POLICIES AND PROCEDURES

FOR

INTENSIVE CARE UNIT

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CLINICAL PROCEDURES IN ICU

1. **Purpose:** To develop a Quality Assurance Manual in Intensive Care Units

2. **Scope:** The policy and procedure covers the all the intensive Care units

3. **Distribution:** All Intensive Care Units, ICU Doctors

4. **Definition:** none

5. Res**ponsibility:** - Consultant and Nursing Staff

6. **Policy:** The organization ensures standard practices are adopted and are consistent throughout all the intensive Care units

7. **Procedures:**

7.1 Departmental Procedures

7.1.1. ADMISSION TO ICU

1. Setting up bed space for admission

   Housekeeping staff will:
   a.Mop the floor thoroughly.

   b. Clean bed from top to bottom and damp dust with Bacillocid (2.5ml in 1 lit of water) solution.

2. On confirmation of admission, the nurse will proceed to:
   a. Check and switch on all the monitoring equipment with appropriate modules and accessories to ensure the monitoring system is in good working condition and leave on standby mode.
   b. Check the gas, suction and vacuum supply and attach appropriate apparatus e.g. suction liner to the vacuum outlet and O2 flow meter to the gas outlet.

c. Make up the ICU bed with a long-fitted sheet over the mattress. A blanket is being folded into a pack and placed at the end of the bed. A pillow for the head end.

d. Patient's clinical folders, charts and admission record book placed on the table of the nurses' station.

e. All vacant ICU beds are set up at all times in readiness for any new admission.

f. A ventilator is always set up on standby (ventilator set up according to anesthetist's order).

3. Routes of admission:

a.ER.

b. OR.

c.OPD.

d. Interdepartmental transfer (INTRA HOSPITAL TRANSFER)

e. Other hospitals

4. On admission:

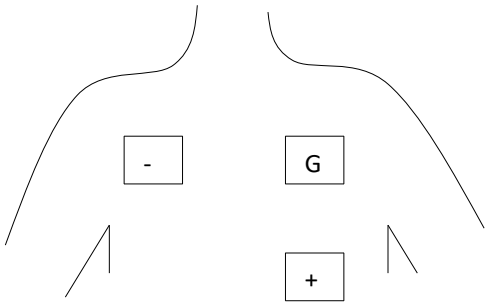
a. A brief history of patient will be handed over from the accompanying nurse.

b. The patient will be transferred onto the ICU bed with roller by the staff making sure that patient is in a comfortable position using safety belts also.

c. The nurse will introduce herself to the patient and at the same time reassure patient and explain about the procedures that will follow.

d. Patient is assisted to undress and gown if condition permits.

e. Attached electrode leads as described below:



f. Attach SPO2 sensor and NIBP cuff.

g. Record patient's baseline vital signs and cardiac rhythm and document in patient's observation chart.

h. Assess patient's general condition i.e. if patient is in pain, pale, sweating, SOB, then administer O2 as instructed.

i. Assess patient's level of consciousness.

j. Notify doctor of patient's arrival and report any abnormalities.

k. Assist with IV cannulation and carry out treatment as ordered.

l. Assist Anaesthesiologist in intubation and placing patient on ventilator (for patient requiring respiratory support).

m. Notify other departments of any stat diagnostic tests that have been ordered e.g. X-ray, ECG, blood tests and stat medication.

n. Request patient's relative to take valuables home and taking the consent. Do a careful check on the valuables for all unaccompanied patients.

o. Explain visiting privileges both to patient and family that visiting shall be limited to twice a day and only one visitor will be allowed for a patient.

p. Orientate patient and patient's relative if available on the facilities available in the unit, rules and regulations of the hospital e.g. no smoking within the hospital premises, charges for ICU/CICU stay etc.

5. Complete essential paper work according to routine policy and procedure:
   a. Log patient's name and particulars into Admission Book and check the HIMS system for bed allocation.
   b. Transcribe physician orders.
   c. Complete medication record.
   d. Fill out necessary requisition for diagnostic tests.
   e. Fill out appropriate charge slip.
   f. Dietary order for patient via phone.

7.1.2. NON AVAILABILITY OF BEDS:

In case of non availability of beds the patients will be accommodated or shifted to outside facility according to the standard operating procedure.

7.1.3. ENDOTRACHEAL INTUBATION – ADULT, MAINTENANCE/CARE OF ENDOTRACHEAL TUBE

1. Purpose:

To provide airway maintenance for ventilation, either mechanical or spontaneous. To protect the airway from occlusion due to edema or aspiration. To provide a means of removing secretions from the tracheobronchial tree.

Patient requiring a patent airway and/or ventilator support will have an endotracheal tube placed by the anaesthetist or medical officer. Patient with ETT will be monitored for maintenance of intubation and prevention of complications.

2. Equipment required

a. Endotracheal tubes with high volume/low pressure cuff. Sizes are determined by the anaesthetist.
b. Laryngoscope handle and blades.
c. Stylet.
d. Magill forceps.
e. Gloves.

f. Lubricant jelly.
g. 10 ml syringe.
h. Xylocaine nasal spray.
i. Adhesive tape.
j. Oropharyngeal airway.
k. Bag-valve-mask unit.
l. Cardiac arrest cart.
m. Electrocardiograph monitor.
n. Suction apparatus.
o. Suction catheter.
p. Yankauer sucker.
q. Oxygen source and mechanical ventilator.
r. Drugs as required by Anesthetist

3. Procedure

a. Explain and reinforce consultant's explanation regarding the necessity of ventilatory support..
b. Assess patient for ventilatory efforts. If ventilatory efforts are insufficient or absent, the doctor will ventilate with bag-valve-mask unit. Oropharyngeal

airway will be used to maintain airway patency during bag-valve-mask ventilation.

c. Administer sedation and/or analgesics intravenously as ordered by the doctor. Administer a muscle relaxant intravenously as ordered by the doctor. In the setting of cardiac or respiratory arrest, this step is excluded.

d. Obtain endotracheal tube size as ordered by the doctor. Inflate the cuff by syringe and assess integrity. Evacuate all the air.

e. Lubricate the distal end of the tube with water soluble jelly.

f. Insert the stylet into the endotracheal tube so that the distal end of the stylet is recessed 2 cm from tip of the ETT.

g. Attach the desired blade to the laryngoscope handle. The blade is chosen based on doctor's order.

h. Elevate the blade to a right angle to the handle and observe for proper functioning of the light source.

i. Position the patient in "sniffing" position. Place folded towers or sheet under the occipital. Do not allow the patient's head to hang over the edge of the bed.

j. Hand the doctor the laryngoscope followed by the ETT. The doctor will perform the intubation either orally or nasally.

k. Remove the stylet once instructed by the doctor. The doctor will stabilize the ETT by his hand.

l. Inflate the cuff and ventilate the patient with the bag-valve-tube unit.

m. Assess for chest expansion and auscaltate for bilateral breath sounds.

n. Cricoid pressure may be applied as ordered by the doctor during intubation to occlude the esophageal opening and prevent vomiting and aspiration.

o. Each attempt to intubate shall not take more than 30 seconds. The doctors will ventilate the patient with the bag-valve-mask unit and 100 percent O2 between each attempt.

p. Attach ETT to mechanical ventilator with setting as ordered by the doctor. Ensure a post intubation Chest X-Ray to verify proper ETT tube placement.

q. Secure the ETT with adhesive plaster and tape. Note and verify the depth marking level of ETT and document it on nursing care plan and flow chart. Change plastering once a day and when necessary. Note the ETT depth marking level (the lip end line or are) during each plaster changing and after each patient's positioning. Connect ETT to mechanical ventilator which has been set as anaesthesiologist's order.

