

e-Prescribing

An Information Brief



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Maryland Health Care Commission

June 2008

Introduction

Technology creates efficiencies and opportunities in almost every industry, and health care is no exception. In recent years, advances in web technologies have enabled vendors to develop products that improve the prescribing process. Hand-held devices with user-friendly interfaces and wireless network technologies offer new approaches to the traditional way of prescribing medication. E-prescribing makes use of computer technology to simplify and improve the traditional paper-based prescribing process. Errors caused by miscommunication resulting from illegible handwriting, unclear instructions, unclear telephone or verbal orders, and other ambiguities can negatively impact on the safety and efficiency of the prescribing process. E-prescribing promotes best practices in an effort to avoid these dangerous occurrences.

The Center for Medicare and Medicaid Services' (CMS) final rule on *E-Prescribing and the Prescription Drug Program* discusses the potential of e-prescribing to improve patient care and safety by reducing adverse drug events (ADEs). The rule supports the view that e-prescribing has the potential to promote efficient and effective drug use by providing up-to-date information regarding drug therapies, and notes that, "... the improvements enabled by e-prescribing will occur through enhanced beneficiary education, health literacy and compliance programs; improved prescription drug-related quality and disease management efforts; and ongoing improvements in the information systems that are used to detect various kinds of prescribing errors, including duplicate prescriptions, drug-drug interactions, incorrect dosage calculations, and problems relating to coordination between pharmacies and health providers."¹

E-Prescribing Definition

The CMS e-prescribing final rule defined e-prescribing as "...the transmission, using electronic media, of prescription or prescription-related information, between a prescriber, dispenser, Pharmacy Benefit Manager (PBM), or health plan, either directly or through an intermediary, including an e-prescribing network. E-prescribing includes, but is not limited to, two-way transmissions between the point of care and the dispenser."² E-prescribing can also provide access to benefits, formulary information, and medication history. In addition, electronic claim and payment transactions are generated between pharmacies and PBMs or health plans. While there are no restrictions on the electronic transmission of Schedule I prescriptions in Maryland, federal regulations mandate that pharmacies maintain written prescriptions for Schedule II, III, and IV controlled substances for two years. It is anticipated that the federal government will soon be issuing a proposed rule to allow e-prescribing of controlled substances.

E-prescribing systems are described as having the following six graduated levels.³

1. Electronic drug reference only;

¹ Federal Register, Vol. 70, No. 214, Monday November 7, 2005 page 67586, 42 CFR Part 423 Medicare Program: E-Prescribing and the Prescription Drug Program; Final Rule

² Federal Register, Vol. 70, No. 214, Monday November 7, 2005 page 67571, 42 CFR Part 423 Medicare Program: E-Prescribing and the Prescription Drug Program; Final Rule.

³Executive Summary, *Electronic Prescribing: Toward Maximum Value and Rapid Adoption, Recommendations for Optimal Design and Implementation to Improve Care, Increase Efficiency and Reduce Costs in Ambulatory Care*, A Report of the *Electronic Prescribing Initiative* eHealth Initiative, April 14, 2004.

2. Stand-alone prescription writer with no medication history or supporting data;
3. As above but includes supporting data (allergies, demographics, formulary information);
4. Includes medication management to monitor patient medications;
5. Connects to other practices, pharmacies, PBMs, intermediaries and/or patients; and
6. Integrates with an electronic medical record system.

E-Prescribing Vendor Landscape

E-prescribing vendors offer stand-alone e-prescribing software that interfaces with hand-held devices or PCs, as well as applications that can integrate with an electronic health record (EHR) system. Some e-prescribing applications can interface with practice management systems; some vendors offer web-based applications that do not require installation or maintenance of software. E-prescribing vendors offer a range of features that include notification of possible drug interactions, and drug reference guides. Presently, more than 50 EHR systems offer interoperable electronic prescribing functionality.⁴ Any of these e-prescribing systems can provide value, but “. . . systems at the higher levels of sophistication (which may be associated with higher start-up cost and complexity) afford much greater opportunities for quality improvement, reduction in errors, and improved workflow efficiency. In general, value is derived by including more relevant information about the patient, and better communication among the stakeholders and data sources in the prescribing chain.”⁵ By comparison, low-end applications provide benefit, formulary, drug interaction and reference guide information, but usually do not transmit prescriptions electronically to pharmacies -- prescriptions are printed to paper or faxed. While national standards for a minimum level of e-prescribing functionality have not been established, the Certification Commission for Health Information Technology (CCHIT) has included medication management criteria in the EHR functionality and interoperability certification criteria.⁶

