

# What if needle pokes didn't hurt? Hospital implements strategies to eliminate or reduce needle pain in kids

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A major US children's hospital introduced a first-of-its-kind project to eliminate or reduce pain from elective needle procedures in all infants and children, reports a study in *PAIN Reports*, part of a special issue on research innovations in pediatric pain. The official open-access journal of the International Association for the Study of Pain (IASP), *PAIN Reports*.

"This is the first report of a successful system-wide protocol implementation to reduce or eliminate [needle pain](#), including pain from vaccinations, in a children's hospital world-wide," write Stefan J. Friedrichsdorf, MD, FAAP, Donna Eull, RN, and their colleagues of Children's Hospitals and Clinics of Minnesota, Minneapolis.

## Four Proven Strategies to Reduce Needle Pain in Children

"Pain remains common, under-recognized, and under-treated in children's hospitals and pediatric clinics," the researchers write. At their hospital, over 200,000 patients experienced unrelieved needle pain annually due to vaccinations, blood tests, injections, and other procedures. While patient surveys found that needle procedures were "the single greatest source of pain and anxiety for our patients and families," staff surveys surprisingly gave a low priority to reducing needle pain.

In response, pain medicine specialists and hospital leadership designed and implemented a quality improvement project to eliminate or reduce needle pain. Developed using the "Lean" improvement methodology, the "Children's Comfort Promise" project vowed "to do everything possible to prevent and treat pain." Frontline staff were trained to always, without exception, offer four research-proven strategies:

- Numbing the skin with topical anesthetic (4% lidocaine cream, available over-the-counter)
- Giving sucrose (sugar water) or allowing breastfeeding in infants younger than 12 months
- Using age-appropriate methods of "comfort positioning" (for example, sitting upright on the parent's lap for preschoolers, swaddling for infants), and never holding down or restraining children
- Age-appropriate distraction (toys, books, games, smartphones, virtual reality)

Between 2014 and 2016, the project was implemented in staggered fashion across the hospital and clinics. As use of the four strategies increased, patient satisfaction with pain management significantly improved. In surveys, families who felt their child's pain was "always well-controlled" rose from 60 to 72 percent. As the project was rolled out, staff concerns about implementation were allayed. Follow-up suggested that pain reduction strategies in infants actually saved time, compared to time spent comforting infants after painful needle procedures, and reduced staff turnover.

"The Children's Comfort Promise has become our institution's new standard of care for needle procedures," Dr. Friedrichsdorf and coauthors write. They note that progress is still needed in some areas—for example, increasing the appropriate use of lidocaine. The strategies are now being introduced and refined at four other North

American children's hospitals (Montreal, Toronto, Kansas City and Atlanta), thanks to a grant by the MAYDAY Fund.

The study represents a "real-world" application of research to improve pediatric pain care, according to an introductory editorial by Guest Editor Christine T. Chambers, Ph.D., RPsych. The special issue presents nine original papers highlighting innovations in pediatric pain research and care. Topics include factors associated with the development of pain in children; new research methods in pediatric pain, including culturally sensitive approaches; new theories that point the way toward future advances in controlling pain in children; and abstracts from a recent state-of-the-art conference on pediatric pain management.

Pediatric pain care has made "tremendous progress" since the 1970s and 1980s, when it was widely believed that babies couldn't feel pain and shouldn't receive anesthetics. However, Dr. Chambers writes, "Inadequate [pain management](#) continues to be reported for children experiencing painful procedures, after surgery, and in the context of [chronic pain](#)."

Groups such as the [IASP's Special Interest Group on Pain in Childhood](#) actively promote education, research, and advocacy about pain in children. Dr. Chambers concludes, "We all must work hard to push ourselves...to address the problem of poorly managed pediatric pain and ensure that all children and their families receive the pain care they deserve."

**More information:** Stefan J. Friedrichsdorf et al. A hospital-wide initiative to eliminate or reduce needle pain in children using lean methodology, *PAIN Reports* (2018). [DOI: 10.1097/PR9.0000000000000671](#)

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