



## A Guide for Health Care Payers to Improve the Medication Management Process

*Value Creation, Market Feasibility,  
and Implementation Opportunities  
Through Technology Innovations*



A collaborative of providers, payors, employers and pharmacies

**JUNE • 2008**

eHI • 818 Connecticut Ave. N.W., Suite 500 • Washington, D.C. 20006  
[www.ehealthinitiative.org](http://www.ehealthinitiative.org)

CIMM • 5971 Kingstowne Village Parkway, Suite 200 • Alexandria, V.A. 22315  
[www.thecimm.org](http://www.thecimm.org)



## EXECUTIVE SUMMARY

- The health care system in the United States is under enormous pressure, and there is growing momentum for health care reform. Many leaders are now viewing health information technology, if implemented effectively, as an important tool to help reduce variations in quality and improve outcomes and efficiency. A key area of focus and opportunity is medication management.
- Approximately \$220 billion is spent on prescription drugs in the United States each year, with more than \$50 billion spent on chronic medications.<sup>i</sup> Patient adherence with prescribed medication regimens is less than 50%.<sup>ii</sup> About 130 million Americans have a chronic condition representing at least 50% of all prescriptions.<sup>iii</sup> Better medication management can lead to potential medical benefits and reduced costs of emergency room, inpatient hospital admissions, and physician practice visits.
- Health care payers, including health plans, large self-insured employers, the government, and others can play a very important role in encouraging e-prescribing to improve medication management.
- In considering an e-prescribing incentives program, payers may want to make a series of decisions about improving the medication management process. Those decisions should include:
  - A review of what the organization values most;
  - How process innovations can best generate value;
  - Which type of innovation makes the most sense, based on market dynamics and fit with their own organization mission or strategy; and
  - Which best practices could guide the implementation of innovations of interest.
- Payers should also consider a broader role in supporting electronic prescribing:
  - The cost, quality, and efficiency benefits of e-prescribing are very dependent on how well the technology is implemented. Successful implementation requires substantial workflow change. Many practices do not have access to sufficient support and resources to manage that change, especially smaller physician practices. In addition, different practice settings such as practice size, specialty mix, patient mix, location (rural, urban) have different needs as they relate to technology implementation.
  - Payer initiatives to encourage e-prescribing should include implementation assistance for physicians that takes into account the different needs of varying types of practices, as well as the engagement of pharmacies, technology solution providers, and other stakeholders in the process to help ensure that the entire end-to-end prescribing process works as smoothly as possible.



- Adopting electronic prescribing in physician practices is challenging, and payers can play a key role in smoothing the way in a given community. Payers can use their community knowledge and relationships to bring together the right stakeholders and bring economies of scale to bear on the process.
- Payers should collaborate with other payers to advance the shared goal of improving medication management. There may be an opportunity to create or leverage an existing forum for payers to discuss and share best practices and lessons learned regarding solutions to improve medication management. Payers could also collaborate on medication management and e-prescribing approaches.



## Table of Contents

<b>EXECUTIVE SUMMARY .....</b>	<b>2</b>
<b>INTRODUCTION.....</b>	<b>5</b>
<b>STEP ONE: What Do We Value? .....</b>	<b>6</b>
<b>STEP TWO: How Do Innovations to the Process Create Value?.....</b>	<b>7</b>
<b>STEP THREE: What Innovations Are a Good Fit Given Market and     Organization Dynamics?.....</b>	<b>10</b>
<b>STEP FOUR: What Best Practices Can Guide the Implementation of     Technology Innovations of Interest? .....</b>	<b>12</b>
<b>STEP FIVE: What Can Payers Do to Improve Medication Management?.....</b>	<b>22</b>
<b>ACKNOWLEDGEMENTS .....</b>	<b>25</b>



## INTRODUCTION

The health care system in the United States is under enormous pressure due to rising costs, fragmentation of care delivery, the aging of the population, the growing uninsured population, limited use and incompatibility of health information technology, conflicting financial incentives, declining reimbursements, health care personnel shortages, and more. There is growing momentum at the national, state, regional, and local levels to reform the delivery and financing of health care, including more prevalent and effective use of health information technology. A key area of focus and opportunity is medication management and compliance.

For example, \$220 billion is spent on prescription drugs in the United States each year, with more than \$50 billion spent on chronic medications.<sup>iv</sup> Patient adherence with prescribed medication regimens is less than 50%.<sup>v</sup> Approximately 130 million Americans have a chronic condition, representing at least 50% of all prescriptions.<sup>vi</sup> Twenty-five percent of prescriptions, amounting to \$46 billion annually, are prescribed for diabetes, asthma, hypertension, hyperlipidemia, congestive heart failure, and heart disease, all with potential medical benefits and reduced costs of emergency room visits, inpatient hospital admissions, and physician practice visits through better adherence with prescribed medications.<sup>vii</sup>

Health care payers, including health plans, large self-insured employers, the government, and others are increasingly concerned about health care costs, quality, and outcomes. They are embarking on and seeking innovative ways to better manage costs, and to improve quality and outcomes. This document is a practical guide for health care payers to begin to evaluate how they can improve the medication management process and achieve benefits for their organizations and for the people whose health care they purchase. In considering an e-prescribing incentives program, organizations may want to make a series of decisions about improving the process that include:

- A review of what the organization values most
- How process innovations can best generate value for them
- Which type of innovation makes the most sense, based on market dynamics and fit with their own organizational culture, objectives, and strategies
- What best practices could guide the implementation of innovations of interest
- What payers can do to improve the medication management process

What follows is a conceptual framework that could support such decision making for each step along the way.

## STEP ONE: WHAT DO WE VALUE?

Initiatives that create value typically impact one or more of three value categories for health care payers. These include: (1) improving an individual's empowerment and satisfaction; (2) improving health outcomes; and (3) improving efficiency and/or lowering costs.

In the worksheet below, each value category is expanded to highlight the specific areas that create value for many organizations. Your organization could benefit from reviewing these and discussing the ways each contributes to values that your organization deems important. Weighting or ranking the value categories or their components can help assess the importance of different technology innovations later in the process.

