A National Web Conference on E-prescribing: Overcoming Barriers with Successful Implementation Techniques

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Moderator and Presenters Disclosures

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There are no financial, personal, or professional conflicts of interest to disclose for the speakers or myself.

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Advancing Excellence in Health Care
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Physician Practice and Pharmacy Experiences with Advanced E-prescribing Features

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Center for Studying Health System Change (HSC)

AHRQ National Web Conference on E-prescribing: Overcoming Barriers with Successful Implementation Techniques

September 5, 2012

AHRQ-Funded E-Prescribing Project

- HSC conducted a qualitative research project on physician practice and pharmacy experiences with advanced e-prescribing features

- Two published studies on:
  - Physician access to third-party data on medication histories, formularies and generic alternatives
  - Electronic prescription transmission

Study Motivation

- Use of “advanced” e-prescribing features has the potential to improve health care quality and reduce costs
- Limited research has shown barriers to successful implementation
- Important to understand challenges given that federal financial incentives are accelerating e-prescribing volume

Qualitative Research Design

- 114 telephone interviews conducted in 2010
- Core interviews with organizations actively using Surescripts:
  - 24 physician practices
  - 48 community pharmacies (½ local, ½ national)
  - 3 mail-order pharmacies
- Practices and community pharmacies clustered in 12 metropolitan areas

Study 1 – Research Questions

- How are e-prescribers using third-party information on patient medication history, formulary data and generic alternatives?
- What are the facilitators of and challenges to implementing these e-prescribing features?
- What are the implications for efforts to promote e-prescribing?

Med History/Formulary (1)

- Feature Use
  - Some practices didn't have access to these features or didn't implement them
  - Few practices used features routinely
- Data Availability and Usefulness
  - Insurers, state Medicaid may not participate
  - Patient match not always successful
  - Data incomplete, inaccurate, or limited
  - Physician attitudes about need for data varied

Med History/Formulary (2)

- System Design
  - Data sometimes displayed on another screen
    - Medication history not de-duplicated
  - Feature not always well-integrated into workflow
  - Importing data sometimes took multiple steps
    - If system “view only”, data had to be manually entered

Tools to Support Generic Prescribing

- Nearly all practices set system default to "substitution allowable"
- Most practices used tools to help physicians select generics without having to rely on recall
  - Practices created "favorite" lists with generics
  - Some systems provided generic alternatives if physician entered brand name

Physician Use of Data

- Physician perceptions of clinical value of using feature must outweigh time costs
- Physicians more likely to use features consistently:
  - the more they perceive the need for data
  - the more complete and accurate the data
  - the easier the system is to use

Overcoming Barriers (1)

- Increasing data value
  - More participating insurers and state Medicaid programs; more complete data
  - Potentially expanding access to Surescript's pharmacy fill data
  - Enhancing technical standards (RxNorm, real-time formulary data, prior authorizations)

Overcoming Barriers (2)

- Enhancing e-prescribing system design to make it easier to view and act on data
  - Usability studies, user feedback, development of best practices across vendors
- Targeted physician education/training on specific functionalities, especially after users have developed basic competency

Study 2 - Research Questions

- How are physician practices and pharmacies using electronic transmission features for new prescriptions and renewals?
- How does e-prescribing affect pharmacy processing of prescriptions?
- What are the facilitators of/challenges to implementing these features?
- What are the implications?

Electronic Renewals (1)

- Practices and pharmacies were satisfied with electronic transmission of new prescriptions
- E-renewals improved efficiency when working properly but feature was not used consistently
- Some e-prescribing practices and pharmacies had not implemented e-renewal feature

Electronic Renewals (2)

- Practices and pharmacies both reported other party didn't process consistently
  - Pharmacies request refills multiple times
  - Practices approve requests by fax/phone, or deny and send as new order
- Inconsistent renewal methods reinforced inconsistent modes of response
  - Need to manually update message queues

Mail-Order Prescriptions

- Practices were confused about which mail-order pharmacies accepted e-prescriptions and believed that the process, when available, was unreliable
  - Common workaround was to routinely fax or print all mail-order prescriptions
- Practices received most e-renewal requests from mail-order pharmacies by fax

Mail-Order Pharmacy Connectivity

- At the time of the study, few vendors were certified by Surescripts to connect with mail-order pharmacies
  - Some pharmacies handled e-prescriptions like faxed or paper prescriptions
- More e-prescribing vendors were being enabled for new prescriptions, but changes to support e-renewals lagged

Pharmacy E-Prescription Processing

- E-prescribing reduced manual prescription entry at the pharmacy but staff often had to complete or edit certain fields:
  - Medication name
  - Quantity
  - Patient instructions (or ‘Sig’)

Medication Name

- When NDCs in two systems didn't match, pharmacist had to manually select medications
- Physicians had trouble selecting medications from long lists of options and making decisions about packaging, drug form, or other features, sometimes requiring pharmacy follow-up

Quantity

- Physicians faced challenges accurately specifying quantities for prepackaged medications (e.g. inhalers, creams) because systems typically list by package, rather than dosing units
- Pharmacy staff had to be trained to correct errors, especially to generate accurate insurance claims

Patient Instructions

- Pharmacists indicated that, even when not written in Latin, Sigs often needed editing to be more patient-friendly
- Some systems allowed physicians to inadvertently enter contradictory instructions in another field, sometimes requiring pharmacy follow-up

Overcoming E-Renewal Barriers

- Targeted pharmacy and physician practice education/training on incorporating the e-renewal process into workflows, especially after users have developed basic competency

- Enhancing technical standards and physician and pharmacy system design

Overcoming Barriers to Mail-Order Connectivity

- Surescripts, mail-order pharmacies, and e-prescribing vendors working on network and system changes to increase the proportion of practices that can communicate electronically with mail-orders
- Communicating with practices about how to most efficiently process mail-order prescriptions and renewals

Overcoming Barriers to Pharmacy Processing

- Enhancing technical standards
  - Experts have proposed using **RxNorm** in place of NDC codes
  - **Structured and Codified Sig Format** is being implemented to support more complete, accurate, unambiguous Sigs
- Enhancing e-prescribing system design and promoting best practices to make it easier for physicians to accurately select medications and avoid conflicting sigs

Funding Acknowledgment

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- The opinions expressed are those of the authors and do not reflect the official position of AHRQ or the US Department of Health and Human Services.

Project Publications

- The studies are available at: http://www.hschange.org/index.cgi?topic=topic14

Joy M. Grossman, Dori A. Cross, Ellyn R. Boukus and Genna R. Cohen, "Transmitting and Processing Electronic Prescriptions: Experiences of Physician Practices and Pharmacies," Journal of the American Informatics Association, published online first November 18, 2011.

Joy M. Grossman, Ellyn R. Boukus, Dori A. Cross and Genna R. Cohen, "Physician Practices, E-Prescribing and Accessing Information to Improve Prescribing Decisions" Center for Studying Health System Change, Research Brief No. 20, May 2011

- Questions? jgrossman@hschange.org

Tools for E-Prescribing Implementation

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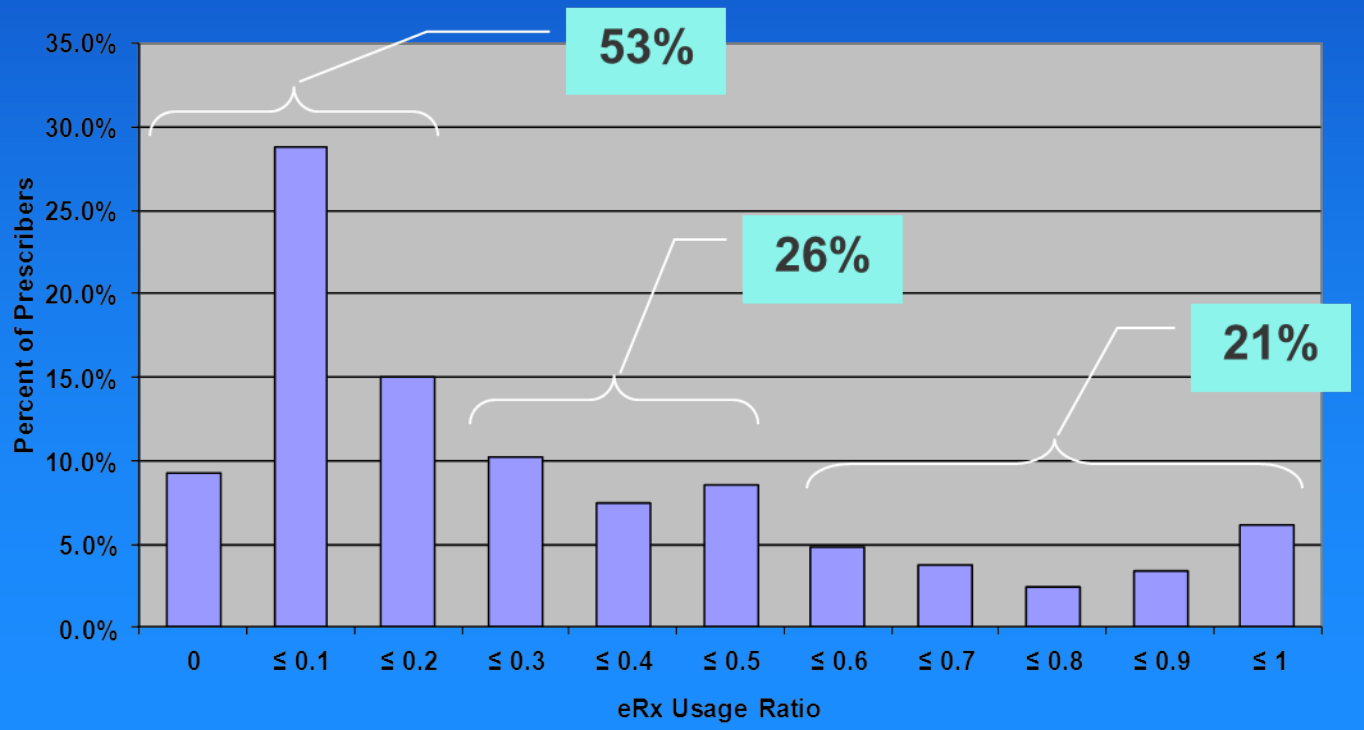
THANK YOU

