

Curbing Adverse Drug Events Starts With Provider

BY BRUCE K. DIXON
Chicago Bureau

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, Mass. 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 educational 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 who completed the 10-day survey and had a chart review; they received 2,155 prescriptions.

The study population was about 49% white, 15% black, 21% Hispanic, and 14% "other," the investigators said. Two-thirds of Hispanics 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 were life threatening or fatal, 14% were serious, and 86% were considered significant.

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 the univariate analysis of the data, the researchers found that children of parents 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. In multivariate analysis, children with chronic illnesses had more medica-

tions prescribed, increasing their risk of a preventable adverse event. Also, most preventable ADEs occurred during home administration, the researchers wrote.

The investigators derived two key policy implications from their findings. First, identification of parents' health literacy and appropriate tailoring of medication-related information are required. "It is imperative that parents clearly understand medication-related instructions and have their questions answered," Dr. Zandieh said. Secondly, for policy makers and providers who are interested in improving patient safety, better methods are needed to identify preventable ADEs. ■

Nontraditional Pets Pose Increased Risk of Infections

BY DOUG BRUNK
San Diego Bureau

LA JOLLA, CALIF. — Parrots, baby chicks, and turtles may be endearing to young children, but exposure to such exotic and nontraditional pets in the home and in public settings puts children at risk for serious infectious diseases.

"When a child visits your office and has [*Escherichia coli* 0157 or *Campylobacter* or *Salmonella*, a thorough history should be performed to determine whether or not he or she has been exposed to an animal in a public setting or whether [there are] some of these pets at home," Dr. Larry K. Pickering said at a meeting sponsored by Rady Children's Hospital and the American Academy of Pediatrics.

In 2007, about 63% of households in the United States contained one or more pets. Of these, 3% contained exotic or nontraditional pets. "In 2005, approximately 88,000 mammals were imported legally into the United States, including 29 species of rodents," added Dr. Pickering, executive secretary of the Advisory Committee on Immunization Practices at the Centers for Disease Control and Prevention, Atlanta. "Exposure to parrots, parakeets, and cockatiels can lead to *Chlamydia psittaci*, an intracellular bacterial pathogen that causes acute febrile respiratory tract illness. In the United States, there were 12-19 cases per year reported annually from 2002 to 2006, "but the number of cases is probably higher," Dr. Pickering said. If you see a child or an adult with atypical pneumonia, ask if there is a bird in the home.

Contact with baby poultry such as chicks, duckling, goslings, and turkeys increases the risk of developing salmonellosis. Children, the elderly, and immunocom-

promised people are especially vulnerable (MMWR 2007;56:273-6). *Salmonella* can be found in chicken feces, feathers, or their environment. Each year, 1.4 million *Salmonella* infections are reported "but we don't know what percent is due to contact with baby poultry," Dr. Pickering said.

Certain *Salmonella* serotypes are isolated from specific animals, so if a child presents with salmonellosis, the organism should be serotyped to determine if it is an unusual species. Salmonellosis from turtles, lizards, and other reptiles represents 6% of all *Salmonella* infections in the United States and 11% of infections in people less than 21 years of age (Clin. Infect. Dis. 2004;38:5353-61).

The chances of a child acquiring *Salmonella*, *E. coli* 0157 or some other infectious disease at a public zoo are "very low, because most zoos are well maintained," Dr. Pickering said. "Petting zoos can be a problem, as can animal swap meets where children can handle animals and there are no hand-washing facilities on site."

Diseases that have been reported associated with pet store animals include *Salmonella* in hamsters, mice, and rats; rabies in kittens; tularemia and lymphocytic choriomeningitis in hamsters; and monkeypox in prairie dogs. ■

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REFERENCES: 1. Del Rosso JQ, Bikowski J, Hawkes S, Sanglay L. Use of a palmitoylethanolamide-containing non-steroidal cream for the treatment of atopic dermatitis: impact on the duration of and time between flares. Presented at: 2006 Meeting of the American Academy of Dermatology; July 2006; San Diego, Calif. Poster 505. 2. Data on file. [TTF clinical results and protocol], August C. Stiefel Research Institute, Inc.

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