



**Craig Hewitt, Chief Information Officer  
New Mexico Health Information Collaborative**

**Dale C. Alverson, MD  
Medical Director, Center for Telehealth and Cybermedicine  
Research, University of New Mexico  
IT Medical Director, LCF Research**



# \* Agenda for this presentation



- \* New Mexico Health Information Collaborative (NMHIC)
  - \* What is an HIE
  - \* Why the NMHIC HIE was created
  - \* How NMHIC works
  - \* Who provides the patient information
  - \* Who currently has access/value to this information
  - \* Privacy and Security
- \* A New Improved Platform for NMHIC
- \* Why do we need Telehealth and Health Information Exchange (HIE):  
Connecting New Mexicans to Quality Healthcare
- \* Telehealth Status in NM
- \* How the NM Legislature can help

# \* Health Information Exchange (HIE)

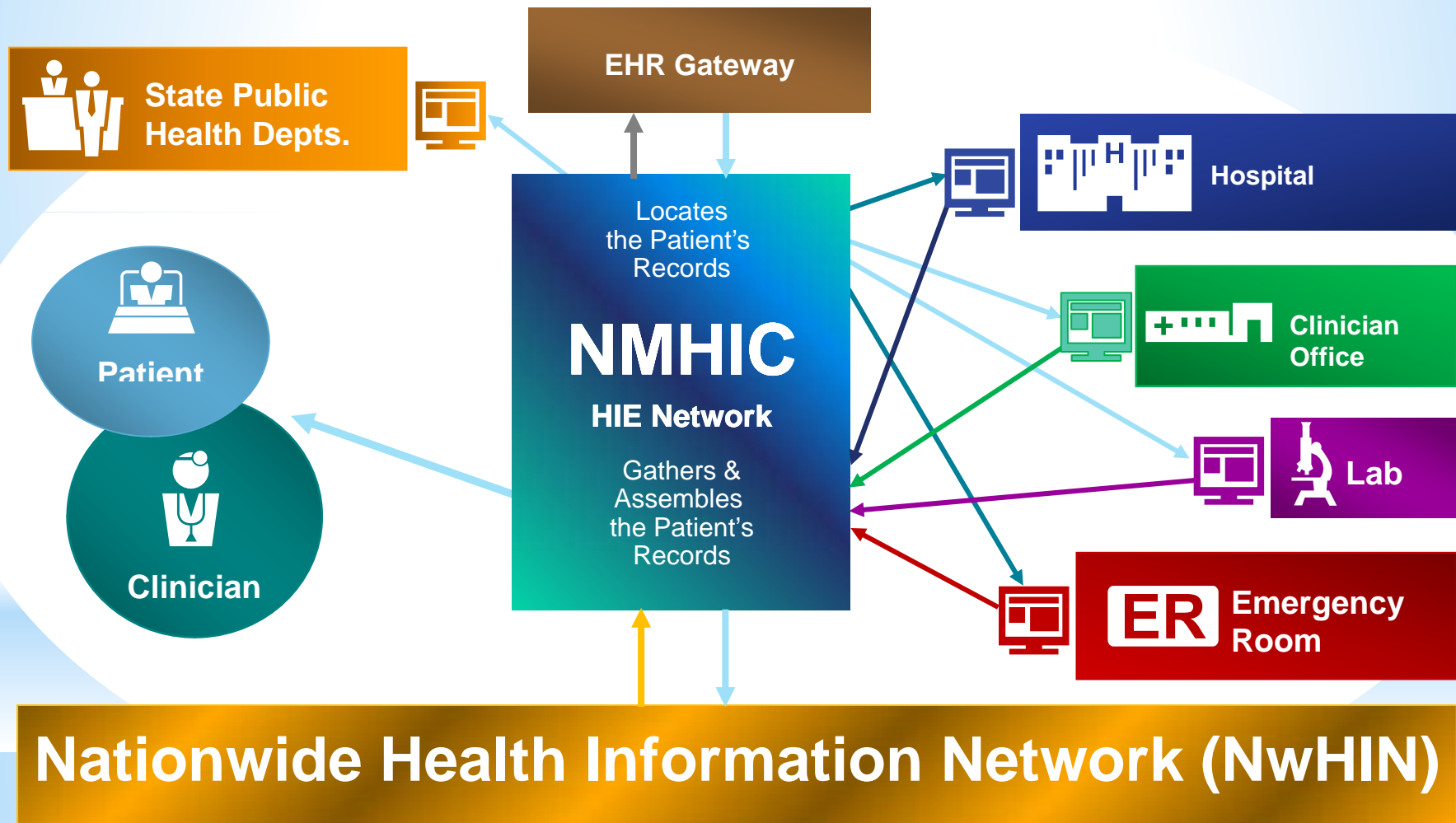


- \* An HIE Solution brings health information systems together across regions and states in order to provide access to a patient's information in **one centralized record**.
- \* Multiple healthcare providers with access to the same record of clinical information will make healthcare delivery more robust and efficient. The benefits to patients, healthcare providers, payers and employers is endless.
- \* Explained in this presentation are some of the expected and tested benefits from the healthcare provider perspective, and some of the highlights of **what** you can expect with the HIE.

# \*How the NMHIC HIE Works



Clinician Requests Access to Patient Records with Patient Consent

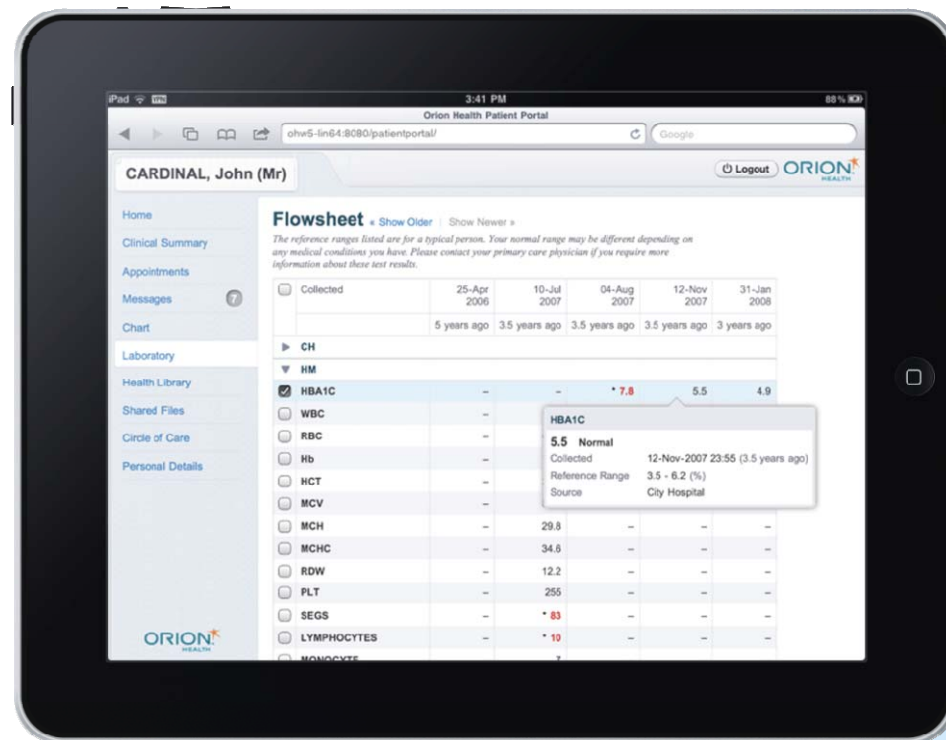


# \* Why the HIE is accessed?



When and why a Provider needs to access the HIE:

