



ICU MANUAL

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Approach to a Critically Ill Patient

Bindu Mulakavalupil

■ DEFINITION

“Critical illness” is any disease process which causes physiological instability leading to disability or death within minutes or hours.

Critically ill patient: A critically ill is one who is at imminent risk of death unless the severity of illness is recognized early and appropriate measures are taken to promptly to assess diagnose and manage the illness.

The sickest of the sick are taken care of by critical care specialists. The ideal place to treat these patients is an intensive care unit (ICU) with well-trained staff. In order to offer the required high intensity of care, including therapy and physiologic parameter monitoring, ICUs maintain a high nurse to patient ratio.

Intensive care units account for 15–25% of patient deaths so doctors should be skilled at end-of-life care (EOLC) too.

Resuscitation: The ABCs—airway, breathing, and circulation (perfusion)—are crucial for the successful resuscitation of a critically ill patient.

After stabilizing the patient’s condition, the clinician must choose the best location for additional patient’s treatment.

Three key categories can be used to simplify the management of the critically ill patient:

1. Treating the particular critical illness
2. Preventing additional insults
3. Providing supportive care—ventilatory and/or hemodynamic

Restoring vital signs in patients who are at the very end of their physiologic decline is the primary focus of critical care, which necessitates a deep comprehension of pathophysiology. This resuscitation frequently happens quickly and without a thorough understanding of the patient’s ongoing medical issues. During the process of physiologic stabilization, intensivists try to get pertinent medical history in order to support the real-time evaluation of the patient’s current physiologic status. Intensivists have a wealth of techniques at their disposal to help them accurately to identify the pathophysiology and manage patients with incipient organ failure.

These tools also provide a window of opportunity for the diagnosis and treatment of underlying disease(s) in stabilized patients. Advanced techniques like renal replacement therapy and extracorporeal mechanical support are provided by high-ended ICUs. However, intensivists have a responsibility to counsel and soothe dying patients and their loved ones, as well as to identify when a patient's chances of recovery are slim to nonexistent. If the underlying illness cannot be resolved, critical care physicians frequently have to refocus the aim of care from resuscitation and cure to comfort.

■ EVALUATION OF THE SEVERITY OF ILLNESS

Illnesses in the ICU are often graded according to severity. Over the past 30 years, many severity-of-illness (SOI) grading systems have been created and proven. Systems for evaluating SOI are crucial for classifying patient groups. SOI scores are helpful in directing the allocation of resources, including nursing and ancillary care, and supporting ongoing evaluations of the quality of ICU treatment.

It is not possible to forecast a patient's survival using SOI rating methods. There are no well-established scoring systems available that claim to guide clinicians in deciding which criteria to use when admitting patients to an ICU (**Flowchart 1**). Therefore, it is not recommended to utilize SOI scoring systems

Flowchart 1: Approach to a patient in critically ill.

