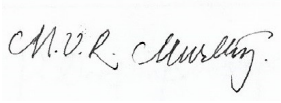
Inodaya Hospitals

INTENSIVE CARE UNIT MANUAL

Document Name:	**INTENSIVE CARE UNIT MANUAL (COP 9a)**
Document No.:	**HCO/IH/ ICU MANUAL 01-35**
Date Created:	01.09.2018
Date of Implementation:	01.09.2018
Date Of Review	31.08.2019, 31.08.2020, 31.08.2021, 31.08.2022, 31.09.2023
Next Review Date	01.09.2024
Review No	05
Prepared By:	***Designation: INTENSIVIST*** **Name :DR.M.V.RAMANAMURTHY** **Signature:** 
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AMENDMENT SHEET

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1. INTRODUCTION

Inodaya Hospital is a 100 bedded hospital with General Surgery, General Medicine, Gastro enterology, Anaesthesiology, Ortho, & Gynaecology as the major thrust areas. The hospital has a dedicated Emergency Department.

Administration

1. SCOPE

Critical care is provided by a multidisciplinary team of healthcare professionals to:

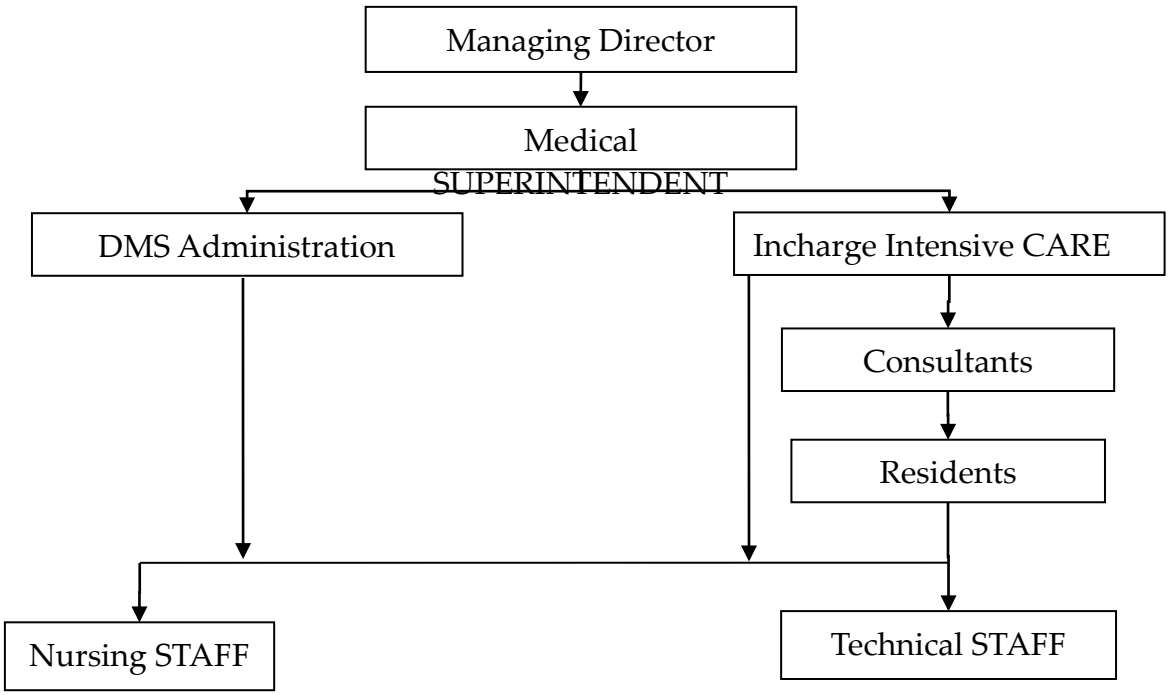
- Coordinate total care of patient
- To ensure that treatment is appropriate for all organ systems
- Honour patient's preference regarding medical treatment
- Respect the patient's religious and cultural beliefs

2. RESPONSIBILITY

Incharge of ICU shall be responsible for the entire functioning of department.

3. DEPARTMENTAL HIERARCHY

Hierarchy Chart



4. JOB DESCRIPTION

1.1 Intensivist

Administrative Responsibilities

Personnel

1. You are primarily responsible for the efficient & smooth functioning of ICU department through maintaining a highly disciplined atmosphere. All your staff should be in proper Uniform with I.D. Card.
2. You should ensure adequate no. Of nursing & Technical Staff along with housekeeping staff for your ICU in accordance with the occupancy rates. In case of crisis or excess you can inform the N.S. to make necessary arrangements.
3. **Housekeeping**

   You should ensure safe, hygienic & highly aseptic environment for all the patients admitted in your ICU. The BMW handling & disposal system of the ICU should be highly organized.

4. **Maintenance**

   You have to make sure that all instruments. /equipment's of ICU/ Ambulance – (ABG Analyser, Cardiac monitors, ventilators, ECG machines, Bipapi, Torch, Glucometer Resuscitative instruments & equipments) should be in proper working condition.

5. In case of any breakdown (Complaint regarding these instruments/equipments) ensure that maintenance department has been informed by the sister in charge in written. Take the follow up.

Others

1. You should daily audit the **emergency crash cart & resuscitative equipments** in ICU for their availability & proper functioning.

