

# Computerized Prescribing Could Reduce Errors

BY JOYCE FRIEDEN

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WASHINGTON — Computerized prescribing could greatly reduce the number of medical errors, especially when it comes to adverse drug events, David Bates, M.D., said at a consensus conference sponsored by the American Association of Clinical Endocrinologists.

In his own health care research at Brigham and Women's Hospital in Boston, where he is chief of general medicine, Dr. Bates and colleagues looked at more than 10,000 medication orders and found 530 errors, an average of 1.4 per hospital admission. Included among those were 35 potential adverse drug events and five preventable adverse drug events.

These data suggest that "about 1 in 100 medication errors results in an [adverse drug event], and 7 in 100 have the potential to do so," said Dr. Bates, who also serves as medical director of clinical and quality analysis at Partners HealthCare, in Boston.

When do the errors occur? In another study, Dr. Bates and colleagues found that about half of prescribing errors (49%) occur at the ordering stage, followed by 26% at the administration stage, 14% at the dispensing stage, and 11% at the transcribing stage.

Although transcribing accounted for the smallest percentage of errors, it can still be a big problem. Dr. Bates showed a sample of a handwritten prescription for Avandia

(rosiglitazone) that was mistakenly dispensed as Coumadin (warfarin). Such problems could be reduced or eliminated by the use of prescribing software, Dr. Bates said.

Ambulatory care settings are particularly ripe for prescribing errors, for several reasons, he said. "There is a long feedback loop, because often you don't hear from patients for a long time, and there are limited resources and redundancy," he said. In addition, "the average primary care encounter is 12 minutes, and the average time to the first interruption is 18 seconds. And 75% of patients leave with unanswered questions."

**With electronic prescribing, orders could be sent directly to pharmacies, and simple orders could be filled and dispensed from ATM-like machines.**

He cited a study by Tejal K. Gandhi, M.D., and colleagues showing that of 661 outpatients, 162 (25%) had adverse drug events, for a total of 181 events. Of those, 13% were serious and 11% were preventable (N. Engl. J. Med. 2003;348:1556-64).

Computerized prescribing can reduce errors in several ways, Dr. Bates said:

- ▶ Preventing errors from occurring in the first place.
- ▶ Catching them more quickly after they have occurred.
- ▶ Tracking the errors themselves.
- ▶ Providing feedback.

Dr. Bates called computerized prescribing the "single most powerful intervention for improving medication safety to date" and noted that errors could be reduced by more than 80% in some cases.

However, computerized prescribing will only work if the people using it follow all the rules, he continued. For example, at



A computerized prescribing system could warn physicians about drug interactions, drug allergies, and renal and geriatric dosing issues.

Brigham and Women's Hospital, researchers looked at more than 7,700 drug allergy alerts that were issued by the computer over a 3-month period in 2002 and found that the alerts were overridden 80% of the time. This may have been because only 6% of the alerts were triggered by an exact match between the drug ordered and a drug on the allergy list, Dr. Bates said.

In addition to drug allergies, a good computerized prescribing system should also alert physicians to drug-drug interactions, renal dosing issues, geriatric dosing issues, and dose ceilings, according to Dr. Bates. And it should have a way to alert physicians to potentially fatal interactions.

As to the future of computerized prescribing, Dr. Bates predicted a time when

all physician drug orders would be sent electronically to the pharmacy, where the pharmacist would review them. Simple orders might be filled and dispensed from an ATM-like machine, he added.

In addition to safety issues, there is another reason physicians might want to consider electronic prescribing: More payers are starting to demand it, Dr. Bates said.

As an example, he cited the Leapfrog Group, an organization of 160 companies seeking to improve health care quality for their employees.

Leapfrog already uses computerized prescribing as a quality measure in the inpatient setting and is planning to include outpatient computerized prescribing in a new set of measures due out in 2006, Dr. Bates said. ■

## Twenty Percent of Group Practices Turn To Paperless Health Records, Survey Shows

BY MARY ELLEN SCHNEIDER

Senior Writer

Most group practices are still using paper medical records and charts, according to preliminary results from a survey by the Medical Group Management Association.

"Paper is still the dominant mode of data collection," William F. Jessee, M.D., president and CEO of the Medical Group Management Association (MGMA) said in a webcast sponsored by the group.

But the scale is tipping, he said. About 20% of group practices report that they have an electronic health record of some kind. In addition, 8% have a dictation and transcription system for physician notes, combined with a document imaging management system for information received on paper.

"We're seeing a steady movement toward a paperless office," Dr. Jessee said.

The preliminary findings are based on responses from about 1,000 group practices that responded to an electronic ques-

tionnaire. The second stage of the survey will include mailing more than 16,000 printed questionnaires to a sample of group practices across the country. Complete results from the survey are expected this spring.

The survey is part of a contract from the Agency for Healthcare Research and Quality to MGMA's Center for Research and the University of Minnesota. The purpose of the contract is to provide a baseline that describes the use of new information technologies in medical groups.

Some of the challenges physicians face in making the transition to an electronic health record include knowing which product to buy, how to go about buying it, and how to implement the system, said David Brailer, M.D., national health information technology coordinator for the Department of Health and Human Services.

"Many groups stumble at every point along the way," Dr. Brailer said.

The private industry is working to cre-

ate a voluntary certification process for electronic health record products.

The American Health Information Management Association, the Healthcare Information and Management Systems Society, and the National Alliance for Health Information Technology have formed a nonprofit group—the Certification Commission for Healthcare Information Technology—that is planning to pilot a first-step certification process this summer.

Dr. Brailer also plans to explore interoperability issues. It is not enough to have every practice using an electronic health record, he said. They also have to be able to share information with other providers and institutions. HHS already has asked the industry for comments on how to design a mechanism that would allow physicians and other health care providers to share information across the health care system.

The agency is now reviewing the more than 500 responses on how to address the legal, economic, privacy, and technical concerns involved in creating an interoperable system, Dr. Brailer said. ■

## Online Health Information Eludes Seniors

Online health information has the potential to become an important resource for seniors "but it's not there yet," the Kaiser Family Foundation reported in a survey of 1,450 adults aged 50 and older.

Of the 583 respondents aged 65 and older, less than a third had ever gone online. But more than two-thirds of the next generation of seniors (50-64 years) has done so, indicating that online resources may soon play a much larger role among older Americans. Seniors whose annual household income is under \$20,000 a year are much less likely to have gone online (15%) as opposed to those with incomes of \$50,000 or more (65%).

"We know that the Internet can be a great health tool for seniors, but the majority are lower-income, less well-educated, and not online," said Drew Altman, the foundation's president and chief executive officer.

—Jennifer Silverman