r. Continuously assess chest movement, respiratory rhythm and rate. Auscultate air entry to both lung each shift and when necessary to verify ETT positioning and both lungs are ventilated.

s. Assess presence of humidified device to prevent drying of secretions within the tracheal tube.

t. Obtain arterial blood gas level daily and whenever patient's respiratory status changes as instructed by the doctor.

u. Assess cuff for proper inflation.

v. Suction the airway when needed. Note the color, amount, consistency and odor of secretions. Document findings on medical record.

w. An Oropharyngeal airway may be used as a bite block to prevent occlusion of the tube.

x. Perform oral care every 8 hours to prevent oral infections.

y. Assess the mouth and lips or nares for skin break down or erosion due to tube pressure on the tissue.

z. Assess for skin breakdown due to the adhesive tape.

aa. Avoid traction on the tube from the ventilator tubing and nebulizer.

bb. If the high pressure alarm sounds on the mechanical ventilator or if the spontaneously breathing patient suddenly develops dysponea or apnea, assess for tube obstruction.

cc. Provide the conscious patient an alternate means of communication.

dd. Document time, date and person performing intubation, intubation site, size of ETT and depth level marking, medications administered to facilitate

intubation, suctioning frequency and results, oral care and assessment, occurrence of complications, mode of mechanical ventilation and setting in patient's medical record and/or flow sheet.

7.1.4. **ENDOTRACHEAL EXTUBATION – ADULT, CARE AND MANAGEMENT**

1. Purpose:

To allow the patient to breathe independently of airway support.

Patient will be extubated by the anaesthesiologist. Equipment for re-intubation must be readily available. ICU nurse will monitor the post-extubation patient for respiratory difficulty and notify the anaesthesiologist if re-intubation is indicated.

2. Equipment Required

a.Oxygen source and device i.e. face mask or high flow mask.

b. Suction apparatus.

c.Sterile suction catheter with glove.

d. Yankauer sucker.

e. Bag-valve-mask unit.

f. Cardiac arrest cart (crash cart).

g. Intubation equipment.

h. 10 or 20 ml syringe.

3. Procedures

a. Assess patient's respiratory status.
b. Assess patient's heart rate, blood pressure, skin perfusion and level of consciousness.
c. Note trends of ABG results, especially the partial pressure of carbon dioxide (PaCo2) which reflects ventilation.
d. Explain the procedure to the patient and reinforce doctor's explanations.
e. Position patient in semi-fowlers or high fowlers.
f. Just prior to extubation, suction ETT and mouth.
g. Loosen the adhesive tape securing the tube to the face. Hyper-oxygenate or oxygenate as ordered.
h. Attach the syringe to the cuff inflation valve and aspirate all air as instructed by the doctor.
i. Instruct patient to inhale and cough. The doctor will quickly remove the ETT while the patient is coughing.
j. Apply humidified O2 via face mask. Set the concentration and flow rate as ordered by the doctor.

k. Assess patient's ability to swallow, speak and cough. Remain with patient for the first 5 minutes post-extubation and monitor closely for the next 8 hours and obtain ABG's as ordered. Note any respiratory distress, strider or hoarseness.

l. Provide chest physiotherapy as ordered to prevent re-intubation.

m. Instruct patient in coughing and deep breathing techniques. Encourage patient to perform these measures every hour.

n. Continue administration of humidified O2 to promote secretion mobilization.

o. Document in patient's medical record and/or flow sheet date, time and person performing the extubation, patient assessment before and after extubation, O2 concentration and flow rate, effectiveness of coughing and deep breathing exercise, characteristics of secretions if present and effectiveness of chest physiotherapy and positioning.

7.1.5 ABDOMINAL PARACENTESIS / ASCITIC TAPPING

1. Purpose:

To remove free fluid in the abdominal cavity for diagnostic purposes & for relief of pressure symptoms.

2. Equipment required

a. Basic Procedure Set.

b. Sterile drape/ eye drape x1.

c. Disposable mask/ Surgical mask.
d. Sterile glove all size.
e. Povidone Iodine
f. Surgical spirit.
g. Injection Lignocaine 2%
h. Syringes – slip tip – 5cc, 10cc, 20cc, 50cc x 2 each.
i. 3 way stopcock.
j. Intravenous tubing.
k. Needle all sizes x 2 each.
l. Surgical blade size 10 and 11.
m. Gauzes and cotton balls.
n. Urgo crepe/ Elastoplast.
o. Micropore.
p. Sterile bottle for specimen.
q. Large Measuring Jug.
r. Pleurafix or canula.

3. Preparation of patient

a. Explain procedure to patient.
b. Doctor to obtain consent from patient.

c. Prepare the surrounding.

d. Push trolley to the side of the patient.

e. Screen the bed.

f. Advise the patient to empty the bladder before the procedure.

g. Position patient in semi-recumbent, Fowlers position close to the beside.

4. Procedure

a.The doctor wears mask, scrubs hands and put on gloves.

b. Skin is clean with Povidone and spirit and the abdomen is draped.

c.Local anaesthesia is injected.

d. A small incision is made with the scalpel and the pleurafix inserted or a large canula is used, if needed.

e. When the fluid is draining a receiver is placed near the abdomen to receive it.

f. A dressing is placed around the cannula and fixed in position with Micropore.

g. The fluid may be allowed to flow into the receiver and emptied into drainage bag.

h. The rate flow is controlled by clamp as ordered. Observe amount of total fluids removed.

i. Drape is removed. Apply dry pressure dressing.

5. Care of patient

a. Make the patient comfortable.

b. Clear the surrounding.

c. Measure and record the amount and characteristics of fluids.

d. Observe vital sign.

e. Apply pressure dressing when cannula is removed.

f. Observe the condition of the patient carefully.

7.1.6. BONE MARROW ASPIRATION / BIOPSY

1. Purpose: To obtain a specimen of bone marrow for diagnostic purposes.

2. Equipment required

a.Basic Procedure Set.

b. Sterile drape/eye drape x1.

c.Disposable mask/Surgical mask.

d. Sterile glove all size.

e. Povidone.

f. Surgical spirit.

g. Injection Lignocaine 2% x 2 amps.

h. Syringes – slip tip – 5cc, 10cc, 20 cc x 2 each.

i. Needle all sizes x 2 each.

j. Surgical blade size 10 and 11.

k.Gauzes and cotton balls.

l. Urgo crepe/ Elastoplasts.

m. Bone Morrow Trephine Set (adult/Paeds).

n. Glass slides (inform laboratory staff).

3. Preparation of patient

a. Explain procedure to patient.

b. Doctor to obtain consent from patient.

c. Prepare the surroundings.

d. Screen the bed.

e. Put the patient in an appropriate position.

f. Expose area to be punctured.

g. Assist doctor as needed throughout the procedure.

h. Observe the patient carefully.

i. Common sites:

i. Sternum.

ii. Iliac crest.

iii. Tibia – for children up to 3 years.

j. Give sedation if ordered.

k. Positions:

i. Sternum – place patient in supine position with a pillow placed under the shoulders.

ii. Illiac crest – place patient in a lateral position.

4. Procedure

a. Doctor wear mask, scrubs hands and wear gloves.
b. Skin is cleansed with antiseptic and the site is draped with sterile drape.
c. After injecting the local anaesthetic, the marrow puncture needle is then carefully and slowly inserted 2 to 3 mls of bone marrow are withdrawn into the syringe.
d. Marrow fragment are removed and thin films are made on the slides with this material by laboratory staff.
e. The marrow puncture needle is withdrawn.
f. A collodion and dry dressing is applied to the puncture.

