

جامعة ساوة الاهلية
كلية التقنيات الصحية والطبية
قسم التخدير - اللجنة العلمية



INTENSIVE CARE UNIT (ICU) Admission and discharge criteria

جامعة ساوة

كلية التقنيات الصحية والطبية

قسم تقنيات التخدير

المرحلة الثالثة عناية مركزة/الكورس الاول

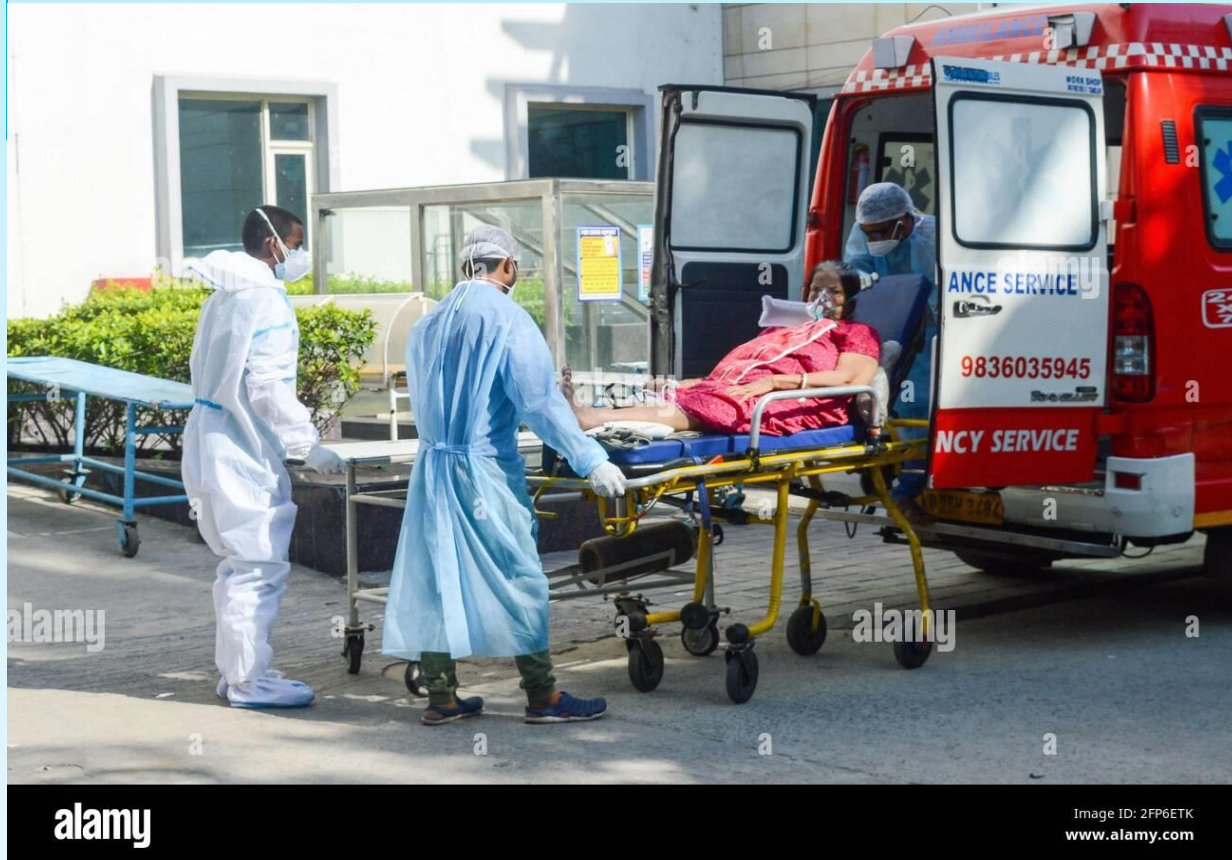
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INTRODUCTION

Types of Admissions into ICU

1. Planned admission
2. Emergency admission



TYPES OF ICU

ICUs can be categorized based on operation or patient group.

A.Types Of ICU Based On Operation Are.

1. Open units :

Primary physician is responsible for admission, treatment and discharge of the patient

1. Closed units:

Responsibility for admission, treatment and discharge of the patient is transferred to a **specialized ICU team**.

TYPES OF ICU

B.Types Of ICU Based On Patient Group.

1.General ICU:

Attend to surgical, medical, obstetric/gynecological, hematological and burns patients.

2.Specialized types of ICUs:

Attend to specific group of patients.

These include:

Neonatal icu ,Pediatric icu ,Cardiac Surgery icu ,Cardio-Vascular icu

Respiratory icu.....etc

WHO SHOULD BE ADMITTED TO ICU?

- ❖ The Intensive Care Unit is an **expensive resource** area and should be reserved for patients with **reversible medical conditions**
- ❖ Because ICU beds **are expensive to run and are limited** in number the **ICU admission decision** may be based models:
 1. **Prioritization model**
 2. **Diagnosis, and**
 3. **Objective parameters models**
- ❖ These are used to **avoid blocking the chance of those patients with a reasonable prospect of substantial recovery.**

1. Prioritization model

SOCIETY OF CRITICAL CARE MEDICINE.

Priority 1:

1. These are **critically ill, unstable patients** in need of intensive treatment and monitoring that **cannot be provided outside of the ICU**. Like **ventilator support**, continuous **vasoactive drug** infusions, etc.
2. **Post-operative or acute respiratory failure patients requiring mechanical ventilatory support and shock or hemodynamically unstable patients receiving invasive monitoring and/or vasoactive drugs.**

Prioritization model.....

