The ROI Behind ePrescribing:
Cost Savings, Patient Safety and Physician Adoption
RxHub Symposium Summary
May 9 & 10, 2006
An Introductory Note

On May 10th, RxHub hosted, by invitation only, an educational and interactive symposium for key senior level health plan and employer group decision makers. This symposium included information on the current eprescribing landscape and industry trends, research evidence of eprescribing impact and value, industry leader's views on current adoption strategies, and discussion of existing barriers to eprescribing. The symposium also focused on strategic issues related to the impact on patient safety, the influence of eprescribing on practice efficiency, the results of an independent study conducted by Milliman on the value of eprescribing decision support information at the point of care, and key strategies to drive further adoption of eprescribing technologies.

In support of continued adoption of eprescribing by all stakeholders, RxHub is releasing this summary document of the Symposium; the ROI Behind ePrescribing: Cost Savings, Patient Safety and Physician Adoption. We would like to thank all the presenters and participants for making the symposium productive, educational and exciting.

— JP Little
Chief Operating Officer
RxHub
Our Topics and Speakers

Keynote - Barrett Toan, Express Scripts

Targeted Drug Cost Management and the Potential Impact of Electronic Prescribing - Keith Kieffer, Milliman

Success Beyond Expectation at Health Alliance Plan (HAP) and the Henry Ford Health System - Matt Walsh, Health Alliance Plan

Electronic Prescribing: Improved Quality & Safety - Jonathan White, M.D., AHRQ

E-Prescribing: From Paper to Powerful - Without the Pitfalls - Peter Kaufman, M.D., DrFirst

E-Prescribing: The Consumer Perspective... (??) - David Lansky, Ph.D., Markle Foundation

Call to Action: Employers and Patients Are Counting on You - Rob Moroni, RAK & Co
Executive Summary

- ePrescribing adoption is growing rapidly, spurred by the fact that it is a favorable solution for doctors, patients, and payers, and the infrastructure is now in place.
- ePrescribing is being supported by a wide range of legislative and regulatory changes at the federal and state levels. The Medicare Modernization Act has sponsored a number of pilots, established standards, and requires it for plans that participate in Medicare Part D.
- An actuarial analysis by Milliman shows substantial savings potential when decision support information (i.e. formulary) is presented to a physician at the point of prescribing. A payer’s drug spend could be reduced by 8-15% and drug spend inflation could be reduced by 1% a year.
- The experience of Henry Ford Health System with eprescribing exceeded their expectations. Of 500,000 prescriptions, 58,000 were changed due to formulary messages, 97,000 were changed due to interaction warnings, and 6000 changed due to drug allergy warning. The generic usage rate was increased 1.25%.
- Physician acceptance is key to driving adoption. ePrescribing is now at the point where physician work flow is improved over conventional processes and the methodology is very easy to use. Time savings for physicians and staff outweigh the implementation costs.
- ePrescribing improves patient safety by reducing adverse drug events due to allergies, drug interactions, improper patient identification and poor handwriting. It also improves patient convenience by reducing formulary errors, call backs, pharmacy wait time, and prescription refill time.
- Messages to consumers about patient safety and managing medications will strike a chord as 34% of the public have experienced a preventable medical error. ePrescribing should be put in the context of connectivity and personal health information, which consumers expect. Communications to consumers should also reassure consumers that eprescribing does nothing to endanger privacy.
- For employers, eprescribing is a way to reduce costs and improve enrollee welfare, with no cost shifting. Consequently, it is the type of initiative that employers are looking for and will meet with strong employer/payer approval. It is a good example of how health care plans can meet employer’s needs.
- ePrescribing is a “win/win” for patients, physicians, health plans and payers. It reduces costs, improves patient safety and convenience, and eases physician work flow.
Why RxHub?

- Critical mass of patient-specific information
- Transaction/connection **standards** in place
- **Infrastructure** (pipes to carry transactions)
- **Single point of contact** (one-to-many connection)
- Master Patient Index
- Patient Eligibility
- Patient Formulary & Benefits
- Patient Medication History
- Prescription Routing to retail and/or mail order

*160 million covered lives*
ePrescribing Adoption is Happening!

