Capturing the Value in EHR and ePrescribing Integration

ePrescribing Forum

Chicago, Illinois
September 21, 2009

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eHealth Management & Marketing Consultants

Agenda

- ePrescribing Overview
- Key Market Influencers
- ePrescribing Adoption
- ePrescribing & EHR integration
- Q&A

ePrescribing Overview

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Health Information Technology

Levels

Functional

ePrescribing | Chronic Care Mgmt | CPOE

Standards *Standards* *Standards* *Standards*

Foundational

Ambulatory EMRs*/ Practice Mgmt Systems | Enterprise EMRs* | PHR

Standards *Standards* *Standards*

Optimal

Electronic Health Record* (cross-system representation of PHI)

*Definitions on Slide 5

Elephant is reference to "The Blind Men and The Elephant," by John Godfrey Sax (see appendix)

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Definition of Key Terms

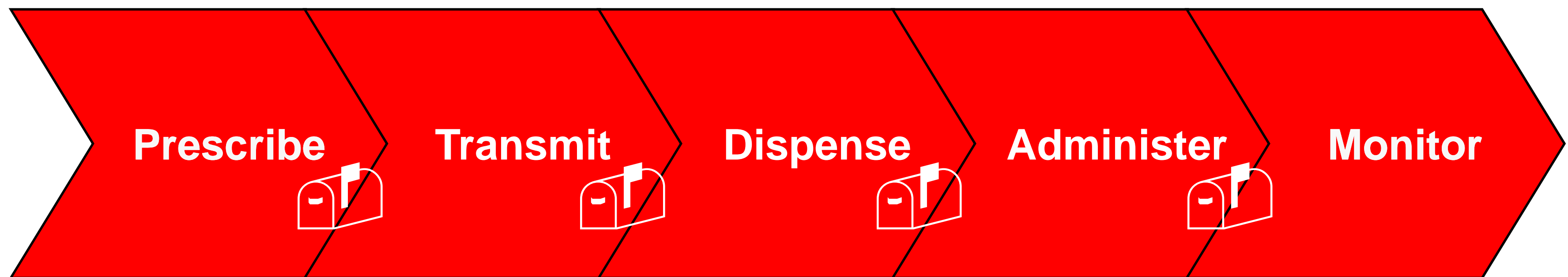
- Ambulatory EMR
  - Electronic medical record and clinical applications designed specifically to support physician office workflow.
- Enterprise EMR
  - Electronic medical record and application architecture originally designed to support hospital workflows; extensions to support physician offices may exist
- Electronic Health Record
  - In contrast to EMRs, which are legal records of the provider organization, EHRs are owned by the patient or stakeholder
  - Contain a subset of info from various providers where patient has had encounters
  - Provides interactive patient access & the ability for the patient to append info
  - Designed to connect into the National Health Information Network (NHIN)

Sources: HIMSS Analytics (2005), POCP

Medication Management

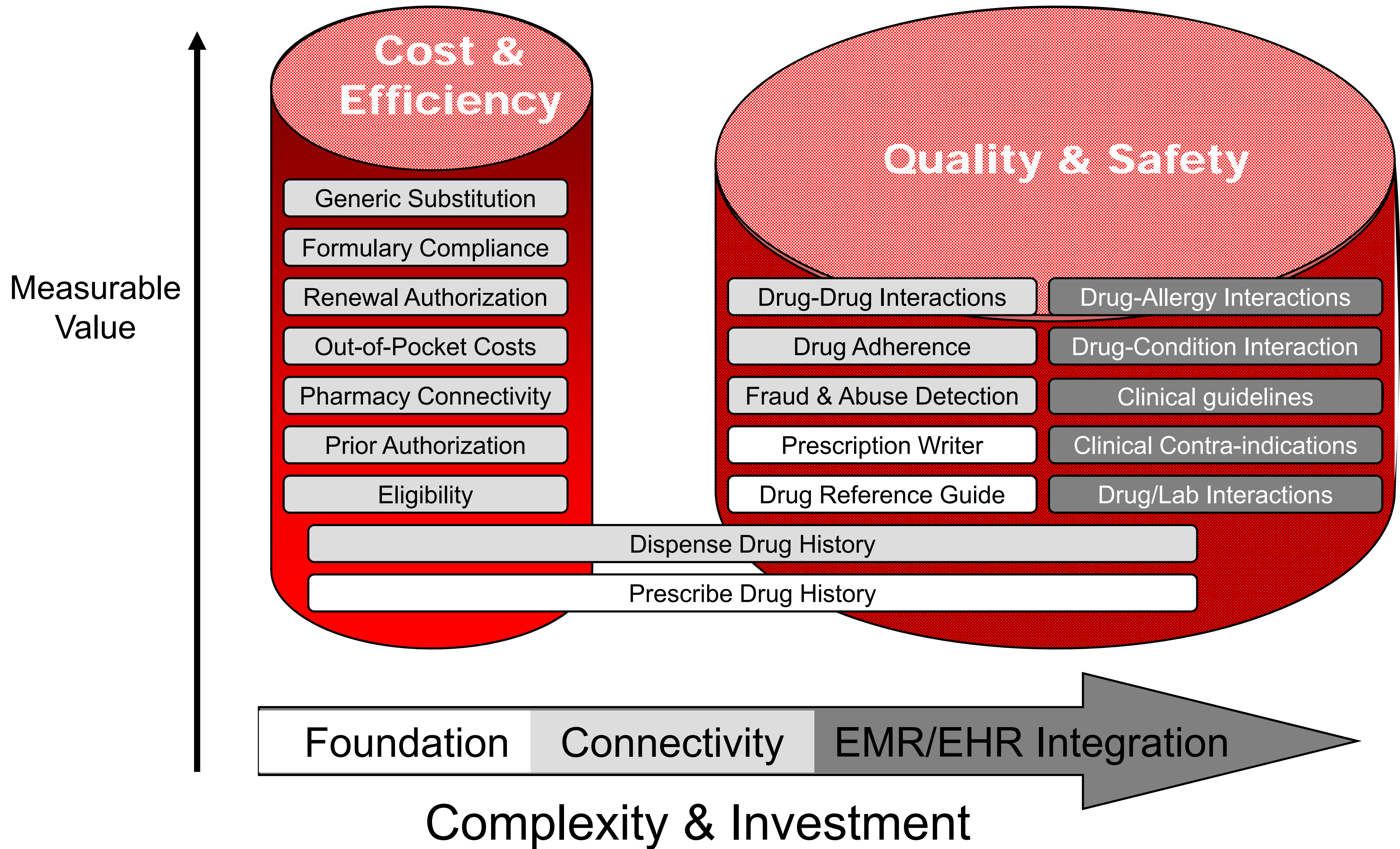
Set of tools that targets improvements to the medication management process, including:

- Writing of the prescription
- Transmission between the prescriber and dispenser
- Dispensing of the medication and support for it's administration
- Monitoring of the impact



Adapted from Bell et al 2004

Medication Management Components & Value



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ePrescribing Interoperability

Physician Practice

EMR or eRx System

A

Formulary Database

Rx

A

Request Eligibility, Drug History

SureScripts, Proprietary

Response

PBM or Plan

Claims Processing System benefit plan rules, formulary, history

B

New Rx

SureScripts, Emdeon RelayHealth

Retail or Mail Pharmacy

Pharmacy Dispensing System

Refill Request
Refill Auth/Denial
Change Request

C

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The Connectivity Roadmap

HIPAA

- Electronic transactions for the business of healthcare

eRx (EDI)

- Gains in accuracy and connectivity enhance safety and efficiency

EHR

- Integrated database allow decision support tools

National Health Information Infrastructure

- Streamlined information retrieval: valuable for epidemiology

National Databases

- Population-based outcomes and cost information readily available to consumers, physicians, payors

"Evidence-Based" Medicine

- Algorithm-driven medicine and decision making

Key Market Influencers

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HIT Advocate-in-Chief

- In January, 2009, signed into law the American Reinvestment and Recovery Act of 2009 (ARRA). The HITECH component:
  - Set aside a potential $36 billion in funds to encourage adoption and use of electronic health records (EHRs)
  - Formed the HIT Policy and HIT Standards committees
  - Modified the HIPPA security laws
- Strongly and firmly believes that HIT is critical to health care reform. Included in voluminous house draft :
  - Administrative simplification, which includes increasing electronic exchange of clinical data and standardized quality reporting;
  - Patient-Centered Medical Home pilot, which has electronic prescribing as a key ingredient
  - A new Bureau of Health Information, which would be responsible for collecting and reporting health information across agencies.

ARRA Appropriated Funds

$2 billion in gross outlays

Program	Distribution Agency	Use of Funds
HIE Planning and Development	ONC	Planning Grants; Implementation Grants
EHR Adoption Loan Program	ONC	Loan Funds
Health IT Extension Program	ONC	Health IT Research Center; Regional Extension Centers
Workforce Training Grants	HHS, NSF	Medical Health Informatics; EHR in Medical School Curricula
New Technology Research and Development Grants	NIST, NSF	Health Care Information Enterprise Integration Research Centers

Recipients

State-designed Entity

States

Health Care Providers

Indian Tribes

Nonprofits

Least-advantaged Providers

Higher Education Medical/Graduate Schools

Federal Government Labs

Adapted from California HealthCare Foundation 2009

ARRA Entitlement Funding

$34 billion in gross outlays

Program	Distribution Agency*	Use of Funds
Medicare Payment Incentives	CMS	Incentive Payments through Carriers
Medicaid Payment Incentives	CMS and states	Incentive Payments through State Agencies

Recipients

- Acute Care and Children's Hospitals
- Physicians and Dentists
- Nurse Practitioners and Midwives
- FQHC

For providers 1) that are ***"meaningful users"*** **and are** 2) using ***certified electronic health records***

