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American Academy of Pediatrics, Committee on Hospital Care and Section on Critical Care and Society of Critical Care Medicine, Pediatric Section Admission Criteria Task Force

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AMERICAN ACADEMY OF PEDIATRICS

Committee on Hospital Care and Section on Critical Care

SOCIETY OF CRITICAL CARE MEDICINE

Pediatric Section Admission Criteria Task Force

Guidelines for Developing Admission and Discharge Policies for the Pediatric Intensive Care Unit

ABSTRACT. These guidelines were developed to provide a reference for preparing policies on admission to and discharge from pediatric intensive care units. They represent a consensus opinion of physicians, nurses, and allied health care professionals. By using this document as a framework for developing multidisciplinary admission and discharge policies, use of pediatric intensive care units can be optimized and patients can receive the level of care appropriate for their condition.

ABBREVIATION. PICU, pediatric intensive care unit.

It should be understood that critically ill pediatric patients should be admitted to designated pediatric critical care beds.¹ The following are recommended as guidelines for admission and discharge for pediatric intensive care units (PICUs). The purpose of these guidelines is to provide a reference for admitting and subsequently discharging critically ill pediatric patients. Because of continuing developments in pediatric critical care, periodic review of these criteria is necessary.

These guidelines must be adapted and modified to each institution's policies and procedures regarding the nature and scope of the critical illnesses seen in that institution¹ and the interhospital transfer arrangements of each institution.

Physiologic parameters should be added to these guidelines by each institution so that patients may be triaged appropriately in and out of the intensive care unit.

PREPARING GUIDELINES FOR INDIVIDUAL UNITS

The following listing is not meant to be inclusive, nor is it necessary for every PICU to admit all patients with every condition listed. However, the following has been prepared for the multiprofessional team developing such criteria to consider when developing admission and discharge policies.

In addition, accrediting agencies have recommended that physiologic limits be placed wherever possible in preparing admission and discharge poli-

cies. For example, a "potassium of 6.0 mEq/L" may be selected to indicate admission to the intensive care unit rather than simply "hyperkalemia."

ADMISSION CRITERIA

Respiratory System

Patients with severe or potentially life-threatening pulmonary or airway disease. Conditions include, but are not limited to:

1. Endotracheal intubation or potential need for emergency endotracheal intubation and mechanical ventilation, regardless of etiology;
2. Rapidly progressive pulmonary, lower or upper airway, disease of high severity with risk of progression to respiratory failure and/or total obstruction;
3. High supplemental oxygen requirement ($F_{iO_2} \geq 0.5$), regardless of etiology;
4. Newly placed tracheostomy with or without the need for mechanical ventilation;
5. Acute barotrauma compromising the upper or lower airway;
6. Requirement for more frequent or continuous inhaled or nebulized medications than can be administered safely on the general pediatric patient care unit (according to institution guidelines).

Cardiovascular System

Patients with severe, life-threatening, or unstable cardiovascular disease. Conditions include, but are not limited to:

1. Shock;
2. Postcardiopulmonary resuscitation;
3. Life-threatening dysrhythmias;
4. Unstable congestive heart failure, with or without need for mechanical ventilation;
5. Congenital heart disease with unstable cardiorespiratory status;
6. After high-risk cardiovascular and intrathoracic procedures;
7. Need for monitoring of arterial, central venous, or pulmonary artery pressures;
8. Need for temporary cardiac pacing;

Neurologic

Patients with actual or potential life-threatening or unstable neurologic disease. Conditions include, but are not limited to:

The recommendations in this statement do not indicate an exclusive course of treatment or serve as a standard of medical care. Variations, taking into account individual circumstances, may be appropriate.

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1. Seizures, unresponsive to therapy or requiring continuous infusion of anticonvulsive agents;
2. Acutely and severely altered sensorium where neurologic deterioration or depression is likely or unpredictable, or coma with the potential for airway compromise;
3. After neurosurgical procedures requiring invasive monitoring or close observation;
4. Acute inflammation or infections of the spinal cord, meninges, or brain with neurologic depression, metabolic and hormonal abnormalities, and respiratory or hemodynamic compromise or the possibility of increased intracranial pressure;
5. Head trauma with increased intracranial pressure;
6. Preoperative neurosurgical conditions with neurologic deterioration;
7. Progressive neuromuscular dysfunction with or without altered sensorium requiring cardiovascular monitoring and/or respiratory support;
8. Spinal cord compression or impending compression;
9. Placement of external ventricular drainage device.