- \* New patient, not seen before
- \* Infrequent patient
- \* Patient known to have received care elsewhere
- \* Complex patient
- \* Tracking of patient
- \* Patient ER visits and hospital stays
- \* EHR is unavailable
- \* Remote Access



# \*Unified Long

ORION HEALTH

jmartin

Logout

Patients

Demographic Search

Inpatient Search

Worklists

Forms

Collections

Notifications

Common

Links

Patient Portal

Messaging

EHR Lite

ORION HEALTH

84568-4564 CARDINAL John (M/61)

Some items are not shown due to privacy restrictions. [Break Privacy Seal](#)

Document View

Showing All [Mark All As Read](#)

Group By [Category](#) Sort By [Date](#)

Patient Summary

Add New Shared File

Add New Document

Advance Directive (1)

Advance Directive Dr. Joe Ma

Clinical Content (1)

Patient Snapshot

Clinical Documents (2 / 8)

EKG (1 / 3)

Radiology (2)

Respiratory (1 / 2)

Ultrasound (1)

Laboratory (18 / 35)

Blood Gases (1 / 1)

Chemistry (12)

Hematology (16 / 21)

Surgical Pathology (1 / 1)

Microbiology (1 / 4)

02 Nov 2005 Urine Culture

Demographics

84568-4564 CARDINAL, John Q

Other Identifiers		Emergency Contact	
NHR	104532R	Name	JARGON, Carol
		Relationship	Sister
		Phone	(408) 455-2112

Demographics		Primary Care Provider	
Sex	Male	Name	WOOD, Brandon R
Date of Birth	12 Nov 1949 ( 61 years )	Clinic	Bough Family Clinic
Address	840 Chester Ave Pasadena	Address	315 Maple Ave Pasadena
Phone	(463) 321-4568	Phone	(468) 456-2421

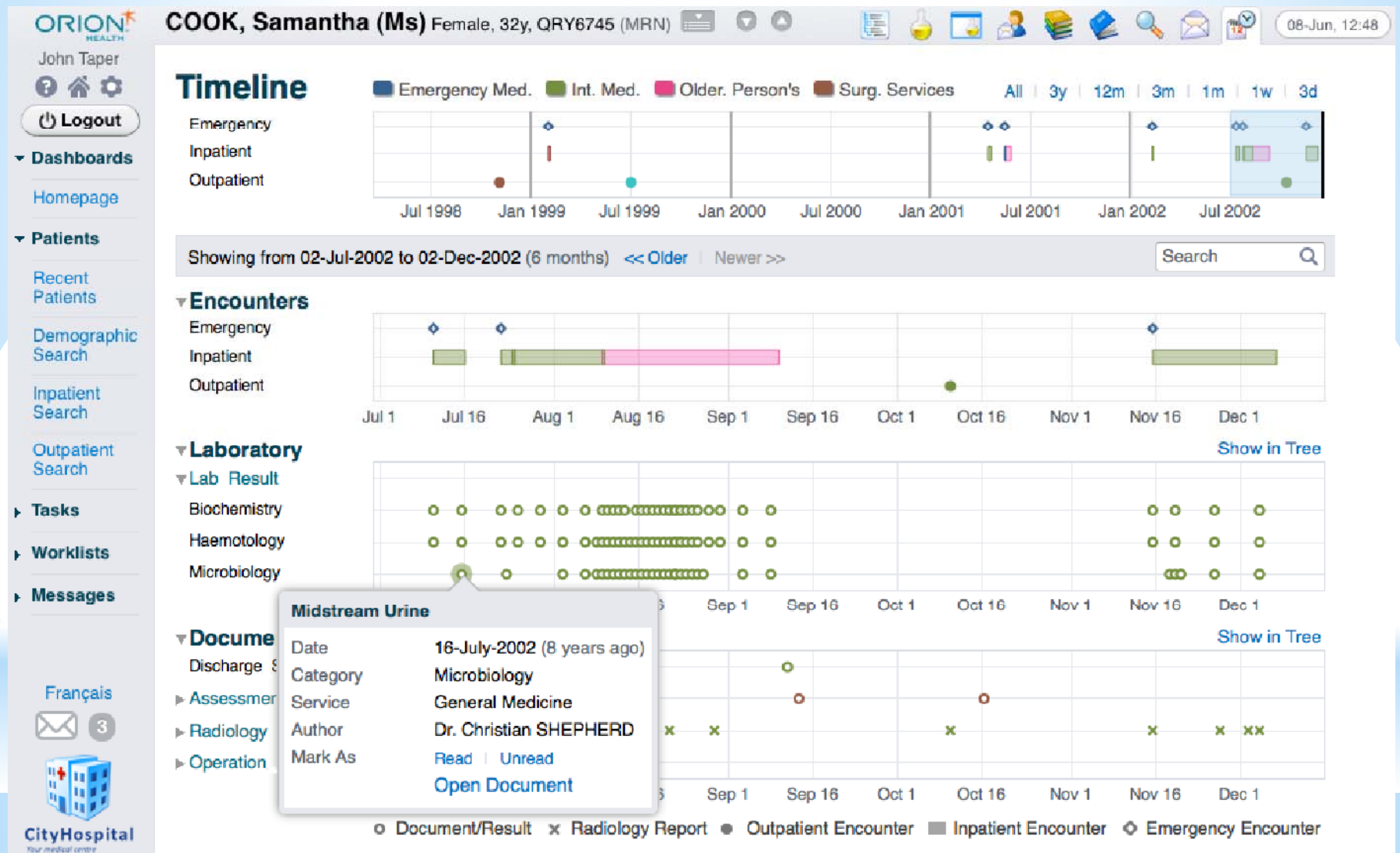
Allergies & Alerts

Details	Reaction	Severity	Date Entered	Source
Penicillin	Hives	Moderate	03-Jun-1995	City Hospital
Bee Stings	anaphylactic shock	Severe	03-Jun-1991	Health Alliance Medical Centre

