When to Admit a Patient to the Surgical Intensive Care Unit After Surgery

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An Intensivist is one who is a specialist in acuity; not a specialist of any particular organ system or machine. We specialize in illness severity and the risk to the patient.


The Intensive Care Unit (ICU) specializes in providing continuous care that is highly specialized and individualized to an acutely ill patient, who has a life threatening condition. These conditions require comprehensive care.

In the ICU the most common organ system that is supported is the lung. However, we also are capable of providing care for all other organ systems as well.


Patients that should not be admitted to the ICU are those “too well to benefit” or those “too sick to benefit”.

So, when should I admit to the ICU?

58 year old male is in the PACU following removal of a kidney stone. He has a heart rate of 109 with a blood pressure of 85/52. He is diaphoretic, but is alert and oriented to person, place and time. He has received 2 L of crystalloid.
Little data exists validating criteria for an ICU admission, but expert opinion and literature supports guidelines to streamline admission.

People that are critically ill or who may become critically ill are who should be admitted to the ICU

– Those who may require support for an organ system not given on the floor
Factors when Assessing for an ICU Admission

Diagnosis
Severity of Illness
Prognosis
Availability
Coexisting Disease
Anticipated Quality of Life

Models for ICU Admission:

– Priority Model
– Diagnosis Model
– Objective Parameters Model
25 year old male involved in a motor vehicle accident. His pupils are fixed and dilated. He has a non survivable traumatic brain hemorrhage.

Priority 1

Patients who are critically ill:

– Unstable
– Require treatment not provided outside the ICU
– No therapeutic limits
– Includes patients who are dead by neurological criteria

Priority 2

Patients that require intensive monitoring and may potentially have a rapid decline needing an immediate intervention

  – Risk for intubation
  
  – No therapeutic limits


Priority 3

Patients with an underlying disease or acute illness with little chance of recovery

  – May receive intensive treatment
  
  – May be therapeutic limits

Priority 4

Not Appropriate for ICU admission

– Too well or too sick

– May have therapeutic limits


Diagnosis Model

Certain diagnosis models require an ICU admission

– Septic shock

– Acute respiratory failure

Objective Parameters Model

A long list of admitting criteria

The list may be arbitrary


53 year old female with an acute subarachnoid hemorrhage. She is following commands. She is alert and oriented to person place and time. Her blood pressure is 110/64 with a heart rate of 74.
The primary determining factor of which model to use is ICU availability. This why the priority model is used first.

Triage

Prioritized based on severity of illness

Allows for allocation and rationing of scarce resources

Some patient may be refused

Triage policies for an institution should be written out

When to Call the ICU

Airway concerns
All respiratory arrests
Respiratory rate >40 or <8
All cardiac arrests
Pulse rate >140 or <40
Systolic blood pressure <90
Sudden decrease level of consciousness
Prolonged seizures
Any concerns

When to Call the ICU

If any concerns call early
– Improves chance of recovery
– Reduces the potential for organ dysfunction
– May reduce length of stay
– May reduce costs
Advanced Respiratory Support

Mechanical ventilation
  – Residual sedation
  – Metabolic acidosis for septic shock

Possibility of rapid decline and the need for emergent intubation
  – Airway edema following surgery
  – Neurological injury or trauma


Basic Respiratory Monitoring

Need for more than 50% oxygen

Need for noninvasive mechanical ventilation following surgery

Circulatory Support

Need for vasoactive drugs to support blood pressure or cardiac output

Support for hypovolemia which has been unresponsive to fluids
  – trauma
  – Hemorrhage

Intra aortic balloon pumps


Circulatory Support

Normal blood pressure does not exclude the diagnosis of shock

Other signs of poor tissue perfusion or shock
  – Tachycardia
  – Poor peripheral perfusion
  – Poor urine output (<0.5 ml/kg/hr)
  – Metabolic acidosis
  – Elevated blood lactate

Circulatory Support

Any concern for shock should be admitted to the ICU. These patients can be intensively monitored and early therapies started. Initiation of early therapies does improve outcomes.


Neurological Monitoring

Neurological depression that can compromise the airway

No cough or gag reflex

Monitoring of intracranial pressures or cerebral perfusion pressures

Elevated intracranial pressures

Prolonged seizures refractory to conventional therapy

Neurological Monitoring

Patients with Guillain-Barre syndrome and myasthenia gravis may require an admission to the ICU following surgery.


Renal Support

Need for Acute Renal Replacement Therapy

– Severe metabolic acidosis

– Hyperkalemia that is life threatening and resistant to drug therapy

ICU beds are limited in quantity and often we do not have a bed. Bed limitation should not stop a referral to an Intensive Care Unit. An intensivist can come and evaluate a patient and help determine the need for an ICU bed for a patient.

Again call early, early referrals are best for survival.