2. Ensure the availability of various procedure sets Tracheostomy, Central Line, LP, Pleural Tap, ascetic tap, ICT, etc.) In your department. Check their autoclaving schedule & method.
3. Check the **availability of all life saving drugs, routine drugs, & disposables** in your department daily check for expiries. No drug near 3 months of expiry should be allowed. Immediately give them to the Emergency dept. For quick usage.
4. Ensure that all **dangerous drugs** are stored separately by the Nursing Incharge & the record of their administration has been maintained by her.
5. Ensure that the Nursing Incharge has maintained a **stock** of all the Stationeries required in your dept. As case sheet, Ventilator notes, D/C Summaries, continuation sheet, Ambulance Booking form, Blood Requisition forms of all B. Banks etc. Death Forms, F. Forms, ABG Report Forms.
6. You have to know the status of **Ambulance Services** in your duty so that in case of emergency you can utilize the same.
7. You have to **communicate with the patient's relatives**. Patients nearest relative should be called periodically if required or during visiting hours. They should be explained of the daily expenses, diagnosis, ongoing treatment protocol, requirement of any procedure, cross consultation, Blood, any special medication. Any risk associated, with the disease & the prognosis should be clearly explained beforehand. Due consents/high risk consents/procedure consents should be obtained timely from the nearest relative.
8. You have to listen to the complaints/dissatisfactions of pt./attendants if any & sort them out sincerely.

9. You should know the Ambulance protocols, Mortuary Protocols, MLC Protocol, Death Birth Protocol, Referral Protocols.

Documentation

1. You have to ensure that a death register has been maintained by the sister in charge ICU. All hospital death whether in casualty, wards, ICU, any other dept. Should by promptly & timely entered into it, you can issue a 'transportation certificate' on letter head for the purpose of transporting the patient's dead body.
2. In case of MLC, dead body should be handed over to police and receiving should be taken by you on the MLC & patient's file. In case any dead body is shifted to mortuary from ICU you have to inform the EMR, & give the charge of dead body to the EMR.
3. You have to check that an ECG, dialysis register is maintained by the technicians. All dialysis whether of opd/ipd cash or credit should be entered in the respective registers with all details of pt., his payment made with receipt no. The ECG report must be given to the patient.
4. You have to maintain a proper hand-over take over register. Detailed bed side over should be given to the doctor on next shift.
5. History sheets & other formats should be completed by the ICU doctor for all patients admitted directly to ICU.
6. You have to revise all the treatment charts in night duties for next day orders or any time if the treatment schedule is changed.
7. You are responsible to document all the planned **discharge - summaries** in night duties discharging directly from ICU. In case of urgent discharges/referrals immediate referral summary should be documented.

8. You are responsible to document the case summaries if it is demanded the Attendants of any patient after permission from the administrator.
9. You are responsible to document the transfer summary/shifting notes in case any patient is shifted to ward or other dept. In case any patient is shifted to some other health care organization for any procedure (diagnostic/therapeutic) a transfer note should be given, mentioning the status of pt, need of anesthesia, any history of drug allergy or any other specific directions.
10. You are responsible to maintain an **'investigation chart'** for all case files. All investigation reports should be entered date wise.
11. You are responsible to revise the **treatment orders** after the consultant's rounds & make sure that the orders have been carried out by the nursing staff.
12. You are responsible to take bed side round of all ICU patients & maintain daily progress notes date wise with time & signatures.
13. In case any procedure is done with in ICU as tapping, lp, central line placement, tracheostomy, icd, trop-t artificial ventilation – bipap/ventilator; temporary pacing etc. Then you are responsible to put detailed procedure notes with date & time in the file.
14. You are responsible to take all **high-risk consents, procedure consents**, blood transfusion consents, surgical/anesthesia consents. The consent must be signed by the patient. In case of minors or unconscious/drowsy patient, the consent must be signed by the nearest blood relatives & the relationship mentioned on paper.

Clinical Responsibilities

1. You are primarily responsible for the **Clinical Care** of all ICU patients admitted under you.
2. You are responsible to ensure that appropriate **Nursing care** has been delivered to all ICU patients by the nursing staff.
3. You are responsible to take **bed side rounds** frequently & get the updated status of all patients & initiate therapeutic/Investigative actions accordingly. In case of any emergency, the concerned consultant must be informed.
4. You are responsible to **accompany the consultants or rounds** & ensure whether the orders are followed properly by the nursing staff or not.
5. You are responsible to carry out certain special **procedures** with due consent of the patient/Attendants as putting CVP Lines, Central lines, ventilator, Bipap, Temporary Pacing, Supervising EEG.
6. You are responsible for **attending ambulance calls**, if required.
7. You are responsible for attending emergencies in wards or casualty.
8. You are responsible to preserve X-Ray films, CT Reports any gastric- lavage sample of all MLR cases. police should be informed after the discharge also.
9. You are responsible to make sure that all the **investigations** are carried out timely. Staff nurse is sending the right sample at the right time.
10. You are responsible to manage the **bed allocation** in ICU.
11. At each time, the **dignity of** unconscious patient/female patients should be maintained.
12. You are responsible to **initiate the process of shifting** in coordination with the concerned consultant. In case the patient recovers & is stable, then he/she can be shifted to the ward of choice. In case any patient is deteriorating, then the prognosis should be clearly explained to the attendants. If for any reason, any patient is to be referred to some higher center then you have to ensure all the documentation proceedings. Patient shifting should be safe & timely.

General Training

You are responsible to participate actively in the training process of all technical/non technical staff.

Others

a) Any assignment given by the Top Management.

b) To follow disciplinary & behavioral rules, while on duty & should follow the 'Quality Policy of the Hospital'.

c) To follow the Personnel rules regarding leave or resignation & making arrangements for your substitutes whenever required.

A. Incharge

The incharge will be responsible for assuring the quality, safety, and appropriateness of care in the ICU. He will work collaboratively with the Head of other departments in the institution so that patient care, triage, and patient flow are effective and efficient. The ultimate authority for ICU admission, discharge, and triage rests with the ICU incharge. The incharge Critical Care will ensure that the patients meet ICU admission and discharge criteria and will identify and solve problems through quality assurance and continuous quality improvement activities.