Active Problems

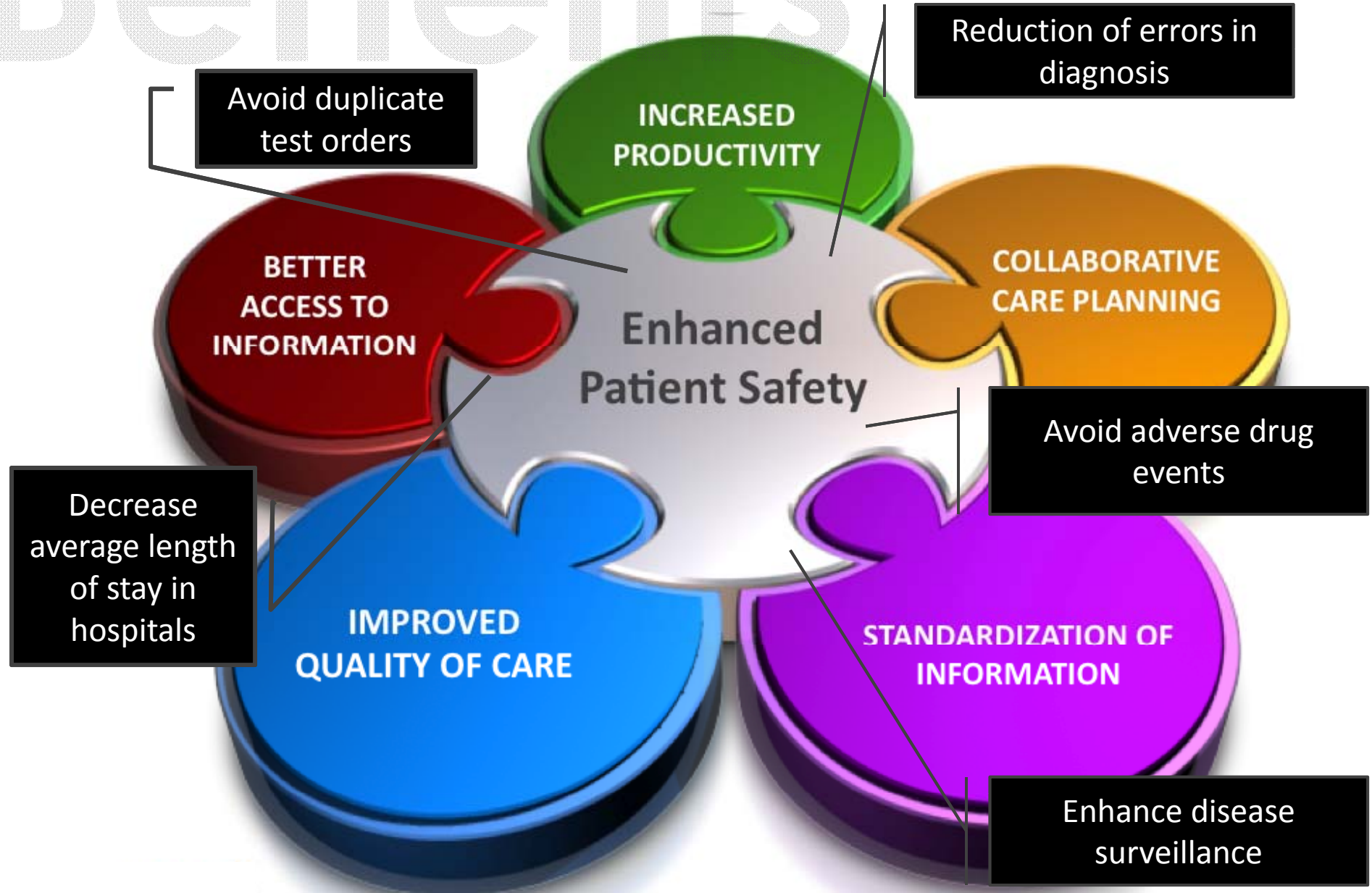
problem	problem	problem	problem	problem
problem	problem	problem	problem	problem
problem	problem	problem	problem	problem
problem	problem	problem	problem	problem
problem	problem	problem	problem	problem

# \*Timeline View





# Most common measures





# \* LCF Research Overview



Independent 501 (c) (3) non-profit org founded in 1990.

**Mission:** health services research, public health research, health information technology, and education

## **Two primary divisions**

Health Information Technology (HIE Network and NMHITREC)  
Research and Education (HSRD)

**Personnel:** 30

## **Governance:**

- Governed by a large, diverse statewide board representing many stakeholders, public and private, urban and rural
- State government, health systems, payers, hospitals, medical groups, health professional assns., employers, large testing labs, consumers

# \* Why/How NMHIC Was Created

## Influence of State and Federal Government



- \* Federal Programs supported development of state and regional HIE networks
  - \* HITECH provisions within ARRA (stimulus package)
  - \* Role of the State HIE network under HITECH is to provide:
    - \* Care Coordination among providers
    - \* Reporting to Public Health
    - \* Reporting of Quality Measures to Medicare & Medicaid
  - \* State designated NMHIC as HIE network for HITECH
  - \* Expand HIE to serve rural and underserved populations
- \* NMHIC received funds through ONC, AHRQ, New Mexico State Legislature and community stakeholders
- \* NMHIC was also awarded a contract to send patient information for Disability Determination to SSA over the Nationwide Health Information Network (NwHIN)

# \* Who Provides the Data currently



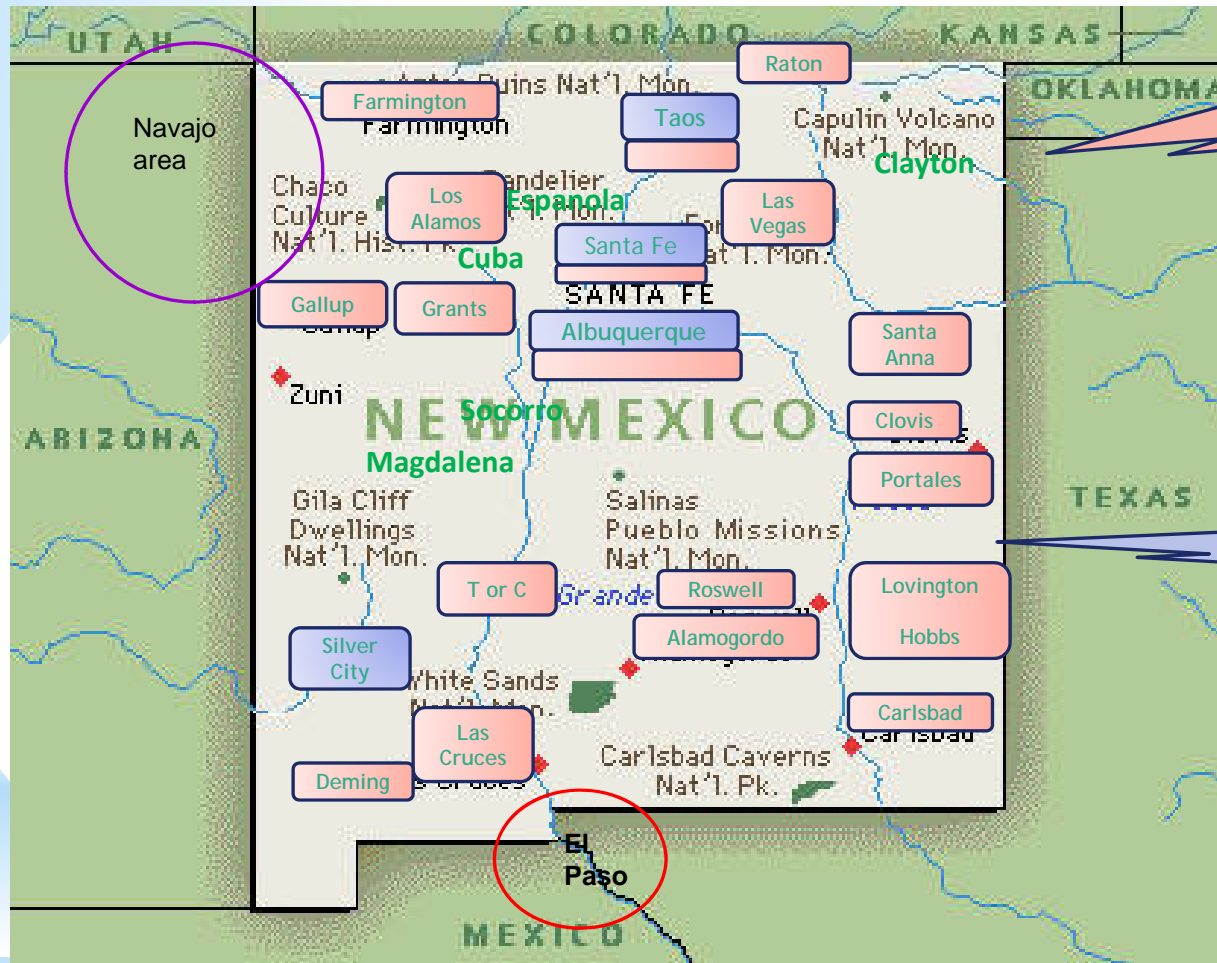
## \* Health care providers

- \* Presbyterian Hospitals and Medical Groups
- \* Lovelace Hospitals
- \* UNMH
- \* ABQ Health Partners
- \* CHRISTUS St. Vincent Hospital and Medical Group
- \* Holy Cross Hospital, Taos
- \* Other health care providers will be added