Adapted from California HealthCare Foundation 2009

Definition of Meaningful Use

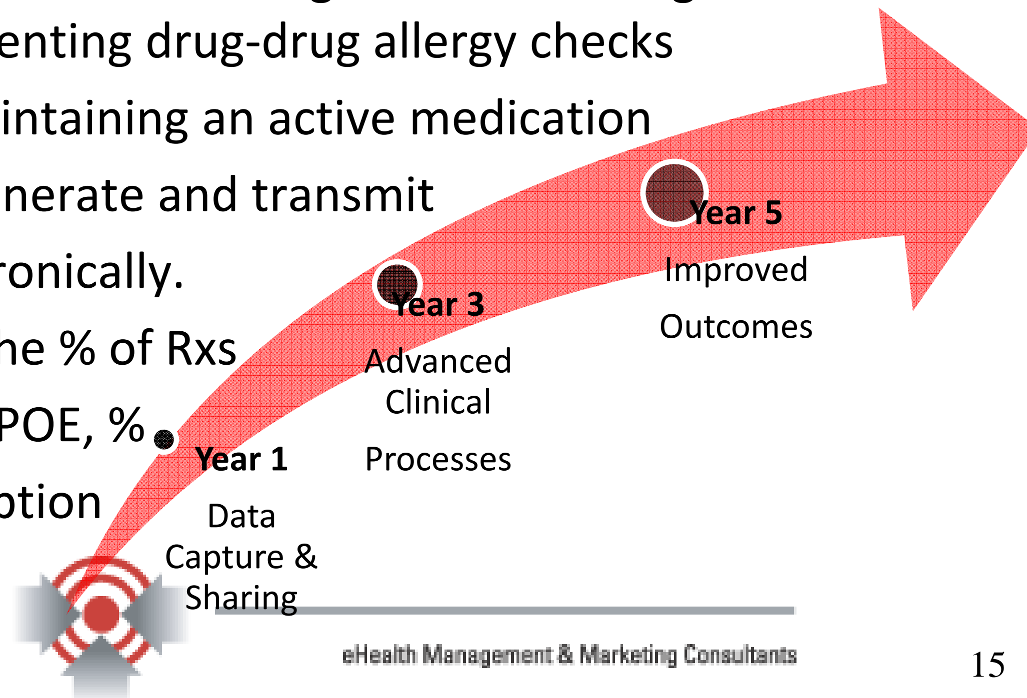
- On June 16, the HIT Policy Committee floated a draft definition of "meaningful use." On July 16, the Committee updated these definitions. They met again in August
- In the draft definition, CMS proposed a matrix with priorities, goals & objectives, expressed as capabilities and measures.
- The "goal of meaningful use of an EHR is to enable significant and measurable improvements in population health through a transformed health care delivery system."
- Criteria are outlined in a phased approach, initially based on "calendar year" but modified to leverage "adoption year," based on feedback from the original draft.

Source: HealthIT News 2009

Meaningful Use & ePrescribing

Foundation | Connectivity | EMR/EHR Integration

- We view the criteria as serving as the driver for the evolution of ePrescribing value from benefit to clinical decision support, helping improve quality and safety.
- ePrescribing figures heavily in the objectives and measures to address the policy goals of "Improving the quality, safety, efficiency and reduce health disparities" and of "improving care coordination."
- Objectives for Year 1 and Year 3 include a range of ePrescribing functionalities, such as implementing drug-drug allergy checks and drug-formulary checks, maintaining an active medication list, and having the ability to generate and transmit permissible prescriptions electronically.
- Measures for Y1 & Y3 include the % of Rxs entered directly by docs thru CPOE, % eds entered as generic when option exists & eligibility checked.



Observations

1) Goals, objectives and measures are not always aligned. Therefore, it is important to the view the matrix holistically.

Policy Priority	Care Goals	Year 1 Objectives	Measures
1. Improve Quality, Safety, Efficiency, and Reduce Health Disparities	• Provide access to comprehensive patient health data for patient 's health care team • Use evidence-based order sets and CPOE • Apply clinical d... support at ...t-of-care • ... lists of patients ...ed care and use ...h out to ... reminders, ...tient ... quality ...t, public reporting	• CPOE • Drug-Drug ...ecks • Proble... List • e... • ...edication List • Allergy List • Patient Demographics • Vital Signs • Lab-test Results • List patients by condition • Send remind... • Progr...	• Report quality measures: - % diabetics with A1C under control - % hypertensive patients with BP under control - LDL - % smokers offered counseling • % patients with recorded BMI • % eligible surgical patients who received VTE prophylaxis • % orders entered directly by doc through CPOE • Use of high-risk meds for elderly

2) The measurement column is critical. Prescriber incentives will be based on measurement

3) The 2011 measures and the overall approach clearly build on the PQRI, NCQA & HEDIS programs, though other measures are emerging.