RxHub Quarterly Volume (000's)

Eligibility Volume

Medication History Volume

Q104 Q204 Q304 Q404 Q105 Q205 Q305 Q405 Q106

Total Incoming Med History
Proving ePrescribing Interoperability through RxHub

RxHub Services Provided YTD 2006 (January – April 06)

| MPI | Access to 160M covered lives via the RxHub Master Patient Index |
| PRN | Ambulatory 13.8M Eligibility Requests YTD 06 22K Formulary Downloads 1.1M Medication History Requests YTD 06 |
| SIG | Ambulatory 62K New/Refill Prescriptions sent to Retail/Mail YTD 06 |
| MEDS | Acute Care 220K Medication History Requests YTD 06 |

Hospitals & Distributors
- Barnes Jewish Hospital
- Healthcare Systems
- Regenstrief Institute
- Siemens Healthcare

Technology Partners
- A4 Health
- AchieveHealthcare
- Allscripts
- Athena Health
- Bond Medical
- Catalis Health
- Cerner
- Community Computer
- DrFirst
- eClinical Works
- eHealth Solutions
- EmDeon/WebMD
- EPIC
- Gold Standard
- H2H Solutions
- Healthcare Systems
- Health Vision
- InstantDx
- iScribe
- MA Share
- McKesson
- MdAnywhere
- MdOffices
- Medical Info Systems
- MedicWare
- Medkeeper
- MedPlus
- Medport
- NewCrop
- NextGen
- OA Systems
- Phytel
- Purkinje
- Relay Health
- RxNT
- SafeMed
- Script IQ
- ScriptRx
- Sequel Systems
- Siemens
- SSIMED
- STI Computer
- Synamed
- Zix Corporation

Patients
- Serving patients in 369 Metropolitan Statistical Area’s within 50 States

Pharmacies
- Caremark Mail Order
- eRx Network
- Express Scripts Mail Services
- Medco Mail Order

PBM/Payors
- Argus
- Caremark
- Express Scripts
- Medco Health Solutions
- PharmaCare
- NMHC
- SXC
  - CAQH (Aetna, Aultcare, Cigna) formulary only
Legislative and Regulatory Changes Promote Awareness and Adoption

- Medicare Drug Improvement and Modernization Act of 2003 (MMA)
  - ePrescribing recognized as key to managing program expense
  - ePrescribing further accelerated by creation of uniform standards and funding of pilot projects

- Plans that participate in Part D **must support** physician and pharmacy electronic prescribing (MMA)

- Proposed Stark and anti-kickback exemptions

- Joint Council on Accreditation of Healthcare Organizations (JCAHO) Medication Reconciliation Requirement and IHI 100,000 Live Program

- Federal drivers of e-Health
  - CMS — MMA ePrescribing Pilots
  - Office of the National Coordinator for Health Information (ONC) — National Health Information Network (NHIN) Prototype Demonstrations
  - American Health Information Community (AHIC) — Breakthroughs and Use Case Development
  - Agency for Healthcare Research and Quality (AHRQ) — Patient Safety and Quality Programs

- 10 bills introduced this year
  - Unprecedented bipartisan collaboration
  - H.R. 4157 & S1418 introduced to make ONC and AHIC legal entities.

- Governors also focusing on Health Information Technology (HIT) in wake of Katrina

*Not a question of “if” but “when” and “what”*
Potential Savings: An Actuarial Analysis by Milliman

- Over 70% of potential drug spend savings is controlled by Primary Care Physicians (PCPs)

- ePrescribing has the potential to:
  - Reduce a payer’s drug spend inflation by 1% per year.
  - Mitigate patient customer service issues on up to 32% of prescriptions under a highly restrictive formulary (i.e., greater than 60% generic use).

- ePrescribing offers the potential to significantly lower prescription drug spend on Medicare beneficiaries
  - Up to 15% of total drug spend under a minimally restrictive drug formulary (i.e., 45% or less generic use).
  - Up to 8% of total drug spend under a moderately restrictive formulary (i.e., 55% generic use).

Source: Milliman
## Estimated Savings Per Member Per Year & By Members Insured

### Estimated 2006 Medicare Drug Spend Savings Per Member Per Year* Primary Care Physicians Only

<table>
<thead>
<tr>
<th>Baseline Generic Use %</th>
<th>Percentage of Potential Prescriptions Shifted**</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>25%</td>
</tr>
<tr>
<td>45%</td>
<td>$65</td>
</tr>
<tr>
<td>50%</td>
<td>$54</td>
</tr>
<tr>
<td>55%</td>
<td>$44</td>
</tr>
</tbody>
</table>

*The estimated potential per member per year savings in drug spend attributable to shifting prescriptions from higher cost products to the average cost of products in the lowest tier alternatives under various Baseline Generic Use Percentage scenarios. The Percentage of Potential Prescriptions Shifted represents various scenarios for shifting drugs to the lowest cost tier alternatives.