Priority 2:

These patients require intensive monitoring and may potentially need immediate intervention.

Examples patients with:

- **Chronic comorbid conditions who developed acute severe medical or surgical illness.**

Prioritization model.....

Priority 3:

These unstable patients are **critically ill** but have a **reduced likelihood of recovery** because of underlying disease or nature of their acute illness.

Examples: patients with:

- **Metastatic malignancy complicated by infection.**

Prioritization model.....

Priority 4:

These are patients who are **generally not appropriate for ICU admission.**

These patients can be placed in two categories:

A. Little or no anticipated benefit from ICU care :

Examples include patients with:

- ❑ **Peripheral vascular surgery.**
- ❑ **Hemodynamically stable diabetic ketoacidosis.**
- ❑ **Mild congestive heart failure.**
- ❑ **Conscious drug overdose..... etc.**

Prioritization model....

**B. Patients with terminal and irreversible illness facing imminent death.
(too sick to benefit from ICU care).**

For example:

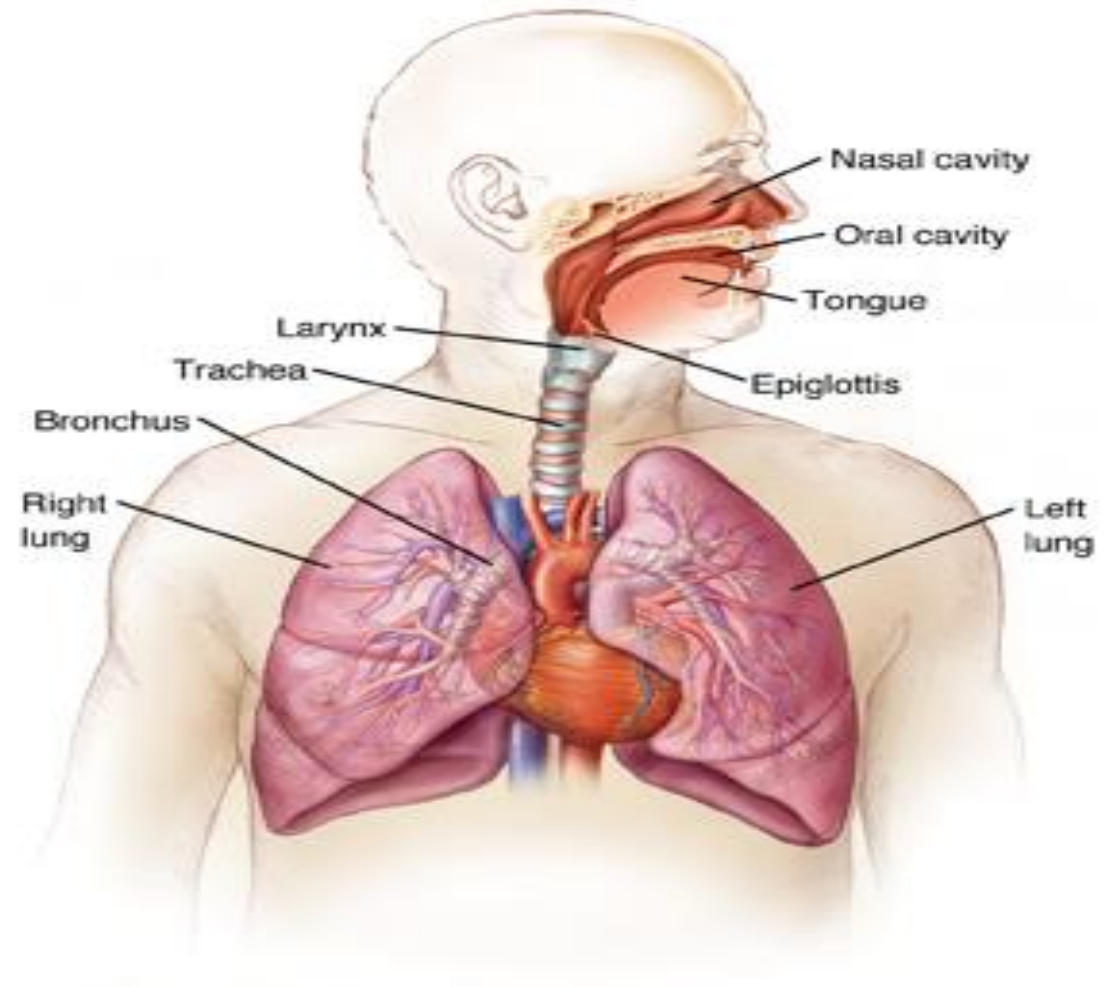
- ❑ **Severe irreversible brain damage**
- ❑ **Irreversible multi-organ system failure**
- ❑ **Metastatic cancer unresponsive to chemotherapy and/or radiation therapy**
- ❑ **Brain dead non-organ donors.**

2. DIAGNOSIS MODEL

- Patient who need ICU care due to some specific diagnosis.

