

# Multiple Errors in Care Befall Hospitalized Children

BY BETSY BATES  
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DENVER — Harmful adverse events occur in hospitalized infants and children at alarming rates, according to a series of studies that go beyond incident reports to identify errors from patient charts.

When Dr. Paul Sharek and his associates used “trigger tools” to examine data in pediatric patient charts, they found the following:

▶ There were 11.1 adverse drug events per 100 admissions to 12 children’s hospitals in the United States (*Pediatrics* 2008;121:e927-35).

▶ There were 74 adverse drug and nondrug events per 100 admissions to North American neonatal intensive care units, 56% of which were deemed preventable (*Pediatrics* 2006;118:1332-40).

▶ There were 1,488 errors in 734 patients admitted to pediatric intensive care units, averaging two harmful events per patient (in press).

“Basically, 1 out of every 4 days [of hospitalization], a child gets hurt,” Dr. Sharek said at a meeting on pediatric hospital medicine sponsored by the Society of Hospital Medicine, the Academic Pediatric Association, and the American Academy of Pediatrics.

“I thought this was earth-shattering news,” said Dr. Sharek of data collected for three studies of inpatient safety in pediatrics.

Historically, most studies of safety in pediatric inpatient care were based largely on incident reports, most often focusing on medication errors.

While Dr. Sharek said that such errors are estimated to

result in more than 4,000 deaths and cost more than \$1 billion a year, these officially documented mistakes barely “scratch the surface” of harmful events.

“The tip of the iceberg [analogy] is really relevant here,” said Dr. Sharek, medical director of quality management and chief clinical patient safety officer at Lucile Packard Children’s Hospital of Stanford University in Palo Alto, Calif.

In looking at drug errors alone, the new methodology captured a health care reliability rate of 101 in properly delivering medications to hospitalized children. This rate equates to 1-2 failures out of 10 opportunities, a proportion considered to be “chaos” in industrial psychology studies.

Ten years into industrywide efforts to reduce hospital errors by focusing on “top offender” medical mistakes, “we probably haven’t done squat,” said Dr. Sharek.

That’s because targeting only high-end errors—an approach he likened to “putting out fires”—misses the critical day-to-day mistakes that cripple an institution’s overall safety profile and compromise patient care.

Admittedly, not all errors are life threatening, but a shift in focus to overall systems that preclude mistakes will undoubtedly save many lives and millions of dollars, he said.

“It is time for us to think about a new paradigm,” he asserted.

By drawing on lessons from reliability science used in industry, medical professionals can shift the way errors are identified, examined, and corrected in a systematic way.

For example, instead of blaming a 10-fold overdose on a “dumb resident who was up all night,” reliability science

encourages a broader look at conditions that allowed for the error and that leave open the possibility of the error being repeated.

“Look deeper ... at multiple system points set up to fail,” he said.

This examination might include an analysis of workforce responsibilities, work hours, communication, drug labeling, pharmacy dispensing, and checks and balances within the system.

Organizations with high rates of reliability have in common a preoccupation with failure, large and small.

“Avoid complacency,” he said. “You look everywhere for failure. You can’t sweep it under the rug.”

He cited as an example frequent mix-ups of stored mothers’ breast milk given to infants at his institution. “It used to be that the nurses would say, ‘What’s the big deal?’” when such an error occurred, because mother’s milk is frequently banked for use by other infants, anyway.

In fact, a system that accommodates errors is dysfunctional in a larger way, without standardized procedures in place to methodically prevent mistakes—be they in breast milk distribution or heparin administration.

Another way health care institutions can improve their safety margins is to incorporate a “stop the line” policy first introduced in factories, whereby any employee who sees an error is empowered to immediately identify it and ensure that it is corrected.

That means that a nurse or a surgical technician can put the brakes on “the world-class cardiothoracic surgeon who loves to suture chest tubes without gloves.”

Dr. Sharek reported no financial disclosures. ■

## CMS Proposes to Replace ICD-9 in 3 Years, but Others Protest

BY MARY ELLEN SCHNEIDER  
New York Bureau

Officials at the Centers for Medicare and Medicaid Services plan to replace the ICD-9-CM diagnosis and procedure code set with a significantly expanded set of codes—the ICD-10—by Oct. 1, 2011.

But physician groups are calling the agency’s plan rushed and unworkable and want the agency to reconsider its compliance date.

