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CLINICAL POLICY ALERT

Improving Pediatric Readiness in the Emergency Department

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Remick K, Gausche-Hill M, Joseph MM, Brown K, Snow SK, Wright JL. Pediatric readiness in the emergency department. Ann Emerg Med. 2018;72(6):e123-e136. PMID: 30392738

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Why is this topic important?

Few emergency physicians (EPs) or emergency departments (EDs) routinely treat critically ill pediatric patients. Improving pediatric readiness among EPs and all community EDs improves outcomes, including mortality for pediatric patients and their families. (1-7) In 2018, guidelines for care of children were revised and approved by the 3 sponsoring organizations (American College of Emergency Physicians [ACEP], the American Academy of Pediatrics [AAP], and the Emergency Nurses Association [ENA]). (2-4) These guidelines delineate the recommended practices and resources needed to prepare EDs to care for pediatric patients. More than 80% of children who seek emergency care present to general EDs versus specialized pediatric EDs. (1)

Policy Recommendations and Focus Points in bold

Recommendations to improve pediatric readiness were made in 7 domains:

- I Administration and Coordination for the Care of Children in the ED
- II Competencies for Physicians, Advanced Practice Providers, Nurses, and Other Health Care Providers
- III Quality Improvement/Performance Improvement in the ED
- IV Policies, Procedures, and Protocols for the ED
- V Pediatric Patient and Medication Safety in the ED
- VI Support Services for the ED
- VII Equipment, Supplies, and Medications

Administration and Coordination for the Care of Children in the ED

- Two **pediatric emergency care coordinators (PECCs) – A Physician Coordinator identified by the ED Medical Director and a Registered Nurse Coordinator identified by the ED Nurse Director should be assigned** to the ED to ensure that all recommendations made in these guidelines are implemented and to ensure appropriate education and competencies of staff.
- The physician and nurse PECC roles may have additional roles assigned in the ED (i.e., Quality Director or Clinical Nurse Educator), or may be shared in multiple facilities within a hospital system.
- The PECC role is central to pediatric readiness and has been found to improve pediatric readiness of EDs, as shown in "A National Assessment of Pediatric Readiness," measured by a weighted pediatric readiness score (WPRS) and shown to have improved availability of pediatric quality improvement plans, policies and protocols, and vital equipment in the ED. (1)

Competencies for Physicians, Advanced Practice Providers, Nurses, and Other Health Care Providers

- **All nurses and physicians staffing the ED should have the necessary knowledge, skills, and training to care for children of all ages**.
- **Evaluation of competencies for physicians caring for children may be met through participation in continuing certification programs in emergency medicine or pediatric emergency medicine**.
- Other activities may achieve competency in caring for children but must be evaluated through direct observation, chart reviews, or written evaluations.

Quality Improvement/Performance Improvement in the ED

- **Quality improvement activities should address the following 6 domains as addressed by the National Academy of Medicine: Safe, Equitable, Patient-Centered, Timely, Efficient, and Effective.**
- **Quality improvement and Performance Improvement Plan should include pediatric indicators and integrate findings from other services that care for children, including emergency medical services, inpatient services (e.g., medical surgical unit), and regional pediatric centers**.

Policies, Procedures, and Protocols for the ED

- **Policies, procedures, and protocols should be developed that meet critical needs for identification and management of critical illness; establish best practice for coordination of care, including in disasters; and ensure that appropriate communication occurs for reporting child maltreatment**.

Pediatric Patient and Medication Safety in the ED

- **Patient safety of children can be optimized by weighing and recording weights of children in kilograms only**; without conversion or calculation.
- **Children who require resuscitation and cannot be weighed easily can have an estimate of their weight determined by a length-based resuscitation tape** (e.g., Broselow-Luten tape).
- Employ strategies to ensure **safe medication dosing determination and delivery**.

Support Services for the ED

- **Support services, such as medical imaging, should have procedures to use weight-based reductions in dosing ionizing radiation using the ALARA (as low as reasonably achievable) principle** and develop **policies that integrate clinical decision rules for appropriate ordering of diagnostic studies**.

Equipment, Supplies, and Medications

- **The ED should have equipment and supplies that are logically organized by weight-based color coding or other method to clearly identify appropriate-sized equipment for children of all ages.**
- **Staff should be educated on location of all resuscitation equipment and supplies for children and have a daily method to verify that all sizes are present and functional.**

Impact of High Pediatric Readiness on Patient Outcome

The National Pediatric Readiness Project (NPRP) is a multidisciplinary quality improvement project sponsored by ACEP, AAP, and ENA, whose mission is ensuring emergency care of all children. The NPRP supports a national assessment of pediatric readiness in EDs and the last assessment was published in 2015. (1) More than 83% of EDs responded. The WPRS is an assessment tool that is normalized to a 100-point scale. The overall national median score was 69 out of 100 possible points. Data from this assessment were used to evaluate the impact of ED pediatric readiness and patient outcomes.