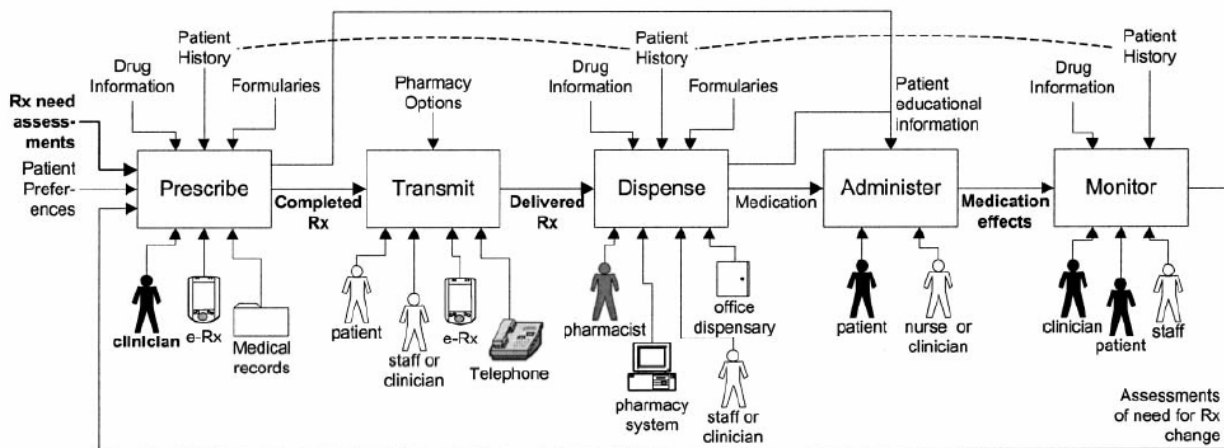
### Organization Value Weighting Worksheet

Value Category	Value Contributor	Weighting or Ranking
<b>Improves Individual Empowerment and Satisfaction</b>	Improves the patient-physician relationship	
	Improves the patient-pharmacist relationship	
	Improves an individual's sense of self-efficacy and intrinsic motivation relative to medication therapies	
	Lowers an individual's cost of medication, e.g., lower co-pays	
	Increases an individual's satisfaction with the health care experience, e.g., shorter wait times in the pharmacy	
<b>Improves Health Outcomes</b>	Improves clinical outcomes, e.g. lower BP, cholesterol, HgA1C	
	Improves patient safety, e.g. ADEs	
	Improves functional outcomes, e.g., absenteeism/presence	
	Improves medication adherence	
<b>Improves Efficiency and/or Lowers Costs</b>	Improves the efficiency of the care process	
	Increases availability of an individual's pharmacy benefit at the point of care	
	Decreases utilization of unnecessary or inappropriate care, e.g., prior authorization or step therapy	


## STEP TWO: HOW DO INNOVATIONS TO THE PROCESS CREATE VALUE?

### *The Medication Management Process*

One model of the medication management process is outlined by Doug Bell in his article, "A Conceptual Framework for Evaluating Outpatient Electronic Prescribing Systems Based on Their Functional Capabilities."<sup>viii</sup> In his diagram below, as described by Bell, "the major activities involved in medication management are shown as boxes. For each box, arrows on the left show the activity's inputs, those on the right show its outputs, those above show information that may influence the activity's performance, and those below show resources that the activity may occupy. In addition, the dashed lines indicate the potential unifying effects of system integration, making the same patient data available across activities. Black shading or bold lettering indicates an element that is mandatory for the particular activity. Gray shading indicates an element that is usually involved in the activity but is not mandatory. "e-Rx" is an abbreviation for electronic prescribing.



The model is generally comprehensive and is inclusive of most of the major "use cases" relevant to medication management that are addressed by technology innovations seeking to generate impact throughout the value chain. It models the creation of the initial prescription, its electronic transmission to a pharmacy and the dispensing of the medication. It also includes the relevant education of the patient about the condition and therapy and implies the activities associated with medication adherence, including persistence and compliance. The monitoring step implies the ideas associated with medication therapy management and also those of remote monitoring and reminders. The important role that medication history can play across the process is well highlighted. The diagram also contains a continuous feedback loop that implies patients refilling medications and the need for periodic prescriber renewal authorizations, although not specifically delineated.



*Technology Innovations that Improve the Medication Management Process*

Technology innovations that impact medication management are emerging across the process and involve virtually all relevant stakeholders. Physicians and other prescribers in their offices or located remotely use innovations either as stand-alone support solutions or as a part of more comprehensive offerings, such as practice management systems or electronic health record solutions for a variety of prescribing and medication management tasks. Health plans, pharmacy benefit managers and pharmacies are providing information about health benefits and about medication history that inform the prescribing activities. Pharmacies, as part of their medication and dispensing tasks, are using innovations to identify individuals who might benefit from additional education and counseling. Patients and their caregivers are getting increasingly involved through innovations that connect them interactively to their physicians, pharmacists, and health plans and may use innovative monitoring technologies as reminders to take a medication, report side effects, or ensure that adequate quantities are on hand.

The worksheet below identifies key functions of technology innovations in the major phases of the medication management process and indicates the category of the potential value to health care payers and administrators. Organizations may want to use this worksheet to assess which technology innovations are most likely to create value for their specific organizations.

The “Functions in Electronic Prescribing That Can Create Value” worksheet is on the next page.