5. Care of patient

a.Make patient comfortable.

b.Rest on bed for at least 1 hour or depend on doctor's order.

c.Tidy surrounding.

d. Sent specimen to laboratory.
e. Observe for bleeding and vital sign as ordered.
f. Keep dressing dry for at least 1 day.

7.1.7. **PLEURAL ASPIRATION**

1. Purpose: To collect a specimen of fluid from the pleural cavity for diagnostic purpose, to remove excessive serous fluid to relieve pressure symptoms & to remove the purulent exudates in empyema.

2. Equipment required

a. Basic Procedure Set.
b. Sterile drape.
c. Surgical mask.
d. Sterile glove.
e. Povidone.
f. Spirit solution.
g. Lignocaine 2% x 2 amp.
h. Syringes – slip tip – 5 cc, 10 cc, 20 cc, 50 cc x 2.
i. Needle all sizes x 2.
j. Surgical blade, if necessary.
k. Thoracocentesis needle.
l. 3 way stopcock.
m. Gauzes and cotton balls.
n. Urgo crepe/ Elastoplast.
o. Micropore.

p. Sterile bottle for specimen.

q. Large Measuring Jug.

3. Preparation of patient

a. Explain procedure to patient.

b. Doctor to obtain consent from patient.

c. Prepare the surrounding.

d. Push clean trolley to the affected side.

e. Screen the bed.

f. Position patient:

i. Sitting position – patient leans forward on a pillow over a bed table.

ii. Semi-recumbent position – patient lies on unaffected side with opposite arm brought above the head, trunk flexed laterally over a pillow.

g. Place Inco-pad under affected area.

h. Expose the site. Be with the patient.

i. Open the set, sterile gloves and items required, assist doctor with the procedure.

j. Observe the patient throughout the procedure.

4. Procedure

a. The doctor wears mask, scrubs hands and wears gloves.

b. Skin is cleansed with antiseptic.

c. The site is draped.

d. Local anaesthetic is injected.

e. Patient is instructed not to cough or move during the procedure.

f. The aspirating needle is passed into the pleural space.

g. Trocar and cannula is used if the fluid is too thick to be aspirated by means of the needle.

h. The fluid is collected in the jug.

i. When no further fluid is withdrawn, the aspirating needle is removed.

j. Puncture is sealed with collodion dressing.

k. Elastoplast is applied over dressing.

l. Chest x-ray is performed to rule out pneumothorax.

5. Care of patient

a. Make the patient comfortable.

b. Clear the surroundings.

c. Make patient comfortable in semi-recumbent position.

d. Observe measure and record the amount, color, the characteristics and any abnormalities of the aspirated fluid.

e. Observe vital signs, especially respiration and color.

7.1.8. LUMBAR PUNCTURE

1. Purpose:

To obtain a specimen of cerebro spinal fluid for laboratory examination.

2. Equipment required

a. Basic Procedure Set.
b. Sterile drape/ eye drape x1.
c. Disposable mask/ Surgical mask.
d. Sterile glove all size.
e. Povidone Iodine
f. Surgical spirit.
g. Injection Lignocaine 2% x 2 amp.
h. Syringes – slip tip – 5cc, 10cc, 20 cc x 2 each.
i. Needle all sizes x 2 each.
j. Gauzes and cotton balls.
k. Urgo crepe/ Elastoplasts.
l. 2 – 3 sterile bottle for specimen.
m. Lumbar Puncture – Paeds Butterfly needles 21G, 23G and 25G.
n. Lumbar Puncture – Adult spinal (Quinke's) needle 22G.

3. Preparation of patient

a. Explain procedure to the patient.

b. Doctor to obtain consent from patient.

c. Prepare the surrounding.

d. Push trolley to the right side of the patient.

e. Screen the bed.

f. Place incopad under the patient.

g. Put patient in left lateral position with knees bent up touching the head. (The nurse must maintain the patient in this position throughout the procedure).

h. Expose the site and be with the patient.

i. Open the set, sterile glove and the items required. Assist the doctor with the procedure.

j. Observe the patient throughout the procedure.

4. Procedure

a. The doctor wears a mask, scrubs his hands and put on gloves.

b. The site is cleaned with antiseptic and draped.

c. Local anaesthetic is injected.

d. The lumbar puncture needle is then inserted between theL3-L4/L4-L5 intervertebral space.

e. As the needle is being inserted, the nurse must support the patient in the position of extreme flexion and prevent him from making any sudden movement.

f. A specimen of the cerebral spinal fluid will be taken and the nurse should have the bottles ready.
g. The specimen is sent to the laboratory as soon as possible.
h. After the lumbar puncture needle is withdrawn dry dressing is applied to the puncture.

5. Care of patient

a. Instruct patient to lie in supine (flat) position without pillows for 4 – 6 hours.
b. Observe the site of lumbar puncture and leakage from the sites.
c. Observe the blood pressure, pulse and for any complaint of headache for 6 hours.
d. Record the characteristics of cerebral spinal fluid.

7.1.9. SUPRA PUBIC CATHETER INSERTION

1. Purpose:

To drain urine when there is difficulty of passing urine per urethra, or when normal catheterization per urethra is impossible, e.g. in enlarged prostate, urethral abnormalities, etc.

2. Equipment required

a. Toilet and suture set.
b. Cystofix set (both green and blue sets).

c. Povidone and alcohol.

d. Sterile gloves all sizes.

e. 3/0 ethilon on cutting needle (large needle size).

f. Blade size 11.

g. Green needle x 1, blue needle x 1.

h. 10 cc syringe x 1.

i. Lignocaine 2%.

j. Micropore 1".

k. Mask.

3. Procedure

a. Routine cleaning of dressing trolley.

b. Open cytofix set.

c. Open sterile gloves onto sterile set.

d. Open blade and ethilon when ordered by doctor only.

e. Doctor will clean abdomen with Povidone and alcohol.

f. Open 10 cc syringe onto trolley – offer green needle to doctor, or open onto trolley.

g. Wipe top of Lignocaine bottle with spirit swab and hold bottle with rubber bunk top facing doctor for him to draw up the local anaesthesia.

h. Open blue needle onto the trolley.

i. Open Cystofix set, with open end facing doctor – on order only.

j. Once Cystofix is inserted, to attach urine bag.

k. Assist in strapping up dressing and ensure the cystofix is properly anchored. **Ensure that there is no 'kink' at tubing at all times**. 'Kink' always occur between cystofix tubing and connector. **Strap this region tightly**.

l. Record all action and changes in your core plan and if any abnormalities to inform doctor.

7.1.10. LIVER BIOPSY

1. *Equipment required*

a. Basic Procedure Set.

b. Liver biopsy needle.

c. Sterile drape/eye drape x 1.

d. Disposable mask/Surgical mask.

e. Sterile glove all size.

f. Povidone.

g. Spirit solution.

h. Lignocaine 2% x 2 amp.

i. Syringes – slip tip – 5cc, 10cc, 20 cc x 2 each.

j. Needle all sizes x 2 each.

k. Surgical blade size 10 and 11.

l. Gauzes and cotton balls.

m. Urgo crepe/ Elastoplast.

n. Micropore all size.

o. Formaline for specimen.

