The Emergence of Community and Statewide Health Information Exchange (HIE)

Erin Grace, MHA

Chris Muir, MPA

James Walker, MD, FACP & Andrea Hassol, MSPH

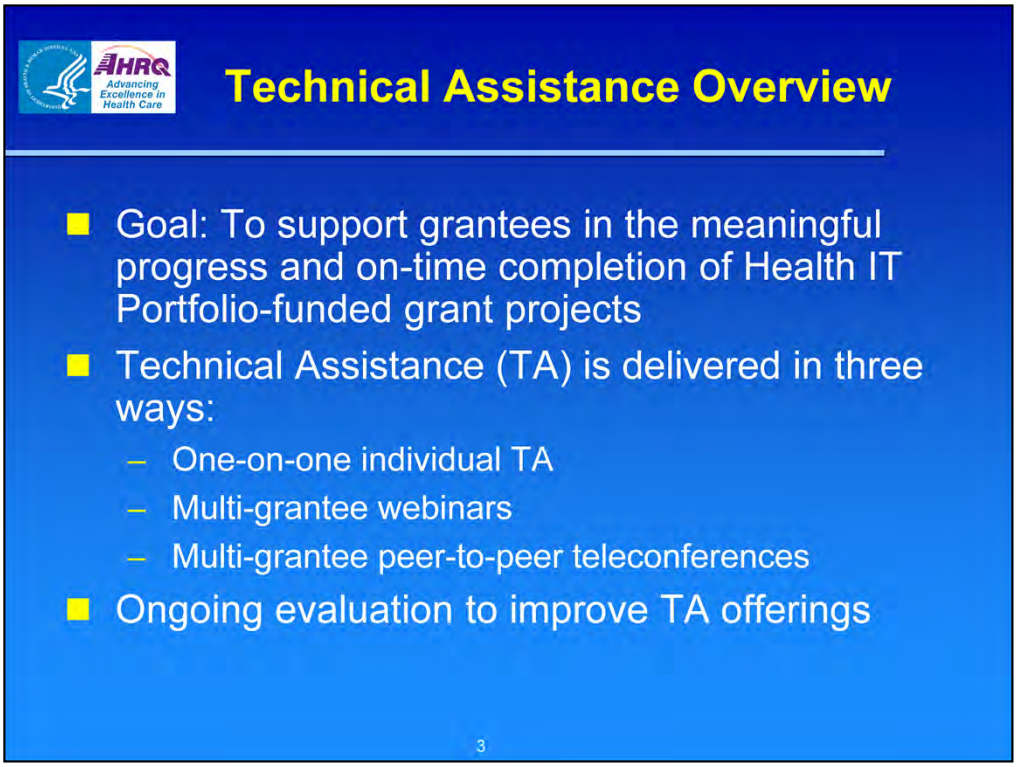
Mark Belanger, MBA

January 17, 2013

3:00-4:30 PM EST

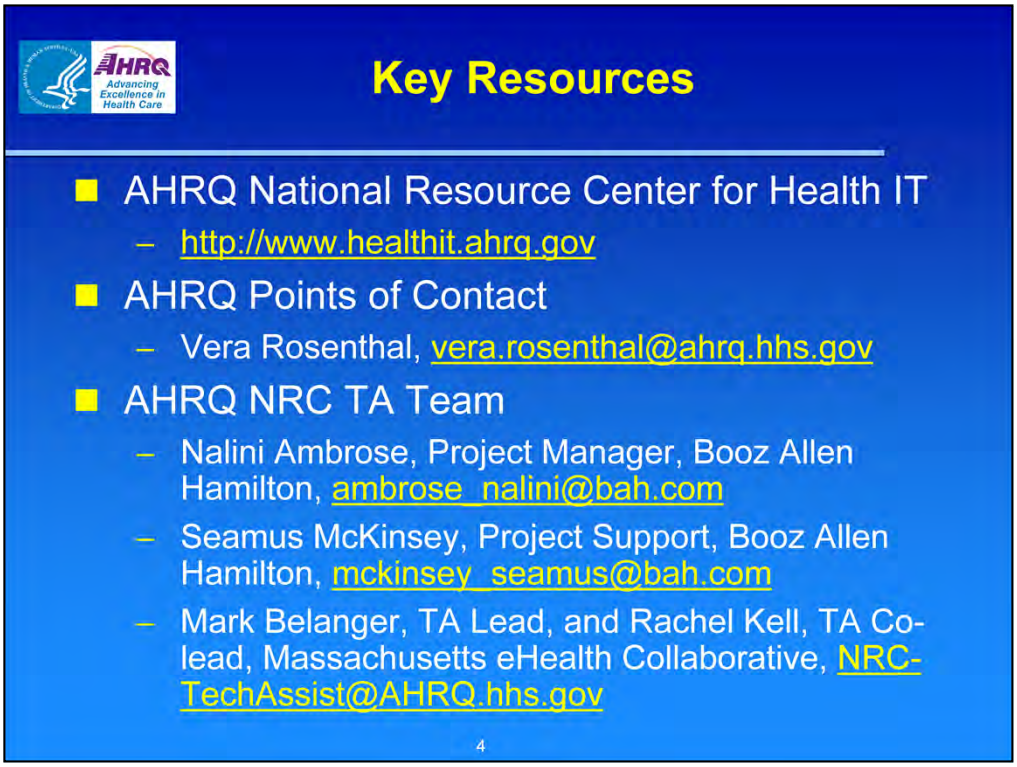
Agenda

- Welcome
    - Nalini Ambrose, AHRQ NRC TA Team
- Speaker Presentations
    - Chris Muir, Office of the National Coordinator for Health IT (ONC)
    - James Walker, Geisinger Health System & Andrea Hassol, Abt Associates
    - Mark Belanger, Massachusetts eHealth Collaborative (MAeHC)
- Questions & Discussion



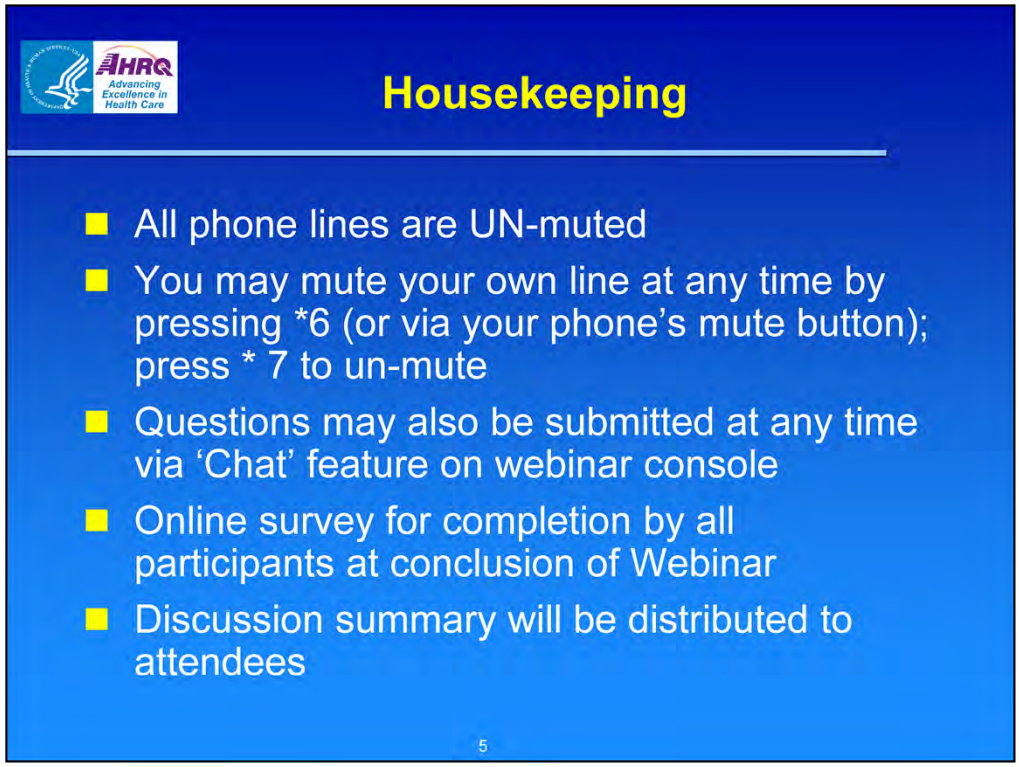
Technical Assistance Overview

- Goal: To support grantees in the meaningful progress and on-time completion of Health IT Portfolio-funded grant projects
- Technical Assistance (TA) is delivered in three ways:
    - One-on-one individual TA
    - Multi-grantee webinars
    - Multi-grantee peer-to-peer teleconferences
- Ongoing evaluation to improve TA offerings



Key Resources

- AHRQ National Resource Center for Health IT
  - http://www.healthit.ahrq.gov
- AHRQ Points of Contact
  - Vera Rosenthal, vera.rosenthal@ahrq.hhs.gov
- AHRQ NRC TA Team
  - Nalini Ambrose, Project Manager, Booz Allen Hamilton, ambrose_nalini@bah.com
  - Seamus McKinsey, Project Support, Booz Allen Hamilton, mckinsey_seamus@bah.com
  - Mark Belanger, TA Lead, and Rachel Kell, TA Co-lead, Massachusetts eHealth Collaborative, NRC-TechAssist@AHRQ.hhs.gov



Housekeeping

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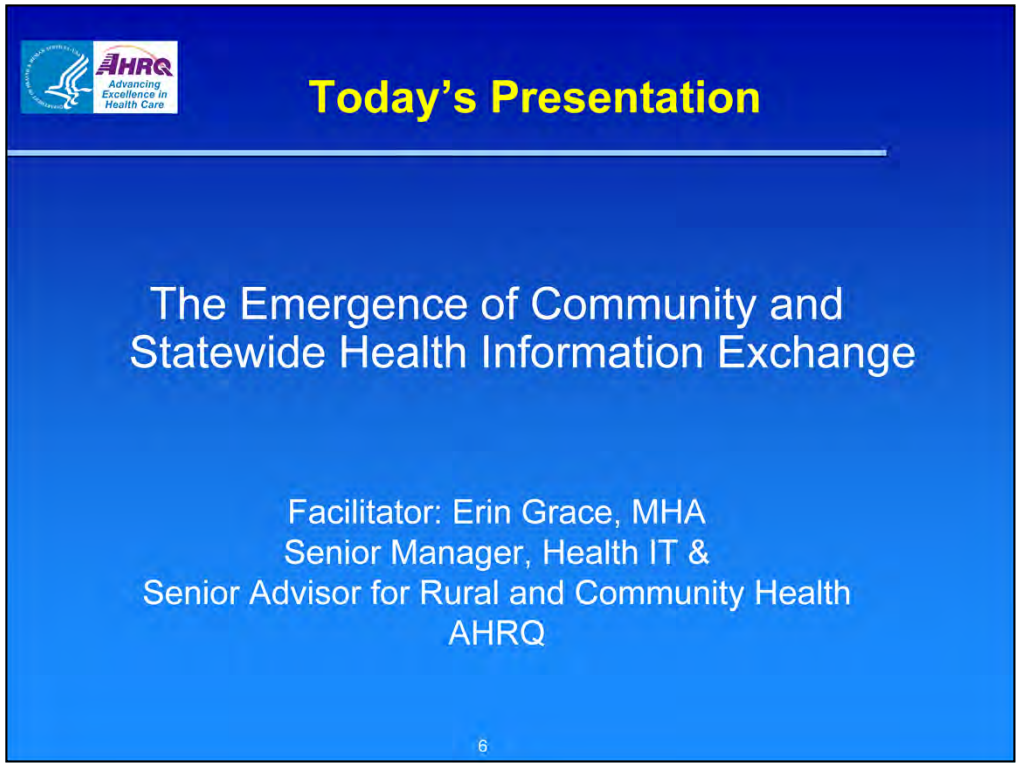
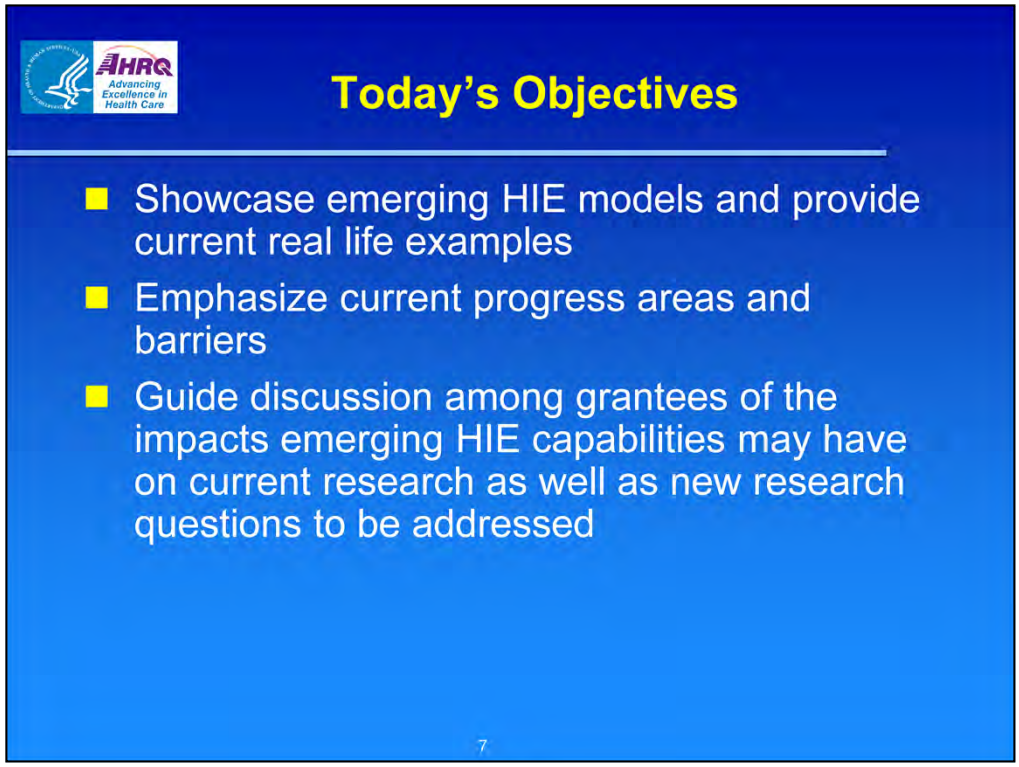
- You may mute your own line at any time by pressing *6 (or via your phone's mute button); press * 7 to un-mute
- Questions may also be submitted at any time via 'Chat' feature on webinar console
- Online survey for completion by all participants at conclusion of Webinar
- Discussion summary will be distributed to attendees