## Functions in Electronic Prescribing That Can Create Value

Process Phase	Key Functions of Innovations	Description	Empowerment & Satisfaction	Health Outcomes	Efficiency & Cost
Prescribe	1 Patient identification	The prescription is linked to detailed patient demographic information including birth date, gender, zip code		X	X
	2 Current medication list based on history	The prescriber can have access to medication history across providers from PBM claims data, retail pharmacy transaction data, a health information exchange (HIE) initiative, or a combination of these	X	X	
	3 Medication selection	Medication can be selected from a list; options may be driven by diagnosis; accurate dosing; favorites lists		X	X
	4 Safety alerts, clinical decision support	Can alert the prescriber when a medication is selected that is contraindicated or has a significant precaution based on the patient's allergies, current medications, medical conditions, body size, and/or laboratory test results		X	
	5 Formulary and benefit information at the point of care	Can alert the prescriber when medication is selected that is contraindicated by the patient's pharmacy benefit, e.g., non-preferred, prior authorization, step therapy, higher co-pay	X		X
	6 Renewal authorizations	Can alert the prescriber that a refill authorization is required and allows for generation of the renewal	X		X
Transmit	7 Bi-directional electronic data interchange	Can communicate medication information among prescribers, dispensers and payers including: new scripts, renewal authorizations, change requests, pharmacy benefit information, medication history, counseling results, etc.	X	X	X
Dispense	8 Pharmacist assessment and counseling	Assessment tools can identify patients likely to become non-adherent and encourage pharmacist counseling; makes a personal medication profile available to the patient	X	X	
Administer	9 Patient education materials	Education materials can be made available about the condition, the therapy and potential side effects	X	X	
	10 Administration aids	Can provide graphical medication administration support for complex dosing schedules involving multiple medications	X	X	
	11 Collaborative medication management	Can connect physicians, other prescribers, pharmacists, health plan care coordinators and individual care managers to support collaboration for management of medication therapy	X	X	X
Monitor	12 Linkages to lab testing	Can remind prescribers and patients to obtain lab tests associated with monitoring certain medications	X	X	
	13 Medication adherence alerts	Can use medication history to alert prescribers, pharmacists and others that a patient is non-adherent	X	X	
	14 Patient outreach	Can query patients regarding their experience with therapy, e.g., side effects, via interactive voice, email or text messaging	X	X	
	15 Refill reminders	Can remind patients that medications need to be refilled	X	X	
	16 Remote adherence monitoring	Can alert the patient, caregiver or care monitor when administration of doses is late or missed.	X	X	



## **STEP THREE: WHAT INNOVATIONS ARE A GOOD FIT GIVEN MARKET AND ORGANIZATION DYNAMICS?**

The next step is to look at how the technology innovations are being brought to the market. The organization may want to assess which market segments are maturing and which ones are still in early adopter or pilot stages. For those of interest, a small example set of companies is provided in the table below. This listing does not imply endorsement of any kind; rather it is intended to serve as a list of helpful examples to facilitate further research and understanding.

Sometimes a particular market segment addresses multiple technology innovations. And sometimes a particular innovation is satisfied in different ways by different segments. For example, a number of innovations in the Prescribe category can be satisfied by e-prescribing, either as a stand-alone innovation or as part of an electronic health record (EHR) or practice management system. These solutions can also support patient education innovations in the Administer category.

The following market segments are included in the Market Segments, Companies, and Market Maturity Worksheet on the following page.

- Electronic prescribing stand-alone
- Electronic prescribing with an EHR
- Electronic prescribing with a practice management system
- Medication reconciliation
- Patient communications
- Personal health records and PHR platforms
- Pharmacist support solution
- Pharmacy information system
- Remote monitoring and smart dosing
- Transaction hub

## Market Segments, Companies and Market Maturity Worksheet\*

Process Phase	Key Functions of Innovations	Market Segments	Example Companies	Market Maturity**
Prescribe	1 Patient identification 2 Current medication list based on history 3 Medication selection 4 Safety alerts 5 Formulary alerts 6 Renewal authorizations	Stand-alone electronic prescribing applications	DrFirst, NEPSI, Prematics, RxNT, ZixCorp	Ready now
		Electronic health records (EHR) solutions with e-prescribing module	Allscripts, eClinicalWorks, Epic, GE, NextGen	Ready now
		Practice management solutions with e-prescribing	BCBS Alabama, LighthouseMD, LSS Data Systems	Ready now
Transmit	7 Bidirectional electronic data interchange	Transaction hubs	RxHub, SureScripts	Ready now
Dispense	8 Pharmacist assessment and counseling	Pharmacy information systems	CVS, Kerr Drug, Walgreens	Pilots
		Pharmacist support solutions	Mirixa, Outcomes, PharmMD	Pilots
Administer	9 Patient education materials 10 Administration aids	Electronic prescribing	DrFirst, , Prematics, RxNT, ZixCorp	Ready now
		EHR solutions	AllScripts, eClinicalWorks, Epic, GE, NextGen	Ready now
		Pharmacy information systems	CVS, Kerr Drug, Walgreens	Ready now
		Health content	ADAM, Healthwise, IxCenter	Ready now
	11 Collaborative medication management	Personal health records (PHRs) or PHR platforms	Active Health, CapMed, Dossia, Epic, Google, Microsoft, WebMD	Some Ready Now (PHRs), Some Pilots (platforms)
		Medication reconciliation	DrFirst, Health Care Systems, HealthVision, Siemens	Pilots
Monitor	12 Linkages to lab testing	EHR solutions	AllScripts, eClinicalWorks, Epic, GE, Medplus, NextGen	Pilots
	13 Medication adherence alerts	EHR and electronic prescribing solutions	Allscripts, DrFirst	Pilots
	14 Patient outreach	Patient communications	Eliza, SilverLink, Varolii	Pilots
	15 Refill reminders	Pharmacy information systems	CVS, Kerr Drug, Walgreens	Ready now
	16 Remote adherence monitoring	Remote monitoring; smart dosing	Informedix, Phillips, RxVitality	Pilots

\* This listing does not imply endorsement of any kind; it is intended to be a list of examples to facilitate further research.

\*\* The maturity index considers markets as either "Ready Now" or "Pilots." Markets that are "Ready Now" are ones in which there are a number of proven projects in operation and either at scale or ready for scale. Markets that are "Pilots" are ones in which there are one or more pilot or demonstration projects in operation, but are in earlier stages of commercialization.



## STEP FOUR: WHAT BEST PRACTICES CAN GUIDE THE IMPLEMENTATION OF TECHNOLOGY INNOVATIONS OF INTEREST?

Electronic prescribing projects have been successful for a number of employers, health plans, and other health care stakeholders. Benefits include the ability to select the most appropriate drug by presenting an individual's medication benefit and formulary tier to a prescriber in a simple way, avoidance of potential adverse drug events because of real-time access to patient medication history information, and streamlined communications on medication management issues between physician practices, pharmacies, payers and pharmacy benefits managers, and patients. Without e-prescribing, it is very difficult for providers to have an accurate and complete medication history on patients because patients see multiple providers. It is important to resolve this in order for clinicians to take the best advantage of clinical decision support, such as drug-drug interaction checking provided by the technology. It is important to note that e-prescribing can yield even greater benefits when it is included in a full EHR that allows increased use of clinical decision support tools.