B. Admission Policies

a) The patients will be managed by the ICU staff during their stay in ICU,
b) All admissions to ICU **must** be approved by the Duty Consultant, Dept. of Critical Care Medicine.

i) Resuscitation or admission will not be delayed where the presenting condition is imminently life threatening, unless specific advanced directives exist and are clearly documented.

ii) Such admissions should be discussed with the Duty Consultant Dept. of Critical Care Medicine.

c) Admission is reserved for patients with actual or potential vital organ system failures, which appear reversible with the provision of ICU support.

d) Patients will be admitted under the 'bed-card' of the original or taking unit while in the ICU.

e) Clinics/units requesting elective postoperative surgical beds must confirm bed availability on the day of surgery, prior to the operation commencing.

f) Admission disputes must be referred to the Chairman, Dept. of Critical Care Medicine.

Guidelines of specific conditions or diseases to determine appropriateness of ICU admission

1. Cardiac System
    A. Acute myocardial infarction with complications
    B. Cardiogenic shock
    C. Complex arrhythmias requiring close monitoring and intervention
    D. Acute congestive heart failure with respiratory failure and/or requiring hemodynamic support
    E. Hypertensive emergencies
    F. Unstable angina, particularly with dysrhythmias, hemodynamic instability, or persistent chest pain
    G. S/P cardiac arrest
    H. Cardiac tamponade or constriction with hemodynamic instability
    I. Dissecting aortic aneurysms
    J. Complete heart block
2. Pulmonary System
    A. Acute respiratory failure requiring ventilator support
    B. Pulmonary emboli with hemodynamic instability
    C. Patients in an intermediate care unit who are demonstrating respiratory deterioration
    D. Need for nursing/respiratory care not available in lesser care areas such as floor or intermediate care unit
    E. Massive haemoptysis
    F. Respiratory failure with imminent intubation.
3. Neurologic Disorders
    A. Acute stroke with altered mental status
    B. Coma: metabolic, toxic, or anoxic
    C. Intracranial haemorrhage with potential for herniation
    D. Acute subarachnoid haemorrhage
    E. Meningitis with altered mental status or respiratory compromise
    F. Central nervous system or neuromuscular disorders with deteriorating neurologic or pulmonary function
    G. Status epilepticus
    H. Brain-dead or potentially brain-dead patients who are being aggressively managed while determining organ donation status
    I. Vasospasm
    J. Severely head-injured patients
4. Drug Ingestion and Drug Overdose
    A. Hemodynamically unstable drug ingestion
    B. Drug ingestion with significantly altered mental status with inadequate airway protection
    C. Seizures following drug ingestion
5. Gastrointestinal Disorders

A. Life-threatening gastrointestinal bleeding including hypotension, angina, continued bleeding, or with co morbid conditions
B. Fulminant hepatic failure
C. Severe pancreatitis
D. Esophageal perforation with or without mediastinitis

6. Endocrine
   A. Diabetic ketoacidosis complicated by hemodynamic instability, altered mental status, respiratory insufficiency, or severe acidosis
   B. Thyroid storm or myxedema coma with hemodynamic instability
   C. Hyperosmolar state with coma and/or hemodynamic instability
   D. Other endocrine problems such as adrenal crises with hemodynamic instability
   E. Severe hypocalcaemia with altered mental status, requiring hemodynamic monitoring
   F. Hypo- or hypernatremia with seizures, altered mental status
   G. Hypo- or hypermagnesemia with hemodynamic compromise or dysrhythmias
   H. Hypo- or hyperkalemia with dysrhythmias or muscular weakness
   I. Hypophosphatemia with muscular weakness
7. Surgical
   A. Postoperative patients requiring hemodynamic monitoring/ventilatory support or extensive nursing care.
8. Miscellaneous
   A. Septic shock with hemodynamic instability
   B. Hemodynamic monitoring
   C. Clinical conditions requiring ICU-level nursing care
   D. Environmental injuries (lightning, near drowning, hypo/hyperthermia)
   E. New/experimental therapies with potential for complications

Objective parameters as part of the admitting criteria

1. Vital Signs
   A. Pulse <50 or >150 beats/min
   B. Systolic arterial pressure <80 mm Hg or 20 mm Hg below the patient's usual pressure
   C. Mean arterial pressure <60 mm Hg
   D. Diastolic arterial pressure >120 mm Hg
   E. Respiratory rate >35 breaths/min
2. Laboratory Values (newly discovered)
   A. Serum sodium <110 mEq/L or >170 mEq/L
   B. Serum potassium <2.0 mEq/L or >7.0 mEq/L
   C. Pa O_2 <50 torr (6.67 kPa)

D. pH <7.1 or >7.7
E. Serum glucose >800 mg/dL
F. Serum calcium >15 mg/dL
G. Toxic level of drug or other chemical substance in a hemodynamically or neurologically compromised patient

3. Radiography/Ultrasonography/Tomography (newly discovered)
   A. Cerebral vascular hemorrhage, contusion, or subarachnoid hemorrhage with altered mental status or focal neurologic signs
   B. Ruptured viscera, bladder, liver, esophageal varices or uterus with hemodynamic instability
   C. Dissecting aortic aneurysm
4. Electrocardiogram
   A. Myocardial infarction with complex arrhythmias, hemodynamic instability or congestive heart failure
   B. Sustained ventricular tachycardia or ventricular fibrillation
   C. Complete heart block with hemodynamic instability
5. Physical Findings (acute onset)
   A. Unequal pupils in an unconscious patient
   B. Burns covering >10% body surface area
   C. Anuria
   D. Airway obstruction
   E. Coma
   F. Continuous seizures
   G. Cyanosis
   H. Cardiac tamponade

C. Admission Process

1. Purpose : to ensure timely and appropriate admission of patients in icus
2. Scope : all the patients getting admission in the icus
3. Responsibility : all icu doctors, icu/ot/er/ floor nurses, front office staff
4. Procedure : patient will come to icu from ot, er, floor and admission to be shown in icu through his

S.no.	Process detail
4.1	**Communication**
4.1.1	Concerned nurse from various areas mentioned above will communicate to the counter nurse/other concerned nurse where patient is to be admitted.
4.1.2	Communication should include information about patient, diagnosis, current problems and requirements in ICU.