Low E-Prescribing Use

- New Jersey E-Prescribe Program, 2006
  - 293 prescribers who installed in CY 2005
  - Incentive for use up to $500/qtr



Pevnick, et al., Am J Manag Care. 2010;16(3):182-189

Study: 5 Exemplar Sites

- Planning
  - Identify organizational champion(s)
    - Articulate vision and necessity
  - Plan workflow changes (*vs.* current state)

    "We spent tons and tons of time, initially before we got the system… went through every step of everything we did. I didn't quite get… why we were spending some much time, but now I see that's what made it easier. Every step of everything every person does in the office had to be transformed."
    - Expand staff roles, e.g. with renewal protocols
  - Alert patients and pharmacies to plans

Crosson, et al., Ann Fam Med. 2011;9:392-397

Study: 5 Exemplar Sites

- Implementation
  - Hands-on on-site training
  - Well-trained super users
    - Set up templates for commonly-used options
  - Technical support available in real-time
- Monitoring and Fine-tuning
  - Pharmacy communication (e.g. e-refills)
  - Work processes
  - System customizations (e.g. “favorites”)

Sociotechnical Model for Health IT

Model Dimensions

- Hardware & Software
- Clinical Content
- User Interface
- People
- Workflow/communication
- Practice Policies, Culture
- External Pressures
- Measurement/Monitoring

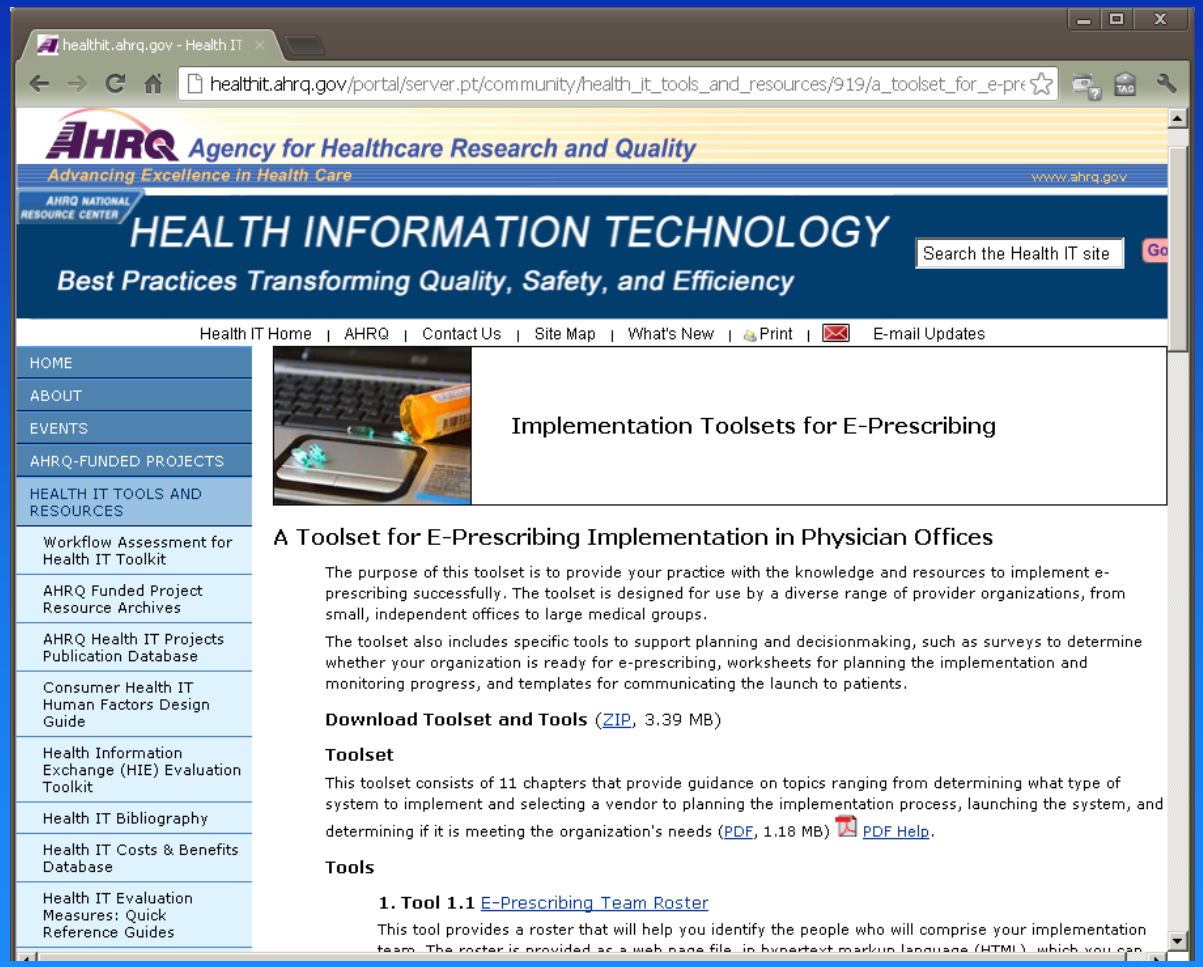
Exemplar Findings

- Onsite tech support
- Favorites and alerts
- Preferences
- Champions, super-users
- Redesign for delegation
- Planning, project mgmt
- Meaningful use, MIPAA
- Monitoring/remediation

Sittig and Singh. Qual Saf Health Care 2010; 19:i68-i74

Sittig and Ash. Ann Fam Med. 2011; 9:390-391

E-Prescribing Toolset



http://healthit.ahrq.gov/eprescribingtoolsets

E-Prescribing Toolset

- Chapters
  1. How to Use the Toolset
  2. Understanding the Building Blocks
  3. Setting Goals and Achieving Buy-in
  4. Assessing Readiness and Preparing for Change
  5. Planning Work Process Changes
  6. Selecting System
  7. Planning and Preparing for the Setup and Launch
  8. Setting up the System
  9. Training
  10. Launch
  11. Monitoring Results and Remediating Problems

1. How to Use the Toolset

E-Prescribing Team Roster

The Core Team

The implementation process should be initiated and driven by a core team that includes people in each of the following roles. This nucleus of people will carry out the tasks needed in the *planning* phases of implementation (Chapters 2-7), and in the later stages of implementation (Chapters 8-11), the latter of which may include supervising a larger team composed of technical support and training personnel.

E-Prescribing or EHR Implementation Leader	Candidates:
▪ **Role**: Has overall responsibility for the e-prescribing or EHR project and is typically selected by the executive sponsor. This person should have authority over project resources (e.g., equipment purchase, hiring or firing consultants). ▪ **Tasks**: ✓ Builds and leads implementation team ✓ Leads negotiation of goals with executive or owner stakeholders ✓ Develops and oversees plans for project financing ✓ Approves work of the implementation team, including system	_____ _____

1. How to Use the Toolset

The Core Team

The implementation process should be initiated and driven by a core team that includes people in each of the following roles. This nucleus of people will carry out the tasks needed in the *planning* phases of implementation (Chapters 2-7), and in the later stages of implementation (Chapters 8-11), the latter of which may include supervising a larger team composed of technical support and training personnel.

E-Prescribing or EHR Implementation Leader
• **Role**: Has overall responsibility for the e-prescribing or EHR project and is typically selected by the executive sponsor. This person should have authority over project resources (e.g., equipment purchase, hiring or firing consultants).
• **Tasks**:
  ○ Builds and leads implementation team
  ○ Leads negotiation of goals with executive or owner stakeholders
  ○ Develops and oversees plans for project financing
  ○ Approves work of the implementation team, including system requirements, system selection, process changes, and implementation plan
  ○ Provides support to the project manager by escalating issues to vendor or internally for resources or funding
  ○ Evaluates project status from a management perspective
  ○ Regularly assesses or reviews milestone achievements
	Candidates:
	_____
	_____

Physician Champion
• **Role**: Communicates the goals/benefits of e-prescribing and best practices for using e-prescribing to other providers in the office and represents prescribers in the planning and implementation processes. Should be committed to the project and its success, a recognized leader and available to participate in all team activities.
• **Tasks**:
  ○ Ensures buy-in from other providers in negotiating goals
  ○ Represents other providers in assessing readiness, process redesign, and system selection
  ○ Provides physician consultation during the implementation
  ○ Helps set and maintain appropriate physician expectations before and after implementation
  ○ Participates in evaluation of implementation towards meeting office goals
	Candidates:
	_____
	_____

Implementation Project Manager
• **Role**: Manages the project, leads team meetings, identifies potential issues, and coordinates activities internally and with the vendor. This is a role best filled by an internal resource person with project management experience (possibly an office manager) or an outside consultant.
• **Tasks**:
  ○ Develops the project plans and project timeline
  ○ Identifies tasks and available resources to do the work for each task
  ○ Assigns responsibility for tasks to individuals
  ○ Monitors progress on tasks and progress on the timeline
  ○ Manages project issues and project constraints that develop
  ○ Coordinates communications within the office and among the vendors
  ○ Coordinates demos, site visits, phone calls, travel arrangements
  ○ Documents meeting notes, phone call conversations, decisions made, action items and follow-up
  ○ Coordinates implementation activities with the vendor
  ○ Follows project management principles to keep the activities aligned with goals
  ○ Coordinates contract negotiations
  ○ Works closely with the physician champion and executive sponsor
  ○ Leads the project team meetings
	Candidates:
	_____
	_____

1. How to Use the Toolset

The Stakeholders

Stakeholders represent a separate group of roles from the core implementation team. Stakeholders need to be involved in key decisions but may often be too busy with other supervisory duties to carry out the tasks needed to drive the implementation process. It is crucial for the core team to identify leaders who can represent each of the key practice constituencies and to involve them in key decisions at every step.

