 5cc,20cc
6. sterile pint measure (if continuous drainage)
7. tape measure
8. Weighing scale
9. Sterile gloves
10. Disposable plastic apron
11. Mask
12. Adhesive dressing
13. Under pad/disposable clean pad
14. Appropriate antiseptic solution (betadine)
15. Clean IV Clean

D: procedure:

S.NO	Action	Rationale
1.	Explain and discuss the procedure to the patient	To ensure that the patient is involved in time decision and understand the procedure the agreed aim the risks and benefits Informed consent for the procedure must be obtained by the doctor on duty or the respective consultant
2	Check whether the patient is on anti-coagulant therapy	To ensure that the patient is not at a high risk for bleeding after the procedure
3.	Collect the equipment on the dressing trolley	
4.	Ask the patient to empty his/her bladder before the procedure	If the bladder is full there is chance of it being punctured when the trocar is introduced
5	Check abdominal girth and weight patient before and after procedure and record	This provide an indication of fluid shift and how much fluid has re- accumulated
6	The patient should lie supine in bed with the head raised 40-50cm with a back rest (semi- fowler's position)	Normally the pressure in the peritoneal cavity in no greater than the atmospheric pressure. But when fluid is present pressure is becomes greater Than atmospheric pressure. This position will then aid gravity in the removal of fluid and the fluid will drain of its own accord until the pressure is equalized
7	Place the under pad below the hips of the patient	This is done to protect the bed and to prevent infection
8	cover the patient with a top sheet and expose the abdomen ,check and record vital signs (pulse respiration and blood pressure)	Baseline vital signs must be obtained prior to the procedure
9.	The procedure is done by a doctor assisted by a nurse throughout • Wash hands • provide sterile gloves to the doctor • Open the abdominal paracentesis set • Assist the doctor inclining the site by pouring antiseptic solution over the cotton swab • Open 5cc syringe .20 and 22Gnedle and drop them into the sterile filed in an aseptic method	To maintain infection control and minimize the risk of cross –infection
10	The abdomen is prepared aseptically	To reduce the risk of local and or/ systemic in-

	and draped with sterile towels; assist the doctor in the loading and the administration of local anesthetic.	fection .the peritoneal cavity is normally sterile
11	Once the anesthesia has taken effect the doctor then makes an incision. The trocar and the cannula are inserted via the insertion The trocar is then removed	To minimize pain during the procedure thus maximize patient comfort and facilities co- operations
12	As the doctor does the procedure ,assess the patient's pulse and respiratory status frequently Watch for pallor, cyanosis and syncope	To assess for signs of shock /or infection and to ensure unobstructed drainage
13	Asceties fluid is collected 20-200ml as per the requirement therapeutic/ diagnostic purposes /both.	If necessary to diagnosis the cause of ascetics.
14	Once the fluid is withdrawn ,collect in specific specimen container(s)	
15	Once a biopsy is taken ,transfer the biopsy specimen into a container with 10-12% formalin	To prevent organ status
16	Collect sample in the labeled container	To ensure correct identity /of the specimen
17	If for therapeutic purposes a large volume of fluid has to be drained in the sterile pint measure	
18	Monitor the patient's blood pressure, pulse and respiration and observe the rate and nature of drainage. A clamp must be available on the tubing to reduce the flow of fluid.	To asses for signs of shock and /or infection and to ensure unobstructed drainage .to assess for signs of complication.
19	After withdrawing the needle assist in sealing the site with tincture benzoin swab; cover with small ,dry dressing	To arrest leak of abdominal fluid.
20	If continuous drainage is necessary connect to IV tubing and a used IV bottle. Drainage fluid may be free flowing up to 5 liters. Unless adverse symptoms present. Alternatively ,drainage may be controlled at 2litress four hour	The amount of fluid draining will alter the vital signs thus Q15 min monitoring vital signs and flow of fluid is essential if continuous drainage is connected.

21	Comfort patient and replace all equipment's used.	For further use.
22.	Wash hands	To prevent infection.
23	Documentation the procedure, appearance and amount of fluid, specimen sent to lab and the condition and the reaction of the patient Document if there is any complaints of pain at the aspiration site or related areas. Notify duty doctor of the observations made. Follow –up to collect the result and document.	To maintain accurate records , provide a point of reference in the event of any queries

E: follow up Care

1. Assist patient to assume a comfortable position.
2. Record the amount and the kind of fluid withdrawn (usually limited to 1-2letres)
3. Label specimen and send to the laboratory
4. Check blood pressure ,pulse respiration rate and abdominal girth every 15minutes during the first hour and subsequently every1-2 hour till stable
5. Watch for leaking or bleeding from the site.
6. Instruct the patient on strict bed rest for 6-8hour (observe for pallor, tachycardia decreases blood pressure, dyspnea, oliguria, signs of hypovolemic shock and assess for abdominal pain.
7. Hemorrhagic complication from large volume paracentesis in patients with cirrhosis and portal hypertension potentially is life- threatening complication and to promote early detection of this .a mechanism should exist for close outpatient follow up patient follow –up of patients after large volume paracentesis.

F: supportive documents

Clinical chart, nurses notes

4:27 Assisting With Lumbar Puncture

A: definition

Lumbar puncture is a medical procedure which involves withdrawing of cerebrospinal fluid (CSF) by the insertion of a hollow spinal needle with a stylet into the subarachnoid space.

B: purposes

1. To collect CSF for diagnostic purposes.
2. Introduction anesthetic of therapeutic agents
3. To determine the pressure
4. To do a myelogram
5. To give spinal anesthesia
6. To introduce radio opaque contrast medium

C**: Equipment**

Antiseptic skin cleaning agents (e.g. betadine)
Local anesthetic (inj. Xylocaine)

- Sterile gloves
- Sterile dressing pack
- Lumbar puncture needle of assorted sizes
- A manometer if required
- Three sterile specimen bottles (these bottles should be labeled as bottle 1,2,3,)
- The first specimen may be bloodstained and must be collected in bottle 1.
- Tincture benzoin, plaster dressing

D: procedure

S.NO	Action	Rationale
1	Explain and discuss the procedure with the client/ relative	Ro ensure that the patient understands the procedure and gives his/her valid consent
2.	Patient must empty his/her bowel and bladder before the procedure.	To ensure comfort
3.	Assist patient onto a form surface: 1.Lying : One pillow under patient head. Assist the patient to turn to the left side With knees drawn up to the abdomen And clasped by the hands. The spine should be parallel to the edge of the bed. Support patient to maintain this position. 2.sitting : Patient straddles a straight back chair so that his/ her back is facing the doctor. Patient folds arms on the back of the chair and rests on them.	To ensure maximum widening of the intervertebral space and thus easier access to the subarachnoid space. To avoid sudden movement by the patient which would produce trauma This position may be used for those patients unable to maintain the lying position. It allows more accurate identification of the spinous processes and thus intervertebral disc.
4	cover patient with top sheet and expose only the back	To provide privacy to the client.
5.	Wash hands	Ti minimizes risk of cross infection.
6.	Provide sterile gloves to the physician	To prevent infection as it is an invasive procedure.
7	Open the dressing set/lumbar puncture set; pour antiseptic solution into the cup provided.	To ensure the removal of skin flora and minimize the risk of infections.
8	Assist the physician in preparing site	To ensure the removal of skin flora and minimize the risk of infections.
9.	Open the appropriate needle as requested by the physician and place inside the sterile filed	
10	Assist with the loading of local anesthetic.	
11	Continue to support .explain care and observe the patient through the procedure.	To facilitate psychological and physical wellbeing
12	The doctor will then proceed to; • Identify the area to be punctured and in-filtrate the skin and subcutaneous layers	This is below the level of the spinal cord but still within the subarachnoid space.

S.NO	Action	Rationale
	with local anesthetic. • Introduce a spinal needle between the 2nd and 3rd lumber vertebral and into the subarachnoid space. • Ensure that the subarachnoid space has been entered and if required measure the pressure using a manometer. • Obtain the appropriate specimen of CSF for analysis, cell count and gram stain can be performed with 1ml of fluid. • If intrathecal medication is to be instilled drug and dose must be checked and administered safely • Withdraw the spinal needle once specimens have been obtained pressure measurements taken	To obtain a CSF pressure reading (normal pressure is 100-150 mm H2O) To establish a diagnosis To ensure that the correct drug and correct dosing is administered. To minimize the risks of the procedure.
13	When the doctor removes the spinal needle apply pressure over the insertion site using cotton soaked in tincture benzoin .when all the leakage is stopped apply a plaster dressing.	To maintain asepsis and to stop blood and CSF leak
14	Make the patient comfortable .he/she should lay flat supine for approximately 4 hours. If there is no headache. If the procedure is done in the outpatient department the patient can go home after 1 -2 hours but with clear instructions to lie flat in transport and at home, and to report any of the following leakage from, the site headache and back ache.	To avoid headache and decrease the possibility of brain stem herniation due to a reduction in CSF pressure.
15	replace equipment and dispose of as appropriate	To prevent the spread of infection and reduce the risk of needle stick injury.
16	Record the procedure in the appropriate documentation	To promote continuity of care and provide an accurate record for future reference
17	.Ensure that the specimen are labeled appropriately and sent with the correct forms to the laboratory,	To ensure that the correct result are returned to the appropriate patient's notes
18	Patient should be monitored for the next 24hours with careful observation of the following. 1. Leakage from the puncture site 2. Headache and backache: 3.neurological observations and vital signs	There may be a small amount of blood stained oozing .the procedure of clear fluid should be reported immediately to the doctor, especially if accompanied by fluctuation of other symptoms (level of problems voiding), as it might be a CSF leak. Not unusual following lumber

S.NO	Action	Rationale
		puncture and may be due to loss of CSF or irritation of the spinal roots. Usually relieved by lying flat and if ordered by the doctor, a mild analgesic.
19	Encourage a fluid intake of 2-3 liters of fluid in24 hours.	To replace the lost fluid .patient may have difficulty maturating due to procedure and supine position.
20	Documentation procedure, appropriate of spinal fluid specimen sent to lab condition and reaction of patient. Documentation observations and report deviant observations both general and specific to the concern doctor.	To maintain accurate record, provide a point of reference in the event of any quires.

Follow up care:

1. Instruct the patient to lie supine for 4hours
2. Monitor the vital signs of the client every 15minutes in the first 1hour followed by every half an hour for 6hours.
3. Encourage fluid intake
4. Check puncture site frequently for CSF leakage.

E: supportive documentation

Clinical chart nurses notes

4:28 .Assisting with Bone marrow aspiration and biopsy

Policy: bone marrow aspiration and biopsy is performed by the doctor and assisting by the registered nurse.

A**: Definition**

Assisting in taking sample of bone marrow aspiration from sternum, ileum using aseptic technique

B: Purposes

1. To diagnosis hematological disorders
2. To follow the course of disease and patient response to treatment.
3. To diagnosis disease such as primary metastatic tumors, infection disease and certain granulo-mas

C: **Equipment**

A dressing trolley with the following

1. Marrow aspiration set containing.
   - K basin 'artery forceps- 2
   - Thumb forceps- 2
   - Cups with cotton ball and gauze pieces
   - Surgical towels
   - Marrow aspiration needle stylet (Abraham's needle)
   - Scalpel blade with handle
   - Microscope slides

2. injection tray with

- spirit
- Iodine and tincture benzoin
- local anesthetic agent 2% Xylocaine
- 2cc syringe-2
- 5cc syringe -1
- Needle -20G ,22G
- Under pad and draw sheet
- Razor set
- Adhesive and scissors
- Culture tubes
- Sterile gloves
- Mask
- Small bottle filled with formalin alcohol acetic acid solution

D: procedure

S.No	Action	Rationale
1.	Explain the procedure and reassure the patient throughout the procedure.	To relieve anxiety and to gain cooperation.
2	Collect and assemble equipment at the bed-side	For ease of doing procedure and save time.
3.	Provide privacy and position the patient. 1. For iliac crest aspiration ,position the patient on lateral position with up-per knee flexed 2. For sterna aspiration ,position the patient in supine	Reduces the embarrassment for the patient.
4	Site is located and marked by the doctor.	Reduces the embarrassment for the patient.
5	Open the bone marrow set slide the syringe and needle.	For use during the procedure
6.	Assist the doctor to clean the site with antiseptic solution	To prevent local infection
7.	Assist in giving local anesthesia and drape with surgical towels.	Local anesthesia reduces pain
8.	A small incision may be made with the scalpel blade; bone marrow needle with stylet is introduced through the incision and marrow is aspirated	Incision makes insertion of bone marrow needle easier and less painful
9	Inform the patient that a brief episode of sharp pain during aspiration will be experienced	Enables the patient tp be prepared.
10	Syringe with aspirated marrow is handed over to technician and collected into various containers as indicated.	

11	Collect bone marrow tissue in small bottle containing FFA solution (if biopsy is bone)	Use for preservation
12	Apply pressure over the puncture site	To control bleeding
13	Assist the doctor to seal the puncture site with tincture benzoin and apply a small dressing	To prevent local site infection.
POST PROCEDURE CARE		
1	Keep the patient in supine or lateral position	
2.	Give prescribed mild analgesic if needed	
3	Label specimen and send to lab immediately	
4	Check pulse and respiration Q1/2 h for 4to 6 hours or until stable	
5	Replace equipment	
6	Documentation the procedure time, whether biopsy was obtained, specimen was sent to lab, condition, and reaction of patient during and after procedure.	
7	Observe the patient for discomfort and bleeding	
8	Instruct the patient to be on strict bed on strict bed rest for at least 4hours	

E: supportive Documentation

Nurse'snotes and vital signs chart

4:29.Assisting with Cardiac Catheterization

A: Definition

An invasive diagnosis procedure in which one or more catheters are introduced into heart and selected blood vessels to measure pressure and to determine oxygen saturation in the various chambers of the heart.

B: purposes

1. To assess patency of coronary artery
2. To decide on appropriate treatment examples PTCA, CABG, if atherosclerosis is present.
3. To measure pressure in the various chambers of heart.
4. To obtain blood samples for measurement of hematocrit and oxygen saturation
5. To conform diagnosis of heart disease and determine the extent to which the disease has affected structure and function of heart.
6. To obtain clear picture of cardiac anatomy prior to heart surgery
7. To determine cardiac out put
8. To obtain endocardial biopsies
9. To detect shunts.

Right heart catheterization

Passing a radio opaque catheter from antecubital or femoral vein into the right atrium, right ventricle and pulmonary vasculature

Left heart catheterization

- Insertion of a catheter into right brachial artery or femoral artery, ascending aorta and into left ventricle. It also be performed trans- spectrally from right atrium into left atrium and then left ventricle.

C**: Equipment**
Cardiac monitor

- Pressure monitoring device
- Fluoroscope
- Sterile radio opaque cardiac – catheter
- Radio opaque dye
- Sterile line draping
- Antiseptic solution
- Sterile glove
- Cardiac catheterization pack
- Cut down set
- Scalpel blade
- Sterile gown
- Local anesthetic agent
- Syringe and needle

D: procedure

S.No	Action	Rationale
1.	Explain the procedure tom the patient and obtain valid consent	Allays anxiety and ensures co- operation of the patient
2	Wash hands and prepare area for surgical procedure.	To reduce transmission of micro organisms
3	Don masks goggles cap, and gloves. Drape the patient with sterile drapes	To protect from risk of infection maintain surgical asepsis
4.	Assist in administering local anesthesia on the site overlying the artery puncture site.	To minimize pain
5	Assist in performing needle puncture of artery ,inserting guide wire through the needle and threading angiographic catheter	Permits access to artery and prevents coiling of catheter in artery
6	Explain to patient that he will experience a feeling of heart flushing of face and may have desire to cough during dye injection and X –ray films may be taken during the time	Permits radiographic records of visualization of dye through artery as well as any abnormality present reduces anxiety of the patient
7.	Withdraw chatterer after the entire procedure is over and apply	Pressure on puncture site promotes clotting and prevent bleeding

	pressure to puncture site for at least 10to 20 minutes. assess puncture site for hematoma formation and increase in pain or tenderness	
8	Apply pressure dressing over puncture site	To prevent bleeding
9	Monitor vital signs apical and peripheral pulse , auscultate heart and lungs after cardiac catheterization every 15minutes until stable and compare with baseline value	To verify patient's physiological status and evaluate effects of procedure on physiological functions
10.	Assess patient for possible delayed reaction, of iodine s dyspnea ,tachycardia or rash	Reaction may occur up to few hours after injection of dye.
11.	Assess post procedure laboratory values such blood count of prothrombin time ,electrolyte and Creatinine	Changes in laboratory up to few may indicates the onset of complications
12	Instruct patient about strict bed rest for 4-6 hours and keep affected extremity straight for 6-12 hours	To preventing bleeding Long hours of immobilization not required as it may also lead to complications of DVT
13	Encourage fluid intake	Promotes excretion of dye.
14	Replace the equipment and wash hands	To reduce risk of cross contamination
15	Record the type of cardiac catheterization done. And patient tolerance of the procedure and type of dressing ,amount and type of drainage and pressure of pain or discomfort	Documentation patient response to intensive procedure and provide baseline date for determining patient's progress

E: supportive documentation
Clinical chart, nurses notes

4:30 post Cardiac Catheterization Sheath Removal

Policy: a medical officer or a registered nurse competent in the technique of removal may remove a femoral artery sheath post angiography or percutaneous interventions or investigations.

A: Definition

B: sheath removal document

This document will include the following details;

- Orders for IV fluids or premedication prior to sheath removal
- Time and dose of last heparin administration

- Size and length of a arterial /venous heath
- Order for first and second line treatment if the patient experience a vasovagal attack during heath removal

C**: on return ward**

- Patient is kept flat in bed with pressure applied to gain, either manual or Femoral –stop applied
- Record a12lead ECG on return to ward and if the patient complaints of any chest pain b
- The ECG should be reviewed and compared to pre- procedure ECG
- Any chest pain should be reported to cardiology registrar or cardiologist

D**: observation prior sheath removal**

- Continuous cardiac monitoring via bedside or telemetry
- Hourly vital signs
- Half hourly groin and circulation observation including; pedal pulse and color warmth movement and sensation of affected leg &foot.
- Assess insertion site for bleeding, a pain, tenderness, swelling, or hematoma.
- Urinary retention may occur whilst the sheath is insitu, monitor urine output and signs if bladder distention or discomfort. A urinary catheter may be inserted.

E: prior to removal
Review PTCA document for:

- Time of last heparin dose
- Time of sheath removal
- Size and length of sheath

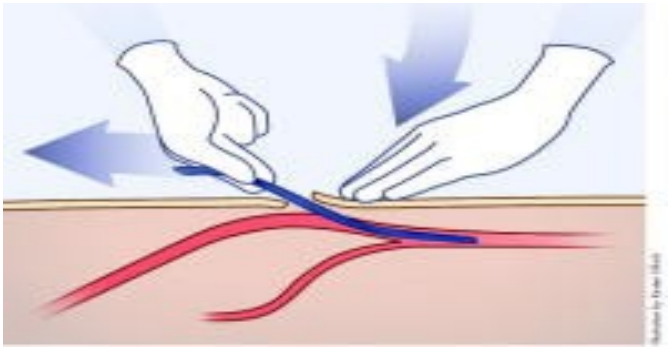
F: Article needed

- Femo- stop arch and hand pump and sterile Femo- stop pack containing belt ,bubble ,and 3- way tap
- Sterile gloves and protective eye ware
- Gauze
- Waste container for contaminated heath and soiled equipment
- Emergency drugs to be available for potential complications.
- IV atropine
- Extra IV normal saline 500ml
- Lignocaine 1% 5ml of local anesthetic required (this is given by DMO)

G**: patient assessment and preparation**

1. Discuss the procedure with the patient
2. Place under pad below the groin the patient and cover the patient with blankets to ensure com-fort, privacy and divinity, whilst still able to clearly observe sheath site
3. Position the Femo- stop belt under the patient's buttocks on line with the puncture site
4. Record and document baseline observations including neurovascular observation of both legs.
5. Ensure continuous bedsit monitoring of vital signs: HR, BP, SaO2, monitor systolic BP >160mmHg or diastolic >100mmHg may require intervention to lower BP prior to removal of sheath. Discuss with the cardiology registrar
6. Palpate and mark posterior tibialis and doralispedis pulses
7. Ensure the patient has patent IV access

8. IV pre medication and fluid bolus are given as per PTCA sheath removal orders. This is usually morphine 2.5 mgs. IV and normal saline
9. Assess puncture site for bruising bleeding or hematoma
10. Assess patient's comfort consider urinary catheterization
11. Instruct the patient to keep leg still head flat and breathe normally and to report if they experience any vasovagal symptoms or discomfort



H. procedure:

S.NO	Action	Rationale
1	Gather equipment a. Personnel protective equipment (PPE) b. Pre- medications c. Atropine , epinephrine readily available d. C- clamp (Femo-stop if ordered) e. Doppler and gel ,if required f. Suture removal kit, if sheath is sutured.	
2.	Assure patient connected to monitor and that setting are as desired	Position for direct visualization of rate/rhythm blood pressure
3	**Assess:** A. Heparin off minimum four hours prior to sheath removal or activated clotting tine less Than or equal to 160seconds. document ACT B. Patient's IV access is patent C. Vital signs and rhythm D. Drug allergies,	
4.	Explain procedure to patient	Alleviates anxiety promotes cooperation.
5	Assess and pre- medicate patient as ordered. or per protocol . Assure that atropine. epinephrine and intravenous fluid are immediately available	Pressure on the artery/ nerve can induce a vagal response with bradycardia nausea, hypotension diaphoresis.
6	.Position the patient flat on his/her back .with affected leg exposed groin to	Allows easy access and visibility of femoral site; provides visibility for circulatory changes and /or

S.NO	Action	Rationale
	toes. Legs should be 10-12 apart , with effected foot rotated out ward	mottling of lower extremity ; provides for proper hand /body positioning of sheath puller Outer rogation of foot helps move ligament away from femoral artery in groin area
7.	Review physician order for sheath removal	
8	Wash hands ,don gloves and glasses/ mask with eye protection	The potential for contact with blood requires appropriate protection
9.	Gently remove dressing covering groin maintaining stability of sheaths	Sheath side arms may adhere to adhesive dressing
10.	Wipe area with 4x4 gauze pieces if blood present	
11	Palpate femoral pulse (if unable to palpate) may check with Doppler clip suture if sheath is sutured.	This will be the area where manual pressure is applied post heath removal
12.	Document strength of following pulses doralispedis (left and right Posterior tibialis (left right)	3+normal ,2+weak ,1+ doppeled& present o- absent
13.	Give pre- meds if needed a. Local anesthetic 2 areas Draw 12cc 1% Xylocaine using b. 20G needle , change to 25Gg 1 ½ inch needle c. Area one: 2mm medial and above sheath insertion site, insert needle at 15 degree angle until tip is under layer skin. d. Aspirate syringe then slowly insert 2cc Xylocaine causing formation bled. Aspirating syringe to ½ length maintaining needle parallel to sheath (angle 15-30 degree) e. Slowly advance needle ,while aspirating syringe to ½ length maintaining needle parallel to sheath (angle 15-30 degree) f. If blood not aspirated slowly inject 2cc Xylocaine g. Withdraw needle changing needle h. Area two: 2mm lateral and below sheath insertion site , insert needle at 15degree angle until is under layer of skin. i. Repeat steps d-g j. Withdraw needle and gently massage area for thirty seconds	a. mall needle minimize skin trauma during infiltration remove needle , change needle and insert at alternate site e b. if blood appear in syringe , change needle form bleb and insert at alternate site' c. total Xylocaine 6cc per site x2 sites d. Changing needle with each re insertion decreased change of infection' e. Massage will disperse the Xylocaine into tissue and facilitates absorption

S.NO	Action	Rationale

I. removal of sheath using manual pressure

S.NO	Procedure	Rationale
1.	Position gloved figures of femoral pulse 2- 3cm above or directly below, puncture site.	Pulse check ensure proper placement of fingers before sheath removal.
2.	Apply firm pressure with finger and gently remove sheath from artery ,taking care not to crush sheath	Crushing heath may strip clot into distal artery
3	Release pressure enough to allow small spurt of blood from artery when sheath pulled. When the patient has two. Or more sheaths steps as outlined above for arterial sheath removed, apply firm pressure 2mm below venous sheath site and remove the sheath .hold non-occlusive pressure for additional ten munities on both sites. or until homeostasis is achieved.	Purges any retained thrombi resulting from sheath in artery. Remove and control arterial sheath first, then pull venous. venous pressure is low and does not require application or pressure to achieve homeostasis
4.	Note time and applied firm finger pressure to occlude distal pulse for five minutes. Continue firm pressure (permitting distal pulse) for an additional 15minutes (total 20 minutes). Or until homeostasis is achieved may use gauze sponge to wipe blood from groin area this period. During. Do not obstruct visualization or puncture site.	Pressure controls bleeding and promotes homeostasis. Monitoring may occur during the first five minutes of pressure, should be alleviated .when pressure slightly reduced after first five minutes and distal circulation is restored.
5	Intravenous patient will required 40munites of pressure .may use manual C- Clamp or combination	
6.	Remove hand slowly after holding pressure and inspect site for 1-2 minutes. If bleeding occurs continue pressure at site until hemostat sis	These assessments aid in decreasing the changes of post hematoma /bleeding
7.	When patient has both an arterial and venous sheath. Follow steps as outlined above for arterial removal. after 10minutes of pressure for the arterial removal ,extend of finger pressure such that it corves the femora l venous access site and remove the heath .hold on	Venous pressure is low and does not required application of occlusive pressure to archive homoeostasis

	occlusive pressure 10 minutes or until homeostasis is achieved.	
8	If bleeding should develop once pressure has been released from either arterial or venous site. A minimum or 20minutes or recompression should be applied notify re- bleed.	Floor nurse who receive post catheterization patient should be comfortable applying additional pressure. if wound ,immediately glove remove dressing and applied direct pressure to site until homeostasis is achieved.
9	If no bleeding or hematoma occurs apply anti- bacterial and tight adhesive following sheath removal .site should be left exposed for first 30minutes	Light dressing allows easy visualization of any oozing or bleeding at site. Heavier dressing may block visualization of bleed.
10.	Site should be visually monitored and palpated every 15minutes for 4hrs and 30 minutes For 2and then hourly Distal pulse should be palpate as above.	Even after removal and pressure application, there are chances for the patient to bleed.
11.	Patient will remain in holding room for minimum of 30minutes after homeostasis has been obtained.	To closely monitor
12.	Patient are generally at berets for 4hours cauterization sheath removal or six hours post intervention sheath removal	Movement can cause bleed.

J: management of patient with Sheath Removal

Following cardiac catheterization for angiogram or angioplasty and stent development, the patient may return from the cardiac cauterization lab (CCL), with a femoral artery sheath in-situ. When collecting the patient from the CCL, the RN should receive handover of relevant details including.

- Procedure performed
- Medication given during/post procedure –check the drug chart is completed and signed.
- Check intravenous infusion and rates are as ordered.
- Observe sheath site for signs of bleeding ,swelling or hematoma
- Review last vital signs, pressure or absence & location of pedal pulse.
- Determine if the patient has chest discomfort, pain or shortness of breath.
- Determine orders for time of femoral artery sheath removal and ensure the PTCA sheath re-moval document is completed.

K. management of complications

- Pressure on a large artery and pain can stimulate the Vagus nerve , causing slowing of the
- Heart rate a drop in blood pressure
- Anxiety pain and discomfort at the puncture site may also result in a vasovagal reaction.
- Early signs include pallor ,nausea and /or yawning ,which often present with a slowing of the heart rate before a drop in blood pressure
- Vasovagal reactions may lead to irreversible shock if untreated.
- IV atropine and IV fluid should be administered as ordered
- Oxygen should be administered via mask at 6L/min and the bed tilted to head low position.

- Vasovagal reactions may occur whilst applying pressure to the groin therefore another person should be present to administer treatment while pressure on the site is maintained.

2. Bleeding

- Superficial bleeding: from soft tissue may appear as slight ooze .to determine whether it is arterial or superficial, briefly occlude the femoral artery with manual pressure, if is superficial the ooze will not stop. bruising around the site may become apparent accompanied by minor swelling ; pressure may be applied to reduce the swelling
- Mild bleeding :occur following removal of the femoral artery sheath therefore pressure should be applied for 10-20minute .either using the Femo-stop or manual pressure and the cardiology team notified
- Major bleeding: resulting in drop in hemoglobin of 3-2g/dl or resulting a blood transfusion occurs in only about 0.75% of patients.
- A retroperitoneal bleed: from a ruptured false aneurysm may occur in to the retroperitoneal area and manifest as severe back pain, hypotension and brushing around the puncture site. Any increase in back discomfort or severe back pain, or hypotension should be reported immediately

3. Hematoma

- Hematoma caused by bleeding in the tissue surrounding the site femoral sheath will feel firm and will have defines boundaries. They may also be swelling and localized pain. If unsure whether hematoma is present, the sheath should be compared with the other side.
- Larger hematomas: have potential to result in edema of the lower leg with possible obstruction of blood flow; if the femoral nerve is also compressed there may be deficits in movement & sensation. Most hematoma can be managed with manual compression. Large hematomas can cause censurable discomfort to the patient and have the potential to develop into false aneurysms
- Pseudo aneurysm (false aneurysm) is a result of blood leaking from the artery into the surrounding tissue with persistent communication between the originating artery and the terminating blood filled cavity. A pseudo aneurysm can be detected by physician examination and palpation of pulsatile femoral mas as well ultrasound. The extremity a pseudo aneurysm may also cause distal emboli, or potentially rupture..

4. Ischemic limb arterial occlusion

A clot formatting in the femoral arterial system may result in diminished pulse, coolness or pallor as well as changes in sensation. Any changes in neurovascular observations should be reported to the cardiology team and requires immediate intervention.

L: Discharge

Potentially the patient may be discharged the following day; each patient is assessed on an individual basis.

- The site should observed for signs of bleeding or hematoma
- The patient should be instructed to keep the site clean and dry and report ooze , swelling redness or discomfort
- To reduce the change of possible hematoma formation or bleeding the patient should be instructed not to lift more than 5kg for the next week.
- If the patient has had an AMI they should check their doctor when they can resume driving .if the procedure was elective and uncomplicated, they can generally drive within two days or so return to work.
- GP follow up should be organized within 5-7days and a cardiology appointment organized for 4-6 weeks or as stated by cardiologist

- Check the need for medical certificate for work.
- Ensure discharge medications are given to the patient and that they are aware of the importance of continuing all medication and not to stop taking any without advice

M: patient education

Following a PTCA and stent the patient may require education regarding maintaining healthily lifestyle and modification of risk factor

Their will be benefit from cardiac Rehab sessions and should be referred to an outpatient program along with literature and verbal information regarding modification of lifestyle, diet and ceasing smoking.

N: supportive document:

Nurse record and TPR sheet

4: 31 Assisting with Pericardio-centesis

Policy:

Pericardio-centesis will be performed by a physician and assisted by a registered nurse and an echocardiogram technologist.

A**: purposes:**

To provide a guideline for nursing responsibilities in assisting the physician with Pericardio-centesis

B**: Articles needed**

- 16 to 18 gauze short bevel needle or catheter over needle 3in length
- 10ml syringe with three –way stopcock
- Provide –iodine pre solution
- 'local anesthetics (1% lidocaine)
- Sterile gloves ,gown mask
- Alligator lip cable
- 12 lead ECG machine
- Defibrillator and resuscitation equipment
- Vacuum bottle and drainage tubing
- Sterile 5cc,3ccsyringe (2each)

D: procedure

S.NO	Action	Rationale
1	Validate signed /informed consent	Ethical consideration
2.	Place patient in semi recumbent position with head elevated approximately 45degree	Helps to insert needle easily
3.	Obtain baseline blood pressure	
4	.Attach limb leads of 12 lead ECG	
5.	Prepare resuscitation equipment and medications as appropriate	Serious dysrthymias can occur during the procedure
6	Prepare skin site with providing –iodine solution	The most common insertion site is sub-xiphoid ,with the needle being inserting in the angle between the xiphoid and coastal margin directed towards the right shoulder aspiration fluid may be

		clean cloudy or bloody but should not clot.
7	Monitor effect of therapy on patient during needle insertion and aspiration of fluid using echocardiography guidance	
9.	Once effect is withdrawn ,cleanse the site with antiseptic solution apply sterile dressing	

E: post procedure precautions;

1. Monitor blood pressure, pulse and heart rhythm during entire procedure and every 15munites for the first 2hours and hourly for 6hours.
2. Assess for signs and symptoms of cardiac tamponade, air, embolism, laceration of coronary artery, hydropneumothorax.

F: Document

1. Pulse –oxymeters every 15minutes
2. Amount and description of aspirated fluid
3. Any dysrhythmias
4. Patient tolerance

4:32 .Nursing Care of Patient with pace Maker

Policy: pace maker implantation will be performed by a cardiologist and assisted by a registered nurse.

A: Definition

Insertion of artificial cardiac pacemaker and electronic device used in the place if sino-atrial node. It is a battery operated electrical circuit in which electricity travels through a conducting wire to the myocardium and the myocardium stimulates the heart to beat.

In permanent pacemaker the power source is implanted subcutaneously in the chest or abdomen and attached to the electrodes, which are threaded transvenously to the right ventricle or right atrium.

B: Indicators

- third degree AV block
- bundle branch block
- inducible A-V block
- sinus node dysfunction
- sick sinus syndrome
- hypertensive carotid sinus and malignant vasovagal syndromes
- tachyarrthmia

C: Articles needed:

1. electronic cardiac monitor
2. pacemaker
3. catheters
4. sterile PPI Tray with
   a. forceps -4 toothed straight big -1 ,small -1
   b. scissors -3 tissue cutting -1 big , tissue cutting small -1

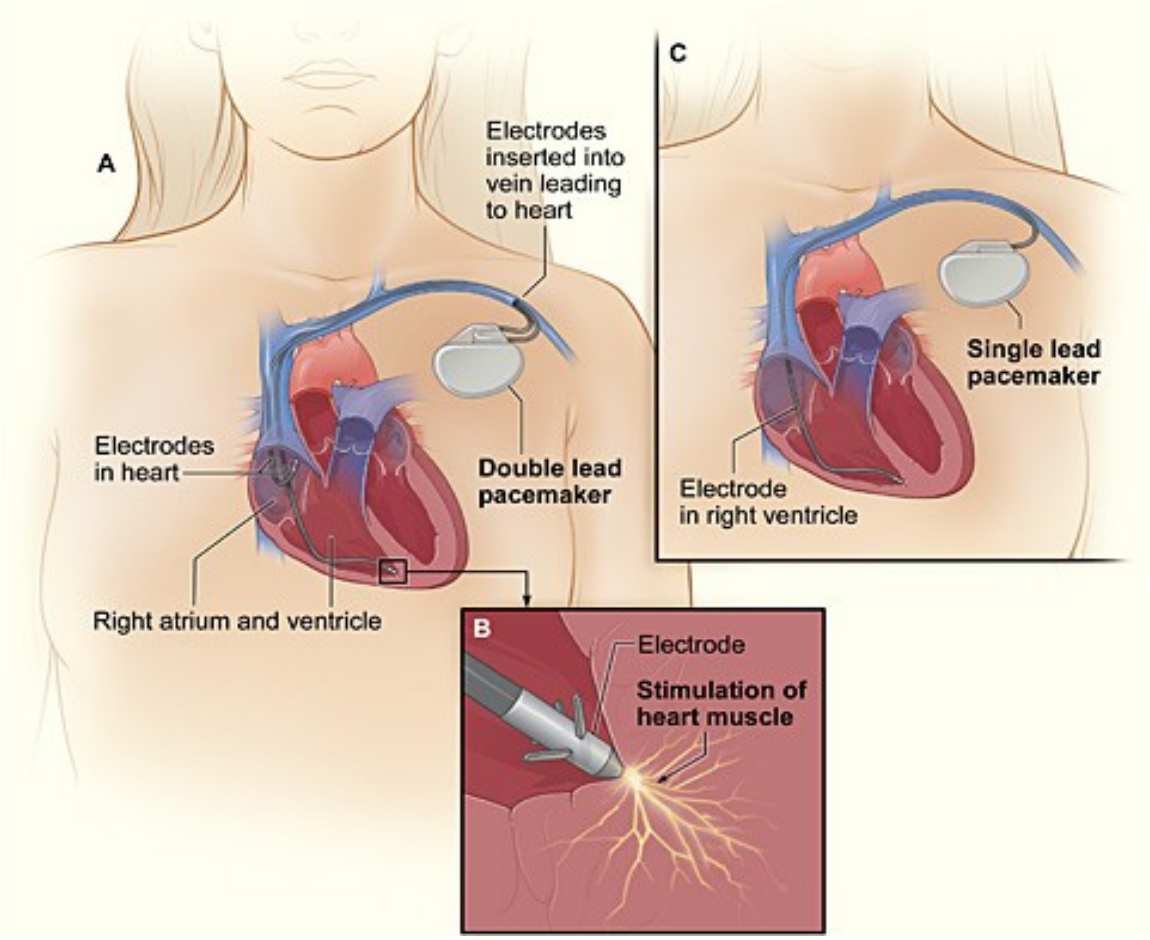
c. suture -1,retractors-3
d. self-retaining retractors-1big
e. pace retractor small -1, big- 1
f. scalpel blade

Other equipment

a. local anesthetic
b. cleaning solution
c. Dynaplast
d. emergency resuscitation equipment

D: pre- Nursing Care

1. Explain about starvation required for 8-10 hrs prior to procedure
2. Enquire where patient has drug /food allergy and report to doctor if any
3. Clip the hair from the following area
   a. Anterior cheat from neck to umbilicus , nape of neck to loins
   b. Both axillae and arm
4. .Advice to take bath with antiseptic scrub and water for 2days before procedure and on day of procedure
5. Provide a clan gown
6. Remove jewelry denture and contact lens if any
7. Ask patient to empty bladder prior to pre medication
8. Start IV line with heparin lock
9. Administer pre medication and first dose of antibiotics
10. Explain that one relative can stay in CCU waiting area
11. Send the patient to cardiac cauterization lab with following items
    a. Normal saline 1pint
    b. Disposable needle 21G -2
    c. Dynaplast 1roll.
    d. Betadine solution 100ml -2bottles
    e. Inj; gentamycin, cefazolin if not administered with pre medication
    f. Disposable syringe 5cc -2



Pre- procedure for insertion of pacemaker

S.NO	Action	Rationale
1.	Explain procedure to patient and family	decrease apprehension
2.	Assure patient consent obtained physician	Can only done in an emergence without consent The physician needs to document in the progress notes regarding the emergency situation
3	Assemble equipment	Supplies can be obtained from central supply or the ICU's
4.	Establish or assure IV access or assure current IV I is patient	Preferably 20G or large. will be used for medication administration throughout the procedure
5.	ECG monitor should be maintained during the procedure	Keep patient on bedside monitor so patient's rhythm can be watched .document to pre- procedure rhythm requiring the insertion of a temporary pacemaker.
6.	Monitor intrinsic rhythm as well as rhythm during and after procedure	To evaluate for adequate rate and pacemaker function
7.	Position crash cart and defibrillator near patient's room	Due to increased incident generator with date and time of battery change on a piece of tape.
8.	Prepare pulse generator for use; 1. Insert new 9volt battery 2. Check for proper function	Label the pacemaker generator with date and time of battery change on a piece of tape

9.	Prepare for use of bedside fluoroscopy if needed .ICU beds can be used for fluoroscopy	Remove gowns with metal snaps and EKG patches should be off the chest when possible to sure open area across chest

Assisting during insertion of pacemaker

S.NO	Procedure	Rationale
1	Wash hands and put on mask	Everyone in the room must wear a mask
2.	Assist physician with sterile gown ,gloves, and mask	Persons assisting with insertion should also wear sterile gown gloves and mask
3	Cleanse site with antiseptic solution such as provide iodine	Make sure you if there is in an allergy to iodine before cleansing the site.
4	Assist physician with draping patient	Assure large sterile fille
5.	Set up and open sterile suppliers as needed	Maintain sterile technique
6.	Assist with administration of local enthusiastic to numb insertion site	It is essential to know if the patient has any allergies
7.	Assist physician with insertion procedure	Proceed as with insertion of any central line
8.	Verify trasvenous and placing lead wire placement via one of the following a. Fluoroscopy b. Bedside ECG 12lead ECG	It is fluoroscopy is being used. Staff in the room should all wear lead.
9.	Observe the ECG rhythm for ectopics to occur throughout the procedure and notify physician if it occurs.	If ectopics occurs during insertion. Physician may order medications to be administered IV. patients should also be on a beside monitor for continuous observation throughout the procedure
10.	Monitor and record vital signs throughout procedure	Obtain BP, pulse, and perspiration and document
11.	Connect the gray connecting cable the pulse generator	Physician will connect the pacing wire to the gray connecting cable and hand the other end to the nurse. Connect the cable to the pulse generator by inserting positive electrodes to positive port and negative electrodes to negative port. Check back gently on connection to assure tightness. The nurse should assure understanding the pulse generator prior to starting the procedure
12.	Turn on pulse generator and turn on settings prescribed by physician.	Set milliamp ,rate, and sensitivity
13	Assist physician in assessing threshold	Threshold is the minimum amount of energy required to depolarize the heart .when pacing wire is directly touching the endocardium. threshold is

S.NO	Procedure	Rationale
		usually less than 1.5 milliamps wire may need to be repositioned by Physician if less than 1.5milliamps since this may be indicative of poor contact with viable myocardium.
14.	Set the milliamps or output dial as prescribed by physician.	The usual setting is two times the threshold or between 3-5pm. The milliamps should never exceed 10 because higher levels can cause myocardium damage.
15.	Increase rate of pulse generator and momentarily observe for effective demand pacing.	To assure proper pacing of 1:1 conduction observe pacing spike.
16.	Pull plastic over guard over dials on face of pulse generator.	To protect from accidental adjustment or changes in pacemaker settings.
17.	Place a dry sterile dressing over insertion site	Sterile dressing should be applied as with a central line. Prior to covering with a dressing ,the physician will suture the wire in placing to maintain stability
18	Obtain s STAT 12 lead ECG.	To document effective demand pacing
19	Obtain STAT portable chest X-ray.	To document position of placing wire and rule out pneumothorax
20.	Infuse IV solution as ordered by physician through all new port established during procedure.	Fluid must be infused through the side port of the RV pacer port lumen to assure patency
21.	Obtain specific physician order regarding wedding of pulmonary artery	If pace maker wires insertion is through PA catheter,.
22.	Hang pulse generator from an IV pole near the patient.	
23.	Obtain post procedure vital signs and record.	Obtain and record vital signs as ordered by the physician.

Post procedure care with pacemaker

S. NO	Action	Rationale
1.	Instruct patient not to tamper with pacemaker or wire in any way	To avoid dislodging the pacemaker wire.
2.	Warm patient not use any electrical equipment as long as pace maker in.	Avoiding aground electrical equipment will prevent micro shock.
3.	Constant ECG monitoring should be maintained as long as pace maker in.	Rhythm strips should be document every shift and as needed with any rhythm changes. Notify physician immediately if non- sending or non –capture occurs.
4.	Observe for absence or loss of ability of pacing	Check to make sure pacemaker is turned on and all connections are secure. Check to see .if patient's heart rate is exceeding pacemaker rate. In pacing is

		not resumed. Call physician immediately
5.	Restrict patient activity as ordered by the physician	Patient may be kept on complete bed rest to avoid dislodging pace wire.
6.	Monitor patient level of comfort and administer pain medications as ordered PRN. Evaluate patient response to the intervention	Patient will not function properly if connections are loose or disconnected.
7.	Check pacemaker setting and ALL connections every shift and document. Document senility and stimulation threshold at least every 24 hours.	Pace maker will not functions properly if connection are loose or disconnections
8.	Obtain vital signs as per unit policy or as ordered by the physician	Infection is a risk of any indwelling catheter and a rise in temperature should be reported to the physician
9.	Change dressing in accordance with central line hospital policy	Decrease potential for infection.
10.	Observe patient closely for any signs and symptoms of perforation of myocardium with result pericarditis or pericardial tamponade.	Early recognition leads to promote treatment

E: Documentation on the nursing Progress Notes

- All vital signs obtained during the procedure
- EKG rhythm strips before and after the procedure
- Insertion site used and methods of port used
- Pacemaker setting (MA, rate, sensitivity)
- IV solution and rates established via new port
- Physician performing the procedure
- Patient education and evaluation
- Patient tolerances, dressing applied.
- Any medications given
- Chest X-ray and 12lead ECG

E: Patient Education

Don't be in contact with

- Cell phones and Mp3playesrs (for examples ,iPods)
- Household appliances ,such as microwave ovens

- High –tension wires
- Metal detectors
- Industrial welders
- Electrical procedures

Some medical procedure

- Magnetic resonance imaging
- Shock- wave lithotripsy to get rid of kidney stones
- Electro –cauterization to stop bleeding during surgery

G: physician Activity

1. Won't limit you from doing sports and exercises including strenuous activates
2. May need to avoid full- contact sports, such as football

H: Battery Replacement

Pacemaker batteries last between 5and 15year (average to 7years) depending on how active the pacemaker is.

4: 33 Nursing Care of a Patient with Pulmonary Artery Catheter

Policy: the pulmonary catheter will be performed by a physician and assisted by a registered nurse and an echocardiogram technologist.

A: purposes:

The pulmonary artery catheter is a diagnostic tool to obtain and monitor hemodynamic pressure.

B: Insertion:

The physician may choose to insert the pulmonary artery (PA) catheter at the patient's bedside or under fluoroscopy in the procedure room. The qualified RN and /or registered Respiratory therapist will be available to assist the physician and monitor the patient during the procedures.

C:Articlesneeded:

Bedside table

1. Sheath introducer kit 8(8FR)
2. Transducer kit (Trifurcated)
3. Pulmonary artery flow –directed thermo – dilution catheter with 7.5 FR or with 7.0 FR pace-port (pace utilized for cardiac pacing)
4. 1% or 2% Xylocaine anesthetic
5. 21gauze needle
6. Sterile gloves
7. Small sterile gowns and mask
8. Pressure bag
9. Small sterile towlesx3
10. 500cc normal saline unless otherwise ordered by physician.

NOTE: due to the temporary presence of wires and other invasive in the heart and vascular system, the short- term use of Heparin in the bags in the procedural/ surgical department will be practiced at the desecration on the physician

11. Emergency code blue cart and defibrillator should be readily available
12. Monitoring ECG equipment
13. Occlusive dressing
14. Adapter cap for pace –port necessary
15. Personal protective equipment

D: Procedure

Use 500ml normal saline .unless otherwise ordered. Connect solution to transducer kit. Assemble infusion set described above. The drip chamber is to be completely fluid filled. A sterile 21- gauze needle will be inserted into the medication additive port and al air will be removed from the saline bag. With all air removed from the system potential air emboli will be prevented. Appropriately label and date flush solution and infusion set. The fast flush device is color coded. Red for arterial, yellow for pulmonary artery catheter distal lumen. Blue for CVP, (or proximal lumen) of PA catheter

Slip transducer into holder.

- Flush retire line to ensure that there are no air bubbles .check and tighten all connections.
- Cap all port on stopcock with enclosed dead-end caps, being careful to maintain their sterility.
- Label all tubing for the next designated tubing change using a regular IV tubing label.
- Pressurize the normal saline flush bag to 300mm Hg and maintain.
    - Level the transducer to the phlebostatic axis forth inter-costal space mid- axiliary line. Calibrate (or Zero) the transducer to atmospheric pressure.

i).Pre-insertion

- Explain procedure to patient .positive patient identification is required prior to performing the procedure. Refer to corporate policy –patient identification: inpatient /outpatient.
- Obtain a written consent and witness same. If unable to obtain consent due to patient's condition, document in narrative notes.
- Perform a "time out" per hospital policy
- Monitor ECG
- Record patient's vitals. Observe document any dysrhythmias.
- Position according to physician reference.
- Have equipment .code blue cart ,and defibrillator available

ii).Insertion

- Assist with sterile preparation and draping of insertion site.
- While maintaining sterility, flush all ports of PA catheter with saline flush solution and place adapter cap on pace port if in indicated.
- Alert the physician to any ectopic beats or dysrhythmias noted during passage of catheter .have lidocaine bolus available.
- Either an RN or an RPT will be available to inflate and deflate the PA balloon during the insertion procedure.
- Record right atrium, right ventricles, pulmonary artery, and pulmonary catheter wedge (PCWP) pressures during insertion.
- Monitor and evaluate the patient's condition throughout the procedure. Blood pressure and ECG are especially importance and should be watched closely. Continue to reassure the patient and explain activities during insertion.
- Obtain portable CXR after insertion unless inserted under fluoroscopy.
- Medications and intravenous fluids may be infused in an emergency situation via RA and pace ports if blood return is present prior to position verification by X-ray and direction by physician.

iii).Management

Application of sterile dressing using aseptic technique.

1. Make a sterile loop without kinks. secure tubing to the skin to prevent inadvertent
2. Dislodgment of the line
3. Apply tape to secure distal end of sleeve catheter to preserve sterility if sterile –sleeve.
4. Used. If sterile –sleeve has a closure valve on distal end, tighten until firm hold obtained
5. On catheter. (Be sure it is not so tight as to occlude any of the ports.)

1. Cover insertion site with a 4-x-4 sterile gauze dressing such as covaderm (a sterile transparent dressing may be used per physician order) and occlusive tape to edges of dressing, label with date, time, and initials.
2. The dressing, flush bags and tubing are to be changes every 96hurs. dressing may be changed

E: Nursing Responsibilities:

- TPN bags and tunings are changes every 24hours. Flush bags and tubing changes are the responsibilities of respiratory care servicers
- Document the position of the catheter at the insertion site upon insertion and every shift unless inaccessible due to dressing.
- Monitor and document PA, RA with vital signs.
- PCWP is usually monitored at the beginning of each shift (every 12hours) and PRN unless otherwise ordered by the physician.

1. Use 3cc syringe and withdraw barrel to maximum of 1.5cc.
2. Attach syringe to balloon port
3. Slowly inflate balloon until a PCW is seen and numbers on oscilloscope change.
4. Disconnect syringe from balloon port to deflate the balloon. DO NOT aspirate on the syringe to deflate the balloon. This may cause the balloon to rapture. An inflated balloon is always associated with a feeling of resistance. If no resistance if felt, discontinue inflation immediately. the balloon has probably ruptured and should be so labeled to prevent its future use.
5. 3cc syringe should remain in closed position between PCWP readings with the port in the locked position.
6. PA catheter and CVP lines should re recalibrated every 4hours and with position changes. Readings will be obtained per unit standards with patient in the supine position with head of bed elevated no more than 45degree and at end expiration. Alarms will be on at all times with appropriate parameters individualizing for the patient.
7. Nursing is to record pressure, with time and date and will be written on the strip and placed in the physician's progress notes or medical record according to unit preference upon initial placement, PRN, and at the beginning of each shift.

F: withdrawing a PA Catheter out Of Permanent Wedge: (Responsibility limited to qualified RN or Respiratory Therapist):

- Verify waveform with strips previously recorded in progress and or medical record
- Run a strip to document waveform
- Consult R.T. Team Leaders, clinical coordinator or CNS to verify waveform.
- First attempt to change position of catheter by having patient cough, deep breath and by repositioning patient
- If the above is unsuccessful, try to aspirate blood .if this can be done, keep aspirating until blood no longer seems thickened. Flush with saline until a readable pressure trace appears. If no blood can be aspirated. DO NOT FLUSH. Call physician for possible withdraw.
- If waveform continues to indicate permanent wedge. Withdraw the Pa catheter 1

- Centimeter and observe waveform, if no change, repeat twice for a total of 3cm .if still no changes inform the physician.
- If RV waveform appears, pull PA catheter to RA and notify physician.
- Upon completion ,run another strip and document the number of centimeters the PA catheter was withdraw

G: Discontinuation of catheter: (responsibility limited to qualified RN or respiratory therapist

- If applicable, check with physician to see if introducer is to be discontinued as well.
- Explain procedure to patient position flat in bed. Notify that the PA catheter is being discontinued. Continuous ECG is monitored.
- Record vital signs before and after withdrawal. Be sure balloon is deflated before withdrawal by removing syringe from balloon port.
- Clip suture with sterile suture set using aseptic technique. With clean gloves , place 4x4 gauze over insertion site and slowly withdraw the PA catheter and cord together as unit (unless introducer is not to be discontinued.)
- Observe ECG monitor for dysrhythmias and other irregularities as catheter is being withdrawn.
- Maintain pressure distal to hand over withdrawal site until bleeding has ceased.
- If ordered by physician, put tip into a labeled (date/time/details) sterile container, using sterile technique and send to laboratory for culture and sensitivity. Obtain a requisition to accompany the tip.
- Check sire at least every 15 minutes x2 then every hour x2, then PRN. Document condition of site.
- If discontinuing a femoral pulmonary artery catheter and /or venous sheath, keep affected leg straight and head of bed elevated no more than 30degree for the first six hours, or individualized per physician order. Immobilize leg PRN.
- Monitor patient for possible complications ,such as dysrhythmias ,pulmonary emboli and infection , for at least 24 hours after

H: complications:

- Ventricular arrhythmias : irritation of the catheter tip as it moves through the ventricle on insertion or when catheter tip migrates back into the ventricle
- Knotting or coiling of catheter on insertion
- Pulmonary infraction : catheter trip wedged for prolonged period or formation of thromboemboli
- Pulmonary artery rupture: over inflation of balloon while in wedge position.
- Pneumothorax /hemothorax, infection –local systemic ,bleeding

I.NURSING CARE

- zero transducer and maintain level with the phlebostatic axis
- Ensure correct length of catheter is secured in the sheath with suture and tape.
- Ensure catheter lumen are secured to a pillow slip placed near the patient's shoulder.
- Record catheter length at the sheath site at commencement of shift
    i. Think band =50cm
    ii. Thin band =10cm e.g. thick band plus 1thin band =60cm
- Review CXR to check catheter position.
- Record pulmonary pressure hourly normal ranges;
    i. Pulmonary artery systolic pressure :15-30mmHg

ii. Pulmonary artery diastolic pressure 4-12mmHg
iii. Pulmonary artery mean pressure 6-16mmHg

- Record pulmonary artery capillary wedge pressure to establish a baseline and then only to evaluate treatment ie not as routine measurement .normal range: 2-12mmHg
- Change dressing every 72hurs or earlier if soiled or loosened
- Never allows balloon to remain inflated and wedged for more than 80-15 seconds as it will act as a pulmonary embolus
- To prevent accidental balloon inflation disconnect syringe ,expel any air , reconnect syringe , then ensure inflation valve is open to the syringe
- Monitor pulmonary artery trace set alarm limits and ensure that accidental occlusions (wedging) is recognized and ratified early in order to prevent pulmonary infarction

J: Troubleshooting

Problem	Cause	Prevention	Treatment
Dampened waveform	Partial clotting at catheter tip. Misdiagnosis of overdampened waveform due to a scale that is too high	Flush clotting at maintained 300mmHg Set scale appropriately to pressure being monitored	Aspirate and then flush gently Check scale and adjust as necessary.
Negativeorlow pressure	Transducer level incorrect Zero not correct	Maintains transducer at phlebostatic axis Zero	Check and reposition transducer at phlebostatic axis Recheck zero
Ventricle Arrhythmias	Excusive loops in right ventricle Catheter migration to RV Irritationduring catheter insertion	Suture in- situ Maintain immobility of catheter with secure dressing Keep balloon inflated while gently advancing the catheter	Check chest X ray Reposition catheter Check position is in pulmonary artery. Inflate balloon, float catheter into PA. (Doctor only). Inflate treatment if intractable arrhythmia occurs.
Hemorrhage /infarction	Catheter migration distally inadvertent wedding of balloon	Record length of catheter and check TDS Leave balloon deflate with stopcock open but syringe empty	Check chest x- ray Open stopcock and allow any air to passively fill syringe, flush line. Suction or ask patient to cough as the catheter aay move back as a result of a sudden intense elevation in doctor who will reposition catheter.

K: supportive documents:
Vitals sings sheet and nurse record

4:34: Nursing Care of a patient With Intra –Aortic Balloon Pump (IABP)

A: introduction
The intra –aortic balloon pump (IABP) is a circulatory assist device that is used to support the left ventricle .the IABP uses counter pulsation where aortic blood is displaced with the inflation and deflation of the balloon catheter ,which is timed to the cardiac cycle. Counter –pulsation provides both an augmented drastic arterial pressure and decreased end diastolic pressure. The balloon is connected to a console that regulates the inflation or deflation of the balloon with the passage of helium. Helium is used it is easily dissolved in blood and prevents the risk of air emboli if the catheter ruptures.

B: The IABP has following effects

- Increases coronary artery perfusion
- Increases myocardial oxygen supply
- Decreases myocardial oxygen demand
- Decreases myocardial work by reducing after load
- Increase blood pressure
- Decreases pulmonary artery pressure

C: Indication

The IABP used in:

- Acute left ventricle failure post cardiac surgery
- Severe unstable angina
- cardiologic shock post myocardial infarction
- bridge to cardiac transplantation
- Stunned myocardium after myocardial infarction.

D: Contraindication

- Severe aortic insufficiency
- Aortic or abdominal aneurism
- Severe peripheral vascular disease

E: Insertion
The balloon catheter is inserted either percutaneous or surgically by cut down into the patient femoral artery. The catheter can be inserted at the bedside, in a cathlab or operating room theater. The catheter is threaded up through the femoral artery and located in the descending thoracic aorta.

F: IABP size:

The size of the balloon is depending on the patient's height to prevent occlusion of sub- clavian or renal arteries
<160cm use 34cc
160-182cm use 40cc
>182 cm use 50cc.

G: Trigger of IABP
The trigger is the way the IABP identifies the beginning of the cardiac cycle. There are 5ways

Triggering may be achieved.

1. ECG uses R wave on the ECG to imitate the pumping.
2. Pressure the arterial pressure waveform is used to trigger.
3. Internal this allows a synchronous trigger set at 80beats/min. internal mode should never be used if a patient is generating a cardiac output
4. Pace V/AV uses ventricle spike to trigger an event, it not an appropriate trigger for demand pacing
5. Pacer A, the R wave on the ECG is the trigger; the atrial pacer spikes are enhanced and rejected. This mode is only if ECG trigger is not able to interpret R wave with a pacing. Never use if patient is ventricularly paced.

Augmentation:

This is ability of the balloon to be fully expanded and contain the full amount of helium for the catheter .during normal pumping it should be maintained on full (meaning all lights on) to prevent blood clots forming by the sides of the pump and preventing thrombosis formation. The ability of the balloon to forward flow blood when inflated may be affected if blood is allowed to flow down the sides of catheter.

H: Complication of IABP

- Limb ischemia- bleeding from sire internal
- Infection /sepsis, aortic dissection, embolism.
- Thrombosis, false aneurism, aortic valve rupture
- Catheter obstruction due to improper positioning with renal arteries or subclavian
- Inappropriate timing causing increased after load and stress of left ventricle.
- Pump failure ,balloon catheter rupture and gas loss
- Heamolysis ,inability to wean
- Incorrect timing, compartment syndrome, acute renal failure.

I: Nursing Care

Monitoring the following

- Hemodynamic status
- Circulation observations
- IABP ratio and level of augmentation
- Urine out-put to indicate an early sign of IABP catheter migration
- Daily chest X- ray to monitor position of IABP catheter.
- Insertion site for infection and bleeding
- Maintain normal coagulation and electrolyte balance
- External tubing from the catheter to pump for nay condensation or blood stains
- Ensure patient is quiet and released with minimal movement around the bed. Sedation may be required.
- Martian a patient airway .the patient may be extubated if awake and orientated and satisfies estuation protocol.
- Patent is nursed supine 30 elevated or on side (ensuring that the leg which has the balloon inserted through the groin is straight at all times ,avoid bending it..

J: Troubleshooting

The following are common problems that occur when using an IABP

a) **No trigger** – this means that the IABP has lost its tracing of ECG or pressure and is unable to time the inflation and deflation.

Action: to reconnect the ECG leads or pressure cable .or change the ECG leads or tracing lead to obtain a better trace.

b) **IABP disconnection:** this means the IABP catheter extension tubing has been disconnected and the pump will stop working.
Action: reconnect the extension tubing, PRESS LAB Fill for 3 seconds till promotes is on the screen and the PRESS assist /standby to start pumping.

c) **Rapid Gas Loss**: this will appear if there is a leak or hole in the balloon or extension tubing .this means the balloon may be ruptured, you will see flecks of blood in the tubing (no gushing blood .as blood is under pressure.
Action: if the balloon is losing its gas and filling is frequently necessary .or blood flecks have been identified in the tubing , then stop pumping and call the RMO .it will mean that the catheter will need to removed and replaced . Check all connection for any leaks or disconnections.

d) **Check IABP Catheter**: this means that the IAB catheter is either kinked insitu or at the insertion site or it has not unwrapped fully insitu.

Action: examine the catheter and extension tubing for any signs of kinking. Ensure that full augmentation is on; making sure the balloon has the ability to expand .examine the skin insertion ,as this is a common place for kinking .if problem continues ,connect RMO

e) **Low helium** – this means that the supply of helium is less than 24fills.
The helium cylinder needs replacing .pleasing ensure that the O ring is not dislodged while changing the cylinder as this ensures the seal

f) **Low battery**- this means the battery has less than 30 minutes of operating time.
Action: ensure that the balloon pump is connection to the mains power at all times, to recharge the battery.
IABP Failure: this means that the IAPB console fails to pump, usually as a result of electrical malfunction or the presence of blood in the condensers.
Action: contact RMO .disconnect patient from the IAB console and obtain another IAB console (this should only to be attempted if the balloon is not required .as the same problem will occur). Ensure that the machine is not Labelle faulty. Depending on the patient's hemodynamic status. The AIB catheter may be removed

g) **Augmentation below Limit Set**: this means that the augmented diastolic has fallen below the alarm set.
Action: or the presence of blood in the concerned with the drop, then contact RAMO

K: supportive documentation

Vital signs recording sheet, IABP monitoring sheet and nurse's record.

4:35 Nursing care of a Patient with Acute Myocardial Infraction

A: Definition

Myocardial infarction occurs when myocardial tissue is abruptly and severely deprives of oxygen ischemia can lead necrosis of myocardial tissue if blood flow is not restored.
Infraction does not occur instantly but evolves severe hours.

B: Assessment:

1. Pain:

- Patient may experience crushing substantial pain
- Pain may radiate to the jaw, back and left arm
- Pain may occur without cause ,primary early in the morning

- Pain is unrelieved by rest or nitroglycerin and is relieved only opioids.
- Pain last 30munites or longer
  1. 2Nausea and vomiting
  2. 3Diaphoresis
  3. 4Dyspnea
  4. 5.dysrhythmias
  5. 6Felling of fear and anxiety
  6. 7Pallor ,cyanosis, coolness of extremities

INTERVENTION:

a) Window period three Hours

i) DOOR TO NEEDLE –should be within 60min (THROMBOLYSIS)

1. secure peripheral line
2. ECG ECHO
3. Load patient with 300mg disprin
4. 300mg clopilet or 60mg prasugrel and 80mg atorvastatin
5. Start NTG (infusion)
6. Start morphine (STAT dose)
7. O2 supplement
8. Consent form (risk of bleeding to be explainedo
9. If patient is pulmonary edema to give IV Frusemide can go up to 120mg if needed
10. To secure Foley's catheter
11. Premedication inj:avil , pan and hydrocortisone to be given
12. Shift patient immediately to I CCU
13. As the door time needle time is openly 60min.

ii) DOOR TO BALLOON (PRIMARY PCI: SHOULD BE WITHIN 90MI

1. should be within 90min
2. organize cath lab and anesthetist
3. Secure peripheral line (preferably left hand. EJY line also be secured (for inotropes if indicated)
4. ECG
5. Echo – to rule out RWMA
6. Load patient with 300mg disprin (non-enteric coated aspirin)
7. 300mg clopilet or 60mg prasugrel and 80mg atorvastatin
8. Start iv NTG (titer if according to BP)
9. Inj: morphine
10. O2 supplement
11. If patient is pulmonary edema to give iv Frusemide
12. Send serology and serum Creatinine& cardiac enzymes
13. Secure Foley's
14. Both growing and right arm preparation
15. High risk consent
16. Premed –avil ,Ranitidine, hydrocortisone
17. Shift the patient immediately to Cath lab
18. As door to balloon time is 90min

NOTE: DO NOT GIVE HEPARINE PRIOR TO PCI IN EMR

COMPLICATION:

1. Dysrhythmias
2. Heart failure
3. Pulmonary edema
4. Carcinogenic shock
5. Thrombophlebitis
6. Pericarditis
7. Mitravalve insufficiency
8. Post infraction angina'
9. ventricle rapture
10. Dressler's syndrome (a combination if pericarditis, effusion and pleural effusion which can occur several weeks to months following an MI)

4:36 Care of Patient With renal biopsy

A: Definition:

A kidney biopsy is done by an urologist, nephrologists or a radiologist. A kidney biopsy is often done by using ultrasound, fluoroscopy, a CT or magnetic resonance imaging (MRI) to help guide the biopsy needle to remove a small piece of the tissue for diagnosis purpose

B: Indications:

- Find kidney disease when there is blood or protein in the urine or when the kidney are not working well
- Check kidney problems seen on an ultrasound or a CT scan
- Watch kidney disease and see if treatment is working.
- Find out why a transplanted kidney isn't working well.
-

C: Nursing Care

S.NO	Action	Rationale
	Pre- procedure	
1	Check the result of the coagulation tests (PT ,PTT and platelet count) are available and that compatible donor is available	To assess for the risk of bleeding as the patient may have clotting defects.
2.	Get the informed consent .the doctor may advice to stop certain medications as necessary.	To prevent bleeding and other complication during the procedure.
3	Observe the Patient pulse ,respiration and arterial pressure immediately before biopsy	Serves as a baseline data and further comparisons of values after the procedure
4.	Explain to the patient regarding the steps of procedure sensations expected, after effects anticipated, restrictions of activity and monitoring procedure to be followed.	To allay fears and enhance patient cooperation during the procedure
	During procedure	

1.	Support the patient during the procedure	To enhance comfort
2.	Expose the patient's upper body and lie on the back with support to the stomach area.	For identifying the area to be cleaned and infiltrated with local anesthetic.
3	The patient will be given an intravenous injection as sedation before the local is being infiltrated. The physician promptly introduces the biopsy needle and takes a ample of the tissue, instruct the patient to take deep breath during the procedure. The entire procedure is completed within 25-30mints	
	Post procedure	
1.	Immediately after biopsy assist the patient to turn to the right side, place pillow under the coastal margin and caution the patient to remain in this position.	The site of penetration is compressed against the chest wall and the escape of blood or bile is through the perforation is impeded.
2.	Measure and record patient pulse respiration and blood pressure at 10-20mints intervals for the prescribed period or until stable report promptly any increase in pulse rate or any decrease in arterial pressure, any complaint of abdominal pain.	These signs may indicate the complication of kidney biopsy like bleeding serve hemorrhage.
3.	To prevent bleeding at the biopsy site, patient will be told lie down I a supine position of the next 12to 24 hours .normal diet can be taken. they must not take aspirin or anti- inflammatory medicines for week after the biopsy. Can do your regular activities such as heavy lifting , hard running , motorcycle ridding, contact sports, or other activities that might jar or jilt your kidney ,for 2 weeks after that the biopsy .also to drink fluids to prevent dehydration	To prevent complication

D**: supportive documentation**
TPR sheet, Nurses notes and intake and output chart

4:37 Nursing care of patient following renal transplantation

A: Renal transplantation:
Kidney transplantation or renal transplantation is the organ transplant of a kidney into a patient with end – stage renal disease. It means replacement of the failed kidney with a working from another person, called a donor. Kidney transplantation is not a complete cure, although many people who receive a kidney transplant are able to live much as they did before their kidneys failed.

B: Classification

1. Decreased –donor (formerly known as cadaveric
2. Living –donor transplantation

C: Indications

- End –stage renal disease (ESRD)
- Polycystic kidney disease

- Potential indication for kidney transplantation
- Glomerulonephritis
- Chronic pyelonephritis (reflux nephropathy)
- Obstructive nephropathy
- Hemolyticuremic syndrome
- Trauma

D Nursing Care

Pre-Operative care:

Prednisolone is used to achieve promote suppression of inflammation in many inflammatory and allergic conditions.

Side effects of prednisone and other corticosteroids range from mild annoyances to serious irreversible damage. side effects include fluid retention .weight gain ,high blood pressure , potassium loss. Headache, muscle weakness, puffiness of and hair growth on the face, thinning any easy bruising of the skin ,glaucoma , cataracts, peptic ulceration ,worsening of diabetes, irregular menses ,growth retardation in children ,convulsions ,and psychic disturbances. Psychic disturbances can include depression, euphoria, insomnia, mood swings, personality changes, and even psychotic behavior.

Prolonged use of Prednisolone can depress the ability of body's adrenal gland to produce corticosteroids. Abruptly stopping prednisone can cause symptoms of corticosteroids insufficiency, with accompanying nausea, vomiting, and even shock. Therefore, withdrawal of Prednisolone is usually accomplished by gradual tapering .gradually tapering Prednisolone not only minimize the symptoms of corticosteroid inefficiency, but it also the risk of an abrupt flare of the disease under treatment.

Prednisolone:

Glucocorticoids are adrenocortical steroids, both naturally occurring and synthetic ,which are readily absorbed from the gastrointestinal tract.

Aspirin:

Aspirin is a non-steroidal anti-inflammatory drug (NSAID) effective in treating fever, pain, and inflammation in the body. It also prevent blood clots (i.e. is antithrombotic).