The following are in-depth case studies from some of the leading initiatives in the United States. A combination of best practices, challenges, and lessons learned are described in each. A summary of potential barriers and how to overcome them is provided, as well as a list of incentive models that have been used.

### Massachusetts

In 2002, BlueCross BlueShield of Massachusetts (BCBSMA) and Tufts Health Plan independently began e-prescribing pilot programs with Zix Corporation (NASDAQ:ZIXI) using its PocketScript application. Recognizing that collaboration would minimize confusion in the marketplace and at the same time offer economies of scale, BCBSMA and Tufts Health Plan combined their efforts. Neighborhood Health Plan joined in 2004, and DrFirst joined as a second e-prescribing vendor in 2005. The eRx Collaborative's mission is to collaboratively promote and enable the use of electronic prescribing in Massachusetts in order to improve patient safety, health care affordability, quality, and delivery.

#### *Top six best practices*

- Collaborate with other health plans
  - Collaborating with other health plans in your market sends a powerful message that e-prescribing is important for all stakeholders and minimizes confusion among prescribers. The prescriber also receives more value from the technology by being able to access multiple plan formularies using the same devices.
- Provide subsidies and incentives
  - Initial start-up costs must be subsidized to encourage adoption.
  - Offer an incentive program to promote continued utilization, such as BCBSMA's incentive program for e-prescribing.



- Limit the number of vendors offered through your program
  - Avoid overwhelming the prescriber with too many choices, while still maintaining some degree of choice.
  - Help establish closer relationships with selected vendors and ease program administration and evaluation.
- Training and support
  - Ensure that technology is intuitive and prescriber training is hands-on and focused.
  - Involve office staff because they may have more time and will directly benefit from a streamlined prescription process. They can also act as trainers and champions of the technology.
  - Provide on-site support during rollout and recommend site champions where applicable.
- Monitor utilization
  - Ensure ongoing utilization monitoring and proactive outreach if issues are detected.
  - Reward and recognize prescribers for successful utilization.
  - Provide vendors with incentives for utilization.
- Foster relationships with e-prescribing community to work together to raise awareness of e-prescribing, remove barriers, and promote greater adoption.

### **Program structure**

Each eRx Collaborative organization has an executive-level Champion to provide strategic guidance and program oversight. A Program Management team manages the relationship among participating organizations and the daily activities involving the plans, vendors, and prescribers. The health plans also offer support from the following functions and business areas: Information Technology, Pharmacy Services, Prescriber Relations, Communications, Legal, and Corporate Affairs. This cross-functional structure and collaboration among multiple organizations has proven to be effective.

### **Adoption and utilization**

In addition to funding the start-up costs for e-prescribing technology, the eRx Collaborative takes a proactive approach to ensuring utilization. Each vendor actively monitors utilization and reaches out to inactive prescribers or practices through additional training or support.

BCBSMA also further supports e-prescribing adoption through its pay-for-performance programs where incentive money can be earned for meeting defined utilization thresholds.

### **Lessons learned**

Lessons learned by the eRx Collaborative that may be helpful for other market initiatives include:

- If you build it, they may not come – Initially the eRx Collaborative created forums in centralized locations for providers to learn about the technology and sign up for the free offer, but they were not successful due to low attendance. To increase effectiveness, technology vendors should go to the physician office directly in order to engage physicians and their staff.



- Free is not cheap enough – Initiatives should subsidize initial startup costs and provide additional incentives to promote utilization. Initiatives should also highlight savings opportunities, specifically with prescription renewal requests.
- Importance of training – It is critical to ensure that the technology is intuitive and that provider training is focused. Providing targeted office staff training, on-site support during rollout, and identifying site champions where applicable, can all support success.
- Perceived lack of value -- Cooperation between health plan competitors can send a powerful message. The eRx Collaborative promotes discussing e-prescribing benefits for all stakeholders within health care delivery to improve quality, delivery, and affordability.
- Technology Infrastructure – It is important to evaluate and confirm appropriate technological infrastructure to support e-prescribing prior to implementation. Initiatives should engage the practice's IT team early on in the deployment process, ensuring that technology is consistent with the organization's security standards and requirements, and that interoperability with existing or future technologies (e.g., EHRs) is attainable.
- Utilization -- Office staff support is fundamental to effective utilization. Initiatives should ensure utilization monitoring and reach out proactively when issues are detected. Rewarding and recognizing prescribers for successful utilization is critical, as is incentivizing vendors to focus on utilization.

## **Rhode Island**

Rhode Island had the second-highest penetration of e-prescribing in both 2006 and 2007. In 2007:

- Approximately 750,000 prescriptions, or 9% of eligible prescriptions, were transmitted electronically.
- There were almost 800 e-prescribers, representing 39% of office based physicians.
- About 179 (89%) of pharmacies were e-prescribing.<sup>ix</sup>
- Approximately 837,000 patient records related to medication history and eligibility were accessible through RxHub, representing 80% of total residents.
- Prescribers requested pharmacy eligibility, formulary and medication history records on 106,000 patients through RxHub and 30,849 (29%) were provided. Additionally, 23,100 medication history requests were made through SureScripts and 12,600 (55%) were provided.

Rhode Island is an example of a public-private partnership on e-prescribing. The Rhode Island Quality Institute (RIQI) worked with SureScripts to beta test e-prescribing in June 2003, with 40 prescribers and 80 pharmacies. The beta test was successful, with one participant, Anchor Medical, receiving 40-50 fewer phone calls per day, resulting in the elimination of a phone line dedicated to prescription calls, and saving 1.3 RN full-time equivalents per month. Since the beta test, several major medical groups have adopted e-prescribing.