Executive Sponsor(s)
• **Role**: This person should be the CEO, owner, or key decision maker who has the authority to fund and/or cancel the project. In smaller offices this person may also be the implementation leader.
• **Tasks**:
  ○ Provides input on goals and signs off on final project goals
  ○ Meets occasionally with the implementation leader
	Candidates:
	_____
	_____

Nursing Representative
• **Role**: Should be knowledgeable and trusted. Should have a deep understanding of the processes required to deliver healthcare within the office, especially the new and renewal prescription processes. Should be aware of the practice?s clinical needs and shortcomings.
• **Tasks**:
  ○ Provides input in e-prescribing goals negotiations
  ○ Provides input and nursing perspective in defining work processes and system functionality requirements
  ○ Provides clinical consultation from a nursing perspective during the implementation
  ○ Helps set and keep nurses expectations before and after implementation
  ○ Participates in evaluation of implementation
	Candidates:
	_____
	_____

Other Stakeholders
The need to bring other stakeholders into the e-prescribing planning process will depend on the nature of the practice and the individuals who might be seen as leaders or representatives of personnel constituencies. Larger offices are likely to have more of these constituencies. Other stakeholders to consider include:
  ○ Medical assistant
  ○ Medical records lead
  ○ Billing office representatives
  ○ Quality improvement representative
  ○ Ancillary area representatives
  ○ In-house pharmacy, if any
  ○ Hospital IT
  ○ Network/technical analyst
  ○ Other lab, other nurses, other support staff
	Candidates:
	_____
	_____

1. How to Use the Toolset

Additional Post-Selection Team Members

Once a specific e-prescribing system has been selected and a contract signed, the implementation team will need to expand as the office moves beyond planning to system set-up, training, and implementation of new work processes, and system launch.

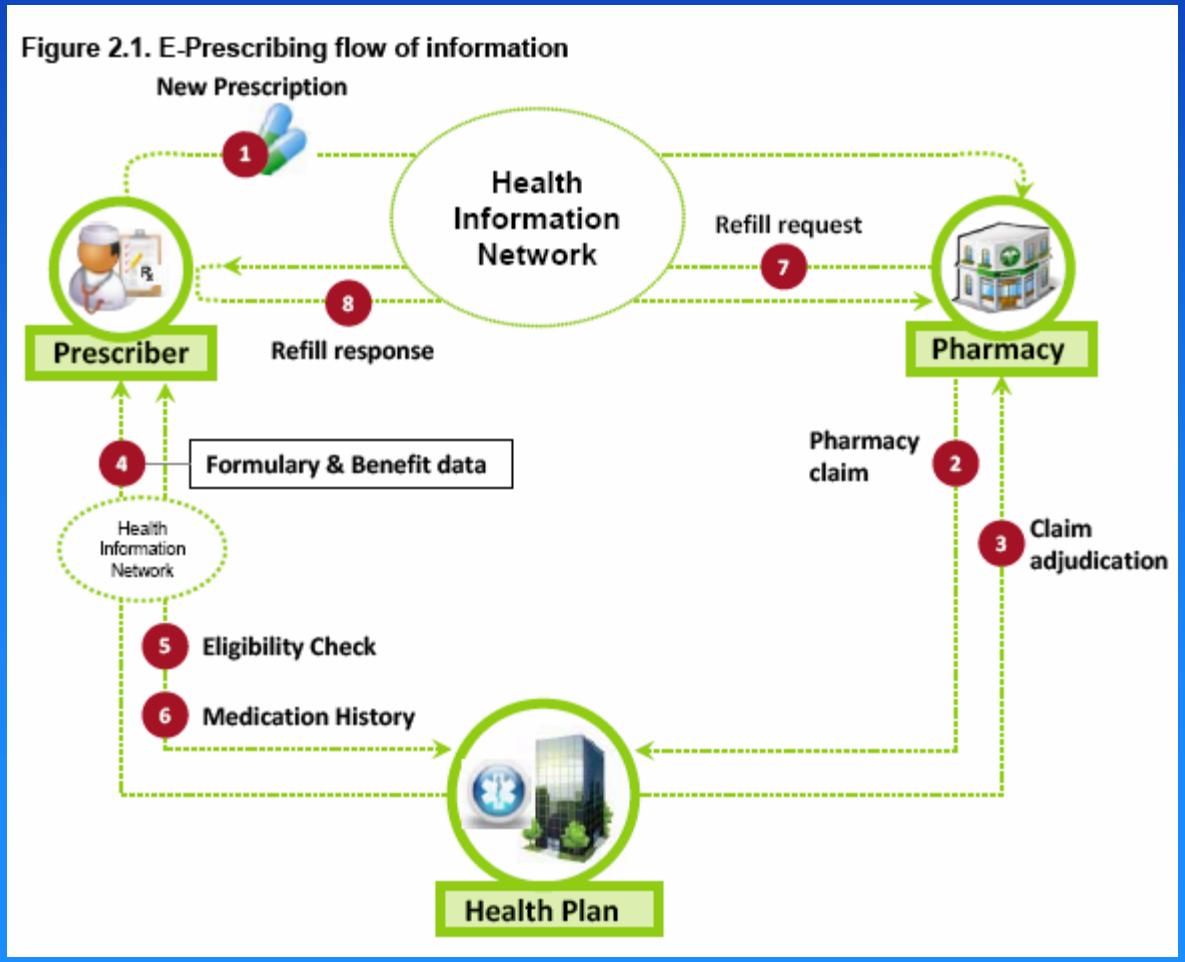
Super Users
• **Role**: A super user is someone who is the resident expert in using the system. This person should be the first person trained for each role.
• **Tasks**:
  ○ Tests and documents results and workarounds
  ○ Trains new users or others as needed
  ○ Serves as the internal support
  ○ Performs multiple roles within the office
	Candidates:
	_____
	_____

IT Staff
• **Role**: Works with the team and vendor to ensure that the implementation accounts for any technical considerations, including 1) hardware, 2) software interface with the practice management system, and 3) system testing.
• **Tasks**:
  ○ Works with the vendor regarding PMS integration planning
  ○ Identifies any issues related to hardware implementation and compatibility
  ○ Supports training
  ○ Works with the vendor to understand new hardware maintenance/warranties
	Candidates:
	_____
	_____

Trainer
• **Role**: In many cases, this role may be filled by the system vendor, but practices also frequently need to go beyond what the vendor offers. Super users may also be trainers.
• **Tasks**:
  ○ Works hand-in-hand with the vendor
  ○ Is knowledgeable about all aspects of the system
  ○ Is current with any upgrades and their limitations or work-arounds
  ○ Can train new users on basic system usage
	Candidates:
	_____
	_____

2. Understanding the Building Blocks

- E-Prescribing Infrastructure



3. Setting Goals and Achieving Buy-in

- Goals Poster

Our Goals for E-Prescribing

Goal (Target)	Monitoring Plan	Who Will Monitor	Start Date for Monitoring
[*Replace this text with your goal*, for example, "Reduce pharmacy phone calls."]	[*Replace this text with your plan*, for example, "Log pharmacy phone calls for 1 week, before and after."]	[*Replace this with the responsible person*, for example, "Lucinda," or "Telephone staff."]	[*Replace this with date you've chosen to start tracking progress*, for example, "3/15/2012."]

4. Assessing Readiness and Preparing for Change

- Readiness assessment spreadsheet

Table 1. Readiness Assessment of Business Goals and Organizational Culture

Readiness Area	Readiness Component	A	B	C	Response (A, B, or C)
Business Goals	1. The practice has goals that are...	Not defined or not necessarily linked to any HIT adoption	Somewhat linked to the successful adoption of HIT	Very tightly linked to adoption of HIT	
	2. The practice has objectives for efficiency and quality that are...	Not defined or broad and/or vague	Specific and measurable	Specific and measurable	
Organizational Culture	1. Our practice's past experiences in implementing major organizational changes have been...	Limited or largely unsuccessful in achieving our goals, or we have no previous experience	Largely successful in achieving our goals	Highly successful in achieving our goals	
	2. Staff attitudes toward HIT...	Are mostly negative	Are generally positive	Are very positive	
	3. When it comes to collaborating on special projects or on planning and decision making, our clinical and administrative staff...	Haven't collaborated or have difficulty working together	Work well together	Work well together	

4. Assessing Readiness and Preparing for Change

- Readiness assessment spreadsheet

Table 2. Readiness Assessment of Leadership and Planning for Implementation

Readiness Area	Readiness Component	A	B	C	Response (A, B, or C)
Leadership	1. The chief sponsor for HIT is …	The officer manager	A physician champion	A physician champion	
	2. Physician leaders …	Are not experienced with HIT	Have some experience with HIT or have studied HIT systems and implementation processes	Have had substantial experience with HIT	
	3. Physicians and other practice leaders …	Have mixed or negative attitudes toward the adoption of the system	Are generally supportive of adopting HIT and believe that the benefits outweigh the costs	Are enthusiastic about adopting HIT and set a clear vision for how HIT can achieve the practice's goals	
	4. The HIT planning and implementation processes will be led by…	A staff member who lacks support from practice leadership	A physician champion or other leader who is respected by clinical and administrative staff	A physician champion or other leader who is respected by clinical and administrative staff	
Planning for the Implementation	1. Our office staff is willing to spend…	No time planning for HIT implementation	2-3 months planning for HIT implementation	4-6 months or longer planning for HIT implementation	
	2. Our office staff is…	Unwilling to make changes to patient-oriented work flow processes	Willing to make some changes to patient-oriented work flow processes	Willing to make all necessary changes to patient-oriented workflow processes	
	3. During go-live, our practice …	Could not withstand any reduction in productivity and/or patient visit volume	Could tolerate some reduction in productivity and/or patient visit volume for a short period of time (e.g., a few days)	Is ready to reduce productivity/patient visit volume for a longer period during implementation (e.g., several weeks)	