Aspirin also is used for rapid relief of mild to moderate pain and fever in other inflammatory conditions .because aspirin inhibits the function of platelets for prolonged periods of time.

The most common side effects aspirin involves the gastrointestinal system and ringing in the ears. With respect to the gastrointestinal system, it can cause ulcerations, abdominal burning, pain, cramping, nausea, gastritis, and even serious gastrointestinal bleeding and liver toxicity, sometimes, ulceration and bleeding can occur without any abdominal pain. Black tarry stools weakness, and dizziness upon standing may be the signs of internal bleeding

VALCYTE

What are the possible side effects of valganciclovir (valcyte)

Stop taking valganciclovir and seek emergency medical attention or contact your doctor immediately if you experience any of the following serious side effects

- An allergic reaction (difficulty breathing: closing of the throat: swelling of the lips ,tongue, or face or hives);
- Easy brushing ,unusual bleeding
- Numberless or tingling in a part of the body
- Signs if infection (fever ,chills, body aches, flu symptoms):or
- Seizure (convulsions)

Pediatric patient:

Prevention of CMV Disease: valcyte (valganciclovir hcl) for oral solution and tablets are indicated for the prevention of CMV disease in kidney or heart transplant patient (4months to 16years of age) at high risk.

4:38 Assisting with Gastro Intestine Procedures

A: pre procedure assessment

- Informed consent by doctor

The key components are the informed consent are

- Descriptions of the procedure
- Indications of the procedure
- 'risks and complications of the procedure
- Alternative to the procedure
- Assessment of the patient for
  - Diabetes
  - Cardiac and pulmonary history
  - Liver disease
- Approach to anticoagulants and aspirin products
- Pre procedure antibiotics

B: post procedure assessment following gastro intestine procedure

- Vitals to be monitored every 3to 5 minutes immediately following the procedure
- Documentation the procedure that was done. What medicine was being given findings and the recommendation
- Follow the doctor order.
- Give nothing by mouth until the bag reflex and sensation in the rectum
- If the procedure done conscious sedation patient has in the closed observation for 2hours. when the patient is fully awake inform to the doctor then only discharge the patient top ward or to home
- Reports to be handover to the patient or relatives

C: types of procedures

- ✓ Upper GI
- ✓ Lower GI
- ✓

a. Upper GI and lower GI procedure : diagnostic and therapeutic

Preparation of the patient for upper GI procedure

- Nothing by mouth for 6to 8hours
- Asking the patient has dentures or loose teeth to avoid complications

Esophago gastro duodenoscopy

Definition: it is a visual examination of the lining of the esophagus, stomach and the part of the duodenum.

D: Indication

- To establish the site of upper GI bleeding
- To visually define biopsy abnormalities seen on radiological studies (ulcers, filing defects and cancers)
- To evaluate healing of medically treated gastrotrich ulcers.
- To evaluate dysphasia ,abdominal pain, gastric outlet obstruction (GOO) chest pain after negative cardiac evolution , iron deficiency anemia after negative colonoscopy
- To elevate odynophagia
- To determine the extent of damage after a caustic ingestion

E: contra Indication

- Shock
- Acute myocardial infarction
- Severe dyspnea with hypoxemia
- Seizures
- Acutely perforated ulcers or perforated esophagus
- Uncooperative patient

F: Equipment:

- Gastro scope
- Fiber optic light source
- Video monitor
- 10%xyocaine spray
- Mouth guard
- Biopsy forceps
- 10% formalin bottle
- RUT container if necessary to rule out H pylori infection
- Washing cannula and syringe
- Computer disc for image storage
- Kidney tray

G**: Procedure (Nurses responsibilities)**

- To make number in the throat soapy with 10% Xylocaine or Xylocaine viscous 10ml to be given to the patient to drink
- Ask the patient to lie down on the left lateral position
- Holding the mouth guard
- If necessary assisting the doctors to take tissue sampling

H: supportive document

- Consent form
- Endoscopy pre procedure nursing record
- Endoscopy nursing procedure record
- Endoscopy post procedure nursing record

THERAPEUTIC UPPER GI PROCEDURES

A: Indication

- Esophageal fibrotic strictures
  - GERD related peptic structure
  - Casuistic stricture
  - Radiation induct strictures
  - Anastigmatic strictures
- Benign esophageal luminal stenosis
  - Schatzki's ring
  - Esophageal webs
- Esophageal carcinoma ,for palliation
- Empiric dilation for dysphagia
- Corrosive injury
- Achalasia cardia

B: contra indication

- Bleeding diathesis
- INR<1.5
- Platelet <50,000to 100,000
- Recent esophageal biopsies within 14days
- Active food impaction
- Neck immobility
- Esophageal diverticulum

C: Equipment

- Same as EGD
- Dilators
- Guide wire
- Contrast
- Syringe for injection contract
- Distilled water for dilution of contract

D: procedure (nurses Responsibilities)

- Same as EGD
- IV line to be started prior to the procedure with the doctor order
- Keep the anesthesia trolley ready
- Inform to the anesthetist prior to the procedure
- Anesthesia consent to be obtained by the anesthetist
- Procedure to be explained to the patient
- Inform the radiographer prior to the procedure
- Assist for the procedure
- Follow the after care.

E: supportive document

- Procedure consent form
- 'anesthesia consent form
- Endoscopy pre procedure nursing record

- Endoscopy nursing procedure record
- Endoscopy post procedure nursing record
- Discharge criteria form

SCLEROTHERAPY

A: Indication

- esophageal avarices that are actively bleeding
- To eradicate gastric verices

B: contra indication:

- Risk of perforation
- Inability to achieve adequate visibility of the field

C: Equipment

- Same as EGD except biopsy forceps
- Sclerocent recommended by the doctor
- Sclerotherapy needle 23g
- Sengstaken Blakemore tube
- Syringe for injection Sclerocent
- Distilled water for dilution of Sclerocent
- All PPE

D: procedure (nurses responsibilities)

- Same as EGD
- IV line to be started prior to the procedure with the doctor order
- Blood sample to be sent for groping and cross matching, hematology , biochemistry if it is a active bleed to replace lost blood
- Keep the anesthesia trolley ready
- Inform to the anesthetist prior to the procedure
- Anesthesia consent to be obtained by the anesthetist
- Assist for the procedure
- Observe the signs of blood loss ,esophageal perforation
- With acute bleeding keep NPO for least 4to 6 hours post procedure as re bleeding may occur
- Assessment forms to be completed

E: Supportive document

- Procedure consent form
- 'anesthesia consent form
- Endoscopy pre procedure nursing record
- Endoscopy nursing procedure record
- Endoscopy post procedure nursing record
- Discharge criteria form

GLUE THERAPY

A: Indication

- Fundal varices with no bleed
- Fundal varices with active ooze

B**: Contra indications**

- Risk of perforation
- Inability to achieve adequate visibility of the field

E: Equipment

- Same as EGD except biopsy forceps
- Sclerocent recommended by the doctor
- Sclerotherapy needle 23g
- Sengstaken Blakemore tube
- Syringe for injection Sclerocent
- Distilled water for dilution of Sclerocent
- All PPE

D: procedure (nurses responsibilities)

- Same as EGD
- IV line to be started prior to the procedure with the doctor order
- Blood sample to be sent for groping and cross matching, hematology , biochemistry if it is a active bleed to replace lost blood
- Keep the anesthesia trolley ready
- Inform to the anesthetist prior to the procedure
- Anesthesia consent to be obtained by the anesthetist
- Assist for the procedure
- Observe the signs of blood loss ,esophageal perforation
- With acute bleeding keep NPO for least 4to 6 hours post procedure as re bleeding may occur
- Assessment forms to be completed

E: Supportive document

- Procedure consent form
- 'anesthesia consent form
- Endoscopy pre procedure nursing record
- Endoscopy nursing procedure record
- Endoscopy post procedure nursing record
- Discharge criteria form

ENDOSCOPIC VARICEAL LIGATION

A: Indication

- To maintain hemostasis of acutely or recently bleeding esophageal verices
- Elective obliteration of esophageal varices to prevent recurrent hemorrhage

B: **Contra Indication**

- Esophageal stricture
- Diverticula
- Suspected esophageal perforation

C: Equipment

- Same as EGD except biopsy forceps
- Sclerocent recommended by the doctor
- Sclerotherapy needle 23g

- Sengstaken Blakemore tube
- Syringe for injection Sclerocent
- Distilled water for dilution of Sclerocent
- All PPE

D: procedure (nurses responsibilities)

- Same as EGD
- IV line to be started prior to the procedure with the doctor order
- Blood sample to be sent for groping and cross matching, hematology , biochemistry if it is a active bleed to replace lost blood
- Keep the anesthesia trolley ready
- Inform to the anesthetist prior to the procedure
- Anesthesia consent to be obtained by the anesthetist
- Assist for the procedure
- Observe the signs of blood loss ,esophageal perforation
- With acute bleeding keep NPO for least 4to 6 hours post procedure as re bleeding may occur
- Assessment forms to be completed

E: Supportive document

- Procedure consent form
- 'anesthesia consent form
- Endoscopy pre procedure nursing record
- Endoscopy nursing procedure record
- Endoscopy post procedure nursing record
- Discharge criteria form

GLUE THERAPY

A: Indication

- Fundal varices with no bleed
- Fundal varices with active ooze

B: Contra indications

- Risk of perforation
- Inability to achieve adequate visibility of the field

E: Equipment

- Same as EGD except biopsy forceps
- Sclerocent recommended by the doctor
- Sclerotherapy needle 23g
- Sengstaken Blakemore tube
- Syringe for injection Sclerocent
- Distilled water for dilution of Sclerocent
- All PPE

D: procedure (nurses responsibilities)

- Same as EGD
- IV line to be started prior to the procedure with the doctor order

- Blood sample to be sent for groping and cross matching, hematology , biochemistry if it is a active bleed to replace lost blood
- Keep the anesthesia trolley ready
- Inform to the anesthetist prior to the procedure
- Anesthesia consent to be obtained by the anesthetist
- Assist for the procedure
- Observe the signs of blood loss ,esophageal perforation
- With acute bleeding
- Keep balloon tamponade for 24hours give nothing by mouth .if necessary give medications

E: Supportive document

- Procedure consent form
- 'anesthesia consent form
- Endoscopy pre procedure nursing record
- Endoscopy nursing procedure record
- Endoscopy post procedure nursing record
- Discharge criteria form

BALLOON TAMPONADE

A**: Indication:**

- Acute bleeding from esophageal or gastric varices unresponsive to medical and endoscopic Therapy including band ligation and Sclerotherapy

B: contra indication

- Cessation of variceal bleeding
- Recent surgery involving the esophageal gastric junction
- Known esophageal structure

C: Equipment

- Topical anesthesia
- Sengstaken Blakemore tube
- 50ml syringe to inflate the balloon
- Artery forceps to clamp the gastric and esophageal balloon ports
- Water soluble lubricant
- Adhesive tape
- Scissors

D: procedure

- IV line to be started prior to the procedure with the doctor order
- Blood sample to be sent for groping and cross matching, hematology , biochemistry if it is a active bleed to replace lost blood
- Keep the anesthesia trolley ready
- Inform to the anesthetist prior to the procedure
- Anesthesia consent to be obtained by the anesthetist
- Observe the signs of blood loss ,esophageal perforation
- With acute bleeding
- Keep balloon tamponade for 24hours give nothing by mouth .if necessary give medications Through the gastric port
- Assessment forms to be completed

E: Supportive document

- Procedure consent form
- ‘anesthesia consent form
- Endoscopy pre procedure nursing record
- Endoscopy nursing procedure record
- Endoscopy post procedure nursing record
- Discharge criteria

ADRENALINE THERAPY

A: Indication

- Post polpectomy bleed
- Ulcer bleed
- Acute non variceal GI bleed

B: contra indication

- Risk of perforation
- Inability to achieve adequate visibility of the fields

C: Equipment:

- Same as EGD except biopsy forceps
- Sclerocent recommended by the doctor
- Sclerotherapy needle 23g
- Sengstaken Blakemore tube
- Syringe for injection Sclerocent
- Distilled water for dilution of Sclerocent
- All PPE

D: procedure (nurses responsibilities)

- Same as EGD
- IV line to be started prior to the procedure with the doctor order
- Blood sample to be sent for groping and cross matching, hematology , biochemistry if it is a active bleed to replace lost blood
- Keep the anesthesia trolley ready
- Inform to the anesthetist prior to the procedure
- Anesthesia consent to be obtained by the anesthetist
- Assist for the procedure
- Observe the signs of blood loss ,esophageal perforation
- With acute bleeding keep on for least 4to 6 hours post procedure as re bleeding may occur
- Assessment forms to be completed

E: Supportive document

- Procedure consent form
- anesthesia consent form
- Endoscopy pre procedure nursing record
- Endoscopy nursing procedure record
- Endoscopy post procedure nursing record
- Discharge criteria form

PERCUTANEOUS ENDOSCOPIC GASTROSTOMY {PEG}

Definition:

PEG is an endoscopic medical procedure in which a tube (PEG) tube is passes in to a patient's stomach through the abdominal wall most commonly to means of feeding when oral intake is not adequate

A: Indication:

- Patient with any permanent or anticipated long-term inability swallow
- During pre-operative radiation /chemotherapy for esophageal cancer
- Underlying diseases with profound anorexia
- Gastric decompression

C: Equipment

- Same as EGD
- PEG tube
- Dressing trolley contains
  - Dressing tray
  - Betadine solution
  - Suturing tray to secure the PEG tube in place
  - Ganzee pad
  - 2%yxylocaine injection to localize the place
  - Syringe 5ml to give inj; 2% Xylocaine
  - Sterile gloves
  - Snare

D: procedure (nurses responsibilities)

- Same as EGD
- IV line to be started prior to the procedure with the doctor order
- Inform to the anesthetist prior to the procedure
- Keep the anesthesia trolley ready
- Place the patient in a supine position
- Dim the room light
- Assist to the doctor
- Ensure that the procedure is done in an aseptic technique
- Educate the patient attendees how to give feed and how to take care of the tube
- Assessment forms to be completed with includes the type of PEG tube

E: Supportive document

- Anesthesia consent form
- 'anesthesia consent form
- Endoscopy pre procedure nursing record
- Endoscopy nursing procedure record
- Endoscopy post procedure nursing record

  Discharge criteria form

FOREIGN BODY REMOVAL

A: Indication

- Esophageal obstruction with any object
- Sharp object lodged on the esophageal ,stomach or proximal duodenum

B: contraindication

Same as upper endoscopy

C: Equipment

- Same as EGD
- Rat tooth forceps
- Snares
- Baskets
- Grasping forceps
- Alligator forceps

D: procedure {nurses responsibilities}

- Same as EGD
- IV line to be started prior to the procedure with the doctor order
- Keep the anesthesia trolley ready
- Inform the anesthetist prior tom the procedure
- Informed consent to be obtained by the doctor
- Assessment forms to be completed
- Inform the radiologist prior to the procedure
- Checking accessories needed for the procedure
- Assist for the procedure
- Post procedure follow the doctor order

E: Supportive document

- Procedure consent form
- 'anesthesia consent form
- Endoscopy pre procedure nursing record
- Endoscopy nursing procedure record
- Endoscopy post procedure nursing record
- Discharge criteria form

ENDOSCOPIC POLYPECTOMY

A: Indication

- Resection of pedunculated luminal digestive tract polyps
- Resection of moderate sizes .05to 2cm sessile luminal digestive tract polyps

B: contraindication

- Lesion has feature suggestive of invasive carcinoma including ulceration ,fixation ,hard consistency
- Lesion is not readily accessible endoscopically
- Unaddressed bleeding or coagulation disorder
- Poor general medical condition of the patient

C: Equipment:

- Same as EGD
- Polpectomy snare
- Diathermy machine 'diathermy pad
- 10% formalin bottle

- Hemostasis device to manage bleeding such as
  - Sclerotherapy
  - Sclerocent
  - Mechanical lops. Clips.

D: procedure {nurses responsibilities}

- Same as EGD
- IV line to be started prior to the procedure with the doctor order
- Keep the anesthesia trolley ready
- Inform the anesthetist prior tom the procedure
- Informed consent to be obtained by the doctor
- Assessment forms to be completed
- After the procedure polyps to be sent for pathological study
- Follow up the post procedure order

E: Supportive document

- Procedure consent form
- 'anesthesia consent form
- Endoscopy pre procedure nursing record
- Endoscopy nursing procedure record
- Endoscopy post procedure nursing record
- Discharge criteria form

ENDOSCOPIC CLIP

A: Indication

- Treating of active bleeding vascular lesions such as a peptic ulcer
- High risk of re bleeding visible vessel
- High risk lesions in patient with coagulation disorders
- Treatment of post sphincterotomy bleeding
- Treatment of post poly polpectomy bleeding
- Closure of small luminal perforations
- Temporary marking of colonic lesions preoperatively to assist surgical identification

B: contraindication

- Ligation of esophageal or gastric verices
- Inability to see the bleeding vessel

E: Equipment

- Same as EGD
- End clips

D: procedure {nurses responsibilities}

- Same as EGD
- IV line to be started prior to the procedure with the doctor order
- Keep the anesthesia trolley ready
- Inform the anesthetist prior tom the procedure
- Informed consent to be obtained by the doctor
- Assessment forms to be completed

- Checking the equipment needed for the procedure
- After procedure follow the doctor order

E: Supportive document

- Procedure consent form
- 'anesthesia consent form
- Endoscopy pre procedure nursing record
- Endoscopy nursing procedure record
- Endoscopy post procedure nursing record
- Discharge criteria form

ESOPHGEAL METAL STENTING

A: indication

- To relieve dysphasia produced by neoplastic stricture of the esophagus
- To relieve dysphagia in chronic non neoplastic strictures that has not responded to routine dilatation.
- To seal fistulas between the trachea and esophageal due to neoplastic causes

B: contraindication

- Compression of the trachea by esophageal cancer
- Anticipated chemotherapy or retinopathy
- Severe cardiac or respiratory disorder
- Food impaction in the esophagus
- Bleeding diathesis

E: Equipment

- Same s EGD
- Guide wire
- Expandable stents
- Dilators
- Radio opaque markers
- Lea d aprons
- TLD badge
- Lubricant
- Sterile gloves

D: procedure {nurses responsibilities}

- Same as EGD
- IV line to be started prior to the procedure with the doctor order
- Keep the anesthesia trolley ready
- Inform the anesthetist prior tom the procedure
- Informed consent to be obtained by the doctor
- Assessment forms to be completed
- Checking the equipment needed for the procedure
- After procedure follow the doctor order

E: Supportive document

- Procedure consent form
- 'anesthesia consent form
- Endoscopy pre procedure nursing record

- Endoscopy nursing procedure record
- Endoscopy post procedure nursing record
- Discharge criteria form

SMALL BOWEL ENTROSCOPE

A: indication:

- Obscure overt gastrointestinal bleeding
- Obscure occult gastrointestinal bleeding
- Iron deficiency anemia with a negative upper endoscopy and colonoscopy
- Radiography abnormalities found in the proximal and or mid –small bowel
- Evaluation of patient with polyposis syndrome
- Placement of percutaneous jejunostomy tune

B: contraindication

- Bowel perforation ,known or suspected
- Bowel obstruction .known or suspected
- Severe respiratory disease (unless the patient is on mechanical ventilation)
- Acute myocardial infarction
- Small bowel ileus
- Coagulopathy

C: Equipment

- Enter scope
- Video processor
- Light source
- Balloon inflator device
- Sterile bowel
- Distilled water
- Lubrication

D: procedure {nurses responsibilities}

- Same as EGD
- IV line to be started prior to the procedure with the doctor order
- Keep the anesthesia trolley ready
- Inform the anesthetist prior tom the procedure
- Informed consent to be obtained by the doctor
- Checking the equipment needed for the procedure
- Assessment forms to be completed
- Assist for the procedure
- After the procedure follow the doctor order

E: Supportive document

- Procedure consent form
- ‘anesthesia consent form
- Endoscopy pre procedure nursing record
- Endoscopy nursing procedure record
- Endoscopy post procedure nursing record , Discharge criteria form

ENDOSCOPIC RETROGRADE CHOLANGIO PANCREATOGRAPHY {ERCP}

A: Indication:

- Removal of common bile duct stones
- To treat post surgical or traumatic bile leaks
- Common bile duct stricture
- To treat sphincter of Odd dysfunction
- Choledochoceles
- Obstructive jaundice
- To treat obstructive cholangitis

B: contraindication

- Unfavorable anatomy
- Bleeding diathesis

C: Equipment

- **Duodenoscopy**
- Light processor
- Light source
- Dressing trolley contains
    - Sterile gauze pack
    - Sterile bowl
    - Syringe 10ml
    - Water for irrigation 500ml
- Guide wire
- Sphincterotomy
- Stone introducer various size
- Biliary dilatation balloon to manage the large stones and strictures
- Baskets
- Lithotripter to manage the large stones

D: procedure {nurses responsibilities}

- Same as EGD
- IV line to be started prior to the procedure with the doctor order
- Keep the anesthesia trolley ready
- Inform the anesthetist prior tom the procedure
- Informed consent to be obtained by the doctor
- Radiologist to be informed prior to the procedure
- Checking the equipment needed for the procedure
- Assessment forms to be completed
- Assist for the procedure
- After the procedure follow the doctor order

E: Supportive document

- Procedure consent form
- 'anesthesia consent form
- Endoscopy pre procedure nursing record
- Endoscopy nursing procedure record
- Endoscopy post procedure nursing record
- Discharge criteria form

Endo scope ultrasound provides high resolution images of the wall of the gastro intestine tract in addition to providing to providing imaging of surrounding organs

A: Indication:

- To visually characterize the gut wall abnormalities
- To stage esophageal carcinoma
- To evaluate known or suspected medical mass or nodes
- To characterize sub epithelial of the GI tact
- To stages gastric malignancies
- To characterize the source of obstruction for the patient with obstructive jaundice
- To assist in determining the nature if a cystic lesion
- To detect choledocholithiasis
- To stage rectal carcinoma

B: contraindication

Same as EGD

C: Equipment

- Same as EGD
- EUS machine
- EUS diagnostic scope

D: procedure {nurses responsibilities}

- Same as EGD
- IV line to be started prior to the procedure with the doctor order
- Keep the anesthesia trolley ready
- Inform the anesthetist prior tom the procedure
- Informed consent to be obtained by the doctor
- Checking the equipment needed for the procedure
- Assessment forms to be completed
- Assist for the procedure
- After the procedure follow the doctor order

E: Supportive document

- Procedure consent form
- 'anesthesia consent form
- Endoscopy pre procedure nursing record
- Endoscopy nursing procedure record
- Endoscopy post procedure nursing record
- Discharge criteria form

ENDOSCOPIC ULTRASOUND WITH FNAC (FINE NEEDLE ASPIRATION CYTOLOGY)

A: Indication

- Per pancreatic mass or node
- Meditational mass or node
- Primary diagnosis of intramural or per intestine solid or cystic lesions

B contraindication

- Uncorrectable coagulation
- Uncorrectable thrombocytopenia
- Untrained biliary obstruction

C: Equipment

- Same as diagnostic EUS
- Echo tip needle
- Microscope
- Slide fixing jar
- 10formaline bottle
- Sterile container

D: procedure {nurses responsibilities}

- Same as EGD
- IV line to be started prior to the procedure with the doctor order
- Keep the anesthesia trolley ready
- Inform the anesthetist prior tom the procedure
- Informed consent to be obtained by the doctor
- Checking the equipment needed for the procedure
- Assessment forms to be completed
- Assist for the procedure
- After the procedure follow the doctor order
- Send the sampling for histopathological study

E: Supportive document

- Procedure consent form
- 'anesthesia consent form
- Endoscopy pre procedure nursing record
- Endoscopy nursing procedure record
- Endoscopy post procedure nursing record
- Discharge criteria form

COLONOSCOPY

Definition:

It Is a visual examination of the lining of the large intestine

A: Indication

- Screening for colorectal neoplasia
- Abnormal barium enema examination
- Pre-operative or post-operative evaluation of the patient with colon cancer
- Change in bowel habits
- Ulcers colitis
- Family history of polyp or cancer
- Chronic diarrhea
- Chronic constipation
- To rule out anemia

B: contraindication

- Peritonitis
- Bowel perforation
- Acute diverticulitis
- Poor bowel preparation

C: Equipment

- Colonoscopy
- Video processor
- Light source
- Video monitor
- Biopsy forceps
- 10% formalin bottle
- Lubricant

D: procedure {nurses responsibilities}

- Same as EGD
- Peglec preparation
  - Mix the Peglec power in 2letrs water shake the solution well
  - Drink 200ml of water in every 15minute so as to consume 1litter solution in a minimum of 1hour of duration
  - Normally the first bowel movement may occur about one hour from the start of drinking
  - The movement occur several times and when the stool changes in to after like (color less and without any solid matter which is an indication of lavage being completed)
- IV line to be started prior to the procedure with the doctor order
- Keep the anesthesia trolley ready
- Inform the anesthetist prior tom the procedure
- Informed consent to be obtained by the doctor
- Checking the equipment needed for the procedure
- Assessment forms to be completed
- Assist for the procedure
- After the procedure follow the doctor order
- Send the sampling for histopathological study

E: Supportive document

- Procedure consent form
- 'anesthesia consent form
- Endoscopy pre procedure nursing record
- Endoscopy nursing procedure record
- Endoscopy post procedure nursing record
- Discharge criteria form

SIGMODOSCOPY

The distal part of the large intestine visualized

A: Indication:

- Evaluation prior to Ano rectal surgery
- To observe the progression or regression of colorectal disease
- To remove foreign bodies from the rectum

- Hemorrhoids

B: contraindication:

- Suspect perforation of the rectum
- Acute peritonitis
- Acute severe diverticulitis

E: Equipment

Same as colonoscopy

D: procedure {nurses responsibilities}

- Sane as EGD
- Bowel preparation to be done by enema { Proctoclysis or soap and water } according to the doctor order
- Assessment forms to be completed
- Assist for the procedure

E: Supportive document

- Procedure consent form
- Endoscopy pre procedure nursing record
- Endoscopy nursing procedure record
- Endoscopy post procedure nursing record

CLEANING, DISINFECTION &STERILIZATION

All the staff should use masks gloves apron and eye goggles

Prepare rapid multi Enzyme solution in procedure room, 5ml solution in 500ml of water .in washing area 50ml in 5letrs of water that rapid enzyme effective against all human secretions. Including protein, lipid, micro-polysaccharide &carbohydrate

Prepare cidex OPA solution that will be virocidal .bacterial & tuberculocidal pseudomonocidal, sporocidal.

EXTERNAL CLEANING AND INTERNAL CLEANING

1. After the procedure gently wipes the external insertion tube with wet lint cloth then again wipe it with rapid enzyme solution suctioning to be done with rapid enzyme water and plain water.
2. Attach the water resistant cap in the scope check leakage .counter- checking to be done by senior staff.
3. Take the scope in to the wash area keep the scope in to the enzyme solution remove the airway ,suction and biopsy channels and put brush in all channels in ZIZ_ZAC method in 30seconds .
4. After the brushing attach the flushing tubes and flush with rapid enzyme solution 30secondswith 50ml syringe, gently wipe the external tube with lint cloth or sponge and rinse thoroughly.
5. After that keep the scope in plain water and flush the channels with water for 30sec than20 sec air to be flushed.
6. After that keep the scope into the CIDEX OPA solution, and flush with CIDEX OPA to all channels.
7. After 5minutes flush the channels for 20sec with air remove the scope and keep the scope in plain water again flush the water and air for 20sec.
8. Keep the scope in the processer suction to be done with 70% alcohol. Make it dry.
9. At end the day all the endoscope to be dried by using all adaptors and dry with 70% alcohol and hang it the cupboard.

4:39 Care of patient undergoing Hemodialysis

A: Introduction:

Hemodialysis blood: dialysis indicated some form of filtration. Hemodialysis is an exchange that takes place between a patient's blood and a solution termed as dialysate across a semi permeable membrane. This exchange removers toxins and water from the blood and correct electrolyte imbalance to near normal.

The basic principles involved in hemodialysis include the following:

1. Diffusion
2. Osmosis
3. ultra filtration
4. Convection

B: Goals of each dialysis treatment:

- To carry out the dialysis treatment according to the prescription of the doctor
- To ensure that he procedure is initiated and safety completed with minimal or no complications.
- To ensure that all the patient and machines parameters are within safe and acceptable limits.
- To minimize variations between prescribed and delivered dialysis treatment
- To detect any exciting or early impending problems including vascular assess and implement re-medial measures.
- To document any upwards incident and to report the doctor promptly.

C: Assessments:

1. Physical assessment and orientation
2. Routine hemodialysis assessment
3. Intra dialysis assessment
4. Post dialysis assessment

Physical assessment includes patient has prescribed for long term hemodialysis .a well functions vascular and hepatitis status of HCV HbsAg and HIV known. It also includes the weight blood pressure, temperature, pulse,respiration,presenceofedema.

- A brief review of available laboratory test results and patient notes for any abnormalities
- The patient is about date and time for 1st dialysis

i). Routine assessment includes:

- Pre dialysis assessment observation
- Confirm patient schedule and check prescription.
- Confirm status of vascular access for patency
- Weight measurement and calculation of weight gain
- Blood pressure measurement
- Temperature mad pulse measurement

ii).Intra-dialysis monitoring

- This includes all observation done on the patient and machine parameters during the treatment session.routine hourly observation are done for stable patient and more often in less stable ones.
- The vital signs of the patient and machine monitors are continuously assessed and documented

- All the possible intra dialysis complications like hypotension, clotting, bleeding, air embolism, hemodialysis and other have to be observed.

The machine parameters include:

1. Arterial pressure
2. Venous pressure
3. Total fluid removed
4. Blood flow site
5. Dialysis flow site
6. Elapse time
7. Total heparin remaining
8. Conductivity reactions, temperature of the dialysis.
9. Visual check of the dialysis integrity and appearance
10. Special attention for patient having any transfusion during dialysis

iii). Post hemodialysis assessment: this include total evolution of the patient clinical status and summary of delivered dialysis therapy.

- Weight
- Blood pressure and pulse
- Status of the vascular access for nay abnormality
- Machine parameters to confirm total volume processes
- Total fluid removed
- Any further bleeding &complaints
- All observations must be recorded
- Patient is remind of his appointment for subsequent dialysis
- Periodic or three motherly assessment
- Patient should be reviewed at least three monthly by the attendingnephrologist

4:40 Application of patient Cast

A: Definition

A rigid immobilizing device that is moulded to the contours of the body to encase an injured part

B: purposes:

- To immobilize a body part in a specific positions, thus promoting healing.
- To apply uniform pressure
- To correct or prevent deformity
- To provide support/stability for weakened joints
- To immobilize a reduced fracture
- To allow patient to perform activities of daily living

C: article needed:

A TRAY CONTAINING

- Plaster bandages
- Scissors
- Dressing supplies
- Measuring tape
- Mackintosh

- Plastic gown/apron
- Gloves
- Newspaper
- Bowel of warm water wash clothing
- Bucket with water.

C: procedure:

S.NO	Action	Rationale
1.	Explain the patient about the procedure of cast application	To gain cooperation
2.	Provide privacy	To ensure patient comfort.
3.	Wash hands and protect bed with Mackintosh	To avoid infection and spillage
4.	Clan skin with soap and water and dry thoroughly .clip hair if present	To ensure intact skin and inspect for lesions dirt, infection and foreign particles.
5.	Check pulse in affected limb to verify blood circulation and make area where pulse it fell.	To ensure blood supply after cast application.
6.	Clean any open wound and apply sterile dressing using aseptic technique.	To avoid infection.
7.	Protect the skin to be casted with cotton padding	Protect the bony prominences
8	Position the part to be caste as directed.	To prevent position
9.	When the doctor is ready to apply the cast, place the bandages in the bucket of water for a few seconds ,remove compresses gently holding the ends with both hands to remove excess water	Place the limb in functional position Ensure that there are no sharp edges hurting the skin by moulding and smoothening the edges of cast.
10.	Plaster bandages to be applied before it sets.	To ensure adherence.
11.	Check the distal pulses of the limb casted.	To ensure blood circulation.
12.	Allow the cast to air dry and instruct patient to avoid electrical dryers.	To provide post procedural comfort.
13	Handle the casted area with the pain and avoid using fingers. Elevate the casted area on pillow or in a sling place the patient comfortably.	Using fingers causes indention on the cast when it is wet.
14	When the cast is dry (usually 24hrs later) ,assist doctor in making a window in the cast of	Window is made for daily dressing of the wound

S.NO	Action	Rationale
	dressing of the wound	
15.	Record time of cast application location ,type of cast, condition of wound patient response to procedure and neurovascular status	To prevent complications

D: Home car teaching for a patient who is casted

1. Do only air drying and do not use external device for drying the cast.
2. Not to handle the casted area with figure and rather use the pain until it dries (to avoid indentation).
3. A patient with freely applied have a burning feel or hot feel which is normal.
4. Latching is one of the common complaints of a patient who is on long term cast; they are advised to avoid sharp device to scratch the area under the cast. They need to approach the doctor and be treated with medications
5. Teach the patient to identify peripheral neurovascular deficit signs and symptoms (numbness, tingling ,clod extremity and loss of function of the limb
6. Shoe polish may be used over the dry cast which is dirty
7. Do not attempt to fix a broken or cracked cast, immediately approach the doctor.
8. Shower is allowed but after the casted area is after with water proof cover.
9. When children are given Spica cast, parent should give importance to Perineal region ,cast may get soiled with urine or stool .(this can lead to infection and skin breakdown
10. Routine inspection of the skin under cast, especially the sacral area in Spica casting is mandatory. (Common complication of Spica cast).
11. Two hourly position change is recommended for patient on spic cast (as they are bedridden and leads to skin breakdown.

E: supportive documents

Nurse's record

4:41 Last office /death care

Policy: CPR given by medical officer on duty and the attending nurse .information to the treating consultant is given by the DMO on duty. In the event of impending death of a patient, the medical team regularly updates the patient's representatives about the patient's condition. Utmost sensitivity is maintained by the medical team in educating and counseling the patient's representative's .death of a patient is handled carefully with concern without complacency. Acknowledgements for receipt of the body are obtained from next of kin/legal representative. Due Arrangements are made if preserving the body in the mortuary if found necessary. A representative of the hospital is present till the departure of the body. In case of an MLC case, local police station is informed and the body is handover to the police for autopsy examination and entry is made in the MLC register. Organ donation facility should be informed to patient's relatives.

A: Introduction:

Nursing care should not stop when the patients dies. Last offices is the term for the nursing care given to diseased person which demonstrates continued respect for the patient as an individual following both religious and cultural norms.

B: Definition:

Care of the body within 30-45 minutes following declaration of death by the doctor

C: purposes:

1. To maintain normal body alignment before rigor mortis sets in
2. Top prepare body for transport to mortuary/ residence
3. To reduce mental distress of family

E: Equipment:

1. Disposal aprons
2. Disposable plastic gloves
3. Tray containing
    - Artery clamp
    - Adsorbent cotton
    - Nonabsorbent cotton
    - Bandage
4. Equipment for mouth care
5. Equipment for giving bath
6. Hospital gown or patient clothes
7. Identification labels
8. Documents required by the law and organization policies

E: procedure:

S.NO	Action	Rationale
1.	Confirmation of death must be given by the medic staff	Registered medical practitioner is required to give a medical certificate for the causes of death.
2.	Information to be given to the relatives regarding the death of the person.	To ensure that they are aware of the patients death
3	Offer support to the relatives, respect the culture and religious norms.	To provide sensitive care.
4.	Follow all protocol as per hospital policies	To enhance the quality
5	Last office should be carried within 2-4 hrs	Rigor mortis sets within few hrs.
6.	Remove personal articles ,jewelers and handover to the relatives and records the same in presence of another staff member staff member always use general terms to identify or describe the jewelers (e.g. yellow metal or red stones)	Recording helps in preventing legal issues
7.	Wash hands and put on disposable	Protect self from biohazards use universal precau-

S.NO	Action	Rationale
	gloves and apron.	tions
8.	Remove tubing's pads and other articles give mouth care, bath close eyes, tie jaws.	To maintain patient's privacy and dignity and improve aesthetic sense
9.	Close orifice using absorbent cotton followed by nonabsorbent cotton	Relaxed sphincter muscles causes leakages of blood body fluids.
10.	Dress the patient in personnel clothing or white gown depending on the hospital policy and relatives wishes	For aesthetics for family and others viewing the body
11.	Attach the patient's identification Labels and complete any documents such as notification of death.	To ensure correct and easy identification of the body
12.	Wrap the body in a sheet making sure that the face and feet are covered and all limbs are held securely in position.	To ensure proper transfer of the body and avoid damage
13	Attach the second notification of death card to the outside of the sheet (or body bag)	For easy identification of body in the mortuary.
14.	Before releasing the body check the medical documents for • Death certificate • Permission for autopsy • Authorization slip for travel • Embalming procedure as and if needed by the relatives	For proper processing of formalities and administrative purposes and legal documentation.
15.	Replace the article used after disinfection	For further use
16.	Hand over the body to the relatives after setting of bill in case of medico legal case the body to be released to the police get signature in handover forms as per the policy of the hospital and document the relapse	To document the time of death manes of those present names of those informed or concerned

F: supportive documents: Nurse's record

Chapter 5
Exercise and ambulation

5:1 chest physiotherapy protocol following surgery

I.CABG /valve replacement

1. 0-1day : ventilator physiotherapy
2. 1st day: after estuation deep breathing exercise, coughing, spiromerty, vibration every 4th hurly.
3. 2nd day: deep breathing exercises (DBE) .coughing, spirometry, vibration, every 4th hourly -2 times a day to be continued till discharge.
4. Patient is encouraged to do DBE 5to 10times every hour
5. Sustained maximal inspiration (SMI) 5minutes every hour.
6. Coughing exercise 2to 3times every hour
7. Ankle toe movement (ATM) 5minutes every hour
8. Sitting out- twice a day.
9. Walking –thrice a day

II protocol for post-surgical patient:

1. **On oxygen mask:**
   - Respiratory physiotherapy
   - Forced expiratory technique
   - Chest manipulation for few hours
2. **Room air :**
   - Respiratory physiotherapy
   - Forced expiratory technique
   - Spiromerty exercises.
   - Chest manipulation to clear the chest secretions to maintain the SpO2 between 98to 100%
   - For COPD patients SpO2 to be between 88to 92%
   - To achieve SMI between 900cc to 1200cc.
   - Every day patient's is given therapy every one hourly 2nd hourly 4th or 8th hourly depending upon the condition of the patient criteria care area.

III. Post intubation protocol:

1. Respiratory physiotherapy
2. Spiromerty /posture drainage
3. 1st day of Extubation
4. 2nd hourly therapy for 1st 8hoursly
5. Followed by4th hourly therapy
6. 2nd day of Extubation
7. 2or 7times a day .depending upon the patient's recovery the frequency of therapy is reduced.

5:2 Chest Physiotherapy

Policy: chest physiotherapy is performed on patient who is ventilated, chronically bedridden, post-operative and in those with respiratory diseases. It can be performed by doctor, nurses, physiotherapists and respiratory technicians. It needs to be performed on written order or as per unit protocol.

A: Definition:

Chest physiotherapy is the term for a group of treatments designed to improve respiratory efficiency, promote expansion of the lungs, strengthen respiratory muscles and eliminates secretions from the respiratory system.

B: purposes:

- To improve the lung volumes & capacity

- To decreases the work of breathing
- To clear the secretions from the airway
- To improve exercise tolerance
- To improve the quality of care

C: Techniques:

1. Deep breathing exercise/diaphragmatic breathing exercises.
2. Costal expansion breathing exercise
3. Active cycle breathing technique
4. Coughing or huffing technique
5. Incentive spiromerty
6. Acappella or flutter valve
7. CPAP-NIP
8. Vibrations –by manual or machine
9. Clapping or shaking
10. Postural drainage
11. Nasopharyngeal suction
12. Endo tracheal suction
13. Glosso-pharyngeal and pursed lip technique
14. Breath holding technique
15. Ventilator physiotherapy
16. Autogenic drainage or self-drainage

I .ventilator/ tracheostomy physiotherapy

1. Chest physiotherapy- clapping /vibration every 2hourly
2. Forced expiratory technique.
3. Tracheal hygiene –every 2hourly depending upon the amount of secretion
4. DVT prophylaxis
   - SCD (sequential compressive device)
   - TED stockings – removed 4hourly and reapplied after ½ hour
   - ATM (ankle toe movement)
5. Longitudinal rotation of the mobilize secretion one or two times per day
6. Put the patient I the side lying position every 2hpurly
7. Head end elevation to 45ro 60degree to drain secretions from upper lobes two times a day provided the blood pressure is stable
8. PROM (passive range of motion exercise)
9. AROM (active range of motion exercises

II.Respiratory physiotherapy:

1. Deep breathing exercise
2. Costal expansion breathing exercise
3. Active cycle of breathing
4. Diaphragmatic breathing exercise
5. Pursed lip or glosso pharyngeal breathing technique
6. Breath hold technique /Buteyko technique

I. Forced expiratory technique (FET)

1. Coughing –splinting or without splinting
2. huffing

3. chest manipulation : clapping or vibration or shaking

IV .Postural drainage technique

1. 45degree head end elevation
2. Side lying or quarter turn or half turn lateral lying position
3. Reversed trendlenburg position
4. Giving chest physiotherapy with the patient in this position enables the movement of secretions

V .Functional residual capacity (FRC) –manual or muscle trainer

1. Flutter valve or Acappella
2. Incentive spiromerty –volume released or flow released
   (To achieve good sustained maximal inspiration –SMI)

VI.Vibration /percussion:

It is fine, shaking pressure applied to the chest wall only during exhalation.

5:3 Standard Operating procedures for ambulating patient

Criteria for ambulation:

- Hemodynamically stable
- Physician's or surgeon's approval
- Absence of bleeding or hematoma
- Absence of deep vein thrombosis
- Pain score on visual analogue scale (VAS) below 2or3
- Muscle power on grading of 3accorondg to medical research committee (MRC)
- Absence of active cardiac problem.
- Ability to provide good support

I. Diagnosis angioplasty

- After four hours patient can be ambulated
- After sheath removal patient can b ambulated four hours

II.CABG

After ventilation with ejection fraction (EF) 40% ICD removal

1st day – standing or sitting out

- 2nd day –mobilize about 3 (metabolic equivalent) MET walking
- 1week -3to 5MET walking
- 1to 4week -9-MET walking exercise
- Up to 4weeks -9-13 MET walking exercises.

If is below 40% protocol will vary accordingly

III. For valvular replacement and other cardiac procedure

- 1st day –bed exercises.
- 2nd day –standing or sitting out of bed
- 3rd day in wards –walking is encouraged.

IV. AFTER ABDOMINAL SURGERIES

- 1st day –standing or sitting out of bed
- 2nd day –ambulation started with support
- 3rd day- ambulation without support (depending upon the condition of the patient

V.**AFTER LIVER/KIDNEY TRANSPLANTATION**

- 0 day- ventilation or bed exercises.
- 1st day – Extubation –bed exercises
- 2nd day –standing –sitting out
- 3rd day- onwards walking exercises.

Depending upon how long the patient gets ventilator support and his hemodynamic status. Ambulation is decided.

VI.ORTHOPEDIC SURGERY AMBULATION PROTOCOLS:

Total knee replacement (TKR)

- 0day – if patient is on epidural only exercises (continuous passive motion –CPM)
- 1st day- on epidural /off epidural high sitting
- Non weight bearing (NBW) standing.
- Check for hematoma or synovial leak or bleeding or DVT or severe pain.
- 2nd day- partial weight bearing with crutches or parallel bar.
- Knee brace to maintain knee in extension may be need during walking.
- 3rd day- to 4weeks – partial weight bearing (PWB)
- After 4weeks –full weight bearing is allowed.
- If bones are severely osteoporotic /severe RA knee, the protocol will vary

Total hip replacement (THR)

- 0day- epidural /bed exercises only
- 1st day –bed exercises, high sitting in the bed.
- 2nd day- NWB_ standing /non weight bearing .crutch walking.
- 3rd day- to 1st week – partial weight bearing
- 1st week to onwards- full weight bearing with crutches for 6weeks.

Uncemented total hip replacement:

- 0day- epidural /bed exercises.
- 1st day- bed exercises.
- 2nd day- bed exercises –high sitting
- 3rd day- non weight nearing walking
- 3to 4weeks - non weight nearing walking to be continued
- After 4weeks –partial weight bearing will be stated.
- 5th week –full weight bearing walking (depends on patient condition.)

Dynamic hip screw (DHS) condylar plating for the trochanter fractures:

- 1st day- high sitting
- 2nd day- non weight bearing standing is encouraged
- 1st to 4weeks – non weight bearing walking with crutches depends on X-ray findings
- 4th to 8th week –graduated weight bearing walking, depends on X-ray findings.
- 8th week onwards- full weight baring walking

Femur /tibia fracture IM nailing interlocked:

- 1st day- non-weight standing
- Up to 1week – non –weight bearing standing –walking
- 2nd to 4week –partial weight bearing walking
- After 4weeks to 8th week - graduated weight bearing walking.

- 8th week –full weight bearing.

Tibia/femur fracture, plate osteo synthesis /buttress plating:

- 4week –non weight bearing walking depends on X-ray findings
- After 4th week –partial weight bearing walking demand on X-ray findings
- 8th to 12week – full weight nearing walking will be given.

Spine injuries:

- Lumbar region-Surgery first or second level – discectomy with bone grafting laminectomy.
- 1st day- walking with lumbo sacral support.
- Surgery: post stabilization /fusion –start ambulation on3rd day with thoraco lumbar sacral orthosis (TLSO)

Corepectomy/care fusion /post stabilization:

- Mobilize after 1-2weeks with total contact brace /TSLO

Scoliotic correction:

- Mobilize after 1-2 weeks with total contact body brace.

Cervical region:

One or 2level –one disc or 2disc

1. Anterior micro discectomy +fusion+ bone graft
2. Anterior micro discectomy

- 1st day –ambulation can be shared with cervical collar.
- C1to C2- sterna occipital mandibular immobilizer (SOM) brace/poster collar
- C2 to C 3 Philadelphia collar.
- C3 C4 C5 –soft /hard cervical collar.
- C5 C6 C7 –hard collar.

Cervical Corepectomy /cage fusion stabilization:

- 3rd day- ambulation can be stated with good cervical collar.

Vertebroplasty: thoracic or lumbar region:

- 1sr day – ambulation can be stated with anti-flexion brace or TLSO brace
- NOTE: for spinal surgeries

1. 1 there should be on CSF leak
2. No postural hypotension.
3. No DVT
4. No cold edema with neuronal irritation
5. No hematoma or bleeding

5:4 care of patient on ventilators

Policy: ventilator patients are nurses by experienced and completed registers nurses under the guidance of intensivists.

A: Definition:

A ventilator is mechanical device that controls assist and support the breathing of the patient.

B: Indications:

1. Inadequate ventilation to maintain pH

2. Inadequate oxygenation
3. Excessive breathing workload
4. Congestive heart failure
5. Circulatory shock

C: Types of ventilators:

1. VOLUME –CYCLED VENTILATORS:

This type delivers a present tidal then allows passive expiration. This is ideal for patients with acute respiratory distress syndrome (ARDS) or bronchospasm. Since the same tidal volume is delivered regardless of the amount of airway resistance this type of ventilator is the most commonly used in critical care environment.

2. PRESSURE –CYCLED VENTILATOR

These ventilator deliver gases at a preset pressure .and allow passive expiration. The benefit of this type is a decreased risk of lung damage from high inspiration pressure, which is particularly beneficial for neonates who have a small lung capacity. The disadvantage is that the tidal volume delivered can decrease if the patient has poor lung compliance and increased airway resistance .this type of ventilation is usually for short –term therapy (less than 24hurs). Some ventilators have the capacity to provide both volumes –cycled and pressure –cycled ventilation. These combination ventilators are also commonly used in critical care environment

3. FLOW –CYCLED VENTILATORS

Flow –cycled ventilators deliver oxygenation until a preset flow rate is achieved during inspiration.

4. TIME –CYCLED VENTILATORS:

Time –cycled ventilators deliver oxygenation over a preset time period. These types of ventilator neither is nor used as frequency as the volume –cycled and pressure –cycled ventilators.

D: Dome of ventilation:

Mode referee to how the machine will ventilate the patient in relation to the patient's respiratory effects .there is a mode for nicely every patient situation; pulse many different types can be used in conjugation with each-other.

1. CONTROL VENTILATOR (CV)

CV refers to how the machine will ventilate the patient in relation to the patient's own inspiratory efforts. This mode is used for patient who is unable to initiate a breath .if it is used with spontaneously breathing patients, they must be sedated and /or pharmacologically paralyzed so they don't breath out of synchrony with the ventilator.

2. ASSIST–CONTROL VENTILATION (a/c) OR CONTINUOUS MANDATORY VENTILATION (CMV):

A/C or CMV delivers the preset volume or pressure in response to the patient's inspiratory effort, but will initiate the patient does not do so within a preset amount of time. Amount of time. This mode is used for patient who can initiate a breath but who have weakened respiratory muscles .the patient may need to be sedated to limit the number of spontaneously breaths, as hypoventilation can occur in patient with high respiratory rates.

3. SYNCHRONIZED INTERMITTENT MANDATORY VENTILATION (SIMV)

SIMV delivers the preset volume or pressure and preset respiratory rate while allowing the patient to breath spontaneously. The ventilator initiated each breath in synchrony with the patient's breaths. SIMV is used as a primary mode of ventilation as well as weaning mode. (During weaning, the preset rate is gradually reduced, allowing the patient to slowly regain breathing on their own.) .the disadvantage of this mode is that it may increase the effort of breathing and cause respiratory muscle fatigue.

(Breathing spontaneously thoroughly ventilator tubing has been compared to breathing through a straw.

4. POSITIVE –END EXPIRATORY PRESSURE (PEEP).

PEEP is positive pressure that is applied by the ventilator at the end of expiration. This mode does not deliver breaths but is used as an adjust to CV, A/C and SIMV to improve oxygenation by opening collapsed alveoli at the end of expiration. Complications from the increased pressure can include decreased cardiac output. Lung rupture and increased intracranial pressure

5. CONSTANT POSITIVE AIRWAY PRESSURE (CPAP)

CAPAP is similar to PEEP, expect that it works only for patient who are breathing spontaneously. The effect of CAPAP (and PEEP) is compared to inflating a balloon but not letting it completely deflate before inflating it again. The second inflation is easier to perform because resistance is decreased. CAPAP can also administer using a mask and CAPAP machine for patient who do not require mechanical ventilation but who need respiratory support.

6. PRESSURE SUPPORT VENTILATOR (PAV)

PS is preset which augment the patient's spontaneous inspiration effort and decreased the work of breathing. The patient completely controls the respiratory rate tidal volume. PS is used for patient with a stable respiratory status and is often used with SIMV during wearing

2. INDEPENDENT LUNG VENTILATION (ILV)

This method is used to ventilate each lung separately in patient with unilateral lung disease or a different disease process in each lung. It requires a double-lumen endotracheal tube and two ventilators .sedation and pharmacologic paralysis are used to facilitate optimal ventilation and increase comfort for the patient on whom this method is used.

HIGH FREQUENCY VENTILATION (HFV)

HFV delivers a small amount of gas at rapid rate (as much as 60-100 breaths for minute). This is used when conventional mechanical ventilation would compromise hemodynamic stability, during short-term procedure, or for patient who is at high risk for lung rupture.Sedation and /or pharmacologic paralysis are required.

INVERSE RATIO VENTILATION (IRV)

The normal inspiration: expiration ratio is 1:2, but this is reversed during IVR to 2:1 or greater (the maximum is 4:1). The method is used for patients who are still hypoxic, even with the use of PEEP longer inspiratory time increased the amount of air in the lungs at the end of expiration (the functional residual capacity) and improves oxygenation by re expanding collapsed alveoli. The shorter expiratory time prevents the alveoli from collapsing again. This method required sedation and therapeutic paralysis because it is very uncomfortable for the patient

E: Complications

1. Decreased cardiac output
2. Barotraumas
3. Nosocomial pneumonia (VAP)
4. Decreased renal perfusion
5. Increased intracranial pressure
6. Hepatic congestion
7. GI bleeding
8. Aspiration, Anxiety &fear

5:5 Prevention of deep vein thrombosis

Policy: deep vein thrombosis prophylaxis is provided to all patent who are bedridden, ventilated admitted in intensive care units and to those who are highly prone to develop DVT. All method of prophylactic measure (shocking. Heparin ect.), are carried out by the register nurse with the doctor's order reassessment for DVT signs and symptoms is to be perfumed at regular intervals by RNs

A: Definition:

Venous thrombosis intravascular deposit composed predominantly of fibrin and red cells with a variable platelet and leukocyte components called blood clot it the deep veins of the body.

B: deep vein of lower limbs:

Posterior anterior posterior popliteal femoral lilac vein

C: Assessment for DVT using wells criteria:

DVT RISK ASSESSMENT IN PATINET TO RULE OUT DVT, WELL'S CRITERIA FOR DVT ASSESSMENT		
Assign a score 1 if (yes) in parameter 1to 9 & assign a score of -2 if (yes) in parameter no 10		
S.NO	PARAMETERS	
1	Active cancer (on-going treatment or diagnosis within 6months or palliative care	
2	Bedridden recently >3days or major surgery within four weeks	
3.	Calf swelling >3cm compared with asymptomatic side, measured at 10cm below tibia tubercle (assess for the legs	
4.	Collateral (non varicose) superficial veins present (assess for both legs)	
5.	Entire leg swollen (assess both legs)	
6.	Localized tenderness along the deep venous system (assess for both legs)	
7	Pitting edema grater in the symptomatic leg (assess for both legs)	
8.	Paralysis paresis ,or recent plaster immobilization for the lower extremity (assess for both legs)	
9.	Previously documented DVT (assess for both legs)	
10.	Alternative diagnosis to DVT as likely or more likely (assess for both legs (co- morbidity like ESLD –renal disease ,renal failure ,CCF cellular (commonly mistake as DVT) dependent (stasis) edema lymphatic obstruction septic arthritis cirrhosis ,nephritic syndrome ,calf muscle tear or strain , hematoma (collection of blood) in the of blood) in the muscle , sprain or rupture of a leg tendon fracture.	
FINAL SCORING		
DVT prophylaxis started Y/N		

D: management:

1. Pharmacological
2. SCD (sequential compressive device)
3. Stocking
4. ATM –ankle toe movement
5. Limb elevation
6. Early mobilization

Low molecular weight heparin: 0.1 mg/kg prophylactic dose for immobilized patient and largest groups (elderly) OD dose

Graduated compression stockings:

- Measure for correct sixe prescription
- Consider above knee or below knee stocking ,decide based on the condition of patient

- Avoid stockings that threaten a garter effect at the calf , post knee or thigh
- Re- measure if edema reduces.Remove every 8th hourly to avoid constriction and break in skin integrity, especially in the thigh and re-apply within half an hour
- Change if wet with urine or stools .wash and dry it in shade before use
- Strictly personal use only advocated ,don't interchange between patient
- Avoid folds or creases in the stocking
- Assess for pulses ,skin condition edema and homan sign

SEQUIENTAIL COMPRESSSIVE DEVICE {SCD}

It increase the venous blood flow in patient who are at risk of developing DVT

Precaution:

1. Proper sleeve positioning must be assured and avoid skin breakdown at the pressure points
2. Ensure proper connection to the SCD controller and sleeves
3. Kinked or twisted tubing may restrict airflow.
4. Sleeves should be removed if the patient experiences numbness, tilling or pain
5. When using sleeves in operating room sleeve cooling should be turned off it available complications
   - Any local condition in which sleeve would interfere such as dermatitis vein tigation gangrarene, recent skin graft.
   - Severe arteriosclerosis or other ischemic vascular diseases
   - Massive edema of legs pulmonary edema from congestive cardiac failure
   - Extreme deformity of leg
   - Suspected pre-existing DVT

ATM (active and passive ankle movement)

- Ankle toe movement for every immobilized patient 2minutes every hour. Patients are encouraged to do more number of times .

Early mobilization

- No patient should be immobilized unnecessarily
- Patient should be made to stand, sit outside and walk without support if no contradictions.
- Walking device like crutches walkers ,and wheel chair or manual support is given for ambulation

Limb elevation:

- Lower end of bed is elevated to 30-45 degree for good venous drainage
- Elevation with one or two pillow also has same effect.
- Positioning the patient above the level of heart is very important

5:6 Range of motion exercises (ROM)

Policy: range of motion exercises are performed by the physiotherapists or registered nurse with verbal or written order from doctor. It is performed on patient on patient who is bedridden, post-operative after major sugary, ventilated and those who are likely to develop contractures. It needs to be performed once in two hours for 10-15 minutes

A: Range of motion exercises:

Physical therapy can help to improve joint function by focusing on range of motion exercises.

B: Goal:

The goal of these exercises is to gently increases range of motion while decreasing pain swelling and stiffness, these are three types of range of motion exercises

C: Types:

Passive range of motion (PROM)

Nurse or equipment moves the joint through the range of motion with no effort from the patient.

Active assisted range of motion (AROM)

Patient performs the exercise to move the joint without any assistance to the muscles surrounding the joints eg. Pelvic bridging exercise (PBE)

Resisted exercises:

There are exercises performed by the patient by pulling or pushing against an opposite force.

Isometric exercises:

These exercises are performed by the patient by contracting and relaxing muscles while keeping the part in fled position .eg static quadriceps exercises

D: purposes:

1. Maintain joint mobility, which is done by putting each of the patient's joints thoroughly all possible range of motion to increase and or maintain movement in each joint.
2. Prevent contractures atrophy and joint stiffness
3. Stimulate circulation preventing thrombus and embolus formation
4. Improve coordination
5. Increase tolerance for more activity
6. Martian and build muscle strength
7. Avoid over exerting the patient
8. Start gradually and slowly using smooth and rhythmic movement appropriate for the patient's condition
9. Support the extremity when giving PROM to the joints of the arm or leg.
10. Stretch the muscles and keep the joints flexible
11. Move each joint unit there resistance but never force a joint to the point of pain
12. Keep friction at minimum to avoid injuring the skin
13. Rectum the joint to its neutral position
14. Use passive exercises as required.

E: types of body motion used:

Flexion extension abduction rotation (medial and lateral pronation and supination)

F: Guidelines:

- Pain when ROM should be done and if it will be passive, active or assistive
- Watch heart rate and respiration rate as they increase during exercises.
- Exercises at least twice a day
- Joint are exercises sequentially staring with the neck putting Each joint through ROM procedure 10-20times .if the affected part is to be treated ,then sequential method of exercising all joints is not done
- Evaluate the patient in terms on fatigue joint discomfort muscle power and joint mobility

G: Contraindication:

1. Newly develop DVT exercises to the affected limb is avoided
2. Connective tissue disorders eg RA passive ROM contraindicated
3. Joint swelling due to infection.

5:7 Nursing care of a patient on traction

Policy: skin traction can be performed by a competent registered nurse or physiotherapist with return order. Skeleton traction is performed by an orthopedician

A: Definition:

Traction is defined as the distraction force applied by weights or other device to separate &elongate the bone /joint structure to treat disorders /injuries.

B: Types:

- Adhesive ,non adhesive traction
- Skeletal traction
- Manual traction

Skin Traction:

Traction on an extremity by means of adhesive tape or another type of strapping applied to the limb .it is used for the treatment of fractured bones and the correction of orthopedic abnormalities. It applies pull to an affected body structure by straps attached to the skin surrounding the structure.

Skeletal Traction:

Traction on a bone structure by means of a pin or wire surgically inserted into the bone

Manual traction:

Applied with the hands to temporarily immobilize the injured part

C: Components of traction:

1. Counter traction
2. Weights, angles and pulleys

D: Equipment:

1. Traction contains Steinman's pin and traction gun or tongs
2. Traction frame and pulleys
3. Popes and weights needed.

E: Purposes:

1. To regain normal length and alignment of involved toe
2. To reduce and immobilize a fractured bone
3. To lasses or eliminate muscle spasm
4. To relieve pressure on nervous especially spinal
5. To prevent skeleton deformities of muscles contractures.

F: procedure:

- Explain the procedure and why it is needed
- Provide divisional activities for patient within the limits of the traction
- Reinforce the need for the exercises to prevent muscles deterioration in unaffected extremities.
- Assist the doctor in skin and skeletal traction application
- Assist the doctor in applying the traction by providing all the articles
- Provide the padding at the bony prominences to avoid pressure ulcers.
- Nurses the patient following all the principles of traction

G: principles of traction:

1. Ensure weight is hanging free of the floor
2. Maintain alignment of ropes, pulleys and weights
3. Ropes should move freely over pulleys

4. Ensure that the counter is applied by elevating foot of bed or keep had of bed flat

H: Cleaning pin tracts:

- Using sterile technique ,were sterile gloves
- Clean pin site and surround skin with gauze soaked in the antiseptic solution (betadine)
- Apply antimicrobial ointments to pin sites if ordered.
- Observe site for infection
- Encourage patient to perform own pin site care
- Apply dressing if copious ooze
- Perform neurovascular check Q4H

Traction care

1. Show the patient how much movement he is allowed and instruct him not to adjust equipment.
2. Tell the patient repots any pin or pressure from traction equipment
3. At least once per shift make sure traction equipment connection is tight
4. Check for equipment, such as ropes getting caught between pulleys
5. Inspect equipment to assure correct alignment
6. Inspect the ropes for framing make sure ropes are positioned properly in the pulley track
7. Make sure all ropes ends are taped above the knot
8. Inspect traction weight to make sure they hang feely
9. About every 2hours check the patient for proper body alignment and reposition as needed.
10. Assess neurovascular integrity based on patient's condition eg sedation temperature movement ,distal perfusion
11. Provide skin care, encourage coughing and deep breathing exercises and assist with ordered range of motion exercises for unaffected extremities.
12. Apply ekistics support stocking if ordered.
13. Make sure protruding pin or wire ends are covered with cork or bend and tape the sharp end so that it won't hurt.
14. Check pin site and surroundings skin for signs of infection
15. Place flat pillow under the extremities .this may helps as long as it does not alter the line of pull.
16. Monitor for pressure ulcer, muscle atrophy, contractures, pneumonia, thrombophlebitis, and depression.
17. Skin traction need to be removed at least once per day for hygiene and reapplication
18. Manual traction ought to be used during removal ,maintain traction weight while log-rolling patient's for hygiene care
19. Encourage deep breathing coughing exercises ,bed exercises and physiotherapy
20. Skin and pain assessment and management is done every shift
21. Positioning in bed to avoid external rotation of lower limb
22. Promptly report changes in neurovascular status unrelieved pain ,pin loosening /infection
23. Minimize the risk of: pin site infection ,potential osteomyelitis risk of neurovascular compromise due to pulling force on vessels and nerves risk of respiratory compromise due to immobility

5:8 Use of Incentive Spiromerty

Policy: spiromerty exercises are given to post operative patient's which in lung expansion .it is performed by the patient under the guidance and supervision by a nurse or physiotherapist.

A: Definition:

Spiromerty is a device that measures the amount of air a subject exhales and the rate which the air is exhaled.

B: purposes:

1. To keep the lungs active during early recovery from sugary
2. To clear the lungs from secretions
3. To achieve maximum lung expansion and to strengthen cough effort
4. To measure the amount and rate is air exhaled
5. To maintain clear airway
6. To prevent respiratory complicating

C: Equipment:

1. Spirometery2.
2. Soap and water
3. Cotton balls to cleanse the mouth piece
4. Sputum cup

D: procedure:

S.NO	Action	Rationale
1.	Explain the procedure	To reduce the anxiety and get the co operation from the patient
2.	Provide privacy	To prevent unnecessary exposure and to protect the patient 's dignity
3	Make the patient to sit in upright or to lean slightly	Enable expansion of the lungs
4.	Hold the spirometery in an upright position	To visually examine the ball movements
5.	Place the mouth piece in patient's mouth and instruct the patient to seal the mouth tightly with the lips	To avoid air leakage.
6.	Instruct the patient to inhale slowly and deeply with the lips sealed tightly on the mouthpiece	To increases the lungs expansion in graded manner
7.	Continue inhaling all three balls (if possible)	For maximum increase in inspired volume
8.	After inhaling as deeply as	Enables the three balls to raise up, thus

S.NO	Action	Rationale
	possible ,instruct the patient to hold the breath for at least three seconds	indicating the inspired volume
9.	Instruct the patient to remove the mouthpiece from the mouth and breathe out normally.	Enable relaxation of thoracic muscles.
10.	Repeat the technique as instructed by the physician (usually 10 – 15 times)	Strengthens cough effort and clears the airway.
11.	Take few normal breaths between deep breaths	To reduce the strain on the thoracic muscles.

E: Supportive Documents:
Clinical charts, Nurses Notes
Note: It is very important to take a deep breath and cough 2 to 3 times after finishing 10 to 15 exercises.

Chapter 6
Patient Safety
6.1 Patient Safety

Policy: INODAYA Hospital's policy for Patient Safety status that:

- Patient safety is the responsibility of every hospital employee irrespective of the department of his / her function. Every employee shall be trained to assess the safety needs of the patient during the hospital induction programme.
- Every patient shall be assessed on admission to identify the potential safety risk and appropriate measures shall be implemented to ensure patient safety.
- Patient and family shall be educated to follow the safety measures at home considering their risk involved.

A. Definition:

Patient safety is new health care discipline that emphasizes the reporting, analysis, and prevention of medical error that often lead to adverse health care events. It also defines as a standard care process for addressing the problem, and prescribing an implementation plan that includes relevant measures and analytic procedure.

B. Purpose:

- A comprehensive approach to quality improvement and achieving high level of patient safety.
- Integral to overall improvement in quality is the ongoing reduction in risk to patient and staff.

Scope of Patient Safety in Health care Ares:

Health services research is the multidisciplinary fields of scientific investigation that studies how social factors; financing system, organizational structures and processes; Health technologies, and personal behavior affect access to health care , the quality and cost of health care, and ultimately our health and well – being . Patient safety research domains are individuals, families, Organization, Institutions, Communities, and Population.

Evaluation of SOP:

1. Standardize process and outcome measures to evaluate patient and staff safety for its improvement over time and in comparison with other best practices availabilities with evidence.

2. Detailed event analyses of specified event if and when they occur
3. Qualitative information obtained through direct observed in addition to quantitative information.
4. Predictive protocols to patient are effectively implemented.

A. International Patient Safety Goals:

Goal 1: Identify Patient Correctly

Use at least two ways to identify a patient by patient UMR number and by name when giving medicines blood or blood product; taking blood samples and other specimen for clinical testing, or providing any other treatment or procedures. The patient's room number cannot be to identify the patient

Goal 2 improves effective communication:

Effective communicated is implemented by

- Get important test result to the right staff person on time
- Verbal order and taking /read back policy
- Handing over and talking over process
- Proper explanation and education to the patient and relatives.
- Maintain good professional decorum to the department in the hospitals.

Goral 3 Improve the safety of high –alert medications:

The high alert drug and use the situation most likely to cause harm to patients. The top five high –alert medications identified by ISMP (institute for use safe medication practice) are in

- Insulin
- Optiates and narcotics
- Injection potassium chloride (or phosphate) concentrate
- Intravenous anti-coagulants (heparin)
- Sodium chloride above 0.9%

Listed below are some common risk factor associated with storage and use of these high- alert medications and suggested strategies for increasing patient safety and avoiding harm

Common cause	Suggested factors
Insulin: 1.lack of dose check systems	Establish a check system whereby one nurse prepares the dose and another nurse reviews it.
2. Insulin and heparin vials kept in close proximity to each other on nursing unit may lead to mix –ups.	Store insulin and heparin separately.
3. An in correct infusion rate may be programmed on the infusion pump.	bulled in an independent check system for infusion pumps rates and connection settings

Common cause	Suggested factors
opiatics and narcotics : 1.storage of parental narcotics in nursing area as floor stock	Limit the opiates and narcotics available in the floor stock
2.confusion between hydromorphine and morphine	Educate staff about the potential for confusion between hydromorphine and morphine
3. potential for concentration and rate errors in patients –controlled analgesia	Implement PCA protocol that includes double check of the drug .pump setting and dosage.
Injection potassium chloride or phosphate concentration 1. Maintaining supply of concentrated potassium chloride or phosphate that is not under ward stock control	Remove the potassium chloride or phosphate from the floor stock.
2.mixing potassium chloride or phosphate extemporaneously	Prescribed all on –side drug preparation- use only commercially available premixed intravenous solution
3. Request for un usual concentration.	standardize and limit the concentration
intravenous anti- coagulant (heparin) 1.uncler ,imprecise concentration and total volume information on container label	Standardize concentration; use only clearly labeled .commercially available premixed solution
2. multi- dose container.	Use only single –dose container.
3.proximity of heparin and insulin in storage system ;similar measurement units in heparin insulin usage	Remove heparin from the top of medicine card.
Sodium chloride solution above 0.9% 1.storage of sodium chloride solutions (above 0.9%) on nursing units	Limits access to sodium chloride solution (above 0.9%) remove from nursing units.
2. Availability of large nimbler of concentration formulation in same location	Standardize and limit available of drug concentration
3. No double –check system in place for rate concentration line attachment	Establish ,implement double – check system for pump rate, drug concentration and line attachment

Goal 4 Eliminate wrong patient's surgery /procedure:

- Adherences to SOPs developed /checklist to verify that all document and equipment needed for surgery are on hand correct and functioning properly before surgery beings.
- Make the precise site where the surgery will be performed .use a clearly understood a mark and involve the patient in doing this.
- Use a check list, including a time –out just before starting a surgical procedure, to ensure the correct patient, procedure and body part.

