
* **ADDENDUM** *

HACKETTSTOWN REGIONAL MEDICAL CENTER

Division of Nursing

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TITLE: **ADMISSION AND DISCHARGE PROTOCOL – CRITICAL CARE UNIT**

An approved member of Hackettstown Regional Medical Center physician staff may admit patients to the Critical Care Unit if the patient falls within the following guidelines. The admitting physician assumes responsibility for the care of the patient while in the unit.

Only 1 criteria under the Admission sections must be met for admission. However, all criteria need to be met for discharge from the unit.

I. MEDICAL GUIDELINES:

A. ACUTE MYOCARDIAL INFARCTION/ANGINAL SYNDROME

ADMISSION: Acute chest pain and/or EKG changes suggestive of acute myocardial injury.

DISCHARGE:

1. Serial CK/MB enzyme level returning towards normal.
2. No severe chest pain for 24 hours
3. No life-threatening arrhythmia's present.
4. No further extension of myocardial injury seen on EKG for 24 hours.
5. Hemodynamically stable.

B. LIFE-THREATENING ARRHYTHMIAS

ADMISSION: Any cardiac arrhythmia, which potentially threatens the life of a patient.

DISCHARGE:

1. Return to normal sinus rhythm, or control of heart rate with medication or pacemaker for 24 hours.
2. Correction of any underlying metabolic disorder or drug toxicity.
3. Hemodynamically stable, free of severe congestive heart failure.

C. ACUTE PULMONARY EDEMA

ADMISSION:

1. Clinical evidence (Rales, S-3 gallop, dyspnea) and/or chest x-ray evidence for severe acute congestive heart failure (cardiomegaly and/or perihilar infiltrates).
2. Acute pulmonary edema of any etiology with crackles, tachypnea, hypoxemia, and/or positive chest x-ray findings.

DISCHARGE:

1. Respiratory rate within patient's normal, patient breathing with minimal discomfort or deemed irreversible.
2. Hypoxemia improving ($PO_2 > 50$) or deemed irreversible.
3. Hemodynamically stable – Vital signs stable, no life threatening arrhythmia.
4. SO_2 greater than 90% or deemed irreversible.

D. ACUTE RESPIRATORY FAILURE

ADMISSION: Hypoxia – PO₂ less than 60 and/or hypercarbia – PCO₂ greater than 50 with need for close observation and/or mechanical support.

DISCHARGE:

1. Stable/improved ABG's, PO₂ greater than 60, PCO₂ less than 50 or deemed terminal.
2. Respiratory rate within patient's normal, patient breathing with minimal discomfort.
3. Any identified concurrent acute process controlled (pneumonia, life threatening arrhythmia, pulmonary edema, etc.).
4. Mechanical ventilation support not required or determined stable. Stable ventilated patient can be transferred to PCU or long term facility. (Stable ventilator patient is described as any ventilator patient hemodynamically stable and has no other ICU criteria warranting their stay in ICU)

E. DRUG OVERDOSE

ADMISSION:

1. Mental status changes.
2. Considered suicidal or awaiting psychiatric evaluation.
3. Presence or potential for life-threatening arrhythmias.
4. Severe metabolic abnormalities.
5. Respiratory decompensation.
6. Hemodynamically instability requiring close observation and/or extensive treatment.

DISCHARGE:

1. Mental status improved.
2. Determined by psychiatric to be non-suicidal.
3. Cardiac rhythm stabilized.
4. Metabolic abnormalities improving.
5. Respiratory status stable.
6. Hemodynamically stable.

NOTE: If patient is medically cleared but has not been evaluated by a psychiatrist, the patient may be transferred to Med/Surg or PCU with 1:1 monitoring as per attending physician order.

F. ACUTE G.I. BLEED

ADMISSION: Associated with shock or identified to be a high risk for massive bleed.

1. Systolic BP less than 90.
2. Resting tachycardia.
3. Orthostatic hypotension (fall in systolic BP greater than 15mmHG – rise in pulse greater than 20 beats/min).
4. Acidosis pH less than 7.3.
5. Urine output less than 30cc/hour.
6. Bright red blood via NG with failure to clear after 500cc NG lavage.
7. Placement of esophageal tamponade balloons (Blakemore or Minnesota tube).
8. HGB/HCT low relative to patient's normal and associated with other criteria.
9. Vasopressin infusion.
10. Identified to be a high risk for massive bleed.

