

Study: E-prescribing cuts medication errors by seven-fold

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(PhysOrg.com) -- A Cornell medical school study finds that when doctors use electronic systems to write prescriptions, they make seven times fewer errors than when they scrawl by hand.

Medication errors are cut by seven-fold when doctors use an [electronic system](#) to write prescriptions, compared with scrawling prescriptions by hand, reports a new study by physician-scientists at Weill Cornell Medical College (WCMC), published online recently in the [Journal of General Internal Medicine](#).

"We found nearly two in five handwritten prescriptions in these community practices had errors," says Dr. Rainu Kaushal, the study's lead author, associate professor of pediatrics, medicine and public health and chief of the Division of Quality and Medical Informatics at WCMC. "Examples of the types of errors we found included incomplete directions and prescribing a medication but omitting the quantity. A small number of errors were more serious, such as prescribing incorrect dosages."

In the United States, there is a strong national push to encourage doctors to adopt e-prescribing in community-based practices, where an estimated 2.6 billion drugs are provided, prescribed or continued. Demonstrating improvements in safety with electronic prescribing is important to encourage its use, especially among community providers in solo and small group practices who mostly write prescriptions by hand, say the authors.

"Although most of the errors we found would not cause serious harm to patients, they could result in callbacks from pharmacies and loss of time for doctors, patients and pharmacists," says senior author Dr. Erika Abramson, assistant professor of pediatrics at WCMC. "On the plus side, we found that by writing prescriptions electronically, doctors can dramatically reduce these errors and therefore these inefficiencies."

To evaluate the effects of e-prescribing on medication safety, the researchers compared the number and severity of prescription errors between 15 [health care providers](#) who adopted e-prescribing and 15 who wrote prescriptions by hand at 12 community practices in the Hudson Valley region of New York.

The providers who adopted e-prescribing used a commercial, stand-alone system that provides dosing recommendations and checks for drug-allergy interactions, drug-drug interactions and duplicate drugs. All the practices that adopted e-prescribing received technical assistance from MedAllies, a health information technology service provider.

The study noted that, without extensive technical support, it is difficult for physician practices to achieve high rates of use of [electronic prescribing](#) and subsequent improvements in medication safety.

In total, the authors reviewed 3,684 paper-based prescriptions at the start of the study and 3,848 paper-based and electronic prescriptions written one year later. After one year, the percentage of errors dropped to 7 percent from 43 percent for the providers using the electronic system; for those writing [prescriptions](#) by hand, the percentage of errors increased slightly to 38 percent from 37 percent. Illegibility problems were completely eliminated by e-prescribing.

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