4.1.3	Nurse in-turn would inform the ICU doctor.
4.2	**Preparation**
4.2.1	The counter nurse or nurse in-charge will assign a nurse and ensure bed and other requirements (ventilator, syringe pumps etc) are ready.
4.3	**Arrival of patient**
4.3.1	Patient would arrive on a bed / trolley accompanied by doctor / nurse and ward boy(s) and patient is shifted to ICU bed in the presence of ICU doctor and nurse with the help of ICU ward boy(s).
4.3.2	A detailed handover and takeover will be taken between ward nurse and ICU nurse respectively. ICU nurse will inform supervisor nurse about the new admission.
4.4	**ICU care initiation**
4.4.1	Vitals checked and recorded, monitors connected as per the requirement
4.4.2	Patient details/assessment recorded by the registrar and treatment started immediately.

5. **Monitoring:** ICU in-charge

Guidelines for admission of a new patient to ICU for ICU registrar

a) Handover from the referring doctor. Obtain as much information as possible.

b) Primary survey:

- Ensure adequate airway, breathing and place patient on highest FiO2 (1.0) until a blood gas is done.
- Check circulation and venous access.

c) Secondary survey: fully examine patient.

d) Document essential orders:

i) Ventilation
ii) Sedation / analgesia
iii) Drugs, infusions
iv) Fluids

e) Outline plan to nursing staff.

f) Secure appropriate basic monitoring/procedures:

i) SpO2 ii) ECG iii) Arterial line iv) IDC, nasogastric tube v) CVC for the majority

g) Basic investigations:

i) Routine biochemistry, blood picture and coagulation studies.
ii) Septic screen/microbiology as indicated.
iii) Arterial blood gas
iv) CXR (after placement of appropriate lines)
v) ECG

h) Notify the duty consultant.

i) Advanced investigations: CT, angiography, MRI, etc

j) Advanced monitoring where indicated: eg PA catheter, ICP, SPO_2.

k) Document in case notes.
l) Notify the parent clinics of patients admitted directly to ICU
m) Inform and counsel relatives.

D. Discharge Policy:

The status of patients admitted to an ICU should be revised continuously to identify patients who may no longer need ICU care.

A. When a patient's physiologic status has stabilized and the need for ICU monitoring and care is no longer necessary. Patient may be discharged to HDU/ floor.
B. When a patient's physiologic status has deteriorated and active interventions are no longer planned, and the family wishes to take the patient home. Such discharges will be labelled as **Discharge on Request**.
C. The patient/family desires to take away the patient against the physician's advice. Such discharges will be labelled as **LAMA**.

a) All discharges must be:
   i) Approved by the duty ICU consultant.
   ii) Discussed with the parent clinic prior to patient transfer, including any potential or continuing problems.

b) Notify the admitting units in case their stable patient needs to be transferred to the floor/ward to accommodate a sick and deserving patient in ICU.
c) Treatment limitation/non-escalation directives must be discussed with the patient or patient's family, the parent clinic and clearly documented prior to discharge.
d) A discharge summary must be completed and a copy included with the patient case notes.

a. Discharge Process

Nurse Incharge/team leader of the respective ICU would inform the floor Nurse In charge/ team leader about the patient who will be transferred to the floor. In case the patient is directly being discharged from the ICU and is going home in the hospital ambulance, Dr. and ER would be informed and ambulance booking would be done in advance.
The ward nurse will come to ICU with a ward bed and a runner and oxygen cylinder if required. A proper hand over –takeover will take place between the ICU nurse and the ward nurse. All the investigations, case files and drugs will be handed over. Any precautions, drug reactions, blood products will be explained and handed over.
In case of discharge to home the following procedure will be adopted:

1. Return unused medicines through the system. Send a runner to pharmacy with the medicines.
2. Check activity sheet, complete it and send to the billing department.
3. Case summary to be written by the concerned resident doctor. Billing department to inform the ICU that the bill has been cleared. case paper should be check to insure completion.
4. Discharge summary to be written on the module and take 2 copies. 1 Copy to be printed on the hospital stationary and will be given to the patient. 2nd copy on plain paper will be attached with the file. Printed copies should have signature of the doctor as well as seal of the hospital.
5. Billing department will issue 2 clearance slips: 1 for the security, and 1 for the nurse.
6. All the relevant documents will be scrutinized by the assigned staff nurse/ In charge before the patient is finally shifted out of the ICU.

1. Purpose : To ensure timely and appropriate admission of patients in ICUs
2. Scope : All the patients getting admission in the ICUs
3. Responsibility : All ICU doctors, ICU/OT/ER/ Floor Nurses, Front office staff
4. Procedure : Patient will come to ICU from OT, ER, Floor and admission to be shown in ICU through HIS

S.No.	Process Detail
4.1	**Communication**
4.1.1	Concerned nurse from various areas mentioned above will communicate to the counter nurse/other concerned nurse where patient is to be admitted.
4.1.2	Communication should include information about patient, diagnosis, current problems and requirements in ICU.
4.1.3	Nurse in-turn would inform the ICU doctor.
4.2	**Preparation**
4.2.1	The counter nurse or nurse in-charge will assign a nurse and ensure bed and other requirements (ventilator, syringe pumps etc) are ready.
4.3	**Arrival of patient**
4.3.1	Patient would arrive on a bed / trolley accompanied by doctor / nurse and ward boy(s) and patient is shifted to ICU bed in the presence of ICU doctor and nurse with the help of ICU ward boy(s).
4.3.2	A detailed handover and takeover will be taken between ward nurse and ICU nurse respectively. ICU nurse will inform supervisor nurse about the new admission.
4.4	**ICU care initiation**
4.4.1	Vitals checked and recorded, monitors connected as per the

	requirement
4.4.2	Patient details/assessment recorded by the registrar and treatment started immediately.