2. *Preparation of patient*

a. Explain procedure to patient.

b. Doctor to obtain consent from patient.

c. Prepare the surrounding.

d. Push trolley to right side of patient.

e. Screen the bed.

f. Remove the clothes.

g. Bring patient as near to the right side of the bed as possible.

h. Make the patient lie in the recumbent position with his/her hand placed beneath his/her head.

i. Place Inco-pad under the patient.

j. Expose the site.

k. Stand beside the patient.

l. Open the set, sterile glove and the items required. Assist the doctor with the procedure.

m. Observe the patient throughout the procedure.

3. *Procedure*

a. The doctor wears mask, scrubs and wears gloves.

b. The skin over the lower ribs is cleaned with antiseptic lotion.

c. The site is draped.

d. Local anaesthetic is injected into the site of the puncture.

e. The patient is instructed not to move or cough while the biopsy needle is inserted.

f. A small cut is made with the scalpel for the insertion of the biopsy needle.

g. While the biopsy needle is inserted, the patient is instructed to breathe in, breathe out then stop breathing.

h. When he does so, the inner part of the apparatus is quickly inserted, twisted and withdrawn.

i. The small piece of tissue removed by the needle is placed immediately in the formalin solution.

j. Dry dressing applied.

4. *Care of patient*

a. Make patient comfortable.

b. Clear the surrounding.

c. Instruct patient to rest in bed for 6 hours.

d. Observe and record pulse and blood pressure hourly for 4 - 6 hours.

e. Observe dressing over the puncture for bleeding.

f. Inform doctor if there is any indication of bleeding.

N.B.

1) This procedure is usually performed after prothrombine time, INR activated partial thromboplastin and platlet count checked..
2) Blood grouping and cross-matching must be done and a pint of blood kept in reserve.
3) A sedative may be given 30 minutes prior to procedure.
4) Check patient's pulse and blood pressure before.
5) This procedure is usually performed at Radiology Department.

7.1.11. TRACHEOSTOMY CARE

Prepared by:	Verified by:	Approved by:
Dr.R.Nagabhushnam	Dr.Gowtham krishna	Mrs. Lakshmi Lavanya
Consultant Anesthesiologist	Medical Director	Chief Executive Officer

1. Purpose:

To maintain a clear airway and removal of secretion & to promote healing and prevention of infection.

2. Equipment required

a. Tracheal dilator.
b. Tracheostomy tube (same size as with patient).
c. Sterile suction catheter with gloves.
d. Tracheostomy care set.
e. Tracheostomy twill tape.
f. Suction apparatus.
g. Sterile containers.
h. Sterile normal saline solution.
i. Key hole dressing.
j. Syringe – 5 cc/3 cc.

3. Procedure

a. Wash Hands.
b. Inform the patient of the procedure, explaining that it may stimulate a cough reflex and choking feeling.

c. Position the patient supine with the head of bed elevated to facilitate access to the tracheostomy.

d. Preoxygenate the patient and suction the airway (Refer to Oro-Naso Suction Policy).

e. Put on non-sterile gloves and remove the dressing from the stoma. Hold the dressing in one hand and remove the glove over the dressing. This encloses the dressing before being placed in the trash receptacle and decreased occurrence of cross-examination.

f. For the patient receiving supplemental oxygen without mechanical ventilation, perform the following steps:

   i. Disconnect the oxygen source.

   ii. Remove the inner cannula, and place it in a container of hydrogen peroxide.

   iii. Clean the inner cannula with hydrogen peroxide using a brush or pipe cleaner.

   iv. Rinse the inner cannula with sterile normal saline. Gently tap the excess solution off the cannula.

   v. Reinsert the inner cannula into the tracheostomy and lock into place.

   vi. Reconnect the oxygen source

g. For the patient receiving mechanical ventilation, perform the following steps:

   i. Disconnect the mechanical ventilator.

ii. Remove the inner cannula and replace it with the extra inner cannula.

iii. Reconnect the mechanical ventilator.

iv. Clean the inner cannula with hydrogen peroxide using a brush or pipe cleaner.

v. Rinse the inner cannula with sterile normal saline.

vi. Place the inner cannula in a sterile container to be used in the next tracheostomy care procedure.

vii. If replacement inner cannulas are not available, provide adequate airway humidification and suctioning to prevent encrustation of secretions in the inner cannula.

h. Clean the stoma. Utilize 4 x 4 gauze sponges and cotton-tipped applicators. Begin at the stomal edge and move out away from the stoma.

i. Place sterile, precut gauze with Flavine under the tube flanges, if the flanges are sutured to the skin, do not force the gauze between the skin and flange.

j. Asses the stomal site for infection, erosion and skin breakdown.

k. Change the tracheostomy tape if it is soiled. Secure the tube with the new tape before removing the soiled tape. Tie the tape securely with a square knot that is loose enough to accommodate two fingers between the ties and skin.

l. Suck the airway again if necessary.

N.B.

1) Assess the oxygen source or mechanical ventilator every 2 to 4 hours for settings and functioning. Assure presence of humidified air to prevent drying of secretions within the tracheostomy tube.
2) Perform tracheostomy care when necessary; perform more often if the stoma is edematous and red or if secretions are copious, foul smelling, or yellow or green in color.
3) Change the tracheostomy dressing and twill tape whenever it becomes soiled.
4) Perform oral care every 8 hours.
5) Keep the obturator and an extra tracheostomy tube of the same size at the bedside.
6) Instill 5 ml of normal saline into the airway and suction, if ordered. There may be a mucus plug obstructing the tube.
7) Document all actions taken.
8) Assess patient before/during and after tracheostomy care.

7.1.12. CHEST TUBE INSERTION

1. Purpose:

To remove air/blood or serous fluid from the pleural space and reestablish negative pressure in the pleural space.

2. Equipment required

a. Toilet and suturing set.
b. Under water seal drainage bottle.
c. Lignocaine 1%.
d. Povidone/Alcohol.
e. Sterile water.
f. 3" Elastoplast.
g. Sterile glove, all sizes.
h. Sterile gauze/cotton.
i. Kellys clamps x 2.
j. Trocar with tube, size 24 to 36.
k. 1" micropore.
l. Surgical mask.
m. Sterile towels.
n. Size 11 blade.
o. 3 - 'O' silk suture with cutting needle.
p. 10 cc syringe x 2.

q. Needles:

r. Green (21G) x 2.

s. Blue (23G) x 2.

t. Spirit swabs x 4.

u. Small sterile bottles x 2 (for collecting specimen).

3. Assisting insertion of chest tube

a. Establish intravenous access.

b. Continuously assess the patient's airway and respiratory status.

c. Lie patient in Fowlers position with both arms resting on cardiac table.

d. Open T & S set and add onto pack sterile gloves/surgical mask.

e. Pour in Povidone and alcohol.

f. Open the sterile towels.

g. Open 10 cc syringe x 1, add on needles one size each.

h. Clean top of lignocaine 1% with spirit swab for doctor to draw up local anaesthesia.

i. Open size 11 blade.

j. Add in 3-'O' silk suture on cutting needle/gauze/cotton.

k. Cut ready strips of 8" long 3" Elastoplast x 4 pcs. (2 strips to have key-hole) and stick lightly to side of 2nd shelf of trolley for use later.

l. While doctor is preparing for insertion, **ask first** before opening under water seal bottle. Carefully add in sterile water into bottle till the correct marking, mark the water level, ensuring glass tube is under water. (**Please ensure sterility at all times**).

m. Unseal chest tube trochar and cannula, holding towards doctor with cap still on until ready to use.

n. Be ready with specimen bottle to collect specimen from chest tube once it is in situ, if specimen is required.

o. To be ready to clamp chest tube with Kellys clamps when ordered.

p. Connect chest tube to under water seal bottle, making sure that it is very secured.

q. Release Kellys tube clamps.

r. Assess type and quantity of drainage in the collection chamber.

s. Assess for any air leak along the tube and the water seal chamber.

t. The tube is sutured on the skin with 3-'0' silk suture.

u. Connect chest drainage system to suction (when ordered).

v. Press the site occlusively with gauze and elastoplast.

w. Tape all tube connections.

x. Obtain chest X-ray immediately to assess the position of the chest tube and effectiveness of the procedure.

y. Ensure that patient is comfortable before leaving him/her.

z. Observe patient's respiration, color and any complications e.g. surgical emphysema.

