Patient Centered Data Home™ Initiative

Presented by:

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Prepared for CAHIE
The Problem that needs to be solved:

*Every patient should have their complete, longitudinal health record available wherever and whenever it is needed for decisions about their care.*
Collect, scrutinize, filter data (surveillance), alert

Identify individual, provider, and content
- Establish relationships (data types, provider index, master person index)

Determine where data needs to go
Determine how it needs to go (be routed)
- “Push” – notify and/or deliver content
- “Pull” – query access to longitudinal record (in “home” HIE)

Determine when it is needed
Strategic Health Information Exchange Collaborative (SHIEC) –
Association of HIE Networks “where trust relationships and technical standards merge”

- Currently 49 members, representing >½ of U.S. population
- SHIEC members share:
  - Common vision
  - Best practices
  - Problem solving
  - Resources
  - Establish national initiatives
    - eg: the Patient Centered Data Home™ (PCDH) Project
What Role Can SHIEC Play?

SHIEC: 47 HIE's representing >½ of U.S. population
SHIEC member populations
(n=49, representing >½ of U.S. population)
The Interoperability Challenge:

Even though SHIEC members are “well connected” within their respective communities, how do we connect the SHIEC member communities together… efficiently and effectively.
Interoperability Spectrum

- **Basic interoperability**: Point of care-typically federated data exchange, e.g.:
  - New patient visits PCP, external records needed
  - Patient admitted to hospital out of home region

- **Advanced interoperability**: Includes
  - Triggered notifications to those who need to know
  - Often requires at least some centralized architecture
  - Supports analytics and measurement, VBPMs
Value-based Payment Models

• **MACRA**
  - MIPS: 90% of doctors in America affected!
  - Alternative Payment Models (10%)
    • Such as CPC+
• **Commercial Payers**
  - ACO’s, CPC+, etc.

**2017 MIPS COMPONENTS FINAL**
- Quality Reporting 60%
- Clinical Practice Improvement Activities 15%
- Advancing Care Information (interoperability) 25%
- Resource Use 0%

MACRA – MIPS: 90% of doctors in America affected!
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- Commercial Payers
  - ACO’s, CPC+, etc.

DK
Basic Interoperability: Challenges

Related to current federated queries via XCA

- **Who to query: Identity issues**
  - Identity must match closely: Likelihood of match is highly dependent on MPI quality, sophistication, and business rules on the receiving end.

- **Where to query:**
  - Must specify locations to search: Difficult to know where a patient received care - not possible to query “everywhere.”

- **When to query:**
  - Must know when to execute query: Many important clinical events need rapid responses.
Example: Oklahoma Patient Data Outside MyHealth (HIE)
Patients with Data Outside their Home HIE: 20M patients
The Solution: Patient Centered Data Home™ (PCDH) SHIEC’s Advanced Interoperability Project

- “Exception” event surveillance – across boundaries
- Simple & cost-effective - use existing standards & technologies
- Scalable
- Zip code-driven alerts
- Providers can complete a targeted query (pull information) from other HIEs based upon a “trigger” event
- Patient information is available when and where it’s needed
- Data becomes part of the longitudinal record in patients’ home HIE
What is PCDH?

♦ A Patient Centered Data Home™:

- Creates **The** comprehensive longitudinal patient record in the HIE where the patient resides
- Provides real-time clinical data
  - No matter where care event occurs
    - Across domain and geopolitical boundary’s - “No Wrong Door!”
- A cost-effective, scalable method of exchanging patient data
  - Care events automatically “monitored” by HIE’s
  - Automatic care team notifications “triggered” by an event
PCDH Guiding Principles

- Each HIE’s unique policies, technology, values honored
  - Governance preserved
  - Identity management processes sustained
  - Data use agreements honored and unchanged
  - Privacy and consent models maintained
  - Business model unchanged
  - Technical architecture preserved
Shared Vision / Shared Standards

◆ ADT commonly used among participants
  ▪ Encounter notification system (alerts)
    • Zip Code determines patient data home
    • MPI number added for output to PCDH HIE
  ▪ Downstream Alert delivery
    – Determined by each HIE’s unique protocols
◆ XCA query (eHealth Exchange standard)
  ▪ Targeted query matched to MPI
    • Triggered by an alert
    • Records retrieved become part of longitudinal record in HIE
Member Population: Quality Health Network
Member Population: Quality Health Network
Patient Centered Data

Result: All health record data on MI residents returns to PCDH

If patient recognized and consented, ADT notification passed to provider

Follow-up queries to OK can be made for completed records and results

Zip 81502 = QHN

MyHealth receives the ADT and checks the zip code
Arizona: population 6.6M - HIE: AzHeC
- MPI: 5.9M
- 21 hospitals and health systems
- 2 reference labs and imaging centers

Utah: population 3M - HIE: UHIN
- MPI: 1.8M
- All 4 of the major health systems and most clinics/labs
- 80% of all providers

Western CO: Population .5M - HIE: QHN
- MPI: .6M with Clinical Data
- 12 Hospitals, all reference labs and imaging centers
- 94% of all providers

Western PCDH Project:
Enlarged interoperability
≈ 10 Million Lives
Technical Challenges

- Ensure that ADTs consistently have hospital identifying information
- Notifications from “outside” HIEs
  - Delivered according to existing protocols
- Automatic query - to do or not to do?
- Process for identifying when clinical data is available
### What do Providers See?