### **Early phase success factors included:**

- Starting with a true value proposition



- Ensuring that major stakeholders were supportive before beginning the project
- Broad participation in design and implementation
- Built-in flexibility
- Significant support for the early adopters
- State regulators and insurers provided incentives, and other key stakeholders supported the initiative

#### **Early phase obstacles included:**

- Difficulty with pharmacy system conversion (training, work-flow redesign)
- Problems encountered with electronic refills when physicians practiced in multiple sites
- Retrofitting into the systems of the more advanced offices
- Early advantage opportunity for prescriber vendors resulted in only one vendor in Rhode Island at first
- Such a low percentage of prescriptions ran through the system that electronic prescriptions weren't part of pharmacies' normal work flows
- Difficulty getting the formularies on the system
- Workflow changes to electronically prescribe were significant—some physicians opted to wait for EHR implementation

The second phase of work on e-prescribing in Rhode Island involved forming an eRx Committee of RIQI, led by David Gifford, MD, director of the state's Department of Health. Governor Carcieri announced e-prescribing as part of his health care platform and set the goal for the majority of prescriptions to be electronically transmitted by the end of 2007. The RI Department of Health plays a role of providing statewide leadership, policy-setting and legislation, regulation, purchasing, and consumer education, including publicly reporting physicians who are actively e-prescribing on their Web site.

Recent initiatives of the eRx Committee and its members include such vendor communication as: requesting information from EHR vendors on how they make their e-prescribing available to providers; professional education, including an e-prescribing event featuring a panel of experienced e-prescribers and health information technology fairs; purchasing, such as BlueCross BlueShield of Rhode Island's increased primary care reimbursement rates conditioned upon health information technology adoption; and consumer education including patient education cards being offered at some clinics.<sup>x</sup>

In fall 2007, the eRx Committee surveyed high-volume prescribers that had not yet adopted e-prescribing. Almost half of the respondents said they believed e-prescribing would benefit them and they were interested in learning more. About 13% said they were planning to implement e-prescribing in the next six months. The biggest concerns among survey respondents were:

- Upfront costs and ongoing fees
- Software usability
- Potential negative impact on practice workflow
- Not enough vendor support or training for practice

#### **Lessons learned to date include:**

- Stakeholders influence each other.
  - eRx Committee provides a forum for generating ideas on how to implement key strategies.
  - Advocates are stronger in numbers, and in turn, influence vendors, providers, lawmakers.





- Providers influence each other: knowing an e-prescriber reduces many barriers to adoption.
- Persistence pays off for providers, pharmacies, consumers, and other stakeholders.
- EHRs may be the ultimate end state, but stand-alone solutions are a great way to introduce health information technology and can serve as a stepping-stone to EHR adoption.
- Prescriber workflow redesign and change management are crucial to long-term e-prescribing utilization and success.
- Education to manage consumer expectations is key.

## Michigan

Michigan is an example of an employer-driven initiative that evolved to become a multi-stakeholder collaborative called the Southeast Michigan E-Prescribing Initiative (SEMI). General Motors (GM) was the initial driver behind SEMI. GM spent \$4.6 billion on health care in 2007, providing coverage for 1 million employees, retirees, and their dependents. Every two seconds, GM pays for a prescription.

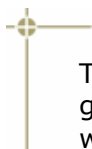
GM, Chrysler, and Ford are championing the initiative to improve the health and safety of their employees, retirees, and their families. The positive response from the leading health plans has enabled more than 3,000 physicians to implement e-prescribing solutions. Two leading pharmacy benefits managers (PBMs) are providing support and consulting services for the initiative. Medco is the PBM for GM and Ford, and processes mail-order prescriptions for Health Alliance Plan (HAP) and BlueCross BlueShield of Michigan. CVS/Caremark is the PBM for Chrysler. RxHub built the infrastructure required to support the secure, bidirectional exchange of patient-specific prescribing information between physicians and PBMs. SureScripts provides the infrastructure to support the secure, bidirectional exchange of prescription information between physician practices and community pharmacies. Henry Ford Medical Group and HAP were the leading early sites where e-prescribing was deployed fully. SEMI counties include Wayne, Oakland, Macomb, Washtenaw, St. Clair, Monroe, and Livingston.

Phase 1 of the program built the infrastructure, chose vendors, identified physician champions, and educated the community. Phase 2 encouraged adoption, conducted community outreach, and began training and implementation. Phase 3 involves supporting utilization, including understanding why some prescribers are using e-prescribing at a low rate, and working to overcome barriers to use.

SEMI used a different approach to vendor selection and incentives than most other market-based initiatives. The philosophy from the beginning was that the physician practice should have some "skin in the game," so the program did not cover the entire cost of implementing e-prescribing.

SEMI also conducted evaluations of e-prescribing vendors and initially provided a list of 12-15 solutions that were approved for physician practices to select from. The incentive payments were made directly to physicians with a \$500 upfront payment and another \$500 payment after six months of using the technology. This contrasts with most other programs where the sponsor contracts with the vendors for a certain number of licenses and pays the vendor rather than the physician. Over time, SEMI reduced the number of technology vendors that were covered under the program because the long list offered physician practices too many options and seemed to slow initial adoption.





The impact of SEMI has been significant. Nearly 7.5 million e-prescriptions have been generated since the launch of the program in February 2005. Nearly 3,000 prescribers are writing about 300,000 e-prescriptions per month. SEMI coalition partners have invested more than \$1 million in the program.

The SEMI results show that among a sample of 4.2 million e-prescriptions reviewed for analysis, a severe or moderate drug-drug interaction was sent to prescribers for 1.3 million prescriptions or 31%, resulting in more than 508,000 prescriptions being changed or canceled. Nearly 120,000 medication-allergy alerts were presented, with 49,000 or 40% being acted upon. When a formulary alert was presented, 38% of the time the physician changed the prescription to comply with formulary requirements.<sup>xi</sup>

In January 2008, SEMI commissioned a survey of 500 physician practices. Physicians and other practice staff responsible for writing prescriptions and managing patient medications provided their insights on using e-prescribing. Issues addressed included frequency of use, functionality, perceived benefits, satisfaction, implementation challenges, and system enhancements.