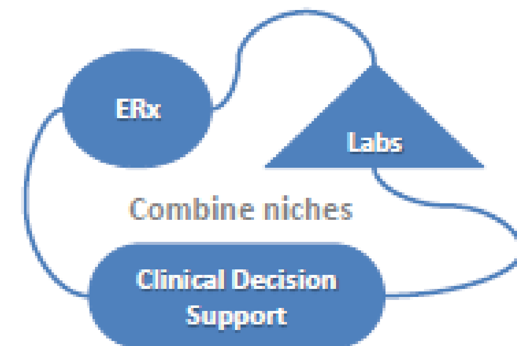
- The proposed definition of meaningful use will enable accelerated use of P4P programs and other quality-based initiatives (e.g. patient-centered medical home).

EHR Certification

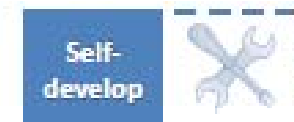
- Certification Commission of Health Information Technology (CCHIT) is a private, non-profit organization initially funded by the Bush Administration
- Role is to accelerate adoption by creating a credible, EHR certification process
- Though not initially named in ARRA legislation, CCHIT is the sole entity able to certify EHRs in the short-term. Concern is more dominance of large EHRs in CCHIT than Democrat vs Republican politics.
- In June, CCHIT announced three new paths to certification to address some concerns.
  - To get to smaller MDs but also to meet broader goals, need multiple pathways.
  - Working name is "HHS Certification." All vendors must comply with security and privacy requirements but they may decide which components of meaningful use they may support
- Although creating a new certification entity may be monumental, there are some forces calling for two.

1.) rigorous

2.) modular



3.) low-cost, site -level



Adapted from Circle Square 2009

ARRA Incentives by Adoption Year

Certified Meaningful User	2009	2010	2011	2012	2013	2014	2015	2016	Total Incentive
2011			$18,000	$12,000	$8,000	$4,000	$2,000		$44,000
2012				$18,000	$12,000	$8,000	$4,000	$2,000	$44,000
2013					$15,000	$12,000	$8,000	$4,000	$39,000
2014						$12,000	$8,000	$4,000	$24,000
2015+									$ Penalties

Source: HIT Policy Committee

<table>
<tr><td rowspan="2">Health Outcomes Policy Priority</td><td rowspan="2">Care Goals</td><td colspan="2">Adoption Year 1 Objectives
Goal is to electronically capture in coded format and to report health information and to use that information to track key clinical conditions</td><td>Adoption Year 1 Measures</td><td colspan="2">Adoption Year 2 Objectives
Goal is to electronically capture in coded format and to report health information and to use that information to track key clinical conditions</td><td>Adoption Year 2 Measures</td></tr>
<tr><td>Eligible Providers</td><td>Hospitals</td><td></td><td>Eligible Providers</td><td>Hospitals</td><td></td></tr>
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Patient-Centered Medical Home

Source: *AAFP 2009*

Goal
- Continuous access to primary care
- Coordinate patient care across various settings & specialties
- Manage care with integrated health records and evidence-based care guidelines

Performance Measures
- Improved patient satisfaction
- Better clinical outcomes
- Reduced utilization of urgent care, emergency services

2-Tier Model of Capabilities
- Tier 1: Track tests, follow-up, referrals; 24x7 access; Integrated care planning, Medication reconciliation; Patient self-management
- Tier 2: EMR; Coordination of care; performances measurement & reporting

Practice Organization | Health Information Technology | Quality Measures | Patient Experience

Family Medicine

20+ Initiatives including:
- BCBS Michigan
- Geisinger Health System
- Group Health
- Taconic (NY) IPA
- Medicare & Medicaid Demonstrations

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Medicare Improvements for Patients and Providers Act of 2008 (MIPPA)

- MIPPA provides both carrots and sticks to prescribers around ePrescribing.
- Physicians qualify by having ePrescribing functionality and writing 50% of their Rxs electronically
- Criteria is self-reported to CMS.

Incentive*	Year	Penalty*
+2%	2009	None
+2%	2010	None
+1%	2011	None
+1%	2012	-1%
+.5%	2013	-1.5%
None	Beyond	-2%

* Increase or decrease in Medicare Part B revenue

ePrescribing Forecast Model (2009, 2010)	
Patients per day	24
% of Practice Medicare	**33%**
Medicare Patient Per Day	8
Revenue per Medicare Patient	$85
Days per year	250
Medicare Revenue Per Year	$168,300
Potential % Increase	2%
Incremental Revenue per MD per Year	**$3,366**

Source: Allscripts

Other ePrescribing Market Drivers

Employers

Health Plans

Pharmacies

Consumers

- Rising consumer expectations for convenience and quality
- Improve efficiency & quality of physicians' practice
- MMA-driven transaction standards
- Prevent/reduce medication errors
- Growth of drug spending
- Managed care sponsorships
- Proven cost savings