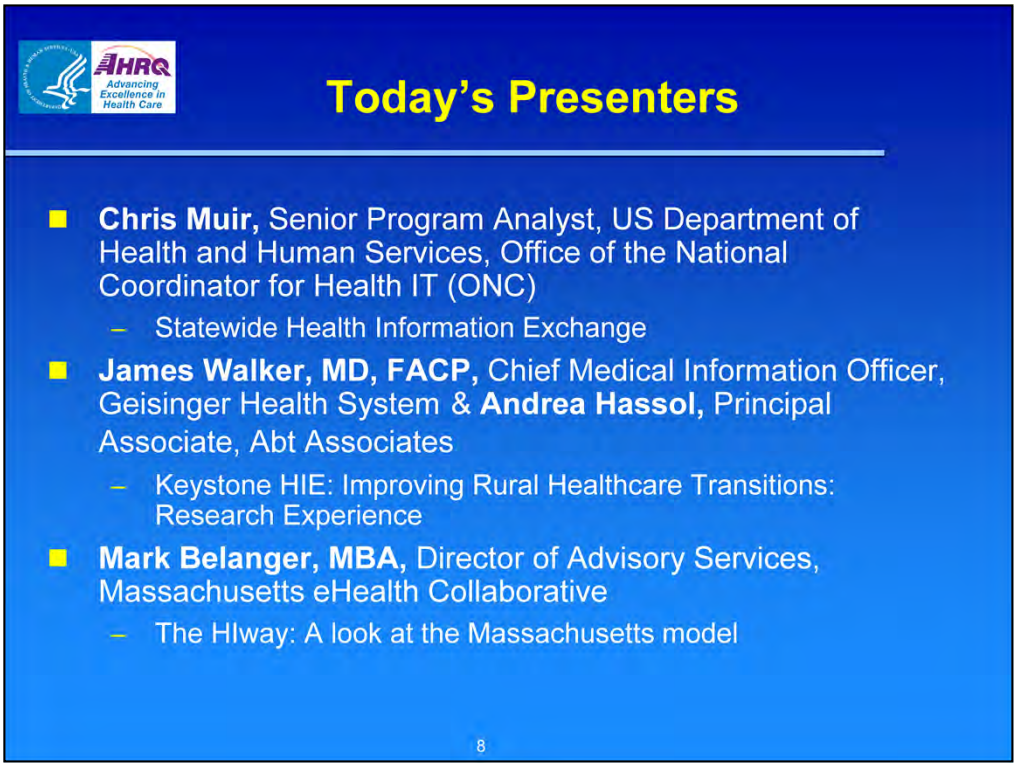
Today's Presentation

The Emergence of Community and Statewide Health Information Exchange
Facilitator: Erin Grace, MHA
Senior Manager, Health IT &
Senior Advisor for Rural and Community Health
AHRQ



Today's Objectives

- Showcase emerging HIE models and provide current real life examples
- Emphasize current progress areas and barriers
- Guide discussion among grantees of the impacts emerging HIE capabilities may have on current research as well as new research questions to be addressed



Today's Presenters

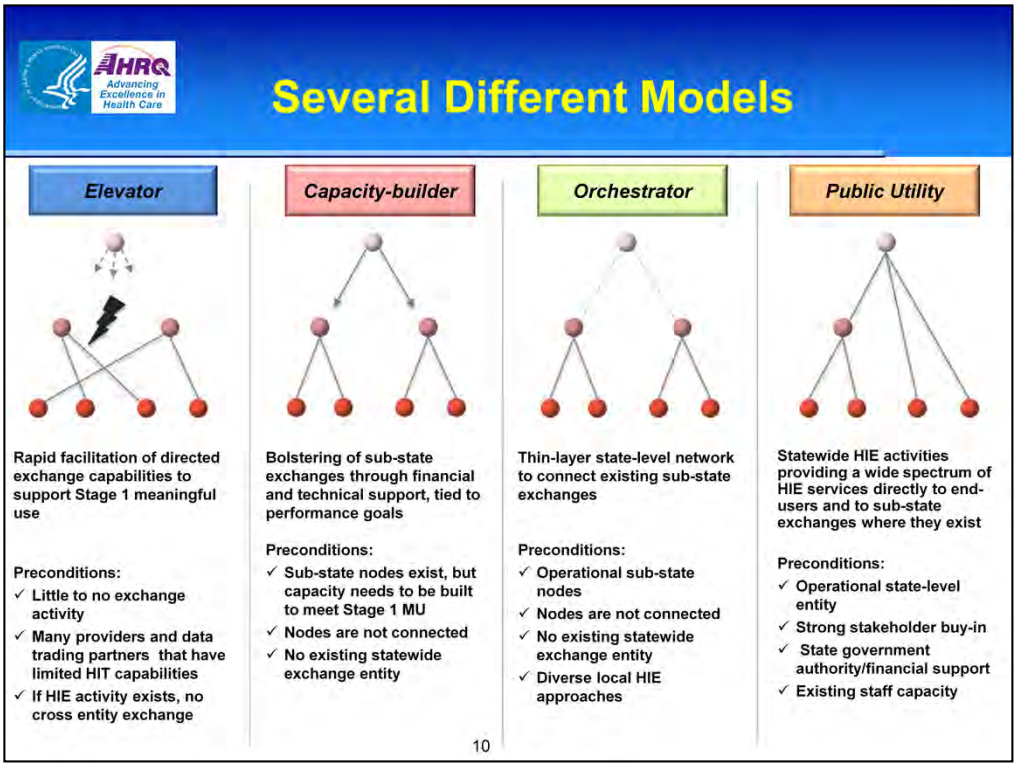
- **Chris Muir,** Senior Program Analyst, US Department of Health and Human Services, Office of the National Coordinator for Health IT (ONC)
  - Statewide Health Information Exchange
- **James Walker, MD, FACP,** Chief Medical Information Officer, Geisinger Health System & **Andrea Hassol,** Principal Associate, Abt Associates
  - Keystone HIE: Improving Rural Healthcare Transitions: Research Experience
- **Mark Belanger, MBA,** Director of Advisory Services, Massachusetts eHealth Collaborative
  - The HIway: A look at the Massachusetts model

Statewide Health Information Exchange

Chris Muir

Program Manager

ONC State HIE Program



Several Different Models

Elevator

Rapid facilitation of directed exchange capabilities to support Stage 1 meaningful use

Preconditions:

- Little to no exchange activity
- Many providers and data trading partners that have limited HIT capabilities
- If HIE activity exists, no cross entity exchange

Capacity-builder

Bolstering of sub-state exchanges through financial and technical support, tied to performance goals

Preconditions:

- Sub-state nodes exist, but capacity needs to be built to meet Stage 1 MU
- Nodes are not connected
- No existing statewide exchange entity

Orchestrator

Thin-layer state-level network to connect existing sub-state exchanges

Preconditions:

- Operational sub-state nodes
- Nodes are not connected

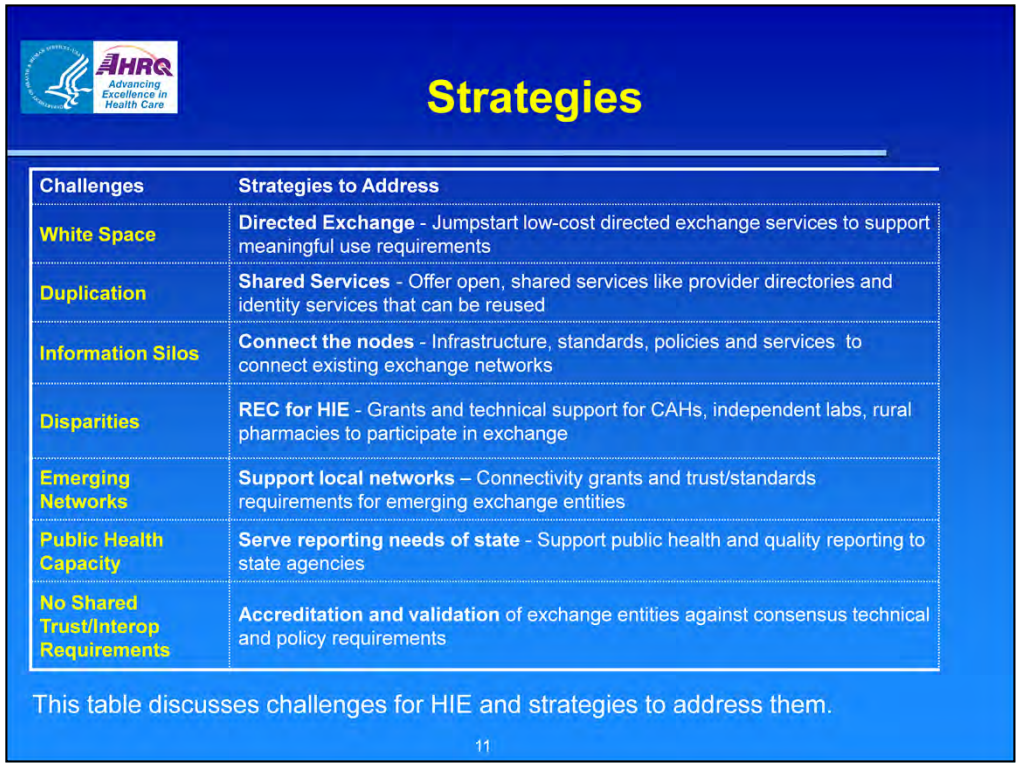
- No existing statewide exchange entity
- Diverse local HIE approaches

Public Utility

Statewide HIE activities providing a wide spectrum of HIE services directly to end-users and to sub-state exchanges where they exist

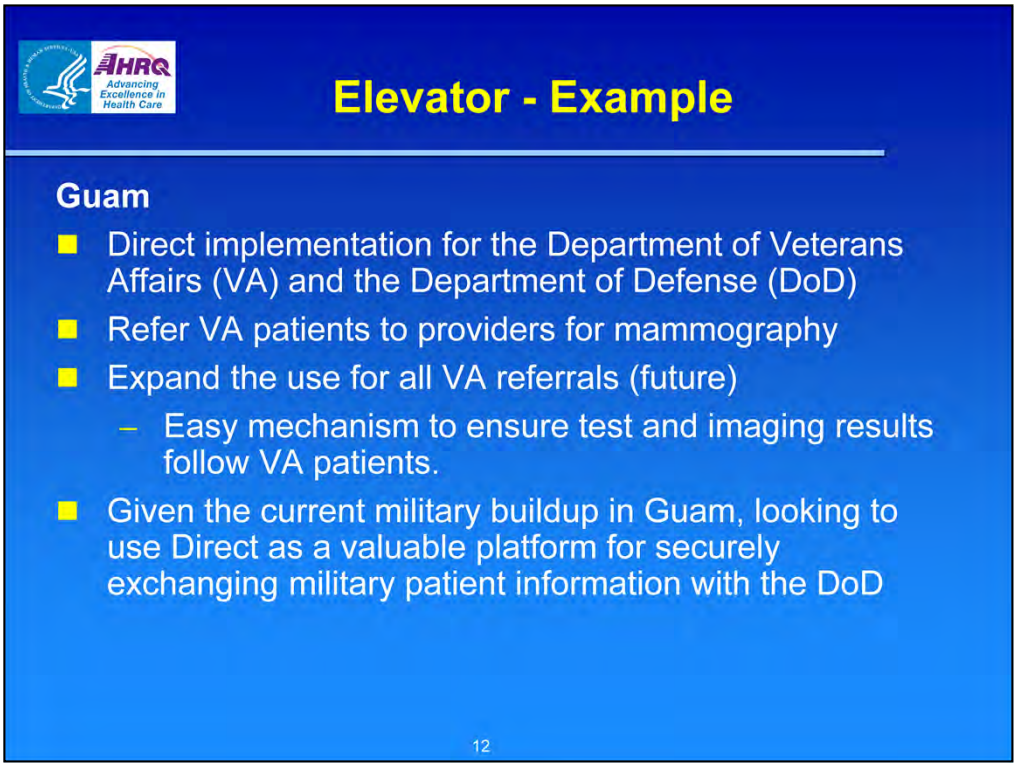
Preconditions:

- Operational state-level entity
- Strong stakeholder buy-in
- State government authority/financial support
- Existing staff capacity



Strategies

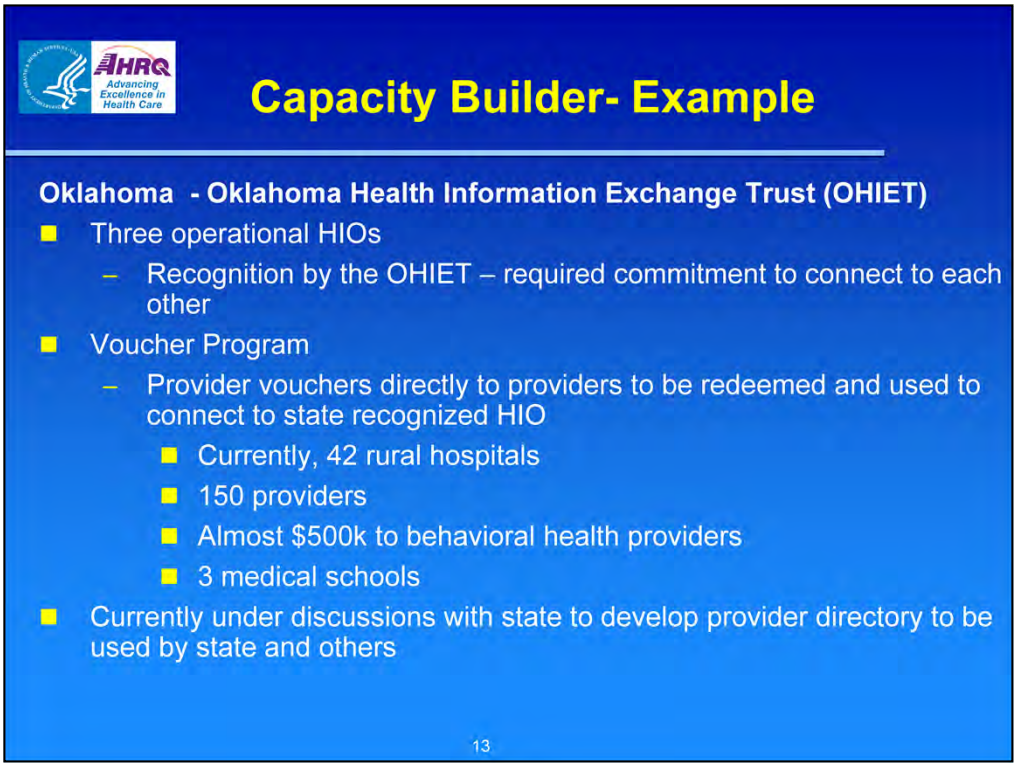
This table discusses challenges for HIE and strategies to address them.



Elevator – Example

Guam

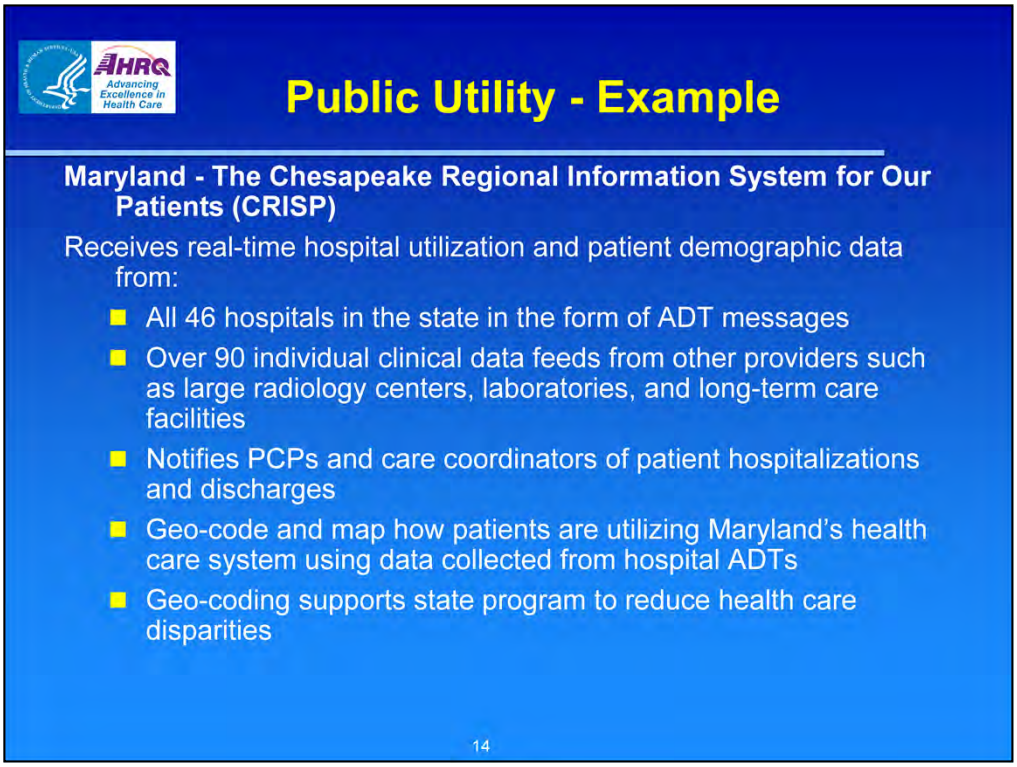
- Direct implementation for the Department of Veterans Affairs (VA) and the Department of Defense (DoD)
- Refer VA patients to providers for mammography
- Expand the use for all VA referrals (future)
  - Easy mechanism to ensure test and imaging results follow VA patients.
- Given the current military buildup in Guam, looking to use Direct as a valuable platform for securely exchanging military patient information with the DoD



Capacity Builder- Example

Oklahoma - Oklahoma Health Information Exchange Trust (OHIET)

- Three operational HIOs
  - Recognition by the OHIET – required commitment to connect to each other
- Voucher Program
  - Provider vouchers directly to providers to be redeemed and used to connect to state recognized HIO
    - Currently, 42 rural hospitals
    - 150 providers
    - Almost $500k to behavioral health providers
    - 3 medical schools
- Currently under discussions with state to develop provider directory to be used by state and others

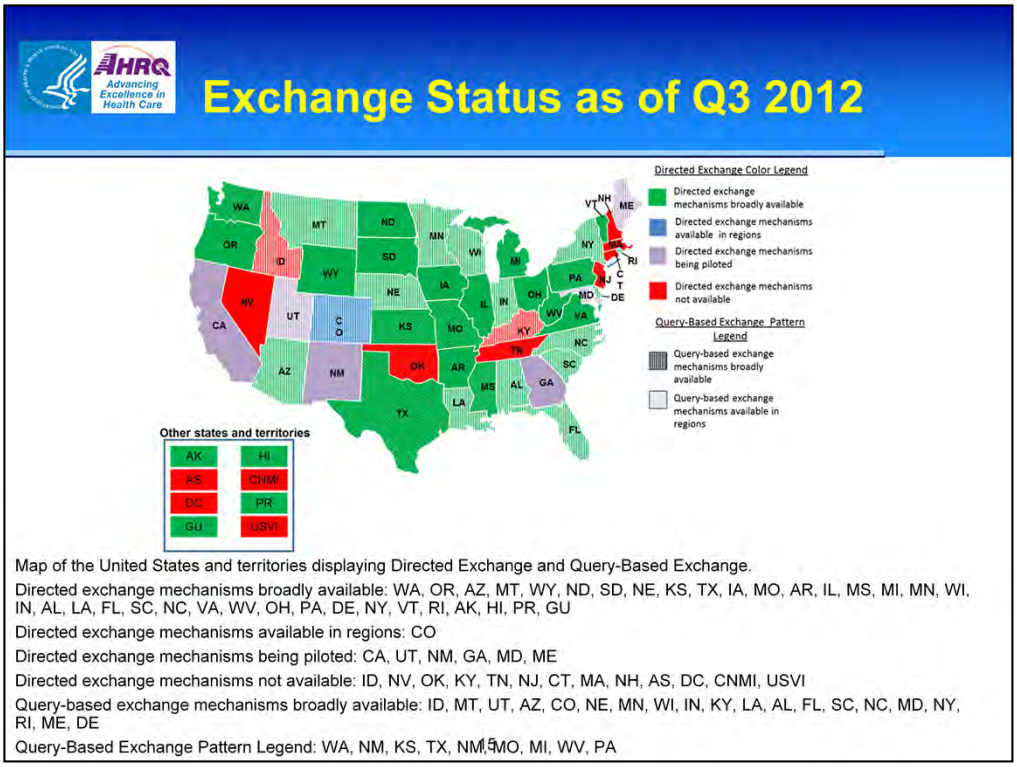


Public Utility – Example

Maryland - The Chesapeake Regional Information System for Our Patients (CRISP)

Receives real-time hospital utilization and patient demographic data from:

- All 46 hospitals in the state in the form of ADT messages
- Over 90 individual clinical data feeds from other providers such as large radiology centers, laboratories, and long-term care facilities
- Notifies PCPs and care coordinators of patient hospitalizations and discharges
- Geo-code and map how patients are utilizing Maryland's health care system using data collected from hospital ADTs
- Geo-coding supports state program to reduce health care disparities



Exchange Status as of Q3 2012

Map of the United States and territories displaying Directed Exchange and Query-Based Exchange.

Directed exchange mechanisms broadly available: WA, OR, AZ, MT, WY, ND, SD, NE, KS, TX, IA, MO, AR, IL, MS, MI, MN, WI, IN, AL, LA, FL, SC, NC, VA, WV, OH, PA, DE, NY, VT, RI, AK, HI, PR, GU

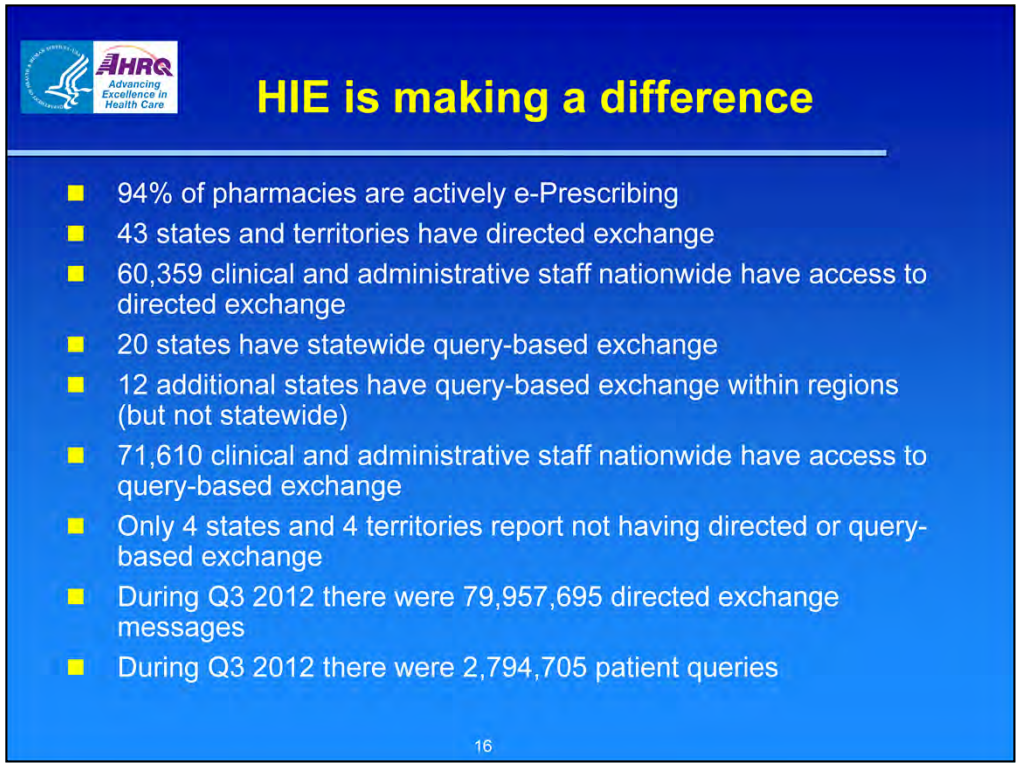
Directed exchange mechanisms available in regions: CO