DISCHARGE:

1. Stable normal vital signs for 24 hours.
2. Urine output greater than 30c per hour.
3. Stable Hemoglobin and Hematocrit for 24 hours. Relative to patient's normal.
4. Removal of esophageal balloons and discontinue of vasopressin infusion with no evidence of bleeding for 24 hours.

G. HEPATIC FAILURE

ADMISSION:

1. Significant encephalopathy.
2. Coagulopathy with active bleeding.
3. Hemodynamic instability.
4. Hepatorenal syndrome (rising BUN/CR with oliguria unresponsive to fluid challenge).

DISCHARGE:

1. Reversal of coma or deemed irreversible.
2. Stable normal vital signs for 24 hours.

H. ACUTE COLITIS

ADMISSION:

1. Severe electrolyte imbalance.
2. Hypovolemia with shock.
3. Sepsis

DISCHARGE:

1. Normalization of volume/electrolyte abnormalities.
2. Benign abdominal exam

I. ACUTE PANCREATITIS

ADMISSION: Severity of acute pancreatitis can be estimated with Ranson's criteria. If the patient has 0-2 factors present, there is a 2% predicted mortality; 3-4 factors present, there is a 15% mortality; 5 to 6 factors present there is a 40 % predicted mortality and with 7-8 factors present there is a 100 % mortality.^①

1. At Admission
 - Age greater than 55
 - Abnormal Pulmonary findings
 - Abnormal mass
 - Hemorrhagic or discolored peritoneal fluid
 - Increased Serum LDH levels (350 U/L)
 - AST> 250 U/L
 - Leukocytosis (>16,000/mm³)
 - Hyperglycemia (>200 mg/dl; no diabetic history)
 - Neurologic deficit (confusion, localizing signs)
2. During initial 48 hours of hospitalization
 - Fall in hematocrit > 10% with hydration or hematocrit < 30%
 - Necessity for massive fluid and colloid replacement

^① Urden, Linda D; Stacy, Kathleen M.; Lough, Mary E.: Thelan's Critical Care Nursing Diagnosis and Management. (Mosby) 2002. Page 813-814.

- Hypocalcemia (<8 ng/dl)
 - Arterial Po₂ < 60 mm Hg with or without acute respiratory distress syndrome
 - Hypoalbuminemia (<3.2 mg/dl)
 - Base deficit > 4 mEq/L
 - Azotemia
3. Altered mental status
 4. Shock

DISCHARGE:

1. Stabilization of vital signs for 24 hours.
2. Pulmonary stability
3. Metabolic alterations improving to normal/stable.
4. Nutritional support established.
5. Improvement in mental status or deemed irreversible.

J. DIC – Disseminated Intravascular Coagulation

ADMISSION:

1. Platelet count < 20,000
2. Active bleeding in face of DIC based on evidence of increase in FSP (fibrin split products) elevated PT, PTT and decreases in platelets.
3. Neurologic changes.

DISCHARGE:

1. No active bleeding for > 24 hours.
2. Improvement and stabilization of hematologic parameters.

K. CEREBRAL HEMORRHAGE/EMBOLUS/THROMBUS

ADMISSION:

1. CT evidence of acute cerebral disease.
2. Alteration in level of consciousness.
3. Alteration in neurological status acute in nature.

DISCHARGE:

1. Stable level of consciousness or deemed irreversible.
2. Stable vital signs.
3. Neurological status stable.

L. SEIZURE DISORDER

ADMISSION:

1. Repetitive or continuous seizures without return of consciousness between seizures (status epilepticus).
2. Generalized seizures in an otherwise medically compromised patient (elderly, pulmonary or cardiac disease).
3. Acute onset of generalized seizure with unknown cause.

DISCHARGE:

1. Adequate control of seizures.

M. MENINGITIS

ADMISSION:

1. Lumbar puncture evidence of meningitis.
2. Shock.
3. Alteration of consciousness.
4. Neurological signs and symptoms.

DISCHARGE:

1. Documented improvement in above parameters.

N. ALTERATION CONSCIOUSNESS

ADMISSION:

1. Alteration of consciousness requiring continuous observation.
2. Neurological evaluations every 2 hours or more frequently.

