Complete Summary

GUIDELINE TITLE

Facilities and equipment for the care of pediatric patients in a community hospital.

BIBLIOGRAPHIC SOURCE(S)

Sigrest TD. Facilities and equipment for the care of pediatric patients in a community hospital. Pediatrics 2003 May;111(5 Pt 1):1120-2. [7 references]
PubMed

GUIDELINE STATUS

This is the current release of the guideline.

This guideline updates a previous version: Facilities and equipment for care of pediatric patients in a community hospital. Pediatrics. 1998 Jun 1;101(6):1089.

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SCOPE

DISEASE/CONDITION(S)

Pediatric diseases or conditions resulting in community hospitalization

GUIDELINE CATEGORY

Diagnosis
Management
Treatment

CLINICAL SPECIALTY

Pediatrics

INTENDED USERS

Hospitals
Nurses
Occupational Therapists
Pharmacists
Physical Therapists
Physicians
Psychologists/Non-physician Behavioral Health Clinicians
Respiratory Care Practitioners
Social Workers
Speech-Language Pathologists

GUIDELINE OBJECTIVE(S)

To provide guidelines for the basic facilities and equipment needed to adequately care for children in community hospitals with the realization that there are significant budgetary constraints to be acknowledged in the provision of these services

TARGET POPULATION

Pediatric patients from birth to 18 years of age in a community hospital

INTERVENTIONS AND PRACTICES CONSIDERED

1. Provision of basic facilities including single- or double-occupancy rooms, age-appropriate furniture such as cribs, area for play and other child activities, separate treatment room for patient assessment and procedures
2. Provision of essential medical equipment including resuscitation cart containing pediatric-specific supplies, intravenous catheters, phlebotomy equipment, and lumbar puncture trays of appropriate size, common neonatal and pediatric intravenous solutions, scales, pediatric-appropriate dietary supplies. (For more details on equipment refer to the original guideline document)
3. Provision of support services including routine radiograph imaging, computed tomography, clinical laboratory services appropriate for neonatal and pediatric needs, pharmacy services with age- and size-appropriate drug administration and dosing. (For more information on support services refer to the original guideline document)
4. Continuing education of all health care professionals in a pediatric area
5. Establishment of referral network
6. Establishment of admission and transfer criteria

MAJOR OUTCOMES CONSIDERED

Not stated

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Not stated

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Not stated

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Not applicable

METHODS USED TO ANALYZE THE EVIDENCE

Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not applicable

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Not stated

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

The Facility

In addition to recommendations of the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) for facilities used in the provision of care to hospitalized patients, the following is a list of basic facility needs for the care of children from birth to 18 years of age:

- Single- or double-occupancy rooms that comply with guidelines for prevention of nosocomial infections and that are large enough to accommodate parents who stay with their children.
- Patient room configuration and bed positioning that allow convenient observation and supervision of patients by nursing staff, especially if parents are not available.
- Covered electrical outlets, childproof window locks and door latches, padding of sharp edges, and nonslip, easily maintained floor surfaces.
- Age-appropriate furniture, including cribs equipped with safe overhead restraints and beds with covered mechanical or electrical controls. Beds, cribs, and other furniture should meet Consumer Product Safety Commission standards (www.cpsc.gov).
- Area set aside for play, entertainment, education, and other child life activities.
- Separate treatment room for patient assessment and procedures.

Interior design and decor are not addressed in this statement. Information about child-friendly, developmentally appropriate environments may be obtained from the Institute for Family-Centered Care (see "Resources" section).

Equipment

Essential medical equipment for pediatric care is included in the following list. Additional information on pediatric resuscitation equipment is included in the AAP policy statement "Guidelines for Pediatric Emergency Care Facilities" and in standard pediatric emergency care textbooks.

- Resuscitation cart containing pediatric-specific supplies:
    - Common pediatric emergency drugs should be readily accessible and plainly labeled. Drug dosing by weight or length should be easily referenced.
    - The resuscitation cart should also have an appropriate assortment of the various sizes of pediatric oxygen masks, endotracheal tubes, laryngoscope blades, oropharyngeal and nasopharyngeal airways, and

self-inflating bags (ie, Ambu bags [Ambu International, Linthicum, MD]) with various sizes of masks. A size-appropriate backboard for resuscitation should be available.

