New Mexico Health Information Collaborative (NMHIC)
The Statewide Health Information Exchange (HIE) Network

Thomas East, PhD, CEO/CIO

Legislative Health and Human Services Committee Update
October 21, 2015
What is a Health Information Exchange?

• Technology and services to make sure health information is available when and where it is needed.

• “Interoperability” - the ability of systems to exchange and use electronic health information from other systems without special effort on the part of the user.
Why use a Health Information Exchange?

• 18 different doctors in your lifetime
• >65 years old- 28 different doctors
• Your health is dependent on equivalent of 200 pieces of paper in almost 19 different locations.

Average values for the US from the Practice Fusion survey conducted via omnibus survey April 17-18, 2010. The GfK OmniWeb survey is a weekly national web survey of US households. Interviews were conducted from among a nationally representative sample of 1,035 adults age 18 or older.
Different EHRs of Different Healthcare Provider Organizations can’t easily “talk” to each other to share information.
Why does it matter?

Medical Errors in New Mexico:
• Kill 196 patients per month
• 1,980 patients suffer a serious complication each month
• Cost $545 Million Dollars per month
• Does not include impact of sub-optimal care
• #1 and #2 Root Causes of Medical Error are Communication Problems and Inadequate Information Flow.

US Medical Error rates from a 2014 Senate Hearing presentation by Tejal Gandhi, MD, president of the National Patient Safety Foundation
Causes of medical error from Agency for Health Research and Quality publication #04-RG005
Estimates for New Mexico made by using a population ratio from US Census Bureau NM 2,085,572 / USA 318,857,056 Ratio: 0.00625 or 0.654%
Perfectly informed healthcare for New Mexico
New Mexico HIE - How It Works

Integrated Clinical Record, EMPI and Vocabulary Services

Interoperability Services
- V2.x, CCD, CCDA
- XDS / XDR

Workflows
- Single Sign On (SAML)
- Secure Messaging
- Send to my EHR
- Query Retrieve
- Event Notifications
- Mobile

Connectors
- ORION Health
- CORHIO
- HASA Healthcare Access San Antonio
- U.S. Department of Veterans Affairs
- INDIAN HEALTH SERVICE
- NEW MEXICO DEPARTMENT OF HEALTH
- new mexico health connections
- NM HIC
- Hospital
- Clinician Office
- Diagnostic Tests & Imaging
- Emergency Department
- Sentinal
- ENTENNIALCARE
NMHIC – Status

• **HIE – Orion System Live since 5/2015**
• Data from Jan. 2013 forward
• >150M Messages in clinical data repository
• Over 1.5 Million patients- All of Centennial Care
• 3.6 M Messages inbound each month
• 52K public health reporting transactions per month
• Direct secure messaging now available
• eHealth Exchange gateway will be live soon

NM Hospital Beds Providing Data

- Data Providers: 2204 (48%)
- Not Providing Data: 2426 (52%)

64% NM Emergency Dept Admissions in NMHIC

- 2014 Data
- 522K (64%)
- 293K (36%)
NMHIC – Participation Fees

$125/bed/yr

$150/provider/yr

$0.20/member/month

No recurring fee to send data. One-time fee for interfaces.
Public Health Reporting

• Since 2010, NMHIC has been contracted by NMDOH to provide Emergency Department Syndromic Surveillance Reporting and Notifiable Conditions/Reportable Laboratory Results Reporting.

• 3/31/2015 Went live with a completely new version of software with expanded functionality and support for new meaningful use 2 (MU2) required interfaces.

• Current status
  – NMHIC is currently providing Reportable Laboratory Results on behalf of 23 hospitals or reference laboratories (52%), and is currently onboarding an additional 15 hospitals or reference laboratories for meeting MU2 reporting requirements.
  – NMHIC is currently providing ED Syndromic Surveillance data on behalf of 24 hospitals (67%), and is currently onboarding an additional 8 hospitals for meeting MU2 reporting requirements.
Participating Organizations

Hospitals / Health System
• UNM Health System
• Presbyterian Health System
• Lovelace Health System
• Memorial Medical Center
• Los Alamos Medical Center
• Christus St. Vincent Regional Medical Center
• Gila Regional Medical Center
• Holy Cross Hospital
• Nor-Lea General Hospital
• San Juan Regional Medical Center
• Sierra Vista Hospital
• Union County Hospital