Directed exchange mechanisms being piloted: CA, UT, NM, GA, MD, ME

Directed exchange mechanisms not available: ID, NV, OK, KY, TN, NJ, CT, MA, NH, AS, DC, CNMI, USVI

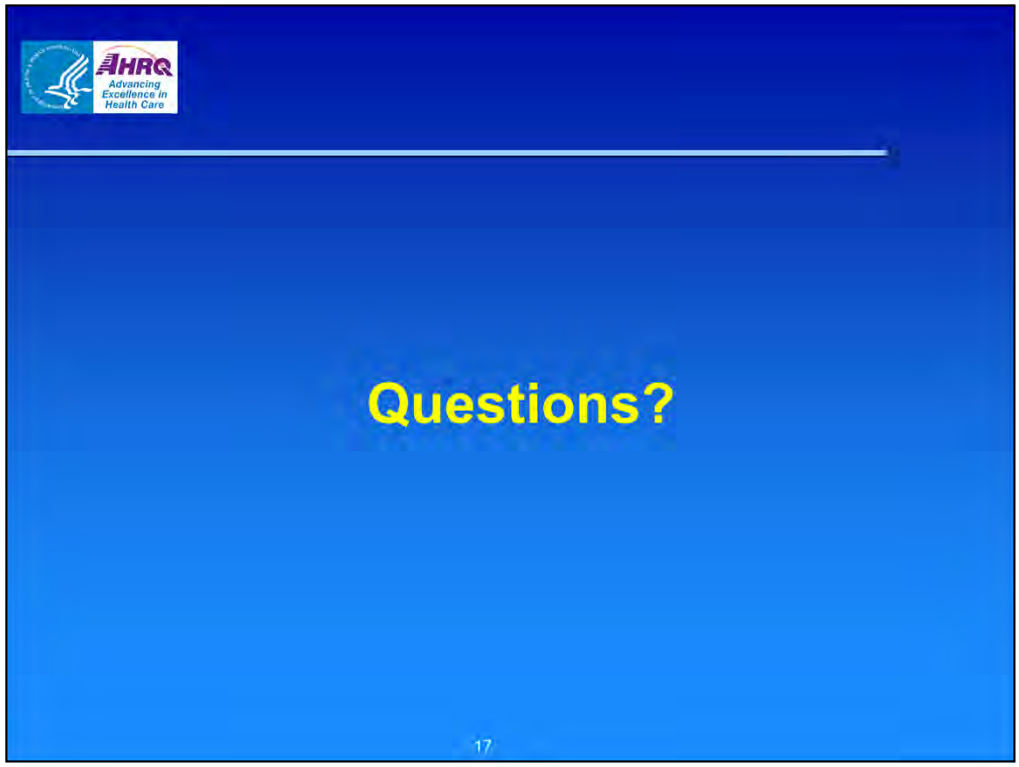
Query-based exchange mechanisms broadly available: ID, MT, UT, AZ, CO, NE, MN, WI, IN, KY, LA, AL, FL, SC, NC, MD, NY, RI, ME, DE

Query-Based Exchange Pattern Legend: WA, NM, KS, TX, NM, MO, MI, WV, PA



HIE is making a difference

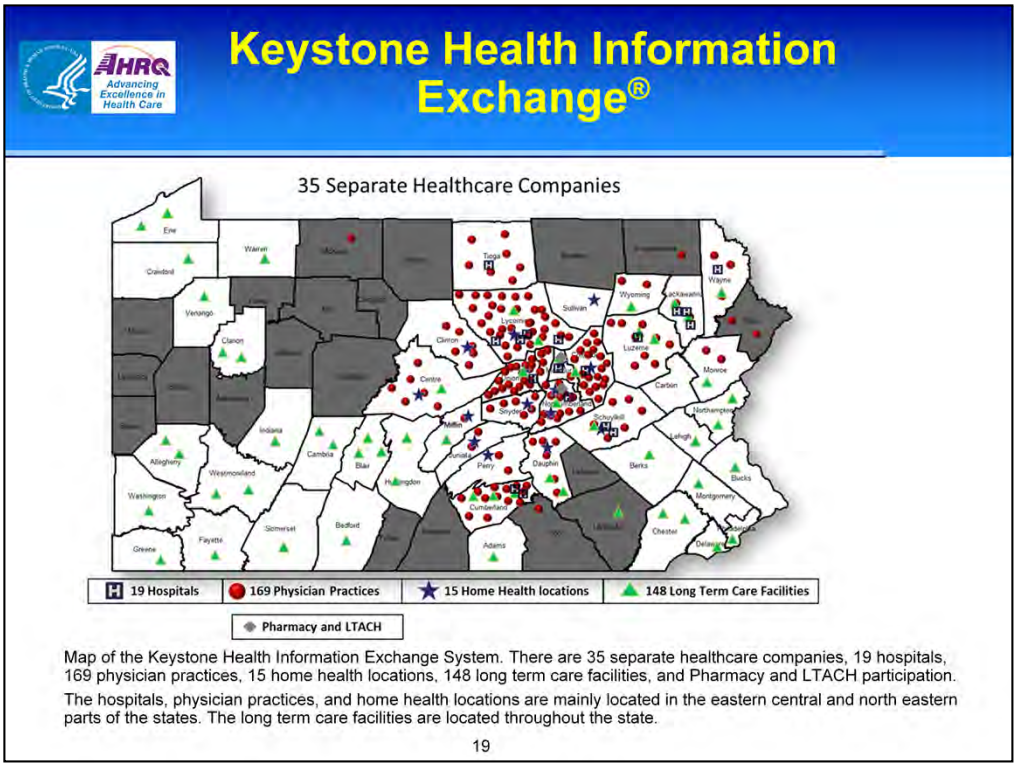
- 94% of pharmacies are actively e-Prescribing
- 43 states and territories have directed exchange
- 60,359 clinical and administrative staff nationwide have access to directed exchange
- 20 states have statewide query-based exchange
- 12 additional states have query-based exchange within regions (but not statewide)
- 71,610 clinical and administrative staff nationwide have access to query-based exchange
- Only 4 states and 4 territories report not having directed or query-based exchange
- During Q3 2012 there were 79,957,695 directed exchange messages
- During Q3 2012 there were 2,794,705 patient queries



Questions?

Improving Rural Healthcare Transitions: Research Experience

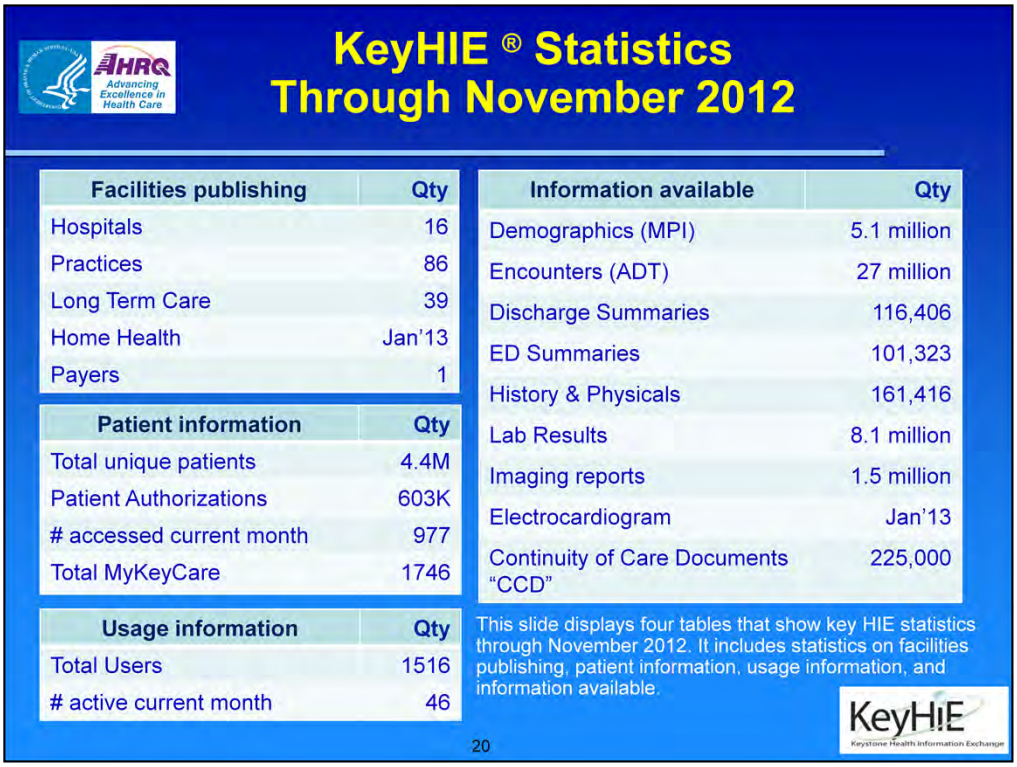
James Walker
Andrea Hassol
AHRQ grant #R18 HS018865-03
Year Three



Keystone Health Information Exchange®

Map of the Keystone Health Information Exchange System. There are 35 separate healthcare companies, 19 hospitals, 169 physician practices, 15 home health locations, 148 long term care facilities, and Pharmacy and LTACH participation.

The hospitals, physician practices, and home health locations are mainly located in the eastern central and north eastern parts of the states. The long term care facilities are located throughout the state.



KeyHIE ® Statistics Through November 2012

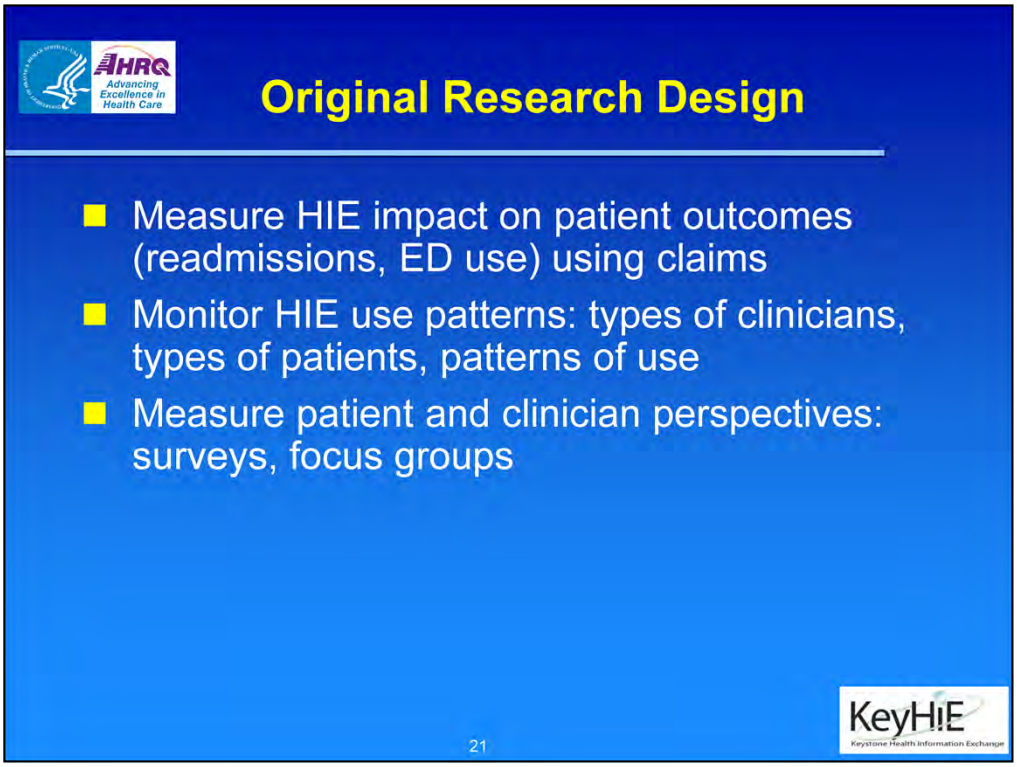
This slide displays four tables that show key HIE statistics through November 2012. It includes statistics on facilities publishing, patient information, usage information, and information available.