4. To prepare low suction pump

a. First ensure that the metal rod marker in glass chamber reaches the bottom of the chamber.

b. Fill glass chamber with water up to marking 30 on the metal rod marker.

c. Pull metal rod marker upwards till marking 15 at water level.

d. Use Y connector for 2 drains and straight connector for single drain.

e. Attach one end of connecting tubing to connector and the other end to low suction pump.

f. Attach connector to drainage tube/tubes from patient.

g. Plug in main and switch on.

7.1.13. REMOVAL OF SUTURES/CLIPS

1.Purpose:

To prevent trauma to incision. This procedure requires a physician order. Sutures and clips are to be removed using aseptic technique.

2.Equipment required

a. Trolley.

b. Suture removal set/clip remover.
c. Cleaning solution – Povidone/spirit.
d. Disposable bag.
e. CSSD bag.

3.Procedure

a. Clean trolley.
b. Attach disposable bag to trolley.
c. Place equipment on bottom shelves of trolley.
d. Take trolley to bedside.
e. Screen and explain procedure to patient, ensure privacy. Wear un-sterile gloves.
f. Peel off dressing edges.
g. Wash hands.
h. Create sterile field by opening suture set/clip remover onto top shelve of trolley.
i. Pour Povidone/spirit into a gallipot.
j. Wash hands.
k. Using sterile forceps remove dressing and discard into clinical bag; discard forceps into CSSD bag.
l. Clean the suture line.

m. Place sterile gauze on, beside suture line.

n. Using a forceps and suture scissors/clip remover, commence removing sutures/clips.

o. Suture is cut as close to the skin as possible (to prevent contamination of wound) and pulled through from the wound.

p. Clips are depressed in the middle to open and removed from either side of the wound.

q. Place removed suture/clip on top of sterile gauze and continue down suture line.

r. Clean suture line with Povidone/spirit and dress wound as necessary according to the physician's order.

s. Make patient comfortable, remove screen.

t. Remove trolley to utility room, discard clinical waste, put CSSD bag in the appropriate container for CSSD collection.

u. Clean trolley.

v. Wash hands.

7.1.14. CANNULATION OF INTERNAL JUGULAR VEIN

1. Purpose: To provide a large-bore venous access into central circulation for the purpose of hemodynamic monitoring, fluids and medication administration and venous blood sampling.

2.Equipment required

a. Single, Double or triple lumen catheter.
b. 2-O suture.
c. Povidone – iodine solution.
d. Sterile gauze sponge.
e. 18-gauge needle, vein dilator, guide-wire, scalpel blade and 5 ml syringe in sterile pack.
f. Dressing material for the site.
g. Sterile towel and gloves.
h. Central venous pressure manometer or pressurized monitoring system.
i. Surgical mask.

3.Procedures

a. Prepare intravenous solution and tubing. Label the solution bag with date, time, solution and additives. Explain procedure and reassure patient.
b. Place sheet roll underneath patient between the shoulder blades.
c. Turn patient's head away from the intended inserted site.
d. All personnel involved should wear mask and gloves.
e. The doctor will prep intended site with Povidone-iodine solution and allow solution to dry.

f. Place patient supine and in Trendelenburg position to facilitate venous distention and assist in the prevention of air embolism.

g. The catheter insertion is performed by the doctor.

h. Apply a sterile, transparent occlusive dressing to the site.

i. Return patient to the desired position. Document date, time, location and by whom the catheter was inserted.

j. Auscultate breath sound for equality to assist in ruling out a pneumothorax or hemothorax.

k. Obtain a chest radiograph as ordered by the doctor to verify catheter placement and rule out pneumothorax or hemothorax.

l. Guidelines for the use of multiple-lumen are as follows:

   i. All lumens may be used as a general access for administration of intravenous fluid.

   ii. Central venous pressure monitoring should be performed through the distal lumen.

   iii. Blood products should be administered through either the distal lumen or the proximal lumen.

   iv. Parenteral nutrition may be administered through any lumen but preferably through the middle or distal lumens.

   v. Blood sampling should be obtained from the proximal lumen.

m. Assess the catheter for patency and presence of blood return every shift and when necessary.

n. If a lumen is heparin-locked, maintain patency by flushing with heparinized saline every shift and when necessary.

o. Change site dressing weekly and whenever necessary. Assess and document site for inflammation, discharge, edema and hematoma. Assess catheter for kinks or loose sutures.

p. Obtain central venous pressure readings as indicated.

q. Central lines should not be used for blood sampling due to risk of line contamination unless all other methods of blood sampling are exhausted.

r. Removal of central venous catheter should be instructed by the intensivist/ anaesthesiologist; perform the following steps:

   i. Remove the dressing.
   ii. Remove suture with a suture-removal set.
   iii. Place a 4 x 4 gauze sponge at the insertion site.
   iv. Gently pull catheter through insertion site.
   v. Immediately place pressure to the site with gauze sponge. Maintain pressure for 3 to 5 minutes.
   vi. Apply some Povidone-iodine solution to the site and apply a sterile dressing.
   vii. Assess the site frequently for any discharge, edema or hematoma formation.

viii. Document date, time and by whom the catheter was removed.

7.1.15. ARTERIAL LINE INSERTION

1.Purpose:

To continuously monitor arterial pressure & to establish an access for obtaining frequent samples of arterial blood with minimal discomfort to patient.

2. Equipment required

a. Single or double pressure tubing system.
b. Pressure transducer.
c. 20-gauge intravenous catheter or arterial line catheter.
d. 3 cc syringe.
e. Povidone – iodine solution.
f. 4 x 4 gauze.
g. Sterile gloves and mask.
h. Dressing for site.

3. Procedures

a.Prepare and calibrate the pressure transducer system.
b. Explain procedure and reassure patient.
c.Perform Allen test to radial artery site.

d. Support hand and dorsiflex wrist. Place a roll of gauze or towel behind the wrist for maximum dorsiflexion.

e. Prepare site with Povidone-iodine solution for 3 minutes and allow to dry. The person performing the procedure should wear a surgical mask and sterile gloves.

f. The doctor will insert the catheter into the artery at 45 degree angle after palpating the artery.

g. After arterial backflow is noticed, the catheter will be thread over the needle and needle removed. Prevent excessive backflow by occluding the catheter with a gloved finger.

h. Connect the pressure tubing to the catheter. Allow backflow and flush pressure tubing while connecting in order to prevent introduction of air into the system.

i. Observe for a crisp arterial tracing on the monitor to indicate accurate placement.

j. If arterial pressure monitoring is not required by the doctor, connect the catheter with pre-heparinised 3-way tape. Flush the 3-way tape every 6 hours with heparinised saline to prevent arterial line blockage.

k. Dress the insertion site with Povidone-iodine and transparent occlusive dressing.

l. Calibrate the transducer to ensure accuracy and maintain a pressurized heparin flush system. Document date, time, size of catheter, location and by whom the catheter was inserted.

m. Monitor arterial pressure hourly or more frequently if indicated.

n. Assess the arterial waveform and presence of blood return every 2 – 4 hours.

o. Frequently check and document the correlation between the arterial line and cuff pressure.

p. Change the dressing every 24 hours and when necessary. Document appearance site and perfusion of the affected extremity. Observe for signs of infection.

q. Removal of the catheter should be ordered by the doctor:

i. Remove the dressing.

ii. Close stopcock closet to site.

iii. Remove the catheter gently and apply firm pressure to site for 5 minutes.

iv. Apply pressure dressing.

v. Assess circulation to affected extremity.

vi. Document removal of catheter with description of site and length of time pressure applied.