Goal 5 reduces the risk of health care- associated infection:

- Hand hygiene (to follow hand hygiene before and after contact with patient use infection control is every ones business in our hospital
- Follow WHO guidelines for infection control practices in our hospitals
- Implement and quality surveillance for SSI, CRUTI, BSI, VAP, CRBSI, based on the guidelines.

Goal 6 reduces the risk of patient harm resulting from fall:

- Identify the vulnerable patient correctly as per criteria
- Ensure that fall assessment in done by the nurses at the time of admission
- Ensure that safety awareness program conducted by the safety committee periodically
- Identification –bright orange wrist ID band vulnerable patient.
- Ensure that safety first sticks over the file and safety first board in patient care area,
- Ensure that side railings are put up and safety belt on wheel chair and trolley while transfer the patient from the patient care unit to some other department
- Follow restrain consent in the hospitals for the patient on whom restraint are applied.

Fall prevention measures:

1. Fall risk assessment should be made for vulnerable patients at the time of admission
2. Pay extra attention to vulnerable patients
3. Avoid slippery floors
4. Have a sign board while the floor is being mopped
5. Have side rails put up at all times while patient is on bed
6. Have belts for while chairs and stretchers while patient are ambulated.
7. Assist patients while they are ambulated post operatively and for their activities of daily living
8. Ensure that rusted screws bolts in cots, wheelchairs and stretchers are changes periodically

6:2 Physical Restraints

Policy: the policy for use physical restraints states as under:

- Physical restraints shall used to restrain patient when absolutely necessary in situation in which the patient is exhibiting behaviors that present a danger to themselves or to others i.e. after all other measure have been tried and found unsatisfactory.
- Use of physician restraints shall only be done after careful assessment of patient and with a written instruction from treating physician .the written instruction shall only be valid for 24hours.
- Physical restrains shall only be applied after receiving an informed written consent from the close relative of the patient.
  The patient must be reassessed every 24hourly for circulation, movement and the findings must be documented in the clinical record of the patented in the designated place
- The use of physician restraint shall be discontinued immediately on finding that the patient fit to obey the instructions of the care giver.

A: Definition:

Any involuntary method (chemical or physical) of inhibiting an individual's freedom of movement physical activity or normal access to body

Physical restraints:

The direct applications of physical force to a patient, without the patient's permissions to restrict his or her freedom of movement .the physician force may be a human, using mechanical device or a combination of all

B: purposes:

1. Controls violent behavior and patient agitation

2. To reduce need for chemical restraints
3. To prevent the self removal of tubing's (eg Ryles tube, intra venous access device, endotracheal tube ect.
4. To prevent from harming self and others

C: Equipment:
A soft cotton sponge pad with bandage or a stitched wrist restraint

D: procedure:

S.No	Action	Rationale
1.	Assess whether the patient needed to be restrained	To prevent confusion or combative patient from self injury by falling out of the bed or a wheel chair and to prevent a patient from removing lines and tubes or life support equipment
2.	Assess patient's behavior such as confusion, disorientation, agitation, restlessness, combativeness, or inability to follow directions.	If patient's behavior is contentions despite attempts to eliminate cause of behavior muse of physical restraint will possible be necessary
3.	Review hospital policy regarding restrains.	An order by a license health care practiorner's is necessary to apply restraint,
4.	Check physician order for purpose type, location and duration of restrains.	The last restrictive type of restraint should be ordered.
5.	Explain to the patient relatives the procedure and obtain the restraint consent before applying the restraint	Explain that the restraint is temporary and is designed to protect patient from injury.
6.	Gather equipment and perform hand hygiene upon entering the patient's care area,	To promote the organization and to recued the cross infection.
7.	Before applying the restraint assess the condition of skin in the placement area of restraint	Restraint compress and interferes with functioning of device e to tubes .to provide base line date regarding the skin condition
8.	Approach the patient in a clam confident manner and explain what you plan to do	To educate the patient anxiety and promotes cooperation
9.	Adjust bed to proper height and lower the side rail on side of patient contact.	To allow the nurse to use proper body mechanism and to prevent injury
10.	Provide privacy and make sure that the patient is comfortable and in proper body alignment.	To prevent the friction and pressure on the skin and underlying tissue.
11.	Pad skin and bony p prominence before applying the restraint	To prevent the lowering of self esteem and prevent contractures and neurovascular injury
12.	Apply appropriate size restraint making sure is not over an IV line or other device	To prevent the therapeutic device or IV lines from being occluded

S.No	Action	Rationale
13.	Attach restraint to movable part of the body frame which moves when the head of the bed is raised or lowered.	To prevent the possible injury (if restraints is secured to side rail and it is lowered
14.	Secure restraint with the quick release tie. Do not tie in a knot.	To allow for quick release in an emergency period.
15.	Insert two fingers under the secured restraint to check tightness.	To prevent constriction and impede circulation is restraint area
16.	Monitor the restrained site two hourly	To assess the site for complications like skin breakdown prevent such from occurring

Reporting and documentation:

1. Record behavior that place patient at risk for injury
2. Record patient and family's understanding about restraint
3. Record type and location of restraint and tine applied
4. Record the time of assessment and releases
5. Document patient behavior after application of restraint
6. Document specific assessments released to orientation ,oxygenation, skin integrity ,circulation ,and positioning
7. Describe patient response during the removal of restraints

E: supportive documents:

- Restraint policy and the nursing procedures manual can be referred for further details.
- Restraint consent form to be signed before the application of the restraints
- This consent form is valid for 24hours

Nursing Responsibilities:

1. Assess proper placement of restraint ,skin ,integrity ,pulses, temperature ,color, and sensation of the restraint body part every 2nd hourly
2. Restraint should be removed at least every 2hours
3. If patient is violent and non compliant remove one restraint at a time and have other staff help while removing restraint
4. Do not leave patient unattended when restraint
5. Secure calling bell system within reach
6. Leave bed or chair with wheels locked
7. Bed should be in lowest position.
8. While restraint are in use inspect patient for nay injury ,including all hazards of immobility
9. Observe IV cannula, urinary catheter and drainage tube and ensure they are positioned correctly.
10. Frequently reassess the patient's needs for continued use of restraint
11. Provide appropriate sensory stimulation and reorient the patient needed.

6:3. Hazardous Material (HAZMAT) Spill Management: Chemical Spill, Blood Spill And Mercury Spill

Policy: This is attended at the unit level with the available department spill kit by personnel who have been trained to work with the material.

A: procedure for Minor Spill: chemical and blood (less than 30ml)

This is attended at the unit level with the available department spill kit by personnel who have been trained to work with the material

- place the chemical spill sign board next to the spill
- Wear appropriate personnel protective equipment (gloves, mask, and eye goggles) to clean up spill.
- Pick up broken galls if any with tongs; do not use your hands.
- Sprinkle absorbent material (chemisorbs) over the spill ,prevent spreading of the spill liquid
- Dispose of all contaminated material placed in zip lock cover with label containing the name of the hazardous materials, date time and name of the department
- Send to HAZMAT waste room .area is cleaned as per routine cleaning procedure
- In case of blood spill clean with paper towels and spray 1%of sodium hypochlorite and soak for 30minutes ,after which regular mopping is done

B: procedure for minor Spill: mercury spill(less than 30ml)

1. Minor spill e.g. thermometer
2. Major spill e.g. apparatus
   - Place chemical spill sign board next to the spill +
   - Wear appropriate personal protective equipment
   - Place the mercury kit next to spill
   - Clean up any broken glass using tongs. Do not pick up broken glasses by hand
   - Gather all the mercury with stiff cardboard and syringe it without needle
   - Pour the content of the syringe in aplitic container with water and put cello tape around the plastic container &&seal the container
   - Dispose all contaminated material in zip lock cover. Label the cover with the name of the hazardous materials date, time, and name of the department and sent to HAZMAT waste room

C: procedure for major spill: (more than 30ml)

- The HAZMAT team is to be alerted immediately after chemical spill over 30ml
- Dial 1234 and call CODE ORANGE.
- Mention the location /ward/unit/of the spill
- Document the occurrences and action taken

a. Place the chemical spill signboard next to the, wear appropriate personal protective equipment (gloves, mask, and eye goggles) to clean up spill.
b. Pick up broken galls if any with tongs; do not use your hands
c. Sprinkle absorbent material (chemisorbs) over the spill ,prevent spreading of the spill liquid
d. Collect the entire spill with water pusher and dust pan.
e. Dispose all contaminated material in zip lock cover. Label the cover with the name of the hazardous materials date, time, and name of the department and sent to HAZMAT waste room

D: supportive documents:

HAZMAT spill register

6:4. vulnerable patient and fall prevention

Policy: INODAYA hospital's policy patient safety states that:

- Patient safety policy responsibility of every hospital employee irrespective of the department of his her function. Every employee shall be trained to assess the vulnerable patient and safety needed of these patients during the hospital induction programme.

- Every patient shall be assessed on admission to identify the potential safety risk and appropriate measures be implemented to ensure vulnerable patient /safety
- Patients and family shall be educated to follow the safety measures at home considering their risk involved.

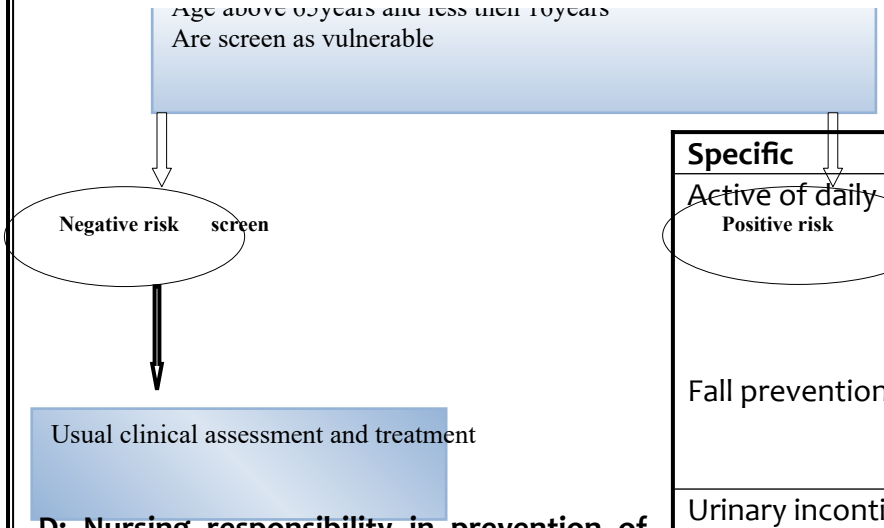
A: Definition:

Vulnerable patient is defined as the patient at the risk of injury or the patient more prone to risk of injury

B: criteria for vulnerable patient:

- All patient ages above 65 years and below 16years
- Patient with limited physical mobility, especially those who cannot perform their daily necessary activities of living i.e. going to the bathroom eating etc.
- Patient with impaired mental function patient who is not being able to communication or has a language problem
- An unconscious female or male patient left alone or unattended,
- Patient on wheel chairs trolleys walking aids hearing aids ect

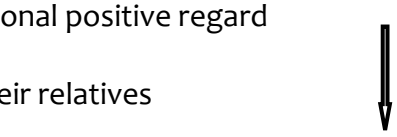
C: Screening of the patient at the time of admission:



Specific	action
Active of daily living (ADL)	▪ Family attended ▪ Specific nursing care ▪ Fall risk assessment form (for pro-active management)
Fall prevention	▪ Side rails on bed ▪ ADL helps as above ▪ Wheels of the
Urinary incontinence	▪ Catheter care ▪ Refer to urology
Skin integrity	▪ Nursing care

D: Nursing responsibility in prevention of fall:

1. Identify risk factor that can trigger unset- ting be havior such as agitation.
2. Communicate in a relaxed calm manner
3. Provide simple direction, avoid detailed rationale and explanation
4. Maintain eye contact and place yourself inline of vision
5. Introduce her by name and recovery unconditional positive regard
6. Minimize relocation
7. Request assistance from families to sit with their relatives



8. Maintain consistency in assignment of care givers and schedule of activities
9. Provide aids for orientation in the environment
10. Ensure safe environment for placing walking rocking, and wandering when required to diffuse energy, and provide rest stops fatigue
11. Modify environment stimuli such as noise and light based on the individuals' needs for rest and stimulation
12. Provide –pharmacological sleep enhancement strategies
13. Consult with psycho geriatric specialist, behavior, neurologist and clinical nurse specialist in dementia care

Post fall management:

Definition: loss of upright position that result in landing on the floor ground or an object or furniture or a sudden, uncontrolled, unintentional, non- purposeful, downward displacement of the body to the floor/ground or hitting another object like a chair stair

Causes of fall:

External causes

1. Hazardous activities
2. Time of day
3. External lighting
4. Clutter
5. Spoils
6. Loose electrical cords

Internal causes:

1. Muscles and strength weakness
2. Gait and balance disorders
3. Visual disturbances
4. Cognitive impairment/ mental status alterations
5. Dizziness /vertigo
6. Postural hypotension
7. Incontinence
    i. Poly pharmacy
    ii. Age
    iii. Chronic diseases

Level of injury identification:

- 0= none
- 1= minor injury (abrasion, bruise, minor laceration)
- 2= major injury (hip fracture, head trauma, arm fracture)
- 3= death

Post – fall management algorithm:

Call for Help

Stabilize the patient

Assess the patient

Baseline vital signs (BP, hear, respiratory rate, oxygen Saturation, blood sugar level)

Neurological observation – initial Glasgow Coma Scale (GCS)

Assess for determine level of injury (0/1/2/3)

6:5 care of violent patient

6:5 care of violent patient

Policy: violent patient are managed by the unit staff (doctor, nurses ward boys etc.) and when they are unable to handle they call in security to assist them in calming down the patient

A: definition:

Violence is endemic in our health care system and is, for many staff working in certain areas an almost daily occurrence .violence at work can be defined as ,any incident in which a health care employee is verbally abused ,threatened or assaulted by a patient or member of the public in the circumstances of their employment

B: procedure guidelines:

Violence: prevention and management

PREDICATION OF VIOLENCE

Procedure:

Action	Rationale
multidisciplinary team assessment for : 1.Demographic /personal history : • History violence /disturbed behavior • Misuse of substances • Evidence of social restlessness • Known personnel triage • Recent severe stress especially loss	To reduce risk of a violent situation developing if risk identified. steps should be taken to avoid violence arising

Action	Rationale
2. clinical variables: • Organic dysfunction e.g. endocrine imbalance, convulsive disorders. Dementia , neurological impairment, encephalopathy • Drug toxicity • Alcohol and substance misuse • Psychiatric factors ,e.g. personality disorder ,symptoms of schizophrenia, antisocial impulsive behavior	
3. situational variables : • Staff attitudes • Extent of social support • Limit setti	
4.antecedents /warning signs: • Tense angry facial signs • Increases restlessness • General over arousal of body systems (incased heart rate ,breathing • Muscle twitching, dilating pupils • Increased volume of speech • Prolonged eye contact • Discontentment ,refusal to communicate , fear • Uncles thought process. • Delusions or hallucinations. • Verbal threats. Similar behavior to previous incidents Violence repotting angry feeling. Blocking escape routes	
5.process of risk assessment considering : • Environment • Organizational • Situational • Attitudinal	To identify why and how conflict can occur

PREVENTION OF VLOLENCE:

Procedure:

Action	Rationale
Consider the following factors: 1. Environmental /organizational: • Perception of space • Natural daylight • Noise levels • Provide smoking and non smoking areas • Privacy in toilet /bathroom and changing room.	To maintain a safe environment for all patients staff and visitors present and to avoid aggravating the situation further.
2.communication skills: • Respond to cues with measured and reasonable action.	

• Consider appropriate de- escalation technician • Avoid provocation Develop staff and patient awareness of triggers and document
3.observetion : • Consider level of observation according to local policy

INTERVENTION AND MANAGEMENT VIOLENCE

Procedure:

Action	Rationale
1.a staff member should be in control and consider the need for further personnel to assist with the management of the situation	to effectively manage the situation and inform staff and distressed individual who is taking responsibility for resolving the issue
2. Remove other patient and relatives form area.	To minimize the risk of physical injury to patient and others
3.staff should be aware that their non-verbal commutation is non- threatening and non provocative	To de- escalate the risk of violence
4.use appropriate alarm to enlist help and contact patient's medical team	To endure the patient is given the appropriate treatment if required
5.consider contracting police if local policy indicates	To minimize safe environment
6.if necessary apply physical intervention seclusion ,consider rapid tranquilization	Physical and /or medical restraint may be required in the management of the patient

POST- VIOLENCE INCIDENT REVIEW

Procedure:

Action	Rationale
1. Attend to patient and staff injured during the incident.	To provide care and support to those involved.
2..A post –incident review should occur within 72hours to address psychological concerns of patient and staff	To comply with legal obligation and hospital policy.
3.docement incident	For legal compliance
4.identify risk factors and /or triggers	To prevent repeat of the incident

Chapter 7:
Hospital infection control (HIC)
7:1 Hand hygiene

A: Introduction:

Hand washing is generally considered to be the most importance in preventing the spread of infection. The association between effective and washing and the prevention of cross infection is well established .hand washing is known to be the single most effective most to reduce cross infection

B: definition:

It is the vigorous, brief rubbing of all surfaces of lathered hands, followed by rinsing under a stream of water in order to create friction

CDC Definition

Hand washing : is the act of vigorous ,brief rubbing together of all surfaces of hands by rinsing under a stream of water in order to create friction with the use of soap and water ,for the purposes of removing soil, dirt, and –or microorganisms

C: purposes:

To provide health care employee research based hand hygiene techniques and practices that will reduce the risk of nosocomial infection when followed and to standardize hand hygiene practices through the organization.

D. policy statement:

Hand hygiene forms an integral part of risk management and clinical government within each organization. It is essential that health works the importance of hand hygiene in relation to their own personal safety and that of their patients or clients

Patient are put at risk developing a health care practitioner caring for them has contaminated hands .effective hand hygiene can greatly reduce the transmission of infections and decrees' the incidence of preventable health care associated infection .leading to reduction in patient morbidity and mortality

The health & safety at works act 1974 require all employees to follow safe work practices which involve effective hand decontamination.

The adoption of safe working practices all assist in the control of existing infection disease and helps to prevent the acquisition of infection at work

The following guidance outlines measures relating to hand hygiene that must be taken by all members of Inodaya hospitals staff in order to prevent the acquisition or spread of infection.

E.Types of skin Flora:

Skin flora can be divided in to two categories

- Transient micro-organisms
- Resident Micro organisms

Transient microorganisms:

They are not constantly present on the skin but are acquired by touch from direct patient contact equipments or the general environment, they can however survive on hands and be easily transmitted to others and items of equipment they can easily be removed by hand washing.

Resident microorganisms:

They live on the skin and protect the skin against invasion by harmful bacteria / transient microorganisms, they are not easily removed by the friction of hand washing but their removal is desirable when hand washing before procedure which break the patient's natural defense e.g. surgical procedure.

F.Guidelines for selection of soaps and intervals for hand washing:

1. Soap and water (Johnson diversy liquid soap)

- Before bringing work and before going home
- Before direct patient contact
- Before and after eating
- After rest room
- Before caring for neurogenic or severe immune suppressed patients
- After contact with patients intact skin (e.g. measuring BP, lifting a patient)
- After contacting with unanimated objects including equipment in the immediate vicinity of the patient
- After removing gloves
- Whenever hands are visibly soiled.

2.Anti-microbial hand wash micro shield (chlorhexidine)

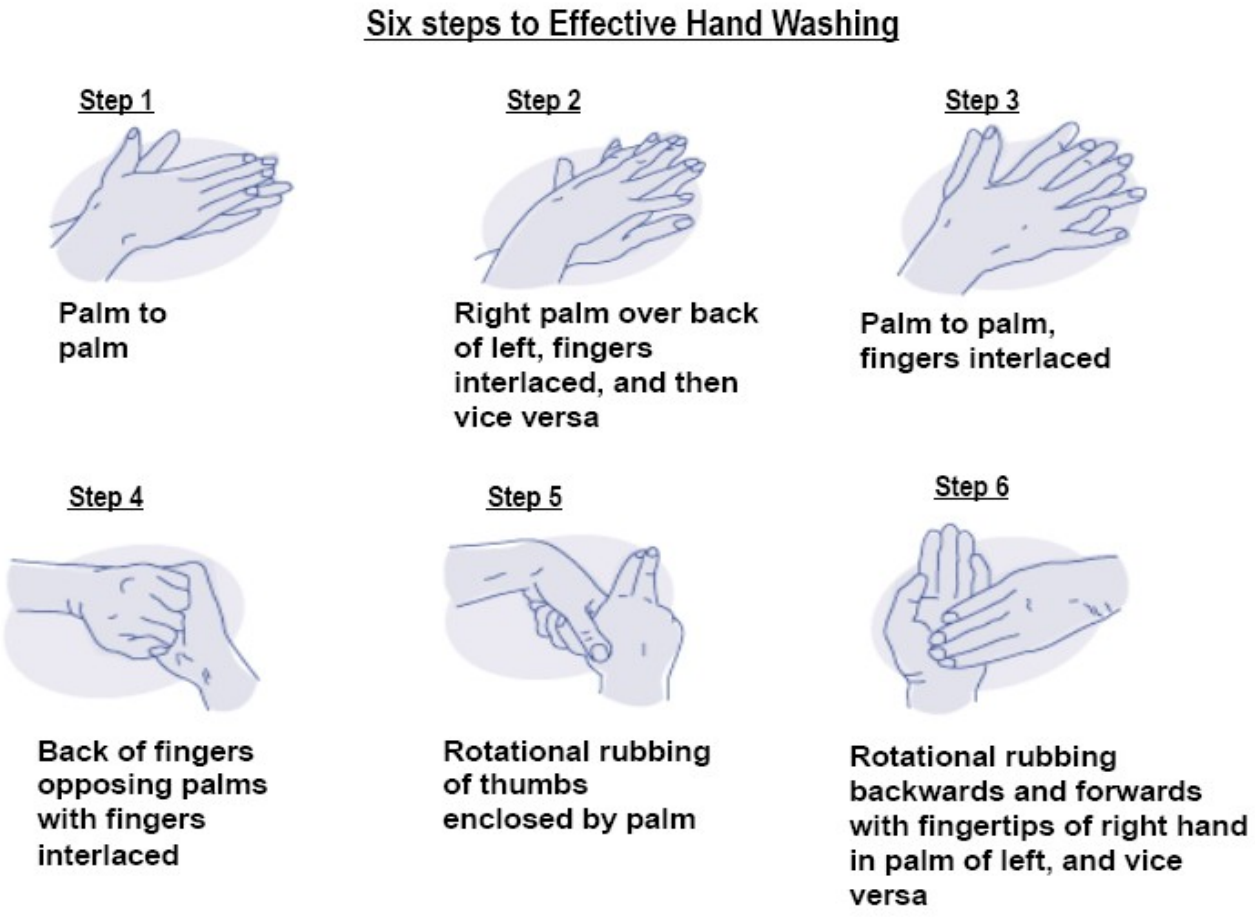
- Before gloving for any invasive procedure
- After contact with body fluids, excretions, mucosa, membrane, non-intact skin or wound dressing.
- When hands are visibly soiled
- When moving from a contaminated body site to clean a clean body site patient care. When hands are not visibly soiled.

3. Alcohol based hand rub: Micro shield chlorhexidine)

The following six steps describe the best way to effectively wash your hands. The following steps recommended and need only take 20 seconds

Wet hands before applying liquid soap / anti-microbial hand wash:

Step: 1 Palm to palm
Step: 2 Right palm over left dorsum and left palm over right dorsum
Step: 3 palm to palm fingers interlocked.
Step: 4 back of fingers to opposing palms with fingers interlocked.
Step: 5 Rotational rubbing of right thumb clasped in left palm and vice versa
Step: 6 Rotational rubbing back and forward with clasped fingers of right hand in left palm & vice versa.



ENSURE HANDS ARE THOROUGHLY RINSED AND DRIED FOLLOWING HAND WASHING

F.Hand drying:

Effective drying of hands after washing is importance as wet surface can transfer microorganisms more effectively than dry over; in adequately dried hands are more prone for skin damage. Paper disposal

hand towels quicker and more effective than warm air dryers additionally. Paper towels not only dry skin but can also sub away transient Microorganisms, dead skin cells loosely attached to the surface of the hand.

Routine hand decontamination using alcohol products:

- Apply alcohol clean dry hands
- Rub hands together covering all surfaces until hands are dry (this takes about 15seconds)
- Follow manufactures recommendation on the volume of product to be used.
- If hands become unduly sticky after several consistent applications ensure hands are washed with soap and water.

G.Additional Requirements:

- The effective of hands decontamination in improved if the following principles are adhered to:
- Keep nails short and pay attention to them when washing hands
- Avoid wearing rings with ridger or stones as bacteria can harbor in cervices and around stone setting. Total bacteria counts on hands are higher when rings are worn.
- Do not were artificial nail polish as they discourage vigorous hand washing , mail polish can flake and crack and it can become a source of contamination. Ridger caused by cracked nail polish can also harbor bacterial; certain type of bacterial can thrive under false nails.
- Remove rings wrist watches, bracelets, bangles and roll up long sleeves prior to hand washing jewelry rings, bracelets wrist watches ect. Must not be worn by those performing prolonged patient care.

H: Role and responsibility of individuals departments:

- It is responsibility of very individuals working within the organization to ensure that the hand hygiene guidelines are complied.
- It is the responsibility of the organization/ department manager to ensure that adequate facilities are provided so that staff is encouraged to wash their hands regular and appropriately. This must include the adequate provision of hand wash basins , contains wrist of elbow mixes taps, liquid soap and disposable paper towels.
- Alcohol hand rub and surgical scrub solution must be provided with in the appropriate area, it is also responsibility of ward/ department managers to ensure that staff within their area maintain complacence with hand hygiene guidelines.
- The infection prevention and control team in corporate hand hygiene training in to all infection control sessions on induction and as part of in service training. Additional hand hygiene campaigns will periodically after an opportunity for the updating of hand hygiene awareness.

7.2 Gown technique

1. Hold the gown at neck on the inside permitting to unfold. The open part of gown is towards nurse
2. Slide hands and arms down the sleeves and fasten ties at neck.
3. Overlap the gown at the back as much as possible and secure waist band at back.

The points to be remembered while removing the gown after use:

1. Untie the waist band.
2. Wash hands
3. Untie the neck ties.
4. Slide gown down the arms and over the hands by holding the inside of the sleeves.

5. Hold the gown with both the hands (inside the shoulders) at the shoulder seams. The gown is turned inside out. The hands are then brought together, and the gown is rolled and discarded in the container provided.
6. Wash hands thoroughly.

7.3 Face masks

Masks are generally used to prevent the spread of microorganisms to and from the patient, through the respiratory tract. Masks should be worn only once and then discarded to ensure effective filtering of micro-organisms. Masks that become wet are less effective and should be discarded. It is desired that the masks should be worn not more than one to two hours at a time. The mask is not worn outside the unit. Masks need to cover both mouth and nose, and fit snugly around the face to prevent the escape of microorganisms around the sides. There should be minimum layers of cloth for the effective filtration of air.

The points to remember while wearing the masks:

1. Wash hands
2. Remove the clean masks from the container with sterile forceps. The masks should be sterilized and kept for the use
3. Hold the masks by its strings. Fit it to the face and tie the strings at the back of the head. Do not touch the masks that cover the face.

To remove the masks

1. Remove the gown
2. Remove the mask and discard it in the container for used masks.
3. Wash hands thoroughly

7.4. Gloves

Gloves are used in the medical asepsis to protect the nurse from pathogens.

DON'T

Don't place a sterile glove package on a wet surface.
Don't touch the outside of the glove with your bare hands or the inside of the glove with a gloved hand.
Don't try to adjust the fit until you're wearing both gloves.

DO

Select the appropriate glove size and inspect the package to make sure it's intact and dry.
Wash and dry your hands.
Place the sterile package on a clean, dry surface above waist height. (Consider anything held below waist level contaminated.)
Peel back the top of the outside wrapper. Handle only the outside of the inner package.
Carefully open the inner package so the cuffs of the sterile gloves are closest to you.
Using the thumb and forefinger of your non dominant hand, grasp the fold of the cuff on the glove for your dominant hand.

Removing of Gloves:

After finishing, remove gloves by pulling off wrists without touching palm of hands

7.5. Nosocomial infection

Definition: Any infection that is neither present nor incubating at the time of Hospital admission Infections are considered Hospital acquired if they occur 48Hrs after Hospital admission without proven prior incubation

If they occur three days after discharge or with in thirty days of a surgical procedure

Impact of Nosocomial Infections:

1. Leading cause of Death
2. Increased length of stay in the Hospital/ICU
3. Economical Costs
4. Adds to an Imbalance between resource allocation for primary and secondary Healthcare by diverting scarce funds to management of potentially preventable conditions.

Transmission of Nosocomial Infections:

Healthcare worker to patient

Patient to patient

Patient to healthcare worker

Strategies to prevent infections: have been subdivided into several groups

Education-based, Process-based, Systems-based

General measures : Surveillance, Isolation précautions

Antibiotic control : Restriction of use, guidelines, rotation

Selective digestive decontamination

Specific measures : Specifically targeted against ventilatory assisted precautions(VAP)

Specifically targeted against catheter-related blood related infections (BSI)

Specifically targeted against selected entry, ….

Infection control: Hand washing is the single most important procedure for preventing the transmission of disease.

Isolation precautions and Policy for Antibiotic use.

Control of catheter related infection: Aseptic technique during I.V/ C.V.P catheter insertion and care:

Use of 2% chlorhexidine or betadine for insertion-site antisepsis

Use of sterile gauze or transparent semipermeable dressing to cover insertion site

Avoid using arterial or venous cut down procedures to insert catheters

Replace catheter-site dressing when loose, damp, or soiled

Work practice must follow standard precautions

Use of personal protective equipment when handling blood, body substances, excretions and secretions

Appropriate handling of patient care equipment and soiled linen

Hand washing and antisepsis

Prevention of needle-stick/sharp injuries

Environmental cleaning and spills-management; and appropriate handling of waste

Summary of Measures: Hand hygiene, Basic hygiene procedures, Antibiotic prophylaxis, Clinical algorithms, Surveillance, Microbiologic support, Reduce empiric Anti Biotic use, Restriction and education, Early detection (screening), Decision support systems, New diagnostic markers, Academic detailing.

7.6. CARE OF RUBBER GOODS

- **Ambu bags and CPR face masks**
- Wipe exposed surface with gauze pad soaked in 60-90% alcohol, rinse immediately
- Wash with soap and water liquid soap and water. Rinse with clean water, air or towel dry
- **Aprons**
- Wipe with 0.5% chlorine solution. Rinse with clean water.
- Wash with liquid soap and water. Rinse with clean water, air or towel dry.
- **Blood Pressure cuff, Footwear**
- If contaminated with blood or body fluids, wipe with gauze pad or cloth. Soaked with 0.5% chlorine solution.
- If soiled, wash with soap and water. Rinse with clean water air or towel dry
- **Suction bulbs (Rubber)**
- Soak in 0.5% chlorine solution for 10mins prior to cleaning. Rinse immediately
- Pass soapy water through catheter three times rinse three times with clean water (inside + outside)
- Steam or boil for 20 minutes.
- **Catheters**
- Soak in 0.5% chlorine solution for 10 minutes prior to cleaning,
- Using brush, wash with soap and water, rinse three times with clean water. Allow the water to run through the eye of a catheter to test for its patency.
- Steam or boil for 20 minutes
- **Mackintoshes**
- Wash with soap and water. Wipe dry
- Allow air dry
- Separate set to be used for infective patients

7.7 BARRIER NURSING

Barrier nursing is a set of stringent infection control techniques used in nursing. Barrier nursing is a method, where one nurse is set apart to take care of a communicable disease patient with all the articles needed only for that particular patient. Articles used to that patient are not used for other patients. Eg – Tetanus, Chicken pox.

The aim of barrier nursing is to protect medical staff against infection by patients, particularly those with highly infectious diseases. Reverse barrier nursing is similar, but concentrates on the reverse: protecting vulnerable patients, such as those with weakened immune systems, against infection by medical staff.

Effective barrier nursing

In an ideal world, a patient requiring barrier nursing should be housed away from other patients in an isolation ward. However, not all practices have the luxury of such facilities, which can make effective barrier nursing more difficult – though not impossible – to achieve. The following points should be adhered to.

• Equipment should be for the sole use of that patient – disposable bedding and even food bowls should be considered to minimize the transportation of contaminated equipment.

• Protective clothing should also be disposable – over gowns or overalls are preferable to aprons, as they provide complete, all-round cover. Gowns with loops for fingers allow the placement of gloves over the top, similar to the closed-gloving method, which ensures the personnel's skin is not exposed to contamination. Protective clothing should also be water repellent to prevent strike-through to clothing.

• A limited number of staff should be responsible for nursing an isolated patient – isolating patients can cause them distress, so ensuring the same staff member cares for an individual has the added advantage of building trust, as well as minimizing cross-contamination.

• Hospital equipment – such as fluid pumps, thermometers and stethoscopes – should also be reserved for the duration of the patient's treatment. Such items should be thoroughly decontaminated after use.

• Consider the use of a designated trolley for transporting patients in isolation – they should only be moved when absolutely necessary. Designated toilet areas should be away from usual toilet areas.

• Owner visitation should be discouraged, but this needs to be balanced with the patient's well-being. If visits are permitted, the owner must comply with infection control policies.

• Ensure your isolation area is well stocked with its own consumables and cleaning products. However, don't overstock, as you will need to dispose of everything once the patient is moved from isolation – this could become costly.

• The NHS recommends barrier nursing for a further 48 hours after a patient is asymptomatic if they have had vomiting or diarrhea.

• And finally… wash your hands. Although gloves and protective equipment will provide a barrier to bacterial contamination, they should be classed as nothing more than a second skin. Observational studies have shown that not removing gloves and touching inanimate objects, such as door handles and telephones, can contribute to bacterial spread[1]. Nothing substitutes good hand washing – even wearing gloves.

Patient considerations

Invasive devices – such as intravenous catheters, urinary catheters, feeding tubes and chest and wound drains – are potential routes for infection. All invasive devices should be closed systems – for example, intravenous catheters should be appropriately bunged and dressed when not in use, and urinary catheters should be attached to a urinary bag.

To minimize the risk of infection, all devices should be removed as soon as possible.

Patients most at risk of HAIs include those that have:

- A weakened immune system
- Open wounds
- Any invasive device
- A severe skin condition
- Had recent surgery
- Frequently been given antibiotics.

7.8 MAJOR SPILL(More than 30ml)

1. Place blood /body fluids spill sing board next to the spill
2. Wear appropriate personal protective equipment
3. Place the spillage management kit next to the spill.
4. Arrange the required color dustbin cover (yellow, red) so that they are ready to receive the contaminated waste
5. Spray adequate amount of 1%sodum hypochlorite solution over the spill and cover the area with disposable paper towels
6. Allow a contact time of 10minutes
7. Remove the absorbent pads.
8. Discard the absorbent pads in to yellow color dust bin cover (with HAZMAT label)
9. Label the cover with the name of the Hazardous materials ,data and name of the department and send to HAZMAT desk
10. Clean the area using cleaning agent specific to the area
11. Put soiled gloves in red color cover
12. Wait of the area to completely dry before removing the blood /body fluids spill

Training:

Training should be provided at induction about the role of staff, it **is their responsibility it attend mandatory infection control induction classes and subsequent annual update.**

7.9 Bio medical waste disposals

A: Definition:

The waste generated during the diagnosis, treatment or immunization of human beings or animals or in research activities pertaining there to or in the production of testing biological.
85%waste generated –non hazardous
10% waste generated –infection
5% waste generated -non infection .hazardous

B: Classification of Hospital Waste:

- Hazardous waste
- Non hazardous waste

Kitchen waste, office waste, wrapping papers and bouquets, etc.kicten waste –left over food swill. Peels and dirty water.

Types:

- Bio- degradable waste
- Non- biodegradable waste

Bio- degradable waste:

Peels of fruits and vegetables skin and left over food and other natural kitchen wastes

Non- biodegradable waste

Wrappings foil, plastic bags ect.

Hazardous waste: hazardous wastes potentially infectious waste.

- Dressing and swabs contaminated with blood ,pus and body fluids
- Laboratory wastes inching laboratory samples, cultures, stock of infectious gannets, laboratory glass ware.
- Instruments used in patient care: this range from diagnosis equipment such as endoscope ultra-sound probes, syringes and needles, sharps and other instruments.
- Potentially infectious materials placenta, tissue, tumors, organs or limbs which are removed during surgery.
- Potentially infected animals: used in diagnostic or reaches studies.
- Pathological waste: human tissue, organs, body parts removed during surgery or autopsy or medical procedure and specimen of body fluids
- Potentially toxic waste.

Radioactive:

These may be solids, liquids and gases used for analytical procedures, body organs imaging and tumor localization and treatment.

Chemical waste:

They may be hazardous toxic, corrosive, inflammable, reactive or genotoxic. They require safe disposal which will ensure that human or environment problems do not arise during storage, transport, and final disposal.

C: categories of personal exposed to risk of infection:

- Other patient attending the health care facilities
- Medical and paramedical person proving health care
- Persons involved in collecting and disposing the waste materials
- Those involved in clearing the instruments, floor surfaces and washing of glass wares and linen.

D: health hazardous associated with poor hospitals waste management:

- Injuries from sharps to all categories of hospitals personnel (HIV and HBV)

- Nosocomial infection in patient from poor infection control and poor hospitals waste management.
- Risk of infectious outside for waste handles, scavengers and eventually the general public.
- Risks associated with hazardous chemical – drugs being handle by persons handling waste at all levels and
- Disposal – recycled – repacked and sold may be non- noticeable

E: routine of transmission of infection

- Through non – -tract skin (preexisting cuts ,raw areas) or by cuts and punctures of the intact skin
- Through mucous membranes such as splashing eyes
- Inhalation of dust particles containing germs
- Bu ingestion –trough contaminated unwashed hands, contaminated water and foodstuff.

Colour coding go waste disposal:

i) Yellow bag (highly infectious)

1. Post operative human body pats
2. Placenta
3. Pathological waste
4. Items contaminated with blood and body fluids including cotton dressing, soiled plaster caste lines, other materials contaminated with blood

ii) Red bag (infection waste)

1. All types of IV sets and tubes /bags
2. Gloves, blood bags, urine bags
3. Disposable syrings) with needle)
4. Catheter
5. All kinds of drains &aprons (like cotton, swabs and bandages)
6. Dialysis kits
7. Microbiological waste

iii) White puncture proof container:

1. All kinds of broken glasses, tools & ampoules
2. All kinds of sharps like scalps, needles, blades, IV catheters etc.
3. Clinical and pathological slides
4. Guide wires
5. Vneflon, needle etc.

Black bag:

1. Cytotoxic drugs
2. Chemical waste

Blue bag:

1. (Non infective) all bottles
2. Vials (unbroken) use for treatment

Precaution:

3. All the health workers employee in /outside the hospitals must be vaccinated against hepatitis – B
4. Al the health care workers put on heavy duty gloves while dealing with infection waste specially sharps
5. Sharps should not be left casually on counter tips, food trays or beds as grievous injuries can result
6. Recapping needless should be discouraged
7. In situation when recapping is unavoidable, the single handed method be utilize

7:10 Protocol to be followed after Needle Stick Injury or Blood /Body Fluids Exposure

A: what is infectious materials and what is not?

Exposure to blood, serum, vaginal secretions, cerebrospinal fluid ,synovial ,pleural, peritoneal, pericardial lid, amniotic fluid and other body fluids contaminated with visible blood can lead to infection .exposure to tears ,sweat, saliva, urine and faces is non- infectious unless these secretions contains visible blood .

B: incident:

Needle sticks injury or blood \body fluid exposure (exposure means contact with mucous membranes, intact or breached skin.

C: first aid in management of exposure

For skin – if the skin is broken after a needle –stick or sharp instrument:

- Immediately wash the wound and surrounding skin with water and soap, and rinse do not scrub
- Do not use antiseptics or skin washes (bleach, chlorine, alcohol, betadine)

After a splash of blood or body fluids on unbroken skin:

- Wash the area immediately
- Do not use antiseptics

For eye:

- Irrigate exposed eye immediately with water or normal saline .sit in a chair tilt head back and ask a colleague to gently water or normal saline over the eye
- If wearing contact lens, leave them in place while irrigating, as they form a barrier over the eye and will help protect it. Once the eye is cleaned ,remove the contact leans and clean them in the normal manner .this will make them safe to wear again
- Do not use soap or disinfectant on the eye.

For mouth:

- Spit fluid out immediately
- Rinse the month thoroughly ,using water or saline and spit again
- Repeat this process several times
- Do not use soap or disinfectant in the mouth
- Consult the designated physician of the institution for management of the exposure immediately

Don'ts:

- Do not use bleach, chlorine, alcohol betadine, iodine, or any antiseptic, or detergent

- Do not panic
- Do not put pricked finger in mouth
- Do not squeeze wound to bleed it

Process flow:

- Inform the supervisor in –charge of the respective department
- File a report within half an hour (incident reporting form NSI available at ICU , accident and emergency department ,OT)
- Go to the emergency department
- Get assessed by DMO \ physician within 2to 6 hours
- Proceed with the treatment suggested
- Review for the up care as advised

D**: instructions for the staff**

Standard precautions

- Wash hands after patient contact ,removing gloves
- Wash hands immediately if hands contaminated with body fluids
- Protective eyewear and masks should be worn when splashing with body substance is anticipated.
- All heath care workers should take precautions to prevent injuries during procedures and when cleaning or during disposal of needle or other sharp instruments
- Needle should not be recapped
- Needle should not be purposely bent or broken by hand and not removed from disposable syringe nor manipulated by hand
- After use disposable syrinage and needle ,scale blades and others sharps instruments should be placed in puncture resistant container
- Health care worker who have exudative lesions or dermatitis should refrain from direct patient care, and from handing equipment.
- All needle stick injuries should be reported tom the ER who in turn will inform infection control nurse.
- Handle and disposal of sharps safety
- Clean and disinfected and sterilization standards
- Adhere to disinfection and sterilizations standards
- Vaccines all clinical and laboratory workers against hepatitis B
- Other measure doubles gloving changing surgical technique to avoid"exposure prone "procedure use of needle –less systems and other safe devices.

Post exposure prophylaxis:

Post exposure prophylaxis (PEP) refers to comprehensive medical management to minimize the risk of infection among health care personnel (HCP) following potential exposure to blood- borne pathogens (HIV, HBV, HCV)

This including:

- Counseling
- Risk assessment
- Relevant laboratory investigations (based on informed consent of the source & exposed person)

- First aid (depending on the risk assessment ,the provision of short term (four weeks) of antiretroviral drugs ,with follow up and support

The decision to start PEP is made on the basis of degree of exposures to HIV and the HIV status of the source from whom the exposure /infection have occurred

First PEP dose within 72 hours

A designated personal /trained doctor must assess the risk of HIV and HBV transmission following an AEB (accidental exposure of blood). This evaluation must be quick so as to start treatment without any delay, ideally within two hours but certainly within 72hours; PEP Is not effective when given more than 72 hours after exposure .the dose of PEP should be administered within the first 72 hours of exposures .if the risk is insignificant, PEP could be discontinued if already commenced.

E: assessing risk of transmission:

Exposure is defined under three categories based on the amount of blood \fluid involved and the entry port. These categories are intended to help in assessing the severity of the exposure but may not cover all possibilities.

Categories of exposures	
Category	**Definition and example**
Mild exposure	Mucosa membrane /non –intake skin with small volumes E.g. a superficial wound (erosion of the epidermis) with a plain or low caliber needle or contact with the eyes or mucus membranes subcutaneous injection following small – bore needle
Moderate exposure	Mucous membrane /non intact skin with large volume or percutaneous superficial exposure with solid needle e.g. a cut or needle stick injury penetrating gloves
Severe exposure	Percutaneous with large volume e.g. an accident with a high calbre needle (>15G) visibly contaminated with blood ; a deep wound (hemorrhagic wound and /or very painful); transmission of a significant volume of blood ;an accident with materials that has previously been used intravenously or intra –arterially

F: assess exposed individual:

The exposed individual should have confidential counseling and assessment by experienced physician .exposed individuals who are known or discovered to be HIV positive should not receive PEP. They should be offered counseling and informed on prevention of transmission and referred to clinical and laboratory assessment to determine eligibility for antiretroviral (ART) .besides the medical assessment, counseling exposed HCP is essential to allay fear and start PEP

G: general counseling:

- The HCV should be advised to refrain from donating blood, semen or organs /tissues and abstain from sexual intercourse.
- In case sexual intercourse is undertaken a latex condom be used consistently
- In addition .women HCV should not breast –feed their infants during the follow –up period

Pregnancy and PEP:

- Based on limit information anti –retroviral therapy taken during 2nd and 3rd trimester of pregnancy has not caused serious side effects in mother or infants
- There is very little information on the safety in the 1st trimester.
- If the staff is pregnant at the time of exposure to HIV , the designated authority /physician must be consulted about the use of the drugs for PEP

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Counseling for PEP:

Exposure persons (cliento should receive appropriate information about what PEP is about an the risk and benefits of PEP in order to provide informed consent for taking PEP ,it should be clear that PEP is not mandatory

Psychological support:

Many people feel anxious after exposure .every exposed person need to be informed about the risk, and the measures that can be taken .this will help to relive part of the anxiety .some client may required further specialized psychological support

Document exposure:

Documentation of exposure is essential .special leave from work should be considered initially for a period of two weeks. Subsequently, it can be extended based on the assessment of the exposed person metal. State .side effects and requirements.

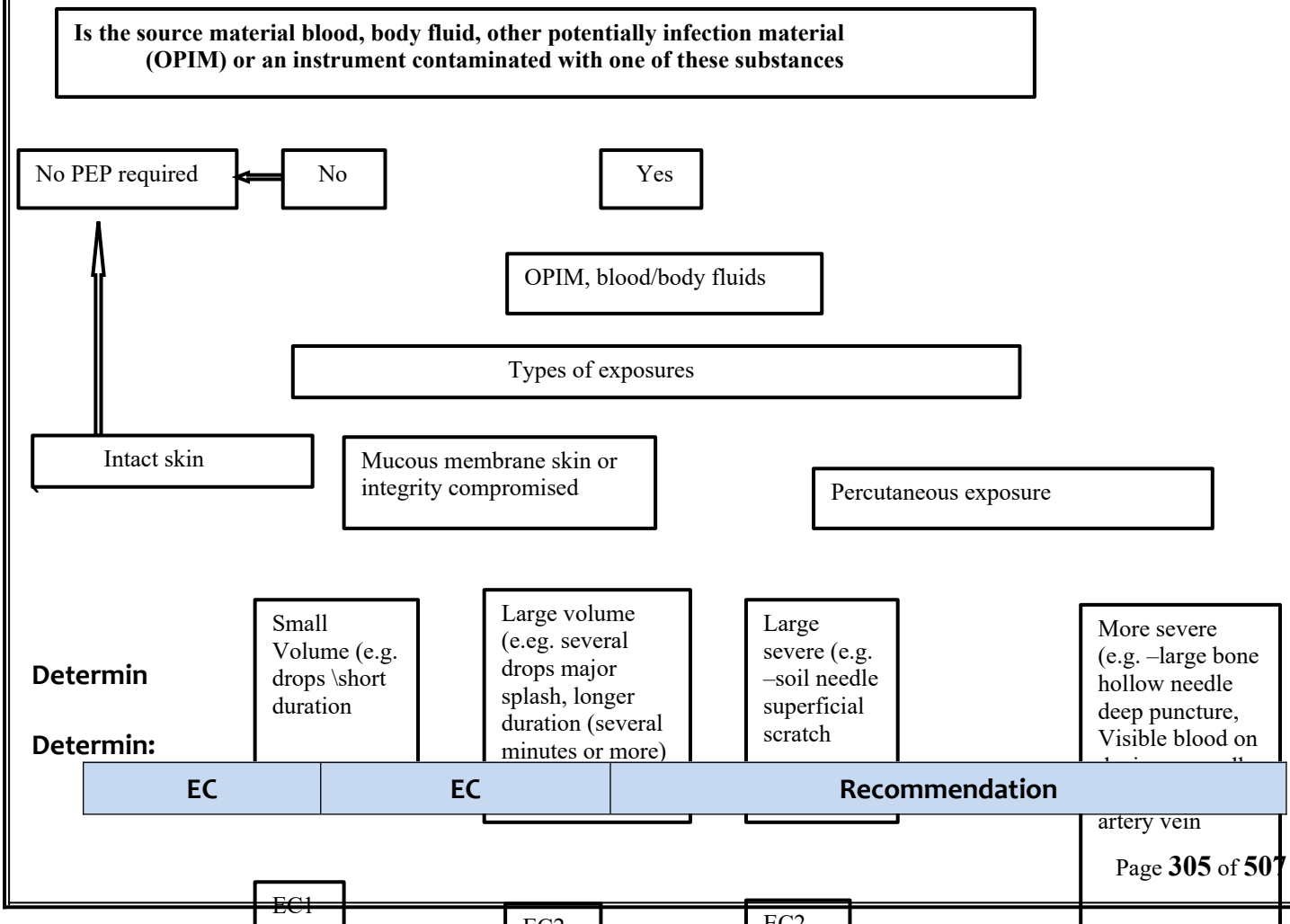
Practical application in the clinical setting:

- For prophylactic treatment the exposed person must sign consent form
- Informed consent also means that if the exposed person has been advised PEP, but refuses to start it, this needs to be recorded .this dement should be kept for PEP
- An information sheet covering the PEP and the biological follow –up after ant AEB must be given to the person under treatment, however this sheet cannot replace verbal explanations.

Determination of the exposure code (EC)

Exposure code can be as per the flow chat given below, it may be classified into three categories, EC1. EC2, EC3, depending upon the nature of exposure

Exposures code (EC)



1	1	pep may not be warranted
1	2	consider basic regimen
2	1	Recommendation basic regimen (most exposures are in this category
2	2	Recommendation expanded regimen
3	1or 2	Recommendation expanded regimen
2-3	unknown	If setting suggests a possible risk (epidemiological risk factors) and EC is 2or 3 consider basic regimen

PEP regimen:

Three are two types of regimens:

i) Basic regimen: 2-drug combination
ii) Expanded regimen :3- drug combination

The decision to initiate the type of regimen depended on the type of exposure and HIV serostatus of the source person

HIV Evaluation			
Exposure	**Status of source**		
	HIC +and Asymptomatic	**HIV + and Clinical Symptomatic**	**HIV status unknown**
Mild	Consider 2-drug PEP	Start 2- drug PEP	Usually no PEP or consider 2-drug PEP
Moderate	Start 2- drug PEP	Start 3-durg PEP	Usually no PEP or consider 2-drug PEP
Severe	Start 3-durg PEP	Start 3-durg PEP	Usually no PEP or consider 2-drug PEP

- In the case of a high risk exposure from a source patient who has been exposed to or is taking antiretroviral medications, consult an expect to choose PEP regimen, as the risk of drug resis-tance in high
- Refer \consult expect physician
- Start 2 –drug regimen first

HIV post –exposure prophylaxis evaluation:

Seek expect opinion in case of

- Delay in reporting exposures (> 72hours).
- Unknown source
- Known or suspected pregnancy ,but initiate PEP
- Breastfeeding mothers , but initiate PEP
- Source patient is on ART
- Major toxicity of PEP regimen.

HIV chemoprophylaxis:

Post –exposures prophylaxis (PEP) has its greatest effect if begun within two hours of exposure .it is essential to act immediately .the prophylaxis needs to be continued for four weeks. Exposure must be immediately reposted to designed authority and therapy administered .never delay start of therapy due to debate over regimen. Begin with basic 2-drug regimen, and once expert advice is obtained, change as required.

Dosage of drugs for PEP		
Medication	**2-drug regimen**	**3-drug regimen**
Zidovudine (AZT)	300mg twice a day	300mg twice a day
Stavudine (d4T)	30mg twice a day	30mg twice a day
Lamivudine (3TC)	150mg twice a day	150mg twice a day
Protease inhibitors		**1st choice** Lopinavir /ritonar (LPV\r) 400/100mg twice a day\or 800/200mg once daily with meals **2nd choice** Nelfinar(NLF) 1250mg twice a day or 750 mg three times a day with empty stomach, **3rd choice** Indinavir (IND) 800mg every 5hours and drink 8-10glasses (1.5 letters) of water dail
Note : • if protease inhibitor is not available and the 3rd drug is indicated ,one can consider using Efavirenz (EFV 600mg once daily • Monitoring should be institute for side effects of this drug e.g. CNS toxicity such as night-mares, insomnia ect. • Foxed dose combination (FDC) are preferred ,if available ,ritonavir requires refrigeration		

Note: Zidovudine (AZT) 300mg, Lamivudine (TC) 150mg, Indinavir (IND) 800mg are the drugs currently available in the hospitals

Follow –up an exposed person:

Whether or not post –exposure prophylaxis is started, a follow up is needed to monitor for possible infection and to provide psychological support.

Clinical follow up:

- In the weeks following as AEB, the exposed person must be monitored for the eventual appearance of sings indicating and HIV seroconversion
- Acute fever
- Generalized lymphadenopathy

- Cutaneous eruption
- Pharyngitis
- Non- specific flu symptoms

  - Ulcers of the mouth or genital area
  - These symptoms appear in50% -70% individuals with an HIV primary (acute) infection and almost always within 3-6weeks after exposures
  - When primary (acute) infection is suspected, referral to an ART centre or for expect opinion should be arranged rapidly
  - An exposed person should be advised to sue precautions) e.g. avoid blood or tissue donations, breastfeeding, unprotected sexual relations or pregnancy) to prevent secondary transmission, especially during the first 6-12 weeks following exposure
  - Condom use in reinforced
  - Drug adherence and side effect counseling should be provide and reinforced at every follow –up visit
  - Psychological support and mental health counseling os often required.

Laboratory follow –up:

The health care provider should be tested for HIV as per the following schedule

- ❖ Base-line HIV test – at time of exposure
- ❖ Repeat HIV test – at 3rd month following exposure
- ❖ 2nd repeat HIV test – at 6th month following exposure

If the test at 6months is negative No further testing is recommended

Investigation

Following investigation are done immediately during exposure to blood and body fluids

- HIV
- HCV
- HbsAg – (not required if immunized)
- These test repeated on the 3rd month and 6th month from the date of initial exposure

7:11 cleaning and disinfection equipments:

A: suction apparatus:

1. Wash your hands and wear disposable gloves
2. Remove the collection bottle from suction apparatus
3. Empty the suctioned secretions present in the container after every suction mandatory when it's filled three forth
4. Clean the suction bottle thoroughly with soap and water
5. A secondary treatment with disinfectant
6. Soak the solution bottle in 1% sodium hypochlorite for 10munites
7. Rinse the suction apertures thoroughly with fresh water to remove all the corrosive materials
8. Wipe the suction bottle a line free cloth
9. Ensure the suction apparatus is clean dry & ready for next use.

B: Oxygen Humidifier:

1. Wash your hands out on the disposal gloves
2. Pour sterile water in to the oxygen humidifier
3. Humidifier should be cleaned thoroughly with soap and water every day.
4. Water in the humidifier should be changed with every 24hours
5. When the oxygen humidifier is not in use ensure, that the humidifier is cleaned thoroughly with soap and water ,dried, and then attached to the oxygen humidifier

C: Cleaning protocol:

Objective:

To ensure that he unit is cleaned and disinfected, promote hospital infection control measures.

Purposes:

The purposes of this cleaning and disinfection process is to remove bacterial contamination from environment surface and equipment surfaces where patients receive care in order to prevent the transmission of the microorganisms from patient to patient ,from patients to healthcare workers, and from patient to visitors.

Process flow:

Unit in charge /nurse manager
Infection control nurse
Technician
House Keeping staff
Housekeeping supervisor
Maintenance worker

Responsibilities

Nursing \Unit in change:

- Intimate need for cleaning to the housekeeping personnel
- Coordinates with the house keeping for accomplishment of cleaning ,disinfection process,
- Co ordinate with the Maintenance department and ensures that the as fillets \ducts are cleaned once in a week \whenever necessary

Technician:

Involved in the process of cleaning all the bio medical equipment

Housekeeping supervisor:

- Responsible for overall monitoring of cleaning /disinfection activates
- Ensures that the cleaning is done effetely

Housekeeping personnel:

- Involves in the process of cleaning the unit
- Removes all the curtains \linens
- Cleaning all matters \bed \trolley\ stretcher \bed pan \kidney trays ect.

Infection control nurse:

Notes if culture has to be sent after cleaning process (if required) –follows up with the result.

D: Bio- medical Equipments:

- Responsible person – technician of the respective unit
- Cleaning agent – 1% incidure (10ml in 1letre of water

Patient room cleaning protocol after discharge \transfer of the patient \death of the patient

- Person responsible –house keeping staff of the unit

- Cleaning agent
  - Virex II256 (100ml in 1leter water)
  - 1% incudure (10ml in 1leter water)
    (Used only for infected patient area \after death of the patient \OT.ICU areas)
  - TASKI R6 (Contact times -5-10min) (**used for only in the toilet)**
  - TASKI R1 (20ml in 1leter of water)
  - **(Used for clean high wall and floor cleaning in the toilet)**
  - TASKI R5 **(used as room spray)**
  - TASK R3 (20-50ml in 1 letter of water)

(Used for cleaning glass material)
E: steps in cleaning:
Using hospital –grade disinfected, the following items should be cleaned:-

- Wear appropriate personnel protective equipment
- Top, front and sides of the bed's headboard, mattress, bed frame, foot board and side rails, and between side rails.
- TV remote ,nurse call device and cord
- All high –touch areas in the room inclung tabletops ,bedside tabletop and inner drawer, phone and cradle ,armchairs, door and cabinet handles ,light switches ,closet handles,etc.
- In the bathroom ,start with the highest surface and clean the toilet last; clean the sink and counter area, including sink fixtures, and if there is a shower ,the support bars and shower fixtures and surfaces .
- Privacy curtains should be removed, placed in a yellow plastic bag in the room, the person should wear gloves, after completing the task this person should remove gloves, wash hands with an antimicrobial soap and water or apply an alcohol rub their hands.
- Cleaning of window curtains, ceiling is not necessary unless visibly soiled.
- Following patient discharge clinical equipment must be cleaned and disinfected ,moved to the door of the room for remove to central supply or to the sterile processing department
- Following the terminal cleaning of a patient room, gloves should be removed so as to avoid touching the outside of the gloves .hands should be washed with antimicrobial soap and water or an alcohol rub applied to the hands to donning a new set of gloves.
- The entire room or the room is refreshed with room spray .

F: final preparation of the unit:

Person responsible: - the unit in- change

- Ensures that the whole cleaning process is carried out
- Ensures that the bed making is done prior to receiving \admission of the patient

Disinfection and their dilution for leaning and disinfection:

Disinfected \ detergent used	Dilution	Method of dilution	purpose	Areas
INCIDURE	1%dilution	10ml in 1leter of water	Cot, bed side equipment, trolley ,bed rails, IV stand ,patient call bell, table	ICU, OT infected patient areas.
VIREX II 256	1%dilutio	100ml in 1letres of water	Floor cleaning	Inpatient& outpatient care areas
TASKI R1	2% dilution	20ml in 1leter on water	Cleaning high wall and rest room floor cleaning	All rest rooms
TASKI R2	2-4% dilution	20-40 ml in 1letres of water	Floor cleaning	Inpatient& outpatient care areas
TASKI R3	2-5% dilution	20-50ml in 1letres of water	Cleaning glass material	Inpatient& outpatient care areas
TASKI R5	Direct use	Direct use	Room spray	Inpatient& outpatient care areas
TASKI R6	Direct use	Direct use with a contact time of 5-10 minutes	Rest room clearing	All rest room
Bacillol 25% spray	Direct use	Direct use	Disinfection of computer,key board, phones	Inpatient& outpatient care areas
Bacillol Concentration	2%lidution	20ml in 1 letter of water	Cot, bed side equipment, trolley ,bed rails, IV stand ,patient call bell, table	ICU, OT infected patient areas.

G: Cleaning and mopping in various areas:

Unit	Disinfectant detergent	Dilution	Frequency
OT	INCIDURE	10 ml in one liter of water	After every procedure\ whenever necessary.
OT	TASKI R2	20-40 ml in one letter of water	Four times a day \ whenever necessary
CCU	TASKI R2	20-40 ml in one letter of water	Four times a day \ whenever necessary
	VIREX II 256	100ml in one letter of water	
OTHERUNITS WARDS	TASKI R2	20-40 ml in one letter of water	three times a day \ whenever necessary
	VIREX II 256	100ml in one letter of water	

Cleaning of BP Cuff:

A: Articles needed:

- Bacillocid spay 25%
- Household bleach
- Paper towels \soft cloth
- Scrub brush
- Disposable gloves

B: Instruments:

Step: 1

Protect your hands from blood and body fluids by wearing disposable gloves .examine the blood pressure cuff fir signs of body fluids of soil .check all parts of the cuff. Inching the tubing and bulb

Step: 2

Remove any visible debris from the cuff bladder with a soft bristle brush. Any debris not easily removed by scrubbing with a soft brush may need to be wiped off with a damp cloth.

Step: 3

Place the cuff flat on a counter, spray bacillocid 25% on a paper towel and wipe it on both sides of the cuff. Use a scrub brush if necessary to remove soil.

Step: 4

Wipe the inside of the blood pressure cuff bladder followed by the tubing and bulb in a horizontal motion with the soft cloth (sprayed with bacillocid 25%).

Step:5

fill an empty spray bottle with a solution of one part chlorine bleach to three parts distilled water. Place the spayed cap on the bottle and agitate gently to mix the bleach solutions.

Step: 6

Hold the cuff over the sink and spray both sides with the bleach solution. Allow the cuff to air dry before using it again avoid introducing water into the tubing .

Step: 7

Pat the cuff and tubing dry with a paper towel.

Care of infectious patient:

A: definition of infection:

Invasion by and multiplications of pathogenic microorganisms in a bodily part or tissue, which may produce subsequent tissue injury and progress to overt disease through a variety of cellular or toxic mechanisms

Infection may be contagious origin, result from nosocomial organisms, or be due to endogenous micro flora from the nose and mouth throat, skin, or bowel.

B: Equipment:

1. Isolation suite with en- suite facilities will prevent cross infection
2. All items required to meet the patient's nursing needs during the period of isolation
3. Protective clothing
4. Alcohol hand rub

C: procedure:

S.NO	Action	Rationale
	Isolation room preparation	
1	place the barrier nursing sign outside the door	To inform anyone intending to enter the room of the situation
2.	List requirements for personnel before entering and leaving the isolation area,	To decrease entries to and exits from the room.
3.	Remove all the essential furniture.	Ro minimize the risk of furniture harboring microbial spores or growth colonies
4.	Stock the hand basin with a suitable bacterial soap preparation and paper towels for staff use.	Facilities for hand washing within the infected area are essential for effective barrier nursing
5	Place bio medical waste segregation container inside the room	To contain the contaminated things within the `room
6.	When the sharps containers is two thirds full it must firmly short and sent for incineration	To minimize the risk of leakages form the sharps containers
7	The patient personnel property to a minimum, advice him\her to wear hospital clothing. All belongings taken into the room should be	The patient's belongings may become contaminated and cannot be taken home unless they are washable or cleanable
8.	Provide the patient with his\her own thermometer and sphygmomanometer, and all items necessary for attending to personnel hygiene.	Equipment used regular by the patient should be kept within the infected area to prevent the speed of infection
9.	Keep dressing solution creams and lotions etc. to a minimum and store them within the room.	All partially used materials must be discarded when barrier nursing end therefore unnecessary waste should be avoided.
10.	Set up a trolley the door to hold plastic aprons and bactericidal alcohol hand rub (this is contraindicated if the trolley causes	Staff is more likely to use the equipment if it is readily available.

	an obstruction or is a hazard to staff and others.)	
Entering the isolation room		
1.	Collect all the equipment needed	To avoid entering and leaving infected area unnecessary
2.	Roll up long sleeves to the elbow	To allow the hand washing to rake place
3.	Put on disposable plastic apron	A plastic apron is inexpensive and it protects the front of the uniform .which is mostly likely area to come in contact with the patient.
4.	Wear a disposable ,impermeable gown when heavy contamination is anticipated	To fully protect clothing from contamination to shoulders, arms and back as permeable cotton gowns are an ineffective barrier against bacteria, particularity when wet.`
5.	Wear a disposable well- fitting mask if there is a risk of air borne contamination.i.e. a) menindococcous b) Blood and body fluids c) Tuberculosis	To reduce the risk on inhaling organisms and to comply with safe techniques and practices.
6.	Safely glasses and goggles should be put on when it is likely that aerosolized droplets of blood or body fluids are present in air	To give protection to the conjunctiva from blood and body fluids splashes.
7.	Rinse hands with bactericidal alcohol hand rub	Hands must be cleaned before and after patient contact to reduce the risk of cross infection
8.	Put on disposable gloves only if you are intending to deal with blood ,excreta or contaminated material	To reduce the risk of hand contamination
9.	Entre the room ,shutting the door behind you	To reduce the risk of air borne organisms leaving the room.
Attending to the patient in isolation :		
1.	MEALS: meals only need to be severed on disposable plates. Uneaten food should be discarded in the appropriate bag.	To prevent contamination
2.	Non disposable utensils should be washed in a dish washer with a hot disinfected cycle.	To disinfect the utensils
3.	**EXCRETA:** a toilet should be kept separate for the patient personal use. A separate bed pan, urinal should be kept for the patient. Glooves must be worn by the staff when dealing with excreta.	To minimize the risk of infection

4.	**ACCIDENATAL SPILLS:** all spills must be suspected contaminated and mopped and cleaned with disinfected immediately	To minimize the risk of infection
5.	**BATHING: separate** bathrooms can be provided or the bathroom is cleaned and dried after the infected patient care	To reduce the growth of microbes.
6.	**DRESSINGS:** aseptic techniques must b used for changing all dress sing	To minimize the risk of infection
7.	Place bio medical wastes segregation container inside the room.	To reduce risk of cross infection

Leaving the isolation room:		
1.	Remove the gloves mask apron and discard in the appropriate bio medical waste container	To reduce risk on cross infection
2.	Leave the room shutting the door behind you	To reduce the spread of air borne spread of infection
3.	Rub hands with a bactericidal alcoholic hand rub.	To remove the pathogenic organisms
Cleaning the isolation room:		
1.	Domestic workers should be educated and trained about barrier techniques and health acquired infection	To reduce mistakes and ensure barrier nursing is maintained
2.	The infected area where barrier nursing is being carried out should be cleaned last.	To reduce risk the cross infection
3.	Cleaning equipments must be kept separate for his this area.	To reduce the cross infection
4.	domestic workers must wear gloves and plastic apron	To reduce risk the cross infection
5.	Floors must be washed with disinfected daily, excess water should be removed	To reduce the bacterial count
6.	Cleaning solution must be prepared freshly, spray container emptied, cleaned and dried daily.	Fluids can easily get contamination
7.	After use clean and dry the buckets	Bactria will not survive on clean dry surface.
8.	Furniture must be damp dusted daily using a disposable cloth with disinfects.	To remove any organisms

9.	Toilet shower and bathroom should be cleaned at least once daily `	
Transporting infected patients outside the source of isolation area:		
1	Inform the concerned department about the diagnosis arrange the last appointment for the patient	To allow other department to make their own arrangements.
2.	The trolleys and wheelchair must be cleaned after use.	To minimize the risk of infection
3.	The nurse can escort the patient	To nurse the necessary precautions are maintaine
4.	In air borne infections patient they should wear a mask when leaving the to prevent cross infection. Room	
Discharging from isolation :		
1.	The infection control team must be informed about the patient discharge.	They may need to provide advice on any special precautions
2.	The room should be thoroughly cleaned floor must be washed and dried thoroughly	To remove micro organisms.
3.	The room can be reused as it has been cleaned thoroughly.	Effective cleaning will remove these organism

Chapter 8
Administration of medication
8:1 Administration of oral drugs

Policy: administration of medication to patient is done by resisted nurse or doctor, following the rights of medications administration therefore error in administration of drug is reduced to zero and the medication administration is properly endorsed in patient record sheet

A: Definition:

Oral medication is the administration of drugs by mouth via the alimentary tract

B: purposes:

Drugs are taken by this route because of convenience, absorption of the drug, ease of use, and cost containment, it is therefore, the most common method used.

C: Article needed:

1. Clean tray to keep the equipments needed
2. Medication container and a small spoon to keep the opened tables to be administered

3. Ounce glass
4. Clean bowl with gauze piece
5. Scissors
6. Small kidney basin
7. Spoon

D: procedure:

S.NO	Action	Rationale
1.	Wash hands	To prevent cross infection
2.	Identify the patient	To prevent error
3.	Check for physician's order .follow the six right of the medication administration	To prevent medication error
4.	Empty the required dose into the medicine container .avoid touching the preparation	To minimize the cross infection and contamination of the drug
5.	Explain the action dose and expected adverse effect of the drug to the patient	Patient has the right to know the treatment
6.	Administer the drug as prescribed through moth with a spoon	No self administration of drug according to GHHC policy
7.	Offer a glass of water	To swallow the medications
8.	Documentation to be done in MAR (medication administration record)	To ensure that patient has received the treatment properly

E: supportive documentation:

1. Medication safety manual
2. MAR (medication administration record)
3. List of lookalike & sound alike drug
4. List of high alert drugs

8:2 administration of Injection

Policy: To ensure that administration of medication to patient is done by resisted nurse or doctor, following the rights of medications administration therefore error in administration of drug is reduced to zero and the medication administration is properly endorsed in patient record sheet

A: Definition:

The parenteral route refers to medication that is given by injection or infusion (para – besisides enteron intestine). It is the forcing of drug in the of fluid into cavity .a blood vessel or intestine.

