

## PROFESSION

### Quantifying adverse drug events: Med mishaps send millions back for care

Reviewing drug lists and making sure patients understand how to take their medicines are two keys to preventing problems.

By KEVIN B. O'REILLY, amednews staff. Posted June 13, 2011.

Every year, adverse drug events send more adult patients to American physician offices and emergency departments than do pneumonia or strep throat.

The trips add up to an estimated 4.5 million annual outpatient visits related to medication problems, with seniors and patients taking more than six medications the most likely to show up in doctors' offices.

The findings -- the first published attempt to estimate the nationwide impact of adverse drug events in the ambulatory setting -- come after an April report by the Agency for Healthcare Research and Quality that said 1.9 million hospitalizations annually are due to medication side effects or errors. Nearly three-quarters of the 4.5 million adverse drug event-related visits were to physician offices, said the study, published online May 10 in *Health Services Research*. About 400,000 of these 4.5 million patients are subsequently hospitalized.

"It's scary, just to think about the number of patients who are coming in with adverse drug events -- and it could be the tip of the iceberg because there is a whole group of patients with problems who are not coming in," said Lee A. Lindquist, MD, MPH, a geriatrician at Northwestern Memorial Hospital in Chicago. She was not involved in the study.

"This shows we have to do a better job of looking at medications as the culprits of a lot of the medical problems that are coming in," she said.

In total, one-half of 1% of all ambulatory visits are related to adverse drug events, the study said. That may not seem like a lot, but the 4.5 million annual adult outpatient visits for medication problems exceed the numbers for conditions such as strep throat (4.4 million) and pneumonia (4.2 million), said Urmimala Sarkar, MD, MPH, lead author of the study.

"Those are things that we think of as common problems," said Dr. Sarkar, assistant professor of medicine in residence at the University of California, San Francisco School of Medicine's Division of General Internal Medicine. "We should think of this as a common problem too."

Patients 65 and older were more than twice as likely as middle-age patients and nearly three times likelier than patients between 25 and 44 to experience adverse drug events serious enough to send them to a doctor or an ED, the study said. After adjusting for age, gender, insurance status and other factors, patients taking six drugs or more had the highest odds of experiencing adverse drug events.

Dr. Sarkar and her colleagues analyzed data from the National Center for Health Statistics' National Ambulatory Medical Care Survey and the National Hospital and Ambulatory Medical Care Survey from 2005 to 2007 to generate an annualized estimate.

Physicians surveyed were asked if patient visits during a random week of the year were related to the adverse effect of medical or surgical care. Researchers then looked for ICD-9 codes related to adverse drug events associated with those patients to arrive at their estimate. Researchers did not have access to information about which medications were implicated.

#### Finding time for medication review

It is unclear how many of these adverse drug events could be prevented. A 2007 Institute of Medicine report estimated that 1.5 million patients are harmed each year by preventable medication errors, although that figure included injuries in the hospital and among outpatients.

Ensuring that patients understand their prescribed drugs and how to take them, and monitoring their medication lists for potential drug-drug or drug-disease interactions, are just two ways to prevent adverse drug events, experts say. The challenge for physicians is to do these things reliably when time and payments are tight, Dr. Sarkar said. Meanwhile, patients and their caregivers often struggle to track medications.

"The question ... how do we change the health care delivery system to promote safe medication use?" she said. "Let's stop putting the burden on the individual patient and the provider and take a larger perspective."

Health information technology may help by making it easier to track medications patients are on and alert physicians to counsel and monitor patients with complex drug regimens carefully, said Michael S. Wolf, PhD, MPH. He is

associate professor of medicine and learning sciences at Northwestern University Feinberg School of Medicine in Chicago.

Yet, Wolf said, part of the fix to the problem lies outside doctors' hands. "From some of the work we've done in health literacy research, we know that nearly half of patients misunderstand common instructions," he said.

The U.S. Pharmacopeial Convention in January proposed new standards to simplify prescription labeling that could become official in May 2012 and set the benchmark for state pharmacy boards.

The standards call for a larger type size, more white space, clearer instructions and critical information listed at the top of the label. The California Board of Pharmacy already has similar standards.

Given the frequency with which medications cause problems, especially for the elderly, physicians should make medication review a priority in the exam room, Dr. Lindquist said.

"Getting the medication reconciliation down early in the visit ... instead of in the middle of the discussion, can help your diagnosis," she said. "If you address it at the beginning, then you can focus on it."

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#### ADDITIONAL INFORMATION:

### Avoiding adverse drug events

There are some steps that physicians can take to lessen the chances that medications will harm their patients, experts say. Doctors should:

- Counsel patients on the name, dose, indication and potential side effects when prescribing new medications.
- For each new medicine, use the "teach-back" method, asking patients to repeat what they understand about the drug, how much to take and when, why they are taking it, and what its potential side effects are.
- Keep an accurate medication list for each patient, and ask patients about medications prescribed by other physicians, as well as any over-the-counter drugs or herbal supplements they take.
- Reconcile medications after a hospital stay.
- Routinely assess patients for medication side effects.
- Submit adverse events to the Institute for Safe Medication Practices' Medication Errors Reporting Program. Also report serious problems to the Food and Drug Administration's MedWatch program.

Sources: Urmimala Sarkar, MD, MPH; Institute of Medicine

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#### WEBLINK

"Adverse Drug Events in U.S. Adult Ambulatory Medical Care," Health Services Research, published online May 10 ([www.ncbi.nlm.nih.gov/pubmed/21554271](http://www.ncbi.nlm.nih.gov/pubmed/21554271))

"Medication-Related Adverse Outcomes in U.S. Hospitals and Emergency Departments, 2008," Healthcare Cost and Utilization Project Statistical Brief #109, Agency for Healthcare Research and Quality, April ([www.hcup-us.ahrq.gov/reports/statbriefs/sb109.pdf](http://www.hcup-us.ahrq.gov/reports/statbriefs/sb109.pdf))

*Preventing Medication Errors*, Institute of Medicine, 2007 ([www.nap.edu/catalog.php?record\\_id=11623](http://www.nap.edu/catalog.php?record_id=11623))

Institute for Safe Medication Practices Medication Errors Reporting Program ([www.fda.gov/safety/medwatch/howtoreport/ucm085568.htm](http://www.fda.gov/safety/medwatch/howtoreport/ucm085568.htm))

Food and Drug Administration on how to report serious adverse drug events to the agency ([www.fda.gov/safety/medwatch/howtoreport/ucm085568.htm](http://www.fda.gov/safety/medwatch/howtoreport/ucm085568.htm))

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