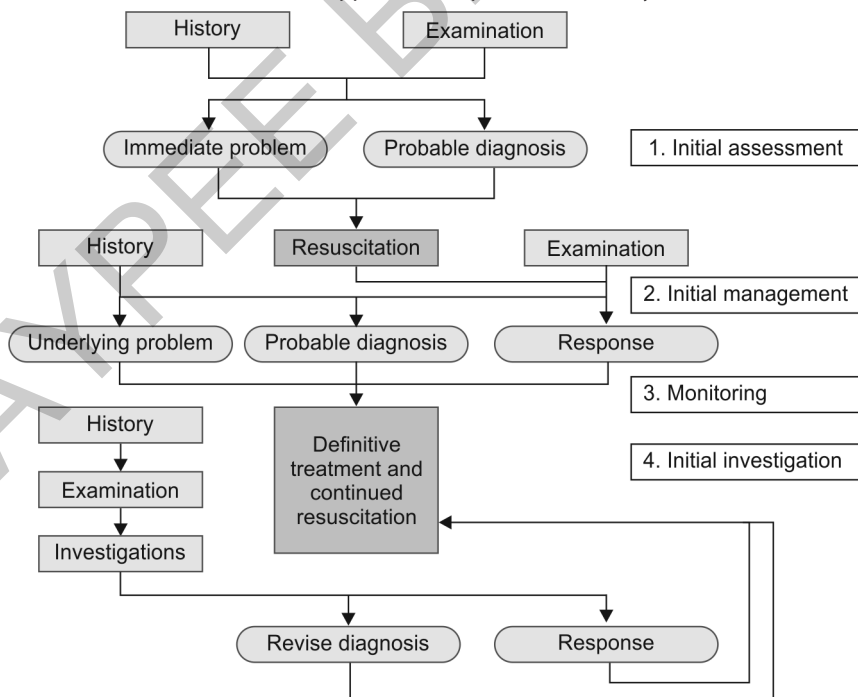


TABLE 1: Categorization of patients based on clinical observations.

Patient category	Clinical observations			
	Appearance	Neurological	Respiratory	Cardiovascular
Not critically ill	Normal	• Alert • Cooperative	• Normal pattern • RR >8 <20 b/min	• HR 60–100 b/min • SBP >90 mm Hg • UO >0.5 mL/kg/h
Potential critical illness	• Sweaty • Pale • Anxious	• Agitation • Confusion • Eyes open to voice only	• Accessory muscle use • RR <8 b/min • RR 20–30 b/min	• HR >100 b/min • SBP <90 mm Hg • UO <0.5 mL/kg/h
Critically ill	• Gray • Blue • Mottled skin	• Unresponsive or eyes open to pain only • Fitting	• Silent chest • RR <8 >30 b/min • Agonal respirations	• HR <50 b/min • HR >150 b/min • SBP <60 mm Hg • Anuric
Cardiac arrest or death				

(b/min: breaths/minute; HR: heart rate; RR: respiratory rate; SBP: systolic blood pressure; UO: urine output)

to guide therapy or clinical decision-making. Rather, these instruments ought to be employed as a vital data source in support of clinical bedside decision-making. The sequential organ failure assessment (SOFA), acute physiology and chronic health evaluation (APACHE), and simplified acute physiology scoring (SAPS) systems are the most often used ones.

Admission criteria for ICUs is possible or confirmed organ failure.

The following factors need to be taken into account:

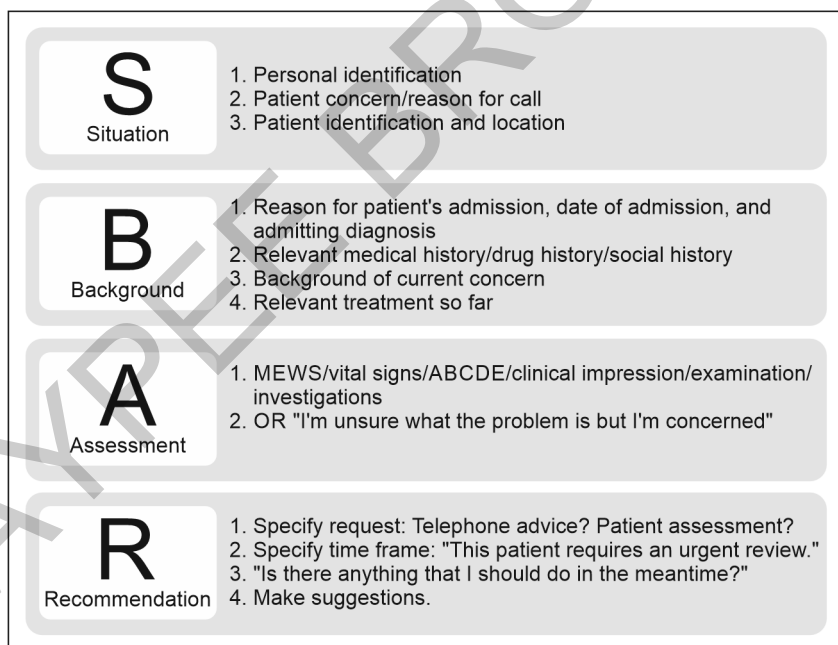
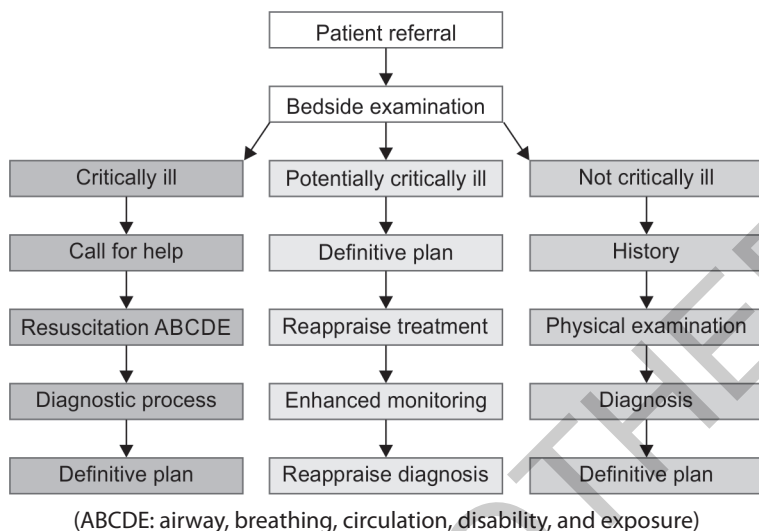
- Diagnosis, sickness severity, age and functional level, coexisting disease, and physiological reserve
- Response to current treatment; availability of appropriate treatment; and prognosis
- Recent cardiopulmonary resuscitation (CPR) episode, expected life expectancy, and the patient's desires