B: purposes:

1. To get a rapid and systematic effect of the drug
2. To provide the needed effect even when the client is unconscious or unable to swallow
3. Assures that the total dosage will be administer and the same will be absorbed for the systematic actions of the drug
4. Provide the only means of administration for medications that can be given orally.
5. To obtain a local effect at the site of injection
6. To restore blood volume by replacing by the fluid (in case of bolus)
7. To give nourishment when it cannot be taken by mouth (in case of total parenteral nutrition

C: Equipment;

- Clean tray or receiver in which to place drug and equipment
- 21G needle (S) to ease reconstitution and drawing up, 23 G if from a glass ampoule
- 223.23 or 25G needle, size dependent on route if administration
- Syringe (S) of appropriate size for amount of drug to be given
- Swabs saturated with isopropyl alcohol 70%
- Sterile topical swab, if drug is presented in ampoule form
- Drug (S) to be administered
- Patient's prescription chart, to check dose route ect.
- Recording sheet or book as required by law or hospital policy
- Any protective clothing required by hospital policy for specified drugs much as antibiotics or cytotoxic drugs

D: procedure:

Single –dose ampoule: solution preparation

S,NO	Action	Rationale
1.	Inspect the solution for cloudiness or particles matter ,if this is present discard and follow hospital guidelines on what action to take ,e.eg return drug to pharmacy	To prevent the patient from receiving an unstable or contaminating drug
2.	Tap the neck of the ampoule gently	To ensure that all the solution is in the bottom of the ampoule
3.	Cover the neck of the ampoule with a sterile topical swab and snap it open. If there is any difficulty a file may be required	To minimize the risk of contamination. To prevent aerosol formation or contact with the drug, this could lead to a sensitivity reaction. To reduce the risk of injury to the nurse.
4.	Inspect the solution for glass solution tilting the ampoule if necessary	To avoid drawing in ay air
5.	Replace the sheath on the needle and tap the syringe to dislodge any air bubbles expel air	To prevent formation To ensure that he correct amount of drug is in the syringe

Single –dose ampoule: powder preparation

S.NO	Action	Rationale
1.	Tap the neck of the ampoule	To endure that any powder lodges here falls to the bottom of the ampoule
2	Cover the neck of the ampoule with a	To minimize the risk of contamination. To

	sterile topical swab and snap it open. If there is any difficulty a file may be required	prevent aerosol formation or contact with the drug, this could lead to a sensitivity reaction. To reduce the risk of injury to the nurse.
3	Inject the correct diluents slowly into the powder within the ampoule	To ensure that the powder is thoroughly wet before agitation and is not related into the atmosphere
4.	Agitate the ampoule	To dissolve the drug
5	Inspect the contents	To detect any glass fragments or any other particulars matter, if present continue agitation or discard as appropriate
6.	When the solution is velar withdraw the prescribed amount ,tilting the ampoule if necessary	To ensure the powder is dissolved and has formed a solution with the diluents .to avoid drawing in air
7.	Replace the heath on the needle and tap the syringe to dislodge any air bubbles .expels air	Tom prevent aerosol formation .to ensure that the correct amount of drug is in the syringe
8.	Attach a new needle if required (and discard used needle into appropriate sharps container) or attach a plastic end cap	To reduce the risk of infection .to avoid tracking medication though superficial tissues ,to ensure that the correct size of needle is used for the injection .to reduce the risk of injury to the nurse

Multi dose vial preparation:

S.NO	Action	Rationale
1	Remove the tamper evident seal and clean the rubber septum with the chosen antiseptic and let it air dry for at least 30seconds	To prevent bacterial contamination of the drug as the plastic lid prevents damage and does not ensure sterility
2.	RESTUTUTION METHOD: Insert a 21G needle onto the cap to vent the bottle	To prevent pressure difference ,this can cause separation of needle and syringe
3.	Inject the correct diluents slowly into the powder within the vial	To endure that the power is thoroughly wet before it is shaken and is not into the atmosphere
4.	Remove the needle and the syringe	To enable adequate mixing of the solution
5.	Place s single topical swab over the venting needle and shake to dissolve the power	To prevent contamination of the drug or the atmosphere To mix the diluents with the power and dissolve the drug
6.	Inspect the solution for cloudiness or particles matter ,if this is present discard .follow hospital guidelines on what action to take e.g. return to pharmacy	To prevent patient from receiving an unstable or contaminating drug .
7.	RECONSTITUTION METHOD: With the needle sheathed draw into the syringe a volume if air equivalent	To prevent bacterial contamination of the drug

S.NO	Action	Rationale
	to the required volume of solution to be drawn up.	
8.	Remove the needle cover and insert the needle into the vial; through the rubber septum	To gain access to the vial
9.	Invert the vial .keep the needle in the solution slowly depress the plunger to push air into the vial	To create an equilibrium in the vial
10	Release the plunger so that the solution flows into the syringe (if a large volume of solution is to be withdrawn use a push pull technique `	To create an equilibrium in the vial
11.	Inject the diluents into the vial keeping the tip of the needle above the level of the solution in the vial ,release the plunger .the syringe will fill with the air which has been displaced by the solution	This equilibrium method helps to minimize the buildup of pressure in the vial
12.	With the needle and syringe in place gently swirl the vials to dissolve all the power	To mix the diluents with the power and dissolve the drug
13.	Inspect the solution for cloudiness or particles matter .if this present discard .follow hospital guidelines on what action to take .e.g. return drug to pharmacy	To prevent patient from receiving an unstable or contaminating drug
14.	**Withdrawal of mediation from vial :** Withdraw the prescribed amount of solution and inspect for piece of rubber which may have cored out of the cap	To ensure that the current amount of drug is in the syringe .to prevent the injection of forgiven matter into the patient
15.	Remove air from syringe without spraying into the atmosphere by injecting air back into the vial or replace the sheath on the needle and tap the syringe to dislodged nay air expel air.	To reduce risk of contamination of practitioner To prevent aerosol formation. To avoid complications
16.	Attach a new needle if required (and discard used needle into appropriate sharps container) or attach a plastic end cap	To reduce the risk of infection .to avoid tracking medication though superficial tissues ,to ensure that the correct size of needle is used for the injection .to reduce the risk of injury to the nurse

Nursing alert

If the drug to be administered is harmful to superficial tissue It should be administered intramuscularly or intravenously .it is useful to remember the following when administering any medication .the right patient, the right medicine, the right route, the right route dose, the right site, and the right time

Aftercare:

Inspection of the site bleeding and abscess, if bleeding apply pressure

What for signs and symptoms of allergic reactions

If the client develops numbness or weakness on walking it may be due to nerve injury .ask him take rest and infirm the doctor

Apply warmth if the client develops pain redness and indurations

Clean all articles and replace them

Wash hands

E: supportive documents: Clinical chart, nurse notes

8:3 Administration of intramuscular injection

Policy: Administration of medication to patient is done by resisted nurse or doctor, following the rights of medications administration therefore error in administration of drug is reduced to zero and the medication administration is properly endorsed in patient record sheet

A: Definition:

Administration of injection (medication) with an angle of 90degree into the muscles

B: purposes:

Provide faster medication adsorbent than the subcutaneous because of muscle's greater vasucurity

C: Articles needed:

- Clean tray or receiver in which to place drug and equipment
- Syringe (s) of appropriate size for amount of drug to be given
- Swabs saturated with isopropyl alcohol 70%
- Sterile topical swab, if drug is presented in ampoule form.
- Drug (S) to be administered
- Patient's prescription chart, to check dose route, etc
- Recording sheet or book as required by law or hospital policy
- Any protective clothing required by hospital policy for specified drugs ,such as antibiotics or cytotoxic drugs

Sites:

- Vastis laterails
- Ventrogluteal
- Deltoid
- Dorso gluteal

D: procedure:

S.No	Action	Rational
1.	Cleanse hands alcohol hand rub	Hands to be cleansed before and after each patient contact
2.	Explain and discuss the procedure with the patient	To ensure the patient understand the procedure and gloves his\her valid consent
	Consult the patient's prescription sheet: • Drug • Dose	To ensure that the patient is given the correct drug in the prescribed dose using the appropriate diluents and by the correct route

S.No	Action	Rational
	• Date and time of administration • Route and method of administration • Dilute as appropriate Validity of prescription	
4	Assist the patient into the required position.	To allow access to the injection site and to ensure the designed muscles is flexed and therefore relaxed
5.	Remove the appropriate garments to expose the injection site.	To gain access for injection.
6.	Assess the injection site for signs of inflammation ,edema and infection and skin lesions	To promote effectiveness of administration To reduce the skin of infection To avoid skin lesions and avoid possible trauma to the patient.
7.	Clean the injections sites with a swab sutured with isopropyl alcohol 70% for 30 seconds and allow it to dry for 30seconds	To reduce the number of pathogens introduced into the skin by the needle at the time of insertion to prevent stinging sensation if alcohol is taken into the tissue upon needle entry
8.	Stretch the skin around the injection site	To facilitate insertion of the needle and to reduce the sensitivity of nerve endings
9.	holding the needle at an angle of 90 degree quickly plunge into the skin	To reduce that the needle penetrates the muscle.
10.	Pull back the plunger .if no blood is aspirated. Depress the plunger at appropriately 1ml every 10seconds and inject the drug slowly and a constant rate. If blood appears, with draw the needle completely, replace if and begin aging. Explain the patient what has occurred.	To confirm that the needle is in the correct position and not in vein .this allows time for the muscles fibers to expand and absorb the solution To prevent pain and ensure even distribution of the drug
11.	Wait 10seconds before withdrawing needle	To allow the medication to dilute into the tissue
12.	Massage the site of injection	To enhance the drug absorption
13.	Wait draw the needle rapidly .apply pressure to any bleeding point	To prevent hematoma
14.	Record the administration on appropriate charts	To maintain accurate record provide point of reference in the event of any quires and prevent any duplication of treatment.
15.	Ensures that all sharps and non sharps waste are disposal safely	To ensure safe disposal and to avoid laceration or other injury to staff

S.No	Action	Rational
	and in accordance with hospital policy (sharps in the sharps bin and syringe into yellow clinical waste bag.)	

E: supportive documents:

- MAR (mediation administration record)
- Medical safety manual
- Management of medication policies

8:4 Administrations of Subcutaneous Injections

Policy: To ensure that administration of medication to patient is done by resisted nurse or doctor, following the rights of medications administration therefore error in administration of drug is reduced to zero and the medication administration is properly endorsed in patient record sheet .

A: Definition:

A subcutaneous injection is method of drug administration into the subcutaneous tissue .up to 2ml of a drug solution can be injected directly beneath the skin .the drug becomes effective within 20 minutes

B: purposes:

- Subcutaneous injection is the method used to administer drug when a small amount of fluid is to be injected the patient ,the patient is unable to take the drug orally or the drug is destroyed by intestines secretions
- Administration prevents complications because
- The skin and underlying tissue are free of abnormalities
- Not over bony prominences
- Free of large blood vessels and nerves.
- Self administration is possible

C: Equipment:

- Clean tray or receiver in which to place drug and equipment
- 23G if from a glass ampoule
- 1or2 ml syringe appropriate for amount of drugs to be given
- Swabs topical swabs, if drug is presented in ampoule form
- Drugs to be administered
- Patient prescription chart, to check dose, route etc
- Recording sheet (MAR) as required by law policy

Sites:

1. Lateral meddle one third aspect of the upper arm.
2. Posterior chest wall below the scapula
3. Anterior abdominal wall from below the breast to the iliac crest
4. The anterior and lateral aspect of the thigh

D: procedure:

S.NO	Action	Rationale
1	Explain and discuss the procedure with the patient	To ensure the patient understand the procedure and gloves his\her valid consent
2	Consult the patient's prescription sheet: • Drug • Dose • Date and time of administration • Route and method of adminis-tration • Dilute as appropriate • Validity of prescription	To ensure that the patient is given the correct drug in the prescribed dose using the appropriate diluents and by the correct route
3.	Assist the patient into the required position.	To allow access to the injection site and to ensure the designed muscles is flexed and therefore relaxed
4	Remove the appropriate garments to expose the injection site.	To gain access for injection.
5.	Assess the injection site for signs of inflammation ,edema and infection and skin lesions	To promote effectiveness of administration To reduce the skin of infection To avoid skin lesions and avoid possible trauma to the patient.
6.	Chose the correct needle size	To minimize the risk of missing the subcutaneous tissue and any ensuring pain
7.	Clean the injections sites with a swab sutured with isopropyl alcohol 70% for	To reduce the number of pathogens introduced into the skin by the needle at the time of insertion.
8.	Gently pinch the skin up into a fold	To elevate the subcutaneous tissue, and lift the adipose tissue away from the underlying muscle.
9.	Subcutaneous injection is administered at 90 angle depending on the needle .use 23G needle for 45 degree and 26G for 90degree.	To ensures proper administration in the subcutaneous tissue
10.	Give the short straight in at a 90degree angle if 2inches of skin can be grasped between your thumb and first (index) finger	To prevent its entry in layer
11.	If only inch of skin can be grasped the injection can be given at a 45 degree angle	To ensure its proper administration in the subcutaneous tissue
12.	Insert the needle into the skin at an angle of 45degree release the grasped skin.injeted the drug slowly	Injection medication into compressed tissue irritated nerve fires and causes the patient discomfort.

S.NO	Action	Rationale
13.	Withdraw the needle rapidly at the same angle it was put in, apply pressure to any bleeding point Do not rub.	To prevent hematoma formation Interferes with absorption
14.	Ensure that all sharps and non –sharp waste are disposable of safety and in accordance with locally approved procedure .for example ,needle into white puncture proof container and syringe into red waste bag	To ensure safe disposal and to avoid laceration or other injury to staff.
15.	Record the administration on appropriate sheets.	To maintain accurate record, provide a point of reference in the event of any quires and prevent any duplication of treatment.

Nursing: alert with the subcutaneous route a small thin needle is inserted beneath the skin and the drug injected slowly .the drug moves from the small blood vessel s into the bloodstream.

E: supportive document:

1. MAR (medication administration record
2. Medication safely manual
3. Medication management polices

8:5 Administration of Insulin

Policy: To ensure that administration of medication to patient is done by resisted nurse or doctor, following the rights of medications administration therefore error in administration of drug is reduced to zero and the medication administration is properly endorsed in patient record sheet.

A: Definition:

Insulin is a hormone used to control glyacemic levels, it must be administer by injection because it is a protein and therefore would be broken down and destroyed in the gastro intestine tract.

B: purposes:

- To provide sufficient insulin thoroughly 24hours to cover basal requirements
- To deliver higher boluses of insulin in an attempt to match the glyacemic effect of meals
- To control diabetes mellitus
- To treat hyperglycemia

Blood glucose monitoring:

Blood glucose levels are often check out q. ac (30minbefore meals), q HS (at bedtime) or prn (as needed.

- Pre- prandial (fasting or before a meal) 70-130 mg\dl
- Postprandial (1-2hours after the start of a meal) <0180mg\dl
- These ranges may vary depending on institution and physician protocols

C: Insulin Administration according to the classification:

RAPID ONSET –FAST ACTING INSULIN: it is fast acting .it starts working within one to 15 minutes. It is clear in appearance and its peak time is about one hour later and lasts for three to five hours. When you inject rapid onset –fast acting insulin types currently available are:

- Novo rapid (insulin Aspart)
- Humalog (Lispro)
- Gluslisine (Apidra)

SHORT ACTING INSULIN: it looks clear and being to lower blood glucose levels within 30 minutes, so you need to take your injection half an hour before eating. short acting insulin has peak effect of hours and works for about six hours .short acting insulin types ,currently available include :

- Actrapid
- Hum insulin
- Hypurin neutral (highly purified beef insulin)

INTERMEDIATE ACTING INSULIN: intermediate acting insulin looks cloudy .they has either protamine or zinc added to delay their action. This insulin starts to show its effect about 90 minutes after you inject .peak at 4to 12 hours and lasts for 16to 24hours

Intermediate acting insulin presently available with protamine:

- Protamine
- Humulin NPH
- Hypurin Isophane (bovine)

MIXED INSULIN: mixed insulin cloudy in appearance .it is a combination ode other a rapid onset –fast acting or short acting insulin and intermediate acting insulin and intermediate acting insulin. Advantages of it that, two types of insulin can be given in one injection when it shows 30/70 then it means of 30% of short acting is mixed with 70% of intermediate acting insulin.

Note: roll or shake well the vial of insulin in order to mix them evenly.

The mixed insulin currently available include;

- Novo mix30
- Humalog mix 25/75
- Mixtard 30/70
- Mixtard 20/80

LONG ACTING INSULIN:

There are two kinds of long acting insulin available in market, with clear appearance

Lantus (glargine) – it has no peak period as it works constantly when released into your bloodstream at a relatively constant rate. (Full 24hours)

Levemir (detemir) –it has a relatively flat action, can last up to 24hours and may be given once or twice during the day

Frequently used regimens:

To injection daily of a mixture of short and intermediate –acting insulin (before breakfast and the main evening meal)

Three injections daily a mixture of short and intermediate acting insulin before breakfast. Short –acting insulin alone before an afternoon sank or main evening meal intermediate acting insulin before bed; variations of this

Basal –bolus regimen of short –acting insulin 30-30 min before main meals (e.g. breakfast .lunch and the main evening meal) intermediate or long -acting insulin at bedtime

Basal –bolus regimen of rapid –along immediately before main meals (e.g. breakfast .lunch and the main evening meal) intermediate or long -acting insulin at bed time probably before breakfast and occasionally at lunch time

Insulin pump regimen are reigning popularity with a fixed or variable basal dose and bolus doses with meal.

Daily insulin dosages:

Daily insulin dosage varies greatly between individuals and changes over time .it therefore reqiries regular review and reassessment

- Dosage depends on many factors such as
- Age
- Weigh
- Stage of puberty
- Duration and phase of diabetes
- State of injection sites
- Nutritional intake and distribution
- Exercise patterns
- Daily routine
- Results of blood glucose (BG) monitoring (and glycosolate hemoglobin)
- Concurrent illness

The correct dose of insulin is that which achieves the best attainable glyacemic control for an individual child or adolescent.

Health care professionals have the responsibilities to advice patients, other care provides and young people on adjusting insulin therapy safely and effectively, this training requires regular review reassessment and reinforcement

Route of administration:

Subcutaneous (hypodermic) – into the subcutaneous tissue

Needle

25to 27G -5/8’ to 1/ 2

Syringe

1ml =100 unit if insulin

1ml =40units of insulin

Position

45-90degree angle

Advantages:

- Allow slower, more sustained drug administration than IM injection
- Injection into the adipose tissue beneath the skin a drug moves into the blood stream more rapidly than if given by mouth
- Minimal tissue risk
- Allows slower adsorption
- Minimal risk of hitting blood vessels

Caution

- Do not give in scarred areas in moles inflamed or edematous areas
- Do not massage after administration

Sites:

- Outer aspect of the upper arm

- Anterior thigh
- Loose tissue of the lower abdomen
- Upper hips
- Buttocks
- Upper back

D: procedure:

S.NO	Action	Rationale
1.	Wash hands	To prevent infection
2.	check the order and make sure that the solution in the vial matches the order solution	Avoids medication error
3.	Obtain an insulin syringe	
4.	Pick up the vial and verify the type of insulin that is prescribed	Avoids medication error
5.	Check the patient's most recent blood glucose if in doubt or assessment changes always recheck and reassess	To avoid over dosage
6.	If applicable ,verify the blood glucose and use sliding scale insulin administration dosage on the patient's MAR	To avoid over dosage
7.	Wipe the insulin vial with a sterile gauze alcohol pad, if the insulin is cloudy roll between palms of your hands. Mix insulin by either rolling between hands or by truing bottle slowly up and down .do not shake	Rotating vial between both hands resuspend the modified insulin preparation and help to warm the medication .shaking insulin vial causes bubbles.
8.	Withdraw the appropriate type and amount of insulin	To achieve the therapeutic effect.
9.	Pull back on barrel of syringe to draw in a volume of the ordered medication dose. Holding the vial between your thumb hand fingers of the non- dominant Hans. Insert the needle through the rubber stopper into the air space – not the solution	Enhances easy withdrawal of medications
10.	Invert the vial & with draw the ordered dose of medication by pulling back on the plunger. Make sure the needle is in the solution to be with drawn	Prevents the entry of air
11.	Expel air bubbles and adjust dose if necessary	To prevent complication
12.	Remove needle from vial and cover the needle with guard using one	Avoids medication error

S.NO	Action	Rationale
	hand or scoop method	
13.	Take medication into client's room and verify, administer the SC injection remember to never massage the insulin injection site.	Avoids medications error Inhibits absorption of medication.
14.	Record the administration on appropriate sheets.	To maintain accurate records ,provide a point of reference in the event of any queries and prevent any duplication of treatment

Insulin pen: dosing injection:

S.NO	Action	Rationale
1	Gather supplies verify insulin type : ➢ Pen device (with cartridge ➢ Pen needle ➢ Alcohol wipe ➢ Sharps container	To save time
2.	Wash hands	To prevent infection
3	Chosen injection site	To administer medications
4.	Clean injection site	To prevent infection
5	Screw on pen needle	
6	Prime :Dial "2" units	
7.	Hold upright remove air by pressing the plunger .repeat "prime" if no insulin shows at end of needle	To avoid air embolism
8.	Dial number of units to be administered as per order	To avoid medication error
9.	Pinch up the skin	Ensures the correct size of the needle
10.	Push the needle into the skin at 90 degree	Avoids injury
11.	Release pinched skin	Causes
12.	Count to 10	
13.	Remove and dispose of pen needle	Avoids needle stick injury
14.	Document time ,dose ,site, and blood glucose value	To maintain accurate records ,provide a point of reference in the event of any queries and prevent any duplication of treatment

Points to be remember after administering insulin

- Check site leakage, lipoatrophy, lipohypertrophy
- Check for s\s of hypoglycemia
- Meal \sank dose
- Timeliness in relation to eating
- Supervision of blood amount

E: supportive documents:

1. MAR (medication administration record
2. Medication safely manual
3. Medication management polices

8:6 Administration of Intravenous Injection

Policy: To ensure that administration of medication to patient is done by resisted nurse or doctor, following the rights of medications administration therefore error in administration of drug is reduced to zero and the medication administration is properly endorsed in patient record sheet.

A: Definition:

Intravenous injection is defined as the parenteral administration of bolus medication directly into the vein through the existing IV line

B: method of insulin:

There are three methods of administration intravenous drugs

Continuous infusion:

Continuous may be defined as the intravenous delivery of medication or fluid at a constant rate over a prescribed time period, ranging from 24hopurs to day's .to active a controlled therapeutic response.

Intermittent infusion:

Intermittent is the administration of a small volume infusion i.e. 50- 250ml over a period of between 20mins and two hours. This may be given as a specific dose at one time or at repeated intervals during 24 hours.

Direct intermittent injection:

This involves the injection of a drug from a syringe into the injection port of the administration set or directly into a vascular access device

C: Purposes:

- To administer large volume of fluid
- Rapid absorption is achieved
- In emergency fast – acting medications can be delivered quickly
- Establishes continuous fluid infusion
- To establish contents therapeutic blood levels
- Medication that are highly alkaline and irritating to subcutaneous tissue are given intravenously
- IV therapy is used primary for fluid replacement in client unable to take fluids

D: Articles needed:

- Clean tray or receiver in which to place drug and equipment
- 21G needle (S) to ease reconstitution and drawing up, 23 G if from a glass ampoule
- 223.23 or 25G needle, size dependent on route if administration
- Syringe (S) of appropriate size for amount of drug to be given
- Swabs saturated with isopropyl alcohol 70%
- Sterile topical swab, if drug is presented in ampoule form
- Drug (S) to be administered
- Patient's prescription chart, to check dose route ect.
- Medication administration record (MAR) recording sheets as required by policy
- Any personal protective devices required by hospital policy for specific drug ,such as cytotoxic drugs
- Three way connection with stopper
- Gloves

- Kidney basin
- Spread sheet to prevent soiling of bed sheet

E: procedure:

S.NO	Action	Rationale
1.	Collect and check all equipment's	To prevent delays and enable full connection on their procedure
2.	Check that the packing of all equipment in intact	To ensure sterility if the seal is damage discard
3.	Wash hands with bactericidal soap and water or bactericidal alcohol rub.	to prevent contamination of medication and equipment
4.	Prepare needle (S) ,syringe (s) ,and other supplies by pacing on a tray or reviver	To contain all times items in a clean area
5.	Inspect all equipment	To check that none is damaged ;if so, discard or report.
6.	Consult the patient prescription chart and ascertain the following: • Drug • Dose date and time of administration • Route and method of administration • Dilute of appropriate • Validity of prescription • Signature of doctor	To ensure that the patient is given the correct drug in the prescribed dose using the appropriate
7.	Check all details with another nurse if required by hospital policy	To minimize any risk of error
8.	Select the drug in the appropriate volume ,dilution or dosages and check the expiry date	To reduce wastage ,treatment medication that is outside the expiry is dangerous .the expiry date indicates when a particular drug is no longer pharmacologically efficacious
9.	Proceed with the preparation of the drug using protective device if advisable	To protect practitioner during preparation
10.	Take the prepared dose to the patient whose identify is checked	To protect practitioner during preparations .
11.	Evaluate the patient's knowledge of the medication being offered ,if this knowledge appears to be faulty or incorrect ,offer an potential of the use action dose and potential side –effect of the drug involved	A patient has a right to know the information about the treatment
12.	Close room door or curtains	To ensures patient privacy and dignity
13.	Site is cleaned with an alcohol preparation or povidone iodine swab.	TO PREVENT INFECTION.
14.	Cannula is gripped between the thumb and middle finger of the dominate hand	To ensure the proper positioning and prevent slipping
15.	Needle is inserted bevel –up .the initial	To indicate successful entry into the vessel

S.NO	Action	Rationale
	angle of entry should be approximately 15-30degree	(indicate by return of blood into the flush chamber or extension tube)
16.	Administer the drug as prescribed	To ensure patient receiver treatment
17.	Do not recap. Follow bio medical waste management policy	To minimize risk of contamination and prevent risk on injury to nurses.
18.	Record the administration on appropriate chart. Documentation must include date, time,. Amount, route name of the drug and reaction of patient, follow –up observations also must be recorded.	To maintain accurate record ,provide a point of reference in the event of any quires and prevent any duplication of treatment

F: support documents:

- Clinical chart nurse notes
- Management of medication (MOM) policies
- Medication administration record (MAR)
- Discard balance medicine in the ampoule to follow single dose policy
- If medication has been taken from a vial the time and date prior to storing must be labeled stor-ing should be as per the policy
- For narcotics and high alert drug follow institution policy .

Watch closely during the infusion for the following:

- The rate and the flow of solution
- complication, like infection phlebitis (venous inflammation) thrombophlebitis (clot formation) ,air embolism ,local infiltration and allergic reactions
- Accuracy of flow

Special instructions:

- Label the peripheral line with date and time of starting.
- Change dressing everyday
- Use transparent dressing always
- remove iv line immediately when it will not be used any more
- documentation the date and time of removing line in the notes
- in continuous infusion are tapered or stopped document the medication dosage tapered and when it was tapered in the nurse notes
- do not load narcotic
- load the next dose of inotropes label and warp in a sterile towel and leave it in sterile medication tray before the current gets over (half an hour)

8:7 Administration of intradermal injection

Policy: To ensure that administration of medication to patient is done by resisted nurse or doctor, following the rights of medications administration therefore error in administration of drug is reduced to zero and the medication administration is properly endorsed in patient record sheet.

A: Definition:

Administration of injection (medication with an angle of 5-15 degree into the dermal layer of the skin

B: purposes:

Certain medications may be injected intradermally

C: Articles needed

- Clean tray receiver in which to place drug and equipment
- Syringe (S) of appropriate size for amount of drug to be given
- Swabs sutured with isopropyl alcohol 70%
- Sterile topical swab, if drug is presented in ampoule form
- Drug (S) to be administered
- Patient's prescribed chart to check dose, route, etc
- Recording sheet or book as required by law or hospital policy
- Any protective clothing required by hospital policy for specified drug ,such as antibiotics or cyto-toxic drugs.

Site: Forearm

D: procedure

S.NO	Action	Rationale
1.	Cleanse hands with alcohol hand rub	Hands to be cleaned before and after each patient contact
2	Explain and discuss the procedure with the patient.	To ensure the patient under standard the procedure and gives his \her valid consent
3.	and ascertain the following: • Drug • Dose date and time of administration • Route and method of administration • Dilute of appropriate • Validity of prescription	To ensure that the patient is given the correct drug in the prescribed dose using the appropriated Diluents and by the correct route.
4.	Assist the patient appropriate into the required position	To allow access to the injection site and to ensure the designated muscles is flexed and therefore relaxed.
5.	Remove the appropriate garments to expose the injection site	To gain access for injection
6.	Assess the injection sit for signs of inflammation edema and infection and skin lesions	To promote effectiveness of administration To reduce the risk of infection To avoid skin lesions and avoid possible trauma to the patient
7.	Clean the injection site with a swab saturated with isopropyl alcohol 70% for 30seconds and allow it to	To reduce the number of pathogens introduced into the skin by the needle at the time of insertion to prevent staging sensation if alcohol is taken

S.NO	Action	Rationale
	dry 30 seconds	into the tissue upon needle entry
8.	Stretch the skin around the injection site	To facilitate insertion of the needle and to reduce the sensitivity of nerve endings.
9.	Holding the needle bevel up at an angle of 5-15 degree ,slowly plunger into the skin and administer the drug	To ensure that the needle penetrates the dermis.
10	Notice that while injection the medication small bleb appropriate six mm in diameter appears on the skin surface.	Bleb indicates medication in deposited in dermis.
11.	Withdraw the needle while applying alcohol swab or gauze gently over site.	To minimize discomfort.
12.	Apply gently pressure .do not massage site.	
13	Stay with patient 3-5 minutes and observe for any allergic reactions	Serve anaphylactic reaction is characterized by dyspnea wheezing and circulating collapse
14.	In mantoux test a flat and uneven induration surrounded by erythema is identified. An indurations diameter of 10mm or above is defined as a positive reaction	The result may be read approximately 3 days after the injection
15.	Record the administration on appropriate chart	To maintain accurate records provide point of reference in the event of any queries and prevent any duplication of treatment
16.	Ensure that all sharps and non-sharps waste are disposal of safely and in accordance with locally approved procedure (sharps in the bin and syringe into yellow clinical waste bag.	To ensure safe disposal and to avoid laceration or injury to staff.

E: supportive document s:

1. MAR (medication administration record
2. Medication management polices
3. Medication safely manual

Note: for ID injection, use skin pencil and draw circle around perimeter of injection site. Read site within 48-72 hour of injection for tuberculosis and ½ -1 hour for antibiotic dose.

8:8 Administrations of Eye medications

Policy: To ensure that administration of medication to patient is done by resisted nurse or doctor, following the rights of medications administration therefore error in administration of drug is reduced to zero and the medication administration is properly endorsed in patient record sheet.

Eye ointment applications:

A: Definition:

An eye ointment is a semi solid preparation applied to the eye

B: purposes:

Eye ointment is used to treat conditions like, keratitis, Sclerotic, post External and internal ocular surgeries, post glaucoma surgeries, ocular injuries.

C: Articles needed

- Clean tray to keep all the required materials
- Sterile dressing pack
- Sterile water for irrigation
- Sterile swab
- Prescribed eye ointment

D: Procedure:

S.NO	Action	Rationale
1.	Explain the procedure to the patient	To get the consent
2.	Follow the six right of the drug administration	To prevent medication error
3	Make the patient to lie down in supine position	To ensure the drops are instilled in to the inferior fornix of the eye
4.	Wash hands	To prevent cross infection
5.	Clean the eyes with sterile water	To remove any discharges
6	Hold nozzle of the tube approximately 2.5 cm above the eyes. Apply a line ointment to the inner edge of the lower lid from the nasal corner outwards. Reduce the risk in cross infection contamination of the tube and trauma to the eye.	Reduce the risk of cross infection contamination of the tube and trauma to the eye
7.	Ask the patient to close the eyes for one minute .do not give more than one eye medicine at a time .wait for 5minutes between each drug	To ensure the adequate absorption of the drops
8.	Document in MAR (medication administration record) special notes to be documented in the nurse 's	To maintain the accurate record

	record	

E: supportive documents:

1. MAR (medication administration record
2. Medication safely manual
3. Medication management polices

Eye drop instillation

A:Definition:

eye drops instillation is the instillation of sterile ophthalmic medication into the patient eyes

B: purposes:

Eye drops are used to treat the eye disorders like glaucoma, allergies and infections .and it is used to dilate the pupil for ophthalmic examination.

C: Equipment:

- Clean tray to keep all the required materials
- Sterile dressing pack
- Sterile water for irrigation
- Sterile swab
- Prescribed eye ointment
- **D: Procedure:**

S.NO	Action	Rationale
1.	Explain the procedure to the patient	To get the consent
2.	Follow the six right of the drug administration	To prevent medication error
3	Make the patient to lie down in supine position	To ensure the drops are instilled in to the inferior fornix of the eye
4.	Wash hands.	To prevent cross infections
5.	Clean the eyes with sterile water	To remove any discharges
6	Ask the patient to look up simultaneously pull down the lower eye lid and instill the prescribed eye drips	To ensure the drops are instilled absorption of the drops
7.	Ask the patient to close the eyes for one minute .when using both ointment and drops; use the ointment after the drops. do not give more than one eye medicine at a time .wait for 5minutes between each drug	To ensure the adequate absorption of the drops
8.	Document in MAR (medication administration record) special notes to be documented in the nurse 's record	To maintain the accurate record

E: supportive document

1. MAR (medication administration record
2. Medication management polices
3. Medication safely manual

8:9 Administration of Ear medications

Policy: To ensure that administration of medication to patient is done by resisted nurse or doctor, following the rights of medications administration therefore error in administration of drug is reduced to zero and the medication administration is properly endorsed in patient record sheet.

A: Definition:

Administration of medicine into the ear canal

B: purposes:

Ear drops is used to treat or prevent ear infections

C: Equipment:

- Clean tray to keep all the required materials
- Sterile swab
- Prescribed ear drops

D: procedure:

S.NO	Action	Rationale
1.	Explain the procedure tom the patient	To get the consent and cooperation from the patient
2.	Follow the six rights of drug administration	To prevent medications error
3.	Make the patient to lie on the lateral position with the affected side uppermost	To ensure the best position for installation of the ear drops
4.	Wash hands	To prevent cross infection
5.	Pull the cartilaginous part of the pinna backwards and upwards .instill the drops	To ensure the proper instillation of the ear drops
6.	Advice the patient to be inn same position for 1 to 2 minutes	For the proper absorption of the ear drops
7.	Document in MAR (medications administration record)	To maintain the accurate record.

E: supportive document

1. MAR (medication administration record
2. Medication management polices

3. Medication safely manual

8:10 Administration of Nasal medications

Policy: To ensure that administration of medication to patient is done by resisted nurse or doctor, following the rights of medications administration therefore error in administration of drug is reduced to zero and the medication administration is properly endorsed in patient record sheet.

A: definition:

A nasal instillation is a medicine solution prepared for administration into the nose .nasal medicine is given in the form of nasal drops os nasal sprays

B: purposes:

The purposes of a nasal instillation are to deliver medication directly into the nose and into nasal membranes, where it will be absorbed into the body. The most common nasal medicines are decongestant antihistamine, and steroid nasal sprays used to reliever nasal congestion

D: procedure:

S.NO	Action	Rationale
1	Wash hands	To prevent cross infection
2.	Explain the procedure to the patient and get the consent	Patient has the right to know the treatment
3.	Follow the six rights of drug administration	To prevent medication error
4.	Ask the patient to blow the nose	To clear the passage for easy of medications
5.	Extend the patient neck (unless clinically contraindicated) ., cervical spondylosis	To get a safe position for easy penetration
6.	Avoid touching external nostrils and instill the prescribed strength	To prevent cross infection
7.	Instruct the patient to be the same position for 1to 2 minutes	To ensures the absorption of the medicine
8.	Record in MAR (medication administration record)	To maintain the record of treatment

E: supportive document

1. MAR (medication administration record
2. Medication safely manual
3. MOM policies

8:11 Administration of Rectal medications

Policy: To ensure that administration of medication to patient is done by resisted nurse or doctor, following the rights of medications administration therefore error in administration of drug is reduced to zero and the medication administration is properly endorsed in patient record sheet.

A: definition:

Administration of medicine into the rectum

B: Purposes**:**

This method os preferred to administer laxatives, to obtain localizes therapeutic effect or for diagnosis purpose .also it used when the patient has nausea, vomiting, uncooperative patient or before surgeries.

C: Equipment:

- Clean tray to keep all the equipment's
- Prescribed medicine
- Clean gloves and mask
- Clean gauze
- Clean kidney tray

D: procedure:

S.NO	Action	Rationale
1.	Explain the procedure to the patient and provide privacy	To get the patient consent and for the cooperation
2.	Ask the patient to void procedure	
3.	Make the patient lie down left lateral position with right leg flexed	For the proper administration of the medicine
4.	Wash hands and wear the clean gloves	To prevent cross infection
5..	Ask the patient to relax and to take a deep breath and insert the medicine when patient is in left lateral position. gently and firmly push the suppository into the rectum ,pointed end first	For easy administration of the medications and to prevent pain
6.	Advice the patient to lie down for 1minute	For the absorption of medications
7.	Document in the MAR (medication administration record)	To keep accurate record
8.	Enemas must be at room temperature or should be warmed.	To minimize shock and prevent bowel spasm

E: supportive document

1. MAR (medication administration record
2. Medication safely manual
3. Management of medication policies

8:12 Administration of Vaginal medications

Policy: To ensure that administration of medication to patient is done by resisted nurse or doctor, following the rights of medications administration therefore error in administration of drug is reduced to zero and the medication administration is properly endorsed in patient record sheet.

A: definition:

Administration of medicine (pessaries)

C: Equipment:

- Clean tray to keep all the equipment's
- Prescribed medicine

- Clean gloves
- Clean gauze
- Clean kidney tray

D: procedure:

S.NO	Action	Rationale
1.	Explain the procedure to the patient	To get the patient consent and for the cooperation
2.	Follow the six right of drug administration	To prevent medication error
3.	Make the patient lie down supine position with knees flexed	For the correct insertion of the perraries
4.	Wash hands	To prevent cross infection
5..	Wear gloves and insert the prescribed pessary along the posterior wall of the vagina. ask the patient to lie down on left lateral for 1to 2minute	To ensure that the pessary should retained.
7.	Document in the MAR (medication administration record)	To maintain the accurate record.

E: supportive document

4. MAR (medication administration record
5. Medication safely manual
6. Management of medication policies

8:13 Other Routes of Medication administration

Policy: To ensure that administration of medication to patient is done by resisted nurse or doctor, following the rights of medications administration therefore error in administration of drug is reduced to zero and the medication administration is properly endorsed in patient record sheet.

A: intrathecal injection

i) . Definition:

It is an administration of drug into space under arachnoids membrane of brain or spinal

ii) . Purposes:

To give spinal anesthesia or in chemotherapy or for management application .this routes is also used for inactions .particularly post- neurosurgical. The drug needs to be given this way to avoid the blood brain barrier

iii).Drugs used:

- 24hours dose of analogecis e.g. Opioids
- Chemotherapy drugs e.g. methotrexate, cytarabine
- In spastic cerebral palsy e.g. baclofen

iv).Nurse responsibility

- Explain the procedure to the patient
- Position the patient (fetal position
- Assist the doctor while the injection is administered
- Seal the injected site
- Do not administer any other analgesic without doctor's order when 24hours dose of analgesia is administered intrathecal.

B: epidural Injection:

i).injection of an anesthetic substance into the epidural space of the cord

ii). The anesthetic agents that are infused through the small catheter blockspinal nerve roots in the epidural space and the sympathetic nerve fibers adjust to them . Epidural anesthesia can block most of the pain of labor and birth for vaginal and surgical delivers. Epidural analgesia is also used after cesarean section to help control postoperative pain. This may turn reduce pain, tingling &numbness and other symptoms caused by nerve inflammation \ irritation or swelling.

C: Intraperitoneal:

i) . Definition

Liquid injection, administered to obtain systemic blood levels of the agent; faster than subcutaneous or intramuscular injection. It is preferred when large amounts of blood replacement fluids are needed, during low blood pressure or other problems which prevent the use of a suitable blood vessel for intravenous injection.

ii). **Purposes:**

It is faster than subcutaneous or intramuscular injection and used when veins not accessible

D: Intraosseous infusion:

Definition:

Intra-osseous (IO) is the process of injection directly into the marrow of a bone to provide a non-collapsible entry point onto the systemic venous system .this technique is used in emergency situation to provide fluids and medications when intravenous access is not available or not feasible purposes.

ii). Purposes: the needle is injected through the bone's hard cortex and into the soft marrow interior which allows immediately access to the vascular system.

An IO infusion can be sued on adult or pediatric patinet when traditional of vascular access is difficult or impossible

iii). **Sites used for IO injection :**

- Anterior –medial aspect of the tibia is used as it lies just under the skin and can easily be pal-pated and located
- The anterior aspect of the femur
- The superior
- The head of the hummers are other sites that can be used

E: Nebulization:

i). Definition:

A nebulizer is a form of drug delivery in which a drug in solution is coveted into an aerosol mist by passing a pressurized gas through it. The drug is then inhaled into the lungs. The drug is deposited in the tracheobroncal region or the alveoli depending on the size of the particles in the aerosol mist.

Nebulizing dung is highly effective methods of diverging drug directly into the lungs, providing the correct equipment and gas flow is used with the appropriate drug. Hand held inhalers with large volume spacer device may be equally effective e.g. administering bronchodilators.

ii). Indicators:

Nebulizer drugs are used in the following situation

- Patient required emergency in the following situation
- patient unable to use inhalers
- patients with severe chronic airway disease
- a drug which is to given by the route but is not available in inhaler form e.g. Lignocaine

iii). Purposes:

This increase humidity of the passage .if pure water mist is inhaled it causes productive coughing .if normal saline is nebulized, it eases breathing and or liquefies mucosa

iv). Dung which are commonly nebulizer

- **Bronchodilators**: e.g. salbutamol (vent Olin), terbutaline (bricanyl). Ipratropium bromide (atrovent)
- **Steroids: e.g**. budesonide (pulmicort) flicotide (fluticasone) , inhaled corticosteroids are consider to have fewer systemic side effects than oral corticosteroids .
- **Antibiotics :** administered via nebulizer for topical treatment which reduce systemic side effect .if certain antibiotics e.g. pentamidine , colomycin, tobramycin, and gentamycin, are to be administered ,a breath active open – vent nebulizer should be used with an expiratory filter check
- **Analgesics:** e.g. lignocaine and opioids .occasionally used in palliative care for treatment of intractable cough and severe breathlessness.
- **Mucolytics**: e.g. sodium chloride 0.9% hyper tonic saline ,Dornase alpha (pulmozyme) .these drugs are prescribed to facilitate expectoration by helping to thin the sputum

v). Nursing responsibilities:

- Explain the procedure to the patient
- Wash hands
- Check the patient vital signs and monitor his\her respiratory status
- Place the patient in a sitting or high fowler's position
- Attach the devilry device to the patient
- Encourage the patient to cough and expectorate ,or suction him as needed
- Monitor the patient's respiratory status to evaluate the effectiveness of therapy
- Encourage the patient to take slow ,even breaths to derive maximum benefit
- Monitor for over –hydration ,especially in the patient with a delicate fluid balance
- Monitor for adequate flow if oxygen is being delivered at the same time
- Change the nebulizer cup tubing according to your facility's policy
- Check the out flow port to ensure adequate misting
- Remain with the patient during treatment
- Watch for complications of Nebulization therapy such as: mucosa irritation ,bronchospasm Dyspnea, airway burns, infection, and adverse drug reactions

F: supportive document

1. MAR (medication administration record)
2. Medication safely manual
3. Management of medication policies

8:14 Protocol on administration of Narcotic Drug

Policy: Narcotic medication is administered only y the registered nurse upon current prescription and must be administered in the presence of a witness nurse. These medications are always kept under lock and key and each ampoule is accounted for. Narcotics are indented as a separate indent and to along with other drugs. The indent should be accompanied by the written prescription from the doctor with signature and registration number. Only a senior nurse can indent the drug. The drug is brought from the pharmacy by the nurse or the clinical pharmacist.

A: Definition:

A drug derived from opium like compounds, with potent analgesic effect associated with significant alteration of mood and behavior, and with the potential for dependence and tolerance following repeated administration.

B: General usage:

Narcotics have several legitimate uses: as analgesic: Doctor frequently prescribes oral codeine for main control or treatment pain relief after other output surgical procedures. Intravenous narcotics may be given for several days after major surgery to relive the patient's discomfort, subsequence methods of administering opioids following surgery include a sustained –release injected from of morphine surface (depomorphine) and a patient putsches a button attached to the arm or upper chest intravenous narcotics may also be used for palliative care, relived the a pain of a patient diagnosed with terminal cancer.

C: procedure:

S.NO	Action	Rationale
1.	Check the doctor 's order	To prevent the medication error
2.	The narcotic prescription form the doctor	To indented replenish
3.	Take the narcotic register and the narcotic prescription to the concern ICU	To follow the GHHC narcotic policy
4.	Collect the drug from the authorized nurse the authorized nurse will entre in the narcotic dispensing Register and issue the drug	To minimize any risk of error
5	Select the drug in the appropriate volume dilution or dosages and check the expiry date,	To reduce wastage .treatment with medication that is outside the expiry is dangerous .the expiry date indicates when a particular drug is no longer pharmacologically efficacious
6.	Proceed with loading the dug with the witness	To minimize the risk of error
7.	Take the prepared dose to the patient whose identity is checked	To prevent error and confirm patient's identify
8.	Evaluate the patient's knowledge of the medication being offered. if this knowledge appearance to be faulty or incorrect , offer an explanation of the use action, dose and potential side- effects of the drug or drugs	A patient has a right to know the information about the treatment

S.NO	Action	Rationale
	involved	
9.	Close room door or curtains if appropriate	To ensures patient privacy and dignity
10.	Administer the drug as prescribed.	To ensure patient receives treatment
11.	Do not recap. Follow BMW Policy	To minimize risk of contamination and prevent risk of injury to nurse.
12	Record the administration on appropriate chart	To maintain accurate records ,provide a point of reference in the event of nay quires and prevent any duplication of treatment
13.	The remaining medication should be discarded in front of the witness and to be recorded in the narcotic register	To prevent the misuse of the drug
14.	ampoule to be returned to the authorized nurse in concern ICU	To minimize any risk of error

D: documentation and Reporting:

Documentation must include date, time, amount, route, name of the dug and reaction of patient .follow –up observations also must be recorded.

E: supportive document

1. Management of medication (MOM) policies
2. Medication administration record (MAR)
3. Discard balance medicine in the ampoule to follow single dose

Chapter 9
Wound care
9:1 Surgical Dressing

Policy: surgical dressing is done on doctor‘s order under strict techniqueby the registered nurse who is privileged to do. Frequently of dressing is decided based on the assessment of the wound

A: Definition:

Asterile protective covering applied to a wound or incision using aseptic technique

B: purposes:

1. To promote wound granulation and healing
2. To prevent micro- organisms from entering the wound
3. To decrease the presence of purulent wound discharge
4. To absorb fluid and provide a dry environment
5. To immobilize and support wound
6. To assist in removal of necrotic tissue
7. To apply medication to the wound
8. To provide comfort

C: Articles needed:

- Sterile dressing set.
- Cleaning solution prescribed, betadine \normal saline
- Sterile gloves adhesive obnages \tegaderm
- Scissors

- Extra sterile packs of cotton balls gauze
- A pair of clean gloves
- Clean under pads

D: procedure:

S.NO	Action	Rationale
1.	Ensure that the sweeping and the mopping of the ward is completed	Tom allows dust airborne organisms to settle before the incision and sterile filed are exposed.
2.	Clean trolley with disinfected solution	To prevent infection
3.	Assemble the equipment's on trolley take to the bedside	To save time
4.	Male sure that foot controlled dustbins are present at the side with appropriate covers.	To minimize airborne contamination
5.	Explain the procedure to the client and get his/her valid consent.	To ensure that the patient understands the procedure and gives his \her consent.
6.	Provide privacy .if fan present at the bedside turn off fan.	To minimize airborne contamination
7.	Position patient comfortably .instruct bed touch wound or equipment, dressing supplies.	To prevent infection
8.	Wash hands following surgical aseptic technique. Open dressing pack partially	To prevent infection.
9.	Wear clean gloves while removing old dressing.	To remove old dressing without contaminating hands
10	Remove old dressing .remove tape by loosening the ends and pulling gently parallel to skin and towards incision. Remove old dressing keeping soiled surface away from the patient. If wound drains is present remove only layer at a time	To minimize the risk of introducing infection.
11.	Do not forcibly remove adherent gauze piece from wound	To prevent bleeding and loosening of clots.
12.	Remove the contaminated glove and discard appropriate ,wash hands	To minimize the risk of introducing infection.
13.	Pour sterile saline into dressing cup (if adherent gauze piece is to removed)	
14	Using thumb Forceps pick up cotton wet with saline and using artery	To remove the adherent gauze without causing trauma to the wound

S.NO	Action	Rationale
	clamp soak adherent gauze	
15.	Using the same artery clamp removes gauze and cotton ball and discard in appropriate waste bin.	To prevent cross infection.
16.	Observation character and amount of drainage and assess condition of wound using the REEDA assessment scale. R- Redness E- Edema E-Ecchymosis D- Discharge A- Approximation of the skin	To assess the wound before dressing if there is purulent discharge ,wound gapping Ecchymosis the nurse must inform the concerned doctor
17.	Pour cleaning solution as prescribed (the solution most recommended is sterile normal saline) into the dressing cup. Wash hands and wear sterile gloves.	
18.	Clean from least contaminated to most contaminated area.	To minimize the risk of infection spread from a dirty to clean area,
19.	Use separate cotton bal for each stroke	To minimize the risk of infection spread from a dirty to clean area,
20.	Move in progressive strokes away from the incision line to wound edge	To minimize the risk of infection spread from a dirty to clean area. To enable disinfection process to be completed .to prevents skin reaction in response to the applications of a transparent dressing to moist skin.
21.	Use dry gauze to clean incision	
22.	Apply antiseptic as prescribed ,using the same techniques as for cleaning .include drainage site	To prevent sepsis
23	Apply the sterile dressing to incision \wound\ drain site	Avoids infection
25.	If drain is present .use sterile gauze and wrap around drain incision site	To prevent infection at the drain site
25.	Prevent application of large bulky dressing that any impaired patient's movement .ensure proper coverage of entire wound. if using a commercially available dressing such as tegaderm with pad ,make sure that the size is appropriate .when fixing the commercially available dressing mould it into place so that there are no creases or folds	Provides aesthetic sense

S.NO	Action	Rationale
26.	Dispose the gloves.	
27.	Secure dressing with bandage or adhesive if needed.	To prevent dislodgement
28.	Wash hands	To avoid contamination
29.	Make patient comfortable	
30.	Record observations of wound \ dressing \type of drainage and patient's response	To ensure adequate records and to enable continued care of device and patient.

E Supportive Documents:
Clinical chart, nurses notes

9: 2 Burns dressing

Policy: burns dressing are done on doctor order by the registered nurse who is privileged and competent

A: Defining:
A sterile medicated protective covering applied to burn area, using techniques .it is usually done after burns bath.

B: purposes:

- To clean wound and removed slough
- To prevent infection
- To aid in quick healing
- To apply medication
- To prepare for further management like grafting
- To prevent complications
- To reduced pain

C: Articles needed:
Dressing trolley with

- Dressing bin with sterile bandage
- Gauze piece
- Gauze pads
- Long size ortho pads
- Dressing pack
- Bandages (number depends on the extent of wound
- Normal saline
- Adhesive and scissors
- Vaseline gauze tray
- Sterile scissors
- Sterile gloves
- Clean gloves
- Sterile linen
- Sterile bin

- Chittle forceps
- Dustbins

D: procedure:

S.NO	Action	Rationale
1.	Check the doctor 's order	To minimize any risk of error
2.	Explain the procedure to the patient	To make the patient aware of dressing and involve in the care
3.	Provide privacy and provide psychological support	Prevents embarrassment to the patient.
4.	Assemble all the equipment at the bed side before starting the bath.	To avoids wastage of time
5.	Protect the bed plastic cover over the bed	To avoid soiling of the bed linen
6.	Administer analgesics about 20miutes before the procedure per doctor's order	Minimizes pain during dressing
7.	Put on the mask and cap	To maintain sterility of the environment
8.	Scrub hands and don sterile gown goggles and gloves	To prevent transmission of micro organisms
9.	Clean and deride the wound using sterile scissors and forceps .trim loose Escher and separate devitalized skin.	Remove debris .any remaining topical agent exudates and dead skin increases vasculairty of the wound viability and
10.	Inspect wound and surround area	For proper assessment
11	Apply Topical medications over the wound	
12.	cover the wound with Vaseline gauze and place sterile pad	To keep the wound form eternal environment
13	Apply bandage over the wound	
14.	Remove the plastic cover from the bed and make the patient comfortable	Provides comfort,.
15.	Discard gloves and gown and wash hands	To prevent infection.
16.	Wash reusable articles to be sent for autoclaving	To prevent infection
17.	Record the procedure, time, color, of wound, odor amount and nature of exudates', and signs of epithelializations and the response of the patient. (to give accurate information about the wound and its healing pattern,	To maintain accurate records ,provide a point of ferrous in the event of any queries and prevent any duplication of treatment

E: supportive documents

Clinical chart, nurses notes

9:3 Central Venous Catheter Insertion site dressing change

Policy: central venous catheter site dressing is done in once in 24hours by the registered nurse, it is labeled with date and time

A: Definition: a central venous access device is one where the catheter is threaded into the central vasculature. A central venous catheter (CVC) tip will always be in the superior vena cava (SVC) or right atrium

B: purposes:

- To monitor the CVP in serious ill patients
- To prevent infection

1. For the administration of large amounts of intravenous fluid or blood, e.g In cases of shock or major surgery .
2. To provide long term access for

- Hydration or electrolyte maintenance
- Repeated administration of drugs, such as cytotoxic and antibiotic therapy
- Repeated profusion of blood or blood products
- Repeated specimen collection
- Parenteral nutrition

C: Hazards of CVC insertion:

- Sepsis
- Hydrothorax
- Brachial plexus injury
- Catheter embolism
- Arterial puncture and malposition
- air embolism
- hemorrhage
- thoracic duct trauma
- thrombosis
- pneumothorax
- hemothorax
- misdirection or kinking
- cardiac tamponade
- cardiac arrhythmias

D: Article needed:

- Sterile dressing pack, extra sterile gauze packets cotton balls
- Alcohol based hand rub

- Alcohol based –skin cleaning solution such as Chlorhexidine in 70% alcohol or betadine (povi-done) iodine
- Semi- permeable transparent dressing
- Hypoallergenic tape (micro pore)
- Bacteriological swab
- Pair of sterile gloves

E: procedure:

S. no	Action	Rationale
1	Explain and discuss the procedure with the patient	To ensure that the patient understand the procedure and gives his \her valid consent.
2.	Perform the dressing using an aseptic technician	To prevent infection
3.	Screen the bed. Assist the patient into a supine ,if possible	To allow dust and airborne organisms to settle before the insertion site and sterile filed are exposed.
4.	Take the trolley to the patient's bedside disturbing the screen as little as possible	To minimize airborne contamination
5.	Loosen the old dressing gently	So that the dressing can be lifted off easily
6.	Wash hands with bacterial soap and water or bacterial alcohol hand rub.	Hands may have become contaminated by handing the outer packets
7.	Put on clean gloves	To protect the nurse from any contact with the patient's blood
8.	Using gloved hands, remove the old dressing and discard it.	To remove old dressing without contaminating hands
9.	If the site is red or discharge is present inform the concerned doctor	A swab may be ordered for identification of pathogens .to select appropriate treatment
10.	Remove gloves and put on a sterile pair	To minimize the risk of introducing infection
11.	Open the sterile pack	
12.	Open the other sterile packs such as extra gauze and cotton balls tipping their contents gently onto the centre of the sterile field .pour the betadine into the small sterile cups provided	To reduce risk13. of infections
13	Clean the centre catheter insertion site with betadine .clean first around the insertion site with one circular motion. after that the wound cleaned using friction in circular motions from the centre outwards .allow area to dry prior to applying the dressing	To minimize the risk of infection spread from a dirty to clean area. to enable disinfection process to be completed .to prevent skin reaction in response to the application of a transport dressing to moist skin
14.	Apply the transparent dressing ,molding it into place so that there are no creases or folds	To minimize skin irritation, and reduce risk of dressing peeling or becoming damaged.
15.	Remove gloves	
16.	Fold up the sterile filed : the waste in appropriate container	To prevent environment contamination

S. no	Action	Rationale
17.	Document date time of dressing and any relevant changes	Avoids duplications

E: Supportive Documents:

Clinical chart, nurse notes,

9:4 Colostomy Care

Policy: colostomy care\ dressing is performed once a day or whenever required (leak, filled colostomy bag etc) by the registered nurse is competent and privileged.

A: Definition:

It is the method of regularly emptying and cleaning the colostomy bag and colostomy and thereby maintained of personal hygiene.

B: Indications:

- To assess the stoma and the surrounding regions
- For early identifications of complications
- To maintain personal hygiene
- To prevent skin excoriation around the ostomy
- To prevent order and leakage from the ostomy bag
- To demonstrate care of stoma to patient and care givers

C: Equipment:

- A tray with the following articles
- A pair of disposable gloves
- Gauze piece and wash cloths
- Stoma measuring guide
- A pair of scissors
- Disposable colostomy bag clamp in correct size for two piece system or one- piece type with attached skin barrier
- Adhesive remover (optimal)
- Ostomy deodorant
- Kidney basin
- Pen
- Skin barrier if not attached to pouch
- Tape/ ostomy blat (optimal
- Stethoscope
- Mackintosh /under pad

D: procedure:

S.NO	Action	Rationale
1.	Explain the procedure to the patient	To relieve anxiety and gain co-operation
2.	Provide privacy	To prevent embarrassment and gain confidence
3.	Collect all the equipment and gather near the bedside.	For easy access to materials and to save time
4.	Position client in supine and drape.	Supine position is favorable as it reduce wrinkles and allow for easy application of pouching system
5.	Perform had hygiene and auscultate for bowel sounds	To prevent cross infection and to look for peristalsis
6	Place the mackintosh or under pads under the patient	To protect the bed linen
7.	Apply gloves and observe skin barrier and pouch for leakage	Leakage indicates need for different type of pouch or sealant
8.	Observe the color ,size, and healing of the stoma ,stoma should be normally moist and reddish –pink in appearance	Stoma characteristics must be considered when selecting an appropriate pouching system
9.	If the ostomy bag is full of fecal matter consider emptying of the bag before removal	Removal of a bag which is filled with fecal matter may be inconvenient as it can spill out during the procedure
10.	For emptying, the stoma bag place the kidney basins near the opening of the bag on the bed.	So that decal matter can be easily drained into the kidney basin.
11.	Gently release the clamp and unfold the edge of the stoma bag	To prevent splashing of the fecal matter
12.	Milk out the entire contents of the stoma bag into the kidney basin	For easy removal of the bag
13.	Wipe the edge of the bag with a gauze pad	To prevent soiling of the entire bag.
14.	Fold back the edge of the stoma bag twice and apply the clamp	To avoid sudden leakage as stoma movement can occur any time
15.	Remove gloves and perform hand hygiene	To prevent contamination
16.	Soak the skin barrier ,using gauze pads dipped in warm water or use adhesive removers if available	To allow for easy removal of skin barrier with minimal trauma to the skin
17.	Completely remove used pouch and skin barrier gently by pushing the skin away from the barrier	Jerking irritates skin and causes tears
18.	If portions of the skin barriers remain ,use adhesive removes to remove them completely	Improper removal of barrier will irritate skin and cause skin tars and result in poor adhering of the new pouch

S.NO	Action	Rationale
19.	Assess the skin around the stoma noting scars ,folds skin breakdown pristomal suture line	To help in determining need for barrier paste to increase adherence of pouch to skin or to fill in irregularities
20	Cleanse the stoma and the pristomal skin gently using gauze pads socked in warm water, do not scrub the skin	Avoid use of soap as it leaves a residue on the skin that interferes with pouch adhesion to the skin
21.	Dry completely by the patting the skin with gauze or towel	Skin must be dry ,pouch dose not adhere to wet skin
22.	Assess the abdomen for the best type of punching system to use ,by looking at the contour presence of scars or incisions locations	Proper selection of pouch ensures good fit without leakage of the effluent
23.	Measure the stoma for correct size of the pouching system needed using the measuring guide	Ensures accuracy in determining correct pouch size needed.
24	prepare the selection pouch : For a cut – to fit pouch, cut out an opening on the pouch using scissors after marking the correct size using a pen. the opening should be 1-16 inch large than the stoma size as was measured using the stoma measuring guide	Size of pouch opening keeps drainage off skin and lessens risk of damage to stoma during peristalsis or activity
25.	Foe one piece pouching system : Remove backing from barrier and adhesive .with ileostomy ,apply a thin circle of barrier paste around opening in pouch ,allow to dry	The [paste facilities seal and protects skin
26.	Apply skin barrier and pouch ,if creases occur sue barrier paste to fill in, let dry for 1-2minute	Paste creates a flatter surface for pouch placement
27.	Press the adhesive backing of the pouch smoothly against the skin ,starting from the bottom and working upon and around the sides	Ensures smooth wrinkle free seal .
28.	Hold pouch by barrier ,centre over stoma and press down gently on the barrier bottom of the pouch should point towards client's knees	A different positioning of the pouch is sometimes needed for better gravity flow
29	Maintain gentle finger pressure around the barrier for 1-2 minutes	Gentle pressure and body heat assist the adhesion
30.	For two piece pouching system : Apply flange (barrier with adhesive)	Creates wrinkle free secure seal and decrease irritation from the adhesive on skin

S.NO	Action	Rationale
	just as for the one piece system .then snap on pouch and maintaining finger pressure	
31.	For both pouching systems ,gently tug on the pouch in a downward direction	Determines id the pouch is securely attached
32.	Gently press on the pectin or karaya flange to facilities adhesion	Helps to keep the pouch system securely attached
33.	Fold bottom of open –ended drainable pouches up twice and close using a clamp	Martians secure seal to prevent leaking
34.	Properly dispose old pouches and soiled equipment	Reduces odor in room
35.	Remove gloves and perform hand hygiene	Reduces transmission of micro organisms
36.	Remove the mackintosh \under pads and make the patient comfortable	To increase comfort and promote rest
37.	Document the procedure time, condition, of stoma and pristomal skin, type of pouching system used stool characteristics ,and patient's response	To maintain the accurate record

E: Supportive Document:

Clinical chart, nurse's notes

9:5 Burns Bath

Policy: burns bath is given once a day by a competent register nurse after wound assessment and with written instruction from the treating physician

A: Definition:

To provide therapeutic bath for burns patient

B: purposes:

- To cleanse wound of slough or medication
- To observation the condition wound
- To prevent infection
- To promote healing

C: articles needed:

- **Sterile blade to remove dressing**
- Yellow plastic bag
- Gowns -2 (one for nurse and another for attended)
- Disposable plastic apron
- Plastic bucket and mug
- Warm water and soap (90-100degree F)
- Clean gloves

- Sterile gloves
- Mask
- Sterile towel pack
- Sterile gauze pieces

D: procedure:

S NO	Action	Rationale
1.	Clean and disinfected bath tub before stating bath	To prevent infection
2.	Explain the procedure to the patient	To ensure that the patient understand the procedure and gives his\her valid consent
3.	Collect necessary equipment	
4.	Nurse to wear gown shift the patient bath room.	To prevent soiling of dress
5.	Wear clean gloves and mask	To prevent the transmission of infection
6.	Remove dressing using sterile blade. discard use dressing materials to yellow plastic bag	To prevent cross contaminations
7.	Use sterile saline to remove adherent dressing	To prevent bleeding and ensure easy removal
8.	Once the dressing is removed discard clean gloves and wear sterile dressing	To maintain sterility during the procedure
9.	Make the patient sit in bathroom and give a bath with warm water	To remove the slough and dead tissue
10	Gently rub with soap and sterile gauze piece to clean the wound and remove slough	To remove the dead tissue and help in growth of new tissues
11.	Discard the gauze and slough in yellow plastic bag	To prevent contamination
12.	Apply soap to the whole body	To clean the body
13.	Give hair wash if needed. Wash head first and then the body	Water flowing down from the head will flow down due to gravity
14.	Observe wound for signs of healing	For proper assessment
15.	Complete bath quickly to prevent chilling	Hypothermia may occur as the patient is already having damaged tissue
16.	Get the help of the attendant when needed	To prevent any fall
17.	Gently pat with sterile towels and cover wounds with sterile towel	To prevent contamination
18.	Bring the patient back to the bed and make him\her comfortable	To increase comfort and to perform dressing
19.	Replace the equipments	For further use

S NO	Action	Rationale
20.	Perform the dressing	To reduce the risk of infection
21.	Document the time of bath ,solution used for cleaning ,medication applied, condition of the wound and patient's tolerance	To ensure adequate records and to enable continued care of device and patient

E: Supportive Documents:

Clinical chart, nurses notes.

