Maximizing the Effectiveness of E-Prescribing Between Physicians and Community Pharmacies

Presentation to the NCVHS Standards and Security Subcommittee
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What We Plan to Accomplish—

- Evaluate how the initial MMA e-prescribing standards work (or don’t work) in a variety of practice settings, across a number of geographic areas, utilizing several different e-prescribing technologies.

- Assess how prescriber and vendor characteristics influence e-prescribing adoption, and what "best features" of vendor software improve medication-related outcomes.
The Locales

- Florida
- Massachusetts
- New Jersey
- Nevada
- Rhode Island
- Tennessee
The Physician Vendors

- Allscripts
- DrFirst
- Gold Standard
- InstantDx
- MedPlus/Quest Diagnostics
- ZixCorp
The Pharmacy Partners

- Ahold (Giant and Stop & Shop)
- Albertson’s (Sav-On and Osco)
- Brooks
- CVS
- Duane Reed
- Longs
- Rite Aid
- Walgreens
- Wal-Mart
- And a sample of independent pharmacies (?)
Other Participants

- Aetna
- BC/BS of Massachusetts
- NaviMedix
- Partners in Care
- Walgreens Health Initiative
The Core Research Team

- Kate Lapane, Associate Professor of Medical Science, Department of Community Health, Brown University, Providence, RI (Principal Investigator)
- Catherine Dube, Senior Lecturer, Department of Community Health, Brown University
- Michael Rupp, Professor and Executive Director, Center for the Advancement of Pharmacy Practice, Midwestern University, Glendale, AZ
- Terri Jackson, Clinical Assistant Professor, Department of Pharmacy Practice & Science, University of AZ College of Pharmacy, Tucson, AZ
Cluster Site Visits

Participants:

- Sampled in a way to maximize variability across geography, physician technology vendor, community pharmacy, experience and volume of e-prescribing

Data collection activities:

- Pharmacy (combination of on-site data collection and use of existing data sources)
- Physician providers (Phase I: on-site performance analysis; other phases – follow-up surveys – phone/mail in random samples)
- Patients (self-administered, questionnaire in physician office)
Coordination of Testing of Interoperability of Standards and Research Evaluation

**Phase I: Performance analysis**

**Other phases: phone/mail follow-up**

- **LIVE DATE**
- **LAG**
- **Pilot Testing**
  - Certification process for specific standard complete
  - SURESCRIPTS OVERSITE
  - BROWN OVERSITE
## Proposed Timeframe for Testing of Standards (Application)

<table>
<thead>
<tr>
<th>January 2006 Start Phase I</th>
<th>April 2006 Start Phase II</th>
<th>June 2006 Start Phase III</th>
<th>September 2006 Start Phase IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>NCPDP SCRIPT Standard Version 5, Release 0 (Version 5.0), May 12, 2004</td>
<td>ASC X12N 270/271</td>
<td>NCPDP SCRIPT (cancel and change functions)</td>
<td>Structured and Codified SIG</td>
</tr>
<tr>
<td></td>
<td>NCPDP SCRIPT (fill status notification function)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>NCPDP standard medication history messages</td>
<td></td>
<td>Prior authorization messages - ASC X12N 278</td>
</tr>
</tbody>
</table>
Data Collection Strategy

Cluster Visits - 6 states

Providers, nested within the cluster visits

Random sample providers

Random sample providers from each

Baseline data 03-05//06
- Site visit
- Interviews
- Assessment of workflow, business practices

Follow-up 06-07/06
- Changes in practices

Follow-up 08-09/06
- Changes in practices

Follow-up 10-11/06
- Changes in practices

Delay to avoid confound by Part D issues
Performance Analysis

- The goal is to capture multiple perspectives on the performance, potential problems and opportunities, and barriers and facilitators for successful integration of e-prescribing standards.
- Direct observation
- Semi-structured interviews
- Documentation of:
  - key tasks and tactics associated with e-prescribing
  - descriptions and workflow diagrams
  - business practices
  - personnel roles and organizational structure
  - personnel perspectives on problems and potential solutions associated with e-prescribing.
Performance Analysis

- Observation of the e-prescribing process is likely to focus on ease of use, ancillary materials employed, time required, mistakes and re-dos, concurrent activities, etc.
- Questions will range from open-ended to specific focusing on individual perspectives, opinions, experiences, challenges and suggestions regarding e-prescribing.
- Qualitative data analysis using QSR NVivo®
Factors Potentially Influencing Prescriber Uptake and Drop Out

- Physicians
  - SureScripts certified
  - Physician Technology Vendors
  - Domains: features, functionality, usability, Alerts, reporting functions
  - Domains: Practice characteristics, Provider characteristics, workflow characteristics
  - Dependent variable: Adopt/sustain, Adopt/drop out, Non-adopter

- Patients
  - Domains: Demographics, Acceptability, Knowledge

- Pharmacies
  - Domains: % SureScripts certified; Integration of e-prescribing into workflow of practice
Data Analyses

- Cross-linkage of data from SureScripts, patient survey (lined to practice), pharmacy characteristics, provider characteristics
- Polytomous logistic regression to identify factors related to adoption and drop out
- Outcome variables – to identify characteristics associated with best-practices (based on pharmacy transaction files)
- Hierarchical modeling (may have limited power)
Thank You for Your Attention…

Questions?