Diagnostic Service Centers
• Laboratory Corp. of America
• Quest Diagnostics
• TriCore Reference Labs
• X-Ray Associates of New Mexico

Payers
• Molina Healthcare
• United Healthcare
• New Mexico Health Connections

<table>
<thead>
<tr>
<th>Data Provider Only</th>
<th>Data Provider and user of HIE portal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Portal User Only</td>
<td>Contract signed, in queue for implementation</td>
</tr>
</tbody>
</table>
Participating Organizations
Provider Groups

ABQ Health Partners
Hematology Oncology Associates

InnovAge
Jeffrey D. Miller, MD
Monica Luna, DOM

NM Oncology Hematology Associates
NM Cancer Center
200 Christus St. Vincent Community providers

NM Orthopaedics
NM Primary Care Association
(Represents FQHCs)
Rio Abajo Family Practice
Sandia Neurology PC
Surgical Oncology & Gastroenterology Associates
Taos Clinic for Children and Youth

Data Provider Only
Portal User Only

Data Provider and user of HIE portal
Contract signed, in queue for implementation
Interested Organizations

- DaVida Healthcare
- De Baca Family Practice Clinic
- First Choice Community Healthcare
- First Nations Community HealthSource
- Genesis Healthcare
- Gerald Champion Regional Medical Center
- Guadalupe County Hospital
- Kindred Hospital
- La Clinica De Familia
- Las Cruces IPA
- Miner’s Colfax Medical Center
- Presbyterian Medical Services
- Santa Fe Imaging
- Southwest CARE Center
- Southwest Gastroenterology Associates
- Rio Arriba Community Health Council
Core HIE data

- Demographics
- Allergies
- Medications
- Immunizations
- Insurance
- Procedures
- Problem List
- Encounters (Visits) & Diagnoses

Note: Data available varies by organization
## NMHIC HIE Data Providers & Elements

<table>
<thead>
<tr>
<th>NMHIC HIE Portal data elements</th>
<th>ABQ Health Partners</th>
<th>Christus St. Vincent (Santa Fe)</th>
<th>Lovelace Health System*</th>
<th>Presbyterian Healthcare Services**</th>
<th>Holy Cross Hospital (Taos)</th>
<th>TriCore Reference Laboratories</th>
<th>UNM Hospitals***</th>
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<tbody>
<tr>
<td><strong>Patient Summary</strong></td>
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<td>X (2013 only through Apr. 2014)</td>
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The NMHIC HIE Portal includes clinical data from January 2013 to present (unless noted otherwise).
NMHIC – HIE Testimonial

“I had a complicated patient today who had lots of labs done elsewhere, I was able to look at them all and make a hypothetical diagnosis on that basis, which I could not have done at all without this interface. THANKS!!!!!!”

7/10/2015  5pm (first day being live)

“Thank you, I am using this for about 30% of my patients and it is a huge time saver!!!” 7/16/2015... less than one week being live

“If I had known how useful this was I would have signed up a year ago. It makes my life so much easier to be able to track labs more effectively than my patients can with their portal interfaces. Your interfaces is fast, easy to use, and seems to know nearly everyone I see. I love that I can access labs and tests from UNM and Pres and ABQ in one place. This is an incredible tool. Thank you for providing it!” 8/4/15

Dr. Sally L. Harris
Albuquerque’s Best Docs 2006 - 2015
Best Doctors in America 2009- 2014
Privacy and Security

• Information within the NMHIC HIE is subject to Federal and State Privacy and Security Regulations which includes HIPAA, HITECH and other regulations.
• Information is encrypted at rest and in transit.
• Access is limited to authorized users only.
• Security meets industry standards such as SSAE16 (auditing), ISO 27001 and EHNAC.
Patient Consent

New Mexico is an Opt-Out State: Data can flow into the HIE without patient consent

Patient’s control who can access the record

Break the Seal
Examples of NMHIC HIE
Looking at the Patient’s Chart

<table>
<thead>
<tr>
<th>Patient Context Bar</th>
<th>Portal Mail Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Document Tree</td>
<td>Windowlets</td>
</tr>
</tbody>
</table>