9:6 Suture \Clips \Staples Removal

Policy: Suture, clip, and staple removal can be performed by a doctor or a registered nurse who is specialized in wound care management, in case of plastic surgeries, suture removal is performed only by the plastic surgeon

A: Definition:

The process of removal of skin sutures forms a wound without damaging the newly formed tissue. The timing of suture removal depends on the sharps size and locations of the sutured incision, the absence of inflammation, drainage and infection and the patient's general condition, usually for a sufficiently healed wound the sutures are removed about 7-10days after insertion

B: Articles Needed:

- Sterile dressing tray containing sterile forceps gallipots, and gauze pads
- Sterile gloves
- Antiseptic cleaning agent or povidone iodine
- Sterile curve tipped suture scissors
- Staple remover
- Clean gloves (if needed)

D: procedure

S.NO	Action	Rationale
1.	Check the doctor 's for the procedure	To prevent errors
2.	Explain the procedure tom the patient	To gain cooperation and to obtain a valid consent
3.	Assemble all the equipment's near the bedside	To save the time and for the ease fo doing the procedure
4.	Provide pricy	To prevent embarrassment for the patients
5.	Position the patient comfortable	So that the patient is comfortable and not to place undue tension on the suture line
6.	Encourage the patient to lie down if possible `	Some patient can have giddiness during the procedure
7.	Switch on the light and adjust .it so	To have a clear vision of the suture line and the

S.NO	Action	Rationale
	that it shines directly on the suture line	sutures
8.	Perform hand hygiene	To prevent cross contaminations
9.	If the patient has a dressing ,put on a pair of clean gloves and remove the dressing	To provide for visibility and to prevent hands from being contaminated.
10.	Discard the contaminated dressing and the gloves into the appropriate waste bin	To avoid transmission of micro organisms
11.	Assess the wound for proper healing gaping inflammation, sings infection and embedded sutures.	To check if the wound has healed properly and to notify the physician if needed
12.	Assess the suture line for the ridge	The absence of healing ridge indicates that the wound needs continual support and protection
13.	Open the suture removal tray and suture scissors using sterile techniques	To prevent contamination
14.	Don the sterile gloves	To maintain sterility while performing the procedure
15.	Using sterile technique clean the suture line using the antiseptic solution	To reduce the risk of infection .the cleaning process also moisture the sutures sufficiently to ease removal
16.	If needed ,moisten the sutures further with normal saline solution	Helps in easy removal of the sutures
17.	Using the forceps, pick up one end of the suture on the visible part of the suture at the skin surface and cut it.	The visible part of the suture is exposed to skin bacteria
18.	Remove the suture by lifting and pulling the visible end of the suture off the skin	To avoid drawing this contaminated portion of the suture back through the subcutaneous tissue
19.	Using the same method ,remove the rest of the suture	To avoid contamination
20.	After the removal of the suture ,wipe the incision gently with gauze pads soaked in antiseptic or provided iodide	Removes the microorganisms
21.	**For removal of clips :** Squeeze wings of the clips together with forceps to release from the skin If the wound gaps use adhesive suture to oppose the wound edges	To release clips automatically from the wound To prevent the cosmetic effect
22.	**For removal of staples :** Slide the lower bar of the staple remover with the V_ shaped groove under staple at an angle of 90degree	To release the staple automatically from the wound if the angle of the staple remover is not correct the staple will not come out freely

S.NO	Action	Rationale
	Squeeze the handle of the staple removers together to open the staple If the suture the skin either side of the suture line If the wound gapes use adhesive suture to oppose the wound edges	To reduce the tension of skin around suture line and lessen pain on removal of staple To improve the cosmetic effect.
23.	Apply a light sterile gauze dressing if needed	To prevent infection and irritation from clothing
24.	Remove gloves and wash hands	To prevent cross contamination
25	Wash and replace all the articles	For future use
26.	Instruct the patient about the care of the wound and teach to report any abnormalities noticed	For early identification and treatment of complications
27.	Document the date and time of suture removal type and number of sutures appearance of the suture lines ,sings of wound complications ,dressing and the patient's response	To maintain accurate record ,provide point of reference in the event of any queries and prevent any duplication of treatment

E Supportive Documents:
Nurses' notes wound assessment sheet and progress record

9:7 Removal of Wound Drain

Policy: wound drains are removed by the treating physician after assessment of wound and when there is minimal drainage.
A: Definition: The drain is a common feature of post-operative management of a surgical patient. It is generally removed when the drainage has ceased. Usually 24-to 48 hours following the surgery, if it is to cover peril –operative bleeding and hematoma formation .
B: purposes:

1. To remove a wound drain from a wound
2. To reduce the risk of infection as the longer a drain remains in place .the greater ia the chance of infection to the wound and surrounding tissues
3. Usually removed when the fluid from the wound has reduced (normally) less than 50mlin 24 hours)
4. Drains if left for prolonged period in the wound, granulation tissue may develop around the drain and make the drain removal more traumatic and painful to the patient

C: Equipment:

1. Dressing trolley with a sterile dressing pack containing sterile forceps and gauze pads
2. Normal saline solution
3. Alcohol hand rub\ hand washing facilities

4. Gloves –one disposable pair one sterile pair
5. Sterile scissors

D: Procedure:

S.NO	Action	Rationale
1.	Explain the procedure and purposes to the patient	To gain his \her consent and cooperation and to encourage participation in care.
2.	Position the patient comfortably and conveniently	For appropriate visualization of the area and ease of handling the drain without causing discomfort to the patient
3.	Administer analgesics as per order if needed, and allow time for it to act	To reduce discomfort and to gain cooperation
4.	wash hands using bacterial soap and water or bactericidal alcohol hand rub	To minimize the risk of infection
5.	Clean the trolley and gather all the equipment on the bottom of the trolley	To provide a clean area for the procedure
6.	Take the trolley to the bed side and adjust the height of the bed as appropriate	To avoid stooping over the bed while performing the procedure
7.	Place the dressing pack on top of the trolley and open it without contaminating the inner side	To maintain the sterility of the pack
8.	open and place the scissors and sterile gloves on to the sterile field	For use during the procedure and to prevent contamination
9	Pour normal saline solution into the galipots	To clean the drain site
10.	Wash hands using bacterial soap and water or bactericidal alcohol hand rub	To minimize the risk of infection
11.	Expose the drain site and adjust the patient's clothes to expose the wound taking care to maintain his\her dignity	For proper visualization of the drain site
12.	Don the disposable gloves and remove the dressing covering the drain site and discard in appropriate waste bin	To expose the drain site
13.	If the drain has a vacuum bottle attached clamp the tube suing the clamp provided	This releases the vacuum and prevents suction during the removal of the drain which may cause tissue damage or pain
14.	Clean the hands using the alcohol hand rub	To minimize the risk of contamination
15.	Don the sterile gloves	To maintain the sterility of the hands
16.	If the drain site appears to be inflamed or purulent ,a swab should be obtained and sent to microbiology	For culture and sensitivity analysis
17.	Clean the wound if necessary ,using normal saline solution	To reduce the risk of infect ion
18.	Ensure that the suture is visible and	To remove the sutures without causing any

S.NO	Action	Rationale
	accessible	discomfort to the patient
19.	Place sterile gauze under the drain tubing	To absorb any discharge that comes out while removing the drain
20.	Lift up the knot of the suture with sterile forceps and use the suture scissors close to the skin to cut the suture ,remove the suture with forceps	To allow space for the scissors to e place underneath.
21.	Fold up a sterile gauze swab to create an absorbent pad and hold in position over the drain site with one finger each side.	For supporting the skin around the drain site.
22.	Warn the patient of a pulling sensation in relation to the drain removal	To prepare the patient mentally
23.	Grasp the drain close to the skin using a sterile gloved hand or forceps	Helps to pull out the drain easily with less force
24.	Gently pull out the drain using a steady gentle traction ,if there is a resistance place free gloved hand against the tissue to oppose the tubing of the drain being removed	To reduce the pain and trauma to the tissue surrounding the drain site
25.	Check that the entire drain tube has been removed .the drain should have a clean cut edge.	To ensure that there is no remnants of drains tube inside.
26.	Maintain pressure over the drain site with the gauze pad until bleeding or drainage is minimal	To stop the discharge or bleeding from the site.
27.	Cover the drain site with a sterile dry dressing and tape securely	To prevent microbes from entering the drain site
28.	If the tip of the drain tube has to be sent for microbiologist investigation .cut it with the sterile scissors and place it in a sterile specimen container and label it	For culture and senility analysis
29.	Measure the amount of contents in the drainage bottl	For accurate measurement and to identify any abnormality
30.	Discard the drain tube and vacuum to bottle in the appropriate waste bin	ensure safe disposable
31.	Replace all the equipment and wash hands	For future use To prevent cross contamination
32.	Document the date ,time, appearance of the drain site the amount of drainage in the vacuum bottle ,presence of any discharge from the site and response of the patien	To maintain accurate records

E: Supportive Documents

1. Nurse's notes
2. Intake and Output chart

9:8 Percutaneous Endoscopically placed Gastrostomy (PEG Tube dressing and feeding)

Policy: Gastrostomy tube dressing and feeding is done a competent nurse who is privileged to do .dressing is done once a day.

A: Definition:

Percutaneous Endoscopically placed Gastrostomy (PEG) tube is an Endoscopically inserted tube that is used for feeding patients who are to feed by mouth on a long term basis. Until granulation of the stoma canal has place, the dressing should change daily

B: purposes:

1. To inspect the wound
2. To maintain skin integrity
3. To prevent infection
4. To maintain the cleanliness of the tube insertion site
5. To maintain the patency of the tube
6. To promote for the patient

C: Equipment:

- A pair of clean gloves
- Disposable mask
- Sterile dressing pack
- Gauze piece
- Normal saline solution
- 10cc or 20cc syringe
- Water
- Kidney tray
- Waste bin

D: procedure:

S.NO	Action	Rationale
1.	Explain the procedure to the patient.	To relieve anxiety and to gain cooperation
2.	Perform hand hygiene using antibacterial solution or alcohol hand rub.	To minimize the risk of infection and cross contaminations
3.	Collection the equipment on clean trolley and take it to the bedside	For easy doing the procedure and to save time
4.	Provide privacy	To prevent embarrassment to the patient5.
5.	Wear clean gloves and remove the old dressing that is present	To prevent infection and gain access to the stoma site
6.	Discard the contaminated gloves perform hand hygiene and wear another pair of clean gloves	To prevent cross contamination

S.NO	Action	Rationale
7.	Observe the stoma and the skin around the stoma for signs of infection ,irritation or excoriation	To identify any complication early and to treat it appropriately
8.	Note the number of the measuring guide on the tube closet to the end on the abdomen	To ensure that the Gastrostomy tube is in the correct position
9.	Clean the area surrounding the tube with normal saline using gauze piece and dry the area thoroughly	To remove the crust and dried secretions To prevent infection and kin excoriation
10	Wrap the tube with gauze piece ay the end closest to the skin	To seal the area from open air
11.	Secure tube adequately using the adhesive tape.	To prevent the tube from hanging loosely and causing discomfort
12.	Release the clamp and open the cap of the tube	To enable flushing
13	Using the syringe aspirate the gastric contents	To check for any blockage and to assess the gastric contents
14.	Flush the tube with water using the syringe	To ensure patency of the tube and to remove any blockages
15.	Clamp the tube and cover with the cap	To prevent any contents from leaking out
16.	Gastrostomy feeding • Check for order • Wash hands • Mix the formula for feeds • Aspirate and check tube placement (withhold feeds if residual volumes is high) • Administer feeds as continuous infusion or as bolus • Flush the Gastrostomy tube with 20ml of water • Close the tube and tape it the abdomen	To administer feed in a clean and safe manner and prevent compilations Aspirate of the tube helps the nurse to ensure that previous feeds is tolerated
17.	remove gloves and replace the equipments wash hands	to prevent cross contaminations
18.	record the procedure condition of the stoma and the surrounding area patency of the tube and patient's response	For proper documentation

E: supportive Documents:

Nurses record and intake and output chart

9:9 Jejunostomy Tube dressing and Feeding

Policy: Jejunostomy tube dressing and feeding is done by a competent nurse who is privileged to do. Dressing is done once a day

A: Definition:

Jejunostomy tube is inserted into the jejunum in order to provide enteral nutrition. Cleaning of the tube must be daily order to maintain skin integrity and to detect any problems early e.g.

B: Purposes:

1. To inspect the wound
2. To m maintain skin integrity
3. To prevent infection
4. To maintain the cleanliness of the tube insertion site
5. To maintain the patency of the tube
6. To promote comfort for the patient

C: Equipment:

1. Two pairs of clean gloves 'disposable mask
2. Sterile dressing pack
3. Gauze piece
4. Normal saline solution
5. Kidney tray
6. Waste bin

D: procedure:

S. NO	Action	Rationale
1.	Explain the procedure to the patient	to relieve anxiety and to gain cooperation
2.	perform hand hygiene using antibacterical solution or alcohol hand rub	to minimize the risk of infection and cross contamination
3.	collection equipment on clean trolley and take it to bedside	for easy of doing the procedure and to save time
4.	provide privacy	to prevent embarrassment to the patient
5.	wear clean gloves remove the old dressing that is present	the prevent infection and gain access to the stoma site
6.	discard the contaminating gloves perform hand hygiene and wear another gloves of clean gloves	to prevent cross contamination

S. NO	Action	Rationale
7.	observe the stoma and the skin around the stoma for signs of infection irritation or excoriation	to identify any complication early and to treat it appropriate
8.	clean the area surrounding the tube with normal saline suing gauze piece and dray the area thoroughly	to remove the crust and dried secretion to prevent infection and skin excoriation
9.	check that the sutures on the device are infract ,if not it has to be informed to the medical team	to prevent accidental removal of the jejunostomy
10	Secure the jejunostomy tube to skin using adhesive tape. Cover the site with a dry gauze piece	
11	advice the patient no to use moistening creams or talcum powder at the site	to prevent infection and irritation to the skin
12	**Jejunostomy tube feeding** • Check for order • Wash hands • Mix the formula for feeds • Aspirate and check tube place-ment (withhold feeds if residual volumes is high) • Administer feeds as continuous infusion or as bolus • Flush the Gastrostomy tube with 20ml of water Close the tube and tape it the abdomen	To administer feed in a clean and safe manner and prevent compilations Aspirate of the tube helps the nurse to ensure that previous feeds is tolerated
13	remove gloves and replace the equipment's& wash hands	to prevent cross contaminations
14	record the procedure condition of the stoma and the surrounding area patency of the tube and patient's response	For proper documentation

E: supportive Documents:

Nurse's record and intake and output chart

Chapter -10
Emergency Procedure

10:1 Assisting With Endotracheal Intubation

A: Definition:

Endotracheal intubation is the placement a tube into the trachea (windpipe)

B: Purposes:

- To maintain an open airway in patients who are unconscious or unable to breathe on their own.
- To deliver oxygen, anesthesia, or other gaseous medications through the tube
- To protect from aspiration
- To prevent damage to the airway at a later time i.e. burn patient who inhales hot gases may be incubated initially to prevent his airway from swelling.
- To administer medications
  - Naloxone
  - Atropine
  - Epinephrine
  - Lidocaine

Indications:

- Respiratory arrest
- Respiratory failure
- Airway obstruction
- Need for prolonged ventilator support
- Class II or IV hemorrhage with poor perfusion
- Severe fail chest or pulmonary contusion
- Multiple trauma, head injury and abdomen mental status
- Inhalation injury, head injury erythema\ edema of the vocal cords
- Patient in deep coma or unresponsive
- Shallow or slow respirations (less than 8perper minute)
- Progressive cyanosis
- Surgical patient where body positioning or facial contours preclude the use of a mask

C: Article needed:

1. Endotracheal tube
   I. Size of tube is depending on size of patient
   II. 7.5mmis the "universally Accepted "size for an unknown victim
   III. Men are usually larger therefore an 8.0mm tube may be appropriate
   IV. Females are usually small therefore 7.0mm tube be appropriate
2. 10cc syringe – used to fill the cuff at the end of the endotracheal tube
3. Stylet – a wire inserted into the endotracheal tube in order to stiffen it during passage
4. Water soluble lubrication – KY Jelly or Xylocaine 2%
5. Stethoscope – to check for proper placement of the endotracheal tube
6. Me gel's forceps – may be to help guide an endotracheal tube from the pharynx into the larynx
7. Laryngoscope handle
8. Laryngoscope blade
9. Miller blade (straight blade)
10. Macintosh blade (curved blade)
11. oropharygeal airway (bite block) – to prevent the patient from biting down on the endotracheal tube
12. tape- to secure the endotracheal tube in place

13. gloves
14. Ambu- bag to facilitate positive pressure ventilations
15. Suction device – to clear the airway of debris (blood ,mucosa ,saliva)

D: Procedure:

S.NO	Action	Rationale
1	Maintain the patient's CAB	To facilitate ventilation
2.	Determine whether the patient enquired endotracheal tube	for baseline assessment
3.	assemble required equipment	to prevent loose of time
4.	If patient is in bed ,remove bed head make sure there is adequate space between the back of bed and well	to allow easy access to patients head in order to facilitate intubation
5.	position the patient head –there axes those of the mouth ,the pharynx ,and the trachea must be aligned	To achieve direct visualization of the vocal cords.
6.	sniffing position- the head is extended and the neck is flexed	To achieve direct visualization of the vocal cords
7.	A folded towel may be placed under the patient's shoulders and neck to assist with positioning	aides in hyperextension of the neck and easy visualization
8.	Check for loose teeth\ dentures ; if found remove with megel's forceps	as these prosthesis can come loose and interfere with the ventilation leading to an obstruction
9.	suction the patient ,not more than 15 seconds	to maintain a patent airway
10.	oxygenate patient for 1minute with 100% oxygen using the AMBU bag	to prevent hypoxia
11.	provide the laryngoscope to the doctor (switched on)	to visualize the larynx and the epiglottis
12.	inflate the ET tube cuff and check for any air leak if no leak is present deflate the ET tube cuff	to identify any leaks before intubation
13.	provide the lubricated endotracheal tube with stylet in situ	for easy and painless intubation
14.	the nurse is asked to press the crico-thyroid cartilage with thumb and index finger against the esophagus	to prevent the risk of regulation of gastric contents and the consequent risk of pulmonary aspiration
15.	assist while the endotracheal tribe is being introduced into the trachea .remove the stylet	
16.	inflate the cuff of the endotracheal tube with 10ml of air	to prevent dislodgement of the tube
17.	auscultate listen\ feel for airflow through the tube and observe for B|L chest movements	Verify the placement of the as the tube may be displaced .thus causing ventilation of only one lung and atelectasis of the others. It is mandatory to check for bilateral air entry

S.NO	Action	Rationale
18.	connect the AMBU bag with oxygen to the endotracheal tube and continue bagging	to prevent hypoxia
19.	insert oral airway and apply endotracheal suctioning if necessary	To prevent biting of the tube and to maintain a patient airway
20	fix the endotracheal tube in position by adhesive strips securing the ET tube over the bridge of the nose \ cheek	to prevent dislodgement of the tube
21.	connect to ventilator	to prevent hypoxia
22.	document the procedure ,document the size t of tube sued ,chest movements vital signs and the patient's tolerance to the procedure .document the position notify duty doctor of the deviant observations made	to maintain accurate records ,provide a point of reference in the of any queries

Follow up:

1. Place patient in lateral position
2. Arrange for chest X-ray to be taken in order to check the placement of ET tube
3. Apply endotracheal suctioning if secretions are present
4. Watch chest movements, ET tube kinking ,obstruction with secretion of blood ,leakage of tube cuff change in position of the tube and over – inflation of cuff

Nursing alerts:

The insertion of the endotracheal tube should be no longer than 30seconds from the time you stop ventilating the patient until the time you remove the stylet .if you are unable to place the endotracheal tube within 30 seconds ,withdraw the endotracheal tube laryngoscope ventilate the patient and start again.

- Do not attempt endotracheal intubation on the following conditions:
  - Obstruction of the upper airway upper to foreign objective
  - Cervical fractures
  - Esophageal disease
  - Ingestions of caustic substances
  - Mandibular fractures
  - Laryngeal edema
  - Thermal or chemical burns neck up
- Criteria for endotracheal Extubation :
  - Patient beings spontaneous respiration
  - Medical officer orders removal of endotracheal tube
  - Adequate forced vital capacity = twice tidal volume
  - Air leak test positive when ET tube cuff is deflated
  - PF ratio >2
  - Peep <= 5cms of H2O

- Fio2< 40%
- Pressure support <7cms of H2O
- GCS> 8

- During Extubation:
  - Remove tape form endotracheal tube
  - Remove oropharygeal airway from patient's mouth
  - Suction the endotracheal tube ,the patient's mouth ,and the patient's posterior pharageal area
  - Deflate the endotracheal tube cuff
  - Withdraw the endotracheal tube with one smooth motion
  - Monitor the patient for signs \symptoms of respiratory distress or difficulty
- Drugs used during endotracheal intubation
  - Propofol (diprivan)
  - Functional class : general anesthetic
  - Chemical class : an isopropyl phenol
  - Dosage; 1-2.5 /kg

- **Actions :**
  - More rapid and complete awakening compared to barbiturates
  - Reduce blood pressure more than thiopental
  - Pain with injection into non- antecubital ,small vein

Midazolam:

- Functional class: sedative, hypnotic, anti-anxiety
- Chemical class: neuron muscular blocker
- Dosage: 0.30to 0.35 mg\ kg over 30seconds
- Onset: 3-5 mines

Action:

Depresses sub cortical levels in CNS

Vecuronium bromide (norcuron)

- Functional class: neuron muscular blocker
- Chemical class: analogue of pancuronium
- Dosage: 0.08-1 mg\ kg
- Onset: 2-3mines

Action:

Inhibits transmission of nerve impulses by binding with cholinergic receptor sites

Atracurium:

- Functional class: neuromuscular blocker
- Dosage: 0.3-0.5 mg\kg

Action;

- Facilitates of endotracheal intubation
- Skeletal muscles relaxation during mechanical ventilation, surgery or general anesthesia

Succinylcholine:

- Functional class: neuromuscular blocker
- Dosage: 0.6-mg\kg

- Onset: 1min

Action: inhibits transmission of nerve impulse by binding with cholinergic receptor sites releases histamine

Glycopyrrolate:

- Functional class: cholinergic blocker
- Chemical class: ammonium compound
- Dosage: IM 4.4 microns

Action:

Inhibits action if acetyl choline at receptor sites, in autonomic nervous system, which controls secretion, free acids in stomach

E: supportive documents:

Clinical chart, nurses notes

10.2 BASIC LIFE SUPPORTS

A: Definition: cardio pulmonary resuscitation (CPR) is a basic emergency procedure of manual external cardiac massage and artificial respiration.

Basic life support (BLS) acts to slow down the determine of the brain and the heart until defibrillation or advanced cardiac life support (ACLS) can be provided

B: working of CPR:

The air we breathe –in travels to our lung where oxygen is picked up by our blood and then pumped by the heart to tissue and organs. When a person experience cardiac arrest whether due to heart failure in adults and the elderly or an injury such as near drowning ,electrocution or server trauma in a child the heart goes from a normal best to an arrhythmic pattern and eventually ceases to beat altogether

This prevents oxygen from circulating throughput the body ,rapidly killing cells and tissue in essence CARDIO (heart) PULMONARY (lung) RESUSCITATION (revive, revitalize) serves as an artificial heart beat and artificial respiration

Cardio pulmonary resuscitation may not save the victim even when performed properly, but if started with in 4minutes of cardiac arrest and defibrillation is provided within 10minutes it is possible to save one's life

C: CPR consists of four main components:

- CIRCULATION
- AIRWAY
- BREATHING
- DEFIBRILLATION

Before you start rescue efforts you must remember to check the RESPONSIVENESS by tapping the victims shoulder and shout "ARE YOU OKAY"

For infants: tap the infant's foot sand shout

If the victim has no response active emergency response system

Circulation:

After checking response locate the carotid pulse

Steps to locate the carotid artery pulse in adults:

Martian a head till with one hand on the victim's forehead

Locate the trachea using 2or 3 fingers into the other hand

Slide these 2or 3 fingers into the groove between the trachea and the muscle at the side of the neck, where you can feel the carotid pulse

Palpate the artery for at least 5sec and not more than 10sec

The steps to locate brachial artery pulse in infants:

Place 2or 3 fingers on the medical aspect of the upper arm, between the infants elbow and shoulder

Pres the index and middle gently on the upper arm for at least 5seconds and not more than 10seconds when attempting to feel pulse

Chest compression technique:

I no pulse, start cycle of 30compression and 2breath; **RATIO: 30:2**

Steps to perform chest compression on an adult:

- Position yourself at the victim's side
- Make sure the victim's is lying on his back on a firm ,flat surface .if the victim is lying face down carefully roll him into his back
- Move or remove all clothing covering the victim's chest. you need to be able to see the victim's skin
- Put the heel of firsthand. straighten your arms and position your shoulder directly over your hands
- Push hard and fast press down at least 2inchs with each compression make sure you push straight down on the victim's breastbone
- At the end of each compression, make sure you allow chest recoil or –expand completely. full chest recoil will reduce the blood flow created by chest compression
- Deliver compression in a smooth fashion at a rate of 100 compressions per minute.

In 1&2 Rescuer adult CPR
Ratio : 15:2 compression
RATE: 100\MIN
DEPTH: At least 1.15 inches

Steps to chest compression on an infant:

Draw an imaginary line between the nipple places 2finger on the breast bone just below this line. This will allow you compress on the lower of the breast boned. Do not press on the xiphoid press

In (1 rescuer) infant CPR Ratio : 15:2compression
RATE: 100\MIN
DEPTH: At least 1-1.5 inches

2 Rescuer infant CPR (2thumb –encircling hands technique)

Steps include:

- Draw an imaginary line between the nipple .place both thumbs side by side in the centre of the infant's chest on the breastbone just below this line. This will allow you to compress on the lower half of the breastbone. Do not press on the xiphoid. The thumbs may overlap in very small infants
- Encircle the infant's chest support the infants back with fingers of both hands

- With your hands encircling the chest ,use both thumb to depress the breast approximately ; at least 1.5 inches the depth of the infants chest as you push down with your thumbs ,squeeze the infants chest with your fingers
- After each compression completely release the pressure on the breastbone and chest and allow the chest to fully re-coil.
- Deliver compression in smooth fashion at a rate of 100 compression per minute
- After every 15compressions ,pause briefly for the second rescuer to open the air way with head tilt chin lift and give 2breaths .coordinate compressions and ventilation to avoid simultaneous de-liver and to ensure adequate ventilation and chest expression ,especially when the airway is unpro-tected.

In 2 Rescuer adult CPR
RATIO : 30:2 COMPRESSION
RATE: 100\MIN
DEPTH: At least 1.15 inches

Air way:

- After giving the chest compression you need to make sure that his airway his is clear of any ob-struction .the breath may be faint and shallow**.**
- The tongue is the main cause of obstruction in unconscious person
- Then open the victims airway with a Head tilt –chin left maneuver and lock for the chest rise and fall, place your ear near the victims mouth and nose and listen for escaping during exhalation feel for flow of air against our cheek
- If the victim is not breathing adequately ,use a barrier device to give 2breath or by mouth to mouth respiration

The steps to give mouth to mouth breath to adults:

- Hold the victim‘s airway open with a head tilt chin lift
- Pinch then nose with thumb and index finger
- Take a regular breath and seal your lips around the victim’s mouth creating an airtight seal
- Give one breath (below for 1sec) ,watch for the chest rise as you give the breath
- Give the second breath like the same as above
-

The steps to give mouth –to- mouth mask breath adults

- Position yourself at the victim side
- Place the mask on the victim face using the bridge of the nose as guide for correct position
- Seal the mask against the face
- Using your hand that is closer to the top of the victim head that closer to the top the victims head ,place the index finger and thumb along the border of the mask
- Place the thumb of your other hand along the lower margin of the mask
- Place the renaming fingers of your hand closer to the victims neck along the bony margin of the jaw and lift to open the airway
- While you lift jaw, press firmly and completely around the outside margin of the mask to seal the mask against the face

Techniques for giving mouth to mouth breaths to infants

- Hold the victim's airway open with a head tilt, Chin lift
- Place your mouth over the infants mouth and nose create an airtight seal
- Give on breath (blow for 1sec)watch for the chest to rise as you give the breath
- Give the second breath like the same as above

Steps to give month – to – mouth breathe to infants

- Position yourself at the victim side
- Place the mask on the victim face using the bridge of the nose as guide for correct position
- Seal the mask against the face
- Using your hand that is closer to the top of the victim head that closer to the top the victims head ,place the index finger and thumb along the border of the mask
- Place the thumb of your other hand along the lower margin of the mask
- Place the renaming fingers of your hand closer to the victims neck along the bony margin of the jaw and lift to open the airway
- While you lift jaw, press firmly and completely around the outside margin of the mask to seal the mask against the face

Chain of Survival

Chain survival is as follows

1. Immediate recognition of cardiac arrest and activation of the emergency response system
2. Early CPR with an emphasis on chest compressions
3. Rapid defibrillation
4. Effective advanced life support
5. Integrated post – cardiac arrest care

D. Procedure

S.No	Action	Rationale
1	Note time of arrest	Lack of cerebral perfusion for approximately 3 -4 min can lead to irreversible brain damage.
2	Call for help. If second nurse is available can call for cardiac arrest team	CPR is more effective if 2-rescure is present. One is responsible for inflating the lung, and the other is giving chest compression.
3	Place cardiac table under the patient	Effective cardiac massage can be performed only on a hand surface.
4	If the patient is in bed, remove bed head, and ensure adequate space between back of bed and well	To allow easy access to patients head in order to facilitating ventilation.
5	Check for the carotid pulse with two or three fingers	To know circulation is present or not
6	If the circulation is not present place the heel of one hand in the center of the sternum and place the other on top, ensuring that the hand is on the center of the sternum and	To ensure the cardiac compression and reduce the delay in commencing cardiac compression

S.No	Action	Rationale
	only the heel of the dominant is touching the sternum	
7	The sternum should be depressed sharply 4-5cm.Cardiac compression should be forceful, and sustained at a rate of 100per min	This produced a cardiac output by applying direct downward force of compression
8	Maintain cardiac compression and ventilation ratio 30:2. This must be continued until the cardiac output return or until ACLS team arrives	To maintain circulation and ventilation. Thus reducing the risk of damage to vital organs
9	Ensure a clear airway this is best archived by head tilt chin left maneuver	To establish and maintain airway, thus facilitate ventilation.
10	If breath is not present give to artificial respiration	For adequate oxygenation and ventilation
11	When the cardiac arrest team arrives, it will assume responsibility for the arrest in coordination with ward staff	To ensure an effective team coordinates the resuscitation
12	Attach patient to ECG monitor using three electrodes defibrillator	To obtain adequate ECG signal. Accurate recording of cardiac rhythm will determine the appropriate treatment.
13	Intubation Continue to ventilate and oxygenate the patient before intubation.	The risk of cardiac arrhythmias due to hypoxia is decreased
14	Equipment for intubation should be checked before handing to appropriate medical or nursing staff	To provide continuity of care
15	Recommence ventilation and oxygenation once intubation is completed.	Intubation should be interrupt resuscitation only for a maximum of 16seconds to prevent the occurrence of cerebral anoxia
16	Once the patient intubated, chest compression , at the rate of 100 per min, should continue and ventilation should continue at 10-12 breath per min.	Uninterrupted compression result in a substantially higher mean coronary perfusion pressure. A pause in chest compression allows the coronary pressure to fall.
17	Intravenous access Venous access must be established through the large vein as soon as possible	To administer cardiac drug and fluid replacement
18	Asepsis should be maintained throughout	To prevent local and systemic infection
19	The correct rate of infusion is required	To ensure maximum drug and solution effectiveness

S.No	Action	Rationale
20	Documentation in detail the proceedings in the CPR track sheet and in the nurses' record. Document the condition of the patient with time, medications used, response and interventions done.	To monitor differences and detect trends; any irregularities

Supportive Documents:

- CPR event recording form.
- Nurses Notes.

10.3 ADVANCE CARDIAC LIFE SUPPORT

Policy: In ACLS, the specific treatment of a given dysrhythmias or condition depends on the patients hemodynamic status.

Patient Assessment

In general, patient can be divided into four categories to determine treatment priorities:
Asymptomatic, Symptomatic – Stable, Symptomatic – Unstable, or Pulse less.

Asymptomatic patient do not receive treatment, but should be monitored for changes in condition. Any patient with symptoms (even apparently mils symptoms such as palpitations) should be assessed to determine if they are stable or unstable. Determination of a patent's level of hemodynamic compromise can include several factors, including general appearance, level of consciousness, and vital signs (especially systolic blood pressure).

General Appearance:

The first indication of hemodynamic status comes from a patients general appearance, including skin signs, level of activity, and work of breathing .if a patient show signs of compensation (such as pale, cool, or diaphoretic skin) or acute distress, they are unstable.

Levels of consciousness:

Interaction with the patient allows the provider to evaluate the patient's levels of consciousness Based on the patient activity awareness of their surrounds, and ability to provide information, if a patient shows any level of medical deficit, family or friends should be consulted to determine if this state differs from the patient baseline, if the mental deficit is acute, the patient should be considered unstable.

Vital signs:

Vital signs provide a diagnosis evaluation of the patient. Blood pressure is the primary indictor. A systolic blood pressure above 90mm usually indicates that the patient is stable (although the provide should alert for change in blood pressure that they might indicate an unstable patient even if blood pressure is normal

Other vital signs:

Other vitals may be useful but should not be relied upon exclusively .pulse oximitery can be useful, especially if it rises or falls ,but provider should remember that various conditions (such as CO_2 poisoning) can mask changes in blood oxygen levels ,and that high O_2 saturation may be present in unstable patients (such as those in shock) . Additional, heart rate is of no use in determining if a patient is stable or unstable –a patient with a heart rate of 80can is severely unstable, while a patient a heart rate of 2010 can be stable if they are still performing well.

If a patient general appearance Level of consciousness, and vital signs are all normal, the patient ids stable if possible treatment should be rendered starting with the least invasive method that is appropriate for that patient's hemodynamic status. In ACLS the preference treatment for symptomatic but stable patient is generally medications, while the preferential treatment for unstable patient is general electrical therapy

Once treatment is rendered, the provider must reassess the patient. If the patient remains symphonic, the appropriate treatment (medications or electricity) should be given again depending on the patient's heart rhythm and current hemodynamic status. (Thus, if patient was stable before but becomes unstable after administration of a drug the patient should receiver electrical therapy to continue treating the dysrhythmias rather than additional doses of a medication,

If a patient general appearance indicates that they may be unconscious ,you should check for responsiveness , if the patient is unresponsive ,get help (send someone to call 911) and bring back an AED , call a code ,ect . The BLS algorithm should then be followed -open the airway check back for breathing ,and assess circulation ,if the patient is apneic , reuse breathing should be stated ; if the patient is pulse less ,rescuers should begin CPR

Once you determine that a patient is pulse less, an AED or EKG, monitor should be attached as soon as possible. CPR should be continued with minimal interruptions. After each rhythm check, the patient should defibrillate if appropriate (for ventricular fibrillation and pulse less ventricular Tachycardia). Regardless of the heart rhythm, medications should be given as soon as possible

After CPR is resumed (the specific medication determine by the patient's exact status and heart rhythm)

B: ACLS Algorithm

Review

Always start with the CABD survey!

ACUTE CORONARY SYNDROME:

Algorithm:

Acute coronary syndrome

Remember:

Consider MONA for patients with suspected ACS (angina or AMI)

- Oxygen
- Nitroglycerine
- Morphine
- Aspirin

But in the order: oxygen, aspirin, Nitroglycerine, morphine

BRADYCARDIA

Algorithm

Bradycardia

Remember:

- Atropine 0.5mg IVP for sinus bradycardia & 1°,2° type I AV Block
- Transcutaneous pacing (preferred for 2° type II and 3° HB); do not dealt pacing in symptomatic patient (even those in sinus bradycardia or low- degree heart blocks
- Dopamine 5-10 mcg \kg \min (if patient unresponsive to atropine \pacing)
- Epinephrine drip 2-10 mcg\ min (if patient unresponsive to atropine \pacing)

Note: atropine is not indicted for 2nd degree type II &2rd degree heart blocks – proceed directly to pacing if the patient is symptoms .although atropine can be considered if pacing is delayed

TACHYCARDIA

Algorithm:
Tachycardia with pulses
Remember:
If the patient is unstable, go directly to synchronized cardio version
Otherwise:
For regular narrow complex tachycardia (probable SVT)

1. Obtain 12 lead ECG; consider expect consultation
2. Attempt vagal maneuvers
3. Adenosine 6mg rapid IV push .if no conversion give up to two more dose at 12mg each

For regular narrow complex tachycardia (probable A-Fib)

1. Obtain 12 lead ECG; consider expect consultation
2. Control rate with Diltiazem or B- blockers

For regular narrow complex tachycardia (probable V- Tach)

1. Obtain 12 lead ECG; consider expect consultation
2. Convert rhythm using amiodarone -150 mg over 10minutes
3. Elective cardio version

For irregular wide complex tachycardia

1. Obtain 12 lead ECG; consider expect consultation
2. Consider antiarrhythmic
3. If torsade's de points ,give magnesium sulfate -1to 2 g over 5-60minutes

Ventricular fibrillation \ pulses ventilator tachycardia
Algorithm :
Pulseless arrest –shockable
Remember:
Good ALCS starts with good BLS

- CPR- starts immediately .push hard and push fast
- Shock – analyze rhythm, and shock if in VF \pulseless VT
- CPR- resumes CPR immediately after shock delivery .continue for 5cycles /2 minutes
- Vasopressors – epinephrine 1mg q 3-5 minutes (can replace 1st or 2nd dose epinephrine with 40 units vasopressin
- Shock- analyze rhythm, and shock if in VF \pulseless VT
- CPR- resumes CPR immediately after shock delivery .continue for 5cycles /2 minutes
- Antiarrhythmic – amiodarone 300mg IV/IM or lidocaine 1.15 mg\kg up to 3mg\kg give as soon as possible after resuming CPR circulate chest compressions
- Shock- analyze rhythm, and shock if in VF \pulseless VT
- CPR- resumes CPR immediately after shock delivery .continue for 5cycles /2 minutes

Note: minimize interruption to chest compression –do not check a pulse or evaluate the heart rhythm after a shock. After each shock, resumes CPR immediately and continue for 5 cycles prior to rhythm analysis and possible pulse check. After a second dose of epinephrine, a second Antiarrhythmic dose (amiodarone 150mg or lidocaine 0.5 -.07 mg\kg) may give after the next rhythm check.

PULSELESS ELECTRICAL ACTIVITY:

Algorithm:
Pulseless arrest – not shakable

Remember:

PEA:

possible causes (consider the H's 5T's)

Epinephrine 1 mg q 3-5 minutes (can replace 1st or 2nd dose of EPI with 40 unit's vasopressin)

Atropine: 1mg IV|IO q 3-5 min to max 3mg (only if electrical rate is < 60) gives as soon as possible after resuming CPR, circles with chest compression

Note: in PEA the electrical System of the heart is functioning, but there is a problem with the pump pipes, or volume –a mechanical part of the system is not working

You can use the H"s and 5T's to remember the common reversible causes of PEA

H"s hypovolemaia, hypo \ Hyperkalemia, hydrogen Ion (acidosis), hypothermia hypoxia hypoglycemia

T's tension pneumothorax, tamponade (cardiac), trauma, toxins, thrombosis (coronary or pulmonary

ASYSTOLE

Algorithm:

Possible arrest **– not shock able**

Remember:

DEAD:

- Determine whether to initiate resuscitation.
- Epinephrine 1mg q 3-5min (can 1st or 2nd dose of epinephrine with 40units vasopressin)
- Differential diagnosis or discounted resuscitation – are they still dead? Consider the 6H's and 5 T"s (see above) check blood glucose ; check temperature ;consider Naloxone ect,

C: EKG and electrical Therapy Review

The EKG tracing represents electrical activity through the heart. The P wave represents depolarization of the atria; the QRS complex represents depolarization of the ventricles; and the T wave represents the later stage of re polarization of the ventricles. The interval from the first deflection of the P wave to the beginning of the QRS complex interval (PRI), and should be between 0.12 and 0.20 seconds .a normal QRS complex has duration of 0.132 seconds or less ;a longer duration (wide QRS) indices delayed conduction through the ventricles, often as the result of a ventricles pacemaker focus .

The horizontal of the EKG strips measures time .each large box represents 0.20 seconds; each small box represents 0.40 seconds

To obtain a 3-lead EKG tracing place the white (RA) electrode on the right chest just below the clavicle; the back electrodes (LA) on the left chest just below the clavicle the red electrodes (LL) laterally on the lower left abdomen .pacer pads go in the anterior\posterior positions .defibrillation patients go on the upper right chest and lower left abdomen, although on children and other small patients the pads may need to be placed in the middle of the anterior and posterior chests

In rhythm disturbances treat the patient, not the dysrhythmias .always assess your patient for pulseless, perfusion, and level of consciousness –is the patient stable, unstable, or pulseless? Next assess the rhythm: is it fast or slow: is it life –treating L as you treat the patient, try to discover the cause the dysrthymias – for many patients their only chance of survival is if you can identify and treat a reversible cause . These are many possible, their cause of rhythm disturbances or PEA. Common causes include sympathetic stimulation, stress, hypoxia, ischemia, drug\toxic, and electrodes disturbances. Although lab draws can be useful, a history of the patient and the current event obtained from a family member or caregiver is often more useful.

Defibrillation (unsynchronized shock)

Fibrillation is a disorganized rhythm that, if present in the ventricle, is life threatening. Immediately CPR combined with early defibrillation is to survival sudden cardiac arrest .defibrillation terminates all electrical activity in the pulses heart in the hopes that it will resume beating in a coordinated fashion. A shock be delivered about once every 2minuetes if the patient remains in ventricular fibrillation .with a

monophasic monitor, the recommendation is to deliver a single shock at 360 joules .if a biphasic monitor is used the recommended dosages is machine – dependent and should appear on the front of the monitor, if optimal shock dosage is not know, the consensus is to defibrillate at 200J

Synchronized cardio version

Synchronized cardiac version is the preferred treatment for unstable patient with a tachycardia such as atrial fibrillation, ventricles tachycardia with a pulse or supraventricular tachycardia (SVT). The shock is timed by the monitor to be delivered in coordination with the QRS complex of the heart if the patient is conscious, consider sedation prior to cardio version; however, synchronized cardio version should not be delayed while waiting for sedation in severely symptomatic patients.

In a monophasic monitor the initial shock delivered at 100J; if the rhythm does not terminate deliver additional shocks in stepwise Faison (20J; 300J. and 360J for subsequent shocks). With a biphasic monitor, dosage and steps are device –dependent; optimal doses are unknown begin at 100J and step up from there

Transcutaneous pacing (TCP)

External cardiac pacing is the recommended treatment for symptomatic bradycardia .if the patient is conscious ,consider sedation ; however , pacing should no be delayed while waiting for sedation .being pacing zero milliamps ,slowly increasing until capture is archives then set the rate at 20 beat per minutes above the monitored heart rate ,with a minimal rate of 20bpm

STROKE MANAGEMENT:

Stroke:

Strokes is a block in a blood vessel or rupture in a blood vessel inside the brain which is sometimes called as a "brain attack" when strokes occur brain cells in the immediate area begins t die because they stop getting oxygen and nutrients they need to function

Approaches to stroke care: Early recognition of acute ischemic stroke is important because IV fibrinolytic treatment should be provided as early as possible, generally within 3hours of onset of symptoms or within 4.5 hours of onset of symptoms for selected patients.

Identification of sings of possible stroke: (Cincinnati pre- hospital stroke scale)

Facial droop, arm draft abnormal speech

If any one of this sings is present the probability of strike is 70% presence of fall the 3sings indicates that the profanity of stroke in >85%

In hospital immediate general assessment and stabilization

Assess ABC's provide oxygen if hypoxia, establish IV access and obtain blood samples, order emergent

CT brain, check glucose, obtain 12lead ECG (do not delay the CT scan to obtain the ECG)

Immediate neurological general assessment by stroke team or designee:

Neurological assessment using NIHSS stroke scale

CT scan: hemorrhage or No hemorrhage

A critical decision point in the assessment of the patient with care acute stroke is performed and interpretation of CT scan to differentiate ischemic from hemorrhage stroke ,if hemorrhage is notes on the CT scan the patient is not a candidate for fibrinolytic and if the CT scan shows no evidence of hemorrhage and no signs of other abnormalities (eg. Tumor, recent stroke) the patient may be a candidate for fibrinolytic therapy.

Fibrinolytic therapy

Immediate perform further eligibility and risk stratification using

Inclusion criteria:

- Diagnosis of ischemic stroke causing measures neurological defect

- Onset of symptoms < 3hous before beings' treatment
- Age <18 years

Exclusive criteria:

- Head trauma or prior stroke in prevention 3months
- Symptoms suggest arachnoids hemorrhage
- Arterial puncture at non compressible site
- History of previous intra cranial hemorrhage
- Elevated blood pressure
- Evidence of activity bleeding or acute bleeding diathesis, including and not limited to platelet count <1000 –mm3
- Current use of anticoagulants with INR <1.7 or PT <15 sec
- Blood glucose concentration <50 mg\dl

D: ACLS medications Review

This information medications meets the standard set by the 2010 American heart association for advanced cardiac life support , it is dose not supersede local protocol or medical control ; consult with your medical director for the most up to date guidelines on medications administration where you work Medications should be administration in a peripheral line during CPR, as soon as possible after a rhythm check .it is recommended that you flush with 20ml of fluid after each drug administration and elevate the extremity .always use large bore catheters if possible.

Endotracheal administration of medications:

This route of medications be9inig de- emphasized the AHA – the intravenous (IV) or Intraosseous routes (IO) are proffered. However , the ET route can still be used if provider are unable to gain access by IV|IO .use the mnemonic "NAVEL" to remember which drug can be administered via this route; narcan – atropine – vasopressin – epinephrine- lidocaine. If using the ET route the drug dosage must increase, typically 2-205 times the IV|IO bolus dosage (although there is no consensus on epinephrine or vasopressin dosing via this route), followed by a 10ml normal saline flush.

ADENOSINE:

Class: endogenous nucleoside

Indicated for: PAVT \ regular narrow – complex tachycardia

IV Bolus Dosage: 6mg rapid IV push -1st dose 12 m, g rapid

Push -3rs dose

Notes: doses are followed by a saline flush two subsequent doses of 12 may be administration at 1-2 minutes intervals. Use the post closest to Cannulation. The AHA recommends that the dose May be cut half if administering through a central line. Or in the presence of sipyridamole or carbamazepine larger doses may be required in the presence of caffeine theophylline

AMIODARONE:

Class: Antiarrhythmic

Indicated for:V fib \pulseless V- Tach

IV\IO Bolus dosage: 300mg -1st dose; 150mg 2nd dos arrhythmias 360mg over 6hours (slow)

150mg over 10minutes (rapid) infusion dose

540 mg IV\IO over 18hours (0.5mg/min)

Notes: cumulative doses <2.2 g\ 24hours are associated with significant hypotension .dot not administer with other that prolong QT interval (i.e. procainamide). Terminal elimination is extremely long –half-life lasts up to 40days during arrest, IV bolus should be delivered slowly over 1-3 minutes

ASPRIN:

Class: NSAID (non – steroids anti- inflammatory Drug)

Indicates for: chest pain \ACS
PO Dosage (no IV IO) 160mg- 325mg
Suppository Dose: 300mg
Notes: in suspected ACS, aspirin can block platelet aggregation and arterial constriction .also helps with pain control .may causes or exacerbates GI bleeding.

ATROPINE:

Class: parasympathetic blocker
Indicated for: bradycardia, a systole and slow PEA
IV/IO bolus dosage: 0.5 mg every 3-5 minutes as needed
1mg every 3-5 minutes (up to 3mg
Notes: used only in symptoms bradycardia or in PEA with heart rate < (not indicates in seconds degree type II or third degree heart block) doses < 0.5 mg may result in paradoxical slowing of the heart ET route discouraged ,but can be used if IV\IO access not available
DEXTROSE \ GALCOSE
Class: carbohydrate
Indicated for: hypoglycemia
IV/IO bolus dosage: (25g ml)of D50 w
Notes: use to reverse documentation hypoglycemia in patients with symptomatic bradycardia or during cardiac arrest should know to use routinely during cardiac arrest.

DOPAMINE:

Class: catecholamine
Indicated for: symptomatic bradycardia
IV infusion: 2-10microgram \kg\min
10-20micrgram \kg\min –vasopressors dose
Notes: titrate to patient response .correct hypovolemic with volume replacement before initiating dopamine, it may causes tachyarrthmia. Do not mix with sodium bicarbonate.

EPINEPHIRINE:

Class: catecholamine
Indicated for: pulse –less arrest
IV/IO bolus dosage: 1mg (1:10,000) every 3-5 minutes
Symptomatic bradycardia infusion: 1mg in 500ml of D5 W or Nacl at microgram\ min titrated to effect.
Notes: first line drug in all pulse less rhythm. Increases myocardial oxygen demand, and may cause myocardial ischemia or angina. ET route is discouraged, but if used give 2.2.5mg of a 1:1000 solution diluted 10ml normal saline

Fluid administration (e.g. Normal saline)

Class: fluids volume
Indicated for: hypovolemaia
IV\Io Dosage: 250 -500 cc bolus (repeated as needed)
Notes: use to treat specific reversible causes, s such as hypovolemic. Routine administration of fluids during resuscitation is not indicated .as it can reduce coronary perfusion pressure.
HEPARIN (unfractionated)
Class: Anticoagulant
Indicated for: STEMI (AMI)
IV\IO bolus dosage: initial Dose: 60 IU \kg (max.400 IU) infusion: 12IU \kg\hr (max.1000 IU\hr
Notes: do not use in patients with active bleeding or bleeding disorders: severe hypotension; or recent surgery .monitor a PTT platelet count while administering

LIDOCAINE:

Class: Antiarrhythmic

Indicated for: V- fib\pulseless, V- Tach stable V- Tach
IV\IO bolus dosage: 1.1.5 mg/kg (1st dose) infusion: 1.1 mg\min (30-50micrigramkg\min)
Notes: may repeat at 0.5-0.75 mg\kg every 5-10minutes to a maximum dose of 3mg\kg .use with caution in presence of impaired liver; discontinue if signs of toxicity develop. Prophylactic use in AMI is contraindicated.ET tube discouraged, but can be used if IV|IO access not available.

MAGNESIUM SULFATE:
Class: electrolyte
Indicated for: tordades de points or hypomagnesaemia
IV|IO bolus dosages: 1.2g in 10ml D5 over 5-20 minutes
Notes: a fall in blood pressure may be noted with rapid administered. Dose is given over 5-20 minute during cardiac arrest 5-60 minutes in living patient. Use with caution in renal failure

MORPHINE SULFATE:
Class: opiate \analgesic
Indicated for: chest pain &pulmonary edema
IV\IO Bolus Dosages: 2-4 mg every 5-30 minutes
Notes: administer slowly and titrate to effect; may cause hypotension .may cause respiratory depression –be prepared to support ventilations. Naloxone is the reversal agent

NITROGLYCERIN:
Class: vasodilator
Indicated for: chest pain \ACS
IV bolus dosages: 12.5-25 ug in D5 W or Nacl
Sublingual dose; 0.3-0.4 mg
Notes : most common given sublingually as tablet or spray –repeat up to 3doses at 5minutes intervals .hypotension may occur .do not use with Viagra or other phosprhodiesterase inhibitors with severe bradycardia or tachycardia ‘or in presence of RV infraction to inferior MI . Do not mix with other drugs

SODIUM BICARBONATE:
Class: buffer
Indicated dosages: acidosis, Hyperkalemia
IV bolus dosages: 1mEq\ kg
Notes: not recommended for routine in cardiac arrest, if available, use arterial blood gas analysis to guide bicarbonate therapy.

VASPOPRESSIN:
Class: hormone
Indicated for: pulseless arrest
IV/IO bolus dosages: 40units IV /IO
Notes; only given time **to replace the first or second dose of epinephrine; epinephrine** dosing can continue 3-5 minutes after vasopressin administered. Vasopressin should not replace antiarrhythmic (such as amiodarone may cause cardiac ischemic and angina not recommended for responsive patient with coronary disease .ET route discourages but can be used if IV \IO access not available

VERAPAMIL:
Class: calcium channel blocker
Indicated for: atrial fibrillation \atrial flutter PAVT
IV bolus dosages: 2.5-5 mg over 2-5 minutes
Notes: Alterative drug after adenosine to terminate PSVT with adequate blood pressure and preserved LV function .it can cause peripheral vasodilatation and hypotension use with extreme causation in patient receiving oral beta blockers

Inodaya Hospitals

10:4 Modified Early Warning Signs (MEWS)

A: Terms and Definition:

Scoring systems were developed in response to studies that showed patients who suffered an in hospital cardiac arrest often had abnormal physiologic values charted in the preceding hour
Rapid response call alert is the call given by the units /ward nurses to the medical emergency team (MET) for early decision and management

B: Purposes:

Is to decrease unexpected mortality by early recognition of a patient's condition and intervention before the patient either arrests or required transfer to ICU (chon, 2009)
C: AIM: to empower to call rapid response for whatever level of help is required

Most common abnormalities in patient:

Tachypnea and an altered level of consciousness
Also derangement of heart, arterial blood pressure .arterial oxygen saturation and urinary output

D criteria top call the MET

- Respiratory rate <25 or <10 breaths per minute
- Arterial systolic blood pressure of <90mm hg
- Heart rate of >1100r <55 beats per minutes
- Not fully alert and oriented
- Oxygen saturation of <90 per cent
- Urine output over the last four hours <100 ml
- Respiratory rate >25 breaths or a heart rate >140brats per minutes

E: rapid response call team members

- Specialist on call service; assess, collaborates and initiates appropriate interventions
- ICU nurse: guide and assist the primary nurse in the assessment and nursing management for the patient
- Respiratory therapist : assesses collaborates and initial appropriate respiratory interventions

10.4 MODIFED EARLY WARNING SCORE (MEWS)

score	3	2	1	0	1	2	3	total
Central nervous system (AVPU)			confusion	awake & responsive	responds to verbal commands	responds to painful stimuli	un responsive	
Respiratory rate (b\mt)		<8	88-11	12-20	21-25	26-30	>30	
Heart rate beats \mt		<40	41-50	51-100	101-110	111-220	>130	
Systolic blood pressure hhHg	>70	71-80	81-100	101-179	180-199-	200-220	>220	
Oxygen	<85%	90-	>95%					

saturations		94%						
Respiratory support oxygen therapy	Bipap \ CPAP	HI Flow	oxygen therapy					
Urine output ml\hr	<80	20-120	120-200		>800			

Note any single of 3in any category or total score of 4 indicates the need to initiate RAPID RESPONSE CALL (108)

Vital signs

GCS---------- CBG---------- mg\dl

Urine output ---------- ml\hr CBG ----------mg\dl

YES ----------

ECG taken –YES ☐ NO ☐

ABG taken YES ☐ NO ☐

IF YES ----------

Note: any signs score of 3in any category or a total of 4 indicate the need to imitate

F: interpretation;

- The greater the physiologic deviation from the normal parameters, the higher the point scores.
- Clinical determinations is subsequently detected and medical intervention can be implemented at an early stage in the patient's illness

RAPID RESPONSE CALL (MET)

MEWS Rapid Response Flow chart

Single score of 3 or a total score 4 identify by the assigned RNusing adult modified warning score sheet

↓

Alert senor staff nurse DMO in respective wards

↓

Call for CODE BLUE :Tell clearly about ward location and room number

10:5 Role of a nurse in disaster management

↓

Simultaneously assess the patient's airway breathing, circulatio

↓

MET arrive at the designated location

↓

Receive information about the patient from assigned nurse

↓

Assess the patient and initiate appropriate interventions

A: Introduction:

Disaster nursing refers to nursing reveries offered to the victims of disaster who experience trauma caused by disaster

B: disaster produces several kinds of trauma:

- Physical – Fractures, burns, injuries, and infection
- Physiological – shock and electrolyte imbalance
- Psychological – anxiety, depression, substance, abuse, stress, reaction
- Socio-economic – un employment, homelessness, environmental, destruction disorganization

C: symptoms related to trauma produced by disaster usually occur in five phases:

a) **Impact phase:** It include event itself and is characterized by shock extreme

b) **Heroic phase**: characterized by co-operative spirit exist between friends, neighbor and emergency teams. Constructive activity at this rime can help to overcome felling of anxiety and depression

c) **The honeymoon phase**: it beginning to appear one week to several months after the disaster ,the need to help others is sustained ,and the money ,recourse and support receive from varying agencies allow life to being again in the community .

d) **Disillusionment phase**: it last from two months to one year ,a time of disappointment resentment frustration and anger .victims often being to compare their neighbors with their own and may start to resent or show hostility towards others

e) **Reconstruction and reorganization phase**: in this individual recognized that they must adjust with their own problems .they being to rebuild their homes, boniness and lives in constructive fashion, this period may last for year after the disaster.

B. Nurse Role :

Nurse along with the health team needs to utilize primary health care intervention in acute emergencies as follows.

- Nursing management
- Immunization and preventive health
- Management of diarrheas and dehydration
- Management of acute respiratory infection
- Setting up a health information system
- Safe drinking water supply
- Sanitation
- Training and support health workers

Other basic service:

In addition to above the following psychological intervention are provided by the nurse:

- Crises intervention /counseling
- Group work
- Telephone contact services
- Disaster response management
- Health education
- Community services like facilities of self-groups etc.

E: community measures in disaster:

Pre disaster phase, appropriate management of disaster requires advance planning .a nurse should be the part of the term for disaster planning.

Community participation: it is the process by which individuals, families and communities assume the responsibility of promoting their own health and welfare. The community health nurse maintains the link between professional group of expect in disaster management and community

Mock trails\ training: the training of various inters –disciplinary forces like school children, voluntary organization can be impacted by community health nurse and her team

Mass awareness: the community should have the knowledge of all the channel commutation system, stand by equipment supplies and other resources; otherwise disaster preparedness will be failure

Education: mass awareness through media booklets panel discussion, films and television information is very essential

F: Basic community education should incorporate the following essentials

- Setting up the first and post
- Causality elevation
- Basic hygiene and sanitation
- Safety measures
- Maintaince of food and water supply
- Maintaince of law and order
- Prevision of shelters
- Rescue streaming
- Significance of traffic control and commutation
- Use of fire services
- Hazards of radiation and prevention measures
- Prevention of future disasters
- Grant in aid
- Rehabilitation

Conclusion:

Disaster are of different types which can happen anytime anywhere, in the world causing tremendous after effect such as loss of human life ,economical imbalance ,food scarcity epidemics ,forced relocation of population etc. disasters usually affect the developing countries comparing with the developing countries . While deserting the matter we could come to the measures that the adverse affects of natural disaster can be minimized by proper preventive measures alert technology at high risk areas can be minimized by proper preventive corruption in the field and also the mock training programs in the community

10:6 Management of code blue

Policy: under the emergency codes formulated by our hospitals .code blue represents cardiac arrest alert among patients on the entire hospital. As soon as the code blue is announced it is expected that the code blue team reaches the area within 2minutes

A: code blue activated steps:

- Confirm that the patient is in cardiac arrest

- Call 108 inform code blue in ward X & bed no with loud voice
- Place the crash cart proximal to the patient

B: code blue team members:

ER physician intensivists, cardiologist, BLS qualified staff nurse , technician

C: Equipment's Required:

Code blue kit:

- Endotracheal tubes of all sizes ranging from 2.5-8.5
- Stillet
- Boogie
- Oropharygeal airways of all sizes
- Syringes IV sets and blood sets
- Ambu bag
- Oxygen mask (adult and pediatric)
- Nebulization (adult and pediatric)
- Reservoir mask (adult and pediatric)
- All personnel protective equipments kike gloves ,mask ,apron.
- Emergency drugs like anti-arrhymics like Ijn.Adrenaline ,Inj: atropine muscle relaxants like, Inj midaz,Inj:Propofol, high alert medications like inj. Sodabicard,inj; calcium gluconate ,Inj: magnesium sulphate,diuretics like inj. Lasix, inj: epidrin .
- Intravenous infusion fluids like colloids crystalloids, isotonic as well as hypertonic should be available.
- Venflons sizes from 22-19G
- Debrillitaor with cardio version

D: purposes:

- To prevent the patient to the at most limited amount of time span
- To provide quality care at the optimum limit of timing
- To prevents worsening of the disease condition
- To prevent worsening of the disease condition
- To priorities treatment

E: procedure:

S.NO	Action	Rationale
1.	Explain the procedure to patient attended	To reduce the anxiety and get the cooperation from the patient attended
2.	Provide privacy	To prevent unnecessary exposure and to protect the patient's dignity
3.	Bring the patient to the edge of bed and preferred by in supine position if not contraindicated	For ease of doing the procedure and to prevent the patient aspiration
4.	provide a safe environment for the patient	To prevent harm for the patient while performing CPR
5.	Check for response	To assess the level of consciousness
6	allocate each team members for each activity CPR nurse 1 will assist for	In order to prevent confusion CPR nurse I initiates CPR actives and IV line access and drug

S.NO	Action	Rationale
	circulation intervention ,CPR nurse 2 will assist airway intervention	administration ; CPR 2 nurse assist in intubation intervention
7.	circulation : check for carotid pulse with the dormant index finger and middle finger palpating over the lateral area between the cricoids and sternocleidomastoid muscles	To assess the blood circulation to the heart
8.	If no pulse is felt place the non-dominate hand inter locked between two nipples in the misdeal region and give compression with straight elbows	By compressing the chest with elbows straight exert pressure in order to pump blood to the heart
9.	**compressions :** single and two rescuer :30:2 rescuer breaths 2 are given	per minute 100 compression should be accomplished for 3-5 cycles and then person are interchanged
10.	**Airway and breathing:** 2resucre breaths will be given through EC technician whereby the last 3fingers will be grasping the angle of the mandible, the thumb and the index finger will be positioned to fix the mask tightly enclosed the nose and the mouth. the other hand will compress the Ambu bag effectively in order to give complete expansion to the lungs	Head tilt and chin left will be done in order to visualize and clear the airway by scouting use of megel's forceps in case of any foreign body
11.	IV line access in is introduced based on the vitals the fluids on rushed on the circulatory system	to initiate circulation of blood throughout the system
12.	Meticulous monitoring and recording of each 5minutes will be recorded	In order to evidence the progress of the patient
13.	Code blue documentation : a written account of events and sequence will be maintained throughout all code blue situations	Record should be maintained since it a documentary evidence for the event in sequence.
14.	the CPR report from will serve as ordered sheet and medication administration sheet for the code event	in order to co- relates the event status of patient and action done on it
15.	Contents of documents: it includes time of CPR initiated, patient status & team members. lines: peripheral \ central procedures performed for the patient defibrillation attempts and medications	in order to prevent confusion while documenting

10:7 Defibrillation and Cardiac version

Policy: the safety and efficiently convert tachy arrhymais causing hemodynamic compromise into sinus rhythm. It can be performed by a registered nurse doctor's order in the presence of a doctor or performed by the treating physician \physician assistant or anesthesia

A: Definition:

1. Defibrillation:

Defibrillation is delivering a therapeutic dose of electrical; energy to the affected heart using a device called Defibrillator. This depolarizes the heart cells, terminates the arrhythmia and allows normal sinus rhythm to be reestablished by the body's natural pacemaker the SA node .

Types of Defibrillators:

- Manual external defibrillator
- Manual internal defibrillator
- Automated external defibrillator
- Implantable cardioverter- defibrillator
- Wearable cardiac defibrillator

2. Cardio version:

Medical procedure by which an abnormally fast heart rate or cardiac arrhythmia is converted to a normal rhythm using electrically or drugs. Synchronized cardivesion uses therapeutic dose of current to the heart at a specific moment in the cycle. Chemical cardio version is using arrhythmia medications instead of shock

B: Equipment

- Defibrillator with synchronizing capacity
- Defibrillator pads
- Emergency trolley with equipment
- Bag and mask circuit
- Suction Equipment
- IV success
- Drugs according to ER physician preference
- Syringe and needle

C: preparation:

1. Place ECG electrodes on the shoulders, electrodes away from the paddle sites monitor
2. Patient ECG on the defibrillator
3. Press synch button (synch button should become illuminated)
4. Select lead with the most upright R wave .ensure r wave is highlighted .if not increase ECG size.
5. Pre oxygenate patient with 100% anesthetist will administer drugs
6. Position defibrillator pads: 1 under right clavicle (sternum)
    a. 1 under left breast (apex)
7. Set desired energy start at 50 joules
8. Charge defibrillator
9. Warm all staff clear when ready to cardioverter
10. Place paddles on defibrillator pad: sternum under right clavicle
    i. Apex under left breast

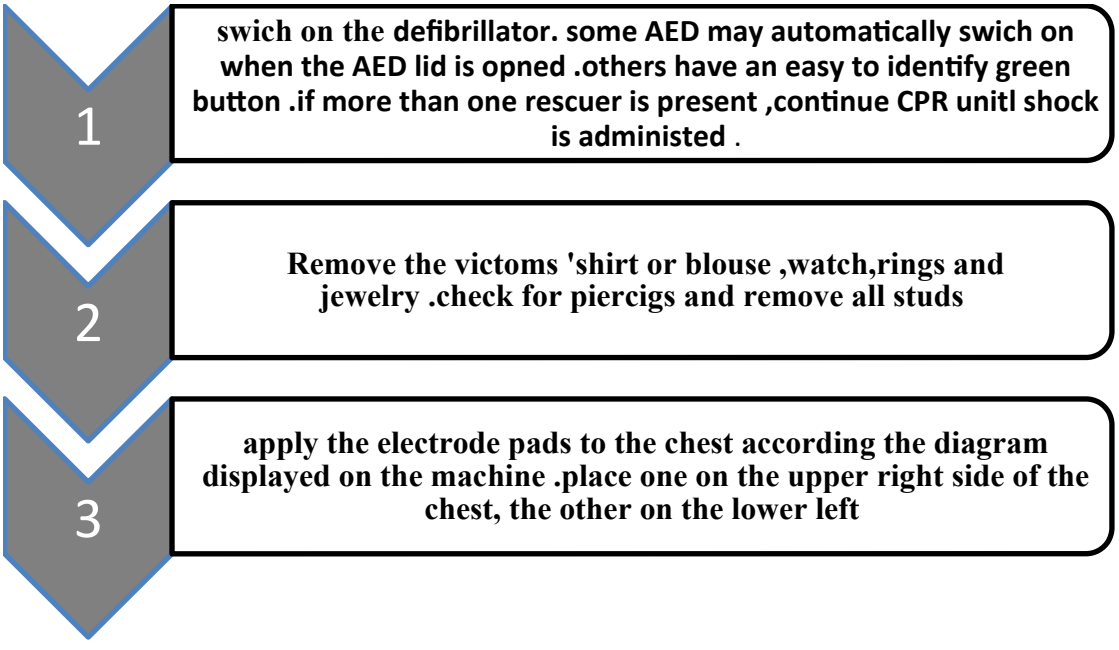
11. Depress and hold discharge button on paddles simultaneously until discharge occurs on the next R wave
12. Check rhythm.

Note: if performing more than 3 cardio version change the defibrillator pad

D: Nursing management:

S.NO	Action `	Rationale
1.	position : place in supine position	in order to facilitate defibrillation
2	assess vitals and observe the respiratory status of the patient	to enhance optimum quality care in terms of analyzing the condition of the patient
3.	maintain nil by mouth till fully conscious	in order to prevent aspirating
4.	if unsuccessful repeat procedure from step 2using higher voltage	in order to administer effective voltage
5.	if patient not incubated ,recover in left lateral position	to facilitate airway breathing
6.	administer oxygen at 6l \min	in order to enhance perfusion
7.	observe for alterations in respiratory pattern	in order to witness the prognosis of the patient8
8.	continuous ECG monitoring	to read the status of the cardiac system
9.	monitor blood pressure and pulse every ½ hourly until vitals are stable	to monitor the patients hemodynamic status
10	obtained every 2hourly rhythm strips perform 12lead ECG	to evidence changes in the rhythm of cardiac system.
11	report arrhythmias and abnormal observations	to revert abnormalities

FLOW CHART:



4 stop CPR .plug the electrode pads into the connector. the defibrillator will analyze the patient's heart beat and asses the need for a shock . during this process do not touch the patinet

5 if the AED determines that a shock is needed ,the machine will tell you audibly to deliver a shock by pressing the orange button .yes it is use ful to say "clear" prior to doing so, since no recuere should be in contact with the patinet at this time. the machine will examine the victims heart beat to see if another shick is needed,if it is ,you ll be told to press the orange button again .some ADE 's will administer the shocks automatically as needed.

6 check the victm's breathing and pulse. if the heart has resumed beating ,but the patinet is not breating ,resume CPR ,if there is no pulkse mreapet the defirillation process.

E: supportive Documents
Nurses notes, clinical chart.

10:8 Care of High risk patients

Policy: To innovate deliver and lead the practice of trauma and pain management. The emergency department has a triage area .red area, yellow area, and a green area, the patient is wheeled in the triaged desk where the triage officer, based on the evolution of ABCD triages to the Red area, yellow area and the green area. Patient is treated as per ATLS protocol and ACLS if they are unresponsive.

Patient management protocol

A: Triage

Medical triage is the highest priority
Radiation exposure and contamination are secondary considerations
Degree of decontamination is dictated by number of and capacity to treat other injured patient
Use survey n meter to monitor progress of decontamination
Patient management – decontamination
Cease decontamination of skin wounds

- When the area is less than twice background
- When there is no significant reduction between decontamination efforts
- Before intact becomes abraded.

- Contaminated thermal burns
  - Gently rinse ,washing may increase severity injury
  - Additional contamination will be removed when dressing are changed.

Do not delay surgery or other necessary medical procedures or exams ….. Residual contamination can be controlled

B: patient management

- Patient transfer, transport injury, contaminated patient into or from the emergency department:
- Cover clean gurney with two sheets
- Lift patient onto clean gurney
- Wrap sheets over patient

- Roll gurney into emergency department or out of treatment room
- Facility recovery survey facility for contamination
- Remove waste from the emergency department and triage area

Decontamination as necessary:
Normal cleaning routines (mop. Strip waxed floors) are typically very effective.
Periodically reassess contamination levels.
Replace furniture floor tiles, etc. that cannot be adequately decontaminate
Decontamination Goal:
Less than twice normal background … higher levels may be acceptable
C: Triage color coding:
See injury uncompensated blood loss, negative neurological assessment

CATEGORY	MEANING	PRIORITY	EXAMPLES
ACUTE CARE (RED)	PATINET WHO NEED IMMEDIATE LIFE SAVING MEASURES	PRORITY ONE	SEVERE HEAD INJURY ,ACUTE MI ,DROWNING
NEEDS MEDICAL ATTENTION (YELLOW)	PATIENT WHO NEED TO BE TREATED THROUGH MEDICAL MANAGEMENT.	PRORITY TWO	SHANKE BITE, CVA ,SEIZURES, DIARRHEA
MINIOR ALIMENT (GREEN)	PATIENTS ARE STABLE BUT DO REQUIRE MEDICAL CONSULATATION	PRIORITY THREE	FEREVE WITH CHILLS , ALLEGIES
END STAGE (ORANGE)	PATIENT SICK BEYOUND MEDICAL MANAGEMENT	PRIORITY FOUR	CANCER STAGE 5, END STAGE RENAL FAILURE
DECEASED (BLACK)	BROUGH DEAD	PRIORITY FIVE	DEATH DUE TO CO-MORBDITIES

D: Nursing Management:

- Allocate staffing according to priority
- Assist for all emergency procedures like intubation, tracheotomy, and central line procedure
- Periodic assessing and recording of vitals
- Resuscitating and lifesaving procedures are done by a team of senor staff, junior staff ETCT technician
- Assisting for all diagnosis procedures like X-rays, CT MRI endoscopy
- Until the vitals are Hemodynamically stable patient will be taken care by the ER staff and then shifted to ICU ward Operation Theater depending on their prognosis

E: supportive Documents:
Emergency record, emergency nurses, assessment record, high risk consent form.

10:9 Error prevention: safety alerts

1. Handing the patient:

- Patient should be identify by his\her name and the identification number
- Ensure contact precautions

- According to the patient's conditions follow proper techniques to mobilize the patient with in the unit also take proper care while transporting the patient to other department for investigations or other medical reasons.
- Seek the physician's advice while using restrains (physician \chemical)

2. Monitor the vital signs:

- Be watchful about the vital parameters .do not put off the alarm without assessing the patient when the gives and alarm.

