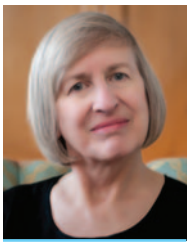

From the Editor

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Needle Procedures: Let's Try to Do Better

It is no secret to pediatric nurses that children do not like needles. For most children, the first exposure to a needle is when receiving routine immunizations. Children also encounter needles for blood draws, intravenous infusions, lumbar punctures, or wound suturing. A recent systematic review and meta-analysis revealed that most children exhibit needle fear, while prevalence ranged from 20% to 50% in adolescents and 20% to 30% in young adults (McLenon & Rogers, 2019).

The primary reason children dislike and/or fear needles is obvious: unless measures are taken, getting stuck with a needle hurts. Along with the trauma of the event, this pain and fear can contribute to the development of needle phobias, which can lead to immunization non-compliance, and reluctance to get flu shots and other potentially life-saving vaccines.

Taddio and colleagues (2012) surveyed a sample of parents (*n*=883) and children (*n*=1024) attending a public museum in Canada regarding needle fears and non-compliance with immunization due to needle fear. Of the groups, 24% of parents and 63% of children reported fear of needles, with 7% of parents and 8% of children saying this fear was the primary reason for immunization non-compliance.

Research suggests that a fear of injections develops around age 5 years and has a negative impact on vaccine compliance (Baxter, Cohen, Burton, Mohammer, & Lawson, 2017). A private pediatric practice asked parents and 10 to 12-year-olds to rate needle anxiety on a 100 mm visual analog scale. Their needle anxiety was compared to previous vaccination records, including number of vaccinations between ages 4 and 6 years (total and same-day maximum), and subsequent initiation of the human papillomavirus (HPV) vaccine through age 13 years. Of the 120 enrolled, 117 received preschool vaccinations between ages four and six years. Baxter and colleagues (2017) found that the likelihood of being in the upper quartile of fear 5 years later increased with each additional same-day injection but was not related to total lifetime or total 4- to 6-year injections. About a quarter of the children in the upper fear quartile began their HPV series comparted to 48% in the lower quartile.

Findings by Baxter and colleagues (2017) suggest reducing the number of injections in a single day as one way to reduce fear of needles. Other healthcare researchers and practitioners are addressing the primary reason behind the fear – the pain associated with needles.

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Taking Action

Pediatric pain specialists acknowledge that change in medical practice can be slow and that parents are their most important partners in advocacy. "Simply asking the question, 'What can be done to manage my child's pain?' – just bringing that possibility up, often starts doctors and nurses thinking about better pain management (Chambers in Klass, 2019). Chambers leads the "It Doesn't Have to Hurt" (https://itdoesnthavetohurt.ca) research group in Canada that partners with parents to improve pain management for children. The group is conducting a survey asking parents their opinions about an information sheet, "Needles Don't Have to Hurt" (https://immunize.ca/sites/default/files/resources/parentscanada-ad-feature-needles-dont-have-to-hurt.pdf) for managing their child's vaccination pain. A report of the findings will be released when complete.

Some hospitals are establishing ambitious policies to reduce or eliminate the pain associated with needles. An international organization, ChildKind (http://childkindinternational.org), works to reduce the pain and needless suffering of children, no matter their site of care, through educating, evaluating, and recognizing healthcare facilities that have developed standardized institution-wide, collaborative approaches to the treatment of children's pain, and certifying those institutions as ChildKind Certified Hospitals. The basic criteria necessary for ChildKind certification include the following:

1. Presence of a facility-wide policy on pain assessment, prevention, and management that demonstrates a clear institutional commitment to pain relief.
2. Ongoing education on pain management for staff, trainees, and patients.
3. Evidence of the sustained use of a developmentally appropriate process for pain assessment.
4. Specific evidence-informed protocols for pain prevention and management, including pharmacological, psychological, and physical methods.
5. Regular institutional self-monitoring within the framework of continuous quality improvement.

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It was felt that these core principles could be incorporated in any institution regardless of resources availability, assuming adequate commitment. To date, hospitals that have received certification include Boston Children's Hospital, Connecticut Children's Medical Center, Seattle Children's Hospital, Children's Minnesota, Rainbow Babies and Children's Hospital, Ann & Robert H. Lurie Children's Hospital, and the Hospital for Sick Children.

ChildKind-certified Children's Minnesota has initiated the "Comfort Promise," which has four elements (Klass, 2019):

1. **Numb the skin.** Topical lidocaine is available over the counter and is safe for even infants. Numbing is offered to every child every single time. Because it needs to be applied 30 minutes before, planning and coordination are needed.
2. **Let infants breast-feed.** Breast-feeding is offered or a pacifier dipped in sugar water for children under 12 months old.
3. **Don't pin a child down.** Holding a child down is frightening; instead, children are put in an upright position on a parent's lap. At Children's Minnesota, it is illegal to hold children down.
4. **Provide a distraction.** Many things can distract children: the parent's phone, an electronic tablet, or even blowing bubbles.

As with Children's Minnesota, other ChildKind hospitals also have policies for needle procedures. For example, at Boston Children's Hospital, policy dictates that numbing medicine is applied to the skin whenever possible for every patient who has a needle procedure. Sucrose is given to infants, along with numbing medicine or breast-feeding during certain needle procedures. The hospital encourages the use of a variety of behavioral and psychological techniques that might further reduce the pain that a child might experience.

Two primary barriers need to be overcome to initiate such policies. The first is a lack of training among pediatricians on how to handle pain. One pediatric pain specialist remarked that veterinary medicine requires much more training in how to handle pain "before you can operate on a hamster" than is required of pediatricians and even of surgeons (Friedrichsdorf, in Klass, 2019). All ChildKind-certified hospitals have Child Life departments with child life specialists trained to provide behavioral and psychological techniques to help children cope with needle procedures. Educational offerings for doctors, nurses, and other healthcare professionals about eliminating or reducing the pain associated with needle procedures are required. Parent education is delivered in a variety of formats.

The second barrier is the logistics of providing this kind of pain management for routine injections and blood draws (Klass, 2019). In a busy institution or practice, it can be daunting to find a way to apply all those topical anesthetics and to learn and practice all those distraction techniques.

However, a commitment to atraumatic care for all children requires that we try, and there are a growing number of resources to help.

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