## \* Independent Laboratories

- \* Tricare
- \* SED (now Quest Labs)
- \* LabCorp
- \* NM Scientific Laboratory Division – for public health only

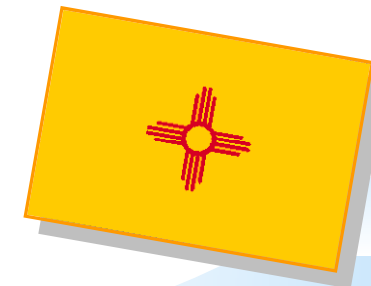
# \*The HIE in New Mexico



VA

- Established HIE connectivity
- Future HIE connectivity (random sample of sites)

SSA



HITREC sites  
(random sample of  
sites)

# \* Who Has Access to NMHIC Data



- \* NM Department of Health in accordance with state public health reporting laws and with the consent of the data provider
  - \* Lab results of reportable conditions
  - \* Encounter information from emergency departments
  - \* Immunization data for State Immunization Registry
- \* SSA is receiving patient info from NMHIC over the NwHIN for Disability Determination
- \* Providers are now beginning to access patient info
  - \* Emergency Departments; UNMH and soon Lovelace and Presbyterian

# \*Value/Benefits of HIE in ED



- \* Access to each patient's health information
- \* Improved situational awareness regarding patient's health and use of health systems, better coordination of care
- \* Better triage and evaluation capability: Access to Diagnoses/Problem list, Prior Procedures, Medications, Allergies, Tests; lab/x-ray
- \* Improved efficiency in making diagnosis and management plans
- \* Decrease unnecessary duplication of tests
- \* Admission/Readmission avoidance



# \* NMHIC Benefits in UNMH ED



- \* 1) A patient had been at another facility recently and indicated Gall Bladder surgery might be needed. When NMHIC was accessed, the ED providers were able to see all of the details for his recent visit at the other facility which was very helpful in determining the actual diagnosis and that the patient did not need the surgery, as well as prevented some unnecessary redundant testing.
- \* 2) A case where the patient had long standing back issues. In NMHIC there was a recent CT scan that saved them from doing another CT scan and avoided more radiation to the patient
- \* 3) In a complicated case on one patient, NMHIC had notes of a recent lung biopsy that helped with the remainder of the evaluation. Saved many additional tests and significant time if they hadn't had that information on the lung biopsy
- \* 4) In another case, a mass was felt on the patient's rib. A prior x-ray report in NMHIC indicated that the rib had a previous fracture explaining the problem and avoided doing a CT scan that they would have otherwise done.
- \* 5) A patient with a complicated cardiac history had been discharged from another hospital within the last 48 hours. In NMHIC, able to access the discharge summary and saw the complete work up that was done, which avoided doing many additional tests and again saved a significant amount of time.

# \*Privacy and Security



- \* Privacy and security protections
  - \* All NMHIC participants sign Network Subscription Agreement (NSA)
  - \* Requires user authorization and authentication
  - \* Prerequisite of written patient consent recorded in NMHIC
  - \* Patient information encrypted in motion and at rest
  - \* Audit logs of all transactions



# New Enhanced State-of-the-art HIE Platform for NMHIC

A large, stylized orange star with five points, centered on the slide. It has a slightly irregular, hand-drawn appearance.

[www.orionhealth.com](http://www.orionhealth.com)

## Integrating the HIE with the EHR



# Orion Health HIE Products

## HIE Base Solution

- Clinical Portal with Results Viewer
- Clinical Data Repository
- Rhapsody Interface Engine
- EMPI – Enterprise Master Patient Index
- Health Languages

## HIE Module

- ✧ CCD Exchange
- ✧ Notifications
- ✧ Send to my EHR
- ✧ Direct Secure Messaging
- ✧ Single Sign-On form EHRs
- ✧ Privacy & Consent
- ✧ Auditing

## Additional Modules

- ✧ Case Management
- ✧ OHBI – Meaningful Use Dashboards, HIE Utilization Analytics
- ✧ Public Health Reporting
  - ✧ Electronic Laboratory Reporting (ELR) Profile
  - ✧ CSTE Case Reporting Profile
  - ✧ Hospital Acquired Infection Profile
  - ✧ Biosurveillance Profile
  - ✧ Immunization Registry Profile
  - ✧ Discharge Reporting Profile
  - ✧ + custom reporting
- ✧ Patient portal
- ✧ NwHIN
- ✧ EHR Lite
- ✧ Diagnostic Orders
- ✧ ePrescribe

# Example Integration (Epic)

## Single Click access to Clinical Portal

**Hyperspace** Epic Home Schedule In Basket Patient Station Chart My Reports Print Secure Log Out

Cardinal, John

**Cardinal, John** MRN: 84568-4564 DOB: 11/12/1949 Room: None Allergies: Penicillin, Bee Stings Isolation: None Attend Prov: None  
CSN: 104532R Sex: Male Age: 61 yrs Bed: None Code: Inactive Infection: None Language: None

Health Information Exchange **84568-4564 CARDINAL John Q ( M / 62** 12:17 14-11

Chart Review  
Flowsheets  
Results Review  
Synopsis  
History  
Allergies  
Problem List  
Immunizations  
Demographics  
Order Entry  
HIE

**Document View**  
Showing All Mark All As Read  
Group By Category Sort By Date

**Patient Summary**  
Add New Shared File  
Add New Document  
Advance Directive (1)  
Advance Directive Dr. Joe M  
Clinical Content (1)  
Patient Snapshot  
Clinical Documents (8)  
EKG (3)  
Radiology (2)  
Respiratory (2)  
Ultrasound (1)  
Clinical Documents (1)  
History and Physical Dr. McK  
Laboratory (34)  
Chemistry (13)  
Hematology (20)  
Surgical Pathology (1)  
Microbiology (4)  
02-Nov-2006 Urine Culture J  
22-Apr-2006 Midstream Urin  
22-Apr-2006 Midstream Urin

**Demographics**  
**84568-4564 CARDINAL, John Q**

Other Identifiers		Emergency Contact	
ID1	104532R	Name	JARGON, Carol
		Relationship	Sister
		Phone	(408) 455-2112

Demographics		Primary Care Provider	
Sex	Male	Name	WOOD, Brandon R
Date of Birth	12 Nov 1949 ( 62 years )	Clinic	Bough Family Clinic
Address	840 Chester Ave Pasadena	Address	315 Maple Ave Pasadena
Phone	(463) 321-4568	Phone	(468) 456-2421

**Allergies & Alerts**

Details	Reaction	Severity	Date Entered	Source
Penicillin	Hives	Moderate	03-Jun-1995	City Hospital
Bee Stings	anaphylactic shock	Severe	03-Jun-1991	Health Alliance Medical Centre

**Active Problems**

Not all results have been displayed due to patient privacy restrictions. Break Privacy Seal

Status	Type	Description	Severity	Onset	End	Last	Comments
--------	------	-------------	----------	-------	-----	------	----------

PAT LEAD Results Patient Calls Pt Reminder My Open Charts My Open Encounters Cosign - Meds Verbal Order Cosign Unsents Letters 11:37 AM



# Example Integration (Cerner)

## Single Click access to Clinical Portal

The screenshot displays the Cerner clinical portal interface. At the top, a patient header bar shows the patient's name, DOB, age, gender, and admission details. Below this, a sidebar menu on the left contains various navigation options, with 'HIE' highlighted by an orange box. The main content area is divided into several sections: Demographics, Document View, Allergies & Alerts, and Encounter History.