4. Assessing Readiness and Preparing for Change

Table. 3 Readiness Assessment of Finance and Budget and Accountability

Readiness Area	Readiness Component	A	B	C	Response (A, B, or C)
Finance and Budget [2][3]	1. For HIT system acquisition, we are prepared to spend...	Nothing or very little	Approximately $3000 per prescriber[4]	Approximately $20,000 – $50,000 or more per full-time provider[5]	
	2. For ongoing maintenance and support of an HIT system, we are prepared to spend...	Nothing or very little	Up to $700 per prescriber per year after the first year[4]	Up to $10,000 or more per full-time provider, per year after the first year[5]	
Accountability	1. Clinical and administrative staff to analyze product options and contract terms and negotiate with the HIT vendor...	Do not have the skills, are not available, or are reluctant to fulfill these roles and responsibilities	Have some relevant experience, are available, and are willing to fulfill these roles and responsibilities	Are highly skilled, are available, and are eager to fulfill these roles and responsibilities	
	2. Clinical and administrative staff to plan the implementation and manage the system over time...	Do not have the skills, are not available, or are reluctant to fulfill these roles and responsibilities	Have some relevant experience, are available, and are willing to fulfill these roles and responsibilities	Are highly skilled, are available, and are eager to fulfill these roles and responsibilities	

4. Assessing Readiness and Preparing for Change

Table. 4 Readiness Assessment of IT Management and Support

Readiness Area	Readiness Component	A	B	C	Response (A, B, or C)
IT Management and Support	1. IT staff have...	Limited experience with HIT and rely heavily on external resources for IT planning and decision making – or, we do not have an IT staff or external IT support	Experience with HIT but tend to rely on the vendor to detail the tasks and activities	Substantial experience with HIT	
	2. IT staff...	Will determine IT infrastructure and/or hardware requirements without involvement in the process – or, we do not have an IT staff or external IT support	Have been educated about our business objectives for HIT and may be involved in decision-making to determine IT infrastructure and hardware requirements	Have been educated about our business objectives for HIT and will be involved in decision-making to determine IT infrastructure and hardware requirements	

4. Assessing Readiness and Preparing for Change

- Readiness Tally

The grid below tallies your "A", "B", and "C" responses in each section.			
Readiness Area (Number of items)	**Total Number of Responses**		
	A	**B**	**C**
Business Goals (2)	0	0	0
Organizational Culture (3)	0	0	0
Leadership (4)	0	0	0
Planning for the Implementation (3)	0	0	0
Finance and budget (2)	0	0	0
Accountability (2)	0	0	0
IT management and support (2)	0	0	0
Total	**0**	**0**	**0**

4. Assessing Readiness and Preparing for Change

- Deal-breaker items

You selected the following possible deal breakers:	
Item	**Response**
Organizational Culture	
2. Staff attitudes toward HIT ...	-
Leadership	
1. The chief sponsor for HIT is ...	-
3. Physicians and other practice leaders ...	-
Planning for the Implementation	
1. Our office staff is willing to spend...	-
2. Our office staff is...	-
3. During go-live, our practice ...	-
Finance and budget	
1. For HIT system acquisition, we are prepared to spend...	-
2. For ongoing maintenance and support of an HIT system, we are prepared to spend...	-

5. Planning Work Process Changes

Tool 5.2a Sample Task Table (No Delegation)

Scenario: Refill request received by phone or by fax before implementation of e-prescribing

Step No.	Step	Performer	Step type	Description	Documents	Key information
1.	Retrieve renewal request message(s)	Office Staff	Receive and transcribe	Take or retrieve fax or phone message from a pharmacy or patient to request medication renewal; if phone, transcribe message to a note; call pharmacy to clarify request as needed	Request fax or phone message	Telephone message transcribed to notes
2.	Retrieve patient information	Office Staff	Retrieving file	Retrieve patient record and/or look up in practice management system; confirm that patient ihas established care with your office	Patient record	Patient identity for matching to paper record or EHR record
3.	Deposit message with record for prescriber for renewal approval	Office Staff	Handoffs	Put request in queue for provider	Patient record, request	Patient ID, date of request
4.	Prescriber retrieve message with record	Prescribing physician or nurse practitioner	Research, review	Review materials received, generally first come, first served	Patient record, request	Medical records, details of request
5.	Prescriber approve or decline request or change medication	Prescribing physician or nurse practitioner	Decision on order	Decide on request by looking up information such as last visit, lab results, current medication list, insurance coverage; complete prescription	Patient record, request	Prescription written, note re order
6.	Give prescription and record to office staff	Prescribing physician or nurse practitioner	Handoffs	Give all materials to staff	Patient record, prescription	Prescription details
7.	Update record	Office Staff	Enter information in patient record	Add information to patient record	Patient record and order copy	
8.	File patient record	Office Staff	Filing	Move record to file area	Patient record	
9.	Transmit to pharmacy	Office Staff	Processing	Transmit to pharmacy via fax or phone	Prescription	Pharmacy information including name, address, phone number

5. Planning Work Process Changes

Tool 5.2b: Sample Task Table (with Delegation)

Scenario: Refill request received by phone or by fax before e-prescribing

Step No.	Step	Performer	Step type	Description	Documents	Key information
1.	Retrieve renewal request message(s)	Office staff	Retrieving	Take or retrieve fax or phone message from a pharmacy or patient to request medication renewal; if phone, transcribed message to a note; calls pharmacy to clarify request as needed	Request fax or phone message	Telephone message transcribed to notes
2.	Retrieve patient information	Office staff	Retrieving	Pull record and/or look up in practice management system; confirm that patient is seen in the clinic	Patient record	Patient identification confirmation on fax sheet or transribed phone message and clipped to the record to pass to authorized office staff for renewal approval
3.	Deposit message with record for staff authorized for renewal approval	Office staff	Handoffs		Patient record, request	Patient ID, date of request
4.	Authorized staff retrieve message with record	Authorized office staff	Retrieving		Patient record, request	Medical records, details of request
5.	Check whether request meet protocol for authorization vs. needing physician review	Authorized office staff	Decision	Staff person checks protocol criteria for approving request without physician review and routes request to physician or to be approved per protocol	Patient record and protocol for staff renewal	Details of request, match to protocol
Protocol-approval pathway (a)						
6a.	Document protocol renewal	Authorized office staff	Processing	Document renewal on patient record	Patient record	Details of request
7a.	Inform physician	Authorized office staff	Communication	Inform physician verbally or in writing	Note paper	Details of request
8a.	Give patient record and prescription to office staff	Authorized office staff	Handoffs		Patient record, prescription copies	Details of request
Physician-review pathway (b)						
6b.	Deposit message with record for prescriber approval	Authorized office staff	Handoffs		Patient record, request	Details of request
7b.	Prescriber retrieve message with record	Prescribing physician or nurse practitioner	Retrieving		Patient record, request	Patient ID
8b.	Prescriber approve or decline request or change medication	Prescribing physician or nurse practitioner	Decision	Decide if prescriber has approved request by looking up information such as last visit, lab results, current medication list, insurance coverage; complete prescription	Patient record, request	Approval or denial
9b.	Give prescription and record to office staff	Prescribing physician or nurse practitioner	Handoffs		Patient record, prescription copies	Patient ID
All renewals (pathways a and b rejoined)						
10.	File patient record	Office staff	Filing		Patient record, prescription copies	Patient ID
11.	Transmit to pharmacy	Office staff	Processing	Transmit to pharmacy via fax or phone	Prescription	Pharmacy information including name, address, phone number

5. Planning Work Process Changes

Tool 5.2c: Sample Task Table (eRx Renewal)

Scenario: Refill request received by phone or by fax before e-prescribing

Step No.	Step	Performer	Step Type	Deprescription	Documents	Key Information
E-prescribing enabled renewal request pathway (a)						
1a.	Receive renewal request message(s)	E-prescribing system	**Automatic**	E-prescribing prescription automatically receive pharmacy request of medication renewal	None, electronic message	Request details, patient ID
2a.	Match patient information	E-prescribing system	**Automatic**	E-prescribing system automatically match renewal request with patient information in practice management system to confirm that patient is seen in the clinic	E-prescribing system is linked to the practice management system to have automatic update of patient information including name, medical record number, address, phone number, and appointment dates	If clean match on patient: a renew request item is added to prescriber task list with patient information; If no clean match on patient: a renew request item is added to prescriber task list with blank patient information
Not E-prescribing enabled renewal request pathway (b)						
1b.	Retrieve renewal request message(s)	Office staff	Retrieving	Take or retrieve fax or phone message from a pharmacy or patient to request medication renewal; if phone, transcribe message to a note; call pharmacy to clarify request as needed	Request fax or phone message	Telephone message transcribed to notes
2b.	Deposit message for staff authorized for renewal approval	Office staff	Handoffs			
3b.	Authorized staff retrieve message/fax	Authorized Office Staff	Retrieving			
All renewal requests (pathways a and b rejoined)						
4.	Check whether request meets protocol for authorization vs. needing physician review	Authorized office staff	Decision	Staff person verify renewal request is for patient seen in the clinic, check protocol criteria for approving request without physician review and route request to physician or to be approved per protocol	Protocol for staff renewal and E-prescribing system linked to the practice management system; patient chart as needed	If physician review required: Send to physician task list (step 5b) If protocol authorization: Go to step 5a
Protocol-approval pathway (c)						
5c.	Document protocol renewal	Office staff	Processing	Approve renewal on E-prescribing system and save records in E-prescribing	E-prescribing system includes lab results, current medication list, and insurance coverage information; if needed, pulls patient chart	Request approved, record saved in E-prescribing
6c.	Transmit to pharmacy	E-prescribing system	**Automatic**	Completed prepresctiptionion automatically be transmitted to the pharmacy that requests renewal	Pharmacy that requests renewal prescription enabled pharmacy with up-to-date information including name, address, and phone number	Prepresctiptionion sent
Physician-review pathway (d)						
5d.	Prescriber approve or decline request or change medication	Prescribing physician/NP	Decision	Decide if prescriber has approved request by looking up information such as last visit, lab results, current medication list, insurance coverage; complete prepresctiptionion and save records in E-prescribing	E-prescribing system includes lab results, current medication list, and insurance coverage information; if needed, pulls patient chart	Prepresctiption written and automatically saved; if needed, prints prepresctiption
6d.	Fax/phone transmit to pharmacy	E-prescribing system	**Automatic**	Completed prepresctiptionion automatically be transmitting to the pharmacy that requests renewal	Prescription enabled pharmacy with up-to-date information including name, address, and phone number	Prepresctiption sent
All renewals (pathways c and d rejoined)						
7.	Fax/phone transmit to pharmacy	Office staff	Contingent processing	For pharmacies not E-prescribing enabled, staff fax or phone completed prepresctiptionion to pharmacy	Fax or electronic message	IDs of pharmacy, patient and also request details
8.	For controlled substance, print prepresctiptionion for patient to take to pharmacy	Office staff	Contingent processing	Controlled substance prepresctiptionion must be printed, wet-signed by prescriber, and picked up by patient	Paper prepresctiption	Request details, patient ID