Hematology/Oncology

Patients with life-threatening or unstable hematologic or oncologic disease or active life-threatening bleeding. Conditions include, but are not limited to:

1. Exchange transfusions;
2. Plasmapheresis or leukopheresis with unstable clinical condition;
3. Severe coagulopathy;
4. Severe anemia resulting in hemodynamic and/or respiratory compromise;
5. Severe complications of sickle cell crisis, such as neurologic changes, acute chest syndrome, or aplastic anemia with hemodynamic instability;
6. Initiation of chemotherapy with anticipated tumor lysis syndrome;
7. Tumors or masses compressing or threatening to compress vital vessels, organs, or airway.

Endocrine/Metabolic

Patients with life-threatening or unstable endocrine or metabolic disease. Conditions include, but are not limited to:

1. Severe diabetic ketoacidosis requiring therapy exceeding institutional patient care unit guidelines. (If hemodynamic or neurologic compromise, see specific section);
2. Other severe electrolyte abnormalities, such as:
 - Hyperkalemia, requiring cardiac monitoring and acute therapeutic intervention
 - Severe hypo- or hypernatremia
 - Hypo- or hypercalcemia
 - Hypo- or hyperglycemia requiring intensive monitoring
 - Severe metabolic acidosis requiring bicarbonate infusion, intensive monitoring, or complex intervention
 - Complex intervention required to maintain fluid balance

3. Inborn errors of metabolism with acute deterioration requiring respiratory support, acute dialysis, hemoperfusion, management of intracranial hypertension, or inotropic support.

Gastrointestinal

Patients with life-threatening or unstable gastrointestinal disease. Conditions include, but are not limited to:

1. Severe acute gastrointestinal bleeding leading to hemodynamic or respiratory instability;
2. After emergency endoscopy for removal of foreign bodies;
3. Acute hepatic failure leading to coma, hemodynamic, or respiratory instability.

Surgical

Postoperative patients requiring frequent monitoring and potentially requiring intensive intervention. Conditions include, but are not limited to:

1. Cardiovascular surgery;
2. Thoracic surgery;
3. Neurosurgical procedures;
4. Otolaryngologic surgery;
5. Craniofacial surgery;
6. Orthopedic and spine surgery;
7. General surgery with hemodynamic or respiratory instability;
8. Organ transplantation;
9. Multiple trauma with or without cardiovascular instability;
10. Major blood loss, either during surgery or during the postoperative period.

Renal System

Patients with life-threatening or unstable renal disease. Conditions include, but are not limited to:

1. Renal failure;
2. Requirement for acute hemodialysis, peritoneal dialysis, or other continuous renal replacement therapies in the unstable patient;
3. Acute rhabdomyolysis with renal insufficiency.

Multisystem and Other

Patients with life-threatening or unstable multisystem disease. Conditions include, but are not limited to:

1. Toxic ingestions and drug overdose with potential acute decompensation of major organ systems;
2. Multiple organ dysfunction syndrome;
3. Suspected or documented malignant hyperthermia;
4. Electrical or other household or environmental (eg, lightning) injuries;
5. Burns covering >10% of body surface (institutions with burn units only; institutions without such units will have transfer policy to cover such patients).

Special Intensive Technologic Needs

Conditions that necessitate the application of special technologic needs, monitoring, complex intervention, or treatment including medications associated with the disease that exceed individual patient care unit policy limitations.

DISCHARGE/TRANSFER CRITERIA

Patients in the PICU will be evaluated and considered for discharge based on the reversal of the disease process or resolution of the unstable physiologic condition that prompted admission to the unit, and it is determined that the need for complex intervention exceeding general patient care unit capabilities is no longer needed.

Transfer/discharge will be based on the following criteria:

1. Stable hemodynamic parameters;
2. Stable respiratory status (patient extubated with stable arterial blood gases) and airway patency;
3. Minimal oxygen requirements that do not exceed patient care unit guidelines;
4. Intravenous inotropic support, vasodilators, and antiarrhythmic drugs are no longer required or, when applicable, low doses of these medications can be administered safely in otherwise stable patients in a designated patient care unit;
5. Cardiac dysrhythmias are controlled;
6. Intracranial pressure monitoring equipment has been removed;
7. Neurologic stability with control of seizures;
8. Removal of all hemodynamic monitoring catheters;
9. Chronically mechanically ventilated patients whose critical illness has been reversed or resolved and who are otherwise stable may be discharged to a designated patient care unit that routinely manages chronically ventilated patients, when applicable, or to home;
10. Routine peritoneal or hemodialysis with resolution of critical illness not exceeding general patient care unit guidelines;
11. Patients with mature artificial airways (tracheostomies) who no longer require excessive suctioning;
12. The health care team and the patient's family, after careful assessment, determine that there is no benefit in keeping the child in the PICU or that the course of treatment is medically futile.²

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