Study: E-Prescribing Shown to Improve Outcomes and Save U.S. Healthcare System Billions of Dollars

ARLINGTON, VA -- (MARKET WIRE) -- 02/01/12 -- Surescripts, the nation’s e-prescription network, today announced study findings from de-identified data that link e-prescribing to a significant increase in first-fill medication adherence. Poor adherence to medication therapy is a large and costly problem in the U.S. The World Health Organization estimates that as many as 50 percent of patients do not adhere fully to their medication treatment(1), leading to 125,000 premature deaths and billions in preventable health care costs(2). The Surescripts analysis suggests that the increase in first-fill medication adherence combined with other e-prescribing benefits could, over the next 10 years, lead to between $140 billion and $240 billion in health care savings and improved health outcomes.

Earlier this year, Surescripts collaborated with pharmacies and pharmacy benefit managers on a study to quantify the benefits of e-prescribing. Reviewers analyzed de-identified data sets representing over 40 million prescription records -- comparing electronic prescriptions with paper, phoned- and faxed-prescriptions -- to measure the impact on first-fill medication adherence.*

The data showed a consistent 10 percent increase in patient first-fill medication adherence (i.e., new prescriptions that were picked up by the patient) among physicians who adopted e-prescribing technology when compared with physicians who did not use e-prescribing. Physicians who adopted e-prescribing used the technology to route up to 40 percent of their prescriptions electronically during the time of the study, and Surescripts estimates that first-fill medication adherence rates will continue to improve as e-prescribing adoption and usage increase.

"The Surescripts analysis is an important contribution to a growing body of literature on e-prescribing and on medication adherence," said William H. Shrank, MD, MSHS, of Harvard Medical School and medication adherence expert and researcher. "In a huge study, they have shown a clear link between e-prescribing and first fill medication adherence. This speaks to the potential of technology to improve the efficacy of drug therapy, which ideally should promote better health outcomes and reduce costs."

Study Examines E-Prescribing and Medication Adherence

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<tr>
<th>E-Prescribing Impact on First Fill Adherence Rates</th>
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<tr>
<td>Out of 100 Written Prescriptions</td>
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<td>De-identified data from 2008 - 2010; multiple data sources</td>
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<table>
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<th>E-Prescribing Physician</th>
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<td>Pre-adoption</td>
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Prescriptions written per month** 100.0 100.0 0.0%
Prescriptions that make it to the pharmacy 73.2 81.8 +11.7%
The Surescripts study suggests two key factors contribute to the increase in first-fill adherence. First, prior studies have found as high as 28 percent of paper prescriptions never make it to the pharmacy(3), a well known but difficult-to-address problem known as "prescription leakage." In contrast, when a physician elects to send a prescription electronically to the patient's choice of pharmacy, the prescription is immediately sent to the pharmacy. Second, the study validates previous findings that patient copay is highly associated with prescription abandonment rates(4), or the percent of prescriptions not picked up at the pharmacy. Surescripts' analysis confirms that the higher the copay, the more likely it is that the prescription will be abandoned by the patient. The "sticker shock" that occurs when a patient arrives at the pharmacy to pick up their prescription has been a chronic problem facing pharmacies and physicians, but can be addressed through the e-prescribing process.

"E-prescribing provides physicians with the patient's insurance and medication history information during a patient visit, which can lead to a more clinically appropriate prescriptions with a lower out-of-pocket cost for the patient," said Ken Majkowski, PharmD and vice president of strategy and innovation at Surescripts. "When the doctor e-prescribes, the patient is more likely to know that the prescription has a lower out of pocket cost. When you combine this with the fact that it will be electronically routed to the pharmacy -- which makes it more convenient for the patient and provides more information to the pharmacist -- you have a great opportunity to improve medication adherence."

Study Furthers Understanding of Prescription Abandonment Rates
Previous studies have found that e-prescriptions have higher abandonment rates than non e-prescriptions(5). The Surescripts study confirms this and adds context by demonstrating that e-prescriptions have higher abandonment rates in part because more prescriptions make it to the pharmacy.

"Paper prescriptions appeared -- at first glance -- to have a lower abandonment rate," said Majkowski. "But historically, the pharmacy could only measure those paper prescriptions that were brought into the pharmacy by the patient. When you consider all of the paper prescriptions that don't make it to the pharmacy, the true prescription abandonment rate for paper prescriptions is dramatically higher. Our study suggests that, compared to the true abandonment rate of paper prescriptions, e-prescriptions are actually abandoned at a far lower rate."

Findings Suggest E-Prescribing Will Help Improve Outcomes and Lower Health Care Costs
Today, poor adherence to medication therapy is a large and costly problem in the U.S. The World Health Organization estimates that as many as 50 percent of patients do not adhere fully to their medication treatment(6). This non-adherence contributes to 125,000 premature deaths annually as well as to other patient safety concerns that cost the healthcare system an estimated $290 billion annually in the form of increased hospitalizations and costly complications(7).
A 2011 study found that every dollar spent on improving patient adherence to medication can result in three to ten dollars of savings from reduced downstream medical costs for certain diseases(8). Given health care policy makers' and industry leaders' objectives to reduce costs and improve the quality of care, improving medication adherence can be a key lever in achieving those goals.

The Surescripts study suggests that e-prescribing is already significantly contributing toward meeting the cost and quality of care objectives by improving first-fill medication adherence.

“There are many contributing factors to medication non-adherence -- social, economic, degree of health literacy, support system, and still others that we are still learning about,” said Majkowski. "E-prescribing is not a panacea and does not solve for all of these. However, it is evident from the data that e-prescribing is already positively impacting first fill medication adherence rates and should be considered a powerful tool in the healthcare system's efforts to address medication adherence and improve patient outcomes."

To view a downloadable graphic detailing the study results, go to www.surescripts.com/adherence.

* No patient identifiable data was used in the analysis. The study was conducted on a retrospective, longitudinal, pre-post basis comparing outcome metrics for electronic prescribing physicians (Test Group) vs. non-electronic prescribing physicians (Control Group). The study involved more than 50,000 active prescribers (representing Test and Control physicians) across 50 states using over 200 e-prescribing applications, four different pharmacy and PBM organizations, and de-identified data sets representing over 40 million prescription records. Data was analyzed over a three year period, from 2008 to 2010. To account for seasonal and macroeconomic influences on prescribing patterns, baseline data was collected for all Test (electronic prescribing) and Control (non-electronic prescribing) physicians prior to the time of adoption, and compared to results following adoption; the pre- and post-periods were determined by the time of e-prescribing adoption by the Test group physicians and a pseudo-adoption date randomly generated for each Control group physician. Criteria for inclusion in the Test Group included adoption of e-prescribing technology during the 2009 calendar year.

About Surescripts
The Surescripts network supports the most comprehensive ecosystem of healthcare organizations nationwide. Pharmacies, payers, pharmacy benefit managers, physicians, hospitals, health information exchanges and health technology firms rely on Surescripts to more easily and securely share health information. Guided by the principles of neutrality, transparency, physician and patient choice, open standards, collaboration and privacy, Surescripts operates the nation's largest health information network. By providing information for routine, recurring and emergency care, Surescripts is committed to saving lives, improving efficiency and reducing the cost of health care for all. For more information, go to www.surescripts.com and follow us at twitter.com/surescripts.


(2) Thinking Outside the Pillbox: A System-wide Approach to Improving Patient Medication Adherence for Chronic Disease. NEHI (August 2009).


(5) Shrank, ibid.

(7) Thinking Outside the Pillbox: A System-wide Approach to Improving Patient Medication Adherence for Chronic Disease. NEHI (August 2009).


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