Table: Facilities Publishing
Hospitals, Quantity 16; Practices, Quantity 86; Long Term Care, Quantity 39; Home Health, Quantity to be available in January 2013; Payers, Quantity 1

Table: Patient Information
Total Unique Patients, Quantity 4.4 million; Patient Authorizations, Quantity 603,000; Number Accessed Current Month, Quantity 977; Total MyKeyCare, Quantity 1,746

Table: Usage Information
Total Users, Quantity 1,516; Number Active Current Month, Quantity 46

Table: Information Available
Demographics (MPI), Quantity 5.1 million; Encounters (ADT), Quantity 27 million; Discharge Summaries, Quantity 116,406; ED Summaries, Quantity 101,323; History & Physicals, Quantity 161,416; Lab Results, Quantity 8.1 million; Imaging Reports, Quantity 1.5 million; Electrocardiogram, Quantity to be available in January 2013; Continuity of Care Documents (CCD), Quantity 225,000



Original Research Design

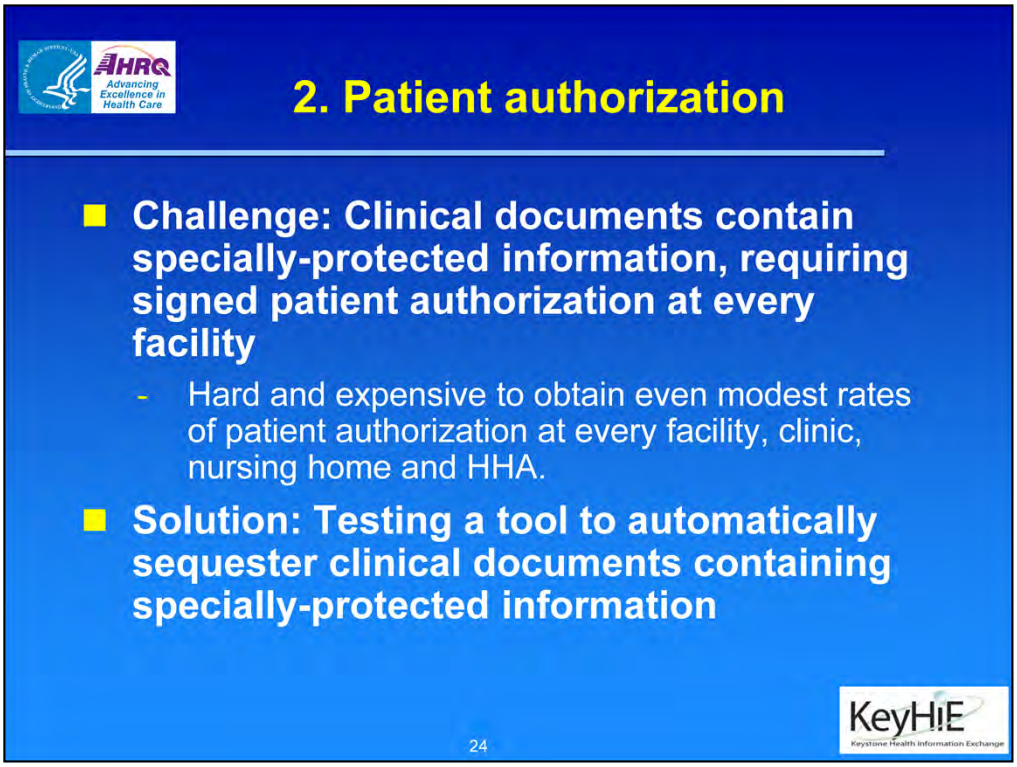
- Measure HIE impact on patient outcomes (readmissions, ED use) using claims
- Monitor HIE use patterns: types of clinicians, types of patients, patterns of use
- Measure patient and clinician perspectives: surveys, focus groups

Research Challenges: Agenda

1. Governance: Using HIE data for research purposes
2. Patient authorization (specially-protected information)
3. Data from multiple HIE platforms
4. Data Sources
5. Adapting evaluation plans throughout 5 years of HIE innovation

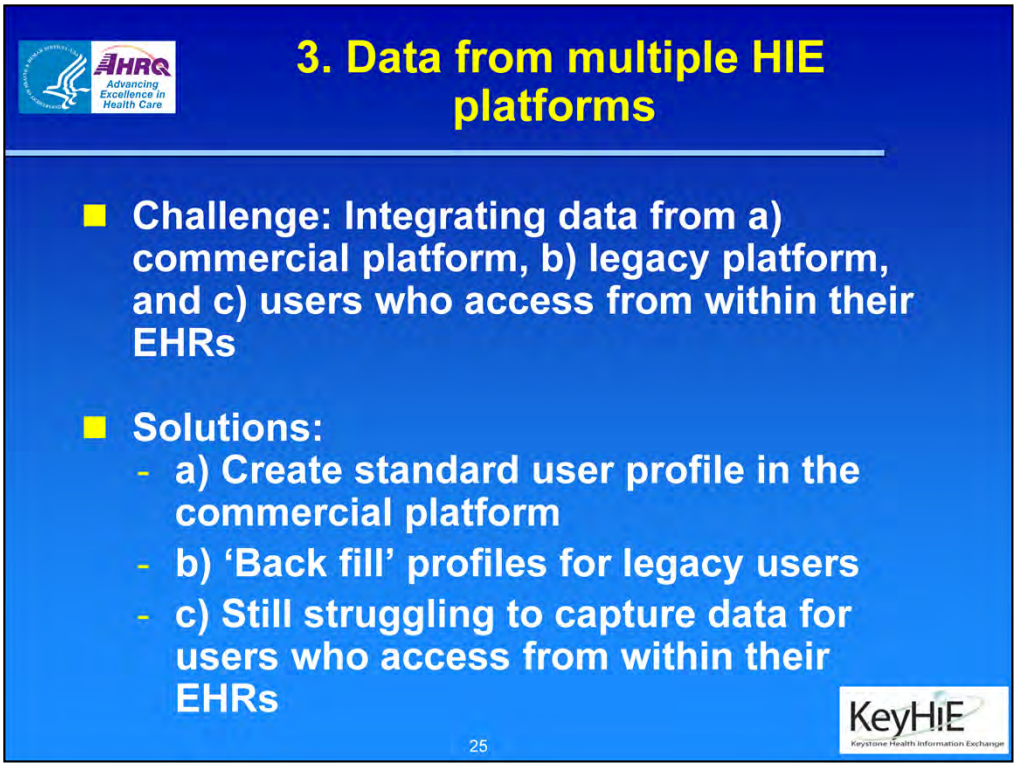
1. Governance: Using HIE data for research

- Challenge: Original HIE agreements specified Treatment only
- Solution: Amending agreements to add research



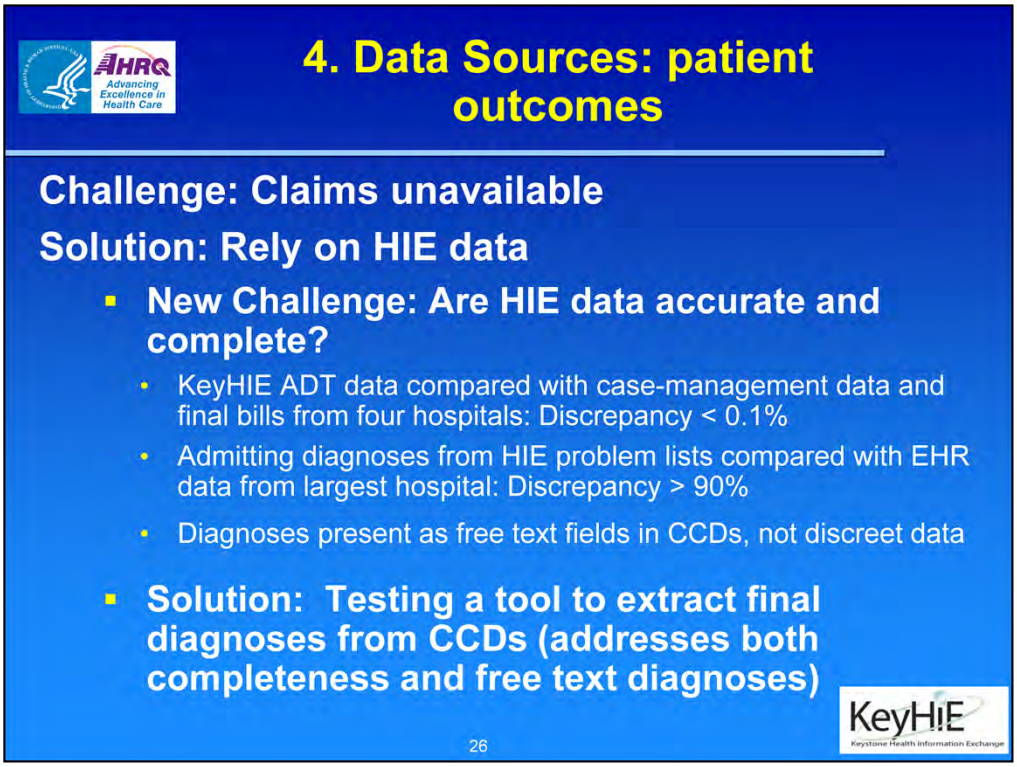
2. Patient authorization

- Challenge: Clinical documents contain specially-protected information, requiring signed patient authorization at every facility
  - Hard and expensive to obtain even modest rates of patient authorization at every facility, clinic, nursing home and HHA.
- Solution: Testing a tool to automatically sequester clinical documents containing specially-protected information



3. Data from multiple HIE platforms

- Challenge: Integrating data from a) commercial platform, b) legacy platform, and c) users who access from within their EHRs
- Solutions:
    - a) Create standard user profile in the commercial platform
    - b) 'Back fill' profiles for legacy users
    - c) Still struggling to capture data for users who access from within their EHRs