3. Procedures:

All nursing procedures should be carried out by a qualified skilled nurse

4. Drug administration

- Minimize repetition of drug
- Minimize wrong dose administration
- Nurse should be aware of the drug its action, indication contra indications and side effects

5. Documentation:

- Do not hide your error if committed and do not have the attitude of blaming others
- Do the charting in a sequential manner

6. **Communication:**

- Avoid commutation gap among the multi-disciplinary team
- Document all the communication happening regarding the patient care and treatment writing

7. Error possibilities:

Three major expected errors are:

- Human error e.g. (diagnosis. Monitoring and treatment)
- Equipment error
- Patient error

Causes for the errors:

- Busy unit
- More number of gadgets
- Too much consultation \orders
- More number of procedures \investigations
- Frequent shafting of the patient
- Paper works
- Inadequate knowledge of the error
- Diversion
- Attitude
- Work load
- Communication gap
- Documentation \execution error

Effects:

- Increase in mortality and morbidity rate
- Cost exceeding
- Litigation issues
- Reputation is affected

Prevention measures:

- Induction training
- Regular operatic education
- Culture development
- Encourage team work
- Follow protocol
- Sign boards for safety alerts
- Ensures adequate man power
- Suitable infrastructure
- Information technology
- Error reporting _RCA
- Research

Essential of daily care:

- Patient identification and handing
- Close careful monitoring with alarms on
- FAST HUGS bid (f-feeding a- analgesic. S- sedation, t- thromboembolism prophylaxis's- head end elevation – ulcer prophylaxis- glycemic control , s- sedation interval , b- bowel and bladder care , i- indwelling catheter , d- dressing drug administration and documentation)
- Check forties
- Care of tubing and minimal handing
- Safe disposal

Chapter - 11
Nutritional needs
1:1 Ryles Tube Insertion and Feeding

A: Definition:

It is a method of feeding given by tube which is inserted through the patient nose onto stomach .when the patient is unable to take food orally

B: Purposes:

- To provide adequate nutrition
- To give large amounts of fluids for the therapeutic purposes
- To assess tolerance of feeds in postoperative patient who have major surgery and have NG tube in situ

C: Equipments:

A tarry containing

- 20cc syringe
- Stethoscope
- Bowel with water
- k- Basin
- Measured amount of feeds
- Water
- Towel
- Adhesive and scissors

- 2% Xylocaine jelly
- Sterile gloves

D: NG tube placement checking:

1. Bowl and water method
2. Aspiration methods
3. Auscultator method
4. x- Ray

E: procedure:

S.NO	Action	Rationale
1.	**NG tube insertion :** • Explain the procedure and collect articles • Wash hands and provide privacy • Were sterile gloves and measure the tube for insertion (from the nose to the ear lobe and then to the xiphoid sternum) • Lubricate the tube up to 5 cm with 2% Xylocaine jelly • Insert with the head slightly extended and flate on bed • If patient well oriented ,encourage him\her to swallow when the tube is being inserted • Once the measured length is inserted ,placement of the tube is checked be the above mentioned methods	To achieve good cooperation from patient To avoid infection To station the NG tube at the body of the stomach Enables smooth insertion ,local anesthetic effect and prevents mucosal injury Opens the passage for comfortable insertion swallowing action acids in inserting the tube to check the lungs have bed inserted into the trachea
2.	check for the doctor's order –type of feed ,amount of feed and any dietary restriction	To prevent the error
3.	Explain procedure to patient.	To get the consent from the patient and to get the cooperation
4.	Make the patient to lie down in semi fowler's position	To prevent aspiration
5.	Wash hands	To prevent cross infection
6.	Check the tracheotomy tube cuff for inflation before feeding	deflated cuff can aspiration of the feed

S.NO	Action	Rationale
7.	Administer nebulizer and suction the patient when the patient is on tracheotomy	suctioning before feeds prevents aspiration
8.	Check the residual volume and inform doctor if > 50 ml before giving feeds.	High residual indicates indigestion intolerance of the last feed causes regularization
9.	place towel around the neck	To protect the patient cloth from soiling
10.	Aspirate the small amount of gastric contests	To ensures that the tube is in position
11.	Pinch the loop and remove the syringe from the tube and rinse	To prevent air entry in to the stomach
12.	Connect only the barrel of the syringe to the Ryles tube. Lift the syringe to 12 inches above the patient body	To ensure the gravity flow of the fluid
13.	At the end of the feed flush the tube with a measuring amount of water	To keep the tube clean
14.	Pinch the loop of the tube and remove the syringe and close the tube with spigot.	To prevent air entry into the stomach
15.	Allow the patient to lie down in semi fowlers' position for 30minutes	To ensure the patient is comfortable after the feed and To prevent aspiration of the fluid
16.	document in the nurse chart and in intake &output chart	To maintain the accurate record
17.	Replace the articles	To keep the area clean.

Removal of NG tube:

- Check for the doctor order
- Wear clean gloves
- Explain to the patient
- Suction the patient if he is tracheotomy or endotracheal tube
- Position in fowlers
- Pull out the tube steadily and gently
- Discard as per hospitals policy

E: supportive documents:

1. Nurses chart, clinical notes
2. Intake and output chart

11:2 Percutaneous Endoscopic Gastrostomy (PEG) dressing and feeding

Policy: Dressing of the PEG tube and feeding is performed by a completed and privileged registered nurse on written from the treating physician.

A: Definition:

A Percutaneous Endoscopic Gastrostomy (PEG) is a procedure for placing a feeding tube directly into the stomach through a small incision in the abdomen wall using an instrument known as an endoscope.

B: purposes:

The procedures is performed as a means of providing nutrition to patients who cannot take food by mouth e.g. stroke patients

C: Equipment:

- Clean tray to collect all the articles
- Disposable feeding bag
- Stethoscope
- Measured amount of feed
  IV stands
- Administration set
- Infusion pump

D: procedure:

S.NO	Action	Rationale
1.	Explain the procedure to the patient	To get the patient's cooparatation and consent
2.	Check the doctor's order for rate frequently and formula	To prevent error
3.	Check the percutaneous endoscopic Gastrostomy site for redness ,edema or oozing and displacement	To make sure that there is no infection or skin break down
4.	Wash hands	To prevent cross infection
5.	Connect the tube to the bag fill the bag with feed expel the air	To prevent air entry
6.	Make the patient to lie down in fowlers position or in supine with 30 degree of head end elevation	To prevent aspiration
7.	Aspirate the gastric secretion auscultate over the left upper quadrant with stethoscope and push 10to 20ml of air to the using syringe	To ensure that the end of tube is in the stomach
8.	1. Hang the bag to IV stand 2. Raise the bag up to 18inches above the patient's abdomen 3. Fix the bag to the infusion pump and set the rate 4. Connect the proximal end of the tube to the feeding bag 5. Allow the feed to go	To deliver hourly geed without error
9.	Administer measured amount of water into the after the feed	To keep the feeding tube clean
10	Rinse the feeding bag with warm water	To avoid contamination and to ensure that the bag is ready for next feed
11.	Advice the patient to lie down in same position for 30 minutes	To prevent aspiration

S.NO	Action	Rationale
12.	Replace the articles and wash hands	To prevent cross infection
13	Document the procedure in the nurses chart and in detail and maintain the intake & output	To maintain the accurate record

E: Dressing of PEG Site:

Articles needed:

- Sterile dressing pack
- Sterile gloves
- Betadine
- K basin

F: procedure:

S.NO	procedure	Rationale
1.	Explain the procedure ,assemble at bedside	To gain cooperation from patient
2.	Wash hands and provide privacy	To prevent infection
3.	Open the dressing pack and add in sterile gauze and cotton needed. Remove the old dressing with clean gloves	Enables to work without assistance
4	Wash hands and wear sterile gloves clean the stoma with betadine in circular movement with one cotton ball for each stroke	Dressing enables in observation of the site for infection and prevent it
5.	Apply betadine impregnated gauze around the stoma and a pad. Fix it with micro- Porte adhesive	To prevent infection
6.	Replace the articles and wash hands	To keep area clean
7.	Document the time, condition of the stoma solution used for dressing and patient's cooperation. Report to the doctor if there are signs of infection. label the dressing with date and time of dressing	To maintain accurate record
8.	Dressing is done once day	To observe the site of infection and prevent infection

E: Supportive Documents

1. Nurses chart
2. Intake & output chart

11:3 jejunostomy feeding

Inodaya Hospitals

Policy: dressing the jejunostomy tube and feeding is performed by a competent and provided registered nurse on written order from the treating physician .

A: Definition:

It is the method of administration of food that has underdone gastro intestine tract bypass surgery

B: purposes:

To provide adequate to the patient who has undergone gastro intestine tract bypass surgery

C: Equipments:

1. Clean try to collect all the things
2. Disposable feeding bag
3. Stethoscope
4. Measured amount of feed
5. IV stand
6. Administered set
7. Infusion pump

D: procedure:

S.NO	Action	Rationale
1.	Explain the procedure to the patient	To get the patient's cooperation and consent
2.	Check the doctors order for rate frequently and formula	To prevent error
3.	Check the doctor order for rate redness edema or oozing	To make sure that there is no infection or skin break down
4	Wash hands	To prevent cross infection
5	• connect The tube to the bag • fill the bag with feed • expel the air	To prevent air entry
6	Make the patient to lie down in fowlers position or in supine with 30 degree of head end elevation	To prevent aspiration
7	• Aspirate the gastric secretion • Auscultale over the left upper quadrant with stethoscope and push 10to 20ml of air to the using syringe	To ensure that the end of tube is in the stomach
8	• Hang the bag to IV stand • Raise the bag up to 18inches above the patient's abdomen • Fix the bag to the infusion pump and set the rate • Connect the proximal end of the tube to the feeding bag • Allow the feed to go	To deliver hourly geed without error
9	Push measured amount of water to the tube after the need	To make the feeding tube clean
10	Rinse the feeding bag with warm water	To avoid contamination and to ensure that the bag is ready for next feed
11.	Advice the patient lie down in same	To prevent aspiration

	position for 5to 10 munities	
12.	Replace the articles and wash hands	To prevents cross infection
13	Document the procedure in the nurse's chart and in detail and maintain the intake &output chart	To maintain the accurate record.

E: supportive Documents

1. Nurses chart
2. Intake & output chart

11.4 preparation and administration of parental nutrition

A: definition of parenteral nutrition:

- The administration of nutrients via the intravenous route'
- Usually with a dedicated central or peripheral line

B: purposes of parenteral nutrition:

- Parental nutrition is generally started in order to prevent or minimize the adverse effect of mal-nutrition in patient who would otherwise have no significant intake
- The length of time that a patient can tolerance complete or near starvation without harm is variable and unknown
- TPN is compounded using 10% or 15% amino acids 70% dextrose and 20% lipids
- The TPN prescription must be compoundable using standard base solution
- This becomes an issues if the patient is one a fluid restriction

Long term indication for PN in Adults:

- Extreme short bowel syndrome
- Inflammatory bowel disease
- Radiation enteritis
- Motility disorders (Scleroderma)
- Chronic mal absorption

Short term indication for parental nutrition:

- Prolonged NBM following major excisional surgery
- Multi- organ failure where nutritional requirements cannot be met by enteral route
- Severe pancreatitis
- Microsites following chemotherapy
- High output or entero-cutaneous fistula
- Intractable vomiting

C: Advantages of parental nutrition:

Meet calculated nutritional requirements in first 24 hours
The feed can be tailored to meet estimated requirements

D**: disadvantages of parental nutrition**

- Invasive

- Un-physiological –gut atrophy bacterial translocation
- Cost economic and clinical
- Risk of fluid and electrolyte imbalance
- In patient with a failure gut function (e.g. fistula, ileus, dysmotility, severe mal-absorption,) to a degree that will definitely prevent gastro intestine absorption of nutrients
- The consequent intestine failure has persisted for many days (e.g. >5days) or is likely to persist for many days (e.g. 5days longer) before significant improvement

E: preparation:

- Select appropriate patients to receive PN
- Aseptic technician for insertion and site care of IV catheter
- Do not overfeed
- Maintain glycemic control >150-170mg/dl
- Limit lipids to 1gm \kg and monitor TG levels
- Abject protein based on metabolic demand and organ function
- Monitor fluid \electrolytes mineral status
- Provide standard vitamin and trace element preparation daily
- Fat emulsions \ gelofusine should be checked well prior administration to the patient

F: parental nutrition formula and calculation:

Macronutrients concentration in PN solutions

- Macronutrients concentration (%) = the grams of solution \100 of fluid
- D70 has 70grams of dextrose per 100ml
- 10% amino acid solution has 10grams amino acids 100ml of solution
- 20%lipids has 20grams of lipids 10ml of solution

Protein content calculation:

To calculate grams of supplies by a TPN solution multiply the total volume of amino acids (in ml) supplied in a day by the amino acids concentration	Examples protein calculation 1000 ml of 8% amino acids: 1000mlx 8g\100ml=80g or 1000x.80=80g

Calculation of dextrose calories:

- Calculate grams of dextrose calories:
- Multiply the total volume of dextrose solution (in ml) supplied in a day by the dextrose concentration this gives you grams dextrose supplied in a dayMultiple the grams of dextrose by 3.4 (there are 3.4 kcal]g dextrose) to determine calories supplied by dextrose in a day.

Example dextrose calculation	• 1000ml of D50w (50% dextrose) - 1000ml x50g /100ml =500g dextrose - or 1000ml x050 =500g dextrose - 500g dextrose x3.4kcal\g = 1700 kcal

Calculation of lipid content:

- To determine kcal supplied by lipid multiply the volume of 10%lipid (in ml) by 1.1: multiply the volume of 20% lipid (in ml) by 2.0
- If lipids are not given daily divide total kcal supplied by fat in one week by 7 to get an estimate of the average fat calories per day

- Lipid emulsions contain glycerol. So lipid emulsion does not have 9kcal per gram as it would if it were pure fat. Some use 10 kcal \gm for lipid emulsions.

Example lipid calculation for 2-in-1	• 500ml of 10% lipid - 500ml x1.1 kcal =500kcal • 500ml 20% lipid - 500ml x2.0kcal \ml =1000kcal - Or ,alternatively ,500ml of 10%lipid - 50g lipid x10kcal \g or 500 kcal

Determine protein concentration:

- Subtract volume of lipid from total fluid requirement to determine remaining fluid needs
- Divide protein requirement (in grams) by remaining fluid requirement and multiple by 100. This gives you the amino acids concentration in %
- multiply protein requirements in grams x40 to determine calories from protein

Determine dextrose concentration:

- Subtract kals of lipid + calories from protein from total kals to determine remaining kcal needs.
- Divide remaining kals by 3.4 kals\g to determine grams of dextrose.
- Divide dextrose grams by remaining fluid needs (in protein calculation) and multiply by 100to determine dextrose concentration
- Determine rate of AA \dex solution by dividing remaining fluid needs by 24hrs

Example calculation	Nutrient needs: Kals: 18000 Proteins: 88g. fluid :2000cc 1800kcals x30% =540kcal from lipid Lipid (10%) : 540kcal\1.1 (kcal\cc) -491cc\24 hrs= 20cc\hr. 10%lipid (round to 480ml) remaining fluid needs :2000cc-480cc=1520cc
	Proteins calculation : protein 88g 1520 cc x 100= 5.8 %amino acids 5.8 % amino acids 88g. x 4keal \gm. = 352 kals from protein remaining kals needs : 1800(528+352)= 920
	Dextrose concentration : 920 kals \3.4keal\g=270g dextrose 270 g\ 1520ccx 100= 17.7 dextrose solution rate of amino acids \dextrose :152cc\24hr =63 cc\hr TPN recommendation : suggest two-in-one PN 17.7 dextrose 5.8 amino acids @63cc\hr 10% lipids piggyback @20cc\hr
Evolution of a TNA Order	PN 15% dextrose ,4.5 amino acid ,3% lipid @100cc\hr total volume =2400 dextrose : 15g \100ml = 2400ml=360g 360g x3.4 kcals /gram = 1224kcals lipid 3g\100ml x2400ml=72g lipids
	72x10 kcals \grams =720 kcals amino acids : 4.5 grams \100 ml 240 ml = 108 grams proteins 108x7 = 432 kcals

	1224 +720+ 432=2376 total calories lipid 30% of total calories dextrose is 51.5% of total calories proteins is 18% 61 total calories
Osmolality Quick calculation	To calculate osmolality multiply grams of dextrose per liter by 5 multiply grams of protein per liter by 10 add a& b add 300to 400 to the answer from C (vitamins and minerals contribute about 300to 400 MOs\L

G: monitoring for complication:

- Malnourished patients at risk for re- feeding syndrome should have serum phosphate magnesium, potassium, and glucose levels monitored clove sly at initiation of supplementary nutritional solution (SNS)
- In patients with diabetes or risk factors for glucose intolerance, SNS should be initiated with a low dextrose infusion rate and blood and urine monitored closely.
- Blood glucose should be monitored frequently upon initiation of SNS upon any changes un in insulin dose and until measurements are stale.
- Serum electrolytes (sodium, potassium, chloride and bicarbonate) should be monitored frequently upon initiation of SNS until measurements are stable (B)
- Patient receiving intravenous fat emulsions should have serum triglyceride levels monitored until stable and changes are made the amount of fat administered (C)
- Lever function tests should be monitored periodically in patients receiving PN (A)

Acute inpatient PN monitoring:

Parameter	Daily	Frequency 3x\week	Weekly
Glucose	initially	√	
Electrolytes	initially	√	
Phos .Mg ,Bun, Cr,ca		initially	√
TG			√
Fluid\Is& Os	√		
Temperature	√		
T. Bili, LFTs		initially	√
Body Weight	initially	√	
Nitrogen Balance		initially	√
HGB, HCT	√		
Lymphocyte Count	√		√

Urine:

Glucose and ketones (4-6/day

Specific gravity or osmolarity (2-4/day

Urinary urea nitrogen (weekly)

- Other:
- Volume infuse (daily)
- Oral intake (Daily) if applicable
- Activity ,temperature ,respiration (daily)
- WBC and Different (as needed)
- Culture (as needed)

H: complication of PN:

- Re-feeding syndrome
- Hyperglycemia
- Acid base disorders
- Hypertriglyceridemia
- Hepatobiliary complications (fatty liver cholestasis)
- Metabolic bone disease
- Vascular access sepsis

I procedure:

S.NO	Action	Rationale
1.	Explain the procedure to the patient	To get the consent and cooperation from the patient
2.	Follow the six right of the drug administration	To prevent medication error
3	Wash hands	To prevent cross infection
4.	Refrigerator TPN on arrival to unit and removes one hour before	To prevent growth of bacteria
5.	Label the bag with the details of name of the fluids started on stated at rate of delivery. Name of the nurse who stated the fluid	To ensure the correct flow rate
6.	aseptically connect set to TPN	to prevent growth of bacteria
7.	connect TPN to the infusion pump set the pump on prescribed drops	to ensure the correct flow of the fluid
8.	document in MAR (medication administration record	to maintain an accurate record
9.	document the appearance of catheter insertion site, skin color edema in the nurse chary	to ensure the correct insertion and flow

11:5 Care of Neutropenic patients

A: Definition:

It is the process of care which provides a safe environment for patients who are susceptible to infection by isolating them as far as possible from risk of infection from all exogenous sources.

B: purposes:

Protecting immune suppressed patients from microorganisms carried in the environment, health care workers providing care, on visitors on other patients.

C: procedure:

S.NO	Action	Rationale
A	Room preparation for neutropenic patients	
1.	A single room or designed shared room should be useful if possible	To reduce air bone transmission of micro organisms
2.	Patient must be provided with a separate toilet	To reduce the risk of cross infection
3.	Area should be cleaned meticulously before the patient is admitted	To reduce risks of infection
4.	equipments and supplies should be used separately for the patient	Equipments can easily become colonized with microorganisms which may cause cross infection
5.	Damp dusting of the surface and furniture should be made sure daily with disposable cleaning clothes and detergent solution	Damp dusting and mopping remove microorganisms without disturbing them into the air
6.	Floor to be mopped daily with soap and water	To reduce the risk of cross infection
7.	Mop head to be laundered daily	To reduce risk of cross infection
B	**entering room of neutropenic patients**	
1.	Always were a disposable plastic apron when in contact with the person	To prevent contamination of clothing and thus to prevent cross infection
2.	Clean hands with bacterial alcoholic hand rub	To prevent cross infection
C	**visitors to neutropenic patients**	
1.	The patient should be asked to nominate close relatives and friends who may then after instruction visit freely	The incidence of infection increase in proportion to the number of people visiting
2.	Children ,unless very close relatives ,should be discouraged	Children may be a source of infection diseases.
D	**diet for neutropenic patients**	
1.	educate the patient to choose only cooked foods and eliminate raw fruit, salads and uncooked vegetables from the diet	uncooked foods are heavily colonized by micro organisms
2.	food brought to the hospital by the visitors must be restricted	correctly processed and packaged food are likely to be of an acceptable food hygiene standard
3	filtered water to be used	to reduce colonization of microorganisms
4.	sealed packets of fruits juice are suitable juice should be poured directly into a clean jug and drunk the same day	these juices have been pasteurized and remain pathogen free until they are opened

Discharge advice for neutropenic patients:

- Crowded area, example shops, cinemas, pups, and discos should avoided
- Pets should not be allowed to lick the patient
- Salads and fruits should be washed carefully, dried and if possible peeled.
- Any signs or symptoms of infection be reported to the patients general practitioners or to the discharge hospital

11:6 Extraversions –management of Peripherals Cannula

A: Definition:

Extraversion is the inadvertent administration of drug (vesicle solution or medication) into the surrounding tissue rather than into the intended vein, which can lead to tissue necrosis. Extraversion is a complication of intravenous chemotherapy administration but in general a condition that is often under- diagnosis understands and under- reported

B: poorly managed extraversion lead to:

- Pain from the necrotic site
- Physician defect
- Increase in cost of hospitalization
- Delay in the treatment of disease
- Psychological distress
- Litigation

C: prevention of extraversion:

Focus: safe intravenous technique and implementing appropriate strategies to minimize the risk Forethought .planning and improved prevention measured can minimize the risk of extraversion.

- Careful assessment of the most appropriate Cannulation site should be under taken before insertion sitting the cannula over joints should be avoided, as tissue damage in these areas has serious consequences. If venous access proves difficult, the opinion of an experienced practitioner should be sought as placement of a central venous access device (CVAD) may be necessary
- Extraversion can occur in CVAD s, often with delayed onset, and can be recognized by the patient complaining of sudden pain, discomfort inflammation or swelling around the extraversion site
- Some patient groups are at increased risk of extraversion .these include obese, elderly, pediatric patients thrombocytopenic patients ,diabetics with peripherals neurology and patients who have had previous chemotherapy \radiotherapy .extra care should be taken all these patients groups
- Vesicant drug in a chemotherapy regimen must be given before the other cytoxic agents
- When given peripherally bolus doses (in syringes) of vesicants must be given via a fast running infusion of a compatible fluid. Continually assess the Cannulation site thought the administration

for signs of swelling .pain or inflammation ,and monitor the fast running infusion for change in care rate

- Only the following vesicant cytotoxic may be given by peripherals infusion (in bags); paclitax-elvinca alkaloids, decarbonize, stretozonic trisulfan .however the central venous route minimizes the extravasations' risk and should be considered on an individual patient basis. Any other cytotoxic infusion (in bags) should administered via a CAVD

D: management of extraversion of cytotoxic Drugs:

Administered of the vesicant drugs:

- The vesicant drugs should be administered first since:
- The vascular integrity increases over time
- The vein is most stable and least irrigated at the start of the treatment
- The initial assessment of vein patency in most accurate
- The vesicant drugs are irritant increase, the vein fragility and cause venous spasms masking
- The signs of extraversion when administered last.

Signs and symptoms:

- An extraversion should be suspected if one or more of the following symptoms have occurred
- The patient complains of burning stinging or any discomfort \pain at the injection site
- This should be distinguished from a feeling of clod that may occur with some drugs
- Observation of swelling, redness or blistering at the injection site this should be distinguished from the nettle rash effect seen with anthracycliness.
- No blood return is obtained is obtained, this is not a sign of extraversion if found in isolation
- A resistance is felt on the plunger of the syringe of a bolus drug
- There is absence on the plunger of the infusion
- If in any doubt, treat as extraversion.

Management of extraversion:

- Stop the chemotherapy drug infusion immediately
- Aspirated any residual drug and blood in IV tubing, needle and suspected infiltration site
- The peripherals access device should be removed according to the physician order
- Apply cold packs as indicated
- Administer antidote subcutaneously clockwise into the infiltrated area
- Elevate the limn tom minimize the swelling
- Monitor the site frequently for pain erythema indurations and neurosis
- Plastic surgeon consultation to remove the tissue containing the drug
- Surgical recommendation is required especially
- When the lesion is greater than 2cmThere is significant residual pain 1-2weeks after extraversion .There is minimal healing 2-3 weeks after injury despite local therapeutic measures Document the extraversion management .

CHAPTER: 13

13:1 pre-operative care

A: Definition:

Pre-operative care is the assessment and preparation, physical and psychological of a patient before surgery

B: purposes:

1. To assess the physician of the patient and identify the potential problems and prevented
2. To explain to the patient the need to be physically health prior to surgery
3. To reduce the risk of post-operative complications like hypotension pneumonia. DVT and so, on

C: procedure for pre-Operative care:

S.No	Action	Rational
1.	Assess the condition of the patient and explain the preoperative procedure and importance and ensures that it is complete and understood	To ensure that the patient understand the outcome of the surgery and to reduce the anxiety and possible post-operative complications
2.	check if the patient has undergone relevant investigation procedure e.g. X-ray ECG, any other blood investigation	To ensure all relevant information is available to the surgical team.
3.	Ensure the pregnancy status women of children bearing age. If pregnancy test is required ensures the result is known to all then health care professionals involved in the surgery	To eliminate the possibility of unknown pregnancy to the surgery
4.	Check the consent form is correctly field (date, time, and signature) and completed.	To comply with legal requirements a hospital policy and to ensures that the patient has understood the surgical procedure.
5.	Check the operative site marking prior to the surgery.	To prevent wrong surgery For prevention of infection
6	Check the patient with previous history of pre anesthetic assessment by the anesthetist.	To ensure the suitable anesthetic and any special requirement for anesthesia have been heighted.
7.	Record the hemodynamic level and weight of the patient.	To ensure the correct dose of drug administration and to provide the baseline data for comparison intra and post operatively
9.	Help the patient to change into a theatre gown after having bath \shower	To reduce the risk of cross infection ,ease of access to operative site and soiling of patients own clothes
10.	The hair should be tied properly and cover with disposable cap.	To reduce the risk of infection
11.	All Jewellery ,cosmetics ,nail varnish and clothes ,other than the theatre gown are to be removed .wedding rings may be left in situ must be covered and secured with tape	To prevent cutlery burns and to prevent infection.
12.	ensure the valuables things should be safe and in the hospital custody and record according policy	to prevent loss of valuables
13.	ensures the patient maturated prior to shift the OT	To prevent the urinary incontinence due to anesthesia.
14.	ensures the application	To minimize the risk of postoperative deep

S.No	Action	Rational
		vein thrombosis or pulmonary emboli.
15.	ensures that the patient is wearing ID band with correct information	To prevent possible patient Miss identification
16	ensures that the patient should be nil per oral at least 5hours prior to the surgery	to prevent aspiration on induction of anesthesia
17.	ensure contact lenses, dentures and prosthesis is removed and make note of unmovable prosthesis in the pre-operative checklist	To prevent the airway obstruction and corns abrasions
18.	Ensures the note that whether patient has dental crowns, bridge work or loose teeth.	to prevent accidental damage and to prevent the change of inhaling of dental prosthesis by the patient when an endotracheal tube insertion
19.	The spectacles may be used till the patient shifted to anesthesia room until anaesthetized followed by the prosthesis should labeled clearly and handover to the responsible person in recovery area.	to allow the patient to communicate fully thus reducing anxiety and enabling the patient to understand any procedure carried out .
20.	ensure the patient is support fully on the canvas especially the head ,when transferred from the ward bed to trolley	to reduce the risk injury
21.	ensure all the relevant investigation reports are shifted along with the patient E.g. ECG X-ray and blood investigations reported etc.	to ensure that the surgical team members have all the information they required for the safe treatment of the patient
22.	the patient should be accompanied to the theater by a ward nurse	to reduce patient anxiety and ensuring a safe environment during induction
23	the ward nurse should give full handover to the pre anesthesia staff nurse with all relevant reports,	to ensure continuity of the care and to maintain the safety of the patient by exchanging all relevant information

D: supportive Documents:

1. Pre anesthetic checklist
2. MAR (medication administration record)

13:2 Administration of a patient into Operation Theater

- According to the list which is prepared the previous day of surgery .the patient is called from the ward half an hour before starting the procedure by the OT secretary.
- Once the patient comes ward to Operation Theater. The patient is received by the staff that is posted in pre anesthesia room \circulating nurse posted in the same OT
- When receiving the patient check all the preoperative requirements like (consent, investigations medication, skin preparation blood and blood products reservation ornaments and prosthetics.
- Once the staff nurse the patient is kept in pre anesthesia room

- Then the patient is wheeled in to theaters for the procedure
- In case of emergency (RTA with bleeding) the patient will be directly form emergency department to theater .above points will be checked and immediately patient will be wheeled into the theaters for procedure .

13:3 Time out procedure in Operation Theater

A: Definition:

The time out active (two- way) communication among all surgical \procedural team members that is consistency performed prior to all procedure .the operative team conduct a final verification of the correct patient. Procedure and site and as applicable implants

B: Purposes:

- To prevent medical error by conducting a final verifications of correct patient procedure and site
- To prevent wrong patient wrong procedure and wrong surgery

C: Criteria for Time Out:

- Involve the operative team in the out using active communication
- Know your organizations procedure for reconciling deference in staff response during and time out

D: procedure:

- Ensure the presence of all the team members before starting the time out procedure
- The team members are surgeon, anesthesia provide scrub nurse circulating nurse and surgical technician
- Organization must define who is responsible to initiate the time out but all those present are accountable for the tine out.
- Members of the clinical team must independently verify the following detains
- The presence of the correct patient
- The correct type of procedure to be performed
- That the type of procedural site has been marked and availability of any correct prostheses and \ or any specialized equipment or requirements'
- Any differences \ discrepancies must be reconciled immediately (procedures can NOT start until discrepancies are correct).reported all discrepancies (even those corrected) through the organization predetermine process
- If surgical procedure beings without a time out it must be reported for peer review or quality improvement process
- Document the time out procedure in intra operative nurse record and mark in the surgical safety checklist

E: supportive Documents:

1. pre anesthetic checklist
2. Surgical safety checklist
3. Investigation report

13:4preparation of operating room before surgery

A: Definition:

Keeping operating room ready and available for carrying out surgical procedures

B: purposes:

- To ensures appropriate equipment and machinery are available and in working condition
- To clean equipments t and machines
- To disinfects room, and work surfaces
- To collect necessary supplies of sterile and other items

C: Equipment:

- OR table and accessories
- Lights
- Cautery machine
- Instruments sets
- Instruments trolleys
- Sterile line
- Position articles
- Cleaning solution waste disposable containers
- sponge rack

D: procedure:

- Be aware of the surgery to be carried out
- Assemble necessary equipment and machines
- Check table and accessories lights and Cautery machine for proper functioning
- Disinfects room, work surface walls and floor including equipment and machines
- Collect sterile linen instruments sets
- Account and collect other suppliers
- Ensures scrub room is ready soap, ringing eater and sterile brush
- Ensures that air conditioning lighting and power supply adequate

A: Definition:

Arranging appropriate sterile linen instruments and suppliers on designated trolleys for carrying out surgical operation using aseptic technique

B: purposes:

- To create sterile filed for carrying out surgical operation
- To ensures successful barrier against bacterial invasion of surgical wound

C: Equipment:

- Instruments stand
- Mayo stand
- Basin stand

D: procedure:

- Ensure proper OR via, mask ,gown, gloves
- Check outer labels of all sterile linen bundles and instruments sets
- Strict principles of asepsis to be followed while sterile packs are opened
- Unwrap sterile linen pack
- Don sterile gloves
- Open sterile linen packs and ensure that inner sterilometer tape has changed color
- Remove instruments tray and instruments from sterile pack and gently place on instruments trolley

- Drape mayo stand with sterile plastic sheet and cover
- Arrange instruments as required for incision and suture for closing mayo stand if needed
- Collect sterile saline into sterile basin ,wash is placed in basin stand
- Arrange other instruments according to steps of procedure, on instruments trolley
- Discard unnecessary wrapped and foils from sterile filed
- Discard any contaminated drape\ instruments and substitute with sterile ones
- At all times ensures dryness of whole trolley with drapes a bd instruments by using waterproofing beneath sterile packs

STERILE TECHNIQUE OF DRAPING OF A PATIENT

A: Definition:

Receiving pre- operation on to theater table replacing patient's linen with sterile theater linen exposing operative site for pre-op skin cleaning and pacing sterile mackintosh and towels for barricading operating site and surrounding areas

B: purposes:

- To create sterile filed for carrying surgical operation
- To ensures successful barrier bacterial invasion of surgical wound
- To prevent contamination of operative site with unprepared skin surface

C: Equipment:

- Sterile bed linen
- Big and small mackintosh
- Surgical towels

D: procedure:

- Transfer to theater table
- Replace patient's linen clean OR lien
- Expose operative site while adequately covering other areas
- Assist surgeon to clean the site with bactericidal solution
- Offer sterile plastic sheet, towels and towel clips to surgeon and assist in draping operative site
- Secure towel clips at each corner via, above below and sides of operative site
- Assist the surgeon to apply Onsite evenly without air soon after cleaning and drying operative site
- Drape patient according to nature and type of surgeon and incision

POSITIONS USED IN SURGERY

A: Definition:

Surgical positioning for comfort and safety of patient undergoing surgery and to offer the best visualization and accessibly to surgeon

B: positions id determined by:

- Type of operation to be performed
- Type of anesthesia age, height, weight, and general condition of patient
- Location of lesion or injury
- Surgical approach access

C: General instructions:

- Proper respiratory function must be maintained (avoid presence on chest)
- Prevent impairment to blood circulation especially extremities.

- Avoid pressures on muscles and nerve
- Avoid undue exposure of patient.
- Support small of back
- Do not extend upper arm beyond 90degerre
- Avoid contact between patient's skin and any metallic parts of operating room machinery
- Regardless of procedure patient must always be safe and secure in specific position
- Satisfactory positioning of patient upon table is a skilled procedure ,what at first sight may appear to be trivial details ,often make considerable deference to ease of access which surgeon required and to success of operation
- Anesthesia must always be with patient when patient is moved on the operating table
- No limbs be placed in any position by use of force however little
- Make sure that any apparatus which is to support patient's body is fully secure before body is brought to rest upon it.
- Always ensures that head and cervical spine are adequately supported
- Pillow or sand bags must be used to support arthritic or anklet joints
- It is importance to place in correct position before operation starts it is much more difficult do so afterwards.
- If spinal or local anesthesia is used procedure and position should be clearly explained to patient before and while surgery is in progress

E: Equipments:
Depending on position:

1. Head rest
2. Sand bags
3. Pillows
4. Towel roll
5. Arm board
6. Straps
7. Mackintosh
8. Drapes

E: common position used in surgery:

1. Supine or recumbent position
2. Lithotomy position
3. Lateral (kidney) position
4. Rose position

E: Supine position General information:
Patient is anesthetized in this position and remains in this position for many abdominal, some thoracic or abdominal thoracic operations and some operations on hip and extremities. After patient is anesthetized check to ensures that are uncrossed .this basic position is modified for operations in specific anatomic regions.

- For surgery on face or neck head is stabilized in headrest
- For shoulder operations ,small sand bag or rolled sheet is placed under shoulder
- For operations on upper extremity ,radical mastectomy or axillary dissection arm of affected side is placed on an arm board at a right angle to body .patient lies with affected side close to the edge of the table

- Knees are flexed over pillow with thighs externally rotated for some vaginal examinations. This position is used ,with less flexion of knees ,for saphenous ligations and groin operations
- Protect pressure points occiput, elbows, sacrum, popliteal, malleolus etc.

Procedure:

- Patient is made lie flat on black
- Both arms are secured at sides with down unless one is extended on an arm board for intra-venous therapy
- Head and legs are positioned straight
- Heels and legs operating table, legs, to be uncrossed and safety strap is applied above knees.

G: Lithotomy position: General information:

- This position is used for cystoscopy ,vaginal Perineal and some rectal operations after foot section of table is lowered ,footboard may be attached to provide ledge for surgeon ,arms may be secured across patient's abdomen by flooding sheet over them and tucking under body
- To avoid popliteal pressure, sand bag may be placed under buttocks if required, two people must be available to keep patient in position .always raise or lower simultaneously to avoid sacra iliac strain

Procedure:

- Patient is placed on table in dorsal position
- Often a moisture proof pad is placed over lower end of the table bore patient is transferred on to it
- Patients moves towards foot end of table so that buttocks extends slightly past the lower break in table
- Legs are put into stirrups by lifting and flexing and both legs simultaneously, legs also to be removed from stirrups simultaneously

H: Lateral (kidney) position General information:

- Used for flank incisions and kidney operations Procedure
- Patient is turned on to unaffected side with back near the edge of the table
- Arms are placed on double arm board or folded across chest with folded sheet between them. Sand bag may be used to support chest
- Lower leg is fixed
- Large pillow is placed between legs to relieve pressure of one leg on other .the upper leg remains straight.
- Braces are attached to table, short one at patient back and log one in front
- Safety strap is placed over hip for stability
- Table may be tilted if required
- Protect pressure points between legs ,under thigh retainer ,upper and lower arms

I: Rose positions\neck position:

General information

Used for operations on neck via thyroidectomy, tracheotomy, tonsillectomy, etc

Procedure:

- Place the patient in supine with pillow or sand bag under scapulae
- Support head with padded head ring
- Protect pressure points, behind knees, arms, between, shoulders, blades and occiput

J: Trendlenburg position:

General information

This positions is used for operations on lower abdomen and pelvis

Procedure:

- Placed the patient flat on back
- Lower the foot ends of table so that patient knees are flexed slightly
- Till the table in such a way that the head end of table is slightly lower than the foot end (usually operating table at an angle of 45degree)
- Pas the pressure points
- Secure the patient in potions

K: prone position:

General information:

This position is used for thoracic \lumbar and laminectomy surgery.

Procedure:

- Carefully roll over patient to prone position after the placement of intravenous line and the administration of general anesthesia
- Support forehead on a horse- shoe
- Support arms on an arm board (angle towards the head end of table)

13:5 Duties of a scrub nurse

A: Defilation of a scrub nurse:

B: Before an operation:

- Ensures that the circulating nurse has checked the equipment
- Ensures that the theater has been cleaned before the trolley is set
- Prepares the instruments and equipments needed in the operation
- Uses sterile techniques for scrubbing growing and gloving
- Receives sterile equipment via circulating nurse using sterile technique
- Performs initial sponges instruments and needle count checks with circulating nurse

C: when surgeon arrives after scrubbing:

- Perform assisted gowning and gloving to the surgeon and assistant surgeon as soon as they enter the operation suite
- Assemble the drapes according to use start with towel clips draw sheet and then lap sheet, and then assist in draping the patient aseptically according to routine procedure
- Place blade on the knife handle using needle holder, assemble suction tip and suction tube
- Bring mayo stand and back table near the draped patient after draping in completes
- Secure suction tube and Cautery cord with towel clips or allies
- Prepare sutures and needles according to use

D: during an operation:

- Maintain sterility throughout the procedure
- Awareness of the patient's safety
- Adhere to the policy regarding sponge \instruments count \surgical needles
- Arrange the instruments on the mayo table and on the back table

E: before the incision begins:

- Provide 2 sponges on the operative site prior to incision
- Passes the 1st knife the skin to the surgeon with blade facing downward and a head start to the assistant surgeon
- Hand the retractor to the assistant surgeon
- Watch the field \procedure and anticipate the surgeon's needs
- Pass the instruments in a decisive and positive manner
- Watch out hand signals to ask for instruments and keep instruments as clean as possible by wiping instruments with moist sponge
- Always remove charred tissue from the Cautery tip
- Notify circulating nurse if you need additional instruments as clear as possible
- Keep 2sponges on the flied
- Save and care for tissue specimen according to the hospital policy
- Remove excess instruments from the sterile filed
- Adhere and maintain sterile technique and watch for any breaks

F: End of operations:

- Undertake count sponges and instruments with circulating nurse
- Inform the surgeon of count result
- Clears away instruments and equipments
  after operation helps to apply dressing
- Removes and siposes of drapes
- De gowns
- Prepares the patient for recovery room
- Completes documentation
- Hand patient over to recovery room

G: Intra –operative counting of swabs, needles and instruments

i).Sponge count (gauze, laparotomy sponge's cotton, dissectors etc...

An initial sponge's count should be done on all procedures

Sponges should be counted:

- Before the start of the procedure
- Before closure of a cavity within a cavity
- Before wound closure (at layer of closure)
- At skin closure
- Only X-ray detected sponges shoulder be used
- Sponges should be standardized in established number of multiples such as 5, and counted in multiples of five
- Sponges should be completely separated (one by one) when counting
- Packages containing incorrect number of sponges should be bagged, marked and isolated from the rest of sponges
- Sponges should attached to an instruments when used within a cavity
- Sponges and attached tapes should not be cut
- x- ray detected sponges shall be used as dressing ,and should no be used as packing to remain in patient ,if used and left in patient as packing intentionally the number and type shall be document on the count sheet and on the patient record
- Dressing should only be added at skin closure

- Soiled sponges should be discard off the sterile filed then handle using protective equipment (gloves, forceps) and after contained in plastic bags in the established number of multiples

ii.) Sharps count (needle –suture and hypodermic, blades safety pains :
An initial sponge's count should be done on all procedures
Sponges should be counted:

- Before the start of the procedure
- Before closure of a cavity within a cavity
- Before wound closure (at layer of closure)
- At skin closure
- Suture needles should be counted according to the marked number on the packages multiple sutures needles in a package should be verify with the circulator when package opened
- Needles should be contained in a needle counter \container loaded on a needle driver or sealed package
- Needles should be handed to the surgeon on exchanged basis
- Hand free no touch technique is recommended for passing scalpel
- Used needles blades should be contained in a disposable puncture resistant container
- All parts should be accounted for if a needle or blade breaks
- If a parts should be accounted for if a needle or blade breaks
- If a needle puncture occurs the needle gloves should be removes from to sterile filed policy for punctuate wound should be followed

iii.) Instruments count:

- Before the start of the procedure
- Before wound closures (at first layer of closure)
- Instruments sets should be standardized (sane type and same number of instruments in each set)
- Instruments with component parts should be counted singly not as a whole unit with all component parts listed (e.g. one blade there screws
- Instruments should be inspected for competences
- If an instruments falls to the floor or is passed off the sterile filed to should be kept aside until the final count
- All parts of a broken or disassembled instruments should be accounted for in its entirety
- All instrument should be removed from the operating room at the end of the procedure

Documentation:

- Counts should be recorded on a count sheet
- Manes and titles of personnel performing the counts should be recorded on the count sheet and the patient record
- Results of surgical counts shall be recorded as correct or incorrect
- Instruments and sponges specifically left with the patients should be documented on the count sheet and the patient's record
- Any actions taken the event of account discrepancy should be documented on the patient's record
- Reasons for not conducting account should be documented on the patient's record

Incorrect count policy:
i).When the count is incorrect

- Perform a recount
- Notify the surgeon and supervisor
- Conduct a search (floor, garbage linen)
- Request X-ray to be taken
- Document results on the count sheet and patient's record

ii).when the count is not performed:

- Notify the surgeon and supervisor
- Request an X-ray to be at completion of procedure
- Document the correct as not done the reasons why and result of the X- ray taken on the appropriate record according to facility policy procedure.

H: following asepsis:

- Carbonization of the trolley and theater is done by the housekeeping personnel
- OT temperature and humidity is cheeked by the maintained department every day mooring
- Using personnel protective equipment (PPE) by all the OT staff
- Unnecessary traffic is avoided
- Scrubbing gloving glowing and draping everything will be done before surgery
- During intra operative period any spillages on the floor it will be cleared at the same time

I: specimen handing collecting and transport

- Specimens is taken by the surgeon and hands it over to the scrub nurse
- The laboratory from is filled buy the surgeon
- The scrub nurse hands over the specimen to the circulating nurse ,she labels it with the patent details type of specimen ,and type of lab
- The specimen will be shown to the relatives ,after that it will be handed over the OT secretary
- PT secretary raises the bill and the specimen is sent through runner girls.

13:6 Intra operative care

A: definition:

Intra operative care is the physician and psychological care given to the patient I the anesthesia room and theater until transfer to the recovery area

B: purposes:

- To minimize the anxiety of the patient
- To ensures that the patient has the correct surgery for which the consent from was signed
- To ensures the patient safety and minimizes the post-operative complication like injury patient positing such as nerve or tissue damage

C: procedure:

S.NO	Action	Rationale
1.	pre anesthesia room ensures all the equipments including emergency equipments should in the pre anesthesia room	to make ready for immediate use as well as manage emergency condition if necessary

S.NO	Action	Rationale
2.	identify the patient by checking the identification band (patient name UMR No) and cross check with patient file	to avoid the misidentification and prevent wrong patient and wrong procedure and wrong surgery
3	ensures and confirm that all items to be filled and completed in the pre-operative checklist	help to get complete as well as additional information about the patient
4.	check and ensure the investigation report results of the is ready e.g. EGC ,blood investigations and patient record etc.	to ensures the early identification of abnormal result and to make ready to use for the team and to prevent the delay of the time in the eminency .
5.	explain all the procedure to the patient including the monitoring of hemodynamic by the machine as well as hold priced calm and quite environment to the patient	to reduce the anxiety of the patient
6	Ensures that the patient eye lids to be closed by the tape during anesthesia	To prevent the complication of corneal damage due to eye dying out or accidental abrasion
7.	In the operation room Ensures all the equipments trolley and trays should be ready before the procedure e.g. suction the amnesias machine medical gases monitoring equipment diathermy and operating table etc.	To conserve the time and to prevent accidental injuries due to faulty equipment
8.	Ensures and check with the anesthesia about the patient airway and it should patent and safe	To prevent the breathing complications
9.	Ensures that the adequate staff be available for shifting the patient to the table from the trolley	To prevent the injury during to shifting the patient from trolley to table
10	Ensures the patient limbs are supported and secured and bony prominence should support with pads.	To maintain the correct posture of the patient and prevent the injury
11.	ensures the operating part is exposed and avoid the unnecessary exposures of the body part	To maintain the patient's dignity .to prevent the accidental hypothermia.
12.	Ensures diathermy patient plate is attached securely in accordance with the manufactures' instruction and hospital policy	To ensures that no injury is sustained the use of diathermy during the surgery
13.	Check and ensures the correct accountability swab cotton balls needles and other instructs	The early identification as well as avoiding of misplacement in materials

S.NO	Action	Rationale
14.	Ensures the proper dispose of bio medical waste according the hospital policy	To prevent the contamination as well as risk injury to the staff
	In recovery area : The scrub nurse and the anesthetist should accompany with patient while shifting the patient recovery room **Following hand over is given that include :** The surgery procedure performed Detains handover about the preexisting medical disease and any allergies The details information about the type of anesthesia the patient undergone and the hemodynamic status during the surgery The present condition nature of tubes and drains infusions intravenous fluids and etc. Information about any anxiety of the patient expressed before the surgery such as fear not waking after anesthesia or fear about coping with pain Details information about anesthetist for post-operative order and care of patient All the information should be documented in the operation nurses record	To ensures the continuity and effective communion of care of patient The actual procedure performed may be deferent from the proposes procedure To prevent the post-operative complications and ensures the continuous monitoring To maintain the patient immediate postoperative safety with good hemodynamic level To prevent the occlusion of drains or infusion To ensures assessment of the efficacy of nursing intravenous used To facilitate the effective commutation of the patient's care and treatment

D: Supportive documents:

1. Pre anesthetic checklist
2. Surgical safety check list
3. Intra operative nurses record

13:7 Post anesthesia care

A: Definition:

Postoperative care is the management of a patient after surgery. This include care given during the immediate postoperative period both in the operating room and post anesthesia care unit (PASU)as well as during the hours following surgery

B: purposes:

- To prevent post-operative complication such as primary hemorrhage basal atelectasis acute myocardial infarction pulmonary embolism blood loss or septicemia low urine output inadequate fluid replacement intra- and post operatively and etc.
- To promote healing of surgical incision and to return the patient to state of health

C: procedure:

S.NO	Action	Rationale
1	Ensures all the equipments including emergency equipment should be ready in the post anesthesia room	to make ready for immediate use as well as manage the emergency condition it necessary
2.	Inform the patient relatives about the patient condition as soon as received to PACU from the operation theater	To reduce the anxiety of patient relatives
3.	Ensures that the airway of the patient is patent by felling for movement of expired air	To identify the early the signs of respiratory depression and neuromuscular blockade
4	Ensure the patency of the airway is clear by supporting the chin with the neck extended	To prevent tongue fall (in case of unconscious patient the protective reflex will be absent)
5.	Apply face mask or nasal prong and administer oxygen as per anesthetist order	To maintain adequate amount of oxygen and to prevent hypoxia
6	The nurse should ensure monitor as well as record the following aspects every 30 minutes 1. Vital parameters like temperature pulse, blood pressure, respiratory rate. 2. ECG , oxygen saturation 3. Urine output	Early identification and prevent the post-operative complications such as hypothermia hypotension hypoxia etc.
7.	The recovery area nurse should obtain the following information 1. type of anesthesia that the patient has undergone 2. potential and present medical condition of the patient 3. surgical procedure performed 4. amount of blood loss 5. the specific post-operative instruction to be followed for the patient	To ensure the continuity of care of patient care, treatment and to plan for subsequent care.
8.	Check and observe the drain site dressing and record the bleeding and oozing	To assess and monitor the signs of hemorrhage and ot prevent future complication
9	Check the intravenous infusion site and rate	To ensures the fluid replacement and balanced is achieved safely

S.NO	Action	Rationale
10.	Check the MAR (medical administration chart) for medication to be administered during the immediate post-operative period	To treat symptoms swiftly and appropriately and monitor their effeteness
11.	Monitor and record the level of consciousness reflexes (swallowing tear secretion and eyelash and lid reflex) of the patient throughout the period	To monitor progress from unconscious state to arousals and oriented.
12	Orientate the patient to time place frequently as it necessary as necessary	To alleviate anxiety provide reassurance and gain the patient's confidence and co- operations
13	Ensures the mouth care every 4^{th} hourly	To maintain the personnel hygiene and do prevent the score foul smell etc.
14.	Asses the mobility of the limbs in the case of spinal anesthesia	To prevent the inadequate injury following sensory loss
15.	Ensure that the patient is getting adequate prescribed analgesia	To minimize the pain and help to reduce hypertension and tachycardia
16.	The patient can be transferred to the ward if the following criteria is appropriate ▪ pulse rate : 70-90(+/- 10% of pre op level) ▪ respiratory :14-20 (+-/10% pre op level) ▪ BP: 120-14/70/80mmHg ▪ peripheries are warm ▪ Pain perception more thsan6 (PAIN SCORE) ▪ all reflexes are back patients is able to protect himself \her self	To ensures that the patient should fit for shifting as well as to prevent immediate post-operativecomplications

D: supportive Documents:

1. 1 intra operative nurses record
2. Progress record

Patients from recovery room are transferred to ward after assessing their condition using the modification alder's scale .there are aspects various aspects assessed –activity respiration circulation ,consciousness and oxygen saturation which are monitored and assessed before patient is shift to post-operative ward.

MODIFICATION ALDRETE'S CRITERIA FOR DISCHARGE FROM RECOVERY ROOM

Name: **Sex:** **Time in:**

Age **Date:**

Surgery performed : **UMR :** **Time out:**

Activity	Score	Respir	Score	Circulation	Score	Conscio	Score	Oxygen	Score

		ation				usness			
Moves all 4 extremities voluntary on command	2	Able to breathe deeply and cough freely	2	Blood pressure within 20 mmHg of preoperative level	2	Fully awake	spo2>92%on room	2	
Moves 2 extremities voluntary on command	1	Dyspnea shallow or limited breathing	1	Blood pressure within 20-50mmHg of preoperative level	1	Arousable on calling	1	Need oxygen to maintain saturation >90%	1
Unable to extremities voluntary on command	0	Apnea	0	Blood pressure +/-50mmHg preoperative level	0	Not responding	0	Saturation >90woith oxygen	0
Obtained score									

Total score: /10
Transferred to:
Name and signature of anesthetist:
Name and signature of PACU nurse:
Nine or more points are required for recovery to be confirmed

13:8.Care of patient with epidural line

A: Definition:

The term epidural is often short for epidural analgesia a form regional analgesia involving injection of drug through a catheter placed into the epidural space. The injection can cause both a loss of sensation (anesthesia), by blocking the transmission of signs through nerves in or near the spinal cord.

B: Purposes:

- To provide temporary or prolonged relief from pain
- To provide anesthesia
- It can be used for nerve blocks and surgery

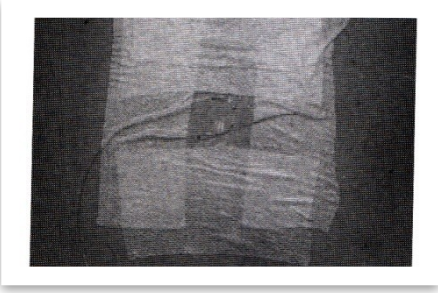
C: procedure:

S.No	Action	Rationale
1	The following aspects should be monitored and recorded every hourly by the assigned nurse. temperature pulse &respiration rate blood pressure oxygen saturation pain and sedation	help to detect the complications in early stage
2.	check epidural insertion site for proper position of catheter and signs of inflammation tenderness leakage and swelling every hourly	to check whether catheter is in position and to assess for any signs of infection
3	Ensures that the epidural line is patent by checking the amount of medication infused every hourly and assessing the patient's pain score	to avoid the error in infusion and to reduce pain for the patient
4	the epidural infusion pump readings should be recorded every hourly and should include rate of infusion volume infused volume reaming in bag	to ensure that the correct amount of medication is transfused for the patient
5.	the epidural site should be covered with a transparent occlusive dressing	to allow for adequate inspection of the site and also to check catheter marking semi- permeable membranes are necessary to prevent colonization
6.	the epidural catheter should be taped to the back and over the left shoulder and labeled EPIDURAL .this particularly importance for patients who also have central venous catheters (CVC) in site	to prevent any confusion between the lines and to prevent errors (the CVC is usually but not always inserted on the Right hand side of the neck) if the CC is inserted on the left side of the neck .the epidural catheter must be taped over the right shoulder
7	epidural catheter should be removed after 7days unless otherwise instructed by the pain management services or anesthetist as well as institutional policy	to reduce the risk of infection and to manage pain adequately
8	after removal of the epidural line the area should be assessed for signs of infection	

D supportive Documents

1. Nurses notes
2. Critical care observation chart

Inodaya Hospitals



OBSERVATION CHART

NAME: HOSPITAL NO : WARD

DIAGNOSIS : SURGERY PERFORMED :

AGE : ROUTE OF INFECTION :

PAIN SCORE	SEDATION SCORE
VISUALANALOG SCORE ☺☹ 0 5 10 NO PAIN WORST PAIN	0- Patient awake 1- Mild pain (occasionally drowsy) 2- Moderate (frequently drowsy easily Arousable 3- Severe (difficult to arouse) 4- Sleeping (easy to arouse)

date	Time	Drug con	Infusion Dose received	Total Dose received	Pain score	RR	BP	HR	Nausea vomiting +/-	Urine retention +/-	Comments

Patient comments: pain relief- poor /satisfactory/good /excellence- Nurses comments

GENERAL INSTRUCTION

1. On opioids or sedatives to given other than that ordered by the pain management team
2. Naloxone 0.4 and Mephentine 15 mg to be available in the ward
3. Monitor the pain score, sedation score and vital signs hourly for the first 4hours and then 2 hourly
4. Management of complications

A: **Respiratory depression**

i. Sedation score = and RR <8/min or sedation score =3 regardless of RR

ii. Start oxygen 41/ min and call the pain management team for further treatment

B: hypotension:

i. If systolic BP <90mmHg call the ward doctor

ii. Infuse 200ml of normal saline or Hartmann's fast while waiting for the doctor

iii. Give InjMephentine mg or ephedrine IV if systolic BP below 90mmHg

C: Bradycardia:

If HR <60/min inform pain management team and give inj atropine 06 mg IV start

D: nausea\vomiting

Administer Inj: Ondansetron 4-8 mg IV

E when to call pain management team

i. Inadequate analgesics

ii. Severe respiratory distress

iii. Hypotension

iv. Severe purities

v. Urinary retention

vi. Nausea\vomiting

vii. Infusion pump not working

viii. If any doubt arises pertaining to the care of patient

ix. migration of catheter (bulge at the insertion site \no pain relief)

x. while patient is ambulated out of bed

xi. leak at the site of insertion or in catheter connection

xii. par aesthesia /numbness in any limb

xiii. accidental removal of catheter

Persons to be contacted:

1. Anesthesiologist
2. Nurse anesthetist if any

DOCTOR 'S PRESCRIPTION

Name: Age: Sex: UMR: Ward:

DIAGNOSIS: SURGERY DONE:

PCA	EPIDURAL	SUBCUTANEOUS	INFUSION

morphine pethidine Conc: …….. mg\ml Bolus: ……. mg Lockout: …… min Loading dose …… mg at …… am\pm		☐ Bupivacine ……% ☐ Fentanyl …… mg\cc ☐ Ketamine …….mg\cc Infusion rate……..ml\hr catheter inserted by: catheter at skin ……..cms		subcutaneous Drug: …….. Conc: …….. Dose: ……..		IV \sc\Nerve block Drug: …….. Conc: …….. Dose: ……..……	
Time /Date	Cahnges	Time /Date	changes	Time /Date	changes	Time /Date	changes

13:9 procedure of removal of epidural catheter

A: criteria for removing Epidural line:

- Pain scores should be 0-1
- Patients should be able to tolerance at last 60ml oral fluid for hours
- Regular oral analgesics such as Paracetamol .Tramadol and dihydrocodeine should have already been started.
- The epidural should then be stopped an epidural trained nurse nut left in situ
- Regular pain assessment should continue and providing the patient is pain free for 4hpurs the epidural can be removed
- Epidural catheter should be removed anyway after 7days because of the risk of infection unless otherwise instructed by the pain management service or anesthetist

B: procedure:

S.No	Action	Rationale
1	explain the procedure to the patient reassure that analgesia will be provided by other routes if necessary ensuring that they have been prescribed	to gain patient's acceptance
2	check the coagulation profile before start to remove the epidural	to prevent the complications (bleeding)
3	Position patient either laterally (fetal position) or sitting un and leaning forward	position will assist with removal of the catheter by opening the intervertebral specs
4.	prepare equipment wash and dry hands	to minimize cross infection from hands to equipment's
5.	put on sterile gloves and apron	to maintain universal precautions
6.	remove dressing over insertion site while applying gentle	to prevent inadvertent removal of the catheter at this point

S.No	Action	Rationale
	pressure on the catheter at the insertion point to hold it in position	
7.	grasp the catheter close to the skin and gently pull the catheter out in even movement	to reduce the possibility of the catheter shearing on removal
8.	inspect the tip of the catheter ensuring the blue tip is in place	to ensure no catheter remains in the epidural place
9	wipe any serous fluid from the insertion site and cover with tegaderm and date dressing	to ensures the site remains clean and visible : dressing not to be left in place for more than 48 hours
10	discard gloves ,apron and used equipment into waste bag according the institutional policy	to ensures safe disposal of used clinical equipment
11.	docent removal at the front of the epidural infusion prescription and observation	to follow the continuity of care for the patient

C: Supportive Documents:

1. Nurse's record
2. Critical care observations chart

13:10 Surgical Scrubbing

A: Definition:

Surgical is the removal of bacteria from the hands and arms by mechanical washing and chemical disinfection before taking part in surgical procedures

B: purposes:

- to prevent the possibility of contamination and disinfection of the operative wound by bacteria on the hands and arms
- To reduce the risk of cross infection among patients
- To reduce the risk transmission of infection agents to oneself
- To prevent iatrogenic infection
- To remove debris and transient microorganisms from the nails hands and fore arms
- To reduce the resident microbial count to a minimum
- To inhibit rapid rebound growth of microorganisms

C: Equipment

- Germinal soap or detergent
- Surgical scrub brush
- Sterile hand towel

D: methods

There two methods of scrub procedure

1. Stroke methods- in which a certain number of brush stroke are designated for each finger palm, back of hand and ram
2. The alternative methods- is the timed scrub and each scrub should last from three to five minutes

This is done:

1. Before the first growing and gloving
2. Following a clean case if the gloves have holes in them
3. Following a clean if the gloves have removed inadvertently before the gown
4. Following a clean case if hands been contaminated in any other way
5. Following a contaminated case, before starting the next case.

Preparation before doing surgical scrub:

- Attend to personnel needs
- Adjust cap and masks properly .the hair should be confined inside the cap .the mask should cover the nose mouth check and chin
- Roll up sleeves of the uniform 3inches above the elbow if sleeves are long
- Check on the liquid soap and brush dispenser
- Remove on your jewelry (rings ,watches , bracelets)
- Check on your fingernails ,they must be kept clan and short to reduce the bacteria count and to prevent the puncturing or tearing of gloves

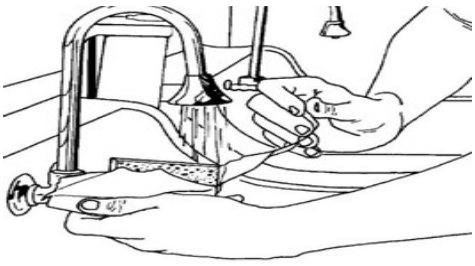
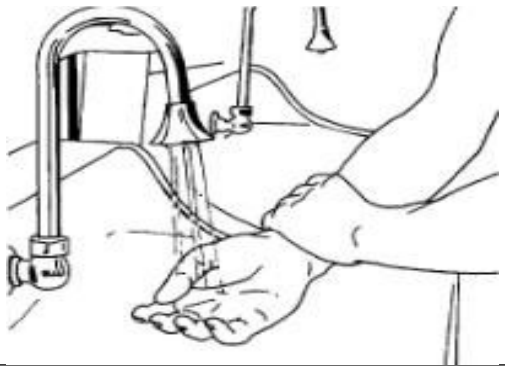
Scrub – up technique

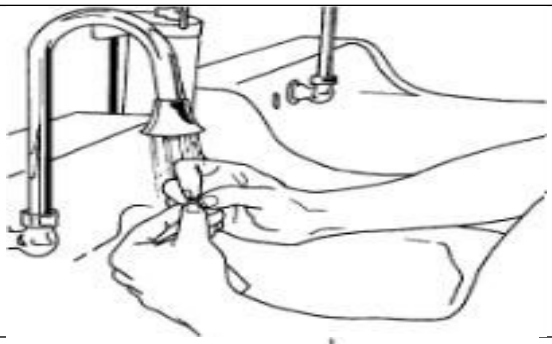
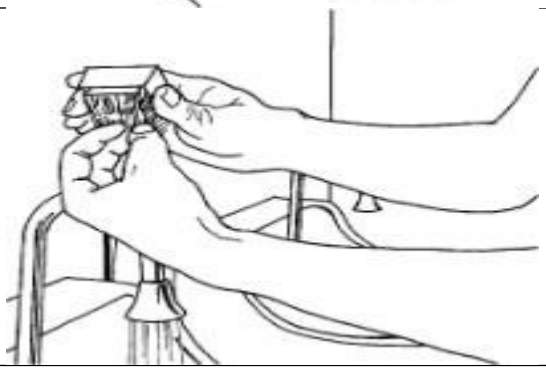
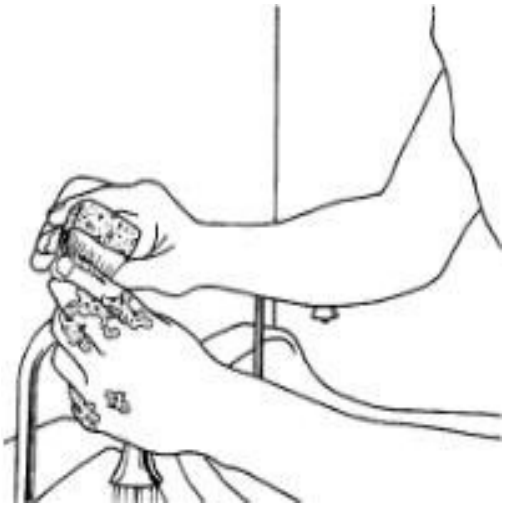
- Take note of the time you stated scrubbing
- Wash hands and arms with soap and water to remove superficial and bacteria
- Get the sterile brush with the right hand in such a way that it faces up
- Saturates the brush with soap and water and start scrubbing from the finger tip
- Transfer the brush to your left hand .saturate it again with soap and water and do the same.
- Divided the arm into longitudinal section scrub from distal to proximal sections of arm
- Ten rinse hands thoroughly, keeping hands raised above elbow
- Scrub the other arm in the same manner
- Turn off water with elbow
- Grasp the edge of sterile towel taking care not to contaminated towel
- Use one side of the towel to dry one hand at a time
- Dry hand from finger in the tip t elbow
- Dry other arm by grasping unused side of towel with dry hand
- Discard used towel in the receptacle
- Keep the hand higher than the body

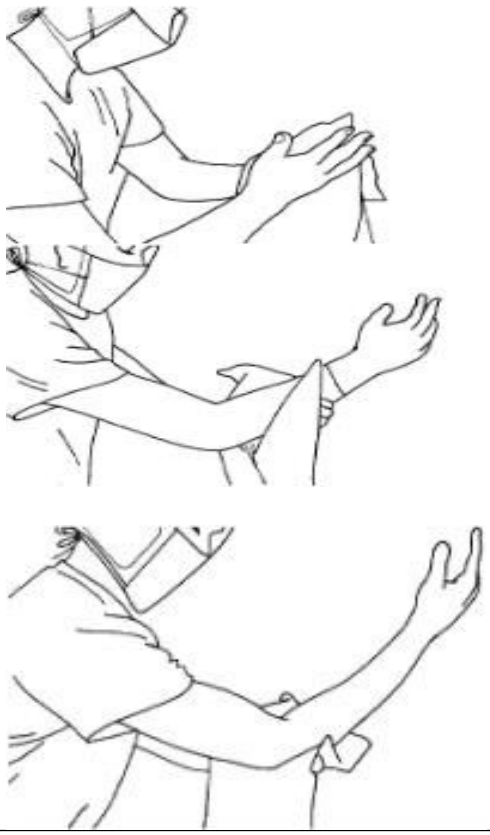
Points to remember in surgical scrub:

- Rinse as often as possible using one direction only. Start from the hand going to the arm taking care not to touch the faucet and the sink
- A person with cut or burn should not scrub because of the high bacteria count
- The hands arms can never be rendered sterile no matter how long or strong the antiseptics
- Surgical scrub is most effective whether motion applied short horizontal or circular stroke could be used
- Use an ample supply of antiseptics

- Since the hands are to be cleaner than any other area after the initial hands wash they are held higher than the elbows during the rest of the procedure to prevent water from running back the scrubbed hands

1.Regular the flow and temperature of the water pre tear the package contain brush lay the brush on the back of the sink	
2.Rinse hands and arms thoroughly ,allowing the water run from the hands to the elbows .do not retrace shank thane hands and arms .let the water drip from them	
3.Wet hands and arms for initial prescribe wash .use several drops of surgical detergent work up a heavy ,then wash the hands and arms to a point about inches above the elbow	
4.Rinse hands and arms thoroughly ,allowing the water to run from the hands to the elbowl .do not retrace or shake the hands arms let water drip from them	

5. remove the sterile brush and file moisten brush and work up lather ,soap fingertips and clean the spaces under fingers nail of both hands under running water discard file	
6. lather fingertips with sponges-side brush then using bristle side of brush, scrub the spaces under the fingstpis of the or left hands 30 circular strokes .when scrubbing slightly bend forward hold hands and arms above the elbow and keep arms away from the body	
• You may begin with the thumb or finger or the right or left hand scrub one hand and arm completely before moving on to the other hands and arm • Lather palm back of hand heel of hand and space between thumb and index finger choosing either of the surface scrub 20 circular strikes on each surface • You are now ready to scrub forearm .divide your arm in three inches increments .the brush should be approximately three inches • Length wise; use the sponge –side of the brush length wise to apply soap around wrist ,scrub 20 circular stroke on all four sides : move up the forearm lather then scrub ending two inches above the elbow • Soap and water may be added to the brush at may time • Discard brush • Rinse hands and arms without retracing and or contaminating • Allow the water to drip from your elbows before entering the operating room.	

• Slightly bend forward, Pick up one hand towel from the top of the gown pack and step back from the table Grasp the towel andopenit so that is folded to double thickness lengthwise .Donotallowthetowel to touch any unsterile object or unsterile parts of your body. Hold your hands and arms above your elbow, and keep your arms away from your body.	
• Holding one end of the towel with one hand dry the fingers of the opposite hand using a blotting rotational motion. Works from your fingertips to the elbow DO NOT retraceanyareas.Dry all slides of the fingers the forearm and the arms thoroughly ,if moisture is left on your fingers and hands ,donning the surgical gloves will be difficult .moisture left on the arms may seep thoroughly surgical cloth gowns thus contaminating them grasped the other end of the towel and dry your other hand and arm in the same manner as above discard the towel into line receptacle the circulating may take if from the distal end	

GOWNING:

A: wearing of sterile over theater clothing before assessing surgical patient

B: Purposes:

The sterile gown is worn in order to permit the wearer to come within the sterile field and carry out sterile technique during an operative procedure.