7.1.16. TRANSVENOUS CARDIAC PACING

1. Purpose:

To provide an artificial electrical stimulus to the myocardium to initiate depolarization.

2. Equipment required

a. Pulse generator.

b. Connecting cable.
c. Trans venous bipolar pacing catheter.
d. Twelve-lead electrocardiogram (ECG) monitor and recorder.
e. Percutaneous introducer kit (needle, dilator, sheath, guide wire).
f. Cardiac arrest cart and defibrillator.
g. Sterile gowns, gloves, drapes.
h. Mask.
i. Povidone-iodine solution.
j. Sterile gauze.
k. Syringe.
l. Xylocaine.
m. Silk suture.
n. Dressing for the site.

3. Procedures

a. Attach the limb leads of the ECG monitor to patient and continuously evaluate the rhythm.
b. Assure patency of an intravenous catheter.
c. Test and prepare the pulse generator. Set the output control on 5 milli amperes (mA); turn the sensitivity control fully clockwise; and set the rate 10 beats per minute (BPM)

above the patient's intrinsic rate. If the patient is severely bradycardia, set the rate between 70 and 90 BPM.

d. Masks and caps are worn by all persons in the area.

e. The physician will insert the trans venous pacing catheter.

f. Once position of trans venous pacing catheter are confirm by the physician, attach the distal and proximal electrodes on the pacing catheter to the pulse generator with a connecting cable. The distal electrode (the cathode) is the negative pole and the proximal electrode (the anode) is the positive pole.

g. Turn on the temporary pacemaker and observe for a pacer spike and capture on the monitor. Assess the patient for pulse and blood pressure.

h. Set the pulse generator as instructed by the physician. The physician will adjust the pulse generator setting.

i. Apply Povidone-iodine solution and cover the insertion site with a sterile, dry, transparent occlusive dressing.

j. Obtain 12-lead ECG and chest radiograph to rule out complications and verify placement. Continuously monitor ECG.

k. Assess for failure to capture. Check security of connections and notify the physician immediately.

l. Assess for failure to sense and pace. Notify physician immediately.

m. Check pulse generator setting mode, rate, output (milli amperes) and sensitivity each shift between on-coming and off-going staff. Document it down.

n. Maintain patient on bed rest to prevent catheter dislodgement.

o. Assure availability of cardiac arrest cart and defibrillator. If defibrillation is required, turn off the pacemaker and disconnect from electrodes.

p. Wear rubber gloves when handling the electrodes to prevent micro-shock.

q. Change the dressing at the insertion site when necessary, only using sterile technique. Observe and document site appearance. Note for inflammation, discharge or discoloration at the insertion site.

r. Label the pulse generator with the date the battery was changed. Have another battery on standby.

7.1.17. Discharge Criteria from ICU

1. Patient no longer requiring organ system support
2. Reversal of initial condition for which patient admitted to ICU
3. In case of bed shortage relatively stable patient shifted to wards (e.g. sharing / private rooms)

NURSE RESPONSIBILITY IN INTENSIVE CARE

1. Scope: ICU

2. Policy:

a. To establish guidelines and procedure to follow in order to deliver safe nursing practice in all situations. All registered nurses in critical care must undergo unit orientation and adhered to the written guidelines and practices within the scope of responsibilities.

b. Nurses assigned to critical care areas must show capability in arrhythmia identification.

c. Nurses in critical care areas are qualified to perform treatment and procedures as outlined in their job description and procedure manual.

d. All procedures performed will be initially evaluated and assessed as having been demonstrated with accuracy by the Charge nurse of critical care areas.

e. Nurses in critical care areas will not perform but only assist the following procedures:

i. Intubation.

ii. Arterial puncture/ line placement (Canulation).

f. The nurse will not perform, but will assist the doctor with the following procedures:

i. Pacemaker insertion.

ii. Chest tube insertion.

iii. Bone marrow aspiration.

iv. Paracentesis.

v. Thoracocentesis.

vi. Liver biopsy.

vii. Vaginal examination.

viii. Subclavian insertion.

ix. Cut down.

x. Tracheotomy or mini tracheostomy.

xi. Intubation.

xii. Removal of sutures/ chest drains

g. The following medications will not be administered by the critical care areas trained nurses:

i. Experimental medications.

ii. Intra cardiac medications.

h. Trained nurse in critical care areas may perform the following:

i. Change irrigation solutions, tubing and dressings on arterial lines.

ii. Administer intravenous medications as ordered by attending doctor.

iii. May discontinue infusions on central venous line on the doctor's order but will not remove CVL

iv. Draw lab samples from indwelling arterial line.

v. Draw lab samples from subclavian catheter with physician's order.

vi. Defibrillate patient in life threatening situations with physicians order.

vii. Administer life saving intravenous medication in life threatening situations e.g. Atropine, Adrenaline or Xylocard.

GUIDELINES FOR MEDICAL STAFF IN ICU

1. Scope: ICU

2. Policy:

a. To establish guidelines and procedures to follow in order to deliver safe nursing practice in all situations.

b. All patients admitted to the ICU/CCU will remain under the medical care of the admitting consultant and the primary doctor will be responsible for the overall management of the patient.

c. All nursing personnel will report any change in patient's condition to the primary doctor and provide delivery of care as per Hospital's protocol.

d. Only Consultant Medical Staff are eligible to admit patients to the ICU/CCU.

e. The primary physician will be notified by the nurse of any change of abnormalities or in the patient's condition, and for any physiologic change (ABG, Lab, and X-ray) and documented.

f. The consulting physician will be notified when problems develop specific to the consult.

g. The primary physician will notify the unit when another physician is covering.

h. A patient will be transferred from the unit by physician's order only.

i. ICU emergency protocol will be used on all ICU patients unless otherwise specified by the physician.

j. In emergency situations, if the primary physician is unavailable, the Medical Officer on duty will be contacted for emergency orders.

STAFFING RATIO IN ICU

1. Scope: ICU

2. Policy:

a) To establish guidelines and procedures to follow in order to deliver safe nursing practice in all situations. Nurse to patient ratio in the Critical Care Unit is 1:1 for Ventilated patients

and Non ventilated patients 1:2 basis, however will be determined by the acuity of the patients.

b) Ratio will be maintained in the ICU/CCU area in cases such as:

c) A critically ill patient that requires increased observation and procedures.

d) A ventilated patient.

e) Any major operations for the first eight (8) hours after returning from Operating Room.

f) Unstable Myocardial Infarction in cardiogenic shock requiring repetitive resuscitation and close observation.

g) Hypovolemic shock due to massive bleeding.

h) Unstable multiple trauma.

i) Patient requiring peritoneal dialysis.

j) Complicated surgery requiring hemodynamic monitoring.

k) Ratio may be established on cases such as:

l) Uncomplicated Myocardial Infarction.

m) Stable patient awaiting transfer to the ward.

n) Uncomplicated surgery – patient requiring observation but not additional procedures or treatment.

o) Chronic diseases that require observation for 24 – 48 hours.