**Patient Header:**

- Patient Name: CARDINAL, John Q
- DOB: 11/12/1949
- Age: 61 years
- Gender: Male
- Admit Date: 08/03/11
- Loc: ICU, 3328, 1
- FIN: 2097254 Inpatient
- MRN: 84588-4564
- Code Status: Full Code
- Provider: TUSZYNSKI, THO...

**Sidebar Menu (HIE highlighted):**

- Round Report
- HIE**
- Results Review
- ISO - Flowcharts
- Overview
- Review Medical Record
- Diagnoses & Problems
- FooterNote
- Documentation
- Orders
- Clinical Documentation
- MAR
- MAR Summary
- Medication List
- Alerts
- Allergies
- Histories
- Immunization Schedule
- Advanced Growth Chart
- Demographics
- Medication Leaflets
- Patient Schedule

**Demographics:**

84588-4564 CARDINAL, John Q

Other Identifiers		Emergency Contact	
NHR	104532R	Name	JARGON, Carol
		Relationship	Sister
		Phone	(408) 455-2112

Demographics		Primary Care Provider	
Sex	Male	Name	WOOD, Brandon R
Date of Birth	12 Nov 1949 (61 years)	Clinic	Bough Family Clinic
Address	840 Chester Ave Pasadena	Address	315 Maple Ave Pasadena
Phone	(463) 321-4566	Phone	(468) 456-2421

**Allergies & Alerts:**

Details	Reaction	Severity	Date Entered	Source
Penicillin	Hives	Moderate	03-Jun-1995	City Hospital
Bee Stings	anaphylactic shock	Severe	03-Jun-1991	Health Alliance Medical Centre

**Encounter History:**

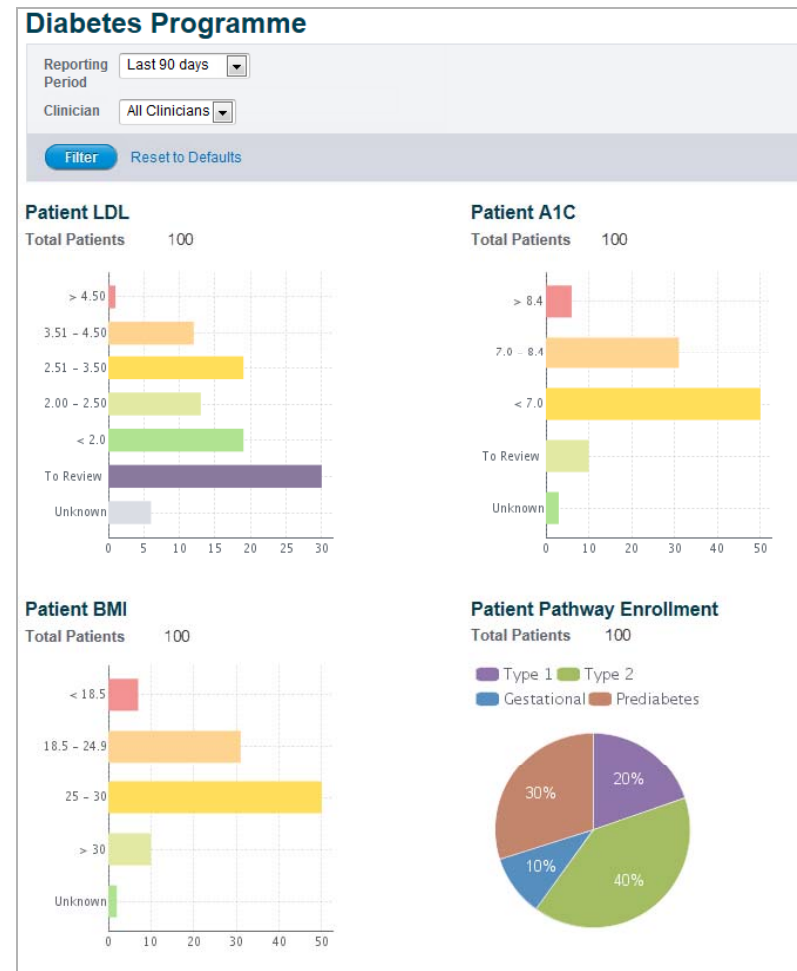
Admission	Discharge	Admit Reason	Discharge Diagnosis	Visit Type	Specialty	Facility	Clinician
16-Jul-2010		Angina		Inpatient	General Medicine	City Hospital	Dr Joe MARTIN
31-Jan-2008	31-Jan-2008	Diabetes	Diabetes	Outpatient	Endocrinology	Health Alliance Medical Centre	Dr Leroy HOOD



# User Interaction Dashboards

## ★ Diabetes Program

- ★ Displays patient outcome measures
- ★ Population wide statistics
  - ★ LBL
  - ★ HbA1c
  - ★ BMI
  - ★ Pathway enrollment
- ★ Drill down to patient lists



# Quality Measures Dashboard

## Clinical Quality Measures Dashboard

[Export to XML](#) | [Configure Dashboard](#)

Reporting Period 22-Oct-2011 to 19-Jan-2012 ( Last 89 days )

Clinician All

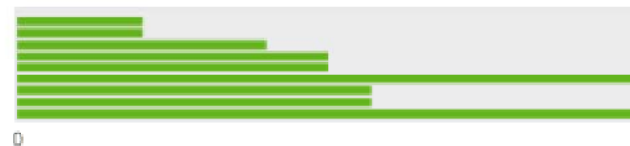
Hypertension: Blood Pressure Measurement (NQF 0013) [i](#)



Controlling High Blood Pressure (NQF 0018) [i](#)



Weight Assessment and Counseling for Children and Adolescents (NQF 0024) [i](#)



Preventive Care and Screening Measure Pair: a. Tobacco Use Assessment (NQF 0028a) [i](#)



Preventive Care and Screening Measure Pair: b. Tobacco Cessation Intervention (NQF 0028b) [i](#)



Childhood immunization Status (NQF 0038) [i](#)



Preventive Care and Screening: Influenza Immunization for Patients >= 50 Years Old (NQF 0041) [i](#)



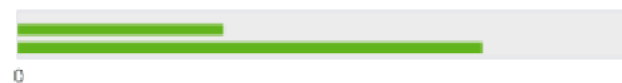
Pneumonia Vaccination Status for Older Adults (NQF 0043) [i](#)