- A cardiac defibrillator designed for pediatric use with paddles for infants and children.
  A chart for appropriate joule dosages for weight should be readily available.
- Cardiorespiratory monitors appropriate for the level of pediatric care provided.
- Respiratory equipment in appropriate sizes for infants and children.
  Necessary items include oxygen masks, nasal cannulas, tubing, self-inflating (Ambu) bags and masks, oropharyngeal and nasopharyngeal airways, suctioning equipment and catheters, nebulizers with pediatric-sized face masks, spacer devices and masks for metered-dose inhalers, pulse oximeters with appropriate infant and pediatric probes, and infant and pediatric tracheostomy supplies.

- Intravenous catheters, phlebotomy equipment, and lumbar puncture trays that are size appropriate; extremity warmers, such as chemical packs that warm via exothermic reaction, for improving peripheral blood flow and facilitating blood sampling in infants; papoose boards, adequately padded, of at least 2 sizes for immobilization of infants and children.
- Common neonatal and pediatric intravenous solutions, such as small vials of 10% dextrose, 100 and 250 mL bags of common pediatric intravenous solutions such as 5% dextrose with one-half normal saline or lactated Ringer's solution, 5% dextrose with one-quarter normal saline or lactated Ringer's solution, and intravenous infusion pumps designed for pediatric use with precise administration of small infusion rates.
- Scales and stadiometers for infants and older children.
- Pediatric-appropriate dietary supplies, such as common newborn formulas, pediatric nutritional supplements, and dietary choices that appeal to children; appropriately sized assortment of orogastric and nasogastric feeding tubes and enteral feeding pumps designed for precise administration of small infusion rates.
- Pediatric urine collection devices and appropriately sized urinary catheters.
- Mercury-free thermometers and blood pressure devices (various sizes of blood pressure cuffs).
- Pediatric orthopedic equipment, including wheelchairs, crutches, slings, and splints.
- Infant incubators for small infants with temperature control problems.
- Portable lamps for bedside procedures.
- Developmentally appropriate books, toys, games, and when economically feasible, electronic media such as videocassette players and computers.
  - Toys and equipment should be safe for use by children with impaired mobility.
  - Infection control should be a priority, with all toys, equipment, and play surfaces regularly cleaned with appropriate germicidal solutions.
  - Computers that are available for pediatric patient use should have Internet access limited to child-appropriate sites.

Support Services

The following therapeutic and diagnostic facilities should be available on a 24-hour basis:

- Routine radiograph imaging, with a radiologist available for reading of emergency films.
    - Availability of computed tomography is strongly recommended.
- Clinical laboratory services appropriate for neonatal and pediatric needs, including hematologic profiles, blood chemistries, blood gas studies, microbiologic profiles, and standard urine studies.
    - Equipment should be available to process all commonly ordered tests such as complete blood cell counts and renal and hepatic function tests using samples of less than 1 mL ("micro" samples).
    - Minimum amounts of blood, urine, and cerebrospinal fluid required for tests should be obtained and posted in the hospital laboratory and pediatric areas.
    - Response times should be appropriate for timely diagnosis and treatment of the child's condition.
    - Topical anesthetics should be available and used before obtaining blood samples whenever possible.
- Pharmacy services providing age- and size-appropriate drug administration and dosing.
    - Commonly used oral suspensions should be immediately available. The equipment necessary to create pediatric liquid formulations, including pill crushers, suspension agents, and flavoring solutions, should be available. Pediatric oral suspension delivery devices, such as oral medication syringes and pacifiers that deliver liquid medications, should be available.
    - Doses of antibiotics that are known to cause ototoxicity or nephrotoxicity, such as vancomycin, tobramycin, and gentamycin, should be calculated using computer programs or calculations based on appropriate neonatal or pediatric pharmacokinetic models. Serum drug concentrations should be obtained to optimize dosage amounts and intervals. Clinical judgment should be used before ordering multiple serum concentrations if the antibiotic is to be discontinued with negative cultures or oral antibiotics are to be started as soon as the patient is afebrile.
    - Current references for pediatric drug dosing and drug interactions should be easily available. A liaison with a tertiary care children's hospital pharmacy is advised to help minimize the possibility of adverse consequences in off-label use of drugs and drug dosing.