6. Selecting a System

For each attribute, provide an office rating (1-4) regarding the importance of the attribute. Then rate each vendor's capability to meet that need (1-4).

Office Rating		Vendor cabability	
relatively unimportant	1	not acceptable	1
somewhat important	2	minimally acceptable	2
moderately important	3	acceptable	3
very important	4	more than acceptable	4

SYSTEM CAPABILITIES		ePrescribing System Alternatives					
	Office Rating	Vendor 1	Vendor 2	Vendor 3	Vendor 4	Vendor 5	Vendor 6
User/Process Functionality							
Attribute		System Attribute Capability Rating					
Scheduling interface or module							
Allows charge capture							
Provides diagnosis with eRx							
Links to other sources of patient demographic data							
Allows for creation of favorite sig list							
Allows for creation of favorite meds list							
Allows creation and printing of customized patient information							
Prompts prescriber with special monitoring parameters							
Allows for drug-pregnancy/lactation check							
System can send prescription to 2 locations (mail order and retail)							
Allows searching for medications using brand or generic names							
[enter additional attribute here]							
[enter additional attribute here]							
[enter additional attribute here]							
TECHNICAL FUNCTIONALITY	**Office Rating**	**Vendor 1**	**Vendor 2**	**Vendor 3**	**Vendor 4**	**Vendor 5**	**Vendor 6**
Attribute		System Attribute Capability Ranking					
Real-time clinical checks							
Can identify users and track system usage							
Supports wireless access							
Has favorable system performance times							
Supports multiple office locations							
Patient eligibility and formulary checks							
Patient medication history from PBM claims							
Patient medication hisotry from retail pharmacies							
Electronic renewals to retail and mail order pharmacies							
Supports e-prescribing of controlled substances							
Can print a "receipt" for patients							
[enter additional attribute here]							
[enter additional attribute here]							
[enter additional attribute here]							

6. Selecting a System

SYSTEM CAPABILITIES		ePrescribing System Alternatives					
	Office Rating	Vendor 1	Vendor 2	Vendor 3	Vendor 4	Vendor 5	Vendor 6
INTERFACES	**Office Rating**	**Vendor 1**	**Vendor 2**	**Vendor 3**	**Vendor 4**	**Vendor 5**	**Vendor 6**
Attribute		**System Attribute Capability Ranking**					
Has existing interface with my PMS/EMR							
The interface can extract the necessary information from the PMS/EMR							
Separate charge for the patient data extraction or link?							
[enter additional attribute here]							
[enter additional attribute here]							
[enter additional attribute here]							
Security	**Office Rating**	**Vendor 1**	**Vendor 2**	**Vendor 3**	**Vendor 4**	**Vendor 5**	**Vendor 6**
Attribute		**System Attribute Capability Ranking**					
Favorable application security							
Offers system timeout with non-use							
Favorable transaction security							
[enter additional attribute here]							
[enter additional attribute here]							
[enter additional attribute here]							
Reporting	**Office Rating**	**Vendor 1**	**Vendor 2**	**Vendor 3**	**Vendor 4**	**Vendor 5**	**Vendor 6**
Attribute		**System Attribute Capability Ranking**					
System provides multiple reporting options							
Provides usage reporting for all users							
[enter additional attribute here]							
[enter additional attribute here]							
[enter additional attribute here]							
Regulatory Compliance	**Office Rating**	**Vendor 1**	**Vendor 2**	**Vendor 3**	**Vendor 4**	**Vendor 5**	**Vendor 6**
Attribute		**System Attribute Capability Ranking**					
Meets HIPAA requirements							
Is Surescripts certified							
Handles Schedule II-IV drugs appropriately							
Is CCHIT certified							
Meets ARRA modular certification requirements for Meaningful Use							
Meets MIPPA system requirements							
[enter additional attribute here]							

6. Selecting a System

SYSTEM CAPABILITIES		ePrescribing System Alternatives					
	Office Rating	Vendor 1	Vendor 2	Vendor 3	Vendor 4	Vendor 5	Vendor 6
SCALABILITY	Office Rating	Vendor 1	Vendor 2	Vendor 3	Vendor 4	Vendor 5	Vendor 6
Attribute		System Attribute Capability Ranking					
Supports adequate number of prescribers or other roles							
Supports multiple office sites adequately							
Can easily link/interface to multiple EMR/EHRs							
[enter additional attribute here]							
[enter additional attribute here]							
[enter additional attribute here]							
PORTABILITY	Office Rating	Vendor 1	Vendor 2	Vendor 3	Vendor 4	Vendor 5	Vendor 6
Attribute		System Attribute Capability Ranking					
Supports wireless access via PDA or smartphone							
Supports other wireless platforms							
Supports tablet PC access							
Allows for secure Internet access anywhere from PC							
Supports printing from portable device (PDA)							
[enter additional attribute here]							
[enter additional attribute here]							
[enter additional attribute here]							

6. Selecting a System

IMPLEMENTATION REQUIREMENTS		ePrescribing System Alternatives					
	Office Rating	Vendor 1	Vendor 2	Vendor 3	Vendor 4	Vendor 5	Vendor 6
Hardware & Infrastructure							
Attribute		**System Attribute Capability Rating**					
System is platform independent							
Available as wireless environment							
Vendor provides wireless implementation support or referral							
Provides patient medication history (internal and external to office)							
[enter additional attribute here]							
[enter additional attribute here]							
[enter additional attribute here]							
Installation Experience	**Office Rating**	**Vendor 1**	**Vendor 2**	**Vendor 3**	**Vendor 4**	**Vendor 5**	**Vendor 6**
Attribute		**System Attribute Capability Ranking**					
Vendor has favorable number of installations (including local)							
Acceptable vendor support during installation							
Vendor provides appropriate level of implementation consultation to assist with process flows and change management issues.							
Implementation plans/timeline meets desired criteria							
Vendor can provide recent local references							
[enter additional attribute here]							
[enter additional attribute here]							
[enter additional attribute here]							
Technical Expertise	**Office Rating**	**Vendor 1**	**Vendor 2**	**Vendor 3**	**Vendor 4**	**Vendor 5**	**Vendor 6**
Attribute		**System Attribute Capability Ranking**					
Vendor technical expertise is viewed favorably by references							
Has appropriate numbers local installation and support staff							
Installation and support staff are employees of Vendor (not contracted)							
[enter additional attribute here]							
[enter additional attribute here]							
[enter additional attribute here]							

6. Selecting a System

IMPLEMENTATION REQUIREMENTS		ePrescribing System Alternatives					
	Office Rating	Vendor 1	Vendor 2	Vendor 3	Vendor 4	Vendor 5	Vendor 6
Project Management	**Office Rating**	**Vendor 1**	**Vendor 2**	**Vendor 3**	**Vendor 4**	**Vendor 5**	**Vendor 6**
Attribute		**System Attribute Capability Ranking**					
Testing plan meets desired schedule							
Testing plan verifies system specifications							
Favorable testing plan of equipment, software, network & interfaces							
Vendor does not provide project management services							
[enter additional attribute here]							
[enter additional attribute here]							
[enter additional attribute here]							
Education & Training	**Office Rating**	**Vendor 1**	**Vendor 2**	**Vendor 3**	**Vendor 4**	**Vendor 5**	**Vendor 6**
Attribute		**System Attribute Capability Ranking**					
Vendor provides adequate training for all physicians and staff							
Location of training is favorable							
Re-training offered if necessary for some staff/physicians							
Computer assessment offered for baseline skills assessment							
Both in-person and remote training options offered							
[enter additional attribute here]							
[enter additional attribute here]							
[enter additional attribute here]							
On-going Education & Training	**Office Rating**	**Vendor 1**	**Vendor 2**	**Vendor 3**	**Vendor 4**	**Vendor 5**	**Vendor 6**
Attribute		**System Attribute Capability Ranking**					
Vendor demonstrates continual effort for training and education							
Location of training is favorable							
[enter additional attribute here]							
[enter additional attribute here]							
[enter additional attribute here]							