Overall, respondents' experiences with e-prescribing were very positive:


- Nine out of 10 respondents said e-prescribing met or exceeded expectations.
- More than 70% were very satisfied with e-prescribing and nearly 70% strongly agreed that e-prescribing improved quality of care.
- About 75% strongly agreed that e-prescribing improved patient safety. Nearly 65% reported at least one change in a prescription due to a safety alert.
- Approximately 70% were very satisfied with the ease of identifying drug-drug or drug-allergy interactions.
- More than 80% of prescriptions were transmitted electronically and more than 40% of prescribers say they only wrote e-prescriptions.
- More than 50% strongly agreed that e-prescribing saved the clinician's time and increased productivity, yet 16% strongly disagreed.
- More than 70% experienced a reduction in communications from a pharmacy; for 40% the reduction was substantial.
- More than 70% strongly agreed the patient's transaction at the pharmacy was faster and easier.
- About 25% strongly agreed e-prescribing will save patients money and reduce a practice's costs; however, 20% strongly disagreed.
- Two out of three respondents said they were more likely to prescribe a generic or plan-preferred drug with e-prescribing, which translates to significant savings for the patient and the health plan.<sup>xii</sup>

## Arizona

Arizona's statewide e-prescribing initiative, EazRx, is a five-year plan to encourage provider adoption of electronic prescribing, either through a stand-alone e-prescribing system or by e-prescribing within an EHR.

The goal of EazRx is to achieve nearly 100% of eligible prescriptions being e-prescribed by April 2013 (five years). Yearly goals include:

- April 2009 (6%)
- April 2010 (12%)
- April 2011 (24%)

- 
- April 2012 (48%)
  - April 2013 (96%)

The strategies to accelerate e-prescribing in Arizona include providing an umbrella coordination organization, the EazRx E-Prescribing Steering Committee; providing information and statistics in easy-to-access format; recognizing top e-prescribers; coordinating and publishing case studies to educate the provider community; working to identify incentives and apply for grants; improving patient safety; and encouraging patient involvement in the e-prescribing process. Arizona Health-e Connection has already posted e-prescribing resources on its Web site at [www.azhec.org/ePrescribingResources.jsp](http://www.azhec.org/ePrescribingResources.jsp), including defining e-prescribing; explaining the process and infrastructure; and providing return on investment information, an e-prescribing primer, white papers, fact sheets, and an e-prescribing continuing medical education program.

Governor Janet Napolitano issued an Executive Order<sup>xiii</sup> in early May 2008, to significantly increase patient safety through the use of e-prescribing in Arizona. "E-prescribing can reduce mistakes and the associated costs dramatically," said Governor Napolitano. "Arizona has been a leader in developing electronic health records and the means by which to exchange those records while still protecting personal privacy. This order will ensure that we stay on that cutting edge of health care technology."

The governor's order also urges Arizona's executive branch agencies to develop awareness and use of consumer tools that assist in medication safety. One example is the Med Form, available at [www.themedform.com](http://www.themedform.com). In 2005, the governor created Arizona's Health-e Connection to research, organize, and implement a statewide e-health information system. In 2007, Arizona was awarded a \$12 million federal grant to enhance and expand that work. Arizona Health-e Connection, along with executive branch agencies, will play a leading role in coordinating the promotion of e-prescription capabilities in Arizona.

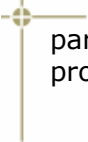
### **Other Market Initiatives**

There are many other market initiatives that should be reviewed to provide case studies and insight on effective methods for making e-prescribing mainstream practice. Although the following list is not intended to be comprehensive, some additional initiatives include:

- Anthem Blue Cross Blue Shield – Ohio, New Hampshire
- BlueCross BlueShield of Delaware
- BlueCross BlueShield of Illinois
- BlueCross BlueShield of Louisiana
- BlueCross BlueShield of North Carolina
- CareFirst Blue Cross Blue Shield
- ePrescribe Florida
- The Highmark eHealth Collaborative
- Horizon Blue Cross Blue Shield

### **Market and Practice Characteristics Impact Adoption**

E-prescribing is more common in urban areas and in large physician groups that have resources for professional information technology support for technology acquisition and deployment. E-prescribing is less common in rural areas and inner cities where there is a greater proportion of independent pharmacies, and in solo and small physician groups. Greater benefit is realized when physician groups are able to implement e-prescribing as



part of a full EHR because they can take best advantage of the clinical decision support tools provided by the technology, such as drug-drug interaction checking.

### **Examples of Incentive Models**

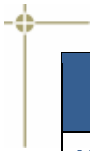
A number of different incentive models have been used for e-prescribing. The following are some examples. These examples are provided as a starting point for further examination, and we recommend that payers understand the benefits, drawbacks, and lessons learned in each approach.

- Free e-prescribing
  - Several years ago, Wellpoint invested approximately \$20 million to offer free personal computers or free e-prescribing software to thousands of physicians. Most physicians opted for the free personal computers. This may have been one of the initiatives that led to the common statement that “free isn’t cheap enough” when talking about e-prescribing incentive programs.
  - In early 2007, the National Electronic Prescribing Patient Safety Initiative (NEPSI) was launched by Allscripts, Dell, Microsoft, Cisco and a number of other companies, to make free e-prescribing available to every physician in America.
- Payers contract with e-prescribing vendors to provide upfront assistance
  - Several health plans have selected one or more e-prescribing technology providers and purchased a number of licenses to cover or subsidize e-prescribing hardware and software. The health plans give the technology providers a list of high prescribers to recruit to accept the technology. In this model, the health plan pays the vendor and the vendor recruits the practices and installs the software.
- Utilization incentives
  - Health plans and employers have provided financial incentives for prescribers to use e-prescribing. Approaches include a bonus after six months of using the technology at a certain threshold, or continuing to subsidize the cost of e-prescribing if prescribers continue to use it at a certain threshold. The case studies included in this guide offer more details.
- Pay-for-performance programs
  - By using e-prescribing, physicians may be eligible for pay-for-performance programs offered by a health plan or other payer. These programs recognize and reward eligible providers for meeting or exceeding certain quality, safety, and prescription management technology goals. The use of e-prescribing may help a physician earn points toward a pay-for-performance bonus.