Primary Open Angle Glaucoma (POAG): Optic Nerve Evaluation (NQF 0086) [i](#)

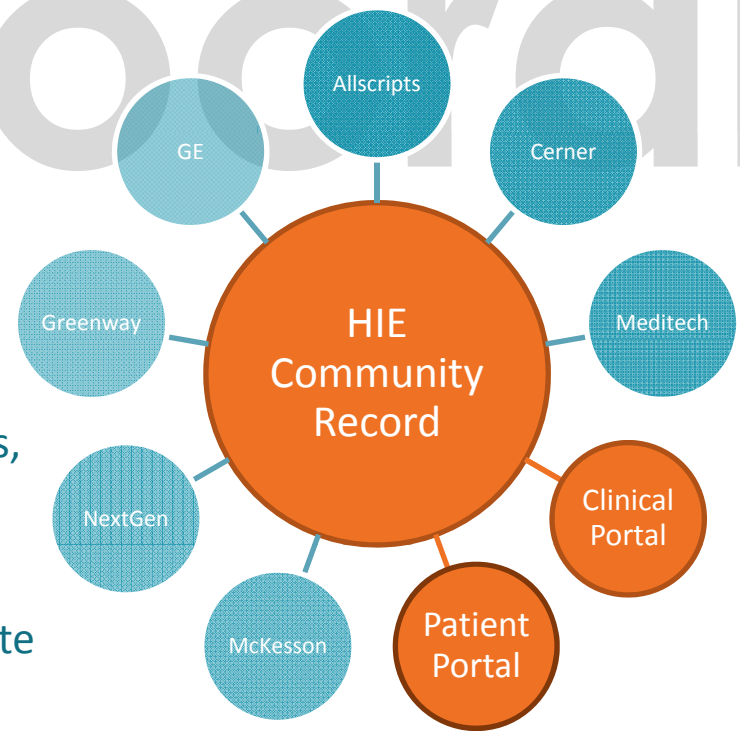


Adult Weight Screening and Follow-Up (NQF 0421) [i](#)



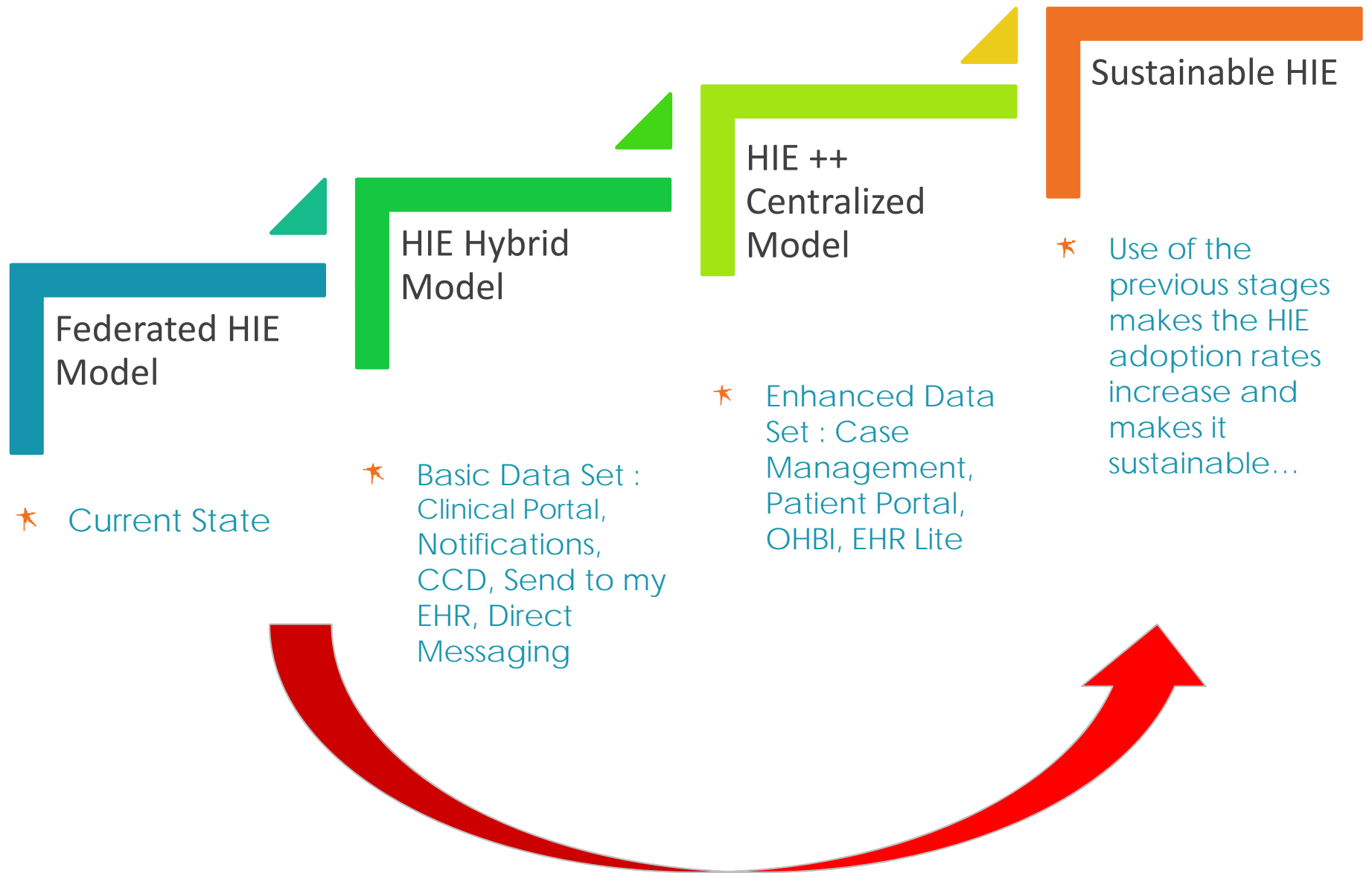
# Care Coordination

- ★ Link pertinent patient information to care providers cross the healthcare continuum
  - ★ Use of **historical information** in the patient's care continuum in order to provide appropriate diagnosis, treatment and care
  - ★ Better **rightsiting** of patients in order to expedite appropriate care and treatment
  - ★ Utilize **secure messaging** for referrals across disparate care settings
  - ★ Set up **notifications** for when your patients enter a Hospital, visits an Emergency room, see another provider, or move from one healthcare facility to another
  - ★ Utilize the **direct messaging** email option with providers who do not participate in the HIE
  - ★ Connect to the **Nationwide Health Information Network (NwHIN)** to exchange information with federal organizations as well.