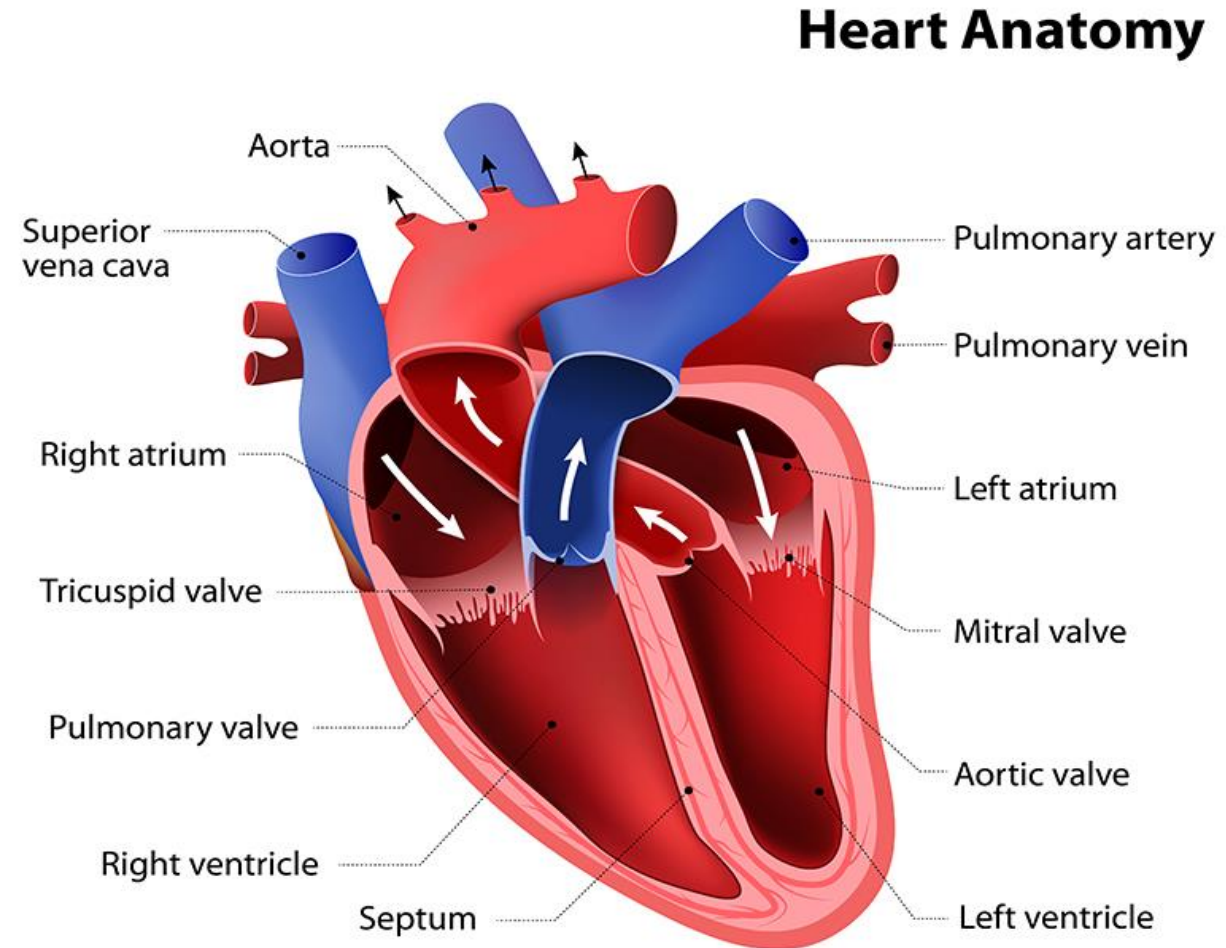
Respiratory

1. Acute respiratory failure requiring ventilatory support
2. Acute pulmonary embolism with hemodynamic instability
3. Massive hemoptysis
4. Upper airway obstruction