Pressures for change

ePrescribing

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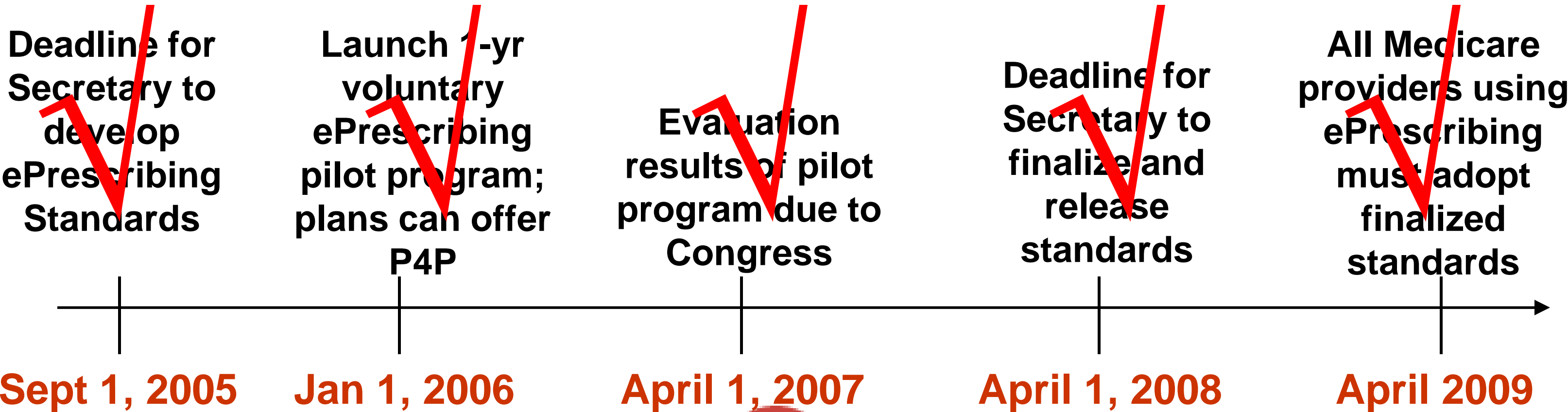
Impact of MMA (Medicare Part D)

Overview

- Landmark legislation required certain standards, if the clinician was ePrescribing.
- Called for hearings and pilots, which were held in '06.
- Initially named NCPDP Script, as standard for ePre.
- Relaxed Stark and Safe Harbor laws to permit hospitals to provide MDs with software.
- Process continued along timeline set out by the MMA, as indicated below.
- Work continues on standards not deemed ready for implementation.

2006 Pilot Recommendations

Standards	Description	Pilot Recommendation
Medication History (NCPDP SCRIPT)	Dispensed/Claims Hx fx of NCPDP SCRIPT	Ready for Implementation
Formulary & Benefit (NCPDP v.1.0)	Form status & alternative drugs, copay	Ready for Implementation
Fill Status Notification (Fxn of NCPDP SCRIPT)	Informs when Rx filled, not filled or partially filled	Ready for Implementation
Structured & Codified SIG	Patient instructions incl. dose, route, freq., etc.	Needs More Work
RxNorm Clinical Drug Terminology	Std drug nomenclature meant to be intralingua	Needs More Work
Electronic **Prior Authorization** Messages	Provider request, payer response to PA criteria	Needs More Work



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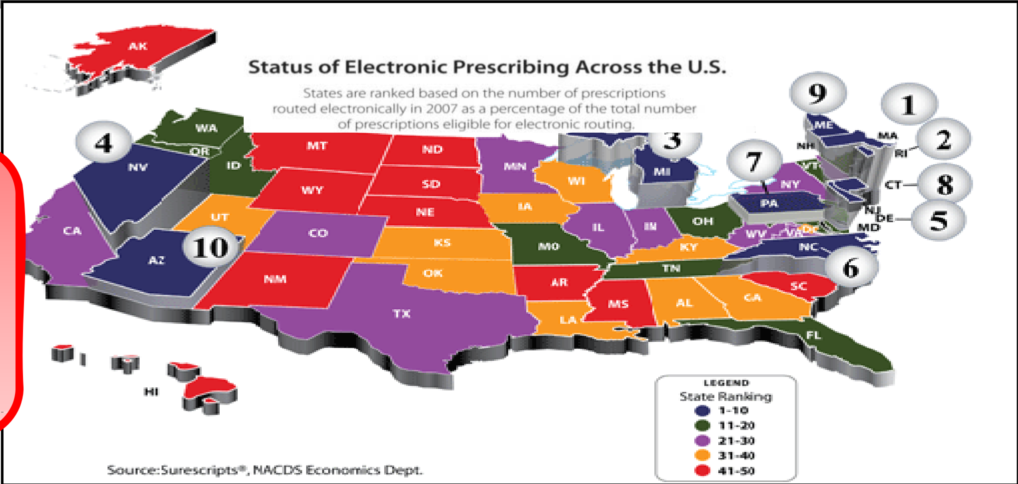
Initiatives Driving Adoption



Initiatives are key contributors in high volume, highest percentage and most improved states

