NEW MEXICO HEALTH INFORMATION COLLABORATIVE: BUILDING A VIRTUAL DATA WAREHOUSE

Disease Management Colloquium
Session: Tools and Technologies for Disease Management

Margaret Gunter, PhD
Lovelace Clinic Foundation
PRESENTATION OVERVIEW

- Introduction of New Mexico Health Information Collaborative (NMHIC)
- Early Lovelace Disease Management program
- Lovelace Clinic Foundation overview and community emphasis for data sharing
- Detailed description of New Mexico Health Information Collaborative
- Next Steps
NEW MEXICO HEALTH INFORMATION COLLABORATIVE (NMHIC)

- $1.5 million grant awarded from the Agency for Health Services Research and Quality
- $1.5 million additional funding in cash and in-kind raised locally
- One of a few of over 1000 applications fully funded at the $3 million level
- Legislative appropriation through UNM Health Sciences Center in 2005 Session
NMHIC PROJECT TEAM

Project Director/PI: Maggie Gunter, PhD
Medical Director: Bob White, MD
Project Manager: Diane Fields, LISW/CCM
Technical Lead: Tracy Smith, LCF/CIO
Clinical Lead: Shelley Carter, RN, MPH
Business Advisor: Darwin Harrison, LCF/CFO
Evaluation Lead: Eva Lydick, PhD
Programmer Analyst: Kent Langsteinter
Data Analyst: Jason Short
Administrative Assistant: Kathy England
NEW MEXICO HEALTH INFORMATION COLLABORATIVE

- A community-wide effort to build a health information exchange to allow the sharing of timely and privacy-protected health care information among health systems and plans in Bernalillo and Taos counties
- Patients – web-enabled access to enhance self-management
- Providers – cross-system access to comprehensive information at point of service
- Employers – aggregate reports to inform worksite health promotion programs
- Initial data sources – claims and encounter data
BACKGROUND

- Focus on provider education, reminders, feedback
- Exciting time, positive outcomes
- Issues of sustainability
  - Large-scale funding ended
  - Lack of integration into Quality department
  - No clinical decision support system to help assure ongoing reinforcement and sustainability
BACKGROUND (cont.)

- Current status
  - Some remaining disease management programs in delivery system (diabetes, asthma, anticoagulation clinic)
  - Health plan more active now – diabetes, asthma, tobacco cessation, COPD, lipid telemanagement, CHF telemanagement
LOVELACE CLINIC FOUNDATION OVERVIEW

- Incorporated December, 1990
- **Type:** 501(c)(3) tax-exempt, non-profit New Mexico corporation
- **Purpose:** health care delivery research, medical education, and environmental health research
LOVELACE CLINIC FOUNDATION
DIVISIONS

- Health Services Research
- Medical Education
- Environmental Health Research
- Community Outcomes Initiatives
EXPANDING FOCUS AT LCF

- Continuing close relationship with Lovelace Health Plan and Lovelace Delivery System
- But – recent expansion into the community – research across health systems (2001 on)
- Medicare Case Management Demonstration (diabetes and CHF)
  - 3 locally competing health systems enrolled patients
    - Lovelace, Presbyterian, St Joseph’s
- Community expansion made fiscal sense and fit our non-profit mission
IMPETUS FROM LCF COMMUNITY BOARD

- Historical Board – mostly Lovelace physicians
- Expanded Board – added banker, Intel, Majority Leader of NM House of Representatives, University of New Mexico
- Expanded Board (employers especially)
  - Why is healthcare so behind in IT?
  - Why aren’t all the health systems sharing data?
  - Can LCF help address this issue?
EMERGING ANSWER

- Establish a cross-system community-wide health information exchange
- Benefit and empower providers, patients, employers (eventually policy makers and researchers)
- Support community-wide disease management program
NEW MEXICO HEALTH INFORMATION COLLABORATIVE