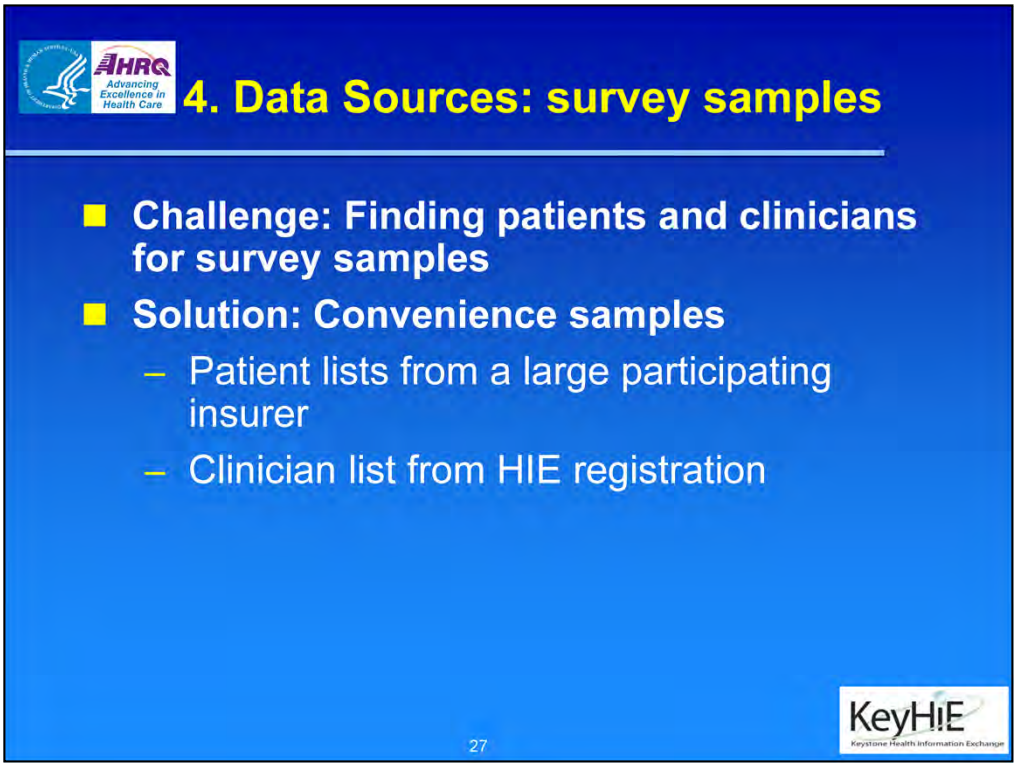


4. Data Sources: patient outcomes

Challenge: Claims unavailable

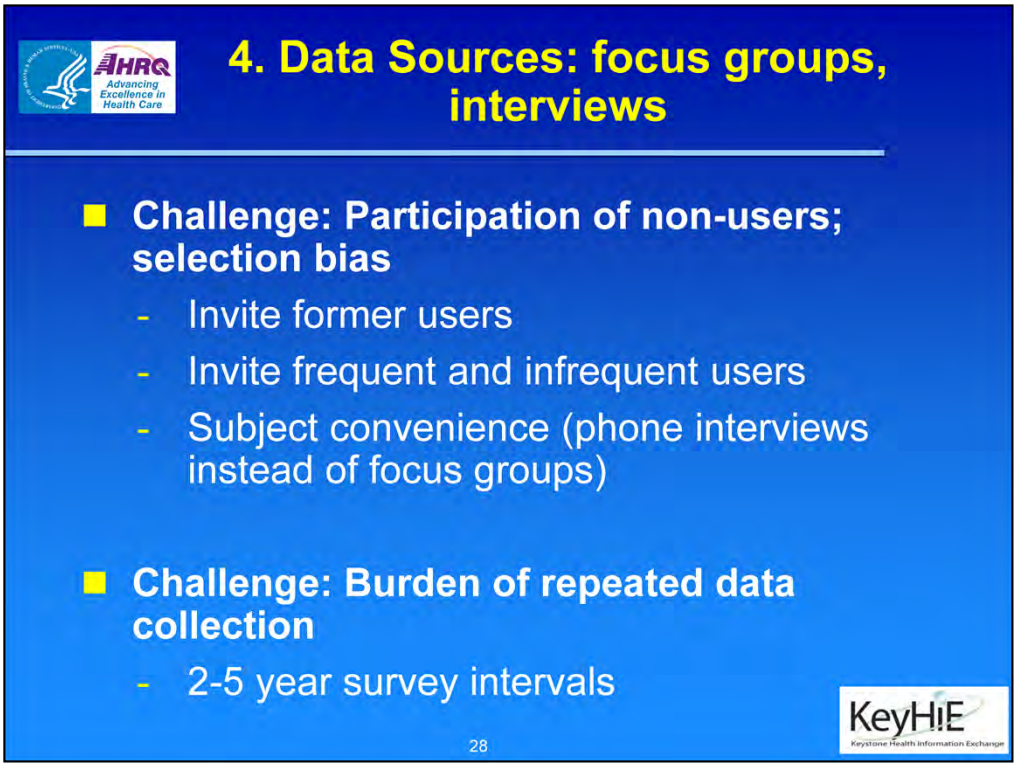
Solution: Rely on HIE data

- New Challenge: Are HIE data accurate and complete?
  - KeyHIE ADT data compared with case-management data and final bills from four hospitals: Discrepancy < 0.1%
  - Admitting diagnoses from HIE problem lists compared with EHR data from largest hospital: Discrepancy > 90%
  - Diagnoses present as free text fields in CCDs, not discreet data
- Solution: Testing a tool to extract final diagnoses from CCDs (addresses both completeness and free text diagnoses)



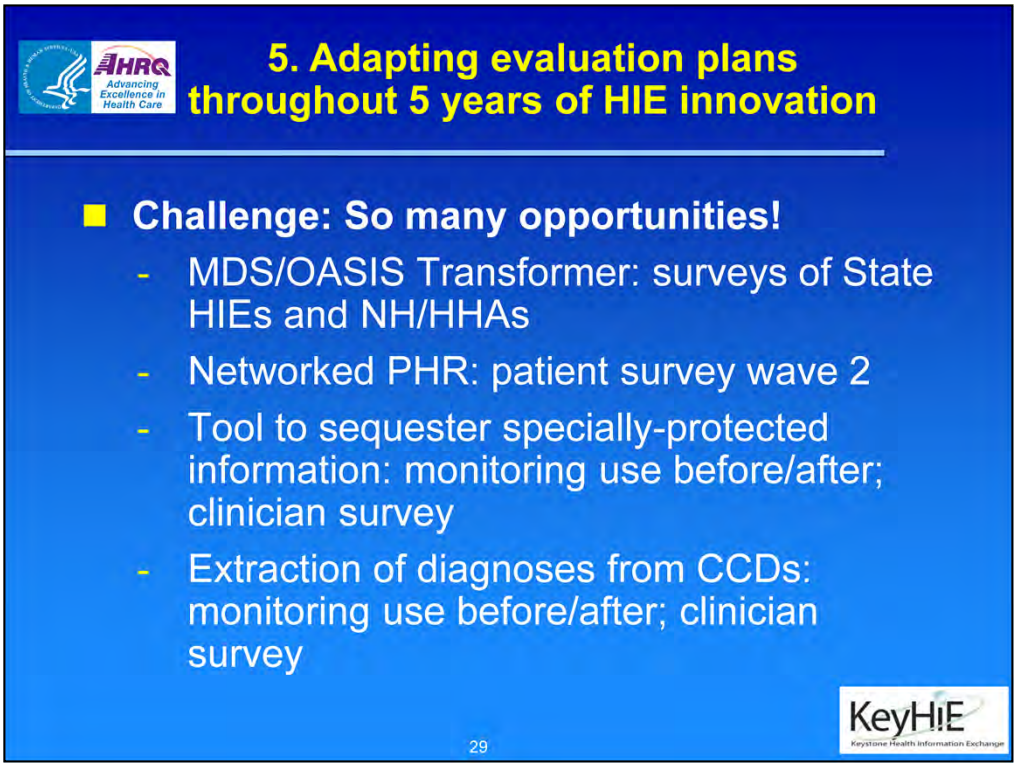
4. Data Sources: survey samples

- Challenge: Finding patients and clinicians for survey samples
- Solution: Convenience samples
  - Patient lists from a large participating insurer
  - Clinician list from HIE registration



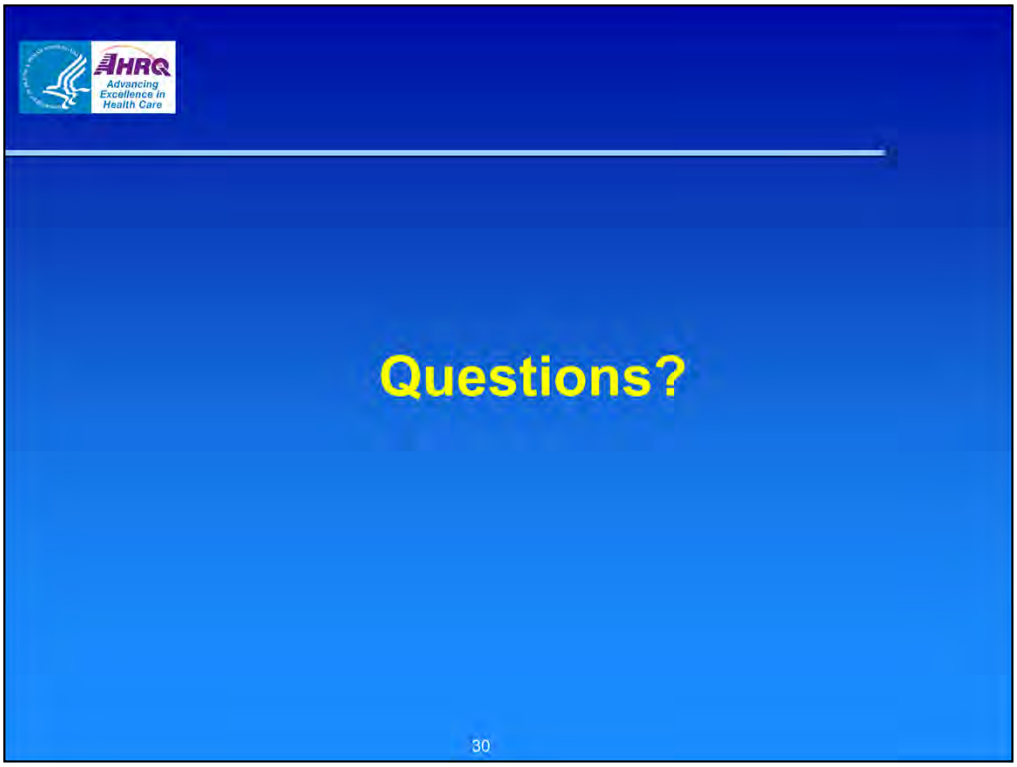
4. Data Sources: focus groups, interviews

- Challenge: Participation of non-users; selection bias
  - Invite former users
  - Invite frequent and infrequent users
  - Subject convenience (phone interviews instead of focus groups)
- Challenge: Burden of repeated data Collection
  - 2-5 year survey intervals

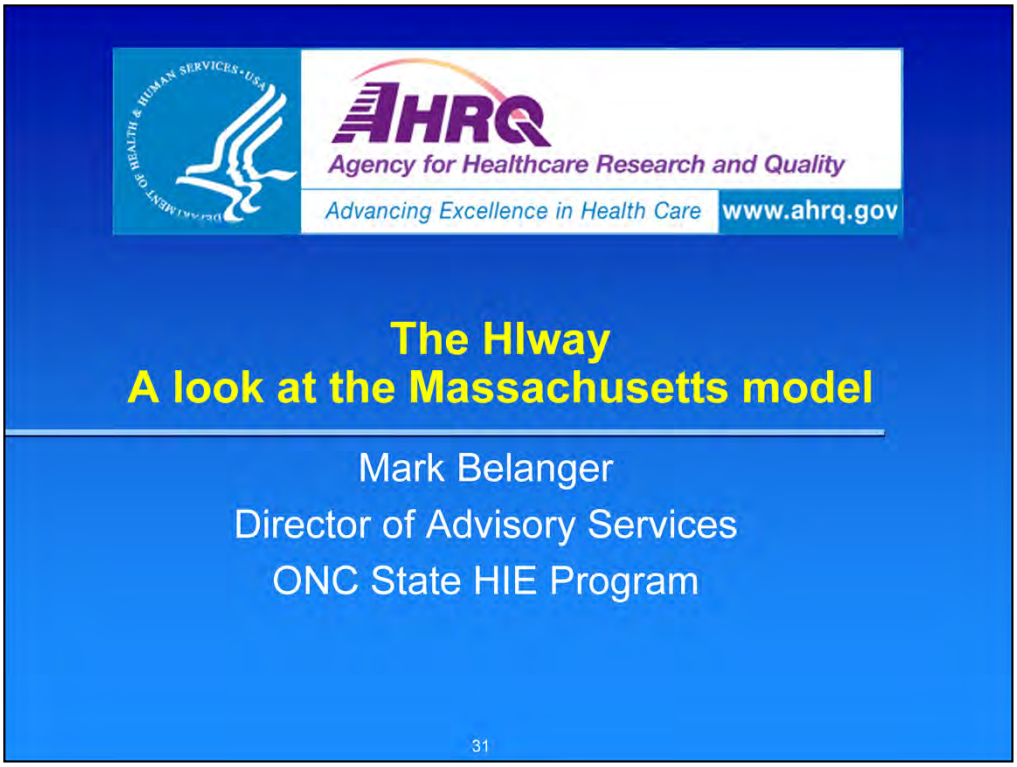


5. Adapting evaluation plans throughout 5 years of HIE innovation

- Challenge: So many opportunities!
  - MDS/OASIS Transformer: surveys of State HIEs and NH/HHAs
  - Networked PHR: patient survey wave 2
  - Tool to sequester specially-protected information: monitoring use before/after; clinician survey
  - Extraction of diagnoses from CCDs: monitoring use before/after; clinician survey



Questions?



The HIway A look at the Massachusetts model

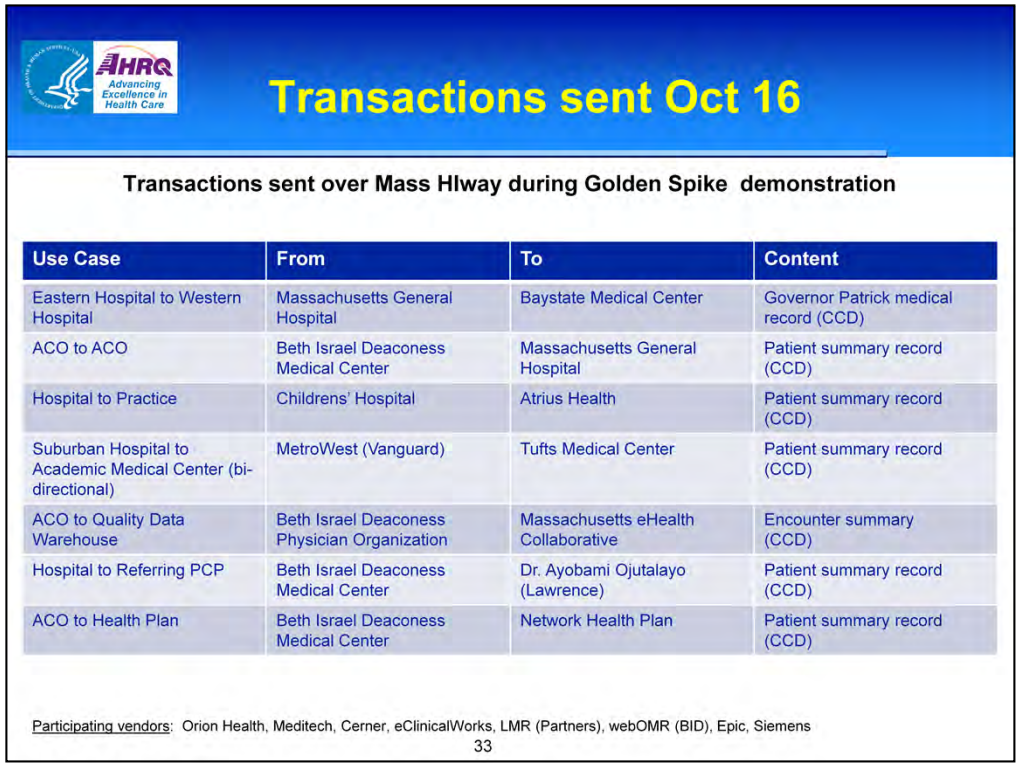
Mark Belanger

Director of Advisory Services

ONC State HIE Program

Driving the "Golden Spike"

On October 16, 2012 nine organizations sent production transactions over the Massachusetts HIway!