**Document View**
- Showing: All
- Group By: Category
- Sort By: Date

**Patient Summary**
- Dynamic Documents (1)
  - Patient Snapshot
- Laboratory (20 / 43)
  - Blood Gases (1)
  - Arterial Blood Gas
- Chemistry (10)
- 04/25/2016: Electrolytes (5) Dr. Timothy Orange
- 01/09/2005: INR (4) Dr. John Black
- 01/09/2005: Creatinine (1) Dr. Joe Martin
- Hematology (19 / 29)
- 05/10/2012: HBA1C (2) Dr. Joe Martin
- 05/01/2012: CBC (17 / 22) Dr. Alberto Jose
- Immunology (1 / 2)
- 01/02/2001: Hepatitis screen (1) Dr. Peter Black
- 01/02/2000: HIV Antibody (1) Dr. Peter Black
- Serology (1)
- 01/09/2005: Cross Match Dr. Alberto Jose
- Microbiology (5)
  - Microbiology (5)
  - Urine Culture@ORION Dr. Francis McNamara
    - 11/02/2005: Midstream Urine Dr. Joe Martin
    - 01/12/2005: *Midstream Urine Dr. Joe Martin
- Pathology (1)
- Radiology (1 / 7)
  - CAT Scan (4)
  - Radiography (1 / 3)

**EMPI Demographics**
- Cardinal, John Q
- Other Identifiers
  - SHP-ABQHlthPrt 098901_111
  - LHS-MedicalCtr 105532R
  - LHS-MedicalCtr 84568-4654
- Emergency Contact
  - Name: Jargon, Carol
  - Relationship: Not specified
  - Phone: (408) 455-2112

**Demographics**
- Sex: Male
- Date of Birth: 11/12/1940 (64 years)
- Address: 840 Chester Ave, Pasadena Sulphur 6532
- Phone: (463) 321-456

**Allergies & Alerts**

<table>
<thead>
<tr>
<th>Details</th>
<th>Reaction</th>
<th>Severeity</th>
<th>Date Entered</th>
<th>Facility</th>
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<tbody>
<tr>
<td>Latex</td>
<td>Difficulty breathing</td>
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<td>2011-11-05</td>
<td>Hospital A Medical Center</td>
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<tr>
<td>Ibuprofen</td>
<td>Difficulty breathing</td>
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<td>Vancomycin</td>
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<td>Vancomycin</td>
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<tr>
<td>Latex</td>
<td>Allergic Reaction</td>
<td>Moderate</td>
<td>2011-11-05</td>
<td>Hospital A Medical Center</td>
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</tbody>
</table>
Complete Medical History at a Glance
### Complete Blood Count W/Differential Cumulative

<table>
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<th></th>
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<tbody>
<tr>
<td><strong>WBC</strong></td>
<td>9.4</td>
<td>9.4</td>
<td>8.5</td>
<td>8.9</td>
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<tr>
<td><strong>RBC</strong></td>
<td><em>3.61</em></td>
<td><em>3.82</em></td>
<td><em>3.31</em></td>
<td><em>3.09</em></td>
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<tr>
<td><strong>Hemoglobin</strong></td>
<td><em>10.3</em></td>
<td><em>11.0</em></td>
<td><em>9.4</em></td>
<td><em>9.0</em></td>
</tr>
<tr>
<td><strong>Hematocrit</strong></td>
<td><em>30.4</em></td>
<td><em>32.2</em></td>
<td><em>27.7</em></td>
<td><em>25.8</em></td>
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<tr>
<td><strong>MCV</strong></td>
<td>84.4</td>
<td>84.2</td>
<td>83.5</td>
<td>83.6</td>
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<tr>
<td><strong>MCH</strong></td>
<td>28.6</td>
<td>28.8</td>
<td>28.5</td>
<td>29.0</td>
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<tr>
<td><strong>MCHC</strong></td>
<td>33.9</td>
<td>34.1</td>
<td>34.2</td>
<td>34.8</td>
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<tr>
<td><strong>RDW</strong></td>
<td><em>17.1</em></td>
<td><em>16.5</em></td>
<td><em>16.7</em></td>
<td><em>17.0</em></td>
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<td><strong>Platelet Count</strong></td>
<td>225</td>
<td>229</td>
<td>225</td>
<td>197</td>
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<td><strong>MPV</strong></td>
<td><em>6.7</em></td>
<td><em>6.7</em></td>
<td><em>6.5</em></td>
<td><em>6.9</em></td>
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<tr>
<td><strong>Neutrophils</strong></td>
<td><em>83.0</em></td>
<td><em>84.3</em></td>
<td><em>82.6</em></td>
<td><em>85.7</em></td>
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<tr>
<td><strong>Lymphocytes</strong></td>
<td><em>7.9</em></td>
<td><em>7.9</em></td>
<td><em>7.4</em></td>
<td><em>6.3</em></td>
</tr>
<tr>
<td><strong>Monocytes</strong></td>
<td>8.0</td>
<td>7.4</td>
<td>9.1</td>
<td>7.4</td>
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<tr>
<td><strong>Eosinophils</strong></td>
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<td>0.3</td>
<td>0.6</td>
<td>0.5</td>
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<tr>
<td><strong>Basophils</strong></td>
<td>0.2</td>
<td>0.1</td>
<td>0.3</td>
<td>0.1</td>
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<tr>
<td><strong>Anisocytosis</strong></td>
<td>1+</td>
<td>1+</td>
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</tbody>
</table>