In addition to the requirements for using the ICD-10 code sets, CMS also is proposing to require entities covered under HIPAA to implement updated versions of electronic transmission standards—the Accredited Standards Committee X12 Version 5010 and the National Council for Prescription Drug Programs Version D.0. Both electronic standards have a compliance date of April 1, 2010. The X12 Version 5010 must be in place before the ICD-10 codes can be used, according to CMS.

The two proposed regulations were published in the Federal Register on Aug. 22. CMS will accept comments on the proposals until Oct. 21.

The switch to ICD-10 has been under consideration by the Department of Health and Human Services since 1997. Size and specificity are two of the biggest drawbacks of the ICD-9-CM code set, according to CMS. Because many of the ICD-9-CM chapters are full, CMS has begun to assign codes to unrelated chapters, so that, for example, cardiac procedures have been put in the eye chapter.

The ICD-9-CM also fails to provide ad-

equated clinical details, according to CMS. For example, the ICD-9-CM has a single procedure code that describes endovascular repair or occlusion of the head and neck vessels. But the code leaves out details such as a description of the artery or vein on which the repair was performed, the precise nature of the repair, or whether it was a percutaneous procedure or was transluminal with a catheter.

“Because of the new and changing medical advancements during the past 20-plus years, the functionality of the ICD-9-CM code set has been exhausted,” CMS officials wrote in the proposed regulation. “This code set is no longer able to respond to additional classification specificity, newly identified disease entities, and other advances.”

CMS also is urging a switch to the ICD-10 code sets in an effort to keep in step with other countries. As of October 2002, 99 countries had adopted ICD-10 or a clinical modification for coding and reporting morbidity data. And CMS contends that because it continues to use ICD-9-CM it has problems identifying emerging recent global health threats such as anthrax, Severe Acute Respiratory Syndrome (SARS), and monkeypox.

Under the proposal, physicians, hospitals, health plans, and other covered health care entities would be required to use the ICD-10-CM for reporting diagnoses and the ICD-10-PCS for reporting procedures.

The ICD-10 code sets offer significantly more codes, about 155,000 across the two sets, compared with about 17,000 for diagnosis and procedure codes within the ICD-9-CM.

In addition to size, the ICD-10 code sets also provide greater specificity, such as being able to reflect the side of the body that is related to the diagnosis or procedure. The more detailed information available through the ICD-10 codes also will aid in the implementation of electronic health records and transmission of data for biosurveillance or pay-for-performance programs, according to CMS.

But physician groups say CMS is asking physicians and other health care providers to do too much too fast.

The American Medical Association balked at the idea of implementation of both the updated X12 Version 5010 electronic transaction standard and the ICD-10 coding system in just 3 years. The X12 Version 5010 standard should first be pilot tested before physicians and others are asked to implement it, AMA said.

“This is a massive administrative undertaking for physicians and must be implemented in a time frame that allows for physician education, software vendor updates, coder training, and testing with payers—steps that cannot be rushed and are needed for a smooth transition,” Dr. Joseph Heyman, AMA board chair, said in a statement.

**Physician groups are calling the agency’s plans rushed and unworkable and want the agency to reconsider its compliance date for replacing the ICD-9 codes.**

The Medical Group Management Association also objected. While MGMA supports the switch to the ICD-10 code sets, they said that 3 years is not enough time for the industry to implement the new system.

Instead of a simultaneous implementation of the X12 Version 5010 standard and the ICD-10 code sets, MGMA is asking CMS to wait at least 3 years after the switch to X12 Version 5010 before implementing the ICD-10.

The switch to ICD-10 needs to be done separately because it will require significant changes from medical groups, according to MGMA. Recent MGMA research indicates that most medical practices will have to purchase software upgrades for their practice management systems or buy all new software in order to implement the transition to ICD-10.

“Moving to these new code sets has the potential to be the most complex change for the U.S. health care system in decades,” Dr. William F. Jessee, president and CEO of MGMA, said in a statement.

Officials at the American College of Physicians were still analyzing the CMS proposal at press time, but said they continue to have concerns about the switch to ICD-10. In a letter to CMS in January 2007, ACP said it opposes the change to ICD-10 for outpatient diagnosis coding and that such a switch would be expensive and time consuming for physicians, especially those in small practices. For some practices, the adoption of ICD-10 would require purchasing a completely new practice management system, which could cost anywhere from \$5,000 to \$30,000. ■