## Key Lessons Learned

The following table summarizes key lessons learned from the case studies.

Barriers	Overcoming Barriers
<p><b>Getting prescribers to adopt electronic prescribing can be difficult (reasons include cost, workflow change required, etc.)</b></p>	<ul style="list-style-type: none"> <li>• Recognize the barriers that exist in transitioning to e-prescribing and work to address them</li> <li>• Cooperation between health plan competitors minimizes confusion and sends a powerful message about the importance of the initiative. It can also maximize incentives</li> <li>• To get prescribers interested, target office staff because:               <ul style="list-style-type: none"> <li>• E-prescribing can directly benefit them by reducing patient and pharmacy phone calls related to prescriptions</li> <li>• They can reinforce the value of e-prescribing to their prescribers and encourage them to consider it</li> </ul> </li> </ul>
<p><b>Upfront costs, lost productivity, and long-term costs</b></p>	<ul style="list-style-type: none"> <li>• Providing program subsidies is key to initial adoption</li> <li>• Additional incentives can further support adoption</li> <li>• Ensure prescribers can quickly realize the benefits of e-prescribing</li> </ul>
<p><b>Negative perception (based on previous negative technology experience, health plan affiliation, etc.)</b></p>	<ul style="list-style-type: none"> <li>• Need to demonstrate the value proposition for all stakeholders, and especially prescribers</li> <li>• Clearly illustrate why health plans are supportive of this type of technology, including that it is ultimately about patient safety, not just saving money</li> <li>• Emphasize health plan collaboration if applicable because it is a powerful message that Plans are coming together to support this</li> </ul>
<p><b>Technological infrastructure</b></p>	<ul style="list-style-type: none"> <li>• Conduct site surveys prior to deployment to ensure prescriber has the appropriate technological infrastructure to support e-prescribing</li> <li>• In large organizations:               <ul style="list-style-type: none"> <li>• Engage IT team early on in the deployment process and obtain support from senior management</li> <li>• Ensure technology is consistent with organization's security standards and requirements</li> </ul> </li> </ul>
<p><b>Change Management</b></p>	<ul style="list-style-type: none"> <li>• Identify an appropriate physician leader to serve as a "champion" or leader for the practice</li> <li>• Fully immerse entire office staff into the new process and make e-prescribing mandatory</li> <li>• Acknowledge that there will be growing pains, but that the greatest effectiveness is garnered by total immersion</li> <li>• Remove prescription pads from patient rooms</li> <li>• Physicians in different practice settings (e.g., size, specialty mix, patient mix, location) have different needs as they relate to technology deployment, workflow, and change management</li> <li>• Small practices, in particular, need additional support in managing change</li> </ul>



Barriers	Overcoming Barriers
<b>Waiting for <i>all-in-one</i> solution</b>	<ul style="list-style-type: none"><li>• Select solutions capable of integrating with current or future technology</li><li>• Highlight value proposition of e-prescribing and how it can be the gateway to an EHR</li></ul>
<b>Unsuccessful training</b>	<ul style="list-style-type: none"><li>• Provide staff and prescribers ample time to adapt to the new prescription workflow and to fully understand the functionality of e-prescribing applications so that they will achieve the maximum value</li><li>• Obtain prescriber commitment for initial training and continuing education</li><li>• Keep training focused</li><li>• Ensure there is on-site support and/or a site Champion to provide support and answer questions during rollout</li></ul>
<b>Not using the technology once implemented</b>	<ul style="list-style-type: none"><li>• Support from administration is fundamental</li><li>• Ensure utilization monitoring</li><li>• Proactive outreach when issues are detected</li><li>• Reward and recognize prescribers for successful utilization</li><li>• Align vendor contracts and payment structure to incent achievement of prescriber utilization</li></ul>



## STEP FIVE: WHAT CAN PAYERS DO TO IMPROVE MEDICATION MANAGEMENT?

Health care payers can play a very important role in encouraging e-prescribing to improve medication management. Leadership and decision makers of health care payers should become educated on medication management issues and how technology innovations such as e-prescribing can improve the process and its outcomes. This education should be an ongoing effort which may necessitate accessing or building a repository of research on e-prescribing, medication history, and medication adherence; implementing market initiatives; adopting innovations, including e-prescribing, EHRs, personal health records and the role of the individual in this process; removing barriers to utilization that prevent benefits of innovations from being realized; and providing access to results of pilot programs, proof of concepts, and demonstrations at the leading edge of innovations for improving medication management.

Payers should also consider:

- Initiatives to work directly with the individuals for whom they purchase health care on medication management opportunities and incentivize certain behaviors
- Initiatives to directly incentivize provider adoption of e-prescribing and other improvements in medication management
- Initiatives to bring together certain community stakeholders who can take action to support adoption and effective use of e-prescribing by providers
- Initiatives to collaborate with other payers to drive more widespread adoption in e-prescribing and other technology innovations to improve medication management

### *Initiatives to work directly with the individuals whose health care they purchase*

Payers can provide patients with information about medication adherence and how to work with their personal physicians and pharmacists to understand how medication therapy supports their health.

In support of medication management and adherence, payers can provide medication data from claims to help consumers establish a personal medication record that is confidential, secure, portable, and interoperable. Some health plans already provide a PHR to their members, and now such initiatives as Dossia, Microsoft HealthVault, and Google Health are offering additional ways to connect patients to their providers and their health data.

Payers already consider how to incentivize healthy behavior, and personal health records and PHR platforms offer an innovative tool that can be used in incentivizing medication management.

### *Initiatives to incentivize provider adoption of e-prescribing*

Large, self-insured employers should encourage business partner health plans and related PBMs to implement incentives for providers to use e-prescribing solutions either as a stand-alone application or as a part of a more comprehensive EHR solution. Important tactics for these initiatives include focusing on high-volume prescribers, targeting those practices already using an EHR but that have not yet implemented e-prescribing in a way fully connected with pharmacies, and offering an assortment of solutions with robust



functionality, such as payer/PBM and pharmacy connectivity, medication history, formulary and benefits information, and clinical and safety alerts.

