



Pennsylvania Patient Safety Reporting System

Patient Safety Advisory

Produced by ECRI & ISMP under contract to the Pennsylvania Patient Safety Authority

From the Mouths of Babes: Healthcare Supplies and Environment Pose Dangers to Children

It is well known that young children are attracted to small things that they may swallow or place into a body orifice. Developmentally, during that time frame, the child becomes independent in both mobility and hand-to-mouth activity, and exploratory behavior increases. They are able to encounter hazards but have not developed avoidance skills or a cognitive awareness of hazards.¹

Particularly during the ages of one to three years of age, children may swallow food items such as meat, nuts, popcorn, fruit pits, candy, seeds that may become lodged in their airway. Nonfood items commonly ingested include marbles, wads of paper, clay, crayon pieces, beads, buttons, coins, safety pins. Small batteries can also be swallowed. Small toys/toy components also place children at risk—the reason why so many toys are labeled as not appropriate for a child under three years old.^{2,3}

What may be less obvious is that the healthcare environment and the supplies commonly used by healthcare workers may also place children at the same kind of risk as small food items and toys.

Healthcare Supplies Can Be Hazardous To A Child's Health

Healthcare supplies that can be safely used in older patients may be hazardous if used on a young child. PA-PSRS reports have indicated the use of adhesive bandages, gauze, and tape on the fingers of youngsters. These supplies can be easily removed and have been found in children's mouths. Therefore, they can be choking hazards in the pediatric population. Here is one example:

A nurse found a 16-month old patient with gauze wrapped with paper tape in his mouth. The object was removed before choking occurred. The bandage had previously been applied to the child's finger after laboratory work was drawn.

Items Inadvertently Left Within Reach

PA-PSRS reports also reflect dangerous objects that were unintentionally left within the grasp of children:

When an IV team nurse approached the crib of a 22-month-old patient, a mini-infusion pump lay in the crib with the electrical cord unwrapped and near the child's feet. The pump syringe was disconnected and near the child's head. (Fortunately, the child did not reach for the pump or syringe, which had small components that the child could have placed into her mouth, nor did the child become entangled in the electrical cord.)

A blue plastic cap was discovered on the bed of a 9-month-old patient, after the child had been coughing.

Healthcare Supplies Used as Toys

During transport to OR, a 22-month-old patient was playing with a syringe (without needle). The patient had taken the syringe apart with the barrel in one hand and plunger in the other hand. In the OR, the anesthetist found that the patient had bitten off the black rubber gasket from the plunger and had it in her mouth.

A three-year-old child was receiving IV pain management. The father asked if the patient could have a clean syringe to play "doctor" with family members. The child was given a syringe with a blunt clean tip. The father reported that the child put the syringe tip into his IV line and injected a small amount of air. The staff disconnected the IV lines and reprimed the tubing. No air actually went into the patient.

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From the Mouths of Babes: Healthcare Supplies and Environment Pose Dangers to Children (Continued)

These PA-PSRS reports reflect attempts to give a child a “toy” to play with, seemingly with good intentions. However, these syringes could have resulted in significant adverse events.

How many times has a child been given a blown-up surgical glove to play with – sometimes with a funny face drawn upon it? To date, no negative outcomes associated with this practice have been reported in PA-PSRS. Yet, the potential for tragedy associated with this “toy” does exist. Ordinarily, one would not give a young child a deflated glove to play with. But an inflated glove can easily become deflated (such as, when a child bites a hole in one of the glove’s fingers). A portion of the deflated glove could be inhaled, thus causing the child to choke.

Risk Reduction Strategies

PA-PSRS reports provide insight into how the risk to children can be reduced:

- Conducting regular assessments of supplies/equipment used on children to determine what risks may exist.
- Developing and enforcing policies concerning the use of certain supplies on children under a certain age.
- Providing age-appropriate toys for children to play with and avoiding using medical supplies as toys.
- Avoiding/prohibiting the use of bandaging material where a child can suck on it, reach it, and/or place it in his/her mouth.
- Removing from pediatric treatment areas healthcare supplies that may be hazardous to children.
- When dangerous supplies are clinically required, considering methods to prevent a child from placing objects in his/her mouth.
- Carefully sweeping for and removing small objects inadvertently left in healthcare/waiting areas accessible to young children.
- Educating healthcare workers, volunteers, and family members concerning such risks.

A Closing Comment

Because children are not “little adults,” meeting their needs safely must be considered during the development of medical devices. Furthermore, monitoring and assessment are important even after pediatric devices enter clinical practice. The Institute of Medicine has recently published a report entitled *Safe Medical Devices for Children*. This comprehensive report evaluates the FDA’s postmarket monitoring and surveillance activities as they pertain to medical devices used for children.

Suggestions for improvement are provided in the following areas: monitoring of postmarket study commitments, public access to information about postmarket studies, adequacy of required postmarket studies, adverse event reporting, independent oversight, and the need for organizational attention to pediatric issues. The report also includes recommendations for medical facilities: providing better patient and family education, designating a person responsible for tracking and responding to safety alerts and recalls, considering safety information when making device purchase decisions, and providing training in adverse event evaluations and reporting.⁴

Notes

1. Agran PF, Anderson C, Winn D, et al. Rates of pediatric injuries by 3-month intervals for children 0 to 3 years of age. *Pediatrics* 2003 Jun;111(6Pt1):e683-92.
2. Rivendell Pediatric and Adolescent Medicine. Foreign bodies [online] 2002 Mar 10 [cited 2005 Jul 14]. Available from Internet: http://www.rivendell-peds.com/foreign_bodies.htm.
3. Dr. Joseph F. Smith Trust Fund. Foreign objects [online] [cited 2005 Jul 14] Available from Internet: <http://www.chclibrary.org/micromed/00048670.html>.
4. Field MJ, Tilson H, eds. Institute of Medicine of the National Academies. *Safe Medical Devices for Children* Washington (DC): National Academies Press; 2005.



An Independent Agency of the Commonwealth of Pennsylvania

The Patient Safety Authority is an independent state agency created by Act 13 of 2002, the Medical Care Availability and Reduction of Error ("Mcare") Act. Consistent with Act 13, ECRI, as contractor for the PA-PSRS program, is issuing this newsletter to advise medical facilities of immediate changes that can be instituted to reduce serious events and incidents. For more information about the PA-PSRS program or the Patient Safety Authority, see the Authority's website at www.psa.state.pa.us.



ECRI is an independent, nonprofit health services research agency dedicated to improving the safety, efficacy and cost-effectiveness of healthcare. ECRI's focus is healthcare technology, healthcare risk and quality management and healthcare environmental management. ECRI provides information services and technical assistance to more than 5,000 hospitals, healthcare organizations, ministries of health, government and planning agencies, and other organizations worldwide.



The Institute for Safe Medication Practices (ISMP) is an independent, nonprofit organization dedicated solely to medication error prevention and safe medication use. ISMP provides recommendations for the safe use of medications to the healthcare community including healthcare professionals, government agencies, accrediting organizations, and consumers. ISMP's efforts are built on a non-punitive approach and systems-based solutions.