DISCHARGE:

1. Improved LOC or deemed irreversible.
2. Stable Neurological evaluations, assessments are required less frequent than every 2 hours.

O. NEUROMUSCULAR WEAKNESS

ADMISSION:

1. Any patient with rapidly ascending polyneuropathy or poorly controlled Myasthenia Gravis, or when complicated by other medical conditions.
2. Requiring careful monitoring of respiratory status.

DISCHARGE:

1. Stabilization or documented improvement in above parameters.

P. RENAL FAILURE

ADMISSION: Renal failure, acute or chronic, when associated with any of the following life-threatening conditions:

1. Frequent Hemodynamic monitoring required, q2 or greater
2. Strict/frequent fluid balance monitoring required.
3. Acid-base disturbances.
4. Severe electrolyte disturbances.
5. Initiation of acute hemodialysis and/or placement of temporary catheter.

DISCHARGE:

1. Resolution of definitive treatment of above life-threatening condition associated with stable vital signs.

Q. ACID-BASE DISTURBANCES

ADMISSION: When any condition of known or unknown cause is associated with:

1. Life-threatening acidosis where arterial pH is less than 7.20 or HCO₃ is less than 12.

2. Life-threatening alkalosis when the arterial pH is greater than 7.55.

DISCHARGES:

1. Normalization of arterial pH after removal of definitive treatment of the causative disorder and associated with stable vital signs.

R. ELECTROLYTE DISTURBANCES

ADMISSION: When any condition whether diagnosed or undiagnosed is associated with the following life-threatening abnormalities of serum electrolytes.

1. Potassium elevation of greater than 6 meq/dl and characteristic EKG changes.
2. Potassium depletion of less than 2.5 meq/dl.
3. Sodium less than 125 or greater than 150, associated with seizures, altered sensorium or level of consciousness.
4. Serum Calcium greater than 12 and associated with altered sensorium or characteristic EKG changes.

DISCHARGE:

1. Correction of serum electrolytes to normal after definitive treatment of the causative disorder, associated with stable vital signs.

S. UNCONTROLLED OR ACCELERATED HYPERTENSION

ADMISSION: When elevated BP is associated with:

1. Fundoscopic hemorrhage or papilledema.
2. Neurologic dysfunction.
3. Requires continuous infusion of IV medication to maintain BP control.
4. Acute renal failure.
5. Cardiac decompensation of CHF or angina.

DISCHARGE:

1. Control of BP without IV Continuous titration of infusion.
2. Recovery of any neurological dysfunction or deemed irreversible.
3. Stabilization of cardiac/renal function or deemed irreversible.

T. DIABETES MELLITUS

ADMISSION:

1. Ketoacidosis as defined by pH < 7.3 or HCO₃ < 15 regardless of neurological function.
2. Hyperosmolar coma – hyperglycemia without Ketoacidosis resulting in declining neurological function.
3. Requiring an insulin infusion to normalize blood sugar.

DISCHARGE:

1. Control of hyperglycemia without continuous insulin infusion and acidosis with significant improvement in neurological function.

U. THYROID DISEASE

ADMISSION:

1. Hyperthyroidism
2. Suspected or proved thyroid storm manifested by tachycardia and/or mental status changes.

DISCHARGE:

1. Control of heart rate and other manifestations with appropriate pharmacological management.

V. ADRENAL INSUFFICIENCY

ADMISSION:

1. Any form of shock or hemodynamic compromise, which potentially could be attributed to adrenal failure or insufficiency.

DISCHARGE:

1. Correction of hemodynamic compromise with appropriate diagnostic tests to rule out adrenal insufficiency.

W. HYPOGLYCEMIA

ADMISSION:

1. Hypoglycemia with persistent neurological defects or repeated bouts of severe, symptomatic episodes.

DISCHARGE:

1. Improvement of stabilization of neurological function stable and/or acceptable blood glucose levels.

X. SHOCK

ADMISSION: Any event, which initiates the shock syndrome. (Classifications – cardiogenic, septic, hypovolemic, neurogenic, anaphylactic, toxic, i.e.)