C: Equipment

- Gown
- Surgical towel

D: parts of a Gown:

1. Right side
2. Wrong side
3. Body
4. Sleeve

5. Cuffs
6. Neckband
7. Belt
8. Hemline
9. Back ties
10. Back apron

E: preparation for sterilization:

The gown is folded lengthwise with the wrong side out and facing the wearer

The following procedure must be followed:

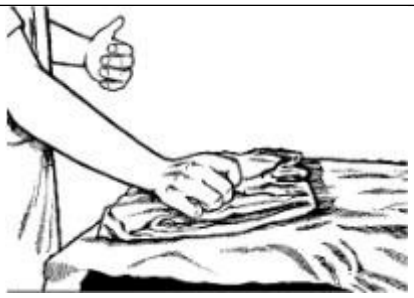
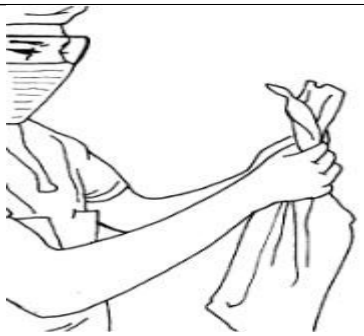
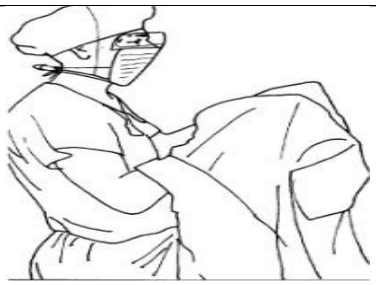
- The surgical scrub procedure must be completed.
- The person who is donning the gown only touches the inside of the garment, locating the neck and holding it securely
- The rest of the gown is released with the inside facing towards the scabbed individual
- The armholes are located and both arms are inserted.
- The circulating practitioner assist the scrubbed personnel to secure the gowns fastenings taking care not to stand too close to avoid any contact with the gown
- The wrap around ties should be fastened with help of another scrubbed person or using the card attached to allow circulator to assist
- Once the surgical procedure is over the circulating practitioner helps to unfasten the gown so that it can placed in the bin provided

D: Responsibility of the circulating nurse in the application sterilization

- She place hands inside of the gown near the shoulder of scrub nurse and aids her in putting on the gown
- She grapes ends of the gown's belt without torching the upper part of sleeves of the gown
- She ties the belt at the back of the gown

E: points to remember in gowning:

- This is done after the surgical scrub
- Use an oscillating motion part dry in drying the hands and arms, start from the hand going to the arms.
- Do not dry hand then arms and return to the same hand
- In drying the hand and arms, a towel could be used, if a towel is used dry one hand arm on one end of the towel and use the opposite end to dry the other hand and arm.
- In serving the gown, do not turn your back on the sterile field to prevent contamination
- In picking the gown from a sterile line pack be careful not to touch nay other articles in the pack

Grasp the gown at the centre or you may receive it form the circulating nurse Step one or two feet away from the sterile filed to have an adequate working space	
Use the towel and wipe the hands .if a towel is used .dry one hand arm on one end of the towel and use the opposite end to dry the other hand and arm.	
The rest of the gown is released with the inside facing towards the scrubbed individual	
Slip your into each armhole and hold your hands and arms straight and obliquely upwards, the circulating nurse will fix it	
The wrap around ties should be fasted with the help of another scrubbed person or using the card attached to allow a circulating to assist	

MASKING:

A: Definition:

Wearing a disposable mask over nose and mouth to maintain asepsis ands to protect the nurse from contaminating herself and others around her

B purposes:

1. To prevent disposable of droplet from wearer to environment and patient
2. To prevent contamination of sterile filed
3. To enhance easy handing of sterile equipments

C: Equipment:

Disposable or clean mask

D: procedures:

Wash hands

- Hold mask by two strings or loop keeping to edge above bridge of nose
- Tie both strings the top of back head firmly above ears
- Tie two lower strings snugly at the back of neck
- Gently press nose clip of the disposable mask for a snug fit

To remove the mask:

- Wash hand
- Untie lower string first top once and pull mask away from face
- Hold mask string and discard into appropriate receptacle

GLOVING TECHNIQUE:

The is done after the gowning technique.

A: purposes:

Gloves are worn to complete the sterile dress in order that the one who wears them any handle sterile equipment

B: parts of a glove:

Palmer surface
Dorsal surface
Finger holes
Cuff

Wrist

C: types of gloving techniques

OPEN METHOD GLOVE TECHNIQUE

Unassisted (self-services)

- Get the right hand gloves with the left hand by it at the edge of everted cuff step back from the sterile filed
- Exposure the finger holes before inserting the hand completely leave the everted cuff as is
- Slip the gloves right hand under the fold of the everted cuff. Insert the left hand by exploring the finger holes before inserting the whole hand completely .leave the folded cuff.
- Make pleat at the cuff of the gown and secure this is place with your right thumb
- Slip the four fingers of the right hand under the fold of the glove and pull it up over the pleated cuff of the sleeves .fix the glove firmly.
- Reaped for the right hand

Assisted (Serving Others) :

- Get the right hand glove and inflate it first for easy insertion and to detect for holes
- In serving the gloves, the palmer surface or the thumb portion should be facing the one who is being served facing the surgeon
- Evert the cuff one inch wide; insert four fingers inside the everted cuff
- Stretch the glove well outward put your thumbs out
- Allow the surgeon to explore the finger holes
- When the surgeon jerks his downward release and pull upward so that the cuff of the glove covers the cuff of the gown.
- Repeat the same procedure for the left hand

CLOSED METHOD OF GLOVING:

It is the methods with the least possibility contamination.

Procedure:

- With your right hand inside the gown‘s sleeves lift the glove by the cuff
- Put thumb down on your upturned left palm fingers of glove pointed towards your elbow
- At this time move your left hand so that your fingers are halfway down the cuff of your gown. do not let them protrude from still inside the sleeve take hold of the end of the cuff
- With your right hand still inside the sleeves take hold of the folded cuff of the left gown and pull it out and over the left hand and well over the cuff of the left sleeve
- Take the right hand still inside the sleeves and grasp the left glove and gown cuff at the wrist and
- Pull glove into the hand
- Proceed to the right hand the same way

Points to remember in gloving

- Take care not of contamination the outside surface of the glove
- In serving the gloves the nurse must have a wide base of support by putting her foot apart
- Always serve the right hand glove first
- In serving get the right glove with the left and the left and glove with right hand
- Always keep gloved hands at waist level or above
- Keep gloved hands away from your mask

REMOVING THE GOWN AND THE GLOVES

Regardless of whether the scrub nurse assists in a case or contaminated case remove first the gown and then the gloves .wash the gloves hands, if they are grossly contaminated before removing the gown

Removing the Gown:

- With the gloves still in ask the circulating nurse to lessen the ties and the belt
- Grasp the right shoulder of the gown and slip off the arm allowing use sleeves to turn inside out
- Repeat the same procedure for the opposite shoulder
- Discard the gown in the hamper

Removing the Gloves

- With the gloved right hand remove the left glove by holing it is its outer surface and pull off (this is the glove to glove technique)
- To remove the right glove inserts your thumb or three fingers between the skin the glove and pull off (this skin to skin technique

Open the inner package containing the glove and pick up one glove by the folded cuff edge with the sleeve covered hand	
Place the glove on the opposite gown sleeve palm down with the glove fingers pointing towards your shoulder .the palm of your inside the gown sleeves must be facing upward toward the palm of the glove	
place the gloves rolled cuff at the seam that connects the sleeves to the gown grasp the bottom rolled cuff edge of the glove with your thumb and index finger	

while holding the gloves cuff edge with one hand grasp the uppermost edge of the glove cuff with the opposite hand take care not to expose the bare fingers while doing this	
continue to grasp the glove stretch the cuff the glove over the hand	
Using the opposite sleeve –covered hand grasp both the glove cuff and sleeve cuff seam and pull any glove onto the hand pull any excursive amount of gown sleeve from underneath the cuff of the glove .	
Using the hand that is now gloved put on the second glove in the same manner .when gloving is completed no part of the skin has touched the outside surface of the gloves .check to make sure that each gown cuff is secured and covered completely by the cuff of the glove. Adjust the fingers of the glove as necessary so that fit snugly	

SKIN PREPARATION:

Before skin preparation of a patient is imitated the skin should be free of gross con termination (i.e. dust .soil .or any other debris

- The patient skin is prepared by applying an antiseptic (10%betadine) in concentric circles beginning in the area of the proposed incision
- The prepared area should be large enough to extend the incision or create new incisions or drain sites if necessary.
- The applications of the skin preparation may need to be modified depending on the condition of the skin e.g. burns or location of the incision site e.g. face

SURGICAL DRAPING:

- Surgical draping defers based on type surgery
- Using disposable drapes (loban) is the trend

- Creation of sterile filed is through sterile presentation of the drape and aseptic application techniques

- Fluids control is thoroughly collection fluid keeps the patients dry decreases health care worker exposure and depresses clean up

CHAPTER- XIV
MATERNAL AND CHILD HEALTH

Introduction

Maternal health refers to the health of women during pregnancy, childbirth and the postpartum period. While motherhood is often a positive and fulfilling experience, for too many women it is associated with suffering, ill-health and even death. The major direct causes of maternal morbidity and mortality include hemorrhage, infection, high blood pressure, unsafe abortion, and obstructed labour. Women who begin prenatal care early in their pregnancies have better birth outcomes than women who receive little or no care during their pregnancies. Postnatal care issues include recovery from childbirth, concerns about newborn care, nutrition, breastfeeding, and family planning. The health workforce plays an important role in strengthening of the health system. However, this workforce must be adequate in number, competent and motivated.

14.1Admission of the patient

A client can access the health care system in variety of ways. The skill focuses primarily on admission into a hospital system. Each institution follows a different set of policies and procedures for admitting a client. Since the first impressions are likely to be vivid and not easily erased, it is especially important that the patient and those who are with him receive most courteous attention and care in the outpatient department. Giving birth, even taking place in a hospital, is a natural process and nurses should make every effort to ensure that it is a pleasant experience for the mothers and their family.

Purposes

- ❖ By making clients and families feel welcome, nurses and other members begin to establish a therapeutic relationship with the mother.

- ❖ Data essential for identification of the patient such as name, address, age, sex, religion, occupation, income and details of husband are recorded.

Procedure:

- Welcome the mother and caretakers with a smile and speak to them politely, making them feel at home
- If the birthing process has started, the mother is taken to the labour room directly and the admission formalities are fulfilled.
- Give her the hospital dress; allow her to take all the jewellary and hand over to her caretaker.

- The correct name, age and address of the husband to be recorded.
- Check the vital signs, F.H.S, weight and height of the mother followed by obstetrical examination and blood tests for Hb, Grouping, HIV, VDRL done if not done earlier.
- Soap and water enema to be given and recorded in the nurses' record
- Mother is instructed for the routines of the ward for safe delivery - position, breathing exercises, type of food and rapport is established.
- A nurse has to be with the mother and close relative/ husband is allowed to stay till the end of first stage of labour.
- If the birthing process has not started and if the mother is willing to stay in the hospital then she is admitted to the antenatal ward so that the necessary investigations can be made.

14.2. ANTENATAL EXAMINATION

History Taking
Obstetrical Score: Gravida- the number of times a woman has conceived
Para- the number of times a woman has given birth
Living- the numbers of children are alive
Abortion-the number of abortions a woman had.
Vital statistics like age, gravida, duration of marriage, religion, occupation, occupation of the husband, period of gestation are taken.
Complaints: even if there are no complaints enquiry is to be made about sleep, appetite, bowel habit and urination.

Family profile: situations like changing status from independence to dependence because of stopping work, chronic illness at home, the death of significant person at pregnancy, the infidelity of the husband, geographical moves, financial hardships or lack of support people can be injurious to a woman's pregnancy status and exposing them will be helpful in preventing undesired effects. Ask specifically about any cardiovascular, renal, blood disorders; mental retardation or any congenital anomalies.
Social profile: It provides information about the woman's lifestyle. Ask her about her exercise pattern, smoking, consumption of drugs and alcohol, hobbies, working conditions, spouse abuse.
History of present pregnancy: the complications of pregnancy should be noted carefully. Features of hyperemesis gravidum, PIH, anaemia, threatened abortion and antepartum haemorrhage should be noted. Immunization status, medication or radiation exposure or any medical or surgical events during pregnancy should be enquired.
Menstrual history: cycle, duration, amount of blood flow and the first day of the last menstrual cycle are to be noted. The expected date of delivery has to be calculated using naegele's formula by adding 9 calendar months and 7 days to the first day of last menstrual cycle.

Personal history: Contraceptive uses, previous history of blood transfusion, corticosteroid therapy, drug allergy, immunization status are to be enquired.
Past medical and surgical history: relevant history of past medical illness, surgery- general or gynecological should be enquired.

14.3. PHYSICAL EXAMINATION

a. General examination

Build: obese/ average/ thin
Nutrition: good/ average/ poor
Check temperature, pulse, respiration, blood pressure, height and weight
General appearance and mental status: inspect signs indicative of fatigue or depression, careless hygiene, unwashed hair, inappropriate or soiled clothing, sad facial expression.
Head and scalp: examine the head for symmetry, normal contour and tenderness; hair for presence, distribution, thickness, dryness or oiliness, dandruff and use of hair dye; look for choasma on face.
Eyes: hypertension in pregnancy can be manifested by eye symptoms such as edema in the eyelids, spots before eyes, diplopia. Optic disc is swollen and can be evidenced by ophthalmoscopic examination.
Nose: the high level of oestrogen during pregnancy causes nasal congestion or the appearance of swollen nasal membranes.
Ears: the nasal stuffiness may lead to blocked Eustachian tubes and therefore a feeling of fullness or dampening of sound during pregnancy. This disappears when body adjusts to new oestrogen level. Normal hearing and tympanic landmarks should be present.
Sinuses: it should be non tender
Mouth, teeth & throat: assess for cracked lips, gingivitis and dental hygiene.
Neck: slight thyroid hypertrophy may occur as overall metabolic rate is increased. Encourage the woman to continue the use of iodised salt and to eat sea food at least once a week.
Lymph nodes: no palpable lymph nodes should be present.
Breasts: as pregnancy begins, the breast areola darkens; Montgomery's tubercle becomes prominent, size increases and the tone firms. A secondary areola develops, blue streaking of veins become prominent. Colostrum can be expelled from the nipples as early as 16th week of pregnancy. All women should be instructed on monthly breast self examination.

Heart: heart rate should be 70-80 beats/min; no accessory sound should be present. Occasionally a woman may develop heart murmurs due to excess amount of blood her heart processes. If it is so, then she may need a further investigation to exclude the cardiac complication. Many women may feel palpitations especially in supine position.
Lungs: assess for rate and rhythm. Late in pregnancy the diaphragm movement is lessened because of the distended uterus.
Back: assess the spine for scoliosis. The woman may have lordosis due to increasing abdominal size. This is the cause of back pain during pregnancy.
Rectum: assess for haemorrhoids which is evident during pregnancy.
Extremities and skin: Many women develop palma erythema and itching early in pregnancy due to high oestrogen level. Lower extremities should be checked for varicosities. Presence of edema is a danger sign of pregnancy.
b. Obstetrical examination
Abdominal examination
Inspection: The size of the uterus is longer than broad when the fetal lie is longitudinal. If the lie is transverse the uterus is low and broad. Stretch marks from the previous pregnancy may appear silvery and recent ones appear pink. Linea nigra may be seen longitudinally in the centre of the abdomen. Scars may indicate previous obstetric or abdominal surgery. A full bladder, distended colon or obesity may give a false impression of fetal size.
Palpation: the midwife's hands should be clean and warm. Cold hands induce the contraction of the uterine and abdominal muscles and the woman may feel uncomfortable. The finger pads and not the tips of the fingers should be used for palpation. The hands are moved smoothly over the abdomen in

stroking motions in order to avoid causing contractions. Palpate fundus location, measure fundal height (from the notch above the symphysis pubis to the superior aspect of the uterine fundus).
Obstetric grips: during contractions, the palpation should be suspended.

1. **Fundal grip:** the palpation is done facing the patient's face. Lay both hands on the sides of the fundus, fingers held close together and curving round the upper border of the uterus. Gentle pressure is applied using palmar surfaces of the fingers to determine the soft consistency and indefinite outlines that determines breech. The head is more distinctive than the breech, being hard and round. It can be balloted between the finger tips of the two hands because of the free movement of the neck.

2. **Lateral or umbilical grip**: the palpation is done facing the patient's face. The hands are placed flat on either side of the umbilicus to palpate one after the other the sides and front of the uterus to find out the position of the back, limbs and anterior shoulder. The back is suggested by smooth curved and resistant feel. The limb side is comparatively empty and there are small knobs like irregular parts. Palpating from the neck upwards and inwards can locate the anterior shoulder.

3. **First pelvic grip:** the examination is done facing the patient's feet. Four fingers of both the hands are placed on either side of the midline in the lower pole of the uterus and parallel to the inguinal ligament. The fingers are pressed downwards and backwards in a manner of approximation of finger tips to palpate the part occupying the lower pole of the uterus. If it is a head, the following should be noted:

- precise presenting area
- attitude
- engagement

This grip is also known as Leopold fourth maneuver. To ascertain the presenting part, the greater mass of the head is carefully palpated and its relation to back and limbs is noted.

4. **Pawlik's grip (second pelvic grip):** the examination is done facing the patients face. The overstretched thumb and four fingers of the right hand are placed over the lower pole of the uterus keeping the ulnar border of the palm on the upper border of the symphysis pubis. When the fingers and thumb are approximated, the presenting part is grasped distinctly, if not engaged and the mobility from side to side is tested. This grip is also known as Leopold third maneuver. In transverse lie, this grip is empty.

c. Auscultation

Auscultation of fetal heart rate not only helps in diagnosis of a live baby but also confirms about the presentation of the fetus. The fetal heart rate is best heard through the back (left scapular region) in vertex and breech presentation. In face presentation, the heart sounds are heard through the fetal chest. Maximum intensity of the fetal heart rate is below the umbilicus in the cephalic presentation and around the umbilicus in breech presentation.

d. Internal examination

The diagnosis of presentation and position of the fetus may not be accurate by internal examination during pregnancy because the cervix remains closed. However during labour it is helpful. Strict aseptic

precautions should be taken during vaginal examination. The mother must empty her bladder prior to examination and is placed in the dorsal position with the thighs flexed & buttocks placed on the foot end of the table.

- **Inspection:** separate the labia using two left fingers, the character of the vaginal discharge, if any is noted. Presence of any abnormality should be noted.
- **Speculum examination:** the cervix and the vault of the vagina are inspected with the help of good light. A bivalve speculum is used
- **Bimanual examination:** two fingers of the right hand are introduced deep into the vagina while separating the labia by the left hand. The left hand is placed supra pubically. Gentle examination is done to note the consistency and direction of the cervix, size, shape, position and consistency of uterus. No attempt should be made to assess the pelvis at this stage.

e. Laboratory Investigation: Routine tests are:

1. Blood: haemoglobin, ABO and Rh typing, HBsAG, HIV, VDRL and blood glucose
2. Urine: protein, sugar, pus cells: Ask the mother to clean the perineum with soap and water, void the urine and collect the midstream urine in a clean wide mouth container without touching the inner part of the lid. Early morning sample is ideal and send to the lab as early as possible with requisition form duly filled.

Special Investigation

1. Serological tests for rubella and hepatitis B.virus
2. Maternal serum alpha feto protein (MSAFP) estimation or triple test at 15 -18 wk for mother at risk of carrying a fetus neural tube defect, down's syndrome or other chromosomal abnormally
3. Ultra sound examination

f. Pelvic examination

Purpose: a pelvic examination is done to permit visual and digital examination of the external and internal genitals and pelvic contours.

Procedure

1. Have mother void
2. Explain the procedure to the mother
3. Equipment is selected and readied for use. The speculum is warmed before inserting. Assist into lithotomic position. Provide privacy
4. Help the mother to relax by teaching breathing exercises; distract her with touch and conversation before the insertion of the speculum and as the vaginal examination is done.
5. When the examination is complete, assist into sitting position and then to stand. Provide necessary cotton or tissue paper for removal of lubricants.

g. Vaginal examination

First Vaginal examination should be done by a senior doctor or an experienced staff nurse to be more reliable and informative. The examination is done with the mother lying in dorsal position once in 4 hours and recorded in the partograph.

Indication

Examination is done in the antenatal clinic when the patient attends the clinic for the first time before 12 weeks

- To diagnose the pregnancy
- To corroborate the size of uterus with the period of amenorrhea

- To exclude any pelvic pathology.

At the onset of labour it is done to detect the following:

- Degrees of effacement of cervix
- Status of membranes, if ruptured –colour of liquor
- Presenting part and its position
- Caput or moulding of the head
- Station of head

Procedure

1. The mother must empty her bladder prior to examination
2. Mother should be placed on dorsal position with the thighs flexed along with the buttocks placed on the foot end of the table
3. Toileting: The hands and forearm should be washed with soap and running water.
4. Sterile pair of gloves to be put on
5. Vulval toileting: Vulva should be swabbed and cleaned with Savulon lotion.
6. Gloved middle and index fingers should be smeared with antiseptic cream and introduced into vagina after separating the labia by two fingers of the left hand.
7. Vaginal examination is done to check the degree of effacement, dilatation of cervix, position of cervix, pulsation at anterior vaginal fornix, status of membranes, if ruptured then the condition of liquor amnion, station of the head, presenting part and presentation of fetus.
8. Complete examination should be done before fingers are withdrawn.
9. If membranes are ruptured intravenous antibiotics are started as per doctor's prescription.

External genitalia: Observe the vulva for any varicosities, oedema, vulval warts or sores.

Note for any scars of previous episiotomy. If the membranes are ruptured colour and odour are noted. Offensive liquor suggests infection and green fluid indicates the presence of meconium which is a sign of fetal distress.

Vagina: The vagina should be warm and moist. The walls are soft and distensible. A hot dry vagina is a sign of obstructed labor. If the mother has temperature vagina will be warm but should not be dry. If the walls are firm and rigid a longer labor can be anticipated. If there is previous Perineal wound scar tissue may cause delay in the second stage of labor. In multiparous a cystocele may be found and a loaded rectum may be felt through the posterior vaginal wall.

Cervix: A spongy feeling between the fingers and the presenting part may indicate the possibility of undiagnosed placenta praevia. The cervix may be in extreme anterior position in case of retroverted gravid uterus. The consistency of the cervix should be soft, elastic and applied closely to the presenting part. If it is tight, rigid or unyielding labour may be prolonged.

The Uterine Os: Dilatation of the cervix is the distance across the opening, is estimated in centimeters. 10 cm dilatation equates full dilatation. One finger is equal to 1cm dilatation.

Bishop's score:A Bishop's Score refers to a group of measurements used to determine whether a woman may have a successful vaginal delivery and whether labor ought to be induced. Bishop's Score is based on station, dilation, effacement, position and consistency.

Station is a term used to describe the descent of the baby into the pelvis. An imaginary line is drawn between the two bones in the pelvis (known as ischial spines). This is the "zero" line, and when the baby reaches this line it is considered to be in "zero station." When the baby is above this imaginary line it is in a minus station. When the baby is below, it is in a "plus" station. Stations are measured from -5 at the pelvic inlet to +4 at the pelvic outlet.

Dilation is measured in centimeters, from 0 to 10. Your cervix is fully open and you should be able to push when it is dilated to 10 centimeters. Occasionally, a physician will measure dilation in "fingers." Dilation often begins days or weeks before labor actually begins. At first, the progress may be very slow. Some women may be dilated 2 to 3 centimeters long before labor. Once active labor begins, begin to dilate more quickly.

Effacement refers to the softening and thinning of the cervix. It may only be measured with a vaginal exam. Effacement is measured in percent. When cervix is normal, it is considered to be 0% effaced. When 50% effaced, cervix is half of its original thickness. When cervix is 100% effaced it is completely thinned out and ready for vaginal delivery.

Position refers to the positioning of the cervix. If the cervix faces front (anterior) it is more favorable, while posterior is less favorable.

Consistency of the cervix is measured on a scale of firmness from firm to soft. The softer the cervix is, the better the chance of vaginal delivery.

The Bishops Score generally follows this scale:

Score	Dilatation	Effacement	Station	Position	Consistency
0	closed	0 – 30%	-3	posterior	firm
1	1-2 cm	40 -50%	-2	mid-position	moderately firm
2	3-4 cm	60 -70%	-1, 0	anterior	soft
3	5+ cm	80+%	+1,+2		

Total score is 13, favorable score is 6-13, unfavorable score is 0-5 which indicates induction or termination of pregnancy.

14.4 POLICY AND PROCEDURE ON CARE OF HIGH RISK OBSTETRICAL PATIENTS

1. PURPOSE
   To define a system that guides the care of high risk obstetrical patients
2. SCOPE
   This policy and procedure is applicable to High Risk Obstetrical patients and their neonates treated . High risk pregnancies are not under the scope.

i. PREGNANCY COMPLICATIONS

DEFINITION:

Pregnancy is one of the most profound times in a woman's life. It is marked by a variety of physical changes, as well as by thoughts and feelings that sometimes overwhelm the mother-to-be. Though

pregnancy is generally a time of joy and well-being, complications can occur that cloud the experience and put the woman and her unborn child at risk.

These complications include:

- Bleeding in early or late pregnancy
- Hyperemesis Gravidarum
- Pregnancy-related hypertension
- Gestational diabetes mellitus
- Preterm rupture of membranes, and preterm labor and birth.

Nurses working in perinatal settings are in a unique position to screen, monitor, and provide care to patients who are affected by complications during pregnancy. It is essential for nurses to be familiar with these complications, as well as the maternal and fetal implications, and nursing care necessary to address these problems.

I. BLEEDING COMPLICATIONS: EARLY PREGANANCY

(a) SPONTANEOUS ABORTION

Abortion describes the loss of pregnancy prior to fetal viability, which is typically defined as greater than 20 weeks' gestation or fetal size greater than 500 grams. Abortion can be either spontaneous or induced. Spontaneous abortion, often called a miscarriage, occurs without intervention from the woman or another person.

TYPES

Threatened abortions are diagnosed when there is vaginal bleeding and, possibly, uterine cramping. Women suffering from a threatened abortion may or may not lose the fetus. However, careful monitoring and appropriate intervention are necessary. Typically, patients are instructed to avoid sexual activity, tampons, and douches, as well as strenuous exercise. Patients are also encouraged to note and report bleeding to their healthcare practitioner.

Inevitable abortions occur when amniotic membranes rupture and the cervix dilates. In this case, abortion or miscarriage is considered inevitable. Patients typically have cramping. The products of conception are commonly expelled without intervention. However, a dilation and curettage (D&C) may be performed if necessary.

Incomplete abortions occur when some, but not all, of the products of conception are expelled from the uterus. The retained products prevent the uterus from contracting completely, which results in bleeding from uterine blood vessels. Patients generally experience severe cramping and profuse bleeding and receive intravenous (IV) fluids and possibly blood products. Generally, a D&C is performed to remove the retained products of conception. Additionally, patients may receive medications such as oxytocin (Pitocin) or methylergonovine (Methergine) to contract the uterus and stop the bleeding.

Complete abortions occur when all of the products of conception, including the fetus and placenta, are expelled from the uterus. The cervix closes and cramping and bleeding stop. Further intervention is typically not necessary. However, the patient is advised to notify her healthcare practitioner of any additional bleeding, pain, or symptoms of infection, such as fever or foul-smelling vaginal discharge.
Missed abortions occur when the fetus expires during the first half of pregnancy but is retained in the uterus. If there are no obvious signs of infection present, the patient may carry the fetus until spontaneous expulsion occurs. This may take several weeks. However, a D&C may be performed.
The term ***recurrent*** (or *habitual*) ***spontaneous abortion*** refers to three or more consecutive spontaneous abortions. It is believed that genetic defects and reproductive system abnormalities are the primary causes of recurrent abortions. Patients are screened and examined for reproductive system abnormalities, such as recurrent premature dilation of the cervix, also known as *incompetent cervix*. In the case of the premature dilation of the cervix, a suturing procedure known as a *cerclage* may be performed to prevent the cervix from opening until delivery.

NURSING CARE

- Nursing care for patients experiencing a spontaneous abortion varies depending on the type of abortion. However, the primary nursing intervention for all types of spontaneous abortion is to ensure patient safety by identifying and controlling bleeding and hypovolemic shock.
- Symptoms of hypovolemic shock include an increased heart rate, decreased blood pressure, cool and clammy skin, lightheadedness, and confusion. The nurse should anticipate the need for oxygen therapy and fluid and blood replacement.
- The nurse may also be responsible for administering medications; for example, oxytocin (Pitocin) may be used to help in expelling the products of conception or to control bleeding. Patients should be blood-typed and cross-matched in case a blood transfusion is necessary.
- The nurse monitors vital signs, oxygen saturation, intake and output, and laboratory results according to institutional policies. If a patient experiences a threatened abortion but the fetus does not die, the nurse may be responsible for monitoring fetal heart sounds and the overall well-being of the fetus depending on gestational age.
- The nurse should administer prescribed Rho(D) Immune Globulin (human) (RhoGAM) to Rh-negative patients within 72 hours to prevent isoimmunization.
- The nurse caring for a patient experiencing spontaneous abortion will also need to help the patient explore her feelings regarding an actual or potential loss.
- Many patients feel that their actions somehow led to the spontaneous abortion; therefore, feelings of guilt are often significant emotional challenges that many patients must deal with while grieving their loss.
- Similarly, women who suffer from a threatened abortion and do not lose the fetus are often afraid that they may still lose the fetus and remain stressed throughout the remainder of the pregnancy. This affects not only the patient but also her family, and the nurse should do everything possible to assist the patient and her family during this time.

COMPLICATIONS OF MISSED ABORTIONS

- Two serious complications of missed abortions are infection and disseminated intravascular coagulation (DIC).
- **Infection** can occur as a result of carrying an expired fetus and is a serious health threat to these patients.
- **DIC** occurs when there is an over-activation of the clotting process in the body. Specifically, the body produces excessive amounts of thrombin in attempts to control bleeding. This stimulates the conversion of fibrinogen to fibrin. As a result, clots form in blood vessels throughout the body and prevent blood flow to vital organs. Clotting factors are heavily consumed during this process and generalized hemorrhage occurs.
- Essentially, DIC produces clotting, bleeding, and ischemia that occur simultaneously. Symptoms include shortness of breath, chest pain, and/or cyanosis that occur suddenly.
- Bleeding from the nose, gums, and IV sites, as well as petechiae, also occur in the presence of DIC. Treatment is aimed at delivering the fetus and placenta, which will stop the over-activation of the clotting process. Patients are treated with oxygen therapy and are usually given blood products.

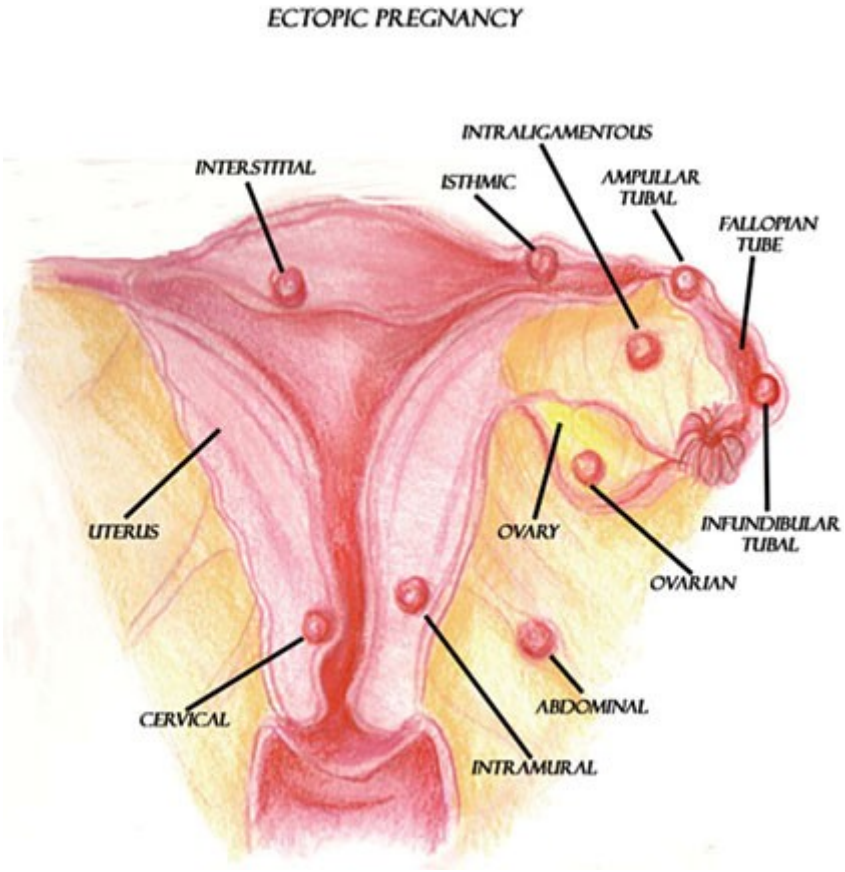
PATIENT TEACHING

- Nurses are responsible for ensuring that patients are adequately prepared to care for themselves upon discharge from the hospital following treatment or monitoring for a spontaneous abortion. It is important that patients understand the warning signs of further complications and the importance of reporting such signs to their healthcare practitioner.
- Warning signs include fever, foul-smelling vaginal discharge, significant bright red vaginal bleeding, and pelvic pain. In addition, patients are encouraged to avoid sexual activity, tampons, or douches.
- Experiencing a spontaneous abortion is challenging for women both physically and emotionally, and they need to rest for a few days after discharge. They may be required to take iron supplements as a result of significant blood loss and/or antibiotics to treat or prevent infection. Foods such as liver, green leafy vegetables, dried foods, and eggs provide needed iron. Additional fluid intake is recommended.
- It is important that the nurse recognize and acknowledge the patient's loss or threatened loss. The patient needs to understand that it is normal for her to go through a grieving process and that she may grieve for six months to one year .
- The patient should also be provided with appropriate community referrals for counseling and/or support groups. She may be eager to become pregnant again if she loses the fetus; however, she should be encouraged to allow her body to rest and recover before attempting another pregnancy and to discuss with her healthcare practitioner when the appropriate time to conceive would be.

(b) ECTOPIC PREGNANCY

DEFINITION

Ectopic pregnancies occur when the ovum is fertilized by the sperm but implants outside the uterus in the fallopian tubes, cervix, ovary, or abdominal cavity. Most ectopic pregnancies occur in the fallopian tubes.



Possible implantation sites for ectopic pregnancies.

SIGNS AND SYMPTOMS

- Signs and symptoms of an ectopic pregnancy include vaginal bleeding
- lack of menstruation (amenorrhea)
- abdominal pain.
- other disease processes (e.g., spontaneous abortion) may be responsible for such symptoms.
- The ovum may naturally reabsorb into the body, or the structure supporting the ovum may rupture. If the implantation site is a fallopian tube, the tube may rupture and cause internal hemorrhaging and hypovolemic shock, which is a life-threatening event for the patient.
- Signs and symptoms of a ruptured fallopian tube include vaginal bleeding; severe abdominal pain or pelvic, shoulder, or neck pain (as a result of blood leaking out of the fallopian tube and irritating the diaphragm); weakness; dizziness; decreased blood pressure; and increased pulse. It is important to note that many patients experiencing an ectopic pregnancy are asymptomatic prior to tubal rupture.

NURSING CARE

- The nurse caring for a patient experiencing an ectopic pregnancy looks for changes in the patient's blood pressure and pulse, which could indicate hypovolemic shock resulting from hemorrhage.
- Regular assessment of vaginal bleeding is also essential.
- Rh-negative patients require administration of prescribed RhoGAM to prevent isoimmunization. Finally, the nurse is responsible for monitoring and controlling pain levels.
- If a linear salpingostomy or salpingectomy is performed, the nurse monitors vital signs, oxygen saturation, intake and output, and laboratory results according to institutional policies.
- As with all patients experiencing a pregnancy loss, it is important for the nurse to recognize the loss and to provide resources to assist the patient in coping with the emotions that accompany the experience of an ectopic pregnancy.

PATIENT TEACHING

- Nurses are responsible for ensuring that the patient is aware of signs and symptoms that require a call to the healthcare practitioner or a return visit to the emergency room following hospital discharge.
- More specifically, if the patient experiences pain, significant bleeding, or a fever and chills, she needs to notify her healthcare practitioner. The patient should have a clear understanding of the feelings of anger, sadness, or guilt that may arise following an ectopic pregnancy and that these feelings are a normal part of the grieving process for someone experiencing the loss of a pregnancy.
- If methotrexate is used for the treatment of an ectopic pregnancy, the patient should be educated about the unpleasant side effects (nausea and vomiting) and told to avoid alcohol as well as foods and vitamins containing folic acid, which can decrease the effectiveness of the medication.

(c) GESTATIONAL TROPHOBLASTIC DISEASE (GTD)

DEFINITION:

- Gestational trophoblastic disease, also known as a hydatidiform mole *or a* molar pregnancy, occurs when the chorionic villi of the placenta increase as a result of genetic abnormalities.
- The villi swell, forming fluid-filled sacs, which appear as tiny clusters of grapes within the uterus.
- Molar pregnancies are classified as complete or partial based on whether a fetus is present.
- A partial mole occurs when a fetus or an amniotic sac is present, whereas a complete mole only contains the fluid-filled sacs.
- The fetus is usually nonviable in a molar pregnancy. However, according to Dente (2007), although it is uncommon, "twinning" has been reported with a complete [mole] plus a surviving fetus with a normal placenta."

SIGNS AND SYMPTOMS

- Patients with a GTD exhibit light to heavy bleeding and even hemorrhage.
- Bleeding can be bright red or brown, appearing similar to prune juice.

- Anemia may result due to bleeding. Additionally, as a result of the proliferation of tissues and the presence of clotted blood, the uterus may appear larger than expected for gestational age. Despite an enlarged uterus, fetal heart tones and movement are absent.
- Serum HCG levels are also increased and patients may experience hyperemesis. Symptoms of gestational hypertension before 24 weeks' gestation are a strong indication of gestational trophoblastic disease.

NURSING CARE

- It is vital that the nurse monitoring patients experiencing molar pregnancies assess for signs and symptoms of bleeding and shock, including changes in heart rate, blood pressure, and urinary output.
- If a patient has hyperemesis resulting from the molar pregnancy, the nurse should assist the patient with mouth care and any additional interventions that are appropriate.
- Nursing care also includes pre- and postoperative care. Laboratory work, including a complete blood count, blood-typing and cross-matching, and serum HCG levels is required prior to vacuum aspiration and curettage.
- Rh-negative patients should receive RhoGAM to prevent isoimmunization. As with all pregnancy losses, patients may exhibit grief in response to the loss.
- Patients should be informed that this is a normal response to a pregnancy loss; therefore, nursing care includes referring patients to appropriate providers or support groups as needed.

PATIENT TEACHING

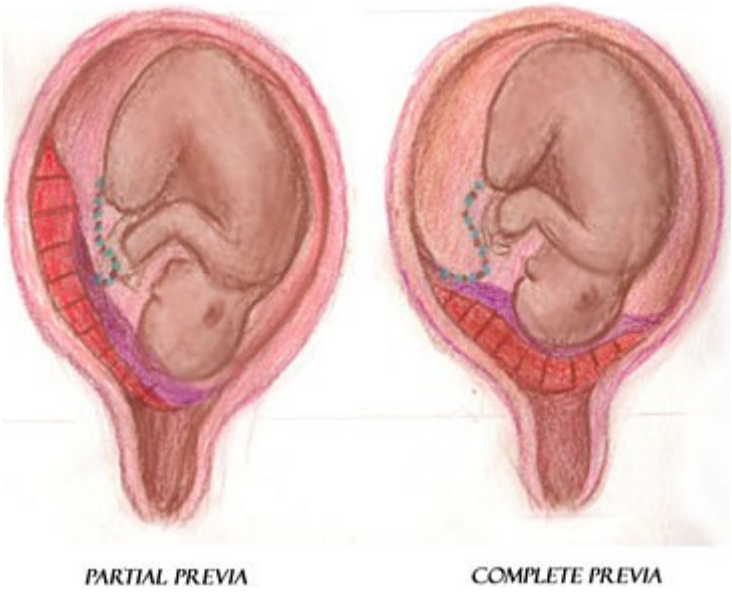
- Due to the risk of choriocarcinoma, it is vital that patients understand the need for regular follow-up to test serum HCG levels.
- Patients should also understand that another pregnancy immediately following a molar pregnancy should be avoided in order to monitor HCG levels without the interference of HCG from pregnancy.
- It is important that patients are aware of the signs and symptoms of complications following a molar pregnancy and vacuum aspiration, including excessive bleeding, foul-smelling vaginal discharge, and fever.
- Patients should avoid tampons, douches, and sexual activity until the healthcare practitioner indicates that these activities can be performed safely.
- As a result of bleeding, patients may be anemic and require increased iron intake or possibly iron supplementation.
- Foods such as liver, green leafy vegetables, dried foods, and eggs can provide needed iron. The patient should also be encouraged to increase fluid intake.

II. BLEEDING COMPLICATIONS – LATE PREGNANCY

(a) Placenta Previa

DEFINITION:

- Placenta previa occurs when the placenta implants in the lower portion of the uterus by the internal cervical os.
- Previas are classified according to the degree to which they cover the os. Specifically, if the lower border of the placenta is close to, but does not quite reach, the internal cervical os, the previa is considered marginal.
- If the placenta partly covers the internal os, the previa is considered a partial placenta previa. The previa is considered a total previa if the placenta completely covers the internal cervical os (see illustration).
- As the pregnancy nears term and the cervix dilates, the placenta implanted near or over the internal cervical os is disrupted and bleeding can occur. The bleeding places the patient and her unborn child at risk.



Placenta previa.

RISK FACTORS

- Advanced maternal age
- Cesarean section
- Smoking or drug use (e.g., cocaine)
- Previous placenta previa
- Uterine scarring (e.g., endometriosis)
- Induced or spontaneous abortion

SIGNS AND SYMPTOMS

- The most significantly recognized symptom of placenta previa is painless, bright red vaginal bleeding or hemorrhage during late pregnancy.
- It is imperative that vaginal examinations be avoided because stimulation of the placenta may cause hemorrhage. However, bleeding may not occur until labor begins.

MATERNAL AND FETAL IMPLICATIONS

- As a result of the abnormally implanted placenta, the fetus is often in a transverse or breech position, which may be noted during fundal examination.
- The fetus may also experience hypoxia and possibly death from maternal bleeding. The patient may go into shock as a result of hemorrhage.

NURSING CARE

- Nursing care for patients with a placenta previa involves close monitoring of bleeding as well as fetal and maternal status.
- Significant bleeding or hemorrhage should be reported immediately to the appropriate healthcare provider.
- Regular assessment of fetal heart rate and movement is necessary. Heart rate patterns that indicate fetal compromise should be reported to the healthcare practitioner immediately.
- Careful monitoring of bleeding is imperative, as vital sign changes may not be initially evident.
- Patients with a placenta previa should remain on bed rest. Non-stress testing to evaluate fetal status is performed during bleeding episodes, while intermittent fetal heart tones are obtained according to medical orders or institutional policy.
- Patients should be blood-typed and cross-matched in case a blood transfusion is necessary. Intravenous access should be maintained for prompt administration of fluids or blood products.
- A Kleihauer-Betke test is usually performed on Rh-negative patients to determine if the fetal blood has entered the maternal circulation as a result of fetal-maternal hemorrhage.
- RhoGAM is given to Rh-negative patients during each bleeding episode to prevent isoimmunization.

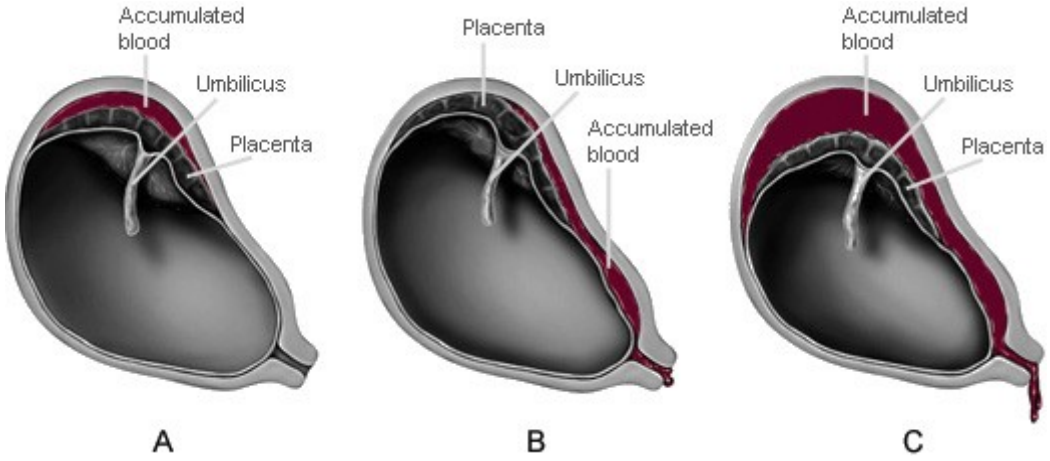
PATIENT TEACHING

- It is extremely important that patients with a placenta previa understand the need to maintain bed rest to prevent unnecessary pressure on the internal cervical area where the placenta is implanted. In addition, patients should be instructed to maintain pelvic rest by abstaining from sexual intercourse or using tampons or douches. Encourage the patient to prohibit vaginal examinations.

(b) ABRUPTIO PLACENTAE

DEFINITION:

- Abruptio placentae often referred to as an *abruption* or *placenta abruption* is the premature separation of the normally implanted placenta from the uterine wall before labor and delivery of the newborn. Bleeding occurs between the uterine wall and the placenta.
- An Abruptio placenta is classified according to the degree of placental separation and subsequent hemorrhage.
- An abruption can be partial or complete, with apparent or concealed hemorrhage (see illustrations). An abruption is partial if a section of the placenta separates from the uterine wall but the margins of the placenta remain intact.
- A complete abruption occurs when the entire placenta detaches from the uterine wall.
- Apparent hemorrhage refers to bleeding that is evident, while a concealed hemorrhage denotes bleeding that is obscured.



A. Partial abruption with concealed hemorrhage.
B. Partial abruption with apparent hemorrhage.
C. Complete abruption with apparent hemorrhage.

INCIDENCE AND RISK FACTORS

Abruptio placentae occurs in 1 in 200 deliveries (Cunningham et al., 2009). Aside from abruptions occurring as a result of trauma, the cause of abruptio placentae is largely unknown. However, there are several factors that place patients at risk for an abruption.

- Drug use (e.g., cocaine)
- Alcohol abuse
- Cigarette smoking
- Hypertension
- Diabetes mellitus
- Advanced maternal age
- Multiparty and multiple pregnancy
- History of Abruptio placentae
- Thromboembolic disorders

- Premature rupture of membranes (PROM)
- Abdominal trauma (e.g., accident, violence)

SIGNS AND SYMPTOMS

The classic signs and symptoms of abruption placentae include vaginal bleeding, which may be dark red due to old blood from a concealed abruption; uterine tenderness; and a board-like abdomen. Patients often complain of an aching or dull pain in the abdomen or lower back. Additionally, uterine irritability with poor uterine resting tone is frequently noted.

MATERNAL AND FETAL IMPLICATIONS

- An Abruptio placenta is a life-threatening event for the patient and the fetus. Patients with an abruption are at risk for developing hypovolemic shock, disseminated intravascular coagulation (DIC), and possibly death.
- Patients may also suffer from postpartum hemorrhage after delivery due to poor contractility of the uterus following an abruption.
- Since the placenta is the source of oxygenation for the unborn fetus, premature separation of the placenta from the uterine wall can place the fetus at great risk for hypoxia and death.

NURSING CARE

- Although vaginal delivery is preferred to cesarean section for patients who are Hemodynamically stable, the nurse must be prepared to deal with the possibility of severe hemorrhage and hypovolemic shock, as well as the resulting fetal distress.
- Patients should have intravenous access with a large-bore catheter to accommodate the administration of fluid and blood products.
- It is necessary to monitor carefully the status of the patient and fetus. Frequent vital signs and fetal heart tones, as well as monitoring and documentation of blood loss, is essential.
- Abnormal vital signs, bleeding, or fetal heart patterns indicating fetal compromise should be reported immediately to the appropriate healthcare provider.
- Observation and documentation of the patient's intake and output and pain and comfort levels are also essential.
- Patients should be blood-typed and cross-matched in case a blood transfusion is necessary. RhoGAM is indicated for Rh-negative patients.
- Because the potential for patient and fetal injury is high in the presence of abruptio placentae, it is important to address the emotional needs of the patient.
- Patients should be kept informed of the status of the fetus, and the nurse should be available and ready to answer any questions that patients or their families may have.

PATIENT TEACHING

- Patients should be instructed to report bleeding and severe abdominal pain immediately.
- It is important to inform patients with Abruptio placentae that emergency delivery may be necessary.

- If a patient must have an emergency cesarean section, it is important for the nurse to quickly communicate to the patient and her family what will occur before and during the procedure.
- Nurses should remember that hemorrhage and emergency surgery can be very frightening; therefore, clear and honest information must be given to the patient and her family as frequently as possible.

PLACENTA PREVIA VERSUS ABRUPTIO PLACENTA		
Assessment	Placenta Previa	Abruptio Placenta
Pain	Pain less	Uterine tenderness; severe abdominal pain and possibly aching or dull pain in the lower back
Bleeding	Bright Red	May Be Concealed; If Noted It Is Often Dark Red
Uterus	No unusual contractions or irritability	"Board-like" abdomen; uterine irritability with poor resting tone
Risk for postpartum haemorrhage	High risk; due to low placement of the placenta, there is limited uterine contraction	High risk due to poor contractility of the uterus following an abruption

III. HYPEREMISIS GRAVIDARUM

- Nausea and vomiting occur normally during pregnancy.
- However, nausea and vomiting that persists beyond the 20th week of gestation and interferes with the intake of food and fluid as well as adequate weight gain during pregnancy is termed *hyperemesis gravidarum.*
- The cause of hyperemesis is unknown, however elevated hormonal levels and relaxation of smooth muscle resulting in delayed stomach emptying, along with stress, are believed to play a part in this disorder.

Signs and Symptoms

Normal first-trimester nausea and vomiting can be challenging for pregnant women. However, patients with hyperemesis gravidarum are frequently debilitated by unrelenting vomiting and dry retching. Common signs and symptoms of hyperemesis gravidarum include:

- Poor appetite
- Poor nutritional intake
- Vomiting beyond 20 weeks' gestation
- Significant weight loss (>5% of pre-pregnancy weight)

- Dehydration (dry mouth and mucous membranes, decreased skin elasticity [turgor], and dark, concentrated urine)

Maternal and Foetal Implications

- Patients with hyperemesis gravidarum frequently become dehydrated and may have metabolic acidosis as a result of starvation.
- In addition, patients may become alkalotic from a loss of hydrochloric acid during vomiting.
- Electrolyte imbalances such as hypokalemia and vitamin deficiencies are also common in patients with hyperemesis gravidarum.
- Ultimately, long-term nausea and vomiting can cause renal and/or gastrointestinal impairment in the pregnant patient.
- Dehydration occurring from hyperemesis gravidarum may result in preterm labor, which can negatively impact the fetus. In addition, dehydration impairs placental perfusion and affects nutrient intake and oxygenation of the fetus.
- Moreover, due to the severe nausea and vomiting associated with hyperemesis, poor maternal nutrient intake is common and fetal growth may be compromised, causing low-birth-weight infants.

Nursing Care

- The nurse caring for patients with hyperemesis gravidarum monitors and provides physical care as well as psychosocial support to patients.
- The nurse will administer intravenous fluids and antiemetics.
- Intake and output are carefully monitored, as well as gastrointestinal status.
- Laboratory results (e.g., ketones, electrolytes, complete blood count, liver enzymes) should be carefully monitored, with abnormal results reported to the appropriate healthcare practitioner.
- It is important to monitor for weight loss. The constant, prolonged nausea and vomiting associated with hyperemesis may easily result in malnutrition for pregnant patients.
- Often patients are unable to work or tend to activities of daily living.
- This underscores the need for the nurse to address the psychosocial needs of patients, which may involve simply listening to the patient or a referral to appropriate resources.

Patient Teaching

- Most of the nursing care provided to patients with hyperemesis gravidarum involves teaching the patient to deal with the associated nausea and vomiting.
- It is important for patients to understand the need to eat small, frequent low-fat meals throughout the day.
- Usually toast, dry cereal, and other bland foods such as bananas, rice, and apples are well tolerated. Patients should be instructed to identify and avoid foods and odors that trigger nausea and vomiting.
- In addition, patients should be encouraged to maintain adequate fluid intake to prevent dehydration.

- Since constant, prolonged vomiting affects the patient's mouth and desire to eat, nurses can teach and encourage patients to provide and maintain adequate oral care.
- Positive ketones in the urine indicate that patients are using fat stores to provide energy to themselves and their growing fetuses.
- Therefore, patients may be required to use urine dipsticks to monitor ketones while at home. The nurse will need to instruct patients in the appropriate use of the urine dipsticks.
- Nurses should instruct patients to notify their healthcare practitioner if they notice dark urine, bloody vomitus, abdominal pain, dehydration, lack of urine output for 8 hours, or inability to keep food down for 24 hours.

IV. PREGNANCY RELATED HYPERTENSIVE COMPLICATIONS

Gestational hypertension, formerly known as *pregnancy-induced hypertension*, refers to hypertension occurring for the first time during pregnancy. Diagnosis of gestational hypertension requires a blood pressure that is greater than or equal to 140/90 mm Hg. The blood pressure should be elevated on at least two occasions 4–6 hours apart. The diagnosis is made after 20 weeks' gestation and is characterized by a blood pressure that returns to normal by 12 weeks postpartum. Patients with gestational hypertension do not present with proteinuria, which is a characteristic of preeclampsia. However, gestational hypertension may progress to preeclampsia. If gestational hypertension does not progress to preeclampsia, it is reclassified as transient hypertension.

Preeclampsia is identified by a blood pressure that is greater than or equal to 140/90 mm Hg in the presence of protein in the urine (proteinuria). Preeclampsia is indicated when there is a finding of 300 mg of protein in a 24-hour urine test or 1–2+ protein or greater via urine dipstick.

Eclampsia is the occurrence of seizures in the presence of preeclampsia. Usually, seizures are related to gestational hypertension and not to other causes. Seizures can occur anytime before, during, or after delivery of the fetus.

Preeclampsia superimposed on chronic hypertension refers to chronic hypertension with a new onset of proteinuria in hypertensive patients without proteinuria before 20 weeks' gestation or a sudden increase in proteinuria or blood pressure, or a platelet count less than 100,000 mm^3 in patients with hypertension and proteinuria before 20 weeks' gestation (Murray et al., 2010). Medical treatment and nursing care for patients with preeclampsia superimposed on chronic hypertension is similar to that of gestational hypertension and preeclampsia. Patients with preeclampsia superimposed on chronic hypertension are often treated with antihypertensive agents.

Signs and Symptoms

- Signs and symptoms of pregnancy-related hypertension vary depending on the severity of the hypertension.

- However, the common signs and symptoms of pregnancy-related hypertension include headache, blurred vision, epigastric pain, weight gain (>2 pounds per week), oliguria, and proteinuria.
- Although no longer considered diagnostic of pregnancy-related hypertension, edema may still be noted in these patients (Cunningham et al., 2009).

Maternal and Foetal Implications

- Hypertension in pregnancy places patients and their fetuses at great risk for a variety of complications.
- Some of the most significant maternal complications of hypertension in pregnancy include cerebral vascular accident (CVA, or stroke), disseminated intravascular coagulation (DIC), and placental abruption from the elevated blood pressure.
- Additionally, patients are at risk for the development of *HELLP*syndrome in the presence of gestational hypertension.
- Just as its name implies ***HELLP* syndrome**causes great dysfunction within the body and requires immediate intervention. It is characterized by:
    - **H**aemolysis of red blood cells, which leads to anaemia
    - **E**levated **l**iver enzymes leading to epigastric pain
    - **L**ow **p**latelets, which cause abnormal bleeding and clotting as well as petechiae
- Patients whose function continues to decline without intervention can develop eclampsia and are at risk for cerebral hemorrhage, DIC, and placental abruption.
- Fetal complications include intrauterine growth retardation and premature delivery resulting from decreased placenta perfusion.

Nursing Care

- Pregnancy-related hypertension presents a great risk to patients and their unborn fetuses. Therefore, it is the responsibility of the nurse to monitor the patient carefully for signs of a decline in health status.
- The nurse should immediately report increases in blood pressure, visual disturbance changes, severe headaches, epigastric pain, and oliguria to the appropriate healthcare practitioner.
- While patients are hospitalized for pregnancy-related hypertension, the nurse will monitor blood pressure and the well-being of the fetus.
- If magnesium sulfate ($MgSO_4$) is prescribed for preeclampsia or eclampsia, a Foley catheter is usually inserted to monitor urine output and to obtain regular urine specimens.
- The nurse is responsible for administering $MgSO_4$ and for monitoring its toxicity. Magnesium sulfate toxicity can be prevented by ensuring that urine output is adequate (at least 30 ml/hr), deep tendon reflexes are present, and the respiratory rate is greater than 12 breaths per minute.
- If $MgSO_4$ toxicity is noted, the healthcare practitioner must be notified immediately and the infusion discontinued.

- Calcium gluconate can be administered when prescribed to reverse the effects of $MgSO_4$ toxicity.
- The serum magnesium level for patients receiving $MgSO_4$ should be 4 to 8 mg/dl (Davidson et al., 2012).
- In the presence of eclampsia, the nurse must be prepared to prevent injury to the patient during seizures and to monitor seizure activity.
- Bedside rails should be up and padded. Emergency equipment should be readily available, including an oral airway, oxygen, a bag-valve-mask (BVM), and emergency medication.
- In the event of a seizure, patients should be protected from injury. The nurse should note the beginning and ending of the seizure and ensure adequate oxygenation after seizure activity has ceased.
- The nurse should not attempt to insert an oral airway or other object into the mouth during a seizure.
- The head can be gently turned to the side to prevent the aspiration of mucus and vomitus into the lungs during seizure activity.
- The nurse obtains vital signs and monitors the fetus following the seizure.
- Labor may progress rapidly during seizure activity.
- Sometimes newborns are delivered suddenly during a seizure. The nurse should be prepared for an imminent delivery in patients with preeclampsia and eclampsia.

Patient Teaching

- Patients suffering from pregnancy-related hypertension who are being treated on an outpatient basis are taught to monitor themselves and their unborn child for a decline in health status. Specifically, patients are taught to notify their healthcare practitioner if they experience headaches, visual disturbances, epigastric pain, or sudden weight gain. Patients may be taught to monitor their weight, blood pressure, and urine protein at home.
- They are instructed to notify the appropriate healthcare practitioner of elevated blood pressures or protein in the urine.
- They should also be instructed to perform daily fetal kick counts to monitor fetal well-being, as well as to increase protein intake because proteinuria decreases the amount of available protein.
- The nurse encourages patients with pregnancy-related hypertension to rest in the side-lying position as much as possible, whether at home or in the hospital.
- This position prevents unnecessary pressure on the vena cava, which decreases renal and placental blood flow and leads to increased blood pressure.
- The patient should also be instructed to decrease environmental stimuli by lowering or turning off lights and by decreasing the volume on radios or televisions as well as decreasing the number of visitors.
- Nursing care should be performed in a manner that prevents unnecessary disturbances to the patient's environment while hospitalized.
- Stress and anxiety is a major concern in patients with pregnancy-related hypertension, as it can lead to increased blood pressure.

- Therefore, the nurse should discuss stress and anxiety management with patients.

V. GESTATIONAL DIABETES MELLITUS

Definition: Gestational diabetes mellitus occurs with the onset of pregnancy and is characterized by the inability of the pregnant patient to tolerate glucose.

Patients who develop gestational diabetes may develop diabetes later in life. However, gestational diabetes often resolves after delivery.

Incidence and Risk Factors

According to the American Diabetes Association (2013), gestational diabetes affects 18% of pregnancies. Factors that place patients at risk for developing gestational diabetes mellitus include:

- Maternal obesity
- Advanced maternal age
- Member of a minority population
- GDM in previous pregnancies
- Presence of glycosuria
- History of a macrosomic infant(s) (birthweight >4500 g)
- History of spontaneous abortion or fetal demise
- Family history of diabetes mellitus or GDM

Maternal and Foetal Complications

- A variety of maternal and fetal complications are associated with gestational diabetes mellitus. Patients have a significant chance of delivering via cesarean section due to the large size of infants born to patients with gestational diabetes.
- Patients also have an increased frequency of hypertension.
- Infants born to patients with gestational diabetes mellitus are usually macrosomic (birthweight >4.5 kg).
- This occurs due to fetal hyperinsulinemia as a result of maternal hyperglycemia, which stimulates excessive growth.
- These large infants may have difficulty maneuvering the birth canal, and a cesarean section may be required.
- If vaginal delivery is attempted, the infant is at risk for shoulder dystocia or other birth injuries.
- After delivery, the newborn infant's blood glucose must be monitored regularly due to the sharp decrease in available glucose after the umbilical cord is cut.

- The newborn's pancreas continues to produce insulin after delivery despite the decrease in serum glucose.
- This adds to the potential instability of the infant's blood glucose.
- Infants are also at risk for hypocalcaemia, hyper bilirubinaemia, and respiratory distress syndrome as a result of gestational diabetes.

Nursing Care

- It is important for the nurse to monitor serum glucose levels as well as ketones and glucose in the urine throughout the pregnancy of patients with gestational diabetes mellitus.
- A referral to a dietician may also be necessary.
- The nurse may also conduct regular fetal surveillance, including non-stress tests (NST)or biophysical profiles (BPP) starting from 32 to 36 weeks' gestation and until delivery.
- During labor, the patient with gestational diabetes mellitus may need to be on intravenous insulin and glucose; blood glucose levels will be monitored regularly according to medical orders or institutional policies.
- Blood glucose may be monitored as often as every hour.
- After delivery, the nurse is responsible for monitoring the infant's blood glucose levels, as glucose instability is common in newborns born to patients with gestational diabetes mellitus.
- If the newborn's blood glucose level is below acceptable national or institutional standards, usually <40 mg/dL, treatment with intravenous fluids, intravenous or oral glucose, or early feedings is necessary.
- Nurses must be aware of signs and symptoms of hypoglycemia in the newborn, including jitteriness, tremors, irritability, lethargy, seizures, tachypnea, temperature instability, and/or poor feeding and take appropriate action to assist in the treatment of hypoglycemia.

Patient Teaching

- The nurse working with patients who are diagnosed with gestational diabetes mellitus is often responsible for teaching the patient how to self-monitor and record glucose at home.
- In addition, the nurse can teach patients about proper diet and safe exercise during pregnancy.
- During prenatal visits, the nurse reviews the blood glucose and diet logs to make recommendations about monitoring, medication administration, and diet.
- Patients may also need to learn how to self-administer insulin.
- The nurse should make sure the patient can comfortably and appropriately check blood glucose levels and administer insulin by requesting a return demonstration.
- It is imperative that the nurse teach patients with gestational diabetes the signs and symptoms of hypoglycemia. These signs and symptoms include shakiness, anxiety, headache, hunger, cold, clammy skin, and tingling around the mouth.
- The patient should be taught to closely monitor for hypoglycemia and to notify her healthcare practitioner immediately if signs and symptoms are noted.

- Hypoglycemia in women with GDM is treated by immediately eating 10 to 20 g of a mixed protein and carbohydrate snack.
- This mixed protein and carbohydrate snack tends to dampen the rapid elevation of glucose followed by rapid decline that can result in pregnant women with diabetes from consuming a pure simple sugar.
- Since the potential for developing diabetes is significant in patients with gestational diabetes, it is important that patients understand the need for follow-up evaluation after delivery.
- Patients should continue to watch for signs and symptoms of hypoglycemia and notify their healthcare practitioner if seen.

VI. AMNIOTIC MEMBRANE COMPLICATIONS

Premature rupture of membranes (PROM) refers to the rupture of membranes one hour or more before the onset of labor, whereas **preterm premature rupture of membranes** (PPROM) refers to the rupture of membranes prior to 37 weeks' gestation. PROM and PPROM are often associated with preterm labor and birth.

Incidence and Risk Factors

Preterm premature rupture of membranes (PPROM) occurs in 3% of pregnancies and is the cause of one third of preterm deliveries (Medina & Hill, 2006). Premature rupture of membranes (PROM) occurs in 3% to 18% of all pregnancies (Brown, 2000). Risk factors for preterm premature and premature rupture of membranes include:

- Infections, such as sexuality transmitted infections (STIs)
- Prematurely dilated cervix
- Hydramnios
- Multiple pregnancy
- Foetal malpresentation
- Maternal nutritional deficiencies
- Stress

Maternal and Foetal Implications

- Preterm premature rupture of membranes can cause a variety of problems, especially for the unborn fetus.
- Without the protective barrier of the amniotic membrane, the fetus is at a greater risk for the development of infection and preterm delivery.
- The fetus is also at risk for becoming septic after delivery. Additionally, without the cushioning of the amniotic fluid, there is a higher probability of umbilical cord compression as well as cord prolapse.

- Patients with PPROM or PROM have a risk of developing chorioamnionitis, which is an infection of the chorion and amnion of the placenta and can be life-threatening for the patient and fetus.

Nursing Care

- As with medical treatment, nursing care greatly depends on whether the medical diagnosis is PPROM or PROM.
- However, nursing care typically involves assisting the healthcare practitioner to confirm the rupture of membranes, monitoring the patient for infection and for the presence of uterine contractions, and monitoring the status of the fetus.
- It is imperative that the nurse change patient underpads frequently and avoid unnecessary vaginal examinations to prevent infection.
- Often, patients with PPROM who are considered stable are initially monitored on an inpatient basis and then discharged to home.
- Nursing care for these patients involves teaching about the signs and symptoms of preterm labor and when to call the healthcare practitioner.
- Nursing care for patients whose labor is induced involves administering induction agents and monitoring the status of the patient, fetus, and uterine contractions.
- As with all complications in pregnancy, the nurse should be available to answer questions and assist in relieving the patient's anxiety about her diagnosis.
- When dealing with PPROM and PROM, the nurse should be prepared to deal with cord prolapse and compression, which can occur as the umbilical cord slips down in the pelvis and is a life-threatening situation for the fetus; therefore, the fetus must be monitored closely.
- In the event of cord prolapse and compression, the nurse should attempt to relieve pressure on the umbilical cord and instruct the patient to quickly move into the knee-chest or Trendelenburg positions.
- Oxygen should be administered and the healthcare practitioner notified immediately.

Patient Teaching

It is important for patients with PPROM to understand the signs and symptoms that suggest infection as well as preterm labor, which often follows PPROM. Patients should be instructed to call their healthcare practitioner or report to the hospital immediately if the following signs and symptoms are noted:

- Fever greater than 100.4 °F (38 °C)
- Foul-smelling vaginal discharge or other signs of infection
- Uterine contractions or cramping (including tightening of the abdomen)
- Decreased fetal movement

In addition, patients should be encouraged to avoid activities or objects that might induce labor or cause infection by exposing the cervix to bacteria. These include sexual activity, orgasm, nipple

stimulation, and tampons and douches. Some patients may be placed on bed rest and should be encouraged to follow this directive to prevent preterm labor.

VII. PRETERM LABOUR AND BIRTH

Preterm labor refers to labor that occurs after 20 weeks' but before 37 weeks' gestation. Preterm birth, a consequence of preterm labor, refers to delivery prior to 37 weeks' gestation.

Incidence and Risk Factors

Preterm labor is responsible for preterm birth, which affects the ability of the newborn to adjust to extrauterine life. According to the National Vital Statistics Reports (2013), the preterm birth rate in the United States in 2011 was 11.73%. Preterm birth is a significant contributor to infant mortality rates. A variety of risk factors predispose patients to preterm labor and subsequent birth.

- Infection
- Dehydration
- PPROM
- Uterine bleeding
- Diabetes
- Substance abuse
- Smoking
- Incompetent cervix
- Multiple gestation
- Preeclampsia
- Poor nutrition
- Poverty (e.g., homelessness, low socioeconomic status)
- History of preterm labor and birth
- Young or advanced maternal age
- Intimate partner violence (IPV)

Maternal and Foetal Implications

- Preterm labor and birth present a unique challenge to patients and their fetuses. Although most of the implications apply to the fetus, patients may suffer from stress due to the diagnosis of preterm labor and birth as well as from the causative agent.
- Specifically, patients may be experiencing preterm labor and birth due to conditions such as sepsis or IPV.
- The fetus is at great risk for delivering early as a result of preterm labor. The effects of preterm labor and birth depend on the gestational age of the fetus at delivery.
- However, the immaturity of fetal lungs in the presence of preterm labor and birth is a significant concern.

Signs and Symptoms

Patients presenting with preterm labor and birth often complain of feeling pressure in the pelvic area, abdominal and/or uterine cramping or contractions, painful or painless contractions, feeling as though the fetus is "balling up," and/or constant back pain. Amniotic membranes may rupture prematurely; therefore a sudden gush or constant trickle of vaginal fluid may be noted.

Nursing Care

- Nursing care for patients experiencing preterm labor include administering prescribed medications such as antibiotics, glucocorticoids, intravenous fluids, and tocolytics and preparing the patient for possible delivery.
- While hospitalized, patients should be monitored for signs and symptoms of infection, which can lead to preterm labor.
- Fetal tachycardia indicates possible infection and should be evaluated immediately. Vital signs, contractions, and fetal status should be assessed as ordered or according to institutional policy.
- As patients are often permitted to remain at home once stable, nursing care for these patients include teaching patients preventive measures that will help them avoid early delivery.
- When patients are faced with the possibility of delivering a preterm infant, the situation may quickly become overwhelming to them.
- Although preterm labor and birth can occur rapidly, it is imperative that nurses address the emotional issues of the patient.
- Generally, this will involve answering patient questions about the status of the fetus and preparing the patient for the care required to prevent delivery or the necessary preparation for preterm delivery.