Transactions sent Oct 16

Transactions sent over Mass Hlway during Golden Spike demonstration:

Use Case: Eastern Hospital to Western Hospital; from Massachusetts General Hospital to Baystate Medical Center; Content: Governor Patrick medical record (CCD)

Use Case: ACO to ACO; from Beth Israel Deaconess Medical Center to Massachusetts General Hospital; Content: Patient summary record (CCD)

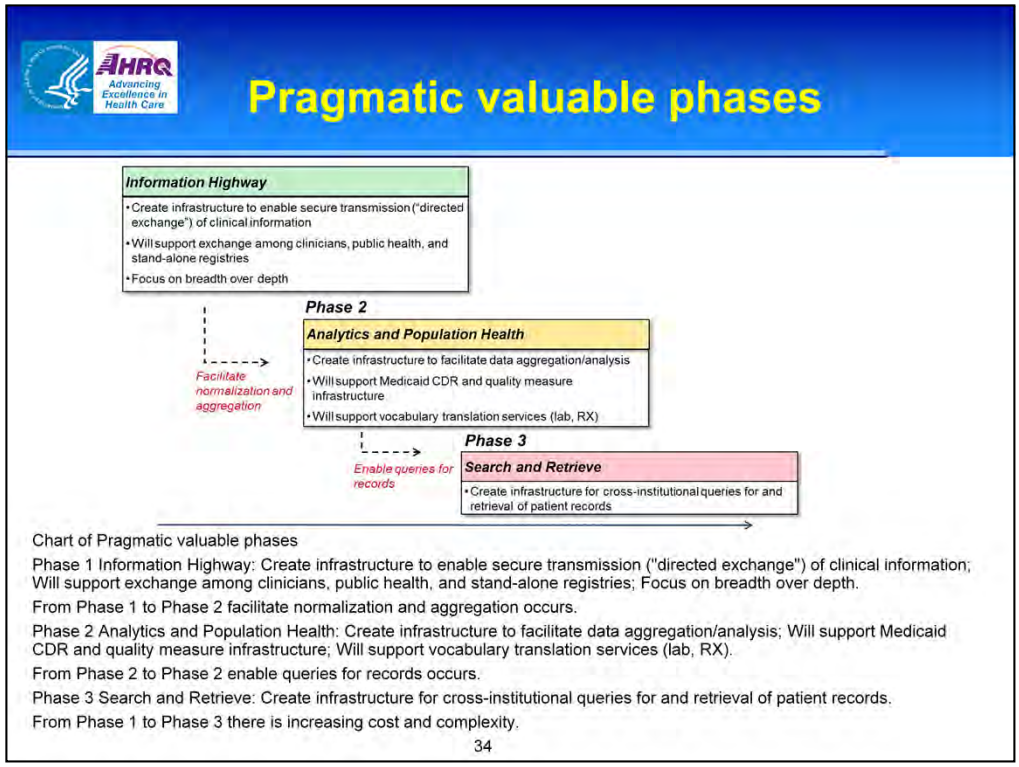
Use Case: Hospital to Practice; from Childrens' Hospital to Atrius Health; Content: Patient summary record (CCD)

Use Case: Suburban Hospital to Academic Medical Center (bi-directional); from MetroWest (Vanguard) to Tufts Medical Center; Content: Patient summary record (CCD)

Use Case: ACO to Quality Data Warehouse; from Beth Israel Deaconess Physician Organization to Massachusetts eHealth Collaborative; Content: Encounter summary (CCD)

Use Case: Hospital to Referring PCP; from Beth Israel Deaconess Medical Center to Dr. Ayobami Ojutalayo (Lawrence); Content: Patient summary record (CCD)

Use Case: ACO to Health Plan; from Beth Israel Deaconess Medical Center to Network Health Plan; Content: Patient summary record (CCD)



Pragmatic valuable phases

Chart of Pragmatic valuable phases

Phase 1 Information Highway: Create infrastructure to enable secure transmission ("directed exchange") of clinical information; Will support exchange among clinicians, public health, and stand-alone registries; Focus on breadth over depth.

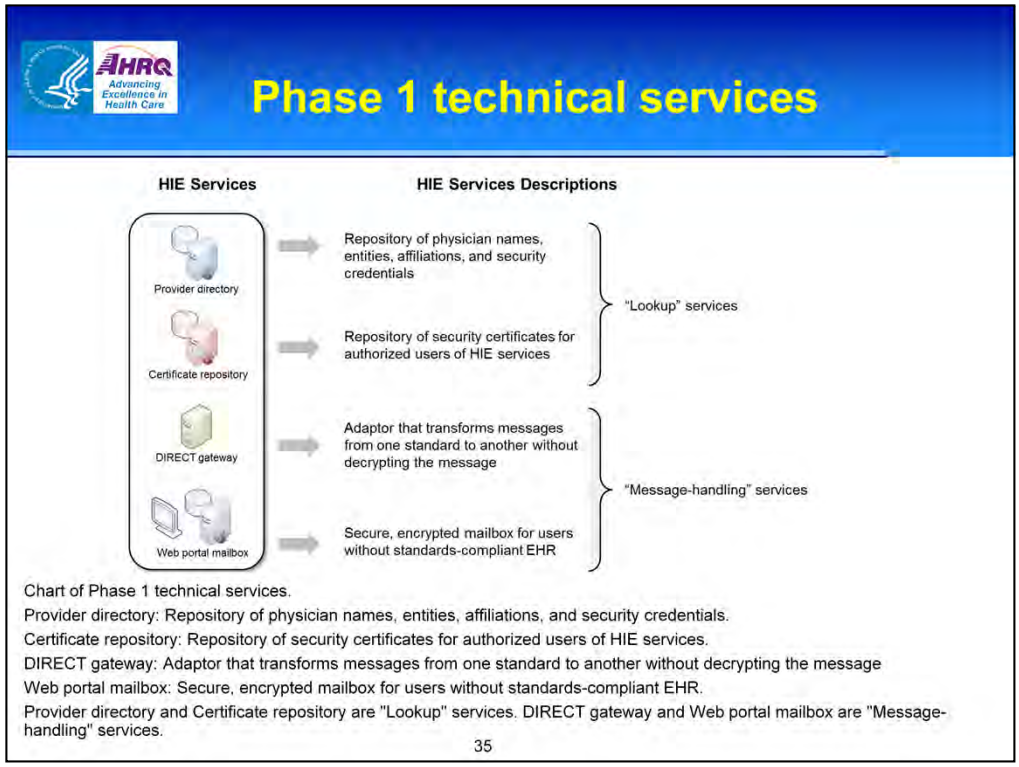
From Phase 1 to Phase 2 facilitate normalization and aggregation occurs.

Phase 2 Analytics and Population Health: Create infrastructure to facilitate data aggregation/analysis; Will support Medicaid CDR and quality measure infrastructure; Will support vocabulary translation services (lab, RX).

From Phase 2 to Phase 2 enable queries for records occurs.

Phase 3 Search and Retrieve: Create infrastructure for cross-institutional queries for and retrieval of patient records.

From Phase 1 to Phase 3 there is increasing cost and complexity.



Phase 1 technical services

Chart of Phase 1 technical services.

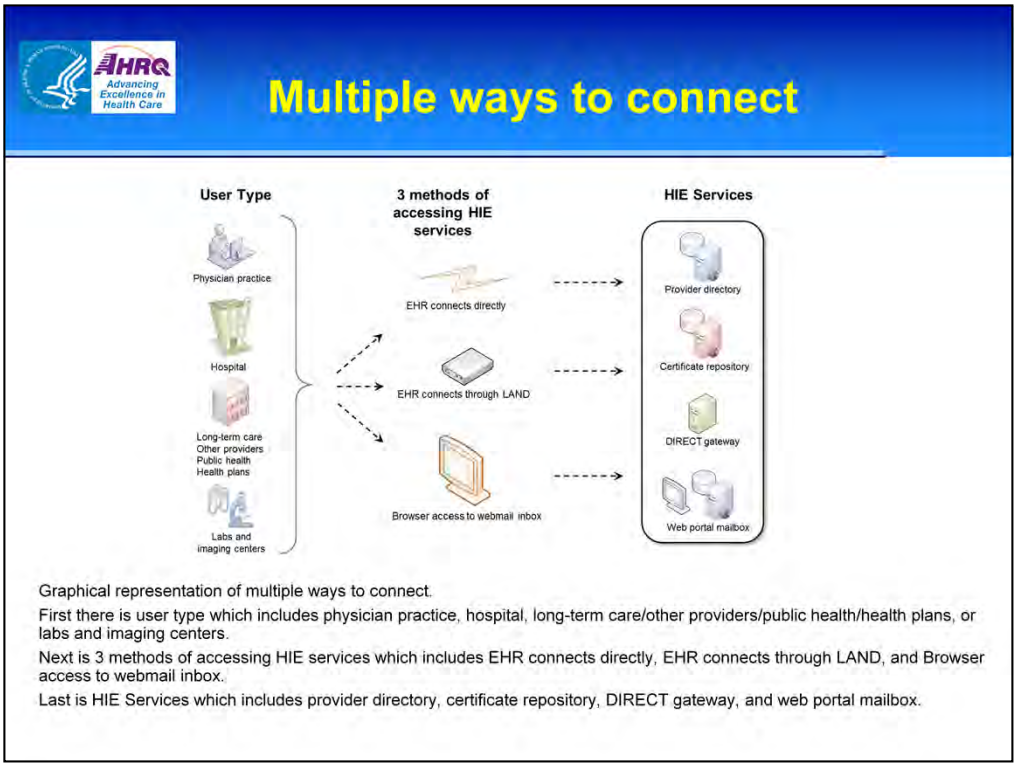
Provider directory: Repository of physician names, entities, affiliations, and security credentials.

Certificate repository: Repository of security certificates for authorized users of HIE services.

DIRECT gateway: Adaptor that transforms messages from one standard to another without decrypting the message

Web portal mailbox: Secure, encrypted mailbox for users without standards-compliant EHR.

Provider directory and Certificate repository are "Lookup" services. DIRECT gateway and Web portal mailbox are "Message-handling" services.



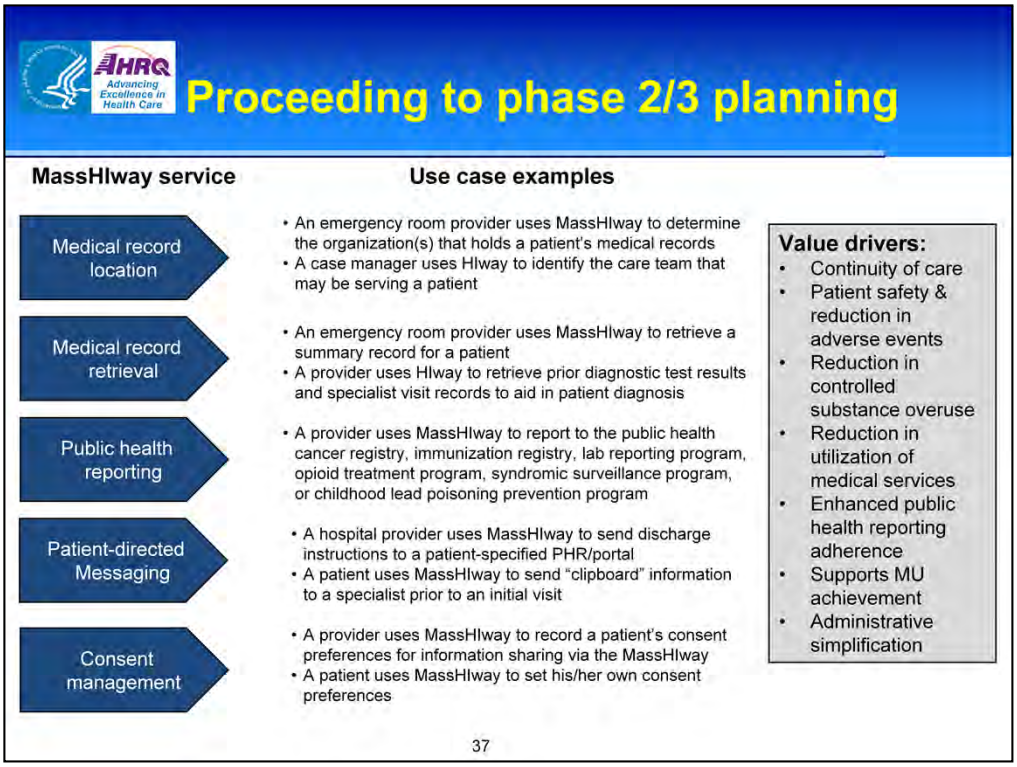
Multiple ways to connect

Graphical representation of multiple ways to connect.

