

Adverse drug events: a large burden in pediatric care

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(PhysOrg.com) -- An 11year national analysis at Children's Hospital Boston shows that side effects or accidental overdoses of medications are a common complication of outpatient care in children, generating more than half a million additional visits per year, particularly in children age 4 and younger. Findings are reported in the October issue of *Pediatrics*.

While many studies have documented adverse drug events, or ADEs, in adults, information in [children](#) has been limited, despite the fact that drugs are prescribed to children in almost 70 percent of outpatient visits (1). According to the American Academy of Pediatrics, 75 percent of drugs given to children have not undergone pediatric testing (2).

The researchers, led by Florence Bourgeois, MD, MPH, of Children's Division of [Emergency Medicine](#), analyzed data from the National Center for Health Statistics on outpatient visits throughout the United States. Focusing on children up to age 18, they tallied an average of 585,922 visits per year for ADEs between 1995 and 2005. Most of these visits were to outpatient clinics, but 22 percent were to emergency rooms.

The authors suggest that clinicians need to be aware of potential adverse effects and provide appropriate anticipatory guidance to parents, especially when children are given a medication for the first time. "We found that there are as many as 13 outpatient visits for adverse drug events per 1,000 children, indicating that they are a common

complication of pediatric care," says Bourgeois.

Children 4 years and younger made the most visits (43 percent), followed by children 15 to 18 years old (23 percent). The most frequent [side effects](#) were skin-related or gastrointestinal, present in 45 and 16.5 percent of children, respectively. 52 percent of the children had symptoms suggesting an allergic reaction.

Antimicrobials (such as [penicillin](#)) were the most frequently implicated drugs, accounting for 27.5 percent of visits overall, and as many as 40 percent of visits among children 0-4 years old. They were followed by neurologic/psychotropic medications (6.5 percent) and hormones (6 percent). The last two categories accounted for the most ADE visits among older children, likely reflecting the increase in medication therapy for emotional and behavioral disorders during the adolescent years, and prescriptions of contraceptives for teenage girls.

Recent data from the National Center for Health Statistics and the Slone Survey indicate that as many as 56 percent of children have taken at least one medication during the preceding week, with 26 percent using two or more medications and more than 20 percent using a prescription drug.

"One approach to reducing adverse events is to ensure that clinicians have ready access to complete information on the adverse effects and comparative effectiveness of medications," says Bourgeois. "This information should derive from data on the real-world use of the drugs, not just from the package inserts."

To the authors' knowledge, this is the first study to comprehensively examine ADEs occurring in the outpatient setting. It was funded by an R01 Grant from the National Library of Medicine and a T32 Grant from the National Institute of Child Health and Human Development.

[More information:](#)

1. Cherry DK, Woodwell DA, Rechtsteiner EA. National Ambulatory Medical Care Survey: 2005 summary. Adv Data. Jun 29 2007(387):1-39.
2. American Academy of Pediatrics, 2007
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Provided by Children's Hospital Boston ([news](#) : [web](#))

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