# Sustainable HIE?

## Time line to sustainable HIE...



# Implementation in terms of stages

90 Days to implement

## 1. Data Exchange

- ★ Message exchange (Rhapsody)
- ★ EMPI, RLS
- ★ Secure Messaging (DIRECT)
- ★ Privacy & Consent

## 2. Data Aggregation

- ★ CDR(s)
- ★ Semantic Interoperability

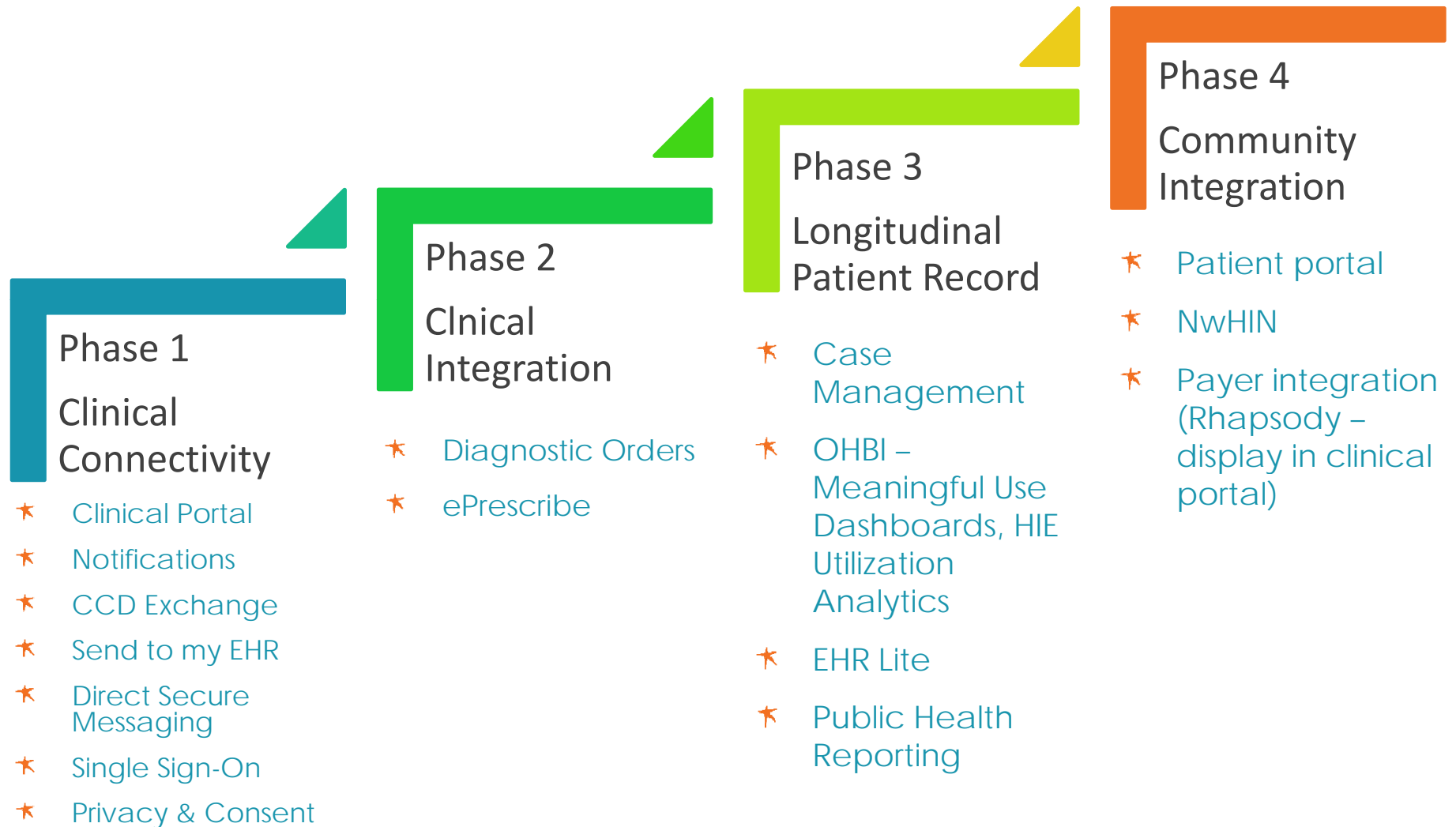
## 3. Information Sharing

- ★ Unified, longitudinal patient record (Clinical Portal)
- ★ Notifications

## 4. Advanced HIE

- ★ Image Viewer
- ★ Disease Management
- ★ Population Health
- ★ Reporting & Analytics
- ★ Patient Portal
- ★ EMR Lite
- ★ NwHIN Gateway
- ★ Public Health Reporting

# Clinical – Functionality Progression





# *Navigating the Perfect Storm with Telemedicine & HIT*

Use a broad spectrum of information communication technologies

Effective distribution of limited resources and expertise

Increasing Access to care

Bringing care to the patient; Aging in place

Decreasing unnecessary variations in care; evidence-based best practices

Improving continuity and coordination of care; The Patient Centered Medical Home

Avoiding unnecessary hospitalizations, duplication of tests, & decreasing errors

Improving health outcomes

Reducing costs; avoiding more costly care and complications, decreasing travel

# *Major Public Health Issues* Impacting our Rural Communities and their Economic Development

## ***Gaps* in Access to Health Services in Rural New Mexico**

- ★ Hepatitis C
- ★ Behavioral Health
- ★ Diabetes
- ★ Asthma
- ★ Cancer
- ★ Oral Health
- ★ Cardiac and Stroke Care



Health Care Reform/PPACA  
Economic Downturn

Emerging Enabling Information  
Communication Technologies

Need for more Access to Care

An Aging Population/Baby Boomers

Critical Shortage of Healthcare Providers

EHR Adoption/HIE

Meaningful Use

ICD10

PCMH

ACOs

A Time for Telemedicine & HIT

---

THE  
PERFECT STORM

---

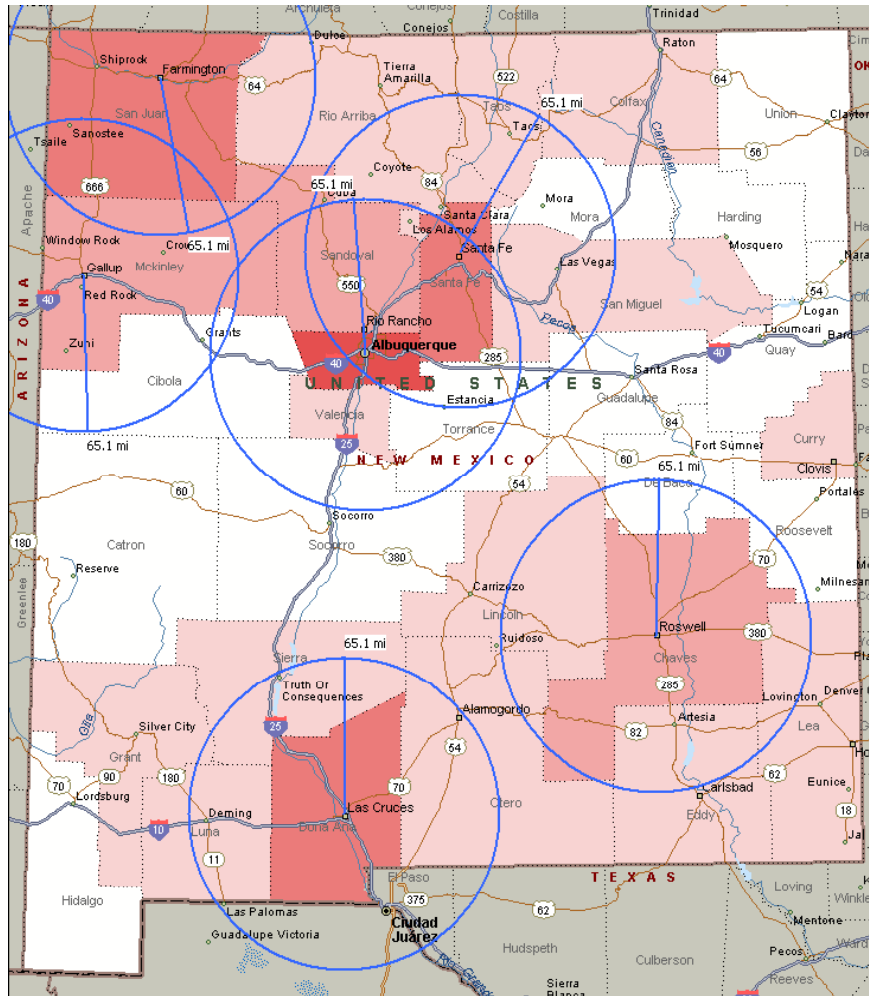


## *Critical Gaps* in Health Expertise and Services in New Mexico

- ★ Mal-distribution of Providers
- ★ Lack of Access to Health Services in Rural Communities
- ✓ **Only 3/33 counties**  
exceed the National average of physicians  
per 100,000 population
- ✓ **64%** of physicians practice in **3/33** counties.
- ✓ These three counties comprise only **39%** of New Mexico's  
Population