The following services should be available as needed: social work services; pastoral services; sign and foreign language interpretation; and respiratory, physical, occupational, and speech therapy. Professionals providing these services should have adequate training and continuing education provided in the pediatric applications of their respective fields. If a child is hospitalized for more than 2 school days, a designated hospital employee, such as nurse, social worker, or child life specialist, should serve as a liaison with the child's school to assist the parents in providing for the child's educational needs.

Child life services are recommended whenever feasible. These specialists provide a valuable service in addressing the psychosocial concerns of children and families

during hospitalization and provide support for the concept of family-centered care in the medical setting.

Continuing Education

All health care professionals in a pediatric area should be familiar with the unique and changing physical and psychosocial needs of children. Continuing education should be provided to reinforce these concepts. Nurses and physicians should have current certification in pediatric life support techniques. All should know the location of carts and equipment for cardiopulmonary resuscitation and mock codes should be conducted on a regular basis. Instruction on the use of cardiorespiratory monitors and their alarms should be provided on an ongoing basis. If patients are provided with monitors that feature electrocardiogram readouts, appropriate training should be provided. Education sessions and mock codes should be documented for review by hospital quality assurance committees and the JCAHO.

Referral Networks

Community hospitals and physicians providing care for children must have well-established referral networks for timely consultation by pediatric subspecialists and, when necessary, for transfer of patients to a pediatric center that offers more advanced levels of care. This includes access to an air and ground transportation system that is responsive and appropriately equipped and staffed to care for children of all ages. Guidelines for regionalization of care and transfer of injured patients have been published by the American Academy of Pediatrics (AAP) and the American College of Surgeons.

Admission and Transfer Criteria

Because community hospitals vary significantly in their resources for providing pediatric care, there is no single set of criteria for admission and transfer of pediatric patients that has universal applicability. Each institution must assess its own capabilities and limitations in light of its mission and then formulate guidelines. Once guidelines for transfer of patients have been established, those for admission become less difficult to define. This challenging process requires input from all members of the health care team, including hospital administration. The goal is to ensure that each patient in the facility receives the optimal care that is most appropriate for his or her medical and psychosocial needs.

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is not specifically stated for each recommendation.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

Appropriate facilities, equipment, and conditions for the care of pediatric patients in community hospitals

POTENTIAL HARMS

Not stated

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

The guidance in the guideline does not indicate an exclusive course of treatment or serve as a standard of medical care. Variations, taking into account individual circumstances, may be appropriate.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better
Staying Healthy

IOM DOMAIN

Effectiveness
Safety

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

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ADAPTATION

Not applicable: Guideline was not adapted from another source.

DATE RELEASED

2003 May

GUIDELINE DEVELOPER(S)

American Academy of Pediatrics - Medical Specialty Society

SOURCE(S) OF FUNDING

American Academy of Pediatrics

GUIDELINE COMMITTEE

Committee on Hospital Care

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Members of the Committee on Hospital Care, 2002-2003: John M. Neff, MD (Chairperson); Jerrold M. Eichner, MD; David R. Hardy, MD; Michael Klein, MD; Jack M. Percelay, MD, MPH; Ted D. Sigrest, MD; Erin R. Stucky, MD;

Liaisons: Susan Dull, RN, MSN, MBA (National Association of Children's Hospitals and Related Institutions); Mary T. Perkins, RN, DNSc (American Hospital Association); Jerriann M. Wilson, CCLS, MEd (Child Life Council)

Consultant: Timothy E. Corden, MD

Staff: Sephanie Mucha, MPH

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

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GUIDELINE AVAILABILITY

Electronic copies: Available from the American Academy of Pediatrics (AAP) Policy Web site.

Print copies: Available from American Academy of Pediatrics, 141 Northwest Point Blvd., P.O. Box 927, Elk Grove Village, IL 60009-0927.

AVAILABILITY OF COMPANION DOCUMENTS

None available

PATIENT RESOURCES

None available

NGC STATUS

This summary was completed by ECRI on December 11, 2003. The information was verified by the guideline developer on February 5, 2004.

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