

Major study of opiate use in children's hospitals provides simple steps to alleviate harm

October 6 2008

Hospitalized kids with painful ailments from broken bones to cancer are often dosed with strong, painkilling drugs known as opiates. The medications block pain, but they can have nasty side effects. Constipation, for instance, is one side effect that can cause discomfort and even extend a child's hospital stay.

"No parent wants their child in the hospital any longer than necessary," said Paul Sharek, MD, MPH, medical director for quality management and chief clinical patient safety officer at Lucile Packard Children's Hospital at Stanford. Sharek is the primary author of a new study, detailing the first large multicenter trial in children to show a decrease in harm from pain medications. It shows how simple changes to hospital procedures can sharply reduce the harm children suffer from opiates. The study, a yearlong collaboration between 14 U.S. children's hospitals, documented a 67 percent drop in harmful events caused by the pain relievers when these procedures were implemented.

"Our collaborative aim was to decrease adverse drug event rates by 50 percent," Sharek said. "We far exceeded that, which was very exciting."

The findings will appear in the October issue of *Pediatrics*. The study was organized by the Child Health Corporation of America, a business alliance of 44 North American children's hospitals. Packard Children's Hospital participated in the study, and Sharek, who is also an assistant

professor of pediatrics at the Stanford University School of Medicine, led the analysis of its results.

The researchers focused on opiates pain-relieving drugs in the morphine family because they're widely used and harm young patients more often than other drugs. Forty percent of patients at children's hospitals across the U.S. receive opiates. The vast majority of harmful incidents from the drugs, such as constipation and skin itching, are relatively minor. But neither families nor doctors want such problems adding to kids' days in hospital. In addition, rare instances of serious harm from opiates, such as a decreased urge to breathe, provide even greater motivation for hospitals to give opiates safely.

For instance, hospital teams followed standard protocols for weaning patients off long-term doses of opiates. They reduced prescription overrides in which nurses gave pain medications to children before double-checking with a pharmacist. And they worked hard to ensure that all caregivers had up-to-date drug lists when patients were admitted to hospital, transferred to new wards and sent home. The study physicians also routinely added medications to prevent constipation.

"Our focus was not only on errors, but also on harm to patients," said Frank Federico, the study's senior author, who is a pharmacist and medication safety expert with the Institute for Healthcare Improvement in Cambridge, Mass. Patients can be harmed by correctly dosed medications, but in the past that hasn't always been considered a problem. For example, many health-care providers may view constipation as simply "the cost of doing business" when opiates are given to children, Federico said. In this study, physicians instead headed off constipation by starting patients on laxatives and stool softeners as soon as they began opiate prescriptions.

The research team checked its progress with quarterly reviews of patient

charts at each hospital. In chart reviews, investigators looked for specific clues that a patient had been harmed by opiates. If they found a clue such as a prescription for naloxone, a drug given to reverse the effects of opiates they read the chart more thoroughly for signs the patient was harmed.

The researchers' efforts began paying off a few months after changes were instituted. Problems associated with opiates dropped, as the new practices spread through each hospital. In total, the team estimated 14,594 harmful events were averted in participating hospitals during the one-year study. The changes also saved hospitals money, since harmful events can be costly to resolve and often result in extended hospital stays.

The collaborative design was an important factor in the study's success, said study co-author Richard McClead, MD, medical director for quality improvement services at Nationwide Children's Hospital in Columbus, Ohio, which is also a member of CHCA. And similar collaborative efforts could be used to tackle other problems in hospital operations, he added. "This shows we can do it," McClead said.

Source: Stanford University

Citation: Major study of opiate use in children's hospitals provides simple steps to alleviate harm (2008, October 6) retrieved 24 April 2024 from <https://medicalxpress.com/news/2008-10-major-opiate-children-hospitals-simple.html>

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