**The percentages reflect the ability to move generic usage to a maximum 70% from the baseline Generic use.

### Illustrative Annual Drug Spend Savings Related to Primary Care Physicians

<table>
<thead>
<tr>
<th>Number of Medicare Members Insured</th>
<th>Estimated 2006 Annual Drug Spend Savings Related to PCPs</th>
</tr>
</thead>
<tbody>
<tr>
<td>5,000</td>
<td>$650,000</td>
</tr>
<tr>
<td>10,000</td>
<td>$1,300,000</td>
</tr>
<tr>
<td>20,000</td>
<td>$2,600,000</td>
</tr>
</tbody>
</table>

### Assumptions:
- Baseline generic use = 45%
- Percentage of potential prescriptions shifted to lowest cost tier = 50%

Source: [Milliman](#)
Experience at Henry Ford Health System (HFHS) and Health Alliance Plan (HAP)

- Over 400 physicians and 800 staff trained and using eprescribing
- Will have over 800 physicians participating by end of 2006
- Generating over 20,000 prescriptions per week
- To date, over 650,000 electronic prescriptions have been processed by over 400 Henry Ford Medical Group physicians
- Specialties completed:
  - Adult primary care (FP, IM)
  - Pediatrics
  - Women’s Health
  - Neurology

Source: [Henry Ford HealthSystem] [Health Alliance Plan]
Impacting Physician Behavior at HFHS

Results for electronic prescriptions by Henry Ford Medical Group (HFMG) physicians during the months of August 2005 – March 2006 for all patients

- Total number of prescriptions: 499,000
- Over 58,000 prescriptions changed or cancelled due to formulary messages
- Over 97,000 prescriptions changed or cancelled due to drug to drug interaction warnings
- Over 6,000 prescriptions changed or cancelled due to Drug/Allergy warnings

Source:

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Impacting Financials at HFHS

% of prescriptions designated “Generics Allowed”: 99.3%

<table>
<thead>
<tr>
<th>Primary Care Generic Use Rate</th>
<th>Q4 04</th>
<th>Q3 05</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>ePrescribing sites</td>
<td>60.92%</td>
<td>63.25%</td>
<td>+2.33</td>
</tr>
<tr>
<td>Non-ePrescribing sites</td>
<td>59.53%</td>
<td>60.61%</td>
<td>+1.08</td>
</tr>
<tr>
<td>Difference</td>
<td>1.39</td>
<td>2.64</td>
<td>1.25</td>
</tr>
</tbody>
</table>

The generic use rate among physicians using eprescribing improved 1.25 percentage points more than those not yet using eprescribing

A key issue driving success was physician acceptance...

Source: Henry Ford Health System, HAP
Main Barriers to Physician Acceptance are Workflow & Usability

Where are the Problems?

Source: DrFirst
## Eliminating Pitfalls: Workflow & Usability

<table>
<thead>
<tr>
<th>Workflow</th>
<th>Usability</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Barrier</strong></td>
<td><strong>ePrescribing Solution</strong></td>
</tr>
<tr>
<td>Interface</td>
<td>Simple, functional, tested</td>
</tr>
<tr>
<td>Renewals</td>
<td>Fast, prompted, automatic</td>
</tr>
<tr>
<td>Medication History</td>
<td>Rapidly accessible</td>
</tr>
<tr>
<td>Pharmacy List</td>
<td>Loaded</td>
</tr>
<tr>
<td>Allergy Lists</td>
<td>History entered by practice</td>
</tr>
<tr>
<td>Mail Order</td>
<td>Complete for Caremark, Medco, Express Scripts</td>
</tr>
<tr>
<td>Pharmacy Access</td>
<td></td>
</tr>
<tr>
<td><strong>New Prescriptions</strong></td>
<td>Faster than manual</td>
</tr>
<tr>
<td><strong>Patient Data</strong></td>
<td>Loaded</td>
</tr>
<tr>
<td><strong>Support</strong></td>
<td>Critical and available 24/7</td>
</tr>
</tbody>
</table>

Source: DrFirst
Cost vs. Time Savings of ePrescribing

Cost:
- License fee
- Hardware (desktop computers, handhelds, wireless access point, etc.)
- Connectivity (broadband internet strongly encouraged)
- Time for training (approx. 1-2 hrs./person)
- Interface to Practice Management System and/or EMR

Time Savings:
- Physician
  - On-call
  - New prescriptions
- Staff
  - Phone calls with pharmacies
  - Chart pulls
  - Renewals
  - Overtime
  - Fax costs

Source: DrFirst
ePrescribing from Physician Perspective at HFHS: Improved work flow, fewer errors, and lower costs

Sources of improved efficiency and decreased error

1. Greatly reduced time and no transcription errors
2. Patient information available as prescription is created
3. Requests not lost
4. Information available at point of care as decision is made
5. Enormous time savings
6. No transcription errors
7. Reliable documentation