**Ref. Range (Units):**
- **WBC**: 4.0-10.0 (K/uL)
- **RBC**: 4.10-5.90 (M/uL)
- **Hemoglobin**: 13.2-17.2 (g/dL)
- **Hematocrit**: 39.0-50.0 (%)
- **MCV**: 78.0-100.0 (fL)
- **MCH**: 28.0-32.0 (pg)
- **MCHC**: 33.0-36.0 (g/dL)
- **RDW**: 11.5-14.5 (%)
- **Platelet Count**: 130-400 (K/uL)
- **MPV**: 7.4-10.4 (fL)
- **Neutrophils**: 42.0-75.0 (%)
- **Lymphocytes**: 21.0-51.0 (%)
- **Monocytes**: 4.0-12.0 (%)
- **Eosinophils**: 0.0-5.0 (%)
- **Basophils**: 0.0-2.0 (%)
Complete Blood Count W/Differential Graph

Information is available from 11/01/2011 to 11/04/2011

Source
- Hospital A Medical Center (1)
- OHCP (3)

WBC (K/uL) Showing from 11/01/2011 to 11/04/2011

RBC (M/uL) Showing from 11/01/2011 to 11/04/2011
Notifications

Choose which notifications you want to receive. All notifications are sent as they happen.

Subscriptions for patients include:
- Inpatient Admission
- Inpatient Discharge
- Patient is admitted to ED
- Patient is discharged from ED
- A new document (imaging report) is available
- Final Radiology Report is available
- Final Laboratory Result is available
- Final Microbiology Result available
- Interim Microbiology Result available
- A new document is available

You can alternatively subscribe to notifications differently for each type of relationship with the patient.
NMHIC Current Financial Status – OK

As of today:
NMHIC has cash in the bank, a revenue stream that funds its operations and is able to meet its current obligations.
NMHIC has a plan for the next two years to expand interoperability throughout New Mexico; but could use help.
NMHIC Sustainability

Projections show sustainability is dependent on full participation by:

- Large hospitals and health systems
- Regional hospitals/hubs
- Large provider groups
- Centennial Care Managed Care Orgs
- Other payers (commercial, Medicare, etc)
Challenges to Adoption

1. Cost of Interfaces - both on the EHR side and the HIE side. One time cost for a hospital or health system can be $80,000. For a provider group it can be over $10,000. To provide full interoperability through New Mexico we estimate one time cost over $3,000,000. Other states have been successful using HITECH administrative funding 90% federal /10% state matching to cover these costs. NMHIC is working with HSD to investigate further.
Challenges to Adoption

2. Getting organizations to share all the elements of an ONC summary of care (Common Clinical data set).

Some states have legislation that mandates participation in an HIE and sharing of a minimum data set
Questions?
Contact us:

Call: (505) 938-9909

Email: info@nmhic.org
Visit: www.nmhic.org