

# Electronic Prescribing to Improve Rural Primary Care Quality and Utility of Related Standards

Chris Sonnenschein  
June 26, 2008

## Electronic Prescribing to Improve Rural Primary Care Quality

*"I have had no financial relationship over the past 12 months with any commercial sponsor with a vested interest in this presentation"*

-Chris Sonnenschein

## Electronic Prescribing to Improve Rural Primary Care Quality



## Electronic Prescribing to Improve Rural Primary Care Quality

- Introduction and Background
  - AHRQ grant awarded to Avera Health on August 30, 2007.
  - Grant period is 9/1/07 through 8/31/10
  - The grant was awarded based upon our proposed area of study.
    - Electronic prescribing
    - Management of hypertension in rural primary care.
      - Medication Safety
      - Patient Compliance

## Electronic Prescribing to Improve Rural Primary Care Quality

- Project Objective:
  - to examine whether, in rural ambulatory care settings, the use of an electronic prescribing system with clinical decision support tools increases patient prescription adherence, improves health outcomes in hypertensive patients, and improves the medication management process.

## Scope Statement

- Fully implement electronic prescribing with clinical decision support in nine clinics within the Avera Health System Service area.
- 41 participating providers in 9 clinics in SD, MN, and IA
- 9 participating pharmacies
- Study to evaluate impact of electronic prescribing through three phases
  - Baseline
  - E-prescribing stand alone (DrFirst RCopia)
  - E-prescribing integrated within EHR (LSS-DrFirst)

## Research Study

- Study population of 8100 hypertensive patients.
- Key study metrics include:
  - Blood Pressure
  - Patient Satisfaction from surveys
  - First Medication Fills
  - Medication Possession Ratio
  - Proportion of hypertensive patients receiving an educational intervention.
  - Provider Satisfaction
  - Proportion of days of generic drug therapy
  - Adjusted Annual Clinic Operating Dollars/Patient Encounter

## Definition of e-Prescribing

A Physician's use of real-time, patient-specific clinical and economic information, for consenting patients, to:

1. Prescribe the most medically appropriate and cost effective prescription at the point of care, and
2. Transmit the prescription electronically to the patient's pharmacy of choice.

Pharmacies can also request refills by sending an electronic refill request to the physician office for approval

## Key Components of e-Prescribing

- e-prescribing application (OnCallData, PocketScript, Rcopia, Care360, eMPowerx, AllScripts)
  - Stand alone or EMR
  - Prescription writing capability through Web browser using PC, PDA, laptop, notebook, etc.
  - Maintain patient medication and allergy history.
  - Clinical decision support
- Bidirectional EDI network to connect prescribers and pharmacies (SureScripts)
- Electronic connectivity between clinicians, health plans, and intermediaries (RxHub)

## Potential Benefits of e-Prescribing

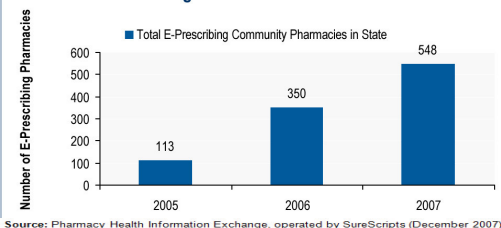
- Improved Patient Safety through real-time Informed Prescriptions
- Streamlined processes enabling clinic and pharmacy workflow efficiencies
- Increased satisfaction across the continuum of care.
- Increase in medication compliance and adherence.
- Prevention of medication diversion.
- Overall cost savings for the delivery of healthcare services in the United States

