

Feeling No Pain

University Hospital's Pediatric Emergency Department has an anesthetic protocol for nearly every problem, making pain during treatment a thing of the past for Central New York kids.

By Renée Gearhart Levy

What hurt worse: falling off your bike or getting the stitches? Breaking your arm or having it x-rayed and reset by the doctor? Until fairly recently, pain during treatment was often identified as the most distressing aspect of a child's visit to the hospital emergency department.

But not anymore at University Hospital.

Richard Cantor, MD '76, is proud to direct what he calls a "painless" pediatric emergency department, thanks both to advances in pediatric analgesia and sedation as well as a change in the mindset of practitioners.

"About 15 years ago, a major study on the delivery of pain medication to injured children found that practitioners were afraid to give children pain medicine. There were concerns about children's sensitivity to medication, questions about whether they were really feeling pain," says Dr. Cantor.

In the ensuing decade, the appropriate use of analgesics and sedatives for children in emergency departments has been a major clinical and research focus for pediatric emergency physicians. Some of that early research was done at the University Hospital Pediatric Emergency Department by Cantor and James D'Agostino, MD, along with former colleagues Thomas Terndrup, MD, HS '94, and Kathleen Brown, MD. As a result, the standard protocol for children's pain management has radically changed.

It's now widely recognized that severe pain and stress can have long-lasting implications for children. According to a February 2005 article in *American Family Physician*, "a newborn infant who undergoes a procedure with inadequate pain relief may have permanent changes in his or her response to and perceptions of pain. Post-traumatic stress disorder also can occur after painful procedures and medical experiences."

"Today, the practice of pediatric analgesia and sedation is a given," says Cantor, who helped write policy statements on emergency pain relief for children for both the American Academy of Pediatrics and American College of Emergency Physicians.

"We now do a better job of recognizing the need for appropriate treatment, not only of the child's underlying disease or injury, but also of their pain and anxiety from that injury or from the diagnostic or therapeutic procedures we perform," adds James Callahan, MD '85, associate professor of emergency medicine at Upstate. "Nonpharmacologic methods, such as distraction with bubbles, movies, music, or sugar-coated pacifiers for infants, also add to patient comfort and relaxation."

Although pediatric pain relief lags behind adult care in many places, University Hospital is a national leader, using a systematic approach that begins when a child enters the emergency department.

Richard Cantor, MD '76, chairman of University Hospital's Pediatric Emergency Department



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"Peds Emergency Department nurses in triage can accurately predict whether a child will need an IV about 90 percent of the time," says Cantor.

At University Hospital, children receiving an IV are pretreated with a topical cream called EMLA, which numbs the site so that the patient doesn't feel the needle. "If the nurse applies the cream right off the bat, by the time I get to the room to do the procedure, the child is numb and ready," says Cantor. "If you can convince a child they aren't going to feel the needle, you have a calm child."

The cream is also used for spinal taps. "They can't feel a thing," he says.

Kids with fractures automatically receive IV pain medication—known as conscious sedation—before they even go to x-ray. "There's no reason to wait," says



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Since 2003, the pediatric emergency department has had its own specially-trained nursing staff.

Cantor. "We've trained everyone to get rid of pain for these kids."

Although conscious sedation has become standard protocol, its use is not taken lightly.

"This is serious business," says Cantor of the practice, which includes using opioids or valium-based medications that are carefully administered based on the weight of the child. The patient has to be on a cardiac-apnea monitor, with constant nursing supervision and in the presence of an attending or trained practitioner. (Only personnel who have passed a pediatric sedation course can deliver the medication.) He is particularly enthused about the advent of Ketamine, a dissociative anesthetic that removes any sensation of pain. "The child is fully awake. It doesn't affect vital signs. You can reset a broken leg or sew up facial lacerations with the child totally calm. It's the coolest thing."

Conscious sedation is a labor-intensive process. A busy evening can bring multiple fracture patients, requiring additional nurses—who work with the patients one-on-one. Despite the increase in time and personnel, Cantor calls it a "god send."

"The days of just holding Billy brutally down to do the procedure are gone," he says. "It has revolutionized our stress levels as practitioners."

And more importantly, it has revolutionized the injured child's experience. "Procedures are able to be done safely and more likely to be accomplished with fewer attempts," says Dr. Callahan. "Many patients don't even remember their procedures, and are therefore less fearful the next time they have to come to the ED or even their physician's office."

Other standard treatments include the use of Dermabond on lacerations small enough not to require stitches; LET (a cream made of lidocaine, epinephrine, and tetracaine) to numb small lacerations that need stitches, making lidocaine injection unnecessary; and NUMBY, a lidocaine and epinephrine patch teamed to a small electrode that delivers dermal anesthesia up to 10 millimeters deep in as little as 10 minutes. "All the kids love it because it's electronic," says Cantor. "We were a test site for it and we liked it and bought it."

What has evolved over the last decade, says Cantor, is having the appropriate anesthetic for every problem. "It's amazing how quickly things you never used to do become the norm, the standard of care."



Dr. Cantor with a young patient.

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LEADING BY EXAMPLE

That can only happen, however, in the right environment. Long before the advent of a children's hospital, Cantor says University Hospital's pediatric ED has functioned like a children's hospital ED, with specialized physicians and nursing support.

The department added a fifth board-certified pediatric emergency medicine physician in July, and since 2003, has had a dedicated pediatric emergency nursing staff as well.

"The majority of care is delivered by nurses and ancillary personnel, and when all they do is care for children and they are trained specifically for children, it's an ideal situation," says Cantor, who hopes to secure funding by the end of the year to add a child life specialist in pediatric emergency medicine.

The Pediatric Emergency Department also has a fellowship program, directed by Callahan, which accepts one three-year fellow annually. The fellowship is one of very few nationally offered outside a children's hospital or a major metropolitan city.

"It says a lot about the caliber of what we do here and the national recognition of that," says Cantor, who is himself quadruple boarded in pediatrics, emergency medicine, pediatric emergency medicine, and toxicology, and is a member of the American Board of

Pediatric Emergency Medicine. "We've been a hidden jewel for a long time."

The advent of the Children's Hospital at University Hospital will increase overall services for Central New York children, and added exposure for the peds ED. Already, it is the only pediatric emergency department in a 20-county area, treating children from infants to age 19 with ailments ranging from respiratory illnesses and fractures to major trauma. Cantor predicts the volume to increase by as many as 4,000 visits a year (the department currently sees averages about 20,000 annually), with the greater public awareness the Children's Hospital will bring.

Although the pediatric emergency department will remain on the first floor, the number of treatment rooms will increase from 12 to 16 or more by 2009, and the department will connect to the Children's Hospital by its own direct elevator.

Other than that, says Cantor, not much will change. "We've been at the forefront of our field for the last 10 years, providing the best emergency treatment possible to kids."

Treatment delivered as painlessly as possible. "We've taken this message to heart and our care is more humane and better for it," says Callahan.