Source: Henry Ford Health System

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Impact on the Patient’s Safety

- The Five Rights - (Right medication, Right dose, Right time, Right patient and Right route)
- Legible Handwriting
- Available Medication History
- Drug Allergies
- Drug interactions
- Limitations based on other information
- Weight-based dosing
- Clear patient identification
- Improved monitoring of drug safety

Source: AHRQ
Impact on the Patient’s Quality of Care

- Efficient
  - Reduce time and effort to prescribe
  - Improved formulary utilization

- Effective
  - Decision support with better information

- Timely
  - Reduce cycle time for authorization and transmission of prescription

- Patient-Centered
  - Silo Buster

- Equitable

Source: AHRQ
Consumers and ePrescribing: What do we know?

- Messages about patient safety and managing medications strike a chord
  - 34% of public has experienced a preventable medical error
- People expect connectivity and personal health information services
  - Little direct exposure or public awareness of eprescribing to patients
- Key is to leverage eprescribing functionality as part of larger service model to benefit patients and families
  - With sensitivity to privacy and patient control
- Health Plans, PBM’s and providers who implement these systems are fulfilling consumers’ intent

Source: CONNECTING FOR HEALTH MARKLE FOUNDATION A Public-Private Collaborative
Consumers Care About Safety and Convenience

ePrescribing Improves Both

- Prescription ready when you get to pharmacy
- Fewer formulary issues
- No waiting
- No physician call-backs for clarification
- Fewer medication errors
- Fewer communications errors

*Convenience and safety specific to ePrescribing is a challenge to communicate*

Source: [Connecting for Health Markle Foundation](http://www.connectingforhealth.org)
Consumers Recognize the “Upside” and “Downside” of Health Information Technology

- **Upside**
  - Errors are frequent
  - Medication errors can be prevented
  - Doctors and pharmacists should be taking steps to reduce errors
  - Computer systems can help
  - Individuals can be key partners in managing their information
  - Health plans, PBMs, and providers who implement these systems are fulfilling consumers’ intent

- **Downside**
  - Significant concern about privacy and security
    - 85% say protecting confidentiality absolutely essential
    - FACCT survey: 91% “very concerned” (barrier for 1/4)
    - Strong desire to “control” who sees health information
  - Fear of secondary uses & misuses
    - 24% believe employer uses medical info to affect personnel or insurance benefits
    - 85% believe if genetic test results known to insurers, would refuse policies or charge more

*Consumers will place significant responsibility with data suppliers, vendors to address privacy and public trust*

Source: MARKLE FOUNDATION A Public-Private Collaborative
Employers and eprescribing: Win/Win Cost control, not cost shifting

- Employers don’t know how they have gotten themselves into this cost predicament
- Must engage in high value actions that lower costs without hurting enrollees
  - Not much more room to cost shift
- Understanding what payers perceive as value
  - Exactly what the patient needs - nothing more - nothing less
  - The best providers committed to quality and safety
  - Aligning with integrated delivery systems with strong leadership and commitment to quality and low cost
  - Strong Formularies and Prescription Management

*ePrescribing is exactly the type of initiatives employers value*

Source: RAK & Co. Integrated Health Care Solutions
Employers Need and Welcome Health Plan Leadership

- The health care industry has taken increased responsibility for improvements in cost and safety
  - Employers want Health Plans to be even more aggressive
- Employers make widgets and want to keep that focus
  - They trust the health care industry to care about the cost and quality of health care
- Employers believe health care suppliers need to make the tough decisions to get costs under control
- ePrescribing is an easy example of how health plans can meet employer’s expectations

Failing to meet employer – and enrollee – expectations could lead to increased political and economic pressure on health plans

Source: RAK & Co. Integrated Health Care Solutions
Savings Opportunity is Real for the Health Plans, Payers, and Enrollees

- Employers will give Health Plans kudos and praise for foresight
  - Reduction in trend hits employers' FAS 106 liability immediately which positively impacts their Earnings Per Share and stock price

- Plan drug spend will be optimized
  - More generic usage
  - More formulary compliance
  - More real-time prescription management capability

- Reduced medication errors

- Better data and information

- Health plans can influence their preferred distribution channel

- Marketing and public relations opportunity is real

Source: RAK & Co. Integrated Health Care Solutions
ePrescribing: a Win/Win for all stakeholders

**Physicians**
- Improves work flow
- Lowers costs
- Lowers adverse drug events

**Patients**
- Increases safety
- Increases convenience
- Lowers costs

**Payers**
- Lowers costs
- Enrollees benefit
- Physicians benefit
For Additional Information

Please contact RxHub at 651-855-3000 or visit us at www.rxhub.net