# Mal-distribution of Health Specialty Providers in New Mexico



The blue circles indicate 65 mile distances from the 6 major specialist centers

- Albuquerque
- Santa Fe
- Las Cruces
- Farmington
- Gallup
- Roswell

# Telehealth and HIE

- ★ Telehealth and HIE should be closely linked as a means to improve access, enhance continuity of coordinated comprehensive quality care, support patients and providers at the site of care, as a means to achieve the best health outcomes and reduce costs



# Patient-Centered Medical Home

- ★ A Patient-Centered Medical Home is a team-based model of care usually led by a personal physician that provides, **comprehensive, continuous and coordinated care** throughout a patient's lifetime to maximize health outcomes.

# Patient-Centered Medical Home and Accountable Care Organizations

- ★ Not only can care be better coordinated, but **Telemedicine, Electronic Health Record (EHR), and Health Information Exchange (HIE)** can incorporate evidence-based best practices, decision support, prevention, earlier detection of a problem, and earlier intervention
- ★ Decreasing Unnecessary Hospitalization
- ★ Decreasing Duplication of Tests
- ★ Decreasing Errors

# Center for Telehealth and Cybermedicine Research



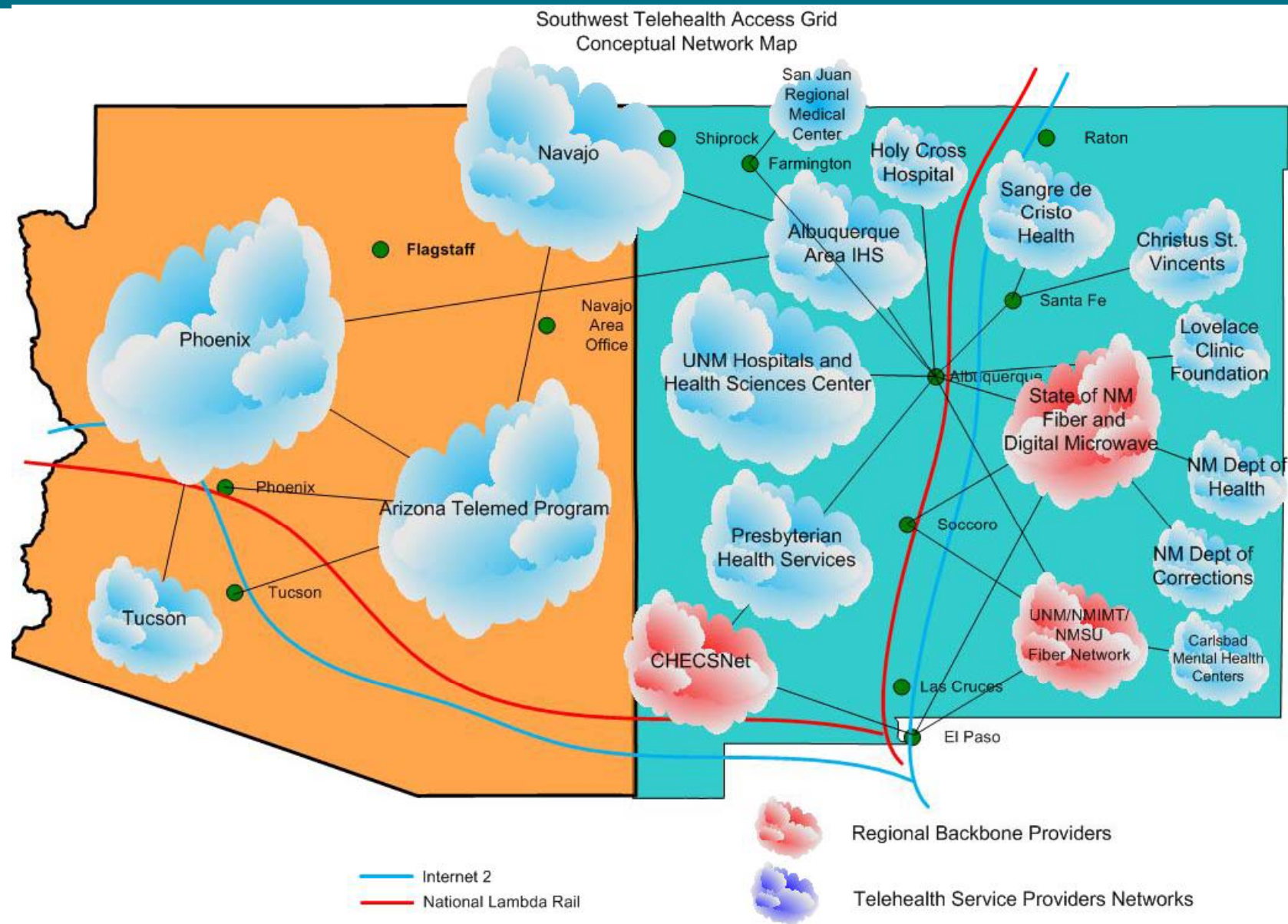
<http://som.unm.edu/telehealth/>

- The **Center** for Telehealth  
at UNM Health Sciences Center:
- Developing New Programs
  - Technical, Operational, Business,  
and Evaluation Planning





# Southwest Telehealth Access Grid (SWTAG): a “Network of Networks” that can support both Telehealth and HIE



Awarded \$15.5 million to cover 85% of build-out and operations of broadband networks for healthcare

# *The New Mexico Telehealth Alliance*

## *Telehealth Alliance* ***“Networks of Networks”***

- ★ Represents a consortium of public and private health care stakeholders: “Neutral Territory” (501c3)
- ★ Reflects the diversity of our health care delivery system in New Mexico
- ★ Enables collaboration

- ✓ Providers
- ✓ Consumers
- ✓ Telehealth Expertise
- ✓ Communication Networks
- ✓ Social Networks



# How the NM Legislature can Help

- Continue to recognize NMHIC as the State HIE
- Continue to support legislation that improves the consent and authorization process at the points of service
- Understand the benefit and support participation for all citizens of New Mexico as well as all those who deliver care
- Work with NMHIC to establish mechanisms to sustain the state HIE and demonstrate effectiveness
- Insure reimbursement for telehealth encounters (Reintroduce Bill [HB 0591] to require coverage for telemedicine services)
- Maintain support for UNM Center for Telehealth as developer of new telehealth programs
- Establish the Telehealth Alliance as the State's overall Telehealth Resource Center

# Questions?