5. **Monitoring:** ICU in-charge

E. Triage Policy For Icu Patients

1. Under ideal conditions, patients would be admitted or discharged strictly on their potential to benefit from ICU care. But many a time the number of potential ICU patients exceeds the available beds. Initial triage of patients may follow the guidelines given above for admissions. If the ICU admissions are rigorously screened for benefit, and discharge is ongoing and continuous, the need for triage will be minimized.

2. When all ICUs and step-down units are filled, the ICU/Critical Care Chairman should have access to all of these units and have the responsibility and authority to admit/discharge patients from these units.
3. Triage decisions will be made explicitly and without bias. Triage decisions may be made after explaining to the patient/relatives that ICU treatment is not medically indicated and there are other patients waiting who would benefit from critical care.

1. Purpose : To effectively utilize the ICU facilities
2. Scope : All the staff working in the ICU
3. Responsibility : ICU consultants
4. Procedure :

S.No.	PROCESS DETAIL
4.1	
4.1.1	Patients should be admitted or discharged from the ICU strictly on the basis of their potential to benefit from ICU care (Triage)
4.1.2	Triage decisions should be made without any bias
4.1.3	The decision should be informed to the parent unit for further proceedings
4.1.4	The decision is also need to be explained to the patient and/or next of kin or attendant

5. Monitoring : ICU In-charge

a. Policy During Non-Availability Of Beds

Refer The Policy Of Non Availability Of Beds

5. Monitoring : ICU In-charge

F. Deaths Policy

a) The duty ICU consultant must be informed of all deaths.

b) The duty ICU registrar must ensure:

- A death certificate is completed after verifying the correctness of name, age and address from the next of kin. If any changes are there they will also be communicated to the front office.
- That the parent clinic/unit or duty resident is notified

c) The Police must be notified after consultation with the Hospital Administration in all cases where:

i) Death is due to violence

a) Trauma deaths: vehicle, home, industrial

b) Homicide / suicide

- Death results from non-natural causes within 24 hours of admission.
- The cause of death is unknown or uncertain.
- Death is peri-operative (ie within 24 hours of an operation)

vi) The patient is certified "Dead on arrival".

vii) When a MLC patient expires, the police will be notified immediately and no death certificate will be issued to the next of kin/ relatives. Body will be kept in the mortuary until the police arrive and the DC will be handed over to them.

1. Purpose : To declare, document and process death in the ICU

2. Scope : All deaths occurring in the ICU

3. Responsibility : All ICU staff, treating doctor, front office, security, pharmacy store

4. Procedure :

S.No.	PROCESS DETAIL
4.1	
4.1.1	Death should be declared to the next of kin in a very polite and subtle manner by the ICU consultant
4.1.2	Preferably the treating unit consultant should visit to console and explain the cause of death to the next of kin or attendant

4.1.3	Body should be packed immediately and sent to mortuary and in case of infectious cases special packing with plastic material should be done.
4.1.4	Return all the unused consumables and medicines and file sent to billing for financial clearance
4.1.5	Billing to generate two clearance slips one to the nursing staff and the other to the security
4.1.6	Death certificate, death form and death summary to be filled and written by the ICU resident doctor
4.1.7	The file should be sent to the MRD within 48 hrs after death
4.1.8	Death certificate and death summary along with investigation reports to be handed over to the relatives while handing over the body
4.1.9	Signature of the relatives taken both in the ICU and mortuary if sent
4.1.10	**MLC:** • No documents to be handed over to the relatives • Death certificate and body handed over to the police • All the documents handed over to the police, a copy of the same should be maintained after getting it signed from the police for hospital record • Death summary should also be handed over to the police

5. **Monitoring** **:** ICU In-charge

G. Nurses Shift Protocol

- Team leader will check crash cart inventory and sign the checklist in each shift.
- The assigned nurses will check remaining inventory and the checklist would be signed.
- Team leader to take round of all patients.
- Remaining nurses look after the assigned patients.
- Detailed handover will be given to the incoming nurse by the outgoing nurse. The incoming nurse would write down the important details e.g. investigations to be sent, laboratory results to be collected, referrals etc.

H. Clinical Duties In The Intensive Care Unit

a. Infection Control In ICU

1. Purpose : To ensure safe and appropriate infection control practices in the ICU

2. Scope : All the staff working in the ICU and treating doctors

3. Responsibility : All ICU staff

4. Procedure :

S.No.	PROCESS DETAIL
4.1	
4.1.1	One should practice and follow proper hand washing guideline • Before commencing the clinical wash hands with soap and water • Before and after touching the patient, it is mandatory to wash hands using hand rub and dry the hands • Hand washing with soap and water is mandatory when hands are visibly soiled, contaminated with blood and body fluids, after removing the glove, before eating and after using rest room
4.1.2	Putting on gloves: Clean glove should be worn during routine activities and while handling body fluids. Sterile glove should be used for all procedures, dressing and suction
4.1.3	Isolation: Infectious patients should be isolated and barrier nursing be followed
4.1.4	Barrier nursing should be followed for as described in the infection control manual
4.1.5	Appropriate aseptic technique is to be followed for all patients undergoing invasive procedures
4.1.6	Bio-Medical Waste management: should be followed as per the protocol segregation at source should be followed.
4.1.7	Controlling traffic: Movement to be kept for a minimum including visitors.
4.1.8	Follow all the guideline and instructions given in the infection control manual. & staff should not bring eatables inside the ICU.