1. Decrease in systolic blood pressure
2. Increase pulse rate; tachycardia
3. Cold, clammy skin: prostration
4. Pallor; circumoral pallor
5. Thirst
6. Alterations in mental status
7. Decrease in urine output
8. Tachypnea
9. Intravascular coagulation
10. Administration of Xigris

DISCHARGE:

1. Stabilization of vital signs for 24 hours
2. Control BP without IV infusion medication
3. Stabilization of cardiac/renal function
4. Stabilization of neurological function
5. Stabilization of respiratory status

II. SURGICAL GUIDELINES:

A. ADMISSION

1. **TRAUMA**

- a. Multiple system trauma – chest/abdomen, multiple long bone fractures, pelvic fractures, head

- injuries.
- b. Penetrating chest wounds.
- c. Chest trauma – severe enough to result or potentially result in respiratory failure.
- d. Intra-abdominal injuries.
- e. Cardiac contusion
- f. Massive hemorrhage
- g. Head trauma with altered state of consciousness requiring close observation.
- h. Oro-pharyngeal/neck trauma with airway compromise.

2. **MAJOR GASTROINTESTINAL HEMORRHAGE** (See criteria listed under Medical)

3. **MASSIVE HEMORRHAGE FROM ANY ETIOLOGY**

4. **PRE-OPERATIVE**

- a. Patient requiring monitoring of cardiac function and intravascular volume by pulmonary artery catheter.

5. **POST - OPERATIVE**

- a. Any patient fulfilling criteria listed above.
- b. Patient requiring post-operative mechanical ventilatory support.
- c. Patient with intra-operative instability – prolonged hypotension, massive hemorrhage, multiple transfusions, cardiac arrhythmias.
- d. Major vascular procedures and peripheral vascular reconstruction requiring frequent monitoring of circulation.
- e. Patient with sepsis and it's manifestations such as shock, DIC, organ failure.
- f. Peritonitis
- g. Patient requiring monitoring of cardiac function and intravascular volume by pulmonary artery catheter.
- h. Patient with history of myocardial infarction in the last 6 months.
- i. Patients with symptomatic coronary artery disease, angina.
- j. Patient with extensive surgical wound necessitating frequent and complex dressing changes and monitoring of wound, such as loss of fluid, necrotizing fasciitis.
- k. Patients with severe debilitation secondary to age, malnutrition undergoing a major surgical procedure.
- l. Post thoracic surgery.
- m. Oro-pharyngeal/neck surgery with potential compromise to the airway.

B. **DISCHARGE GUIDELINES**

- 1. Vital signs within normal limits and temperature < 100 degrees F. for 24 hours.
- 2. No need for mechanical ventilation or stable ventilated patient may be transferred to PCU.
- 3. No need for cardiac or intravascular volume monitoring.
- 4. No ongoing, uncontrolled peritonitis
- 5. Hemodynamically stable.
- 6. Adequate peripheral circulation or deemed irreversible.
- 7. Electrolytes within normal limits.
- 8. Stable level of consciousness for 48 hours.

III. **PEDIATRIC GUIDELINES:**

- Pediatric patients are defined as under the age of 16 . Pediatric patients requiring a higher level of care will not be admitted to ICU, but will be transported to a tertiary facility.

IV. DRUG THERAPY

A. ADMISSION:

1. Although certain medications are covered under other admission diagnoses, there are times when a patient is stable enough to be admitted to the PCU area but because of the IV drug therapy they would need closer monitoring in ICU (e.g. frequent cardiac monitoring, BP, q 1 h, I&O, adjustments in dosage rate of infusion). Those types of infusion may include:
 - a. Antihypertensives
 - b. Vasopressors
 - c. Inotropes
 - d. Vasodilators
 - e. Antiarrhythmics
 - f. Calcium channel blockers
 - g. Beta blockers
 - h. Ventilated patients receiving paralytic agents
 - i. Continuous IV sedatives requiring patient to have an artificial airway maintained.

B. DISCHARGE:

1. Less frequent monitoring is needed and patient remains on IV medication drip.
2. Patient is hemodynamically stable, on fixed dose of IV medication drip.
3. IV medication drips are discontinued.