The E-Prescribing Process

Intermediaries facilitate the aggregation and electronic transmission of prescription information between the prescriber and the PBMs or health plans. The e-prescribing vendor acts as an intermediary between the prescriber and electronic health networks; the electronic health network acts as an intermediary between the e-prescribing vendor and the PBMs or health plans. The e-prescribing process involves a series of electronic requests and responses that are transmitted between the e-prescribing entities. The e-prescribing transaction flow is illustrated in Appendix A of this report.

The prescriber initiates the e-prescribing process by transmitting basic patient identification information to the e-prescribing vendor, which then forwards the request to an electronic health network, typically RxHub. RxHub was founded in 2001 by three PBMs – Advanced PCS (acquired by CVS Caremark), Express Scripts, and Medco Health Solutions. The RxHub

⁴ *Electronic Prescribing: Becoming Mainstream*, A Collaborative Report from The eHealth Initiative & the Center for Improving Medication Management, June 2008, p. 12.
available at: http://www.thecimm.org/press_061108.htm.

⁵ *Executive Summary, Electronic Prescribing: Toward Maximum Value and Rapid Adoption, Recommendations for Optimal Design and Implementation to Improve Care, Increase Efficiency and Reduce Costs in Ambulatory Care*, A Report of the *Electronic Prescribing Initiative* eHealth Initiative, April 14, 2004.

⁶ CCHIT is a voluntary, private-sector organization formed in July 2004 with a mission to accelerate the adoption of HIT by creating an efficient, credible and sustainable network and electronic health record (EHR) certification program. Information regarding EHR certification criteria is available on their website at: www.cchit.org.

National Patient Health Information Network is a secure link to more than 60 technology partners and the nation's leading pharmacy benefit managers, health insurance plans, Medicare Part D and Medicaid plan services. It provides patient-specific medication history, benefits, and formulary information for more than 200 million patients.⁷ When RxHub successfully matches the patient identification information to their benefits, formulary, and medication history information, they return this information to the e-prescribing vendor, which in turn transmits the information to the prescriber. The prescriber subsequently selects the appropriate drug and dosage. It is at this point that the prescriber may receive drug interaction/allergy alerts and choose to make changes to the prescription. Typically, the prescriber has the option of either printing the prescription to paper, faxing the paper prescription, e-faxing the prescription, or transmitting the prescription electronically to the pharmacy. If the prescription will be filled by a mail order pharmacy, the e-prescribing vendor receives the prescription and transmits it to RxHub, which forwards it to the PBM for fulfillment. If the prescription is to be filled by a retail pharmacy, the e-prescribing vendor transmits the prescription to SureScripts, an electronic health network.

SureScripts was founded in 2001 by The National Association of Chain Drug Stores and the National Community Pharmacists Association. The e-prescribing vendors are connected to SureScripts' Pharmacy Health Information Exchange (PHIE), which covers more than 95 percent of the nation's pharmacies.⁸ SureScripts receives the electronic prescription and transmits it to the designated retail pharmacy. Prescription information can be transmitted in a standard National Council for Prescription Drug Programs (NCPDP) electronic format, which is received electronically by the pharmacy directly into the pharmacy information system. Alternatively, the electronic prescription information can be sent as an e-Fax, whereby the pharmacy receives the prescription on their facsimile machine. SureScripts also provides patient medication history derived from data stored in community pharmacies' databases. The medication history information that SureScripts is able to provide includes prescriptions that were paid for out-of-pocket or by multiple health plans, which RxHub is not able to provide. In order to receive payment, the retail pharmacy transmits pharmacy claim information to an electronic health network, such as RelayHealth or Emdeon, which forwards the claim to the PBM or health care payer for payment.