6. Selecting a System

DECISION ECONOMICS		ePrescribing System Alternatives					
	Office Rating	Vendor 1	Vendor 2	Vendor 3	Vendor 4	Vendor 5	Vend
Financial Analysis							
Attribute		System Attribute Capability Rating					
Ability to minimize additional hardware/software infrastructure requirements							
Favorable on-going support and maintenance costs							
Favorable implementation costs							
Favorable software costs							
Favorable hardware costs							
Favorable initial data extraction/upload fee							
Favorable interface fee							
Favorable additional training fee							
Provides usage data from the system for no fee in standard format							
[enter additional attribute here]							
[enter additional attribute here]							
[enter additional attribute here]							
Strategic Investment & Platform Reuse	Office Rating	Vendor 1	Vendor 2	Vendor 3	Vendor 4	Vendor 5	Vend
Attribute		System Attribute Capability Ranking					
Ability to use the hardware for PMS or EMR access							
Ability to use internet/broadband for other office uses							
[enter additional attribute here]							
[enter additional attribute here]							
[enter additional attribute here]							
On-going Costs	Office Rating	Vendor 1	Vendor 2	Vendor 3	Vendor 4	Vendor 5	Vend
Attribute		System Attribute Capability Ranking					
Favorable costs per prescriber per year (after year 1)							
Favorable PDA replacement costs							
[enter additional attribute here]							
[enter additional attribute here]							
[enter additional attribute here]							

6. Selecting a System

OVERALL SCORING		ePrescribing System Alternatives						Maximum
		Vendor 1	Vendor 2	Vendor 3	Vendor 4	Vendor 5	Vendor 6	Score
System Capabilities		-	-	-	-	-	-	1,088
Implementation		-	-	-	-	-	-	656
Decision Economics		-	-	-	-	-	-	448
Total Score	**Assessment Overall Scoring**	-	-	-	-	-	-	2,192

NOTE: Maximum vendor overall score without any additional attribute rows = 2,192

Scoring Interpretation: The vendor score is the total of each attribute score multiplied by the importance of the attribute to your office (office rating). Generally, the vendor with the highest score is the most capable of meeting your offices' needs for ePrescribing.

Should you have multiple persons from within your office scoring the vendors, schedule time to compare and discuss results. This will allow all stakeholders to discuss their interpretations of vendor scores and reach consensus on a decision.

If the vendor scores are very close, it might be worthwhile to schedule a second demonstration among the "finalists" and repeat use of this tool for those vendors.

POCP 2009

7. Planning and Preparing for the Setup and Launch

Tool 7.1: Timeline for Stand-Alone E-Prescribing Implementation

Week 5 Pre-launch	**TECH ASSESSMENT** » Determine if baseline specifications are met **DELIVERABLES** » Prepare and provide IT needs summary	**PROCESS ASSESSMENT** » Identify current Rx writing access and processes » Identify demographic data fields of interest for extract » Define training approach » Schedule data extract webex dates (2) and training date » Collect registration forms **DELIVERABLES** » Inform IM that PA is complete; IM will update scorecard » Provide to IM: -process assessment summary -completed registration forms
Weeks 4 to 1 Pre-launch	**DATA CONVERSION** » Contact practice to select/confirm webex date » Determine practices access to data prior to webex » Coordinate needed staff for webex, if obtaining data directly from practice » Register practice and providers **DELIVERABLES** » Advise IM: - agreed upon webex or data acquisition date - method of accessing data (through practice or PMS) - availability of desired fields - any unusual needs, costs, complications in data conversion » Provide data design document to practice, cc ing IM » Provide error log of missing records » Complete data conversion within 2 business days of webex date	**IT INSTALL** » Install hardware and/or software identified on approved PO » Provide to practice: - warranty information - virus protection information - system information - wireless and other passwords **DELIVERABLES** » Advise IM of scheduled install prior to install date » Provide practice wireless password to IM » Obtain practice signature on inventory of installed items, identifying install location for each item (e.g., front desk, physicians office) » Advise IM when install is complete
Launch Day	**TRAINER** » Perform pre-training checklist items » Train practice members » Have practice complete pre-training survey » Provide application manual to practice **DELIVERABLES** » Provide feedback on training to implementation team	
Post-Launch	**TRAINER or IM** » Provide onsite support to practice following training (1-3 days) » Make daily support calls for first week » Make weekly support calls for next 3 weeks » Maintain log of trouble ticket items, enhancement requests	

8. Configuring the Technology

- Setting up users and access rights
- Pre-populating patient data
- Setting up favorites
- Selecting pharmacies

9. Training

Tool 9.1: Computer Skills Assessment

D. Computer skills

D1. Please tell us how confident you feel about performing each of the following computer and Internet tasks.
(Computer self-efficacy items originally from Murphy, 1989, as used in UCLA Hospital IT User Satisfaction Survey; Internet items originally based on Duvel, 2003, as used in Masspro DOQ-IT instrument.)

	Not at all confident ---------- Very confident				
	1	2	3	4	5
D1a. Make selections from an on-screen menu	0	0	0	0	0
D1b. Use the computer to write a letter or essay	0	0	0	0	0
D1c. Escape or exit from a program or software	0	0	0	0	0
D1d. Copy an individual file	0	0	0	0	0
D1e. Use a web browser like Firefox or Internet Explorer	0	0	0	0	0
D1f. Recognize a URL (e.g., web address)	0	0	0	0	0
D1g. Use Back and Forward buttons to move through webpages	0	0	0	0	0
D1h. Create a bookmark or save a favorite website	0	0	0	0	0
D1i. Locate and click on links in a webpage	0	0	0	0	0
D1j. Use a search engine to locate information on the Internet	0	0	0	0	0
D1k. Download and save a file	0	0	0	0	0
D1l. Save an image to a file	0	0	0	0	0
D1m. Print a webpage	0	0	0	0	0

10. Launch

- "Prescription Pad" Handout

<Clinic Name and Logo>

Dear Pharmacist:

My prescription(s) have been sent to your computer electronically, not by fax or phone. My doctor uses electronic prescribing for both my new prescriptions and for renewals. Please note that my doctor prefers all renewals to be sent electronically to the computer in order to respond to your request within 24 to 48 hours. Over 98% of electronic renewal requests are processed within 24 hours.

If your pharmacy is enabled for electronic prescribing, please check your computer system for my prescriptions. Even when you send a fax for a renewal request, my doctor will respond electronically. Please do not re-fax a request to my doctor unless it has been 48 hours since the original request was sent.

<Clinic Name and Logo>

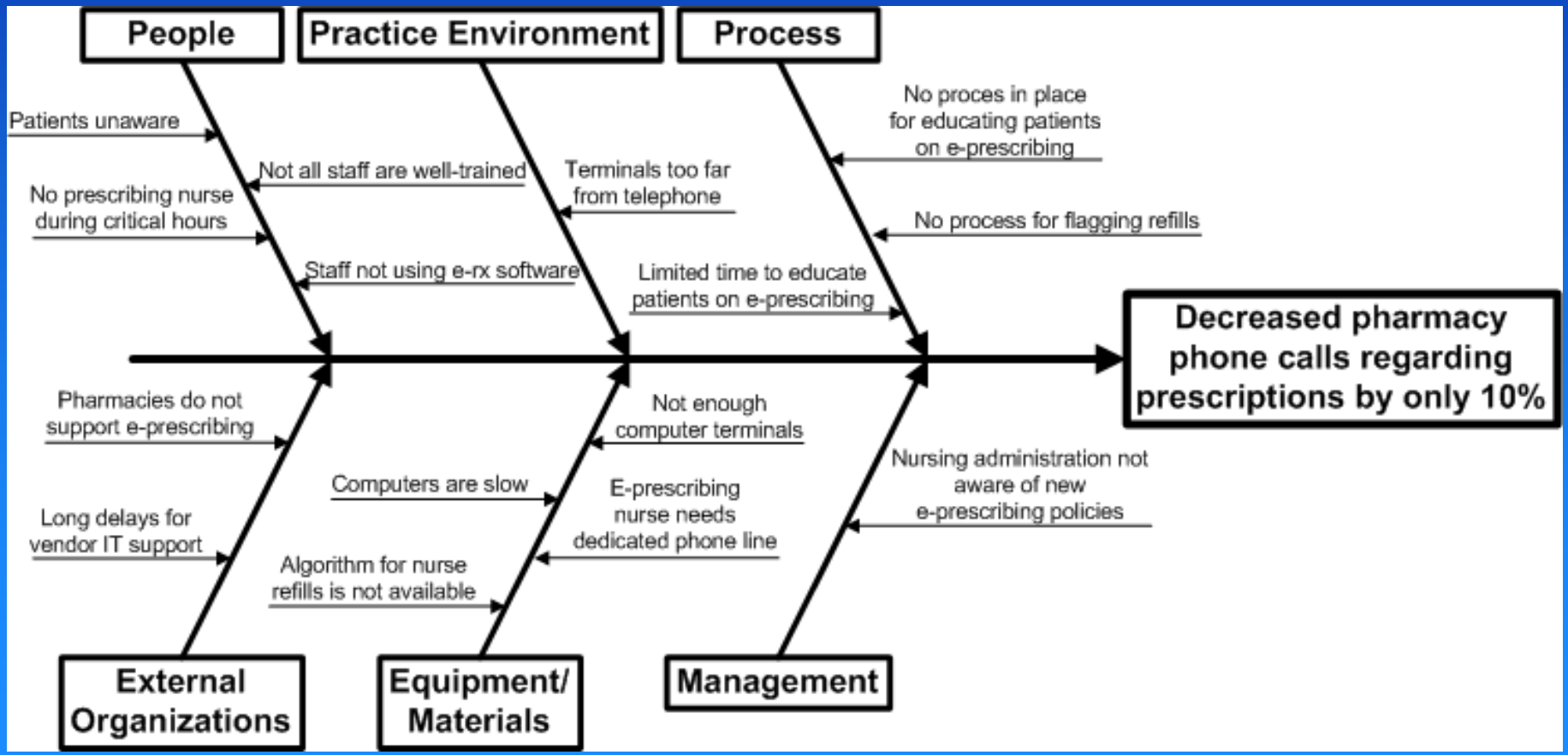
To Our Patients:

This note is a reminder that we sent an electronic prescription to your pharmacy. We are now using electronic prescribing to improve the safety, security and accuracy of your prescriptions. Electronic prescriptions should also save you time by giving your prescription a head start to the pharmacy. We are also handling prescription renewals electronically with your pharmacy.