NURSING DOCUMENTATION IN ICU

Prepared by:	**Verified by:**	**Approved by:**
Dr.R.Nagabhushnam	Dr.Gowtham krishna	Mrs. Lakshmi Lavanya
Consultant Anesthesiologist	Medical Director	Chief Executive Officer

1. Scope: ICU

2. Policy:

a. To communicate among patient care providers regarding patient's status.

b. The nursing documentation will be integrating with medical record and clinical information, with specific application to the critical care management of the patient. The following documentation standard addresses a hospital information system.

c. All components of patient care process, plan of care, evaluation and outcomes will be documented in patient's medical record.

d. The integrating nursing documentation (nursing process) is used in the delivery of patient care and is evidence by the following:

i. Initial assessment (performed by SRN) and reassessments.

ii. Problem identified.

iii. Nursing interventions which are related to patient's problems identified.

iv. Nursing care provided to patient.

v. Effectiveness/outcomes of nursing interventions.

vi. Discharge/transfer plan.

e. Data collected of each caregiver will be documented by that individual.

f. Nurses in ICU will document patient's information including changes in general condition, doctor's review and changes in patient's management, vital parameter and intake output flow sheet, medication served and procedure done closely.

g. Documentation on the ICU flow sheet will be continued as long as the patient is receiving IV drips/infusions that are being titrated according to vital parameter.

h. The ICU flow sheet documentation has to be updated with current data prior to patient transfer to another patient care unit.

REFERRAL

1. Scope: ICU

2. Policy:

a. To establish guidelines and procedures to follow in order to deliver high standard of care.

b. Patients admitted to the hospital remain under the medical care of the admitting consultant.

c. New patients admitted to hospital by the Medical Officer will be under the medical care of the consultant on call.

d. The primary consultant is to decide to call in any other specialist consultant to co-manage the patient.

e. The primary consultant will refer the patient to the related principle consultant and will speak to the responsible consultant regarding cause or authorize the nurse to do so.

f. A note of referral will be written down by the primary consultant to the responsible consultant.

g. The primary consultant will be responsible for the overall management of the patient.

VENTILATOR CARE MANAGEMENT

1. Scope: ICU

2. Policy:

a. To establish guidelines and procedures to follow in order to deliver safe nursing practice in all situations.

b. There will be written guidelines which cover all nursing procedures. They will include the practical steps involved in providing the highest level of safety and comfort to the patient whiles delivering the procedure concerned.

c. Ventilatory setting and changes will be done by the anaesthesiologist/patient's own consultant. The Critical Care area nurse may change the ventilatory setting during emergency situations as directed by the anaesthesiologists or if he/she is present and notify the attending Medical Practitioner accordingly.

d. Ventilator equipment will be maintained by Critical Care area staff, with the assistance of the Bio-medical Engineer.

e. Ambu bags or rebreathing circuits will be at the bedside of all patients.

f. Suction equipment will be at each patient's bedside.

g. Routine tracheal aspiration for Culture and Sensitivity and Ventilator tubings and accessories will be changed on intubated or Tracheostomy patients specified by the anaesthetist.

h. Ventilator will be checked and recorded on flow sheet every hour. Assessment will include:

i. Mode – CMV/SIMV/CPAP.

ii. FiO2.

iii. Tidal volume and minute volume.

iv. Peak inspiratory pressure.

v. Respiratory rate and set rate.

vi. PEEP and Pressure Support.

i. Perform respiratory assessment and vital parameter checking every hour and when there are any changes in patient's condition. Monitor breath sounds for sign of increased accumulation of secretion and the need for suctioning. Assess changes in chest expansion that indicate pneumothorax or right main-stem bronchus intubation.

j. Perform endotracheal tube suctioning at least twice per shift and when necessary. Not and document the color, amount, consistency and odor of secretions.

k. Monitor ABGs with each ventilator setting changes, clinical changes and upon doctor's request.

l. If patient is fighting or "not synchronising" ventilator cycle, assess for possible causes such as improper tube placement, tube kinking, improper ventilator setting or pneumothorax. If all potential causes are ruled out, consider the need for paralytic agents, in conjunction with analgesics and sedatives as instructed by doctors.

m. Monitor exhaled tidal volume hourly and document in flow sheet. Note variations between delivered tidal volume and exhaled tidal volume. If the exhaled tidal volume is less than delivered tidal volume, a leak is present within the system. (Variation of 100 mls is acceptable).

n. Assure endotracheal tube or tracheostomy tube is stabilized secured at all times to prevent tube displacement.

o. Obtain a chest radiograph upon doctor's request to monitor for artificial airway placement, presence of infiltrates and barotraumas.

p. Assess the gastrointestinal system for the development of stress ulcer. Provide nutrition to patient in the form of parental or entered nutrition to meet caloric requirements.

q. Provide patient with a means of communication, e.g. alphabet board,Pen and paper

r. Reorient and reassure patient frequently.

s. Ventilator Weaning:

i. IMV settings and tube settings will be ordered by a anaesthetist or the attending Medical Practitioner.

ii. The following guidelines will be considered for weaning ventilator patients:

   a. Degree of alertness – cough reflex.

   b. Stability of vital signs.

   1. Vital capacity of 10 – 15 ml/Kg.

   2. Adequate ABG value with PO_2 more than 60 mmHg. PCO_2 less than 50 mmHg and adequate pH on 0.40 FiO_2 considering patient's underlying disease process.

3. Respiratory rate less than 35.
4. All ventilator alarm systems will remain ON while the ventilator is in use.

CARE OF PATIENT WITH PULMONARY ALTERATION

1.Scope: ICU

2.Policy:

a. Perform pulmonary assessment at each shift and whenever status changes.
b. Criteria for assessment include:
   i. Inspection of quality, rate, depth and pattern of respiration.
   ii. Auscultation of breath sounds for normal and adventitious sounds (wheezes, rhonchi, rales, rub) and equal on both sides.
c. Obtain and interpret arterial blood gases as ordered.
d. Ventilator oxygen systems will be checked and recorded on flow sheet every hour. Assessment will include:
   a. Mode – CPAP/SIMV/VC.
   b. FiO2.
   c. Tidal volume.
   d. Peak inspiratory pressure.
   e. Respiratory rate, set rate and trigger.

f. PEEP and Pressure Support.

e. Patient requiring oxygen therapy will have continuous pulse oximetry monitoring.

f. All endotracheal tube and tracheostomy tube will be securely taped and marked every 24 hours and when necessary to maintain proper tube position.

g. Patient with oral airways will have mouth care done every 4 hours and when necessary and document conditions of oropharynx, tongue and lips.

h. Confused and combative ventilated patients will be restrained for their airway protection.

i. Maintain patency of airway by suction:
   i. Intubated patient will be suctioned as & when required.
   ii. Note and monitor the saturation, heart rate and skin color before, during and after suctioning.
   iii. Note and comment tenacity, color and amount of secretions.

j. Patients with tracheostomies will have performed:
   i. Trach care every shift, secured with ties checked.
   ii. Cuff pressure checked.
   iii. Patency of tube maintained by suctioning.
   iv. Trachea dilator and extra trach same size at bedside.

k. Monitor mechanical ventilator patient closely to meet criteria and indication for extubation.

l. Provide nursing care to patient requiring chest tube:
   i. Tape securely all chest tube connections.
   ii. Assess chest tube for patency, drainage for color and amount, fluctuation and bubbling and/or air leak.
   iii. Assess for subcutaneous air, notify physician when present.
   iv. Change chest tube insertion site and dressing when necessary. Observe skin for alteration in integrity and document.

m. Obtain chest x-rays after insertion of central lines, ET tube and chest tube.