1. Massachusetts
2. Rhode Island
3. Michigan
4. Nevada
5. Delaware
6. North Carolina
7. Pennsylvania
8. Connecticut
9. Maine
10. Arizona

Different Stakeholders Are Leading:

- Massachusetts – Health plans created eRx Collaborative
- Rhode Island – Multi-stakeholder collaborative with leadership from RI Dept. of Health and RIQI
- Nevada – Large multi-specialty clinic driven
- Michigan – GM, Ford, Chrysler created ePrescribing program supported by BCBSMI, HAP, Medco and CVS Caremark

Proprietary and confidential, for internal distribution purposes only

Published Studies: Value to Health Plan

Study	Results
Brigham and Women's 2008	Generic dispensing rate increased points, almost all movement was alternative
Aetna/Zix 2007	7% improvement in GDR and 5% formulary compliance
Affinity Health 2005	Avg costs ↓ $4.12 for new Rx; PMPM ↓ 57¢ vs control; target drugs were 17.5% lower
Aetna 2005	No change in formulary compliance
Univ. of VA. 2003	Annual drug cost savings in a PCP academic group = 2%; Estimated ADE cost reduction of 62%
Tufts Healthplan 2002	Wide-spread deployment of eRx could mitigate rising pharma costs by 2% or more
Medco 2002	15.3% improvement in generic substitution; 8.1% ↑ in generic dispensing

Though the value of eRx to payers is well documented, there are questions as to what post-ARRA role they might plan.

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DEA & ePrescribing Controlled Substances

- In 2008, a number of prominent politicians started putting pressure on the DEA to permit ePrescribing of controlled substances.
- In October 2008, DEA accepted responses to a notice of proposed rule-making (NPRM) regarding ePrescribing of Scheduled meds.
- There were several provisions that were not acceptable to the industry, including:
  - In-person identification of prescriber's identity (to hospitals & tech vendors)
  - 2 Factor authentication (Hard Token & separate 'key' based on DEA number)
- Since then, a team from CMS has been negotiating with the DEA. We understand the DEA is relaxing *some* onerous provisions.
- CMS is pushing them for a final rule with comments, to continue to leverage the industry.
- In Sept, an AHRQ-funded pilot went live in Mass. Involving DrFirst, Edmeon & pharmacies

ePrescribing Adoption

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ePrescribing by the numbers…

12% MDs prescribing electronically
(SureScripts *National Progress Report on ePrescribing*, April 2009)

46,000 Pharmacies ePrescribing
(SureScripts *National Progress Report on ePrescribing*, April 2009)

240 million Prescriptions sent online to Pharmacies
(SureScripts *National Progress Report on ePrescribing*, April 2009)

7.5% US hospitals using CPOE for Rx orders
(KLAS, 2006)

24% Outpatient EMR use
(National Center for Health Statistics, 2006)

210 million Lives for whom formulary & benefits are contractually available through RxHub

$29 billion Potential annual ePrescribing savings
(Center for Information Technology Leadership, 2004)

ePrescribing Trend

50% of all Rxs will be electronic by 2014

100%
90%
80%
10%
0%

2,500,000,000
2,000,000,000
1,500,000,000
1,000,000,000

2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018

POCP
PCMA
CBO
pre- MIPAA/ARRA

POCP's growth projections are much more conservative

Unintended consequences:
Lack of clarity around "meaningful use" and certification has caused adoption to flat-line.

- growth is expected to continue shortly after clarity is realized

A key signal to watch for is substantive change in the rate of adoption from now until 2012.