Depending on clinical observations patients can be categorized into not critically ill, potential critical illness, and critically ill (**Table 1**).

Once you determine the criticality of the patient then a definitive plan can be made according to the **Flowchart 2**.

INITIAL MANAGEMENT OF A CRITICALLY ILL PATIENT IN THE WARD OR EMERGENCY ROOM

When a patient is in the ward/emergency room (ER) and a medical issue arises, communicating with the rapid response team using situation-background-assessment-recommendation (SBAR) will enable all relevant information to be provided, resulting in quicker assistance (**Fig. 1**).

Flowchart 2: Triaging of a supposedly critically ill patient.**Fig. 1:** Situation-background-assessment-recommendation (SBAR) to enable all relevant information for quicker assistance to a patient. (ABCDE: airway, breathing, circulation, disability, and exposure; MEWS: modified early warning score)

Worrying Signs

- Respiratory rate (RR) >30 breaths/min or breaths less than 8/min
- Unable to speak in full sentence without pausing
- Agitated/confused/comatose
- Cyanosis/ $\text{SpO}_2 = 90\%$
- Deteriorating despite therapy

ABCDE approach is most useful approach.

A: Administer high-flow oxygen with 15 L O_2 on nonrebreathing mask (NRBM)—Ensure reservoir bag does not collapse.

B: Measure respiratory rate/ SpO_2

C: Monitor the electroencephalogram (EEG) continuously.

- Noninvasive blood pressure (NIBP) every 5 minutes
- Intravenous (IV) cannula large bore
- Take blood samples.

D: Record Glasgow Coma Scale

- Pupil size/reactivity
- Blood glucose

E: Temperature—rectal/tympanic membrane

Others

- Arterial blood gas with lactate
- 12-lead ECG
- Chest X-ray
- Urinary catheter and measure urine output hourly
- Urine analysis—ketones/glucose/pus cells
- Urine pregnancy test (UPT) in young females
- Nasogastric tube, if indicated.

SUMMARY

Critical illness is any disease process which causes physiological instability leading to disability within minutes or hours.

The severity of illness must be recognized as early as possible and appropriate measures are taken promptly to assess diagnoses and management of the illness.

Severity of illness scoring system is useful in guiding hospital administrative policies directing the allocation of resources such as nursing and ancillary care and assisting in assessment of quality of ICU care over time.

■ SUGGESTED READING

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The *ICU Manual* serves as a vital resource for medical professionals managing critically ill patients. It outlines standardized practices and protocols to ensure consistent, high-quality care in intensive care units. Key features include guidelines on respiratory, cardiovascular, neurological, and renal support including mechanical ventilation, hemodynamic monitoring, and fluid management. It emphasizes evidence-based practices for infection control, sedation, pain management, and sepsis protocols. The book also provides guidance on emergency procedures, such as resuscitation and airway management, while stressing the importance of multidisciplinary teamwork. Clear algorithms and checklists simplify complex decision-making processes.

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