5. Monitoring: ICU In-charge

a. Prevention and containment of nosocomial infection is a fundamental principle of Critical care practice.

b. The critically ill patient is highly vulnerable to nosocomial infection, which results in significant morbidity, prolonged length of hospital stays, increased cost and attributable mortality.

c. It is the responsibility of every member of the health care team to ensure compliance with Hospital and Unit infection control policies. This may include reminding senior colleagues or visiting teams to conform to basic issues such as hand-washing or barrier nursing measures.

d. If one is reminded by a colleague to conform to these policies (eg hand-washing after examining a patient), then this should not be regarded as a criticism, but rather as responsible practice.

e. ***Hand-washing*** remains the only established method of effective infection control and must be diligently performed by all members of the health care team:

   i. Compulsory **before** and **after handling** a patient for:
      - Physical examination of the patient
      - Manipulation of patient's environment including respiratory equipment, infusion pumps, dressings, drains, linen or bedding.
      - Inspection or handling of the patient chart, casenotes etc.
      - Following all procedures, even if aseptic techniques are used.

   ii. This may be performed by ***either***:
      - Washing for a **minimum of 1 minute** using Microshield hand cleanser (at the basin), or
      - Thorough application of Sterilium hand rub (Alcohol based)
      - In the MRSA, VRE area (Isolation rooms) strict asepsis will be observed. The nurse will don mask, cap and gown over the greens. Staff entering this area would wear mask, cap and a gown.

f. Gloves
   - Latex clean gloves will be used for all patient and body fluid contact activities. Sterile disposable latex gloves must be worn for all procedures, dressing, suction etc.
   - The use of gloves does not preclude hand washing before and after patient contact.
   - Gloves must be disposed of in proper marked bins.

g. Barrier nursing measures:

   i. The following patients are regarded as infective risks requiring barrier nursing:

      a. Infection or colonisation with:
         - Methicillin Resistant Staph. Aureus
         - Vancomycin Resistant Enterococcus
         - Multi-resistant gram negatives

- Clostridium difficile

b. Burns

c. Febrile neutropenia

d. High risk immune suppressed patients as directed by Infection Control

ii. An "Additional precautions" sign will be placed outside the isolation cubicles of patients identified as infective risks.

iii. New disposable gowns and gloves must be used for each person entering the cubicle and disposed of within the cubicle upon leaving.

iv. Attending nurses may use one gown per shift, provided it is kept within the cubicle.

v. Consumable stock at the bedside/ isolation cubicles should be kept to a minimum.

vi. Appropriate staff will be notified if patients are transported to theatre, for diagnostic procedures, or for ambulance transport.

vii. Once the patient has been transferred or discharged, the area should remain vacant until cleaned and disinfected in accordance with policy.

viii. Environmental swabbing in Intensive Care is conducted as required by Infection Control staff.

h. Aseptic technique

Aseptic technique is to be used for all patients undergoing major invasive procedures (refer to procedures section). This includes:

- Hand disinfection: surgical scrub with chlorhexidine for >1 minute
- Sterile barrier: full gown, mask, cap, gloves and sterile drapes.
- Skin prep with chlorhexidine 1% in 75% alcohol: let the skin dry.

i. Sharps disposal

- The person performing the procedure is responsible for disposal of all sharps (needles, blades) using the sharp disposal containers.
- Nursing staff are not responsible for cleaning-up sharps after a medical procedure.

j. "Traffic control"

- Movement of people through the Intensive Care Unit should be kept to a minimum. This applies equally to visiting hospital staff and large numbers of relatives.
- All visitors are expected to conform to the above infection control measures and should be tactfully reminded or instructed about these issues.

b. Daily Management In Icu

1. Purpose : To streamline and provide uninterrupted service to the patients

2. Scope : All the patients in the ICUs

3. Responsibility : All ICU staff

4. Procedure :

S.No.	PROCESS DETAIL
4.1	**Activity**
4.1.1	Handing over and taking over should be done elaborately during shift change by all staff
4.1.2	The duty consultants and duty registrars take utmost interest in establishing and maintaining the systems and discipline in the department
4.1.3	As a routine the sample for investigation should be sent at 6:00 am so that the results are available during morning ward rounds by the consultants
4.1.4	Routine chest X-ray should be done before 8:00 am by the radiology technician. Additional responsibility: X- Ray technician
4.1.5	All the investigation forms should be duly written and signed by the duty registrar and for complex investigations like CT, MRI must be authorized by duty consultant and to be discussed with unit consultant
4.1.6	Academic activities to be formulated and implemented by the In-charge ICU

5. Monitoring : ICU In-charge

i) Drug Prescription Policy

1. Purpose : To streamline and provide uninterrupted service to the patients

2. Scope : All the patients in the ICUs

3. Responsibility : All ICU staff

4. Procedure :

S.No.	PROCESS DETAIL
4.1	**Activity**
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4.1.6	Academic activities to be formulated and implemented by the In-charge ICU

5. Monitoring : ICU In-charge

A. Principles of drug prescription in Intensive Care

1. Ideally, drugs should only be prescribed where proven benefit has been demonstrated.
2. Drugs should be prescribed according to Unit protocols and guidelines.