Please show your pharmacist this card so that he or she is aware that your prescription(s) have been sent electronically. If your pharmacy is electronically enabled, they will receive the prescriptions directly into their computer system. Otherwise, they will receive them on their fax machine.

11. Monitoring and Remediating

- Fishbone diagram for diagnosing failures



Pilot Testing

- 6 Practices in e-prescribing adoption process
  - We conducted introduction and follow-up webinar
    - For 3, we worked with the practice
    - For 3, we worked with REC staff
- Overall, little use of toolset
  - Toolset lengthy, staff felt too busy to read it
  - Only a few were used
    - Goals poster, Outreach letter to pharmacies
    - Patient flyer, Prescription pad handout
  - Struggled to achieve high prescriber use

Recommendations

- Start planning early for e-prescribing
- Identify champions & team leaders
- Arrange for real-time technical support
- Use protocols to professionalize staff
  - Especially delegation of refills
- Carefully engineer “favorites”
- Communicate with local pharmacies
  - Take advantage of e-refills
- Monitor results and remediate problems

Enabling E-Prescribing and Enhanced Management of Controlled Medications

(AHRQ Grant # R18 HS17157)

Grant M. Carrow, PhD
Principal Investigator
Massachusetts Department of Public Health

Cindy Parks Thomas, PhD
Co-Investigator
Schneider Institutes for Health Policy
Brandeis University

Presentation Overview

- Context
- Practice Challenges
  - Systemic
  - Technical
- Prescriber Survey Results
- Lessons Learned

EPCS Project Collaborators

- MA Department of Public Health, Drug Control Program
- DrFirst, Inc., Rockville, MD
- eRx Network, *an* Emdeon *company*, Fort Worth, TX
- Brandeis University, Schneider Institutes for Health Policy
- Berkshire Health Systems, Inc. (189 providers)
- 9 Berkshire County Pharmacies
- U. S. Department of Justice, Drug Enforcement Administration
- Supported by a grant from the U.S. Agency for Healthcare Research and Quality

Project Purpose and Method

- Encourage the expansion, adoption and diffusion of e-prescribing of controlled substances
- Improve medication management by and among ambulatory care clinicians.
- Test and demonstrate the safety, security, quality and effectiveness of electronic transmission of prescriptions for controlled medications in the ambulatory care setting.

Project Specific Aims

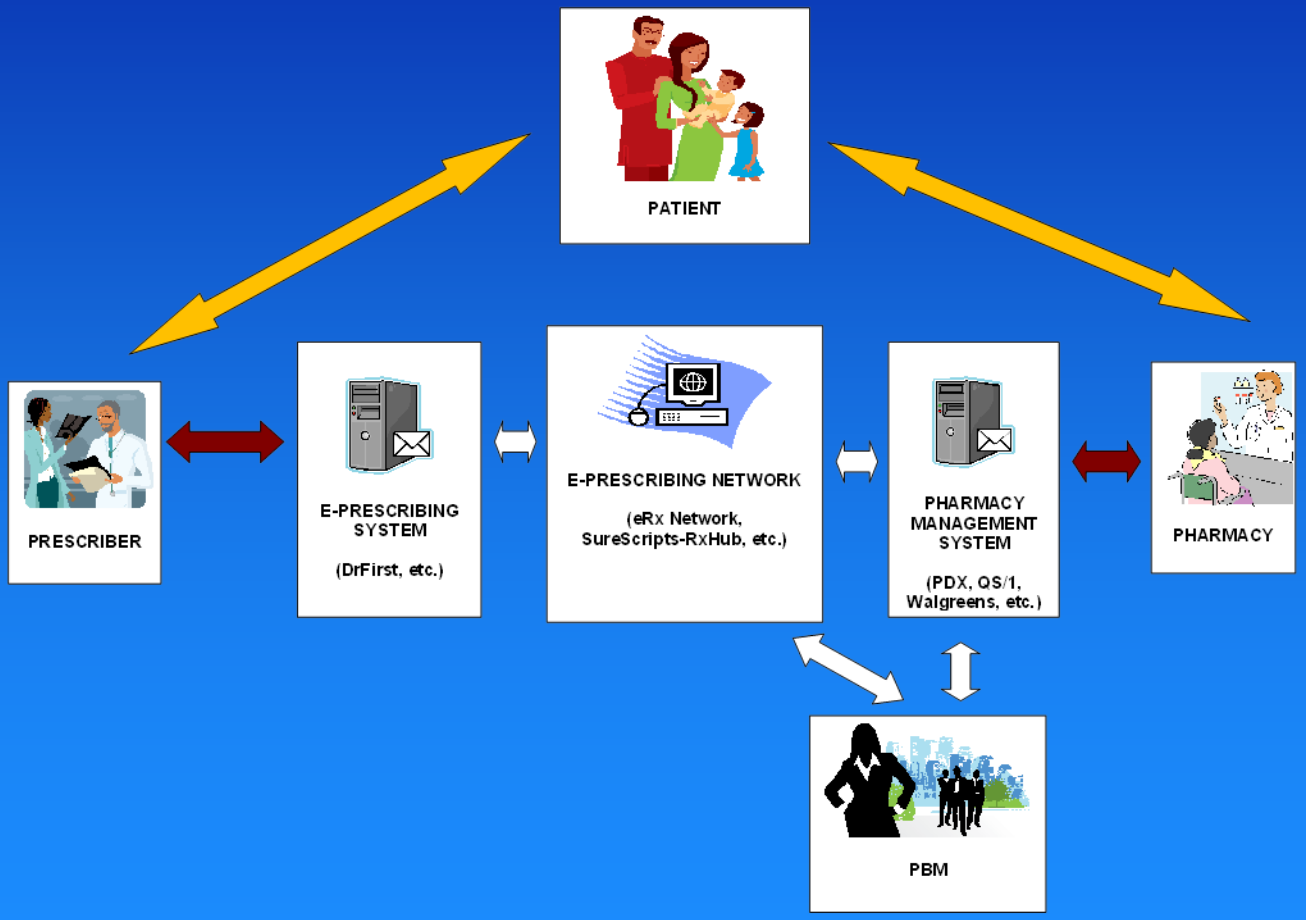
Aim 1: Develop, implement and verify a system of safe and secure electronic transmission of prescriptions for federally controlled substances in an ambulatory care setting.

Aim 2: Develop and test the interface of the e-prescribing system developed in Aim 1 with the Massachusetts Prescription Monitoring Program.

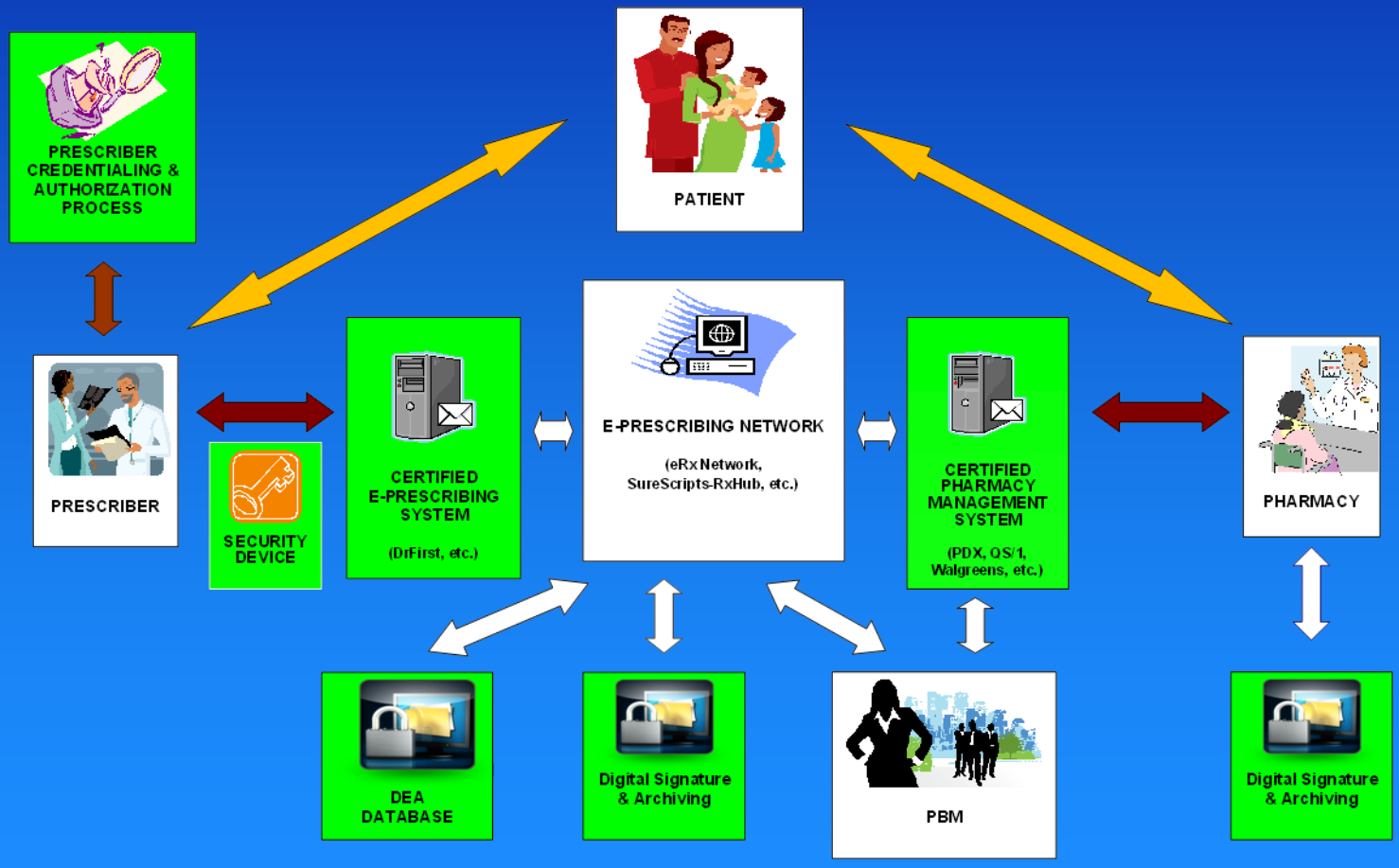
Aim 3: Conduct process and outcomes evaluation of improvements to patient care, risk reductions, patient and clinician benefits, patient safety, information privacy, confidentiality

Aim 4: Develop and implement a plan for dissemination of findings for Aims 1, 2 and 3.