#### Patient Information:
- **Name:** Rogers, Norville S
- **Gender:** Male
- **Birthdate:** 04/01/1969 (47 yrs)
- **Address:** 456 SLACKER CIRCLE, GRAND JUNCTION, CO 81501

#### Ambulatory Encounters:

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#### Referring Information:
- **Referring:** Unknown
- **Location:** SALT LAKE REGIONAL MEDICAL CENTER LP
- **Source:** Utah Health Information Network
- **Dates:** 01-25-2016 to (No End Date)
- **Subject Type/Class:** Unknown / O
- **Encounter ID:** 0DF44FF0-71D7-48c5-B3F2-B4BE9637C2E2
Sample Detail

- Location of care event
- Contact info
- Providers noted

<table>
<thead>
<tr>
<th>Location</th>
<th>SALT LAKE REGIONAL MEDICAL CENTER LP</th>
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### Notes / Comments

How to submit a search for External Documents:
1. From the Patient Summary, click the "External Document Search" tab
2. Click "Submit External Document Search" from the "Patient Actions" panel on the left
3. Select "Utah Health Information Network" from the Endpoints
4. Select your Role and Reason along with any other criteria
5. Click Submit

### Health Information Exchange:

- **Name:** Utah Health Information Network (UTAH)

### Point of Care:

- **MRN:** 1234567890123

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<tr>
<th>Other Names</th>
<th>SALT LAKE REGIONAL MEDICAL CENTER INC</th>
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<tr>
<td><strong>Address:</strong></td>
<td>1050 E SOUTH TEMPLE SALT LAKE CITY, UT 84102-1507</td>
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<td><strong>Telephone:</strong></td>
<td>801-350-4008</td>
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<td><strong>Fax:</strong></td>
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### Providers on Message:

- **Attending:** COLLETT, CAMILLE (827)
- **Referring:** COLLETT, CAMILLE (827)
- **Primary Care:** WILLIAMSON, DIANTHA (1022)
Sample CCD with live link to images.
**QHN Stats:** 04/01/2016 - 12/31/2016

### Messages

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<th>Not Acked</th>
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### Patients

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<th>Not Acked</th>
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<td>90</td>
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Improved Workflow

♦ No workflow interruption
  - Providers receive same notifications they’re used to
  - Their work with patients isn’t interrupted

♦ Greater insight into patient’s health
  - Event triggered notifications

♦ Access to more comprehensive records

♦ Reduced time with calls / faxes

♦ Reduction in unnecessary duplicative tests / labs
Phase 1: Basic ADT Routing
- Primary Function: ADT Exchange
  - Originating HIE sends ADT routed to Home HIE
  - Home HIE acknowledges data on patient
- Subsequent Data Exchange
  - Requires traditional interface (i.e. eHealth Exchange interface, or other standard interface) – enriched with 100% matching

Hub Roadmap:
- Additional transactions:
  - Hub-routed IHE profiles (i.e. eHealth Exchange transactions)
  - Hub-routed QRY HL7 messages; MDM-wrapped CCD responses
  - Hub-routed FHIR transactions (if requested by customers)
- Tokenized patient context
Without PCDH Hub

8 HIEs means 7 interfaces for each HIE to maintain

40 HIEs means 39 interfaces for each HIE to maintain
Initial Feature Set
• Configurable routing/filtering
• Governance controls
• Policy gates – each interface, each direction
• Field mapping/formulas

Status: >45,000 ADT’s exchanged
Central Hub Model: Scale

- Creating and maintaining interfaces is expensive
  - If SHIEC = 50 members,
  - Members would need to maintain 2,450 interfaces in total
- Standards often not met, even for simple HL-7 transactions
- Not all HIE’s are “at the same place”
  - Geographic evaluation may not be possible
  - Provider directories may not be available for all sources
- Must meet HIE’s where they are and enable single interface point with ability to maintain content, not feeds
Heartland PCDH – Who We Are

- Indiana Health Information Exchange (IHIE)
- Michiana Health Information Network (MHIN)
- Great Lakes Health Connect (GLHC)
- The Health Collaborative (HealthBridge)
- HealthLinc
- Kentucky Health Information Exchange (KHIE)
- Eastern Tennessee Health Information Network (etHIN)
Heartland HIEs are Diverse!

- 6 Regional HIEs - 4 are 15+ years old, 2 are statewide
- 1 State HIE (part of state government)
- Serve 400+ hospitals, represent $40M+ annual revenue
- 5 technology platforms, 3 are being replaced
- Overlapping geographies
- All eHealth Exchange members
- 4 HIEs have “Been there, done that” with CCD Exchange
# Heartland - Phased Implementation

<table>
<thead>
<tr>
<th>Phase</th>
<th>Date</th>
<th># of HIEs</th>
<th>ADT/Month</th>
<th>CCD/Month</th>
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<td>350K</td>
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</table>
Scalability / Future

- Expand number of pilot(s) and add to existing pilots
- Connect pilots together
- Create more scalable infrastructure
  - One or more hubs
- Establish common measurement
PCDH Creating Interoperability Infrastructure
Importance of HIE to HIE Exchange

- Puts patient in the center of his / her care
- Allows timely information to be “centered around” the patient - everywhere
- Care teams in divergent geographies can coordinate care
- Better results
- Lower costs
  - Simple and comprehensive data collection
    - Reduces need for unnecessary duplication (e.g. labs & radiology studies)
    - Better medication management
- Builds more comprehensive longitudinal patient record
Benefits:

• Leverages trusted local governance, laws, policies, privacy and security
• Best opportunity to quickly achieve nationwide “Alerting”
• Cost-effective technology, building on what is already in place
• Data aggregated/normalized in “Home” HIE where person resides
• Leverages shared trust and shared national standards
• Chance for accurate quality measurement (close loop on data quality problems)
Questions?

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