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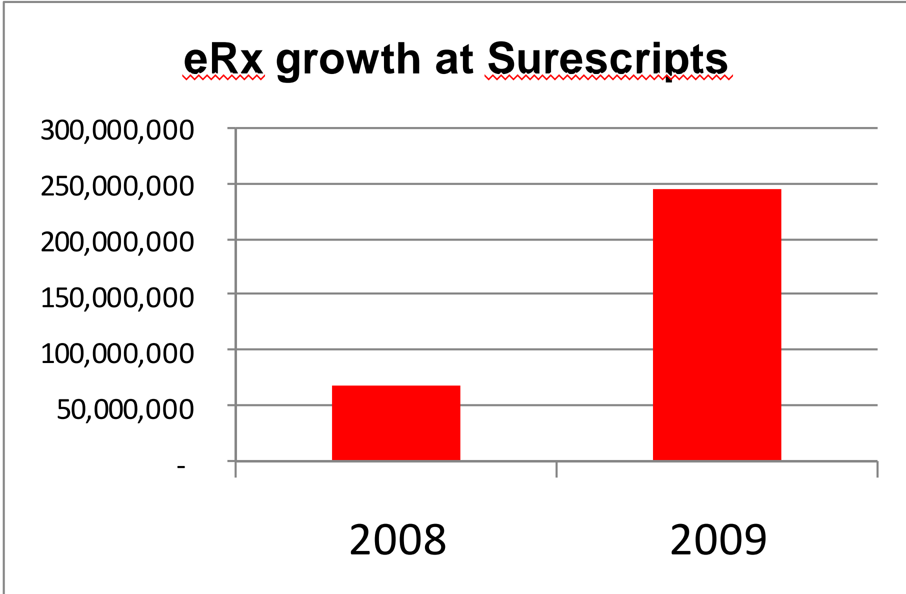
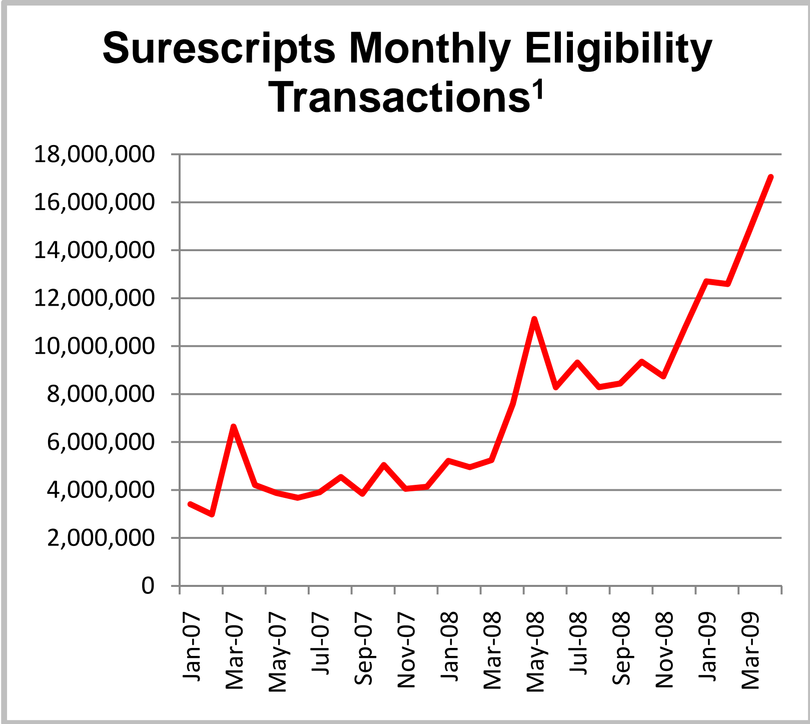
Impact of Eligibility-Informed Formulary





Eligibility Transactions in 2008[1]		Successful Hits (Surescripts[1])		Encounters		Average eRx/Encounter	Rxs Impacted by Surescripts	Total Scripts (that can be transmitted[1])		**Rxs Impacted by Surescripts formulary**
78,000,000	x	.85	=	66,300,000	x	3	= 198,900,000	÷ 1,570,000,000	=	**12%**

[1] Surescripts, *National Progress Report on ePrescribing*, April 2009

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EHR and ePrescribing Integration

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EHR vs ePrescribing

Components	Stand-alone ePrescribing	Electronic Medical Record
Cost	Low	Moderate to High
Difficulty of Implementation	Low	High
Workflow Impact	Low	High
Safety Benefits to Patients	Significant	Highly Significant
Improvements in charting and patient records	Moderate	High
Impact to short-term productivity	Little to none	Could be 6- to 9-month impact

Per Doc Cash Flow for New EHR Implementation

Assumes maximum incentive achieved without implementation services

$K: 0, -5, -10, -15, -20, -25, -30, -35, -40, -45

2009: -30
2010: -5
2011: -5, +18
2012: -5, +12
2013: -5, +8
2014: -10, +4
2015: -5, +2

Net gap: -$21K

Physician cost
Medicare incentive

Source: Massachusetts eHealth Collaborative

EMR Scope & Components

Ambulatory Electronic Medical Record "Foundation"

- Patient Medical History
- Problem List
- Meds List
- Allergies & Adverse Reactions*
- Patient Consents & Directives
- ePrescribing*
- Clinical Documentation Management*
- Dx.Orders & Order Sets*
- Continuity of Care HIE
- Results*
- Alerts & Reminders*
- Standard Care Plans, guidelines, Protocols*
- Clinical Workflow/ Task Mgmt.

* Opportunity for enhancing value via integrated clinical content

Sources: CCHIT, POCP primary research

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CCHIT 2009 ePrescribing vs MIPPA

CCHIT 2009 (Ambulatory EMR Certification)	MIPPA Requirements
(Enable the prescriber to write) a new or refill prescription	
Allow physicians to enter orders with all details needed for the completion of the order	
Alert prescriber if: a. Patient is allergic to a drug being ordered b. Drug interactions may occur Alert prescriber if: a. Patient is currently on a drug for which an allergy has been newly entered b. Drug side effects may occur based on diagnosis c. More appropriate or cost-effective therapy could be substituted d. Give the reasoning behind an alert, and allow override if appropriate	Conduct safety checks
Select medications by brand or generic name	Select medications
Send prescriptions to pharmacy electronically	Electronically transmit prescriptions
Reprint or refax prescription, if necessary, without re-entry of data	Print prescriptions
Obtain electronically: a. Prescription insurance eligibility b. Covered medication list c. Medication History List	Provide information on lower-cost alternatives Provide information on formulary or tiers
Generate patient education material for medications and diagnosis	
Capture diagnosis codes for orders	
Accept instructions for preparation, strength, dose	
Document if samples are dispensed	
Allow docs to create their own list of commonly prescribed meds with automatic prescribing details	
Order and administer immunizations; capture dose, site, manufacturer lot #; document patient receipt, document any adverse reactions.	
	Generate a complete active medication list

Note that CCHIT patient safety checks are much more robust. Drug-to-diagnosis is required.