VISION

To provide a sustainable statewide health information exchange that transforms health care quality, safety, efficiency and outcomes.
NEW MEXICO HEALTH INFORMATION COLLABORATIVE

MISSION
To create a community-wide health information exchange organization that is sufficiently trusted and valued by all stakeholders (employees/patients, employers, physicians, health systems and health plans) to improve care coordination and create a foundation for sustainability
HEALTH REGISTRY

- General Health Registry
  - Laboratory results
  - Pharmacy data
  - Encounter data

- Disease-Specific Health Registry
  - Diabetes – Practice Guidelines, trends in HA1c and lipid profiles
  - Pediatric Asthma – Practice Guidelines, use of medications, use of acute health services
PARTNERSHIPS

- All Albuquerque Hospitals, Health Systems and Health Plans
- Major Albuquerque Employers such as Intel, PNM, Wells Fargo, Don Chalmers, etc.
- United Way, McCune Foundation
- All Major New Mexico Medical Associations
- Albuquerque Public Schools
- Taos Community Hospital and Physicians - rural pilot
GOALS

- Lay groundwork and cooperation for a full healthcare data information exchange for ALL of New Mexico
- Improve the care and outcomes for 2 diseases
- Advance a culture of personal health responsibility
- Assist in controlling the healthcare cost spiral through increasing implementation of information technology to healthcare
- Make New Mexico a model for the nation in healthcare information technology innovation
- Collaboration with other state-wide HIT projects and assist in the development of a NM RHIO
- Position NM for future HIT grants to continue infrastructure development
COUNCILS AND GOVERNANCE

- Initiator and Grant Awardee - Lovelace Clinic Foundation
- Steering Committee made up of data sharing partners and other stakeholders
- Steering Committee eventually becomes the community governance mechanism for the NMHIC
- Clinical Councils by disease to develop standards of care and review web site materials
- Workplace Council to assist in development of health promotion/disease prevention tools and materials in the workplace
EARLY TASKS AND CHALLENGES

- **Scope of project**
  - Managing expectations
  - Short-term achievable goals vs. long-term vision
  - Sequential vs. comprehensive rollout
  - Lessons learned from other projects

- **Issues around data sharing**
  - HIPAA/Privacy/Security
  - Sharing data with competitors
  - IT Architecture
    - Repository vs. Distributed Database Model

- **Sustainable Business and Governance Model**
Lovelace Clinic Foundation

**NMHIC TECHNICAL OVERVIEW**

- HIPAA compliant for both security and privacy
- Compliant with State privacy laws
- Access secured patient data
  - Correct and comprehensive information
  - Timely manner
  - Appropriate format
  - Irrespective of location
- Create an information sharing infrastructure and environment acceptable to all stakeholders and data providers
- Initial version utilizes existing data sources (e.g., Claims, Encounter, Laboratory, Pharmacy)
- Web-based access model
  - Access to comprehensive individual patient information across health systems
  - Provider access at Point of Service (including school nurses)
  - Patient Portal
- Patient matching software (CDC product – Link Plus 1.0)
GENERAL FEATURES

- **Security**
  - SSL 128Bit Encryption
  - User login (lockout – slow down)
  - User registration and authentication process
    - Provider Verification
    - Patient self registration
  - Role-based security
  - Independent review
    - External consultants
    - Privacy and security officer audits

- Patients
- Providers
- School Nurses
- Employers
- Administrators
VIRTUAL DATA WAREHOUSE STRUCTURE

- No centralized data repository
- Data accessed only at time of request
- Utilization data returns to source
- Site maintains control of data
- Minimal centralized data
  - Demographics and/or identifiers needed to build master patient and provider indexes
VIRTUAL DATA WAREHOUSE STRUCTURE

● Similar terms
  – Distributed Database
  – Peer-to-Peer Networks
  – Decentralized
  – Virtual Data Warehouse
  – Federated Database
Network Architecture

- Little Centralization
- On Demand only
- Web Services
- HL7

Located at individual sites
A new grant initiative has been awarded to foster the development of community-based medical information sharing. Lovelace Clinic Foundation (no legal or structural relationship to Lovelace Sandia Health System), a not-for-profit health services research organization, applied for and received a grant for $3 million over three years ($1.5 million from the Agency for Healthcare Services Research and Quality [AHRQ] and $1.5 million matching and in-kind locally, some of which came from UWCNM’s Corporate Cornerstone Special Initiative funds).