E-prescribing Transaction Work Flow (non-EPCS)



EPCS Transaction Work Flow



Two-Factor Authentication

Proves the prescriber is authorized to digitally sign an EPCS

- Something you have (hard token)
- Something you know (password, PIN)
- Something you are (biometric)

There are different kinds of Hard Tokens

- Digital signature (PKI, Cryptokey)
- One-time password generator

Key Project Milestones

Date	Event
Oct. 2007	AHRQ grant award - MA EPCS project begins
Sept. 2008	DEA/MDPH Memorandum of Agreement
Sept. 2009	First test EPCS transmitted – pilot initiated
Jan. 2010	System activation - 33 providers receive cryptokeys
June 2010	Live demonstration of EPCS (Washington, DC) Interim Final Rule on EPCS Promulgated
Nov. 2010	146 providers with cryptokeys 66 have written ≥ 1 EPCS
March 2011	5000th EPCS transmitted
Sept. 2011	9882 EPCS's Transmitted

Practice Challenges-Systemic

- 9 of 30 pharmacies in Berkshire County participating
  - Affected provider adoption of EPCS
    - Lower # of EPCS's than expected
  - Limited the ability to develop quality care data
- Readiness of Applications for the IFR Requirements
  - Prescribing and Pharmacy systems are experiencing delays in certifying their systems
    - Delays affect implementing care-enhancing technology
  - Current Status
    - 5 Prescribing Systems Certified
    - 7 Pharmacy Systems Certified

Practice Challenges- Technical

- Hard Token Issues
  - Device Drivers incompatible with Windows 7/Vista
  - Hard Token Failures
  - Software loading and sustainability problems
- Discrepancies within EPCS's
  - Instances where SIG did not match instructions in Free Text Field
- Timing of Transmitting EPCS's
  - Provider "batching" transmissions
  - Immediacy of the transaction affects work flow at the pharmacy
- EPCS transmissions without a token
- EPCS Rejections

Prescriber Perspectives on EPCS

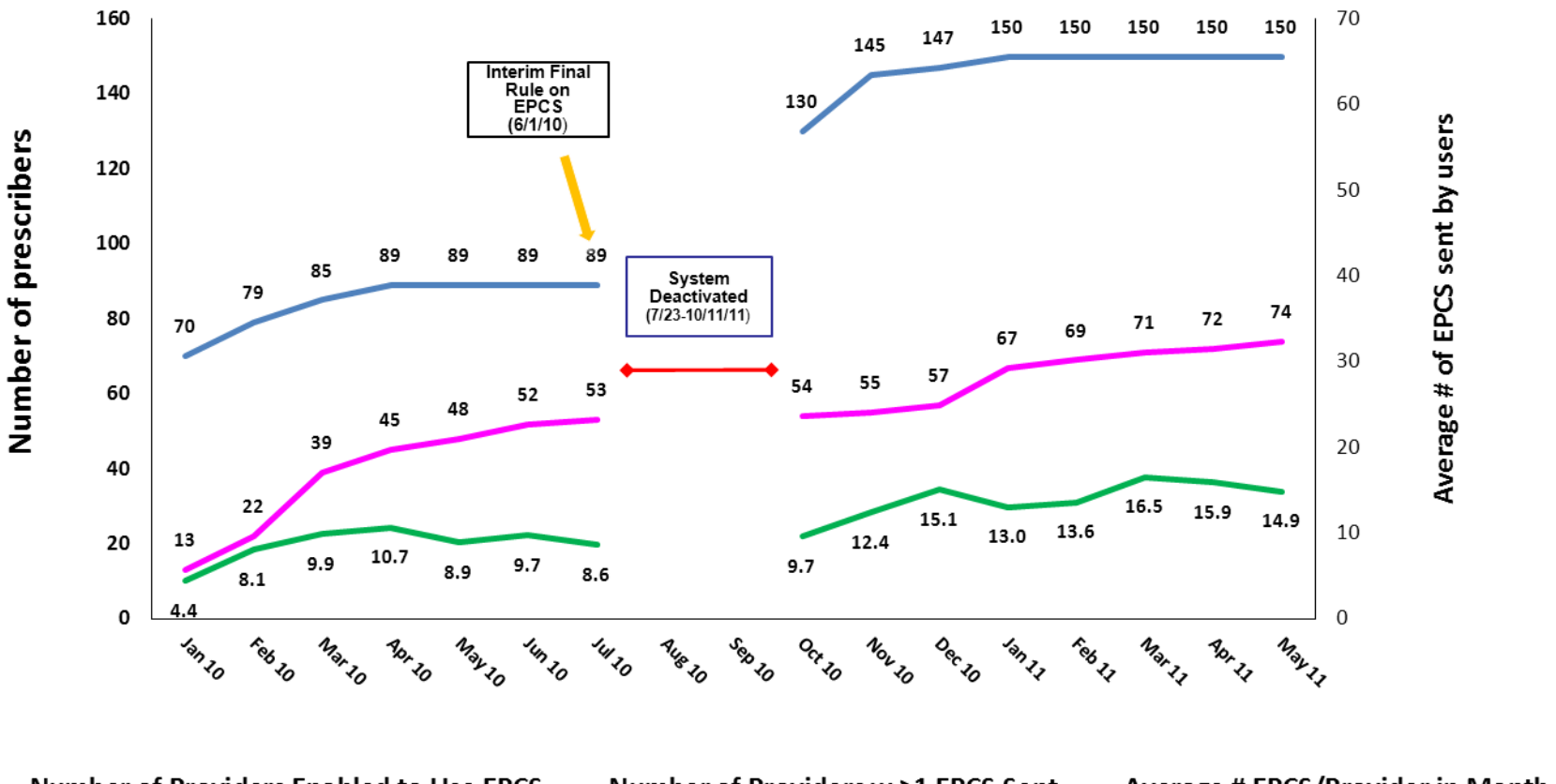
Research Objectives for Physician Perspectives

- Assess the perceived impact of EPCS on patient safety and quality of care
- Identify barriers to adoption and use
- Evaluate the protocol for EPCS and the impact of work-flow requirements on prescribers, pharmacies, patient care, and drug diversion
- Demonstrate provider experience with EPCS

Methods

- Interviews and surveys
- Pre/post implementation survey of prescribers, including physicians, nurse practitioners, physician assistants, and dentists, in a range of general practice and subspecialties (65% of those participating in initial pilot test: 104 prescribers, 41 controls)
- Topic areas:
  - Use of electronic prescribing software
  - Issues with controlled substances (identifying diversion, medication errors, call-backs, etc.)
  - Experience with electronic prescribing of controlled substances

Electronic Prescribing Pilot Adoption Timeline



General Provider Adoption Less Than Expected

- 53.6% of deployed providers generated ≥ 1 EPCS
- Some deployed active providers did not send all CS prescriptions to participating pharmacies electronically
- Survey results suggested a lack of full adoption was directly related to lack availability of a critical mass of participating pharmacies and technical challenges with the hardware

Summary of Major Findings

- Successful implementation for a majority of prescribers
- Expectations of burden of security measures (e.g., carrying a token) were not borne out
- Significant improvement in EPCS users' perception of controlled substance-related issues such as lost or stolen prescriptions, incorrect dose or strength
- Technical challenges considerable
  - Reliability of system was uneven
  - Incompatibility of systems and security token
- Satisfaction with system overall associated with belief that it improved practice management and perception that it provides minimal risk to patient safety

Lessons Learned

- The number of pharmacies capable of handling EPCS's in a community will influence prescribing patterns and the extent to which providers will adopt EPCS
- Creating and processing EPCS's is more complicated than for electronic prescribing of legend drugs due to security requirements and several interdependent IT systems

Lessons Learned (cont.)

- Actively prescribing providers quickly adapt to EPCS
  - Aggregate and average volumes after the 7/2010 deactivation period quickly returned to prior levels
- After an initial transition period, EPCS had a net positive impact on pharmacist work flow
  - While legibility of controlled substances prescriptions improved, instructions in free text fields were often inconsistent with the electronic SIG which precipitated calls to the provider for clarification

Lessons Learned (cont.)

- Applications must prepare to handle EPCS implementation issues
  - Unexpected non-compliant work flows
  - Mandatory deactivations upon notification of security issues
- Medical community engagement is necessary at the local level
  - Prescribers
  - Pharmacies
  - State and Federal regulators

Next Steps

- Further studies to assess EPCS adoption in the context of the current IFR requirements are warranted
  - Revisit implementation issues
  - Identification of other practice challenges under the IFR
  - Impact on quality of care
    - Controlled substance pick-up compliance
    - ADE avoidance
    - Impact on diversion

Contacts

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Q & A

Please submit your questions by using the Q&A box to the lower right of the screen.

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