

AMERICAN ACADEMY OF PEDIATRICS

National Initiative for Children's Health Care Quality Project Advisory Committee

Principles of Patient Safety in Pediatrics

ABSTRACT. The American Academy of Pediatrics and its members are committed to improving the health care system to provide the best and safest health care for infants, children, adolescents, and young adults. In response to a 1999 Institute of Medicine report on building a safer health system, a set of principles was established to guide the profession in designing a health care system that maximizes quality of care and minimizes medical errors through identification and resolution. This set of principles provides direction on setting up processes to identify and learn from errors, developing performance standards and expectations for safety, and promoting leadership and knowledge.

INTRODUCTION

The 1999 report of the Institute of Medicine, *To Err Is Human: Building a Safer Health System*, notes that errors in health care are a leading cause of death and injury.¹ Between 3% and 4% of hospitalized patients are harmed by the care that is supposed to help them. On average, of 100 hospitalized patients, 7 are exposed to a serious medication error that harms or could have harmed them. It is estimated that between 44 000 and 98 000 Americans die in hospitals each year as a result of errors in their care. Although these figures have been challenged, there is no disagreement as to the importance of the topic or the existence of substantial safety concerns in health care. In response to the report, Congress and various states are proposing legislation and programs to improve patient safety.

The increasing complexity in patient care in addition to the public's increased scrutiny of the health care system underscores the need to make patient safety an issue of high priority. The American Academy of Pediatrics and its members are committed to improving the health care system to ensure that infants, children, adolescents, and young adults receive the best and safest health care.

All health care systems should be designed to prevent errors. The first step in designing these systems is to identify errors and study their pattern of occurrence within delivery systems to reduce the likelihood of adverse events. A specific concern in pediatrics is the lack of information on errors in the pediatric population and the strategies needed to minimize errors and maximize care in both the ambulatory (including schools and child care settings) and inpatient sectors. If the Academy is going to

implement an effective and far-reaching agenda to address the public policy and research components of the patient safety debate, the set of principles listed below should serve as its guide.

RECOMMENDATIONS FOR IDENTIFYING AND LEARNING FROM ERRORS

1. Pediatricians are committed to bringing about the best possible health outcomes for children and their families. Because all medical interventions involve known and unknown risks, pediatricians should work with health care teams to create safe patient care environments and prevent medical errors.
2. Efforts to improve patient safety and prevent errors should focus on a systems approach. Existing research on hospital-based care reveals that medical errors rarely represent the failure of an individual caregiver. Most errors in medical care are systems errors related to equipment, complex processes, fragmented care, and lack of standardized procedures.
3. Systems should be developed to identify and learn from errors. These error learning systems should be open, promote discussion of errors without blame, and provide contextual data about the error. The Institute of Medicine has called for a 50% decrease in the rate of medical errors over the next 5 years, which can be realized only by researching the underlying causes of medical errors, creating effective interventions, and addressing future prevention.¹ These efforts must be completely separate from punitive strategies. Peer review protections should be extended to encourage participation in efforts to decrease the rate of medical errors. Currently, state and federal laws provide legal protection so health professionals can be candid during peer review without fear of legal action. This should also apply to situations in which a medical error occurs.

Error reporting systems are one part of an error learning system. We can identify and learn from errors through reporting programs aimed at ensuring the systems are safe for patients. To do so, reporting systems should:

- Be nonpunitive;
- Require that only the most critical events be subject to mandatory reporting;
- Require that information reported to internal and external patient safety review groups should not be discoverable in civil or criminal legal action;

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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- Allow individuals involved in the events to remain anonymous whether or not error is involved;
 - Recognize that adverse events may or may not be caused by errors;
 - Focus on systems failures; and
 - Support the key role that organizational leadership plays in systems improvement.
4. Most research on medical errors is hospital based. It may not be appropriate to extrapolate the number or types of errors found in hospitals to the number or types of errors that might be found in ambulatory health care settings. Because most health care is delivered in ambulatory care settings, and in pediatrics, many medications are taken outside of the home (in schools and child care settings), research on errors in ambulatory care settings should be a priority, particularly for unique patient populations, such as infants, children, adolescents, young adults, and children with special needs. The problem of drug dose calculation errors for pediatric patients, in particular, should be explored.