CARE OF PATIENT WITH CARDIOPULMONARY ALTERATION

1. Scope: ICU

2. Policy:

a. Cardiovascular assessment will be performed on all patients at beginning of each shift and whenever the patient's status changes.

b. The assessment will include:
   i. Assess, interpret and document patient's rhythm.
   ii. Assess skin color, temperature, turgor, edema, and diaphoresis and limbs pulsation volume.

iii. Assess peripheral IV and invasive lives including type of line, location, waveform if applicable, site appearance, presence of blood return.

iv. Ensure cardiac monitor is on.

c. Provide nursing care for patient requiring arterial line monitoring:

i. Assess and identify potential risk factors, complications of arterial lines.

ii. Document date of arterial line cannulation, location.

iii. Verify accuracy of arterial line pressure readings against cuff pressure and document.

iv. Calibrate transducer once per shift and when necessary.

v. Draw lab values from arterial line.

vi. Change dressing when necessary.

d. Routine vital parameter monitoring including blood pressure, heart rate, temperature and respiratory rate every hour or more frequent or as ordered by physician.

e. Providing nursing care for patient requiring temporary pacemakers:

i. Identify indication for temporary cardiac pacing.

ii. Check, verify, by both off going and on coming RN, and document external pulse generator setting mode, rate, capture threshold and type of pacing when present.

iii. Identify pacing complication e.g. failure to pace, failure to capture, failure to sense, competitive rhythm etc and notify the physician immediately.

iv. Pacemaker wires not connected to generator will be checked every shift to ensure readiness of use.

v. Pacemaker wires insertion site dressing will be changed when necessary only. Appearance of site and dressing will be assessed and documented.

vi. Ensure standby batteries for external pulse generator are available.

f. Providing nursing care for patient requiring cardioversion:

i. Identify indication for cardioversion.

ii. Have 12 lead ECG done prior and after.

iii. Ensure crash cart at bedside.

iv. Attach leads from defibrillator to patient.

v. Verify that synchronizer is on.

vi. Identify potential complication and appropriate interventions.

vii. Document all pertinent information.

g. Providing nursing care for patient requiring defibrillation:

i. Identify the potential indications for defibrillation.

ii. Ensure crash cart is at bedside.

iii. Charge defibrillator to proper level.

iv. Place gel pads prior to defibrillation.

v. Utilize firm pressure when defibrillating and intervene appropriately.

vi. Document procedure and patient's response on cardiac arrest form.

CARE OF PATIENT WITH RENAL SYSTEM ALTERATION

1. Scope: ICU

2. Policy:

a. Assess and document quantity and quality of urine which include urine color, clarity every shift.
b. Identify risk factors for pre-renal, post renal and intraparenchymal failure.
c. Assess and document for volume fluid alteration i.e. skin turgor, mucous membranes, orthostatic BP changes and laboratory studies.
d. Patients receiving diuretics will be closely monitored for urine quantity and electrolyte imbalances.
e. All patients will be maintained on strict intake and output chart and balance.
f. Intake and output will be recorded and totaled every 24 hours or upon completion of each shift as requested by the physician.
g. All output drainage i.e. chest tubes, NG, emesis is measured and recorded.

Any urine output less than 30 ml (<0.5ml/Kg) for two consecutive hours will be documented and reported to the physician except in presence of known renal failure.

CARE OF PATIENT WITH INTEGUMENTARY ALTERATION

Prepared by:	Verified by:	Approved by:
Dr.R.Nagabhushnam	Dr.Gowtham krishna	Mrs. Lakshmi Lavanya
Consultant Anesthesiologist	Medical Director	Chief Executive Officer

1. Scope: ICU

2. Policy:

a. Identify those patients requiring close monitoring, assessment and active intervention on their integumentary system. These patients include:

   i. Patients who are on mechanical ventilator support receiving muscle relaxant, analgesic and/or sedation.

   ii. Comatose and decrease sensorium patient.

   iii. Patient who are unable to attain to their ADL e.g. respiratory distress, limbs fracture and contracture, bed ridden etc.

b. Assess the integumentary system every shift, every 4 hourly and when necessary. Document all pertinent data.

c. Perform appropriate wound care and dressing as ordered by the physicians.

d. Position patients every 2 – 4 hours to prevent pressure sore.

e. Identify the potential complication and intervene preventive intervention as appropriate and document.

f. Perform oral care every shift and when necessary.

g. Perform Foley catheter care every 24 hours.

h. Perform passive range of motion on immobile patient every shift during back care when necessary.

i. Perform back care every shift and when necessary, more often in compromised patient.

j. Perform sponging (bed bath) every 24 hours.

k. Operative dressing will be reinforced but not changed until the first dressing change is ordered or is done by the doctor on the first post-op day. Subsequent dressing changes are done as ordered.

CARE OF PATIENT WITH NEUROLOGICAL ALTERATION

1. Scope: ICU

2. Policy:

a. Perform neurological assessment at beginning of each shift, every 2 – 4 hourly and whenever status changes.

b. Neurological assessment includes:

i. Level of consciousness.

ii. Pupils size, symmetry and reaction.

iii. Respiratory pattern.

iv. Vital parameter for sudden decrease in heart rate with an increase in systolic blood pressure.

v. CSF leakage suspected by otorrhea or rhinorrhea.

vi. Document the assessment findings and notify the physician of any changes.

c. Administer eye lubricant every 4 hours. Eyes may be taped shut if indicated. Explain to patient's family regarding the necessity for taping eyes close.

d. Identify patient at risk for seizure activity i.e. history of seizure:

i. Provide a safe environment for patient with seizure precautions.

ii. Properly administer anticonvulsant medication.

iii. Ensure oral airway,O2 point and O2 delivery devices suction machine and sucker are available at patient's bedside.

iv. During seizure activity, secure and maintain patient's airway and identify generalized or focal seizure activity and duration

v. After seizure activity, assess neurological system and document.

vi. Identify signs and symptoms of meningeal irritation such as fever, headache, photophobia, nuchal rigidity, altered level of consciousness, seizures, kerning sign, and Brudzinski sign.

QUALITY ASSURANCE PROGRAMME FOR ICU

1. Scope: Intensive Care Unit /High Dependency Unit

2. Policy:

2.1. The quality indicators which are appropriate for all the Intensive Care Units /High Dependency Units will be monitored on a monthly basis.

2.1. All the infection control activities and parameters will be monitored on monthly basis

2.3. Fumigation registers will be maintained along with the regular housekeeping and engineering controls monitoring.

2.4. All engineering controls and infection control practices will be monitored on monthly basis.

ANNEXURE 1

1. **Forms/ Documents**
    1. Crash Cart Checklist.
    2. Support Service Book.
    3. CPR book
    4. Radiology Form.
    5. Laboratory Form.
    6. Requiting form Blood/Blood Components.
    7. Nursing Documentation.
    8. Blood Transfusion Consent.
    9. High Risk Consent.
    10. Consent for Authorization for Medical/Surgical Treatment & OR Procedure.
    11. Ramsey Sedation Scale.

12. Death Certificate.
13. Pre-OP Checklist.
14. Admission & Discharge Book.
15. Ventilator Using Book.
16. Valuables Handling Over Book.
17. CSSD Book.
18. Communication Book.
19. Stock Issue Register.
20. Instrument Inventory Book.
21. Lending and Borrowing Book.
22. Patient Medicine Refund Book.
23. Quality Indicators registers
24. Refusal of treatment consent
25. LAMA consent
26. Ventilator consent