3. Ensure that the drug doses are correct: seek advice if unsure.
4. The risk and benefit of starting any drug must be carefully considered. Critically ill patients have altered pharmacokinetics and pharmaco-dynamics with the potential for toxicity and drug interactions.

c. Documentation

1. Purpose : To ensure recording of clear relevant information essential for continuity of care, audit, medico legal review and statistical purpose

2. Scope : All the staff working in the ICU

3. Responsibility : All ICU staff

4. Procedure :

S.No.	PROCESS DETAIL
4.1	**Admission notes**
4.1.1	Should be written for all patients getting admitted in the ICU by the resident doctor and nursing staff. Doctor's note should include relevant medical history, clinical examination, entry of investigation report etc and the nurse will document all the necessary information as required by her on the nurse's note.
4.1.2	Routine post operative stay patient do not need detailed admission notes. In such patients, record relevant operative / anaesthetic, significant co-morbid condition and history, anticipated problems and information about procedures e.g. epidural, invasive monitoring, TPN

	etc
4.2	**Daily entry in case notes**
4.2.1	Should be written by the resident doctor and the consultant and signed with date and time. This is to include current results and management plan, new developments, any procedure, change in line of treatment, investigation results (to be written by the resident doctor) etc
4.2.2	Similarly nurse should maintain the nurses record and sign with date and time
4.3	**Discharge summary**
4.3.1	Direct discharge from the ICU should be discouraged and patient to be transferred to the respective wards
4.3.2	Brief transfer summary to be written by the ICU resident doctor
4.3.3	In case direct discharge required permission from the HOD ICU and Medical Administrator is required and the proceedings to be carried out as required for the discharge. The summery to be written by the parent unit resident doctor.

5. Monitoring : ICU In-charge / Medical administrator

d. Consent In Icu

1. Purpose : To obtain appropriate consent for medical treatment

2. Scope : All the patients getting admission and procedure done in the ICUs

3. Responsibility : All ICU doctors and nurses

4. Procedure :

S.No.	PROCESS DETAIL
4.1	**Competent patient (**All patients who are conscious, oriented, can understand, speak or read or write**)**
4.1.1	Such patients undergoing invasive procedures in ICU should sign the ICU consent form, which will be counter signed by the ICU nurse and doctor
4.2	**Incompetent patient (**Sedation, coma, disoriented, mentally retarded or encephalopathy**)**
4.2.1	Such patients undergoing major invasive procedures like percutaneous tracheostomy, percutaneous endoscopic gastrostomy, coronary angiography, permanent pacemaker insertion require completion of consent form.
4.2.2	In case of emergency procedure, the form need to be signed by 2 doctors and when time permits or non urgent procedures to be signed by the next of kin (third party consent)

4.3	**Third party consent**
4.3.1	This is not necessary for routine ICU procedures. However, relatives should be informed prior to the procedure about the indication, method, and complication of procedure which should be documented in case file.
4.3.2	Next of kin or relative, preferably on of the identified spokes person from the family must always be informed of any procedure and consent issue
4.3.3	For unknown patient requiring emergency procedures, authorization by the Medical Superintendent should be required after a request is made by the treating doctor Responsibility: MS, Treating/Unit and ICU doctors, ICU nurse

5. Monitoring : ICU In-charge

e. Icu Ward Round

1. Purpose : To manage patient, discuss the progress and to teach resident doctors and nurses

2. Scope : All the hospital staff working in the ICU

3. Responsibility : All ICU and unit consultants

4. Procedure :

S.No.	PROCESS DETAIL
4.1	**Activity**
4.1.1	Morning round should start at least by 8:15 am
4.1.2	All the reports like x-ray, investigation etc should be ready
4.1.3	Residents or registrars will present their allocated patients and actively participate in the discussions
4.1.4	Consultant should enter the note, change of medicine etc in the progress note and date and time is entered along with the signature

5. Monitoring : ICU in-charge

f. Clinical Duties Outside The Intensive Care Unit

Policy Regarding Floor & Er Consults

a) The Unit **must not** be left unattended at any time to attend outside calls. (ie. at least one registrar must remain on the floor)

b) The consults and cardiac arrest/ER/trauma pagers will be allocated as follows:

i) Day (09:00-18:00):

a) Team 1: Ward consults

b) Team 2: Arrest & trauma consult

ii) Night (18:30-08:00):

a) Team 1 night registrar – **Critical Care Consult pager**

b) Team 2/3: Resuscitation registrar (**cardiac arrest/Trauma pager**). Registrar II/III will perform these duties on alternate days.

iii) These roles may be delegated according to the workload in ICU by the duty ICU consultant.

c) All consults should be addressed as soon as possible.

d) Trauma calls should be attended immediately.

e) All consults/Trauma calls potentially requiring admission to ICU must be discussed with the Duty Consultant.

f) If the ICU workload is heavy, refer ward consults to the duty ICU consultant who will delegate appropriately.

g) Notify the senior nurse (team leader) and fellow registrar when leaving the ICU.

h) The following duties accompany the ***Consults pager*** (pager no ---):

i) Ward consults

ii) Requests for vascular access (CVC insertion)

iii) Requests for Total Parenteral Nutrition

iv) Requests for assessment and transfer.

i) *The following duties accompany the Emergency pager* (pager no ---)

i) Cardiac arrest calls ii] Trauma resuscitation

a) Trauma pages are subdivided into levels

b) Attendance by the ICU registrar is only required for **Level 1** calls.

Ward Calls

1. Purpose : To effectively manage ward calls

2. Scope : All the staff working in the ICU

3. Responsibility : All ICU staff and ward nurse

4. Procedure : Ward calls may be for critical care, patient review, central venous Access, TPN, Tracheostomy, decanulation, IV access etc.

S.No.	PROCESS DETAIL
4.1	
4.1.1	The ward nurse should inform the ICU nursing staff or resident doctor about the referral and location.
4.1.2	The information time should be recorded in the reference register.
4.1.3	If call attended by the nursing staff she / he should immediately inform the ICU duty resident doctor or consultant.

4.1.4	The ICU doctor(s) should attend to the call immediately or as per their schedule depending on the urgency.
4.1.5	For a procedure call, ward nurse will arrange for the required set and disposable and inform the ICU team again

5. Monitoring : ICU In-charge

Total Parenteral Nutrition (Tpn)

a) ICU provides a TPN service for the hospital.
b) Requests for TPN are essentially elective (i.e. Mon to Fri: 0900-1800) and should be made according to recommended indications.
c) Requests are made to the ICU consultant, who will coordinate with requesting clinic with the help of senior resident:
   i) Initial consultation with the requesting clinic.
   ii) Recording TPN patients in the "TPN Folder" maintained in the ICU.
   iii) Insertion of a central venous catheter for TPN.
   iv) Daily: a) Review of electrolytes and fluid balance,
   b) Review of the central venous catheter,
   c) Prescription of TPN orders ± vitamins / trace elements,
   d) Issue a request form for serum electrolytes.