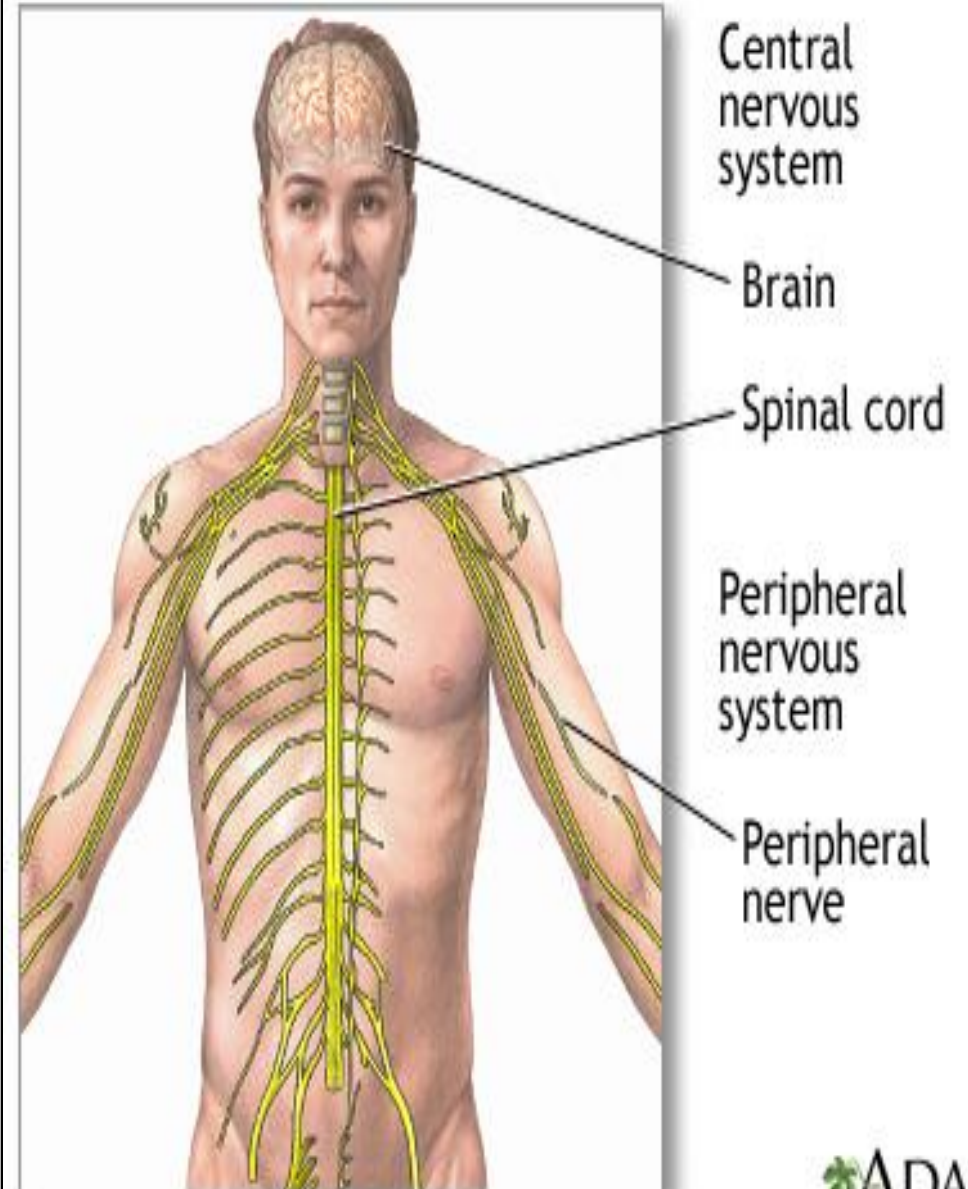
Cardiovascular

1. Shock states
2. Cardiac arrest
3. Life-threatening dysrhythmias
4. Dissecting aortic aneurysms
5. Hypertensive emergencies
6. Need for continuous invasive monitoring of cardiovascular system(arterial pressure, central venous pressure, cardiac output)



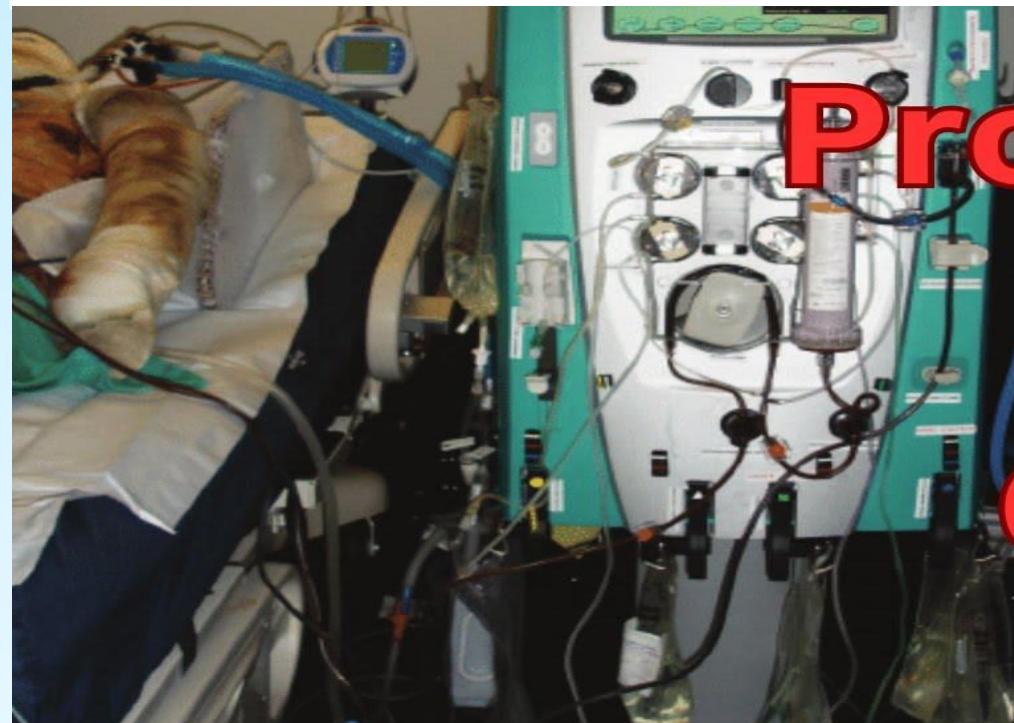
Neurological

1. Severe head trauma
2. CVA with respiratory compromise
3. Status epilepticus
4. Meningitis with altered mental status or respiratory compromise
5. Acutely altered sensorium with the potential for airway compromise
6. Progressive neuromuscular dysfunction requiring respiratory support and / or cardiovascular monitoring (myasthenia gravis, Gullain-Barre syndrome)



Renal

1. Requirement for acute renal replacement therapies in an unstable patient
2. Acute rhabdomyolysis with renal insufficiency