Payer initiatives to incentivize provider adoption should keep in mind several things. The cost, quality, and efficiency benefits of e-prescribing are very dependent on how well the technology is implemented in practice. Successful implementation requires substantial workflow and change management. Many practices do not have access to sufficient support and resources to manage that change, especially smaller physician practices. Different practice types—based on size, specialty mix, patient mix, location (rural, urban)—also have different needs as they relate to technology implementation.

Thus, in addition to financial incentives for e-prescribing, physician practices need assistance with workflow change, care process redesign, and optimal use. These are not trivial tasks since the prescribing process is complex, and automating the process is equally complex. Payer initiatives to encourage e-prescribing should include implementation assistance for physicians that takes into account the different needs of different types of practices. Payers can also engage pharmacies, technology solution providers, and other stakeholders in the process to help ensure that the entire end-to-end prescribing process works as smoothly as possible.

Large, self-insured employers should encourage business partner health plans and related PBMs to implement incentives for physician practices and/or pharmacists who provide medication adherence services to employees and retirees. The focus should be on three areas:

1. Chronic conditions, such as hypertension, diabetes, hyperlipidemia, congestive heart failure, and others that are shown to have downstream cost savings associated with decreased emergency room visits and hospitalizations
2. Chronic conditions such as depression, migraine, lower back pain, asthma, and others that are shown to have downstream impacts on lowering absenteeism and increasing employee productivity
3. Programs that utilize technologies such as e-prescribing, EHRs, automated personal communications, and others that tend to lower the operational costs of such programs

*Initiatives to bring together certain community stakeholders who can take action to support adoption and effective use of e-prescribing by providers*

Adopting e-prescribing in physician practices is challenging, and payers can play a key role in smoothing the way in a given community. Payers can use their community knowledge and relationships to gather the right stakeholders and bring economies of scale to bear on the process. For example, in a community that has many physicians in the process of adopting e-prescribing, payers can bring together pharmacies to help prepare and coordinate the process, relieving each individual practice of having to do outreach to pharmacies.

Payers can also work with others to ensure prescribers have access to formulary and pharmacy benefits information from multiple payers in order to bring more value to physicians and their patients. As issues arise, be they technical, workflow, pharmacy, or PBM connectivity, payers can provide leadership and work collaboratively with all key stakeholders to overcome issues.

*Initiatives to collaborate with other payers to improve medication management*

Payers should collaborate with other payers to advance the shared goal of improving medication management. There may be an opportunity to create or leverage an existing forum for payers to discuss and share best practices and lessons learned on solutions to improve medication management. Payers could also collaborate on medication management and e-prescribing approaches such as:

- Using common incentive models
- Selecting or evaluating technology solution providers
- Maximizing availability of medication history, formulary, and eligibility information through e-prescribing
- Creating or supporting the creation of an implementation support resource center to aid physician practices with change management and other assistance
- Engaging individuals in the process through education and incentives





## ACKNOWLEDGEMENTS

The authors would like to thank the Steering Group, which contributed to this report (listed in the full report), and, in particular, Adrienne Cyrulik of BlueCross BlueShield of Massachusetts for sharing experiences and lessons learned from the eRx Collaborative.

Staff leadership and coordination was provided by Christine Bechtel, Vice President, the eHealth Initiative; and Kate Berry, Executive Director, the Center for Improving Medication Management. A number of staff at both organizations supported the development of this report as well, and their time and contributions are greatly appreciated.

### **About the eHealth Initiative**

The eHealth Initiative and its foundation are independent, nonprofit-affiliated organizations whose missions are the same: to drive improvements in the quality, safety, and efficiency of health care through information and information technology.

eHI engages multiple stakeholders, including clinicians, consumer and patient groups, employers, health plans, health care IT suppliers, hospitals and other providers, laboratories, pharmaceutical and medical device manufacturers, pharmacies, public health, and public sector agencies, as well as its growing coalition of more than 250 state, regional, and community-based collaboratives, to develop and drive the adoption of common principles, policies, and best practices for improving the quality, safety, and effectiveness of America's health care through information and information technology. Visit them at <http://www.ehealthinitiative.org>.

### **About the Center for Improving Medication Management**

The Center for Improving Medication Management serves as an industry resource by gathering and disseminating best and worst practices related to technology deployment for electronic medication management, and for leveraging that technology and connectivity to test innovative approaches to improve patient adherence with prescribed medications. The Center was founded by the American Academy of Family Physicians (AAFP), Humana Inc., Intel Corporation, the Medical Group Management Association (MGMA), and SureScripts. More information about The Center is available at <http://www.theCIMM.org>.

---

<sup>i</sup> National Association of Chain Drug Stores, 2005.

<sup>ii</sup> World Health Organization, 2003.

<sup>iii</sup> *Chronic illness and care-giving survey 2000*, Harris Interactive. NACDS, 2005

<sup>iv</sup> National Association of Chain Drug Stores, 2005.

<sup>v</sup> World Health Organization, 2003.

<sup>vi</sup> *Chronic illness and care-giving survey 2000*, Harris Interactive. NACDS, 2005.

<sup>vii</sup> *Medication Adherence Exchange Business Plan*. National Association of Chain Drug Stores, 2006.

<sup>viii</sup> Journal of the American Medical Informatics Association Volume 11, Number 1 Jan/Feb 2004.

<sup>ix</sup> *National Progress Report on E-Prescribing*, 2007. SureScripts.

<http://www.surescripts.com/pdf/National-Progress-Report-on-E-prescribing-1.pdf>.

---

<sup>x</sup> Adams, Laura and Kissam, Stephanie. *Public-Private Collaboration for E-Prescribing in Rhode Island*. Rhode Island Quality Institute and Rhode Island Department of Health. Presentation. September 2007.

<sup>xi</sup> *E-Prescribing Physician Assessment Study*.

<sup>xii</sup> *E-Prescribing Physician Assessment Study*.

<sup>xiii</sup> [http://www.azgovernor.gov/dms/upload/E0\\_2008\\_21\\_SDOC1676.pdf](http://www.azgovernor.gov/dms/upload/E0_2008_21_SDOC1676.pdf).