Cardiac Arrest & Code Blue Calls

1. Purpose : For prompt response to any patient having cardio pulmonary collapse within the hospital
2. Scope : All patients leading to cardio pulmonary collapse
3. Responsibility : All ICU doctors, nursing staff and technicians
4. Procedure :

S.No.	PROCESS DETAIL
4.1	**The emergencies include:** a) Cardiac arrest in wards, emergency department, OT, radiology department and outpatient departments b) Collapse due to unknown aetiology in the hospital
4.1.1	Receive the code blue information through telephone or public address system
4.1.2	Inform the ICU consultant on duty
4.1.3	Make an entry in the concerned register
4.1.4	ICU consultant on duty will carry all the necessary requirements like emergency drugs, intubation and airway devices etc. and should rush to the area immediately
4.1.5	After resuscitation if required patient to be shifted to ICU

4.1.6	Document code blue and resuscitative measures taken in the case file
4.1.7	Code blue informs following people 1) ICU resident 2) ICU technician 3) Resident Internal medicine

5. Monitoring : ICU In-charge

Trauma Calls

1. Purpose : To provide immediate and appropriate care to the needy
2. Scope : ICU doctors
3. Responsibility : All ICU staff
4. Procedure :

S.No.	PROCESS DETAIL
4.1	
4.1.1	There can be two types of trauma calls a) Trauma requiring immediate attention b) Trauma requiring full assessment
4.1.2	Person attended the call will inform the resident doctor and make the entry in the call register
4.1.3	In case of call requiring immediate attention the ICU resident doctor will proceed to emergency room after informing ICU consultant or ICU consultant. If required the consultant will accompany the resident.
4.1.4	The resident doctor will call the ICU consultant if prolonged resuscitation is required and if his presence is not required then he would return to the ICU immediately
4.1.5	Assessment and activity carried by him is documented in the case file.
4.1.6	If patient requires ICU admission he will communicate to the ICU nursing staff for necessary arrangement

5. Monitoring : ICU In-charge

Intra-Hospital Transportation Of Intensive Care Patients

1. Purpose : To transport patients within the hospital
2. Scope : All employees working in the ICU
3. Responsibility : All ICU staff

4. Procedure :

S.No.	PROCESS DETAIL
4.1	
4.1.1	One should ensure that all transport will be authorized by ICU duty consultant and be in the best interest of the patient
4.1.2	Treating unit should be informed regarding transfer
4.1.3	The concerned nurse will inform the departments if any investigation requirement or report is in the process
4.1.4	The patient should be accompanied by Resident doctor, ICU nurse and ward boy
4.1.5	The transport team should be accompanied by monitor, ambu bag, c-circuit, oxygen source with necessary connections and resuscitation equipment

5. Monitoring : ICU In-charge.

Information Technology In ICU

1. Purpose : To maintain proper database
2. Scope : Doctors, nursing staff and technicians working in the ICU
3. Responsibility : All ICU staff
4. Procedure :

S.No.	PROCESS DETAIL
4.1	
4.1.1	All staff should be conversant with the use of computer and Hospital Information System (HIS)
4.1.2	All the documentations should be updated in the HIS from time to time by the resident doctors and nursing staff
4.1.3	Resident doctors will be responsible for writing history, progress notes, investigation report entry, discharge summery and any information as assigned from time to time
4.1.4	Nursing staff will maintain nursing record, medication record, discharge activity and any assigned duty from time to time. Record the ward no. to which has been shifted from ICU with time & dt.

5. Monitoring : ICU In-charge

Policy On Preventive Maintenance In Icu

1. Purpose : To maintain equipments properly and to prevent avoidable breakdowns
2. Scope : All equipments in the ICU
3. Responsibility : All ICU staff

4. Procedure :

S.No.	PROCESS DETAIL
4.1	
4.1.1	ICU nursing in-charge or ward in-charge or ICU technician will carry physical audit of all equipments like monitors, ventilators, defibrillators, panels on the head side of the bead, electric and gas points to ensure their functioning in the beginning of starting the shift.
4.1.2	For electrical and civil issues maintenance department should be informed for necessary action in case problem doesn't get solved then it should be brought to the knowledge of the medical administrator
4.1.3	For problems in the medical equipments the department of bio-medical engineering personnel should be informed who will take remedial action
4.1.4	Any deficiency must be brought to the knowledge of the HOD ICU or Medical administrator

5. Monitoring : ICU In-charge

Visitors Policy

1. Purpose : To streamline visiting hours in the ICU
2. Scope : All the ICU wards in the second floor
3. Responsibility : ICU nurse in-charge

4. Procedure :

S.No.	PROCESS DETAIL
4.1	Visiting hours are: • ICU **10: 00 am to 11: 30 am and 5: 30 pm to 7: 00 pm**
4.1.1	Front office will issue visiting passes
4.1.2	Attendants are located on the attendant waiting area on the ground floor
4.1.3	Visitors / attendants entry to the critical care area will be regulated by the security guard
4.1.4	The security guard should allow only one person per patient to the critical area and maximum number of visitors allowed are **two** in the

	given time period
4.1.5	Visitor/ attendant should wear a shoe cover before entering the area
4.1.6	The front office executive will also coordinate the activities during visiting hours when they are appointed
4.1.7	Counselling: • Brief counselling will be given in the clinical area • Detailed counselling will be given in the lift lobby counselling area • End of life counselling will be given in the room of incharge, department of critical care

5. Monitoring **:** ICU nurse In-charge