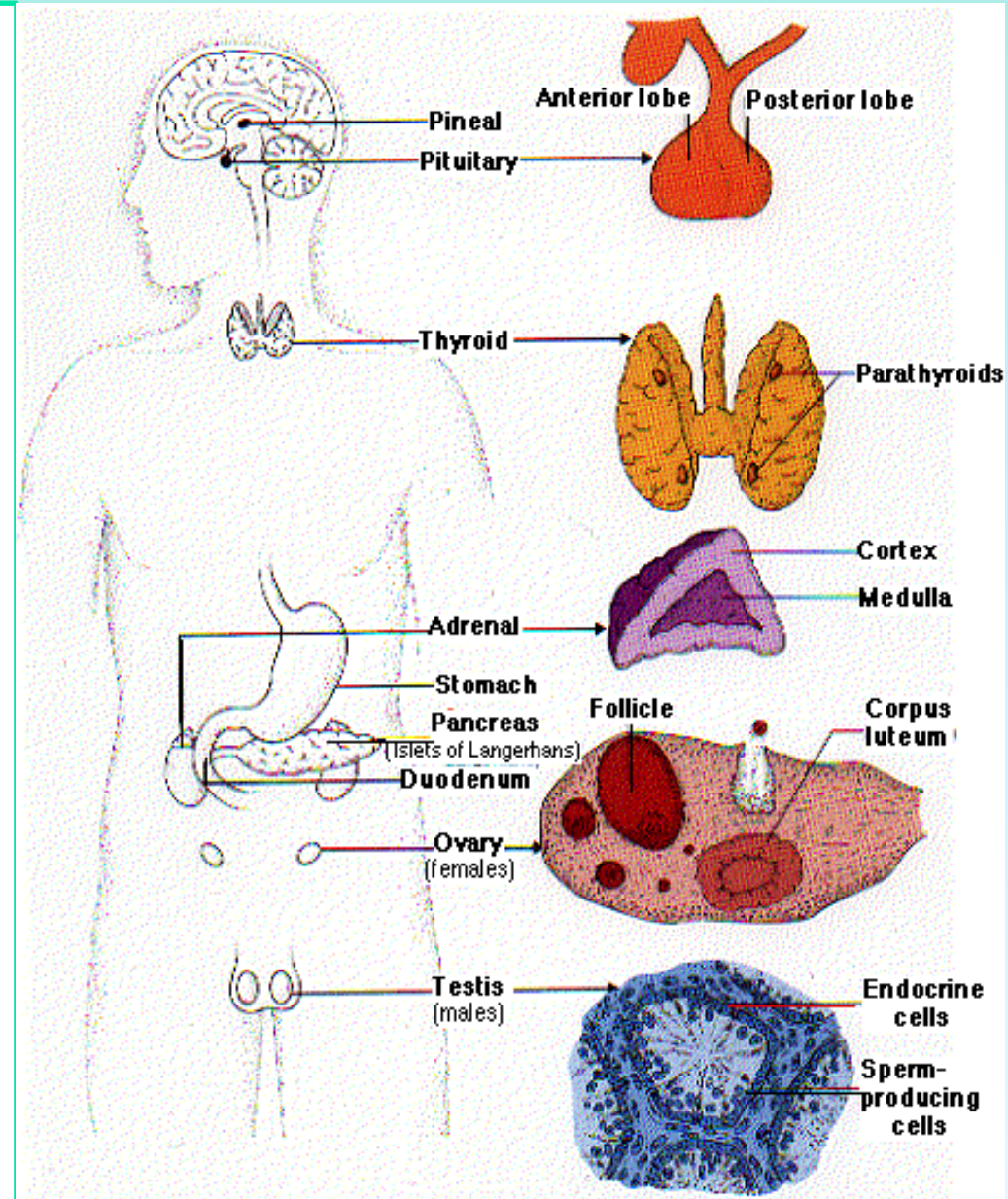


Procedure Of CRRT



Endocrine

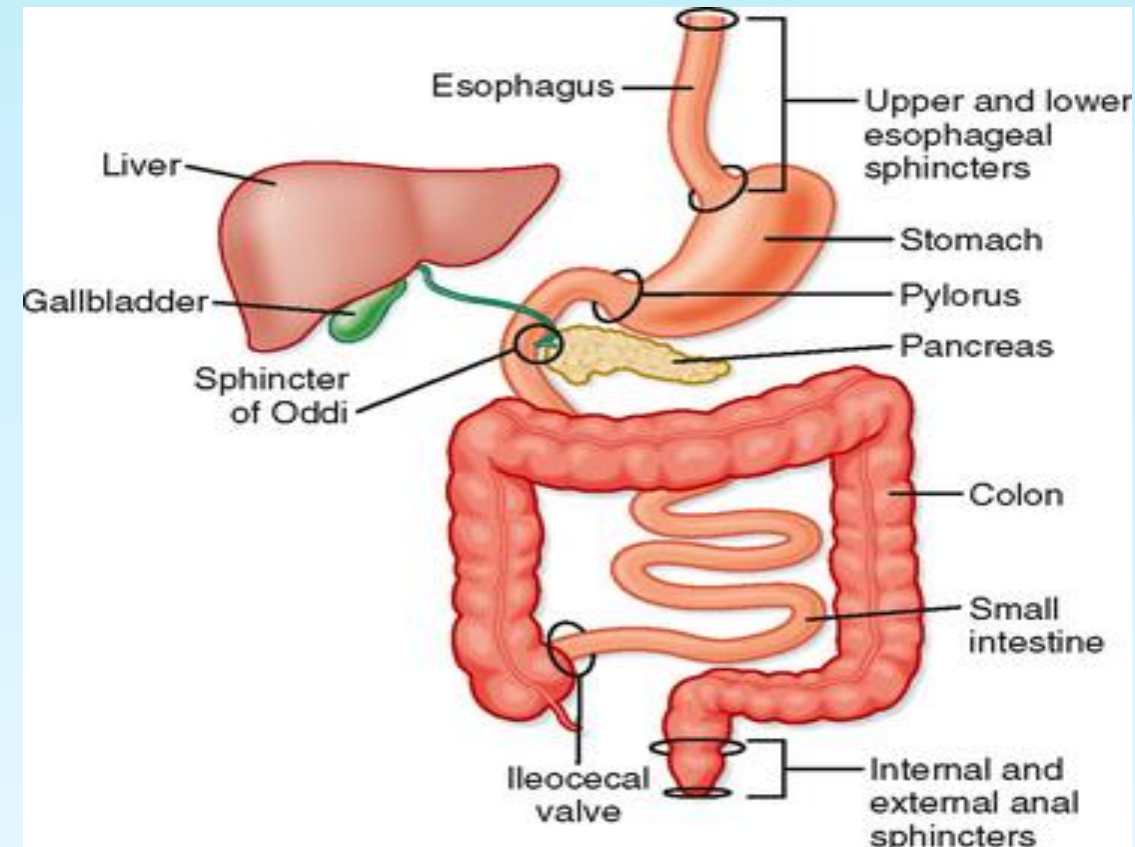
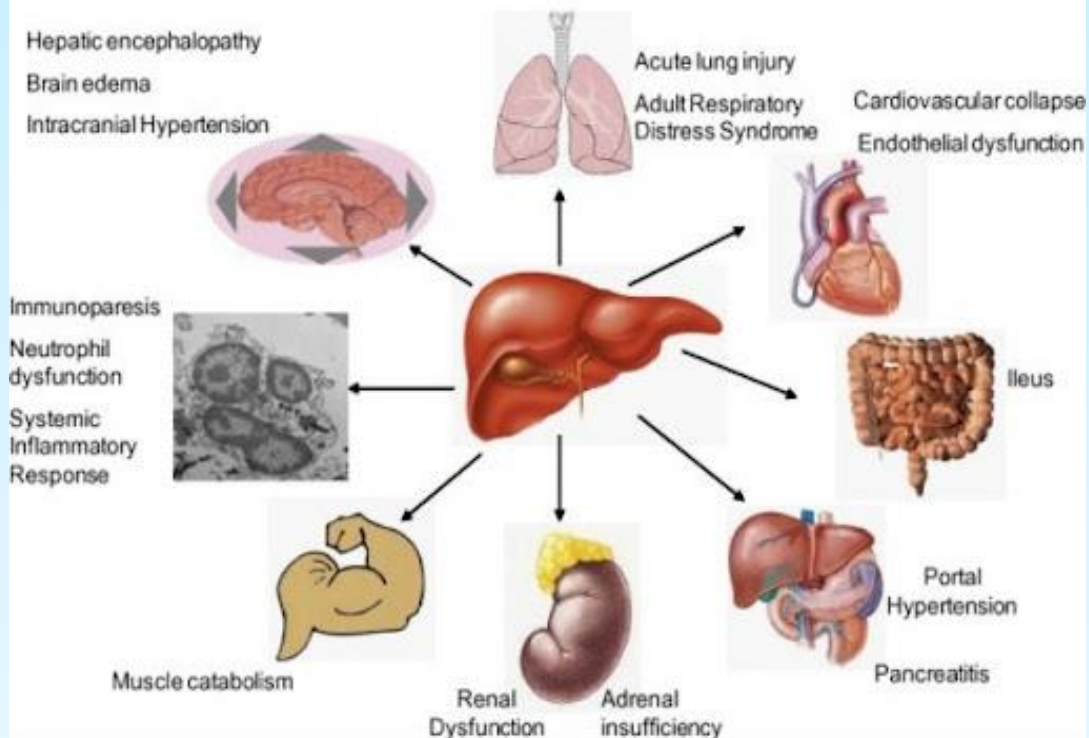
1. DKA complicated by hemodynamic instability
2. Severe metabolic acidotic states
3. Thyroid storm or myxedema coma with hemodynamic instability
4. Hyperosmolar state with coma and/or hemodynamic instability
5. Adrenal crises with hemodynamic instability
6. Other severe electrolyte abnormalities, such as:
 - ❖ Hypo or hyperkalemia with dysrhythmias or muscular weakness
 - ❖ Severe hypo or hypernatremia with seizures, altered mental status
 - ❖ Severe hyperkalemia with altered mental status, requiring hemodynamic monitoring.



Gastrointestinal

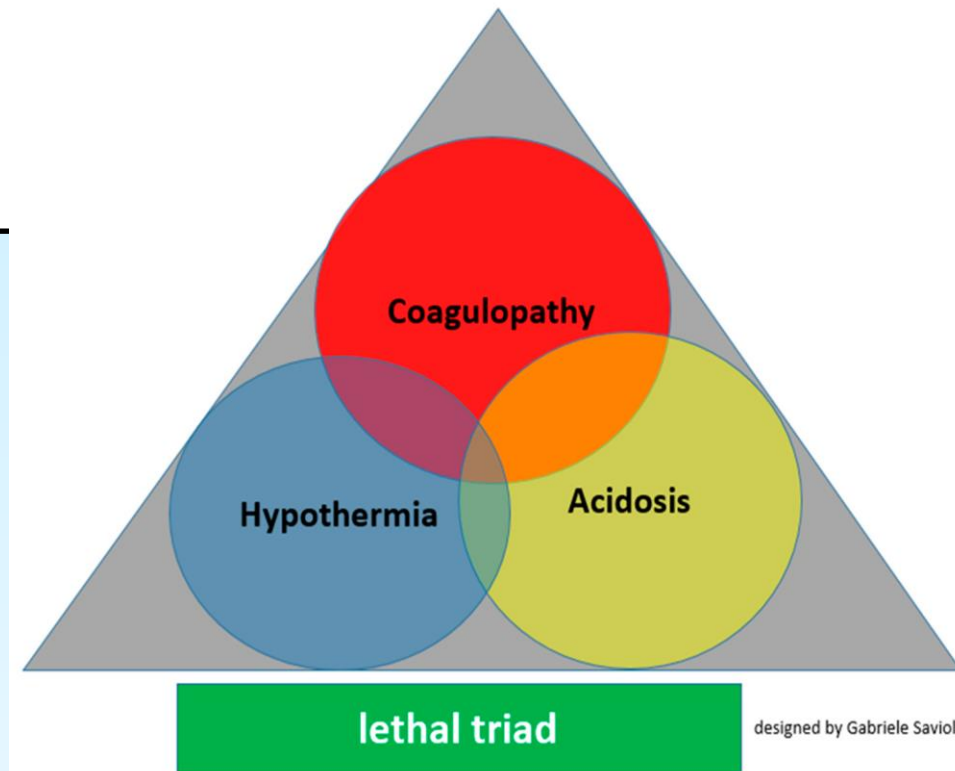
1. Life threatening gastrointestinal bleeding
2. Acute hepatic failure leading to coma, hemodynamic instability
3. Severe acute pancreatitis

