

Hospitalized kids at risk for drug errors

Errors involving medication for hospitalized children are relatively common, and further efforts are needed to reduce them, according to an article in the *Journal of the American Medical Association (JAMA)*.

Lead researcher Rainu Kaushal, M.D., MPH, of Children's Hospital, Boston, and colleagues, studied data from 1,120 patients admitted to two urban teaching hospitals during six weeks in April and May of 1999.

The authors assessed the rates of medication errors, adverse drug events (ADEs), and potential ADEs, compared pediatric rates with previously reported adult rates, analyzed the major types of errors, and evaluated the potential impact of prevention strategies.

"We reviewed 10,778 medication orders and found 616 medication errors (5.7%), 115 potential ADEs (1.1%), and 26 ADEs (0.24%)," the authors wrote. "Of the 26 ADEs, 5 (19%) were preventable.

"While the preventable ADE rate was similar to that of a previous adult hospital study, the potential ADE rate was 3 times higher," they continued. "The rate of potential ADEs was significantly higher in neonates in the neonatal intensive care unit (NICU)."

The authors were not surprised that errors with potential for harm occurred most often in the youngest, most vulnerable patients cared for in the NICU.

"Neonatal weights change rapidly, making appropriate dosing particularly difficult," they stated. "Moreover, medication errors in critically ill neonates may have more serious consequences compared with relatively healthy neonates or older children because they have limited ability to buffer errors. Pharmacists also face special challenges with neonatal drugs because medications generally are not supplied in dosages suitable for neonates and must be diluted."

Physician reviewers concluded that more than 9 out of 10 potential ADEs might have been prevented. "Most potential ADEs occurred at the stage of drug ordering (79%) and involved incorrect dosing (34%), anti-infective drugs (28%), and intravenous medications (54%)," the authors wrote.

"Physician reviewers judged that computerized physician order entry could potentially have prevented 93%, and ward-based clinical pharmacists 94%, of potential ADEs."

Among the factors contributing to the errors were: complex and poorly designed systems, poor teamwork, and psychological and environmental stressors such as fatigue, anxiety, poor lighting, and noise, the researchers noted.

SOURCE: "Medication Errors and Adverse Drug Events in Pediatric Inpatients," *Journal of the American Medical Association (JAMA)* 2001;285:2114-2120.