

Communication Key to Cut Adverse Drug Events

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Children with multiple prescriptions and those whose parents lack English skills are at increased risk of having preventable adverse drug events, according to a Boston study.

"Further attention should be directed toward improved communication among health care providers and patients," said Dr. Stephanie O. Zandieh of Cornell University, New York, and the Komansky Center for Children's Health at New York-Presbyterian Hospital and associates.

In the prospective cohort of patients aged under 21 years who were seen from July 2002 to April 2003 at six urban and suburban practice sites in Boston, the primary outcome measure was the presence of a preventable adverse drug event (ADE), defined as actual harm from medication use (*J. Pediatr.* 2008;152:225-31).

Telephone surveys were used to gather information about race, ethnicity, reported annual family income, parental educa-

tional attainment, and parental self-reported English proficiency.

Independent variables, such as socioeconomic characteristics, poverty status, health care access, and medication regimen complexity, were determined by both telephone interviews and chart reviews.

The study logged more than 21,000 visits by 14,000 patients, 3,838 of whom received a prescription. Of those, the researchers studied 1,689 patients who both completed the 10-day survey and had a chart review; they received 2,155 prescriptions.

The study population was 49% white, 15% black, 21% Hispanic, and 14% "other"; because of rounding, these percentages do not add up to 100%, the investigators said. Two-thirds of Hispanics studied had limited English proficiency, compared with 16% of blacks, 3% of whites, and 23% of the "other" group of Native Americans, Asians, and Native Pacific Islanders.

"We found 283 ADEs occurred in 242 children (14% [of total 1,689 patients]), of

which 57 were preventable in 56 children and 226 were nonpreventable ADEs in 186 children," the investigators said, adding that about 10% of the children who had a preventable ADE also experienced a nonpreventable event.

None of the preventable ADEs was life threatening or fatal, 14% were serious, and 86% were considered significant. As an example of a serious ADE, the investigators described a 9-year-old child with streptococcal pharyngitis for whom amoxicillin was prescribed and whose parent did not complete the course of medicine, resulting in a return visit for persistent symptoms.

A total of 40 preventable ADEs (70%) occurred during parental administration of medication, and 15 (26%) occurred during ordering, they said, adding that the most common drugs involved in preventable ADEs were amoxicillin or amoxicillin-clavulanate (26%), inhaled steroids (11%), topical antifungals (7%), antihistamines (7%), and inhaled bronchodilators (5%).

In their univariate analysis of the data, the researchers found that children of par-

ents who said they spoke English poorly were twice as likely to have a preventable ADE, compared with children of parents who spoke English very well.

Similarly, children with less than a year of continuous care were more likely to have a preventable ADE than those with more continuity of care.

In multivariate analysis, only children with multiple prescriptions were at increased risk of having a preventable ADE.

Of no surprise was the finding that children with chronic illnesses had more medications prescribed, increasing their risk of a preventable adverse event, they wrote.

"We do not believe that these findings are caused by prescribing of less-familiar medications, because most drugs resulting in preventable ADEs were associated with common medications, such as antibiotics."

The more likely explanation, they added, is that providers did not sufficiently or accurately communicate medication administration information to parents, because most preventable ADEs occurred during home administration.

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