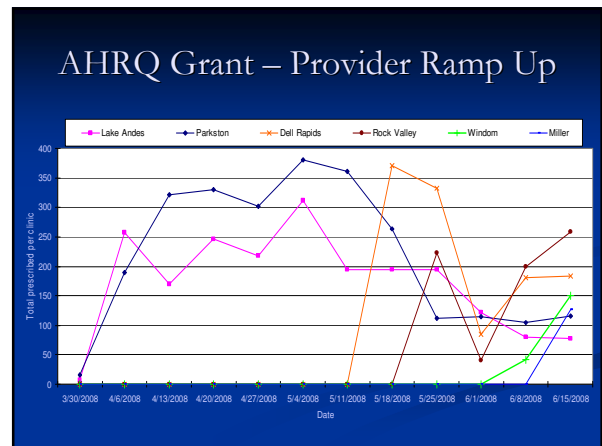
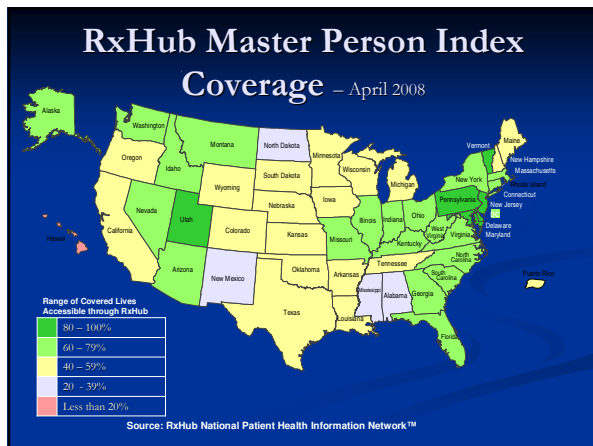
## Challenges Facing e-Prescribing

- Financial Cost.
- Pharmacy Connectivity.
- Payer/PBM Connectivity.
- Change in Workflow.
- Change Management.
- Need for further development of Standards and Interoperability.
- Inability to electronically prescribe controlled substances.

## Connected Minnesota Pharmacies

Minnesota E-Prescribing Pharmacies — Annual Growth





- ### Roadmap to Full Adoption and Interoperability
- Expansion of incentive programs.
  - Stakeholder advancement of e-prescribing infrastructure.
  - Resource center for successful adoption.
  - Accelerate development of Standards.
  - Federal Government to address DEA prohibition on e-prescribing controlled substances.

- ### e-Prescribing Case Study – as of October 2007
- The e-Prescribing experience of Henry Ford Health System exceeded their expectations. To date, more than 6.2M prescriptions have been sent electronically.
  - The SEMI results show that among a sample of 3.3M e-prescriptions reviewed for analysis:
    - A severe or moderate drug-to-drug alert was sent to physicians for more than 1M prescriptions (33%) resulting in nearly 423,000 (41%) of those prescriptions being changed or canceled by the prescribing doctor,
    - More than 100,000 medication allergy alerts were presented, of which more than 41,000 (41%) were acted upon,

- ### e-Prescribing Case Study – as of October 2007
- SEMI results continued:
    - Nearly 56,000 lists of dispensed prescription histories were downloaded by physicians, and
    - When a formulary alert was presented, 39% of the time the physician changed the prescription to comply with formulary requirements, reducing the overall costs of the prescription.
    - e-Prescribing has helped Henry Ford Medical Group improve its overall generic use rate by 7.3 percent, which will save \$3.1 million in pharmacy costs over a one-year period.

- ### Public Policy on e-Prescribing
- E-MEDS bill
  - CMS Electronic Health Records Demonstration
  - Medicare Prescription Drug, Improvement, and Modernization Act of 2003 (MMA)
    - Development of standards to facilitate e-prescribing.
      - Three “foundation” standards identified by NCVHS adopted effective January 1, 2006.
        - The NCPDP SCRIPT Standard Version 5.1
        - The NCPDP Telecommunications Standard
        - The Accredited Standards Committee (ASC) X12N 270/271

## Public Policy on e-Prescribing

- MMA and Standards continued.
  - Testing six “initial” standards in five pilot sites conducted in 2006
    - Exchange of medication history
    - Formulary and benefit information
    - Fill status notification
    - Structured and Codified SIG
    - Clinical drug terminology (RxNorm)
    - Prior authorization messages

## CMS Final e-Prescribing Rule

- April 2008 final rule adopted the following
  - NCPDP SCRIPT 8.1, retiring NCPDP SCRIPT 5.0
  - Prescription Fill Status Notification (RXFILL—part of SCRIPT, but not adopted in 2006)
  - Medication History functionality (which was part of SCRIPT 8.1)
  - NCPDP Formulary and Benefits Standard 1.0
  - The National Provider Identifier (NPI) to specify the identity of prescribers and pharmacies.
- Additional work needed for remaining three “initial” standards.
- Providers and pharmacies are not required to implement e-prescribing, but those who do must comply with new standards for Medicare Part D beneficiaries effective April 2009.