Benefits of E-Prescribing

More than 3.52 billion prescriptions are written annually in the United States and prescription medications are used by about 59 percent of the under-65 population and approximately 80 percent of the over-65 population.⁹ Approximately 7 percent of prescriptions are prescribed electronically.¹⁰ Factors limiting the expansion of e-prescribing include the cost of the initial e-prescribing application, annual support and maintenance costs, the lack of reimbursement to offset these costs, and potential workflow disruptions. A study by the Medical Group Management Association indicates that pharmacy staffs and physician practices spend an average of \$19,444 a year making telephone calls related to the manual processing of

⁷ *Blueprint for E-Prescribing: A Detailed Plan of Action for Implementing E-Prescribing*, RxHub, May 2008.

⁸ *Electronic Prescribing: Building, Deploying and Using E-prescribing to Save Lives and Save Money*, The Center for Health Transformation, 2008, p. 8. available at: <http://www.healthtransformation.net/cs/CHTwhitepapers>.

⁹ *Electronic Prescribing: Becoming Mainstream*, A Collaborative Report from The eHealth Initiative & the Center for Improving Medication Management, June 2008, p. 16. available at: http://www.thecimm.org/press_061108.htm.

¹⁰ *National Progress Report on E-Prescribing*, SureScripts, December 2007, p.2.

prescription refills, and resolving formulary, dosage, and legibility.¹¹ Electronic prescribing has the potential to save practices time and costs by dramatically reducing the burden of returning phone calls and tracking down faxes to clarify prescription information and authorizing prescription renewals.¹² A study released in October 2007 by SureScripts, Walgreens, and IMS Health reported about an 11 percent increase in patients picking up a new medication when prescribers used e-prescribing versus relying on hand-delivered scripts.¹³ Medication adherence is enhanced for the patient by making formulary information available to the prescriber using e-prescribing.¹⁴

The findings from a newly released collaborative report issued by the eHealth Initiative and the Center for Improving Medication Management recommends that the industry support and encourage e-prescribing. "Given the increasing volume and the growing complexity of medications, the alarming rate of medication errors, the burden of callbacks and rework, and new research that supports the idea that e-prescribing can improve medication compliance, a small improvement in quality attributable to electronic prescribing can translate potentially into significant health care cost and safety benefits if broadly adopted."¹⁵

Recommendations

A. Require pharmacies to use intermediaries that are MHCC certified.

COMAR 10.25.07, *Electronic Health Network Certification* MHCC's certifies electronic health network that operate in Maryland. MHCC partners with the Electronic Health Network Accreditation Commission, a national accreditation organization, in assuring that networks meet industry best practice standards related to privacy and confidentiality, technical performance, business practices, physical and human resources, and security.

B. Increase communications to pharmacies/pharmacists on the requirements for e-prescribing.

Industry confusion regarding the appropriate use of e-prescribing often leads to unnecessary actions in the way of policy and or technology implementation. Building awareness is essential to managing expectations among pharmacists as it relates to electronic prescriptions.

¹¹ Analyzing the Cost of Administrative Complexity, Medical Group Management Association, September 2004. available at: <http://www.mgma.com/about/default.aspx?id=280>.

¹² *Electronic Prescribing: Becoming Mainstream*, A Collaborative Report from The eHealth Initiative & the Center for Improving Medication Management, June 2008, p. 17. available at: http://www.thecimm.org/press_061108.htm.