- Ames et al. demonstrated that EDs with the highest quartile pediatric readiness scores reported a 4-fold lower rate of mortality for children with critical illness compared with those with lower readiness scores. (5)
- Newgard et al. showed in a study of more than 800 EDs in the United States with trauma centers, that those children treated initially in the highest quartile scoring EDs, as measured by the WPRS, had half the risk of death, and that this benefit persisted for 1 year post care. (6,7)
- Overall, the Pediatric Readiness in the ED guidelines provide a framework for quality improvement that, if implemented, can improve children's access to EDs that are properly staffed and equipped to provide emergency care and, most importantly, ensure optimal outcomes. (2-10)

References:

1. Gausche-Hill M, Ely M, Schmuhl P, Telford R, Remick KE, Edgerton E, Olson LM. A national assessment of pediatric readiness of emergency departments. *JAMA Pediatr.* 2015;169:527-534. PMID: 25867088

2. Remick K, Gausche-Hill M, Joseph MM, Brown K, Snow SK, Wright JL. Pediatric readiness in the emergency department. *Ann Emerg Med.* 2018;72(6):e123-e136. PMID: 30392738

3. Remick K, Gausche-Hill M, Joseph MM, Brown K, Snow SK, Wright JL. Pediatric readiness in the emergency department. *Pediatrics.* 2018;142(5):e20182459. doi:10.1542/peds.2018-2459. PMID: 30389843

4. Remick K, Gausche-Hill M, Joseph MM, Brown K, Snow SK, Wright JL. Pediatric readiness in the emergency department. *J Emerg Nurs.* 2019;45(1):e3-e18. doi:10.1016/j.jen.2018.10.003. PMID: 30392719

5. Ames SG, Davis BS, Marin JR, Fink EL, Olson LM, Gausche-Hill M, Kahn JM. Emergency department pediatric readiness and mortality in critically ill children. *Pediatrics.* 2019;144(3):e20190568. PMID: 31444254

6. Newgard CD, Lin A, Olson LM, Cook JNB, Gausche-Hill M, Kuppermann N, Goldhaber-Fiebert JD, Malveau S, Smith M, Dai M, Nathens AB, Glass NE, Jenkins PC, McConnell KJ, Remick KE, Hewes H, Mann NC; Pediatric Readiness Study Group. Evaluation of emergency department pediatric readiness and outcomes among US trauma centers. *JAMA Pediatr*. 2021;175(9):947-956. doi:10.1001/jamapediatrics.2021.1319. PMID: 34096991

7. Newgard CD, Lin A, Goldhaber-Fiebert JD, Marin JR, Smith M, Cook JNB, Mohr NM, Zonfrillo MR, Puapong D, Papa L, Cloutier RL, Burd RS; Pediatric Readiness Study Group. Association of emergency department pediatric readiness with mortality to 1 year among injured children treated at trauma centers. *JAMA Surg*. 2022;157(4):e217419. doi:10.1001/jamasurg.2021.7419. PMID: 35107579

8. Ray KN, Olson LM, Edgerton EA, Ely M, Gausche-Hill M, Schmuhl P, Wallace DJ, Kahn JM. Access to high pediatric-readiness emergency care in the United States. *J Pediatr.* 2018;194:225-232. PMID: 29336799

9. Remick KE, Kaji AH, Olson LM, Ely M, Schmuhl P, McGrath M, Edgerton EA, Gausche-Hill M. Pediatric readiness and facility verification. *Ann Emerg Med.* 2015;67(3):320-328.e1. PMID: 26320519

10. Whitfill TM, Remick KE, Olson LM, Richards R, Brown KM, Auerbach MA, Gausche-Hill M. Statewide pediatric facility recognition programs and their association with pediatric readiness in emergency departments in the United States. *J Pediatr*. 2020;218:210-216.e2. doi:10.1016/j.jpeds.2019.10.017. PMID: 31757472

Resources for additional learning:

Check your Eds readiness: https://www.pedsready.org

EMS for Children Innovation and Improvement Center: https://emscimprovement.center/domains/pediatric-readiness-project/

Pediatric Readiness Checklist: https://emscimprovement.center/domains/pediatric-readiness-project/readiness-toolkit/readiness-ED-checklist/

Pediatric Readiness Toolkit: https://emscimprovement.center/domains/pediatric-readiness-project/readiness-toolkit/readiness-toolkit-checklist/

EMRAP: https://www.emrap.org/episode/emrap20219/national

PEMPlayBook: https://pemplaybook.org/podcast/zen-and-the-art-of-pediatric-readiness/

Pediatric Morsels: https://pedemmorsels.com/national-pediatric-readiness-program/

ACEP Frontline: https://soundcloud.com/acep-frontline/are-you-ready-the-pediatric-readiness-project-2021