Systemic Manifestations of Acute Liver Failure



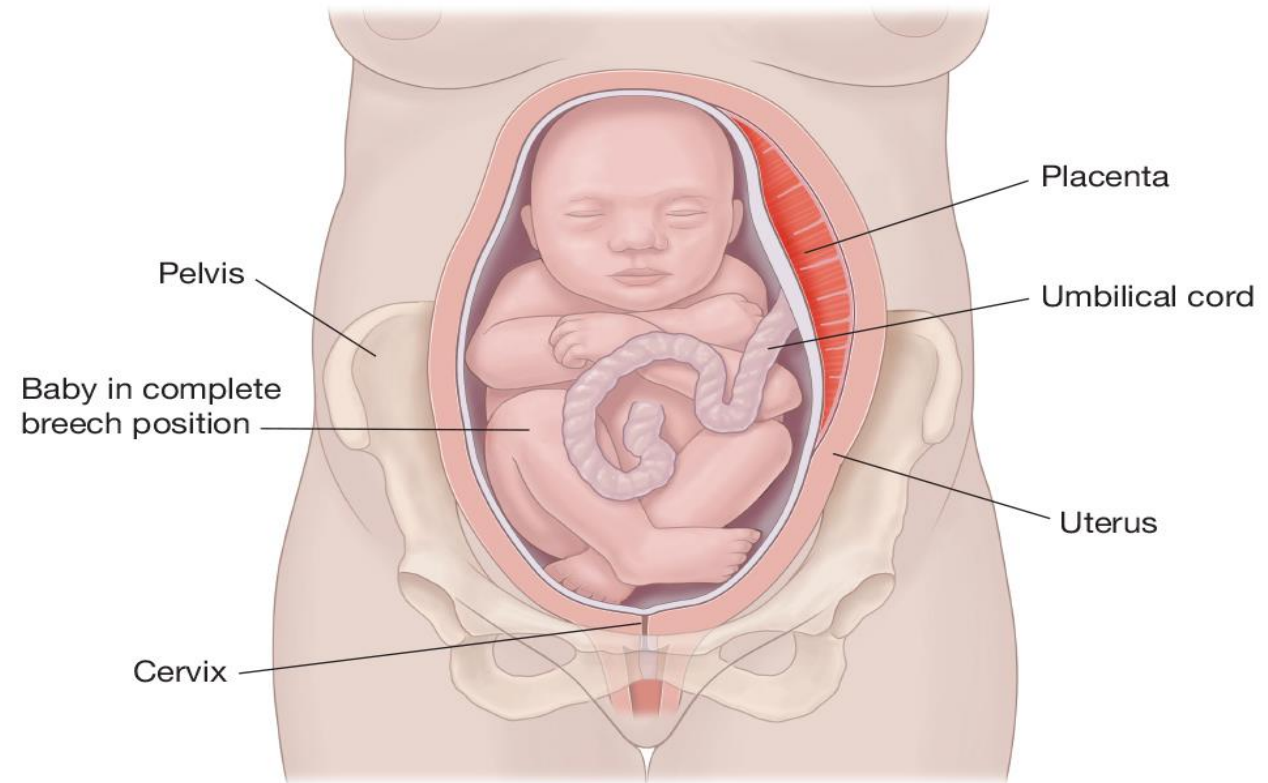
Hematology

1. Severe coagulopathy and/or bleeding diathesis
2. Severe anemia resulting in hemodynamic and/or respiratory compromise
3. Severe complications of sickle cell crisis
4. Hematological malignancies with multi-organ failure



Obstetric

1. Medical conditions complicating pregnancy
2. Severe pregnancy induced hypertension/eclampsia
3. Obstetric hemorrhage
4. Amniotic fluid embolism