## e-Prescribing Controlled Substances

- DEA interprets the Controlled Substance Act (CSA) to not permit the e-prescribing of controlled substances.
- December 2007 – Pressure placed on DEA to allow the electronic prescribing of controlled substances.
- February 2008 - DEA announced it had sent proposed rules to the Department of Justice to allow electronic prescribing of controlled substances.
- Proposed rules expected to be published by September 2008.

## Public Policy on e-Prescribing

- June 2008 - Minnesota Governor Signs Law Requiring E-Prescribing by 2011.
  - Pharmacists, physicians and others who prescribe or dispense medication in the state will be required to use electronic systems by 2011.
  - Create a set of provider quality measures for public reporting and incentive payments.
  - Projected to save 10% to 15% from state employee benefits and public health plan spending by 2015.

## Summary

- Recent e-prescribing growth patterns have been rapid.
- Overall, current adoption level is still low.
- A fully interoperable e-prescribing system has many potential benefits.
- Additional research and testing is needed to address the challenges facing e-prescribing.
- Current e-prescribing infrastructure delivers substantial, measurable benefits.

## References

- Bell DS, Friedman MA. E-prescribing and the Medicare Modernization Act of 2003. *Health Affairs*. Sept–Oct 2005; 24(5):1159–1169.
- Centers for Medicare & Medicaid Services. Medicare Program; Standards for E-Prescribing Under Medicare Part D and Identification of Backward Compatible Version of Adopted Standard for E-Prescribing and the Medicare Prescriptions Drug Program (Version 8.1); Final Rule. *Federal Register*. April 7, 2008; 73 (67).
- eHealth Initiative and the Center for Improving Medication Management. *Electronic Prescribing: Becoming Mainstream Practice*. June 2008. Available at <http://chealthinitiative.org/medicationManagement/default.aspx>
- Hale PL. *Electronic Prescribing for the Medical Practice: Everything you wanted to know but were afraid to ask*. HIMMS. 2007
- Institute for Safe Medicine Practices. *A Call to Action: Eliminate Handwritten Prescriptions Within Three Years*; 2000.
- Institute of Medicine, Committee on Quality in Healthcare in America. *To Err is Human: Building a Safer Health System*. Washington, DC, National Academy Press; 1999.
- Johnston D, Pan E, Walker J, Bates D, Middleton B. *The Value of Computerized Provider Order Entry in Ambulatory Settings*. Boston: Center for Information Technology Leadership; 2003. Executive Preview available at [http://www.citl.org/research/acpoc\\_executive\\_preview.pdf](http://www.citl.org/research/acpoc_executive_preview.pdf)

## References

- Leavitt MO. Pilot Testing of Initial Electronic Prescribing Standards. Report to Congress. 2007. Available at [http://healthit.hhs.gov/portal/server.pt/gateway/PTARGS\\_0\\_1248\\_227312\\_0\\_0\\_18/eRsReport\\_041607.pdf](http://healthit.hhs.gov/portal/server.pt/gateway/PTARGS_0_1248_227312_0_0_18/eRsReport_041607.pdf)
- Majkowski K, Bell DS, Lapane K, Elson B. National Web Conference Regarding Results and Impact of Electronic Prescribing (e-Rx) Use. November 2, 2007. Available at [http://healthit.hhs.gov/portal/server.pt/gateway/PTARGS\\_0\\_1248\\_807449\\_0\\_0\\_18/Nov2\\_eRsWebConference.pdf](http://healthit.hhs.gov/portal/server.pt/gateway/PTARGS_0_1248_807449_0_0_18/Nov2_eRsWebConference.pdf)
- Osheroff JA, Pifer EA, Teich JM, Sittig DF, Jenders RA. Improving Outcomes with Clinical Decision Support: An Implementer's Guide. Chicago:HIMSS; 2005.
- Rannazzisi JT. Electronic Prescribing of Controlled Substances: Addressing Health Care and Law Enforcement Priorities. DEA Congressional Testimony. December 4, 2007. Available at <http://www.usdoj.gov/decl/pubs/engrestr/ct120407.html>
- Teich JM, Osheroff JA, Pifer EA, Sittig DF, Jenders RA. Clinical decision support in electronic prescribing: Recommendations and an action plan. Report of the joint clinical decision support workgroup [Position Paper]. Journal of the American Medical Informatics Association. 2005; 12:365–376.
- [www.rxhub.com](http://www.rxhub.com)  
[www.surescripts.com](http://www.surescripts.com)