RECOMMENDATIONS FOR DEVELOPING PERFORMANCE STANDARDS AND EXPECTATIONS FOR SAFETY

1. Patient safety guidelines should be developed through the coordinated actions of oversight organizations, group purchasers, and professional groups. These guidelines should be reasonable and based on a true assessment of the risk level associated with the specific patient safety intervention. In addition, recommended safety strategies should be flexible enough to allow health care providers to adapt them to varied delivery settings and to pediatric patients' needs.
2. Health care organizations should take into account unique pediatric safety issues. These include particular attention to the potential for errors in care attributable to changes in patient weight and physiologic maturation, limited capacity for cooperation in young children and high levels of dependency on others, and the relative rarity of most pediatric illnesses and attendant lack of widespread familiarity with their care. As uniform regulations and guidelines are developed, they should encompass the service delivery systems and their variations. The goal of pediatric patient safety systems inside health care organizations should be the implementation of safe practices.
3. Information technology has great potential to minimize medication errors. Computerized order entry has been shown to decrease errors and coordinate care given by many individuals to a single pediatric patient.³ It is imperative that research examine the many uses of information technology to improve patient safety and ways to facilitate clinician acceptance of information technology in ambulatory and inpatient settings.
4. All individuals involved in providing health care to children should work together to:
 - Develop and enforce standards for the design

of drug packaging and labeling that will maximize safety in use;

- Require pharmaceutical companies to test proposed drug names to identify and remedy potential "sound-alike" and "look-alike" confusions with existing drug names;
- Establish appropriate responses to problems identified through postmarketing surveillance, especially for concerns that are perceived to require immediate response to protect the safety of patients; and
- Support expanded efforts to include children in new drug trials.

RECOMMENDATIONS FOR LEADERSHIP AND KNOWLEDGE

- 1 The Academy supports the creation of a Research Center for Patient Safety within the Agency for Healthcare Research and Quality. The Academy urges that this center be adequately funded to address the protection of all patients.
2. Health care organizations should demonstrate their commitment to pediatric patient safety by establishing patient safety programs with defined executive responsibility in all settings where medications are delivered or care is provided to children and by developing a culture of improvement. Patient safety programs should:
 - Provide strong, clear, and visible attention to safety;
 - Represent a collaborative effort of physicians, nurses, allied health personnel, and administrative staff who have experience with and knowledge of patient safety;
 - Incorporate well-understood safety principles, such as standardizing and simplifying equipment, supplies, and processes;
 - Implement proven medication safety practices;
 - Establish interdisciplinary learning programs; and
 - Address the special needs of inpatient and ambulatory care environments.
3. Research that explores the effect the error debate has on families' satisfaction with health care services should be conducted.

Promoting safety requires changing the culture of medicine to recognize that the potential for errors exists and that teamwork and communication are the basis to guarantee change. The promotion of patient safety and the decrease in the rate of errors should become one of the major goals of the Academy. Safety should be viewed as one component of a broader commitment to providing optimal health care for children—a goal that the membership embraces and that unites pediatricians with the families they serve.

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REFERENCES

1. Committee on Quality Health Care in America, Institute of Medicine.

In: Kohn LT, Corrigan JM, Donaldson MS, eds. *To Err Is Human: Building a Safer Health System*. Washington, DC: Institute of Medicine; 1999

2. Hearings before the Subcommittee on Health Care of the House Committee on Veterans' Affairs and the Subcommittee on Health and the Environment and the Subcommittee on Oversight and Investigations of the House Committee on Commerce, 106th Cong, 1st Sess (2000) (testimony of Donald Berwick, MD, member Committee on Quality of Health Care in America, Institute of Medicine)
3. Kaushal R, Bates DW, Landrigan C, et al. Medication errors and adverse drug events. *Pediatr Res*. 2000;47:201. Abstract 1188

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