Note that MIPPA requires presentation but CCHIT just requires the system to obtain the data.

Note that CCHIT requires more robust functionality that tend to be standard in EMRs but not in stand-alone ePrescribing

Embedded ePrescribing within an EMR Strategy

NewCrop, H2H, Informed Decisions, RxNT, Zix Corporation

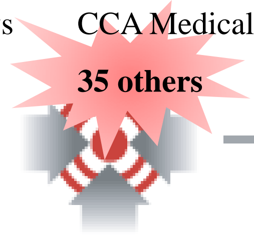
Amazing Charts
PaperFree EMR Solutions, Inc
JMJ Technologies
Alteer

DrFirst℠

Greenway	Nightingale
Meditech/LSS	Medical Records Alert
MediNotes	Noteworthy
ChartLogic	Office Practicum
gMed	PBOmd
HIT Services Group	GE Healthcare
Health Data Svs	CCA Medical
gMed	**35 others**

Levels of Integration

1. Basic data exchange between EMR, eRx company
2. Desktop interface, one- or two-way interface
3. Blackbox drug integration, connectivity and other eRx functions



In Summary

- ePrescribing is a functional component of an EMR; in fact, it's a subset of Medication Management.
- The integration of ePrescribing and EMR promises to yield substantial quality/safety value.
- The overwhelming market influencer today is the Federal government. The stimulus package, ARRA, has over-shadowed MIPPA which had driven adoption previously.
- With both MIPPA and ARRA, penalties may be as important as incentives.
- ARRA is encouraging Medication Management along with other clinical functionality.
- The costs of adopting EMR are substantial but there are strategies to minimize the cost and maximize value.

Thank You!

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Q&A

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Appendix – Additional Slides

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Key Federal Stakeholders

- **HIT Policy Committee** - formed by ARRA, the committee will advise the National Coordinator of HIT on a range of HIT issues; skewed toward clinicians &researchers, with some with more practical experience (e.g. CEO of Epic)
- **HIT Standards Committee** – also formed by ARRA, the committee will largely execute on policies emanating from the policy committee; has 3 workgroups: 1) clinical quality, 2) clinical operations and 3) privacy & security
- **CMS** – office of eHealth standards & security (OESS) playing a key role in standards & meaningful use; Medicaid required tamperproof pads or ePrescribing
- **ONC** – office of the national coordinator for HIT (ONC) codified by ARRA, given substantial responsibility under ARRA to spend $2B and coordinate HIT.
- **AHRQ** – Agency for Healthcare Research & Quality (AHRQ) charged with distributing grants in support of HIT; very much aligned with priorities of OESS
- **NIST** National Institute for Standards & Technology (NIST) and **NSF** National Science Foundation called out in ARRA, though not traditional HIT players

“The Blind Men and the Elephant”

It was six men of Indostan
To learning much inclined,
Who went to see the Elephant~(Though all of them were blind),
That each by observation~Might satisfy his mind.

The First approached the Elephant,
And happening to fall
Against his broad and sturdy side, ~ At once began to bawl:
"God bless me! but the Elephant ~ Is very like a wall!"

The Second, feeling of the tusk,
Cried, "Ho! what have we here?
So very round and smooth and sharp? ~ To me 'tis mighty clear
This wonder of an Elephant ~ Is very like a spear!"

The Third approached the animal,
And happening to take
The squirming trunk within his hands, ~ Thus boldly up and spake:
"I see," quoth he, "the Elephant ~ Is very like a snake!"

The Fourth reached out an eager hand,
And felt about the knee.
"What most this wondrous beast is like ~ Is mighty plain," quoth her;
"'Tis clear enough the Elephant ~ Is very like a tree!"

The Fifth who chanced to touch the ear,
Said: "E'en the blindest man
Can tell what this resembles most; ~ Deny the fact who can,
This marvel of an Elephant ~ Is very like a fan!"

The Sixth no sooner had begun
About the beast to grope,
Than, seizing on the swinging tail ~ That fell within his scope,
"I see," quoth he, "the Elephant ~ Is very like a rope!

And so these men of Indostan
Disputed loud and long,
Each in his own opinion ~ Exceeding stiff and strong,
Though each was partly in the right ~ And all were in the wrong!

- John Godfrey Saxe