Electronic prescribing systems boost efficiency, may lead to improved quality of care

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New research published in the May issue of the *Journal of the American College of Surgeons* indicates that the adoption of electronic prescribing systems may allow for greater efficiency at hospitals, which could result in long-term cost savings and improved quality of care.

In an attempt to reduce or eliminate potentially harmful medication errors, the Institute of Medicine has called for the use of electronic prescribing systems in all health care organizations by 2010. Mixed results have been reported about the benefits of these systems for patients, but experts believe that additional software enhancements and more user-friendly platforms will prompt more hospitals to adopt electronic prescribing systems.

"Although we found that the implementation of an electronic prescribing system at our institution had no substantial impact on the rate of medication errors, we did see considerable gains in efficiency for the ordering process," said William M. Stone, MD, FACS, of Mayo Clinic Arizona.

"Patient safety is not simply reducing the number of medication errors. The use of this system makes obtaining treatment more efficient, could significantly lower health care costs and may also improve patient outcomes. Further study will show if these are additional benefits."

Researchers reviewed the implementation of an electronic prescribing system in a multispecialty surgical practice using a prospective and retrospective analysis of patient-safety measures. Other outcomes measured included order implementation and entry times, personnel requirements and costs. Medication errors were recorded using a standard self-reporting technique at Mayo Clinic Hospital. Order-implementation times (time from initiation of the order to order being available to the health care provider) and order-entry times (time for the provider to find or access a patient record and write or enter the order) were obtained electronically or by hidden observation.

There were 1,836,239 orders placed during the implementation process. Six months before the implementation of the system, 15 medication errors were identified (0.22 percent), and no trends were noted in these errors. After implementation of the system, 10 errors (0.16 percent) occurred during the first six months. During the second six months, 13 errors (0.21 percent) were noted. Rates of medication errors were not statistically significantly different during any of these time periods. Researchers stated that a low baseline rate of errors before implementation of the system may have been a contributing factor to the lack of improvement.

Before the implementation of the electronic prescribing system, the time required for a provider to place an order was 41.2 minutes. With the system, this time decreased to only 27 seconds (p