The funding established the "New Mexico Health Information Collaborative", which will build a disease management data warehouse focusing on diabetes, pediatric asthma, low back pain, and depression. It will create registries with appropriate HIPAA security and protections, and enable providers to obtain appropriate claims-based information on medications, lab results, and acute occurrences (ER visits, admissions, etc.). This will be particularly helpful to ER physicians and school nurses who encounter acute breathless children and often have no baseline or medication information to assess and treat them.
At least three of the following are required in order to enroll:

• Provider Assigned Key
• Medical Record Number
• Social Security Number
• Healthplan Member ID
• Date of Birth
• Current Mailing Address
Enrollment

Please enter a username and password. Usernames must be at least 8 characters long. Passwords must be at least 6 characters long. Both can be comprised of letters and/or numbers.

Username:  
Password:  
Re-enter Password:  

Submit
Asthma is a condition that affects the air passages of the lungs. It is a two-step problem:

• When a person has asthma, the air passages are inflamed, which means that the airways are red and swollen.
• Inflammation of the air passages makes them over extra-sensitive to a number of different things that can "trigger," or bring on, asthma symptoms.

During breathing, air is normally brought in through the nose. After being warmed, filtered, and humidified as it passes through the throat and into the windpipe, called the trachea (TRAY-kee-a). The trachea divides into two large tubes called the right bronchus (BRONG-kus) and left bronchus. These then split up into much smaller tubes, which in turn branch into thousands of very small airways called bronchioles (BRONG-kee-olz). It is the large and small bronchi that are generally affected in asthma.

When a person is exposed to one of these irritants, or triggers, the oversensitive air passages react by becoming narrower, swollen, and even more inflamed. This obstructs airflow to and from the lungs and makes it very difficult for the person to breathe.
Provider Area

- Patient Search
- Medical Data
- Demographics
- Health Status Monitoring
- Healthplan Information

Smith, Jonathan Eric
DOB: 08/01/1967
PROVIDER HEALTHPLAN INFORMATION SCREEN

Provider Area

Patient Search
Medical Data
Demographics
Health Status Monitoring
Healthplan Information

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**Provider Area**

- Patient Search
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**Health Status Monitoring**

**Smith, Jonathan Eric**

**DOB:** 08/01/1967

**BMI**

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<th>BMI</th>
<th>Weight Status</th>
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<tbody>
<tr>
<td>Below 18.5</td>
<td>Underweight</td>
</tr>
<tr>
<td>18.5 – 24.9</td>
<td>Normal</td>
</tr>
<tr>
<td>25.0 – 29.9</td>
<td>Overweight</td>
</tr>
<tr>
<td>30.0 and Above</td>
<td>Obese</td>
</tr>
</tbody>
</table>

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**PROVIDER HEALTH TRENDING SCREEN**
EVALUATION COMPONENTS

- Patient usage and satisfaction
- Provider usage and satisfaction
- Implementation process evaluation (technical, clinical, governance, etc.)
- Impact on disease-specific indicators
- Employer use and satisfaction
- Sustainable business model
- Ongoing governance structure
NEXT STEPS

- Negotiate data sharing agreements
- Finalize design and scope of Version 1
- Define focus of initial implementation and training
- Initial reliability testing of master patient and provider index
- User review of initial web page designs
NMHIC is just the Seed!

For the New Mexico Health Information Technology Tree to grow and achieve its promise…

We need to keep investing
QUESTIONS AND FURTHER INFORMATION

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