# Preventing physician medication mix-ups by reporting them

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The most frequent contributors to medication errors and adverse drug events in busy primary care practice offices are communication problems and lack of knowledge, according to a study of a prototype web-based medication error and adverse drug event reporting system.

Research on the use of MEADERS (Medication Error and Adverse Drug Event Reporting System), developed by investigators from the Regenstrief Institute and Indiana University School of Medicine led by Atif Zafar, M.D., appears in the November/December 2010 issue of the *Annals of Family Medicine*.

"We as physicians have a responsibility to make good decisions and to translate those decisions into safe and effective care. If we make a mistake we need to learn from the mistake and prevent it from reoccurring. We found this first generation reporting system to be popular with physicians and others in their offices, in spite of time pressures and a culture that does not support admitting mistakes," said William M. Tierney, M.D., president and CEO of the Regenstrief Institute. Dr. Tierney, who is also associate dean for clinical effectiveness research at the IU School of Medicine, is a co-developer of MEADERS and is the senior author of the Annals of Family Medicine study.

Urban, suburban and rural primary care practices in California, Connecticut, Oregon and Texas used MEADERS for 10 weeks, submitting 507 confidential event reports. The average time spent

reporting an event was a little over four minutes. Seventy percent of reports included medication errors only. Only two percent included both medication errors and adverse drug events.

"Our study has created what is now the largest database of medication errors in primary care," said Dr. Tierney. "It taught us many real world lessons that we are applying to the next generation reporting system currently under development. It also informed the practices of problems encountered by the doctors, practices and patients in the safe and effective use of drugs. Only by uncovering such problems can they be dealt with to prevent future events. MEADERS allowed a safe and secure means whereby the practices can report such problems."

Medications used for cardiovascular, central nervous system (including pain killers), endocrine diseases (mainly diabetes), and antibiotics were most often associated with the events reported in MEADERS.

Medication errors were equally divided among ordering medications, implementing prescription orders, errors by patients receiving the medications and documentation errors. There was no harm in two-thirds of the patients, documented harm in 11 percent, and nothing mentioned for 20 percent.

"We demonstrated that it is feasible to deploy a web-based medication event reporting system that clinicians and staff can understand and use in busy primary care practices. The real challenge is to demonstrate that event reporting is sustainable and that the data from event reporting can be used in an ongoing way to identify and to correct systems problems to reduce medication errors, adverse drug events, hospital admissions and patient harm," said Dr. Tierney.

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