Patient Teaching

The major goal of teaching patients with preterm labor is to help them become aware of factors that may cause premature labor and delivery. Patients are taught to:

- Avoid activities that may disturb the cervix and cause labour or infection (e.g., vaginal exams, sexual activity, orgasm, tampons, douches)
- Rest in the side-lying position to improve blood flow to the uterus
- Consume adequate fluid to prevent dehydration, which causes the release of oxytocin
- Notify their healthcare practitioner immediately if any of the following signs and symptoms are noted: uterine contractions, cramping or irritability, constant back pain, a feeling that the foetus is "balling up," a gush or a constant trickle of vaginal fluid, or fever

14.5. LABOUR ROOM

Admission to the labor room

1. As soon as the mother comes, welcome her to the labour room with a smile.
2. Ask her to take off the street shoes/chappals and give her hospital slippers
3. Mother's folder and case sheet is prepared with the correct name, permanent address with husband's name, age, religion and occupation
4. Make the mother comfortable and collect brief history and present complaints.
5. Collect the mother's jewelry and valuables and hand over to a responsible care taker and record in the chart, take their signature.
6. Explain the routines and procedure to the mother and caretaker in their language and informed consent is taken.
7. Check and record Blood Pressure, temperature, pulse, respiration, FHS, FKC in the partograph.
8. Inform the doctors.
9. Provide assurance to the mother.
10. As per doctor's prescription soap and water enema is given, clip the pubic hair, connect CST, collect blood and send for investigations like Hb, HIV, HBsAg, VDRL, blood grouping and typing, collect urine for urine analysis.
11. Provide adequate rest to the mother and ambulate the patient if membranes are not ruptured.
12. Maintain adequate hydration by giving soft and liquid diet in the form of plain water, tender coconut water, juice etc.
13. Encourage the mother to pass urine, if not able to go to toilet provide bed pan.
14. Assess the level of pain, to relieve pain analgesics may be given like injection tramadol, pethedine as per doctor's advice.
15. Per Vaginal examination is done once in 4 hours, and once the mother is in active stage of labour, change the gown and is shifted to the labour table.
16. Labour is induced by injection oxytocin, 5units in primi, 2.5units in multiparae, and one unit in grand multiparae to one pint of normal saline.
17. Titre the drops starting with 8, 16, 24, 32 drops per minute.
18. Monitor Fetal Heart Rate every 15 minutes.
19. Watch for membranes and liquor or spontaneous rupture of membranes.
20. Note for cervical dilatation and descent of head.
21. Watch for uterine contractions its durations and intensity.
22. Note for vital signs every 2nd hourly.
23. Encourage the mother to pass urine, in late first stage catheterize the bladder under strict aseptic technique.
24. Check all the articles for working condition like suction, oxygen, spot light, and other articles needed for delivery.

Articles in each room

Each room consists of:

1. Labour table

2. Trolley
3. Delivery tray consists of
   a. 3 sterile towels
   b. 3 bowls- one small with gauze, 2 big bowls, one for savlon, one to collect placenta. (labour table also has a basin to collect placenta)
   c. 2 artery forceps
   d. one pair of scissors to cut the umbilical cord
4. Baby tray with sterile towel to take the baby
5. 2 pair of gynamide gloves, 2 pair of disposable gloves, mask
6. Xylocaine jelly 2%,
7. Disposable syringe 10cc,
8. Simple catheter
9. Gown bin,
10. Tampoon bin,
11. Sterile pad bin
12. Savlon swab bin
13. Savlon with cheetle forceps
14. Xylocaine jelly
15. 15. Injection tray
16. Injections eg;methergin, rantac, perinorm, epidosin, tramadol, buscopan, oxytocin
17. Plastic aprons 18. Gum boots,
18. Suction apparatus and Oxygen inhalation with nasal prongs
21. Doppler

a. **Stages of labour**

Labour is defined as the series of events that take place in the genital organs in an effort to expel the viable products of conception out of the womb through the vagina into the outer world.
Conventionally, events of labour are divided into three stages:

First stage

It starts from the onset of true labour pain and ends with full dilatation of the cervix. It is in other words the "cervical stage" of labour. Its average duration is 12 hours in primi gravidae and 6 hours in multiparae.

Role of the Nurse:

1.The caretaker can be allowed to stay with the mother
2. Watch, observe and give assurance
3.Help to walk around if the membranes are not ruptured.
4.Provide soft, liquid diet and rub the back in severe pain
5.Check the F.H.R at every 15minutes and Blood pressure hourly
6.Maintain the partograph accurately.
7.Provide entonox for the painless delivery

1. **Entonox controlled pain relief:** Entonox is the inhalation of gas used to relieve labour pain at the end of first stage of labour or when dilatation of cervix is 3cm.It consists 50% each of Nitric oxide and Oxygen

Procedure:

1. Ensure proper assembly of the entonox kit before use. Open cylinder by turning the key to anticlock side and hand over the demand valve to the mother. The gas comes out through the demand valve, when the mother inhales only.
2. The mask should be held close to the mouth to maintain a tight seal.
3. Entonox is self administered, so the mother should hold the mask to the mouth by herself, in the presence of a doctor or a trained nurse.
4. For effective analgesia synchronization of contraction and duration of inhalation is a must. To obtain peak analgesia the mother is advised to take 6-7 deep inhalations at least for 20 seconds before each contraction.
5. Mother is advised to keep the mask away from the face when not inhaled or during each interval
6. It not only controls pain but also provides greater oxygen uptake, because it contains oxygen.
7. If a mother complains dryness of mouth, water can be given to sip in between the contractions.

Side effects: Giddiness, drowsiness and nausea are common. Mother is asked to inhale atmospheric air till she recovers.

Vomiting- better not to give food or water one hour before administration of entonox

After every use wash the mask and mouth piece with soap and running water.

Second stage

It starts from the full dilatation of the cervix and ends with expulsion of the fetus from the birth canal. It has got 2 phases.

(a)The propulsive phase- starts from the full dilatation up to the descent of the presenting part to the pelvic floor.

(b)The expulsive phase is distinguished by maternal bearing down efforts and ends with delivery of the baby. Its average duration is 2 hours in primi and 30 minutes in multipara.

Role of the Nurse:

1. Provide fowler's position or whatever position mother prefers.
2. Be with the mother and give assurance
3. Rub the back and ask her to bear down during contractions.
4. Check F.H.R at every 15 minute
5. Keep ready the articles and assist the doctor.
6. Vaginal examinations is done to note the station, position and also to detect any accidental cord prolapse.

Preparation for delivery

1. Person conducting delivery, the hands and forearms should be washed with soap and running water, a scrolling brush be used for the finger nails. The procedure should take at least 3 minutes.
2. Essential aseptic procedures are followed 3c's (A) clean hands (b) clean surface (c) clean cutting and ligaturing of the cord.
3. Sterile gown, mask and gloves are put on
4. Toileting of external genitalia is done with savlontampons.
5. Catheterize the bladder if it's full.
6. Give proper position to the patient using stirrups.
7. Call the pediatrician.
8. Encourage the mother to bear down.
9. Episiotomy is given at the height of the contraction after crowning of head.

10. Once the head of the baby is born, suctioning is done of the mouth, clean the eyes.

11. Note and record the time of delivery.

12. Once the baby is born; cord is clamped at 5-6cm long, cut and separate from the mother.

13. Place in a tray covered with clean cloth and taken to the baby resuscitation room.

14. Injection Oxytocin 20 units is added to the on flow drip.

1. Immediate care of newborn

1. Soon after delivery of the baby, it should be placed on a tray covered with clean dry linen with the head slightly downwards (15°)
2. Air passage should be cleared of mucus and liquor by gentle suction.
3. Clamping and ligature of cord- the cord is clamped immediately by two kocher's forceps, the near one placed 5cm away from the umbilicus and is cut in between to prevent hypervolaemia and hyperbilirubinaemia.
4. Quick check is made to detect any gross abnormality and the baby is wrapped with dry warm towel. The identification tape is tied both on the wrist of the baby and the mother

Baby resuscitation after delivery

1. Baby is placed in the radiant warmer.

2.Thorough physical examination of the new born is done.

3.Baby weight is checked.

4. Clean the baby using coconut oil with cotton swabs, show the sex to the care taker.

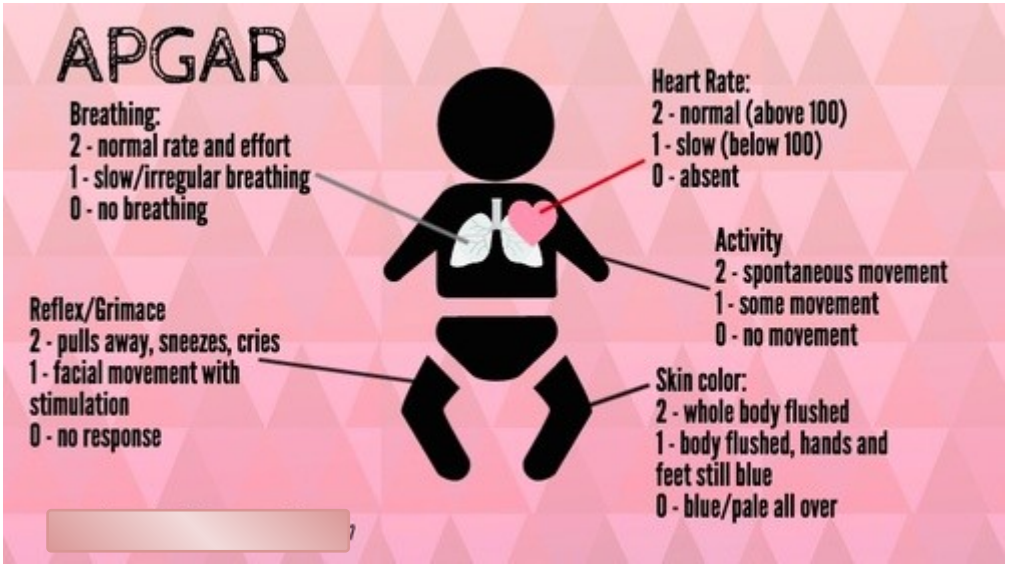
5.Give to the mother to breast feed within half hour of delivery.

6. Apgar score at 5 minutes to be recorded

Apgar score:

	0 (Points)	1	2
Appearance	Blue or pale all over	Blue extremities, but torso pink	Pink all over
Pulse	None	< 100	≥ 100
Grimace	No response	Weak grimace when stimulated	Cries or pulls away when stimulated
Activity	None	Some flexion of arms	Arms flexed, legs resist extension
Respirations	None	Weak, irregular or gasping	Strong cry

0-3 Critically Low, 4-6 Fairly Low, 7-10 Generally Normal



7. Neurological examination is made immediately after birth in babies suspected of having intracranial damages.

1. **Moro's reflex**: the infant is held in supine position with head flexed at 30° and then the head is allowed to drop suddenly. Extension and abduction of the limbs with opening of the hands followed by adduction and flexion in observed as a response in a normal infant.
2. **Rooting reflex:** a normal infant when touched on the check turns eagerly towards the stimulus and open the mouth for a feed.
3. **Sucking and swallowing reflexes**: A normal infant starts sucking when something (nipple and the areola) touches the palate. Baby swallows when the mouth is filled with milk.

8. Mummify the baby and hand over to care taker.

1. Immediate care of Mother

It starts after the expulsion of the fetus and ends with the expulsion of the placenta and the membranes (after-births). Its average duration is about 15 minutes in both primigravidae and multiparae.

Role of the Nurse:

1. Be with the mother and don't massage the abdomen till the expulsion of the placenta and give hot coffee or liquids
2. Give injection methargin 0.2 mg IM
3. Watch for the lengthening of cord and deliver the placenta by controlled cord traction
4. Examine the placenta for the complete membranes and cotyledons for any abnormalities.
5. Ex amine the umbilical cord of the baby for true or false knots, two arteries and one vein. The cord length should be 50cm.
6. Cord blood to be collected in Rh negative mothers, where a haemoglobinopathy is suspected like sickle cell disease and other abnormal conditions.
7. Once the placenta is delivered check that the uterus is well contracted and fresh blood loss is minimal.

8. Careful inspection of the vagina is important and mother is made comfortable by changing the soiled linen and placing a confident pad under the buttocks or clean bed sheet.
9. The vulva and perineum are gently cleansed with savulon, softly dried and a clean pad is placed in position.
10. Maternal pulse, blood pressure and temperature are recorded.
11. Keep ready for suturing of episiotomy:
12. **Articles:** A sterile tray containing:
13. episiotomy scissorshole towel, small towel, needle holder, thumb forceps, sponge holding forceps, gauze pieces.Other articles: Spot lamp, Revolving stool, pair of gloves, mask, tampon bin, Suturing material- Chromic catgut '0'-2.
14. Strict aseptic technique should be maintained.
15. Lithotomy position to be given. Clean the vulva gently with savalon, place the small sterile towel under the buttock and inspect for any injuries and lacerations. Vagina is packed with tampoon. Local anesthesia with xylocaine 2% is given.
16. The vulva and abdomen is draped with A.B.D. or hole towel and hand is placed lightly on the fundus to monitor the progress.
17. The vaginal mucosa is sutured first. The first suture is placed at or just above the apex apposed by interrupted sutures with '0' chromic catgut, from above downwards till the fourchette. The suture should include the deep tissues to obliterate the dead space. Repair of perineal muscle is done by interrupted sutures using '0' chromic catgut. The vaginal wall and the perineal skin are apposed by interrupted sutures.
18. The sutured areas should be inspected to confirm haemostasis before the vaginal pack is removed.
19. A vaginal examination is made to ensure the the introitus is not narrowed. Upon completion a rectal examination is made to confirm that no sutures have penetrated the rectal mucosa. Any such sutures to be removed to prevent fistula formation.
20. Uterine massage given by placing the left hand over the fundus and with right hand vaginal examination done and clots are expelled out completely.
21. The area is cleaned and a sterile pad positioned over the vulva and perineum.
22. The mother's legs are gently and simultaneously removed from lithotomy support and she is made comfortable.
23. The nature of trauma and repair should explain to the mother as well as the care she has to take.

Fourth stage

It is the stage of observation at least one hour after expulsion of the after-births. During this period general condition of the mother and baby are to be carefully monitored.

Immediate delivery care:

1. Careful observation of the mother and baby is very important.
2. The mother is encouraged to pass urine because a full bladder may impede uterine contraction.

3.Change the soiled linen and give her a warm hip bath on the table itself. Do not allow the mother to walk because there are so many instances where a mother was allowed to go the toilet and fallen and even died, because mothers feel weak due to loss of blood.

4. **Hip Bath:** Take a basin full of warm water, soap, sponge clothes-2 and towel.
   Change her gown and cover with a clean dry sheet.
   Wash her from the hip to the mid thigh by using the sponge cloth and soap, then wash off the soap with another sponge cloth and dry with a towel.
   Give her own clean cloths; keep her warm and comfortable with pillows.

5.If the mother is hungry give her light snacks and hot drink like tea or coffee, whatever she prefers.

6. Throughout this same period the nurse should pay regard to the baby's general well being. Check the security of the cord clamp and observe general skin colour, respirations and temperature. Keep in the warmer well covered. Warmest place is cuddled close to the mother. Breast feeding is done within half hour of delivery.

7.It is the responsibility of the labour ward in charge to complete the labour records and the one who conducts or assists in the delivery.

8. This should include details of any drugs administered, of the duration and progress of labour, of the reason for performing episiotomy and perineal repair. Details of the baby's condition including Apgar score are also recorded.

9. Birth register is completed by the ward in charge or a senior staff nurse with correct husband's name, address, sex of the baby, time of delivery, the person who conducted the delivery, mode of delivery and any complications.

10. The birth notification to the corporation must be completed within 36 hours of delivery

14.6. POSTNATAL CARE

Aims and objectives

1. To assess the health status of the mother.
2. To detect and treat at the earliest any gynecological condition arising out of obstetric legacy.
3. To note the progress of the baby and solve the feeding problem if any, and to formulate any preventive measures to be taken.
4. To impact family planning guidance

The five important obstetrical areas of observation are:

1. Eyes- conjunctive and lips for pallor to detect anemia.
2. Breasts examination
3. Abdomen- uterus for contraction
4. Perineum: Episiotomy
5. Legs for deep vein thrombosis

1. Eyes: Pull the conjunctive downwards and look for the pallor and observe the lips for pallor and cracks.

2. **Breast examination: Inspection:** Expose both the breasts to look for the symmetry, redness, varicosities and nipples.

Nipples: Observe for cracked nipples, short nipples, long nipples, abnormally large nipples, inverted and flat nipples

Cracked nipples: Wash with clean water and apply emollient

Inverted and flat nipple: Use the breast pump for expressing the milk

Short nipple: Use the pacifier

Palpation: There are several methods. The most common are:

Circular method, Anti-clock way from peripheral to the central, Quadrant method Wheel speed,

Circular method: Ask the mother to lie on her back with hands under the head to detect the axillaries nodes.

Cover one breast and palpate the other breast. Stabilize the breast with palm of left hand and palpate with finger pads of right hand in an anti clock way in a circular motion for any lymph nodes.

Quadrant method: Divide the breast into four parts and palpate from central to the periphery

Wheel Speed method: On either side of the breasts with longitudinal strokes from up to downwards.

4. **Abdomen:** firm/soft/boggy and contraction of the uterus.

Involution of the uterus: The rate of involution of the uterus can be assessed clinically by noting the height of the fundus of the uterus in relation to the symphysis pubis. Following delivery the fundus is about 13.5cm above the symphysis pubis. The measurement should be taken everyday at a fixed time by the same person. Bladder and bowel must be emptied beforehand. The uterus is to be centralized by the left hand and with a measuring tape, the fundal height is measured above the symphysis pubis. Every day the involution should be 1.25cm in 24hours and by the end of second week it becomes a pelvic organ and by 6 weeks it becomes normal in size.

Perineum: Observe for Lochia and episiotomy wound.

Lochia: It is the vaginal discharge for the first 15 days during puerperium. It originates form the uterus, cervix and vagina.

Types: Lochia rubra, red in colour 1-4 days, Lochia serosa, pink in colour 5-9 days and Lochia alba, pale white in colour 10-15 days.

The vulval pads are to be inspected daily for the odour – if offensive indicates infection.

Amount - If scanty, absent or excessive indicates infection.

Colour – Persistence of red colour beyond the normal days signifies subinvolution or retained bits of conception

Duration – Beyond three weeks suggests local genital lesion.

14.7. CARE OF EPISIOTOMY WOUND

Perineal care

Perineal hygiene involves cleaning the external genitalia and surrounding area. The area is conducive to the growth of pathogenic organisms because it is warm, moist and is not well ventilated.

The principle for perineal care is to clean the perineum from the cleanest to the less clean area. The urethral orifice is considered as the cleanest area and the anal orifice is considered as the dirtiest area .During perineal care, clean the area around the urinary meatus before cleaning the area around the anus.

Observation: REEDA, Redness, Edema, Echymosis, Discharge, Approximation of the wound.

Articles: A sterile tray contains: artery forceps, thumb forceps, bowl and cotton balls.

Procedure:

1. Ask the mother to void urine and clean the area
2. Give her a lithotomy position
3. Wear the mask and gloves
4. Take an artery forceps and cotton ball (Tampons) and clean with normal saline from up to down the whole perineal area and in to out, then the labia minora and majora by separating with left hand holding a gauze piece till it is clean.
5. Clean the episiotomy wound with diluted betadine solution and then exposed to infrared light for about 45" away from the perineum for about 15-20 minutes till the mother feels warm.
6. Apply metrogyl ointment and the pad, Make the mother comfortable and reach her to the bed.
7. Record in the nurses' record and the billing sheet.

Medication

To relieve pain analgesic drugs are given. Antibiotics are given to prevent infection.

Ambulation

Normally the patient is allowed to move out of the bed within 2 hours following delivery. In LSCS patient can be ambulated within 24 hours.

Removal of Stitches

In normal delivery the episiotomy sutures are not removed because it is made of absorbable material (catgut). In LSCS the stitches are to be removed on the 6th day.

Legs: Asses the extremities for varicosities, deep tendon reflexes, tenderness and presence of edema or nodular areas on the legs. The legs can be more easily examine when the mother slightly bends her knees and places the foot flat on the bed.

Homan's sign: It is done to find out deep vein thrombosis.

Ask the mother to lie on the dorsal recumbent position

Straighten the legs and place one hand on the popliteal fossa (Knee)

Face the mother and observe her face

Give a sudden jerk at the dorsal aspect of the foot and observe for the grimace on the face or complain of pain in the calf muscle, which indicates the positive sign of D.V.T.

Palpate the calf for warmth and tenderness.

Examine other leg too.

In case of Positive: Advise complete bed rest, apply crape bandage and inform the doctor. Raise the legs on the pillows or leg elevator.

BABY CARE

The progress of the baby is evaluated and preventive or curative steps are to be taken. MUSEUM = Mouth, Umbilicus, Skin, Eyes, Urine and Meconium. Immunisation to the baby is started during hospitalization. BCG vaccination and zero oral polio vaccine is given. Bath is not advised in the hospital but cleaning of the body done with a soft cloth or coconut oil. Daily cleaning of the umbilical cord and meconium is done.

14.8. VAGINAL DOUCHE

Vaginal douche or vaginal irrigation is the washing of vagina by a liquid at low pressure.

Purposes:

1. To cleanse the vaginal canal, removing an offensive irritating discharge.
2. To relieve congestion and inflammation
3. To apply antiseptic solution discouraging bacterial growth as in preparation of surgery.
4. To arrest hemorrhage
5. To stimulate circulation of pelvic organs and promote absorption of exudates.

Solutions Used:

1. Sterile water
2. Normal saline
3. Sodium bicarbonate – 2%
4. Vinegar – 1%
5. Savlon - 1:1000
6. Potassium permanganate
7. Boric acid
8. Dettol – 2%
9. Betadine in normal saline
10. Acriflavine

Temperature of the solution is usually 105° F to 10° F.

General Instructions::

- Douche is given only on the doctors prescription
- Douche is not given during menstruation, pregnancy and puerperium
- Thorough hand washing is to be done before and after the procedure
- Use gloves to prevent cross infection
- Remove and destroy pads used by patients
- Clean the perineum thoroughly
- Usually a clean technique is enough for all patients
- Use solution of correct strength to avoid chemical irritation.
- Adjust height of reservoir to regulate the flow of the solution
- Douche nozzle should be kept wet and lubricated to prevent tissue trauma
- Regulate temperature of the solution
- The treatment should take 20-30 minutes for the therapeutic effects to be achieved.
- Medications should b applied immediately after the douche, if ordered.
- Do the procedure in adequate light

Nurses Responsibility:

1. Check identification of the patient
2. Check diagnosis and purpose of the douche
3. Check doctors order for the type of solution used
4. Check whether douche is contraindicated
5. Check patients level of consciousness

Article Required

1. Irrigation can with tubing and clamp, can be filled with 500 ml of prescribed solution
2. Douche nozzle, xylocaine jelly
3. Gloves – 1 pair
4. Jug with extra fluid
5. Bed pan
6. IV stand
7. Sponge holding forceps and wet cotton balls
8. Dry Cotton balls
9. Cotton applications
10. Medication
11. Mackintosh and Towel
12. Vaginal speculum
13. Kidney tray
14. Extra sheets

Preparation Of Patient

1. Explain procedure and its sequence and tell how she can co-operate in the procedure
2. Provide privacy
3. Ask the patient to void, to reduce discomfort
4. Remove comfort devices
5. Bring patient to the edge of bed and adjust the height of bed.
6. Place mackintosh and towel
7. Cover the patient
8. Keep all articles arranged
9. Help the patient to position on the bed pan

Procedure:

1. Wash hands
2. Pour warm prescribed solution in the can and allow solution to run through the tubing tighten the clamp, hang the can on IV pole not more than 24 inches from the level of patients hip

3. Put on gloves
4. Clean the perineum with Savlon swab
5. Examine the douche nozzle and attach it, lubricate with 2% xylocian jelly
6. Allow small amount of fluid to flow over vulva. Regulate the flow by adjusting the screw clamp.
7. Separate the labia and insert nozzle 2-3 inches into the vagina. Direct it downward and back-ward.
8. When required amount is used pinch and remove the nozzle, clamp the tubing
9. Disconnect the nozzle and place it in kidney tray.

After Care:

1. Help patient to drain solution from vaginal canal by sitting position, dry the perineum.
2. Apply medication
3. Rearrange the bed
4. Clean all the articles and store them.
5. Record the procedure in nurses' record with date and time and the type and amount of fluid used and type of vaginal discharge if any.

14.9. ASSISTING IN FORCEPS DELIVERY

Prerequisites for application of forceps

- Presentation and position must be either vertex, anterior face or after coming head in breech.
- The cervix must be fully dilated and effaced
- Membranes must be ruptured
- The head must be engaged with no parts of the head abdominally palpable
- Uterine contractions must be present
- Bladder must be empty
- Partograph must be maintained

Preliminaries

- Anesthesia pudental block supplemented by Perineal and labial infiltration with 1% lignocaine hydrochloride is quiet effective in producing localanesthesia.
- Catheterization
- Internal examination to assess (a) state of cervix (f) membranes status (c) presentation and position of the head (d) assessment of the pelvic outlet
- Episiotomy –it may be done during traction when the perineum becomes bulged and thinned out by the advancing head.

Articles required

- Pair of gloves
- Articles required to perform episiotomy

- Pair of outlet forceps in working condition
- Soft rubber catheter
- Sim's speculum
- Newborn resuscitation equipments

All instruments should be sterile

Ensure aseptic technique throughout the process

Nurses' responsibility

- **Before the delivery**

1. Explain to the mother the procedure
2. Obtain written consent to confirm that the relatives understand any possible dangers
3. Inform the pediatrician, so that he or she can be ready to resuscitate the newborn, if necessary
4. Wash hands with soap and water to prevent infection and wear sterile gloves
5. Lay out the essential sterile equipment and see that they are fully operational, especially ensuring that the forceps blades lock together correctly
6. If the bladder is full and the mother is unable to pass urine, catheterize using aseptic technique as the pressure due to fetal head and forceps' blades can cause injury to the neck of the bladder
7. keep the mother in lithotomy position
8. Keep the mother relaxed by talking and asking her to breathe normally. Monitor and record the fetal heart rate after each contraction

After the head is delivered

1. Ensure that the baby is quickly dried with a warm towel

After delivery of the placenta

1. Give injection methargin 0.2 mg IM
2. Ensure proper lighting to assist the doctor in examining the vagina, perineum and cervix for any injury
3. Immediately look for retention or dribbling of urine which indicate injury to the bladder and urethra. If either of these is observed, insert a rubber catheter and inform the doctor
4. Look for vulval or vaginal hematoma
5. Provide follow up care to the mother and newborn

Record

- Why forceps was applied
- Problems encountered during application
- Drugs given
- Condition of the episiotomy wound
- Outcome of the procedure (maternal/fetal)

14.10. Assisting with Ventouse

Conditions to be fulfilled

- There should not be slightest bony resistance below the head.
- The head of a singleton baby should be engaged
- Cervix should be at least 6 cm dilated

The instrument should be assembled and the vacuum is tested prior to the application

Materials required

- Rubber catheter
- Articles required for episiotomy and sutures
- Newborn resuscitation articles
- Vacuum extractor

Steps

(1) application of the cup
(2) traction

Nurses' responsibility

1. Explain in detail to the mother and her husband/family members.
2. Call the pediatrician
3. Wash hands
4. Prepare the equipment ensuring that the vacuum tubing is connected properly and the safety valve is operational. (this is best done by placing the suction cup on operator's own hand and commencing suction)
5. Encourage the mother to empty her bladder. If there is difficulty in passing urine, catheterize the bladder using aseptic technique
6. Instruct to lie in the lithotomy position
7. Throughout the procedure explain what is happening in a gentle and friendly way. Try to keep her relaxed and breathe normally
8. Monitor and record the maternal and fetal condition regularly after each contraction
9. Once the doctor has placed the correct sized cup on the fetal head and ensured that none of the vaginal wall or the other tissue is in between the cup and the fetal skull, commence suction at the doctor's request, following the manufacturer's instructions.
10. At the next contraction raise suction further according to the doctor's instructions. The maximum pressure is 600mm Hg.
11. Encourage the mother to bear down normally during the contraction
12. When the contraction stops, the operator must simultaneously stop the traction
13. Wait for next contraction and then continue
14. Once the head is down on the perineum, ask the mother to stop pushing and to breathe slowly or with short breaths
15. Once the head is delivered release the pressure slowly from the vacuum extractor
16. Ensure that the baby is quickly dried with the warm towel which should be replaced with a second warm towel
17. Once the baby is delivered ensure that it is shown to the mother immediately
18. If the baby does not begin to breath spontaneously, resuscitation should be done immediately

19. Ensure that the baby is examined carefully for injury or trauma caused by suction cup. There will be an edematous swelling on the head where the cup is placed. Explain the mother and the family the reason.
20. Immediately follow the delivery of the placenta and the membranes, check if the uterus is contracted. If not, gentle massage or rub to make it contract and expel any clots. Give an oxytocic drug if recommended by the doctor
21. Assist the doctor to carefully examine the vaginal walls for signs and symptoms of injury or tear by ensuring there is good light and necessary equipment
22. Assist the suturing of the perineum using sterile equipment and gloves
23. Make the mother comfortable and put the baby to breast
24. Check that the mother is passing urine normally.
25. If there is any urine retention insert a soft urinary catheter and immediately call for medical assistance
26. Observe the signs for vaginal trauma in the mother and check to ensure the edematous swelling on the newborn's head does reduce and that no hematoma is developing
27. Keep accurate records

14.11. Caesarean Section

Pre-Operative care as on page-

Post Operative Care: First 24 hours

- Close observation of the patient for at least 6-8 hours. B.P should be checked every half hourly for the first 4 hours.
- Periodic (hourly) check up of BP, temperature, pulse, respiration, amount of vaginal bleeding and urine output.

Medication and IV fluids

Sodium chloride or ringer lactate drip is continued until at least a 1.5 – 2 litre of the solution is infused.

Prophylactic antibiotics are usually prescribed parenterally for the first 48 hours.

Ambulation

The patient can sit on the bed or even get out the bed to evacuate the bladder, provided the general condition permits. She is encouraged to move her legs and ankles and to breathe deeply to minimize deep vein thrombosis and pulmonary embolism. The mother is encouraged to pass urine in the toilet.

Every day morning mother is assisted to ambulate during bed making and bed bath is given, hair is combed and kept neat and tidy.

Diet

Day 1

Oral feeding, plain water, tea, coffee, tender coconut water, conjee water etc are given.

Day 2

Soft diet – bread, conjee etc. is given.

Day 3

Patient can have normal diet.

Day 5 or Day 6

The abdominal skin stitches are to be removed on the 5th or 6th day.

Bowel movement

The mother is encouraged to empty the bladder and bowel. If she has constipation, dulcolax suppository is given.

Health Education

The nurse has to educate the postnatal mother regarding the following factors.

Diet

The diet should be rich in proteins, vitamins and minerals. It should include all available seasonal fruits, vegetables, fish, eggs, milk, iron supplements etc. she should drink plenty of water.

Breast feeding

Exclusive breast feeding is encouraged for 6 months. Breast feeding should be started within one hour following delivery.

If the mother is not in a position to feed the baby or has an engorged breast, she should express the milk in a clean, wide mouthed container and this milk should be fed to the baby.

Postnatal exercises

The nurse should educate the mother regarding the importance of postnatal exercises.

14.12. EXERCISES FOR POSTNATAL MOTHER

a. Abdominal breathing

The mother has to lie flat without pillow on her back or sitting. She should breathe in and out 5 times, holding 3-5 seconds. Then relax using abdominal muscles. Keep ribs stationary and allow abdominal muscles to expand upward, exhale slowly while contracting abdominal muscles.

b. Pelvic floor exercises

The patient is asked to contract the pelvic muscles in a manner to withhold the art of defecation or urination and then to relax. This process is to be repeated as often as possible each day.

c. To tone up the back muscles

The patient has to lie on her face with the arms by her side. The head and the shoulders are slowly moved up and down. The procedure is to be repeated 3-4 times a day and gradually increased each day.

Advice on discharge:

1. **Diet**: Advices patient to take plenty of oral fluids.
2. **Rest**: Light household works can be resumed after 3 weeks and office work after 6 weeks.
3. **Coitus**: There is no fixed time bar. As soon as she is physically and psychological fit, intercourse is permissible. However, it should not be resumed prior to post-operativecheckup (i.e. 6 weeks).
4. **Medications:** medicationson discharge should be explained properly to the patient and that it should be taken only after food.

5. **Follow up:** To come for regular follow up as per the advised of the treating doctor. On the 7th day after discharge patient should collect histopathology report. Explain the OPD days to the patient and family.

14.13. DISCHARGE OF THE MOTHER AND BABY

A suitable day is fixed for the termination of care in the hospital and relatives are informed of it, so that they could prepare to take the mother and child home. Usually the mother with normal delivery is discharged on the third post-natal day and mother with caesarean section is discharged on the sixth post-natal day. Discharge usually depends on the general condition of the mother and the baby.

Purposes

Determine need and make referrals for home health care or extended care services

Ensure client ability to perform self care after discharge

Provide family members with knowledge and skills needed to administer care to the client in the home setting.

Procedure

Check the doctor's discharge orders for prescriptions or change in treatment

Inform the family members about the discharge and payment of bills

Determine whether mother and family has arranged for transport.

Check for all the closets and drawers for personal belongings

Provide client with prescriptions or medications ordered by the physician

Information about the follow up of mother and baby including immunization and collecting birth certificate. BCG card is given in which immunization schedule for the baby is explained.

Assist mother and baby in transferring into automobile

Document the discharge

CONCLUSION

Maternal health care is a concept that encompasses family planning, preconception, prenatal, labour and postnatal care. A dedicated nursing workforce can help in reducing the maternal and perinatal mortality and morbidity and provide comprehensive care to the mother and the child. Labour events have great psychological, emotional, and social impact to the woman and her family. So comfortable environment, skill and confidence of the caregiver and the emotional support are all essential.

ii. CHILD HEALTH NURSING

POLICY AND PROCEDURE ON CARE OF PEDIATRIC PATIENTS

1. PURPOSE

To define a system that guides the care of pediatric patients.

2. **SCOPE**

This policy and procedure applies to pediatric patients treated at Dr. Inodaya Hospital.

3. **DEFINITION**

- pediatric patients – patients less than or equal to 18 years old including premature, new born, neonates, infants, toddlers, children and adolescents.
- Premature Baby – A baby born at or before 37th week of gestation period.
- Neonate – A newborn baby up to first four weeks of life.
- Infant – a child under 1 year of age and /or who is unable to walk unassisted.
- Adolescent – a child with time period between beginning of puberty and adulthood.
- Competency – it is the process of evaluating the performance of employees during a defined period of time with the aim of ascertaining their suitability for the job, potential for growth as well as determining training needs.

4. **RESPONSIBILITY**

Medical administration and nursing administration is responsible to ensure and monitor compliance to this policy and procedure.

5. **POLICY**

- Scope of pediatric services is defined and displayed at prominent locations in the hospital.
- Guidelines given by Indian academy of pediatricians (IAP) are followed for care of neonatal patients.
- Dr. Inodaya Hospital actively promotes breast feeding practices
- Persons (Doctors and Nurses) caring for children to have age specific competency.
- Patient assessment including detailed nutritional, growth, psychosocial and immunization assessment.
- Policy and procedure for prevention of child/neonate abduction/abuse/swapping is defined (Refer POP -60)
- The children's family members are to be educated about nutrition, immunization and safe parenting

6. **PROCEDURE**

6.1. Scope of pediatric services

6.1.1 Medical services

a. General Pediatric services
b. Neonatology
c. Adolescent medicine
d. Pediatric cardiology

6.1.2 Surgical services

a. Day care surgery
b. Pediatric cardiac surgery
c. Paediatric thoracic surgery
d. Paediatric urology

e. Pediatric orthopedics
f. Paediatric dentistry

6.1.3 Special services

a. Neonatal intensive care unit (level 3)
b. Pediatric intensive care unit (level 3)
c. Immunization services
d. Physiotherapy & rehabilitation for neurologically ill child.

6.2 Scope of services of Paediatric services is displayed at the pediatric OPD.

6.3 IAP guidelines followed by Dr. INODAYA HOSPITAL'S for the care of neonatal patients.

6.4 Dr. INODAYA HOSPITAL'S actively promotes breast feeding practices.

6.5 Persons caring for pediatric patients shall meet the following requirements.

6.5.1 Doctors-MD, DCH, DNB, or MBBS, DCH, DNB in pediatrics.

6.5.2 Nurses – GNM Nurses with 3 years of experience / B.Sc. nurses with 2 years of experience.

6.6 Special amenities like play room, breast feeding for the care of infants and children are available in the hospital.

6.7 Pediatric patient assessment including nutrition, growth, psychological and immunization aspects is done and documented in patient's medical record.

6.8 Immunization record is captured in immunization record form.

6.9 Neonates and children are continuously monitored by nurses and are under electronic surveillance for preventing child/neonate abduction/swapping/abuse.

6.10 Preventive measures are taken to prevent child abuses such as unsupervised photo therapy/ warmer leading to burn, medication errors and inappropriate ventilator setting

6.11 Preventive measures are taken to prevent child/neonate abduction/swapping (Refer POP 60 – policy and procedure on handling child abduction.)

6.12 Consultants, nurses and dieticians are responsible for patient family education and documentation including nutrition, immunization and safe parenting.

7. RECORDS

Inpatient case sheet.
Immunization and growth chart.

14.4. Neonatal baby,s:

- **NICU** not available, delivery babies only will be treated.
- If baby is critical after birth immediately they will shift to paediatric hospitals.
- High risk pregnancies also not in the scope.

14.15. EXCHANGE TRANSFUSION

Exchange Transfusion is a procedure performed within Newborn Services for the treatment/correction of anaemia, hyperbilirubinaemia, and to remove antibodies associated with red blood cell haemolysis.

Indications

- At birth cord hemoglobin of less than 10 gm per 100ml or bilirubin of more than 5 mg per 100 ml with history of severe Rh – isoimmunization in previous babies
- Life threatening metabolic disorders
- Chronic anemia
- Acute renal and hepatic failures
- Septicemia

Nurses' role in exchange transfusion

- There must be at least one doctor and one nurse exclusively involved in the exchange throughout its progress.
- The doctor/Nurse must be present throughout the exchange. He/she may leave the room briefly to get blood results, but if called away, the exchange is stopped and the lines flushed.
- Meticulous care must be taken throughout, especially with volume balance, the rate of the exchange, the vital signs and any signs of air in the lines.
- All exchanges are to be conducted in NICU.
- Explain the procedure to the parents and obtain the consent.
- Keep the baby on the radiant warmer to maintain the temperature
- Four hours before the procedure, no feeds, nothing by mouth
- Stomach should be aspirated before the exchange to minimize the risk of aspiration
- Administer pre medication as per the advise
- Keep ready the articles needed for the transfusion (injection tray, infant feeding tube, three way adapter, IV tubings, blood for transfusion, container to receive the discarded blood, a bowl with heparinized saline solution ie.250 ml of saline for 2 ml of heparine, disposable syringes appropriate sizes, umbilical catheter etc)
- Keep ready the suction machine, cardiac monitor, pulse oxymeter
- Keep the emergency articles ready (laryngoscope, E.T tubes, AMBU Bag, emergency drugs)
- Whole procedure should be conducted with aseptic precautions.

- Assist the doctor during the procedure
- Immobilize the baby especially for inserting the umbilical catheter
- The amount needed for an adequate exchange is about 160 -180 ml/kg (double the blood volume)
- First 10 ml of blood is withdrawn and send for pre transfusion test.
- Withdraw 10 ml of blood with gentle suction followed by replacement with a double amount of fresh donar blood.
- Administer calcium gluconate at regular interval (after each 100 ml of transfusion) when using citrate blood for transfusion to prevent hypocalcemia.
- The total time taken for the exchange varies between one to two hours.
- The process is very repetitive and tedious and the personnel must be especially careful about the accuracy of their recordings.
- Observe the baby carefully
- Watch for the complications during the procedure(air embolism, respiratory distress, volume imbalance, unexpected collapse, electrolyte imbalance, arrhythmia, acidosis)
- Stop the transfusion immediately if any complications are developed.
- At the conclusion the last syringe full of blood removed is preserved for post transfusion test.
- Document the procedure in the exchange transfusion chart every 5 minute till the procedure gets completed (i.e. Serial number, time, volume total in, volume out, heart rate, respiratory rate, SpO_2 any drugs administered)

Other document includes

1. Name of the baby, date of transfusion, IP number
2. DOB
3. Indications for exchange
4. Procedure done by (doctors and nurses name)
5. Time started, ended and total volume exchanged
6. Blood group of baby, mother and donars
7. Pre exchange check list
8. Blood investigation both pre and post exchange transfusion(i.e. Serum bilirubin, Hb%, PCV, RBS, Serum calcium, sodium, potassium, bicarbonate)

Post transfusion care

1. Keep the baby warm
2. Observe closely for 6- 8 hours
3. Assess the general condition
4. Inspect the umbilicus for bleeding
5. Watch for the complications (hypoglycemia, sepsis, portal thrombosis, intestinal perforation, metabolic and electrolyte imbalance)
6. Inform the doctor immediately if complications are developed.

14.16. NEONATAL RESUSCITATION

Indication

1. Apnea or gasping respiration
2. heart rate < 100/minute
3. Persistent cyanosis despite 100% O_2

Articles:

All the resuscitation equipment should be available and in working condition

Radiant warmer, Baby sheets, Low suction machine, Suction catheters No-6, No-8.

Infant self inflating resuscitation bag with pressure release valve reservoir

Oxygen with flow meter and tubing, Laryngoscope with No 0 and 1

Endotracheal tubes size 2.5, 3.0, 3.5, and 4.0. cm with connectors

Pair of scissors, adhesive tape, gloves, Needle 24g, 22g 1 inch

Stethoscope, Syringes – 1cc, 5cc, 10cc, 20cc

Spirit, betadine, Feeding tube No.5 No.6, no.8.

No.24 cannula, 3way adaptor

Drugs: Inj Adrenaline

- Inj Nalaxone
- Inj Heparine
- Normal saline
- Sterile water

a. Ambu Bag and mask Ventilation

The size of the bag varies from 24cm to 5cm. The air should be to see adequate chest expansion. The initial breath may require 30-40cm H_2O pressure while subsequently 15-20cm H_20 is sufficient for normal lungs

Rate of ventilation: 40-60 per minute

Assessment of adequacy of bag and mask ventilation

1. By assessing the evidence of lung inflation
    a) By observing the adequate chest movement
    b) By auscultation in the axilla for breath
2. By assessing the evidence of sound improvement
    a) By observing the increase in the heart rate
    b) By observing the improvement in color

Precaution

a) Ensure that the 0_2 tubing and reservoir are attached
b) Select the proper size mask which should cover the tip of the chin to the nose in an airtight manner. Ensure neck is slightly extended and there are no secretions in the mouth.
c) If bag and mask ventilation is given for shock insert an oro-gastric tube

Evaluation and follow up action

After 30 seconds of bag mask ventilation check heart rate

If heart rate is 100/ minute

1. If respiratory efforts are good stop ventilation, tactile stimulation and free flow of O_2, monitor HR, respiration and colour
2. If the respiratory efforts are poor continue ventilation

Heart rate 60-100/ minute

1. continue ventilation

If heart rate 60 / minute

1. continue ventilation
2. check compression

Contraindication

1. Diaphragmatic hernia
2. Meconium stained liquor

b. Endotracheal intubation

Indication

1. Bag and mask ventilation is inattentive or prolonged
2. traced suctioning is required ex: Masonic stained liquor
3. Chest compression
4. Tracheal administration of drugs (surfactant administration)
5. Special circumstance ex: diaphragmatic hernia

Size of the tube Size (mm)	Weigh	Quotation
1. 2.5	< 1Kg	< 28wks
2. 3.0	1-2Kg	28.34Wks
3. 3.5	2-3Kg	34-38 wks
4. 3.5, 4-0	>3Kg	>38wks

Conformation of tube position

1. By observing symmetrical chest wall expansion
2. equal breath sounds in maxillae absent over stomach
3. Absence of gastric dilation
4. Fog of moisture in the tube during expansion
5. Improvements in team treat , colour and activity

Failure of position pressure ventilation

If these are poor response to position pressure ventilation the following steps may improve the effects

Bag and mask ventilation

Initiate B.M.V

↓

Check seal

If adequate, check position of the head suction mouth oropharynx and nostril

Ventilating with open mouth (insert oral airway)

If no adequate response, increase the pressure unit valves opens. If more pressure is required occlude the pressure fleas valve

Ineffective ET intubations and ventilation

Recheck the position of and tube

Check the ET if correct tube

No adequate response increase the ventilation pressure

Chest compression

Indication: after 30 seconds of position pressure ventilation with 100% oxygen if HR < 60 / minute

When to stop: once the heart rate is > 60 / min rate 90 / min

Technique: once may use either two finger technique or thumb technique but these should be time back support. The fingers or thumbs should be applied to the lower third of sternum (avoid xiphoid process) and the and the sternum compressed by 1/3 of AP diameter of the chest sufficient enough to generate a palpable pulse

Precaution:

1. Don't remove the fingers or thumb in between compression
2. Feel the pulse to check the effective ness of the compression
3. Do not squeeze the chest keep the fingers perpendicular
4. Continue position pressure ventilation (if using bag and mask interpose ventilation ten
4. Endotracheal intubations beloved stating chest compression

Evolution and flow up action: after 30 sec of hear rate chest compression

Check heart rate

If heart rate > 60 / minute ⟶ Discontinue compression

Continue ventilation>100/minute and good respiratory effort

Signs of shock during resuscitation

1. Pallor persisting after oxygenation
2. Weak pulses with good heart rate
3. Poor response to resuscitative measures

4. Decreased B.P

14.17National Immunization Schedule

National Immunization Schedule for Infants, Children and Pregnant Women				
Vaccine	**When to give**	**Dose**	**Route**	**Site**
For Pregnant Women				
TT-1	Early in pregnancy	0.5 ml	Intra-muscular	Upper Arm
TT-2	4 weeks after TT-1*	0.5 ml	Intra-muscular	Upper Arm
TT- Booster	If received 2 TT doses in a pregnancy within last 3 yrs*	0.5 ml	Intra-muscular	Upper Arm
For Infants				
BCG	At birth or as early as possible till one year of age	0.1ml (0.05ml till 1mth age)	Intra-dermal	Left Upper Arm
Hepatitis B	At birth or as early as possible within 24 hours	0.5 ml	Intra-muscular	Antero-lateral side of mid-thigh
OPV-0	At birth or as early as possible within the first 15 days	2 drops	Oral	Oral
OPV 1,2 & 3	At 6 weeks, 10 weeks & 14 weeks	2 drops	Oral	Oral
DPT 1,2 & 3	At 6 weeks 10 weeks & 14 weeks	0.5 ml	Intra-muscular	Antero-lateral side of mid-thigh
Hep B 1, 2 & 3	At 6 weeks 10 weeks & 14 weeks	0.5 ml	Intra-muscular	Antero-lateral side of mid-thigh
Measles	9 completed months-12 months.	0.5 ml	Sub-cutaneous	Right upper Arm
Vitamin-A (1stdose)	At 9 months with measles	1 ml (1 lakh IU)	Oral	Oral
For Children				
DPT booster	16-24 months	0.5 ml	Intra-muscular	Antero-lateral side of mid-thigh
Measles 2nd dose	16-24 months	0.5 ml	Sub-cutaneous	Right upper Arm
OPV Booster	16-24 months	2 drops	Oral	Oral
Japanese Encephalitis**	16-24 months	0.5 ml	Sub-cutaneous	Left Upper Arm
Vitamin-A***				
(2nd to 9th dose)	16 months. Then, one dose every 6 months up to the age of 5 years.	2ml (2 lakh IU)	Oral	Oral
DPT Booster	5-6 years	0.5 ml.	Intra-muscular	Upper Arm
TT	10 years & 16 years	0.5 ml	Intra-muscular	Upper Arm

*Give TT-2 or Booster doses before 36 weeks of pregnancy. However, give these even if more than 36 weeks have passed. Give TT to a woman in labour, if she has not previously received TT.

*** The 2nd to 9th doses of Vitamin A can be administered to children 1-5 years old during biannual rounds, in collaboration with ICDS.

14.18 BREAST FEEDING

- Breastfeeding is feeding of babies and young children with milk from a female breast.
- Breastfeeding should be started during the hour after birth and allowed as the baby wishes.
- During the first few weeks of life babies may nurse eight to twelve times a day.
- The duration of a feeding is usually ten to fifteen minutes on each breast.
- The frequency of feeding decreases as the child gets older.
- Some mothers pump milk so that it can be used later when their child is being cared for by others.
- Breastfeeding benefits both mother and baby.Infant formula does not have many of the benefits.

- It is estimated that greater than a million babies could be saved globally per year through greater breastfeeding.

Commencement:

- checks breath sounds

- Breastfeeding can begin immediately after birth.
- The baby is placed on the mother and feeding starts as soon as the baby shows interest.
- According to some authorities, increasing evidence suggests that early skin-to-skin contact (also called kangaroo care) between mother and baby stimulates breastfeeding behavior in the baby.
- Newborns who are immediately placed on their mother's skin have a natural instinct to latch on to the breast and start nursing, typically within one hour of birth.
- Immediate skin-to-skin contact may provide a form of imprinting that makes subsequent feeding significantly easier.
- WHO reported that in addition to more successful breastfeeding and bonding, immediate skin-to-skin contact reduces crying and warms the baby.
- According to studies cited by UNICEF, babies naturally follow a process which leads to a first breastfeed.
- Initially after birth the baby cries with its first breaths. Shortly after, it relaxes and makes small movements of the arms, shoulders and head.
- The baby crawls towards the breast and begins to feed. After feeding, it is normal for a baby to remain latched to the breast while resting.
- This is sometimes mistaken for lack of appetite.
- Absent interruptions, all babies follow this process. Rushing or interrupting the process, such as removing the baby to weigh him/her, may complicate subsequent feeding.
- Activities such as weighing, measuring, bathing, needle-sticks, and eye prophylaxis wait until after the first feeding."

BENEFITS OF BREAST FEEDING: FOR BABY

- Breastfeeding decreases the risk of respiratory tract infections and diarrhea. This is true both in developing and developed countries.
- Other benefits include a lower risk of asthma, food allergies, celiac disease, type 1 diabetes, and leukemia.
- Breastfeeding may also improve cognitive development and decrease the risk of obesity in adulthood.
- Some mothers may feel considerable pressure to breastfeed, but children who are not breastfed grow up normally – without significant harm to their future health.

Benefits of breastfeeding for the mother include:

- Less blood loss following delivery
- Better uterus shrinkage
- Weight loss

- Less postpartum.
- It also increases the time before menstruation and fertility returns, known as lactational amenorrhea.
- Long term benefits may include a decreased risk of breast cancer
- cardiovascular disease
- Rheumatoid arthritis
- Breastfeeding is less expensive for the family than infant formula.

CHAPTER- 15
Nursing committee

In hospital registered nurses practice is represented on nursing committee. Staff nurses have key leadership roles on this committee and are mentored by formal nursing leaders. A registered professional nurse chairs nursing committee.

Members of the committee:

Chairman	Active Committee	Full committee	Convener
Dr.Rammohan (Managing Director)	Dr. D.N.S.Praksh	Director –HR- lalitha CEO- Ms.lakshmi lavanya HOD –Quality sailaja NS-Ms.M.V.P.S.lakshmi Icu- Aruna Operations:Suresh Biomedical-Chandrakala Consultant Gyneacology Emr Nurse- Uma sandhya OT Nurse- Susani HK- Ramjan	NS-Ms.M.V.P.S.lakshmi

Responsibilities, Meeting Frequency, Reporting Of the Committee:

Frequency: once in six months

Reporting: Quality Committee

Responsibilities of Nursing Committee:

- To provide collaborative effort for establishing minimum staffing guidelines to meet patient needs and to provide healthy work environment for licensed and registered nurses
- Review the existing ,and /or develop new staffing plans and guidelines for all staff units
- Review the current nationally recognized evidence-based standards and guidelines as it relates to staffing recommendations
- To offer recommendations for nursing services staffing plan that is cost effective and that ensures that the hospital has a staff of competent nurses with specialized skills needed to meet patient needs ,and addresses the following
- The complexity of care ,patient assessment, volume of patient admissions, discharge and transfer
- Patient acuity and the number of patients for whom care is being provided
- Adjustment of nursing staff levels based on patient needs
- At least annually review the effectiveness of staffing plan using indicators such as patient satisfaction, nurse satisfaction ,quality indicators and fiscal management
- To make recommendations for revisions to the staffing plan based upon this annual review if appropriate. To define a frame work for Nursing privileging for the staff
- Evaluation of performance appraisal, increment and promotions

- To conduct regular CNE programs or National Nursing conclave once in a year.

EMPOWERING NURSES TO MAKE DECISIONS

Introduction in a health care system, nurses are in the frontline of direct patient care. They spend most time with patients and fulfill their needs. Hence, nurses are the face of hospital and the key persons to make significant contributions to healthcare restructure and patient satisfaction. The quality of patient care is directly affected by the degree to which hospital nurses are empowered in participation in decision making regarding their patients' care plan and are central to the organization decision making. In order to provide better patient care, nurses should be empowered to decide how they practice and what kind of working situation is acceptable for fulfilling their professional responsibilities.

Nurses as the first-line care givers can no longer be isolated from power and should be empowered to involve themselves more in decision making.

It is believed that nurses should be empowered to participate in decision making to increase the quality of care and to ensure patient safety.

Empowerment also has implications for the relationship between nurses and patient. Nurses wishing to empower clients must understand the complexity of this approach because failure to do so could result in the nurse not recognizing the need for an individual approach which takes into account patients' differing circumstances. This could result in patients being overloaded with information, creating unnecessary anxiety, rather than the nurse using his/her skills to assess and address individual needs.

1. If patient had swelling at IV cannula site – Nurse can take decision to re-canulate the patient in other site and apply thrombophobe topical ointment to the swelled area.

2. During IV Cannulation – if double punctured that area is to be applied with Ice pack.

3. If patient is not responding to the call and same time found with no pulse and respirations – Nurse can initiate Cardio Pulmonary Resuscitation and activate CODE BLUE with the help of other staff.

4. When Nurse observes bleeding from the surgical site – immediately she can apply pressure bandage or cold applications and later inform to the surgeon.

5. In case patient complaining or nurse observed breathlessness – immediately check the oxygen saturation and start with oxygen administration and maintain patient in Fowler's position.

6. During surgical or any wound dressing performed by nurse – if observed with pus, collect swab for culture and sensitivity and later only inform to the Surgeon.

7. Patient is complaining chest pain – nurse can take ECG and she can inform to the Consultant.

Indications of Thrombolytic: -

1) Haemodynamically Unstable (SBP<90 mm of Hg)

2) Right Ventricular Hypokinesia.

HYPOGLYCEMIA

- Check the vital sign's
- Check the blood sugar
- Inform duty doctor
- Administer sugar substitute like glucose , sugar crystals to the patient if patient conscious
- Start 25% DX accordingly to doctor's order
- With hold the sugar dose
- Identify the underlying cause
- Treat according to the cause of hypoglycemia
- Provide psychological support
- Ensure patient safety

URINE RETENTION

- Assess the condition
- Provide privacy
- Keep hot water bag over the bladder site
- If no result
- Start cold application over the bladders site
- Allow the patient to sit over the commode or stand to void
- If possible open the tap in the bathroom to feel like voiding
- If no result catheterize the patient

HYPERTHERMIA

- Asses the vital signs
- Inform doctor
- Give paracetamol according to standing order
- Give cold compress
- Give sponge bath
- Assess the cause of the hyperthermia
- Start antibiotic according to doctor order
- Check TPR Q2H
- Reassess the patient
- Give psychological support

- Encourage oral fluids
- Maintain i/o chart

HYPOTHERMIA

- Assess the patient condition and inform to doctor
- Keep the environment / Surrounding hot
- Switch off ac
- Switch off patient fan
- Cover the patient with blanket
- Check the temp Q2H
- Allow to drink hot drinks if conscious
- Used bed warmer if necessary

HYPOTENSION

- Check the vital signs
- Make the bed flat to increase blood circulation
- Stop any antihypertensive drugs if is on flow
- Administer oxygen with mask if necessary
- Check saturation and heart rate, maintain airway
- Assess cardiac output clinically using the colour of skin, capillary region, skin temperature, presence of sweating and level of consciousness
- Assess for tachypnoea, tachycardia which indicates altered cardiovascular and neurological function
- Assess the causes of hypotension like dehydration , hemorrhage, diarrhea , extensive burns , sepsis , anaphylaxis , pulmonary embolism
- Inform the duty doctor
- Be sure of IV lines big bore cannula.

HYPER KALEMEA

- Assess the patient condition
- Stop the KCL supplements
- Start 25% Dextrose with insulin 8 units or 10 units according to doctor order
- Monitor for disarrythmias
- Monitor the ECG

- Check the patient condition
- Inj. Calcium Gluconate according to doctor order, potassium levels is above 5.5 Meq\L
- K.bind orally or rectally
- Discourage potassium rich food like Banana, Coconut water
- Stop potassium sparing diuretics like Aldactone

CONSTIPATION

- Assess the patient condition
- Give plenty of oral fluids
- Inform the doctor
- Administer laxatative according to doctor orders
- Increase the green vegetables with diet
- Increase the fiber food in diet
- Formulation regular bowel emptying habit

PAIN MANAGEMENT

- Assess the patient
- Assess the pain, type , area
- Assess the pain score
- According to score give pharmacological treatment for pain
- If pain is less give non - pharmacological treatment like massage , relaxation , diversion technique
- Give psychological support

HYPO KALEMEA

- Assess the patient condition
- Take ECG
- Monitor for dysrhythmias
- Start KCL infusion or oral supplements
- Encourage the potassium rich food
- Stop loop diuretics like Frusemide.

CHAPTER- 16
DEPARTMENTAL QUALITY INDICATORS

Sl. No	Standard	Indicator	Definition	Formula	Sample size*	Remarks**
42	CQI 4b	Incidence of falls	The US Department of Veteran Affairs National Centre for Patient Safety defines fall as "Loss of upright position that results in landing on the floor, ground or an object or furniture or a sudden, uncontrolled unintentional, non-purposeful, downward displacement of the body to the floor/ground or hitting	Number of falls / number of discharges & deaths × 100	N/A	Falls may be: • at different levels – i.e., from one level to ground level e.g. from beds, wheelchairs or down stairs • on the same level as a result of slipping, tripping, or stumbling, or from a collision, pushing, or shoving, by or with another person • below ground level, i.e. into a hole or other opening in surface All types of falls are to be included whether they result from physiological reasons (fainting) or environmental reasons. Assisted falls (when

			another object like a chair or stair." It is an event that results in a person coming to rest inadvertently on the ground or floor or other lower level.			another person attempts to minimize the impact of the fall by assisting the patient's descent to the floor) should be included. (NDNQI, 2005)
43		Incidence of pressure ulcer after admission	A pressure ulcer is localized injury to the skin and/or underlying tissue usually over a bony prominence, as a result of pressure, or pressure in combination with shear and/or friction.	No. Of Patients Who Developed New or Worsening Of Pressure Ulcer / Number Of Discharges & Deaths × 100	N/A	The organization shall use The European and US National Pressure Ulcer Advisory panels (EPUAP and NPUAP) staging system to look for worsening pressure ulcers.

Chapter - 17
NANDA NURSING DIAGNOSES
Below is the list of the 16 new NANDA Nursing Diagnoses

1. Risk for Ineffective Activity Planning
2. Risk for Adverse Reaction to Iodinated Contrast Media
3. Risk for Allergy Response
4. Insufficient Breast Milk
5. Ineffective Childbearing Process
6. Risk for Ineffective Child Bearing Process

7. Risk for Dry Eye
8. Deficient Community Health
9. Ineffective Impulse Control
10. Risk for Neonatal Jaundice
11. Risk for Disturbed Personal Identity
12. Ineffective Relationship
13. Risk for In-effective Relationship
14. Risk for Chronic Low Self-Esteem
15. Risk for Thermal Injury
16. Risk for Ineffective Peripheral Tissue Perfusion

Domain 1 Health Promotion

- Deficient divertional activity
- Sedentary lifestyle
- Deficient community health
- Risk-prone health behavior
- Ineffective health maintenance
- Readiness for enhanced immunization status
- Ineffective protection
- Ineffective self-health management
- Readiness for enhanced self-health management
- Ineffective family therapeutic regimen management

Domain 2 Nutrition

- insufficient breast milk
- Ineffective infant feeding pattern
- Imbalanced nutrition: less than body requirements
- Imbalanced nutrition: more than body requirements
- Risk for imbalanced nutrition: more than body requirements
- Readiness for enhanced nutrition
- Impaired swallowing
- Risk for unstable blood glucose level
- Neonatal jaundice
- Risk for neonatal jaundice
- Risk for impaired liver function
- Risk for electrolyte imbalance
- Readiness for enhanced fluid balance
- Deficient fluid volume
- Excess fluid volume
- Risk for deficient fluid volume
- Risk for imbalanced fluid volume

Domain 3 Elimination and Exchange

- Functional urinary incontinence

- Overflow urinary incontinence
- Reflex urinary incontinence
- Stress urinary incontinence
- Urge urinary incontinence
- Risk for urge urinary incontinence
- Impaired urinary elimination
- Readiness for enhanced urinary elimination
- Urinary retention
- Constipation
- Perceived constipation
- Risk for constipation
- Diarrhea
- Dysfunctional gastrointestinal motility
- Risk for dysfunctional gastrointestinal motility
- Bowel incontinence
- Impaired gas exchange

Domain 4 Activity/ Rest

- Insomnia
- Sleep deprivation
- Readiness for enhanced sleep
- Disturbed sleep pattern
- Risk for disuse syndrome
- Impaired bed mobility
- Impaired physical mobility
- Impaired wheelchair mobility
- Impaired transfer ability
- Impaired walking
- Disturbed energy field
- Fatigue
- Wandering
- Activity intolerance
- Risk for activity intolerance
- Ineffective breathing pattern
- Decreased cardiac output
- Risk for ineffective gastrointestinal perfusion
- Risk for ineffective renal perfusion
- Impaired spontaneous ventilation
- Ineffective peripheral tissue perfusion
- Risk for decreased cardiac tissue perfusion
- Risk for ineffective cerebral tissue perfusion
- Risk for ineffective peripheral tissue perfusion
- Dysfunctional ventilatory weaning response
- Impaired home maintenance

- Readiness for enhanced self-care
- Bathing self-care deficit
- Dressing self-care deficit
- Feeding self-care deficit
- Toileting self-care deficit
- Self-neglect

Domain 5 Perception/ Cognition

- Unilateral neglect
- Impaired environmental interpretation syndrome
- Acute confusion
- Chronic confusion
- Risk for acute confusion
- Ineffective impulse control
- Deficient knowledge
- Readiness for enhanced knowledge
- Impaired memory
- Readiness for enhanced communication
- Impaired verbal communication

Domain 6 Self-Perception

- Hopelessness
- Risk for compromised human dignity
- Risk for loneliness
- Disturbed personal identity
- Risk for disturbed personal identity
- Readiness for enhanced self-control
- chronic low self-esteem
- Risk for chronic low self-esteem
- Risk for situational low self-esteem
- Situational low self-esteem
- Disturbed body image
- Stress overload
- Risk for disorganized infant behavior
- Autonomic dysreflexia
- Risk for autonomic dysreflexia
- Disorganized infant behavior
- Readiness for enhanced organized infant behavior
- Decreased intracranial adaptive capacity

Domain 7 Role Relationships

- Ineffective breastfeeding
- Interrupted breastfeeding
- Readiness for enhanced breastfeeding
- Caregiver role strain

- Risk for caregiver role strain
- Impaired parenting
- Readiness for enhanced parenting
- Risk for impaired parenting
- Risk for impaired attachment
- Dysfunctional family processes
- Interrupted family processes
- Readiness for enhanced family processes
- Ineffective relationship
- Readiness for enhanced relationship
- Risk for ineffective relationship
- Parental role conflict
- Ineffective role performance
- Impaired social interaction

Domain 8 Sexuality

- Sexual dysfunction
- Ineffective sexuality pattern
- Ineffective childbearing process
- Readiness for enhanced childbearing process
- Risk for ineffective childbearing process
- Risk for disturbed maternal-fetal dyad

Domain 9 Coping/ Stress Tolerance

- Post-trauma syndrome
- Risk for post-trauma syndrome
- Rape-trauma syndrome
- Relocation stress syndrome
- Risk for relocation stress syndrome
- Ineffective activity planning
- Risk for ineffective activity planning
- Anxiety
- Compromised family coping
- Defensive coping
- Disabled family coping
- Ineffective coping
- Ineffective community coping
- Readiness for enhanced coping
- Readiness for enhanced family coping
- Death anxiety
- Ineffective denial
- Adult failure to thrive
- Fear
- Grieving

- Complicated grieving
- Risk for complicated grieving
- Readiness for enhanced power
- Powerlessness
- Risk for powerlessness
- Impaired individual resilience
- Readiness for enhanced resilience
- Risk for compromised resilience
- Chronic sorrow
- Stress overload
- Risk for disorganized infant behavior
- Autonomic dysreflexia
- Risk for autonomic dysreflexia
- Disorganized infant behavior
- Readiness for enhanced organized infant behavior
- Decreased intracranial adaptive capacity

Domain 10 Life Principles

- Readiness for enhanced hope
- Readiness for enhanced spiritual well-being
- Readiness for enhanced decision-making
- Decisional conflict
- Moral distress
- Noncompliance
- Impaired religiosity
- Readiness for enhanced religiosity
- Risk for impaired religiosity
- Spiritual distress
- Risk for spiritual distress

Domain 11 Safety/ Protection

- Risk for infection
- Ineffective airway clearance
- Risk for aspiration
- Risk for bleeding
- Impaired dentition
- Risk for dry eye
- Risk for falls
- Risk for injury
- Impaired oral mucous membrane
- Risk for perioperative positioning injury
- Risk for peripheral neurovascular dysfunction
- Risk for shock

- Impaired skin integrity
- Risk for impaired skin integrity
- Risk for sudden infant death syndrome
- Risk for suffocation
- Delayed surgical recovery
- Risk for thermal injury
- Impaired tissue integrity
- Risk for trauma
- Risk for vascular trauma
- Risk for other-directed violence
- Risk for self-directed violence
- Self-mutilation
- Risk for self-mutilation
- Risk for suicide
- Contamination
- Risk for contamination
- Risk for poisoning
- Risk for adverse reaction to iodinated contrast media
- Risk for allergy response
- Latex allergy response
- Risk for latex allergy response
- Risk for imbalanced body temperature
- Hyperthermia
- Hypothermia
- Ineffective thermoregulation

Domain 12 Comfort

- Impaired comfort
- Readiness for enhanced comfort
- Nausea
- Acute pain
- Chronic pain
- Impaired comfort
- Readiness for enhanced comfort
- Social isolation

References

APA (2001) .Publication Manual of the American psychological association .5th edition Washington DC APA

Benner Sutpehn, Leonard, Day (2010) .Educating Nurses: A call for radical transformation.

Blows (2001) .The biological basis of Nursing: clinical Observations London Routledge

Bulger, Nathens, Rivara, et.al (2002) Management of services Head Injury; Institutional Variations in care and effect on Outcome Critical care medicine
Chitty (2005) .Professional nursing: Concepts& challenges .Philadelphia
DiCenso, Guytt, & Ciliska (2005).Evidence based nursing: A guide to clinical practice. January .Elsevier Mosby publications
Ellis & Hartley (2004) .nursing in today's World: trends issue &management .Eighth edition Lippincott Williams and Wilkins.
Ellis & Hartley (2004) .nursing in today's World: Philadelphia Lippincott Williams and Wilkins.
Ferhuson (2005) Blood glucose monitoring .nursing times 101(28), page 28-9
Hickey (2000) .the clinical practice of Neurological and Neurosurgical nursing (4th edition revised). JB Lippincott: Philadelphia, Pennsylvania
Jackie Birmingham. (2009) provisional case management November \December, volume 14 number 6, pages 296-309.
Kozier, Erb Berman & Snyder, (2004) .fundamental of nursing, concepts, principles and practices New Jersey: Pearson prentice.
Lynn- McHale & Carlson (2002) AACN Procedure manual for critical care, W.B Saunders Co Martindale. (1999) .32nd edition, January, Drug reference
Millam& Hadway.(2003) on the road to successful I.V Starts . Nursing 2003 .may supplement Vol 33 No5, pages 1-1
Mower, Myers, Nicklin Kearin, baraff& Sachs (1998) "pulse oxymeter as a fifth vital sign in emergency geriatric assessment" Academic emergency medicine 5(9): 858-65
National accreditation board for hospitals and health care providers (NABH), Third edition .November 2011
NIcol Bavin, Bedbord –Turner, Cronin, Rawlings – Anderson K (2004) Essential nursing skills London
Nieswiadomy (2002) Foundation of nursing research, fourth edition, New Jersey
Nieswiadomy (2002) Foundation of nursing research, prentice Hall
Polit &Beck (2004) Essential of nursing research .7edition, Philadelphia: Lippincott
Polit &perry (1993) Fundamental of nursing: concepts process and practices, Philadelphia
Royal Marsden hospital manual of clinical nursing: Procedures .Eighth Edition
Skinner (2005) Understanding clinical investigations: Aquckrefence manual .2nd Edition London Bailliere Tindal
Studenski, perera & Wallace. (2003) physical performance measures in the clinical setting J.AM Geriatr Soc 51(9) : 341-322
Sweeney et al (1986) Rectal Gangrene: a complication of phosphate enema. The medical journal of Australia: 144; 7, 374-375
Terry (Editor). (1995) intravenous therapy clinical principles and practices.W.B Saunders Co. Philadelphia
Williams, Penny and. Hadaway, Lynn (2003) .Essential of IV therapy: Module 1: peripheral IV catheter Insertion, care and Maintenance. Baxter health care Corporation Accessed on the World Wide Web on June 26th via http:// www Baxter, com\doctors\ IV therapies\education\iv therapy _ce\basic_one\
Wood & Haber. (2002Nursaing Research .St Louis: Mosby