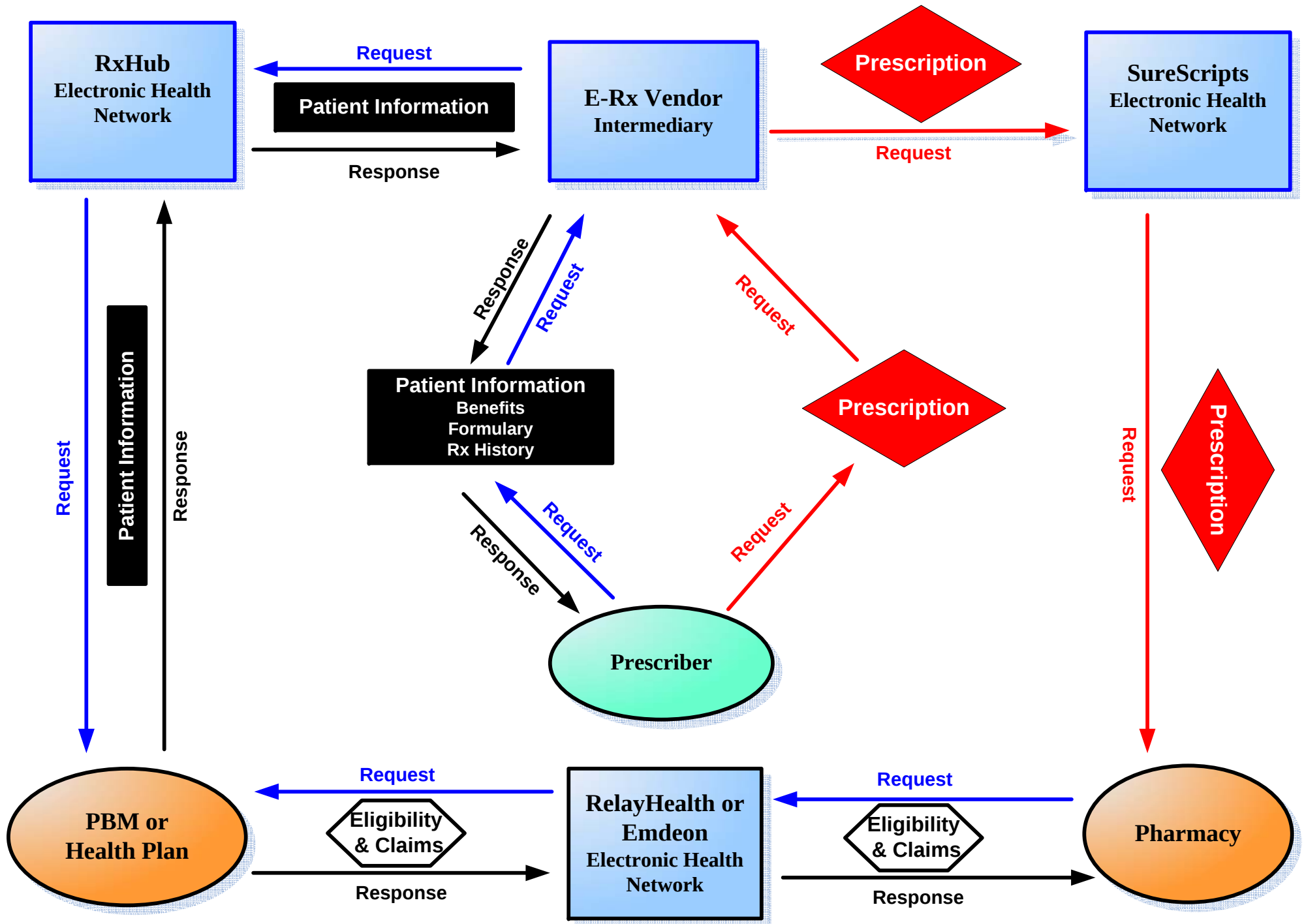
¹³ Ibid.

¹⁴ *Electronic Prescribing: Becoming Mainstream*, A Collaborative Report from The eHealth Initiative & the Center for Improving Medication Management, June 2008, p. 18. available at: http://www.thecimm.org/press_061108.htm.

¹⁵ *Electronic Prescribing: Becoming Mainstream*, A Collaborative Report from The eHealth Initiative & the Center for Improving Medication Management, June 2008, p. 19. available at: http://www.thecimm.org/press_061108.htm.

APPENDIX A
E-PRESCRIBING TRANSACTION FLOW

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