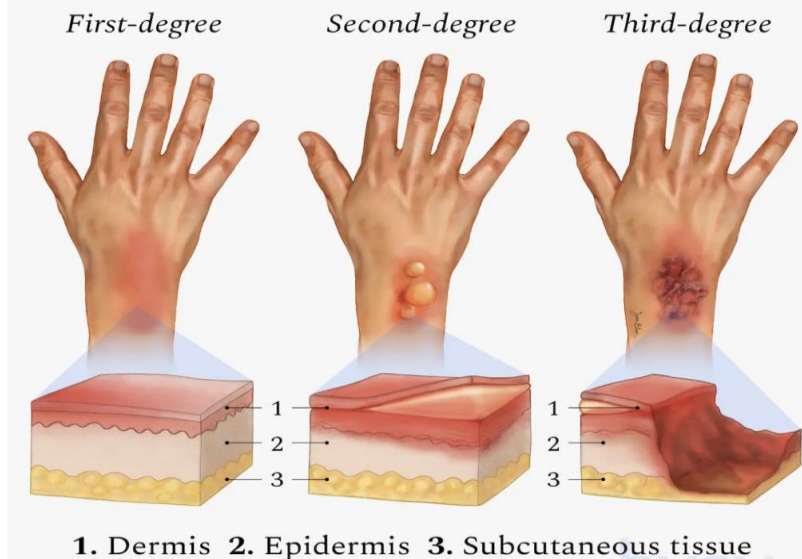
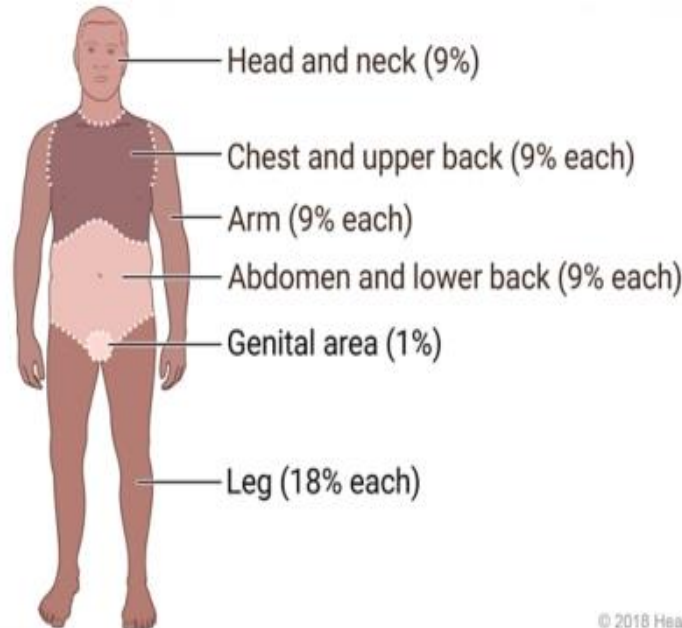


Multi-system

1. Severe sepsis or septic shock
2. Multi-organ dysfunction syndrome
3. Polytrauma
4. Hemorrhagic fevers
5. Drug overdose
6. Environmental injuries (near drowning, severe hypo/hyperthermia)
7. Severe burns

Critical Burns

- 3rd Degree >10% BSA
- 2nd Degree > 25% BSA (20% pediatric)
- Face, Feet, Hands, Perineum
- Airway/Respiratory Involvement
- Associated Trauma
- Associated Medical Disease
- Electrical Burns
- Deep Chemical Burns



Surgical

High risk patients in the peri-operative period

Post-operative patients requiring continuous hemodynamic monitoring/ ventilatory support, usually following:

1. **Vascular surgery**
2. **Thoracic surgery**
3. **Airway surgery**
4. **Craniofacial surgery**
5. **Major orthopedic and spine surgery**
6. **General surgery with major blood loss**
7. **Neurosurgical procedures**



3.Objectives parameters model

Physical Findings (Acute Onset)


1. Unequal pupils with loss of consciousness
2. GCS < 8
3. Burns > 10%BSA
4. Anuria
5. Airway obstruction
6. Continuous seizures
7. Cyanosis
8. Cardiac tamponade

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Glascow Coma Scale


Δ Eye opening

Spontaneous	- 4
To speech	- 3
To pain	- 2
None	- 1




Δ Verbal response

Oriented	- 5
Confused	- 4
Inappropriate words	- 3
Incomprehensible words	- 2
None	- 1



Δ Motor response

Obeys commands	- 6
Localises pain	- 5
Flexion to pain	- 4
Abnormal flexion	- 3
Extension to pain	- 2
None	- 1



Total score : 15

- Mild head injury : 13-15
- Moderate head injury : 9-12
- Severe head injury : < 8 (3-8)

med_life_easy

Objectives parameters model.....

Vital Signs

1. Respiratory rate ≥ 40 or ≤ 8 breaths/min
2. Oxygen saturation $< 90\%$ on $\geq 50\%$ oxygen
3. Pulse rate < 40 or > 140 beats/min
4. Systolic blood pressure < 80 mm Hg

Patients who are generally not appropriate for icu admission

1. Irreversible brain damage
2. End stage cardiac, respiratory and liver disease with no options for transplant
3. Metastatic cancer unresponsive to chemotherapy and/or radiotherapy
4. Brain dead non-organ donors
5. Patients with non-traumatic coma leading to a persistent vegetative state



persistent vegetative state

Discharge criteria

1. When a patient's **physiologic status has stabilized** and the need for ICU monitoring and care is no longer necessary
 2. When a patient's **physiological status has deteriorated and active interventions are no longer planned**, discharge to a lower level of care is appropriate
- Once the patient can breathe unaided, and no longer needs intensive care, he/she will be transferred to a different ward to continue his/her recovery.
 - This will usually either be **a high dependency unit (HDU)**, which is one level down from intensive care, or **a general ward**.

Discharge criteria

1. Stable hemodynamic parameters
2. respiratory status (patients extubated with stable arterial blood gases)
3. Oxygen requirements not more than 60%.
4. Intravenous inotropic/vasopressor support and vasodilators are no longer necessary.
5. Cardiac dysrhythmias are controlled
6. Neurologic stability with control of seizures.
7. Patients who require chronic mechanical ventilation (e.g. motor neuron disease or cervical spine injuries) critical problems reversed or Resolved
8. Patients with tracheostomies who no longer require frequent suctioning



THANK YOU



SCAN TO GET THE LECTURE



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