First there is user type which includes physician practice, hospital, long-term care/other providers/public health/health plans, or labs and imaging centers.

Next is 3 methods of accessing HIE services which includes EHR connects directly, EHR connects through LAND, and Browser access to webmail inbox.

Last is HIE Services which includes provider directory, certificate repository, DIRECT gateway, and web portal mailbox.



Proceeding to phase 2/3 planning

Medical record location

- An emergency room provider uses MassHIway to determine the organization(s) that holds a patient's medical records
- A case manager uses HIway to identify the care team that may be serving a patient

Medical record retrieval

- An emergency room provider uses MassHIway to retrieve a summary record for a patient
- A provider uses HIway to retrieve prior diagnostic test results and specialist visit records to aid in patient diagnosis

Public health reporting

- A provider uses MassHIway to report to the public health cancer registry, immunization registry, lab reporting program, opioid treatment program, syndromic surveillance program, or childhood lead poisoning prevention program

Patient-directed Messaging

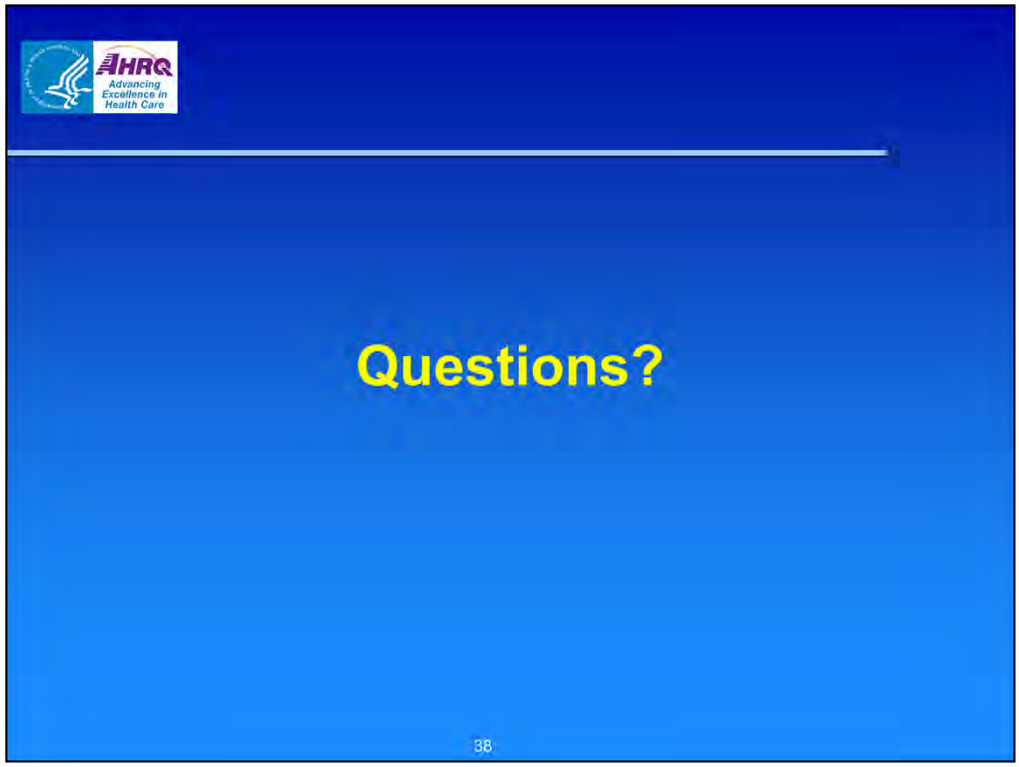
- A hospital provider uses MassHIway to send discharge instructions to a patient-specified PHR/portal
- A patient uses MassHIway to send "clipboard" information to a specialist prior to an initial visit

Consent management

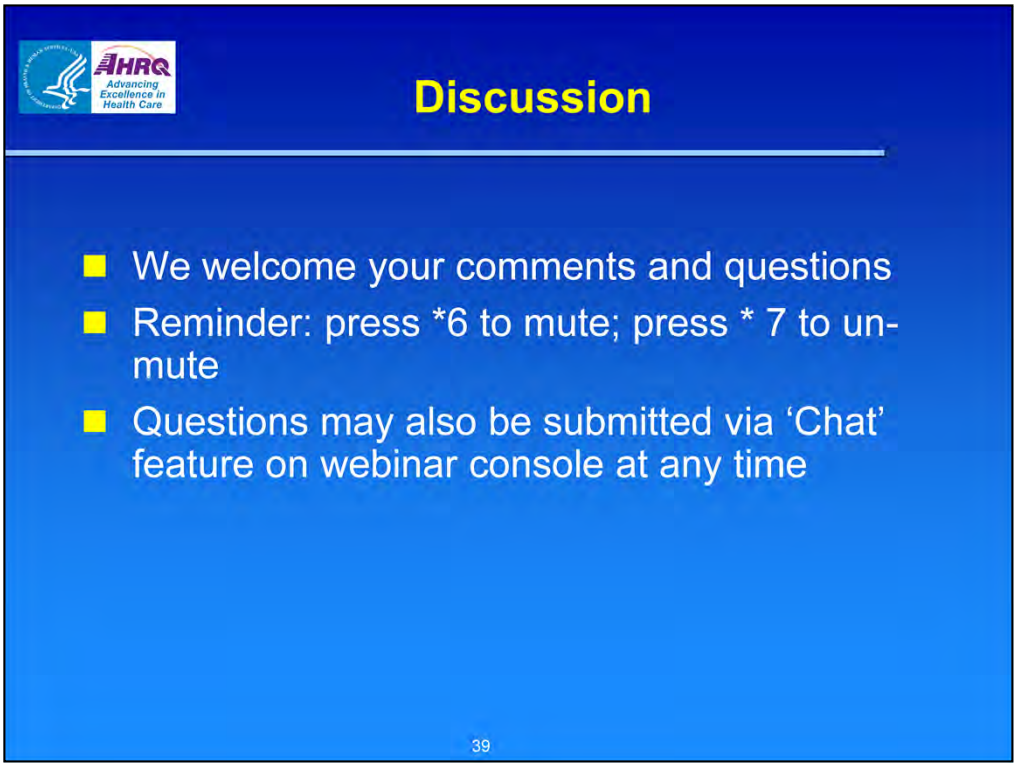
- A provider uses MassHIway to record a patient's consent preferences for information sharing via the MassHIway
- A patient uses MassHIway to set his/her own consent preferences

Value drivers:

- Continuity of care
- Patient safety & reduction in adverse events
- Reduction in controlled substance overuse
- Reduction in utilization of medical services
- Enhanced public health reporting adherence
- Supports MU achievement
- Administrative simplification



Questions?



Discussion

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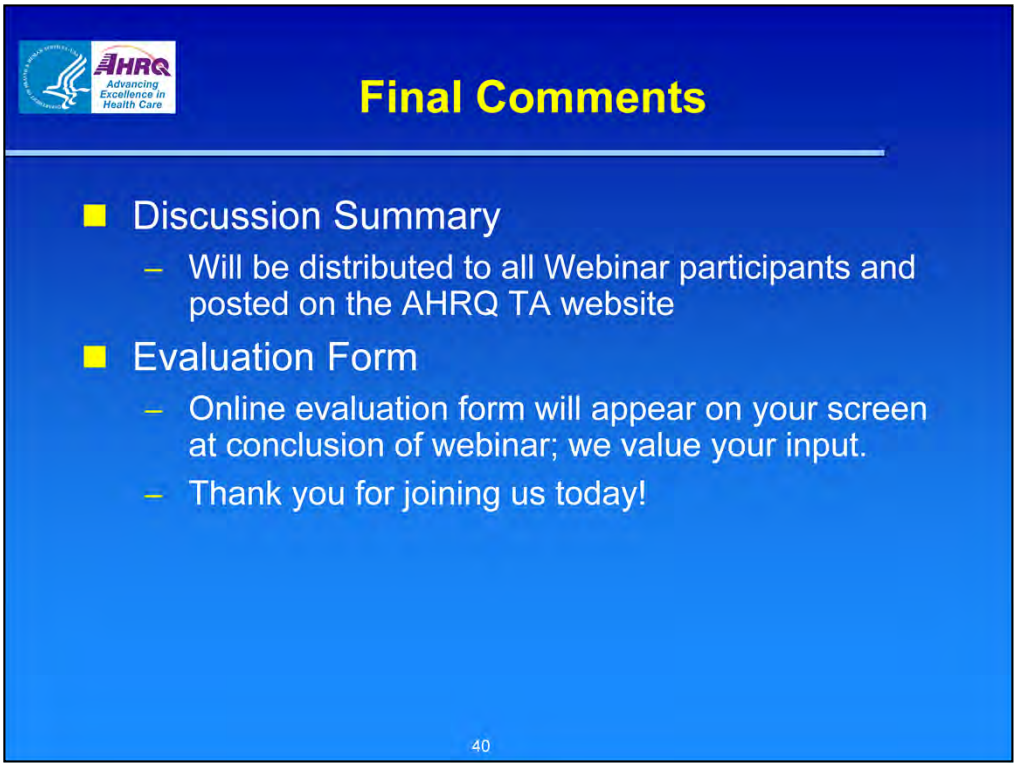
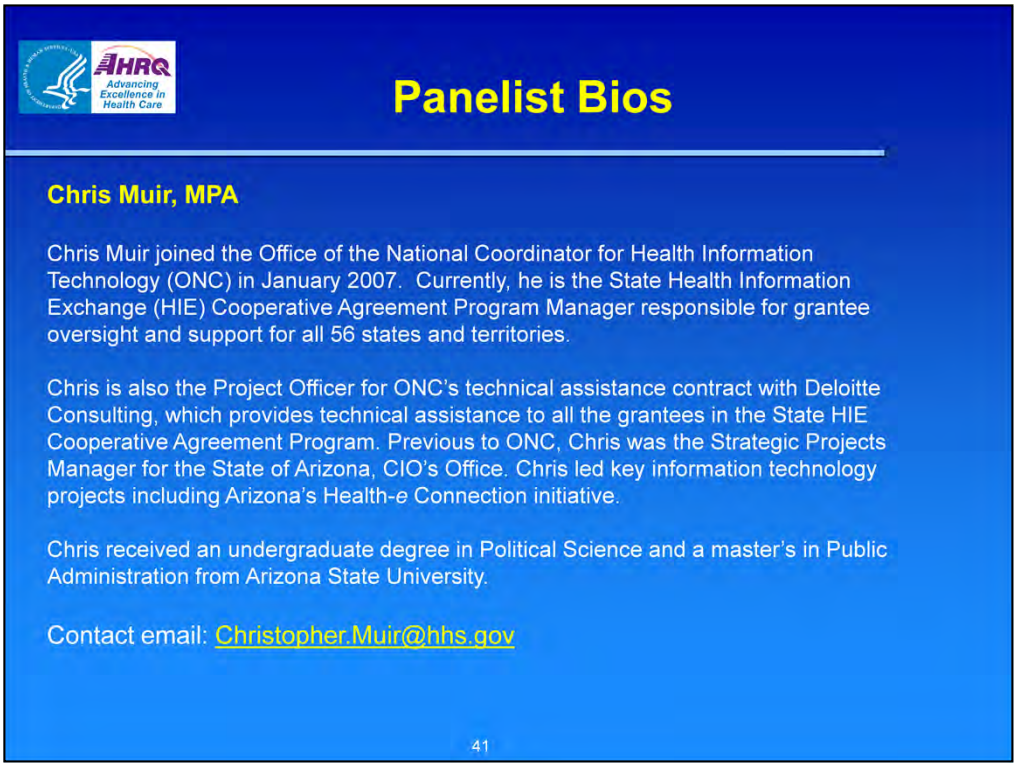
- Reminder: press *6 to mute; press * 7 to un-mute
- Questions may also be submitted via 'Chat' feature on webinar console at any time



Final Comments

- Discussion Summary
    - Will be distributed to all Webinar participants and posted on the AHRQ TA website
- Evaluation Form
    - Online evaluation form will appear on your screen at conclusion of webinar; we value your input.
    - Thank you for joining us today!



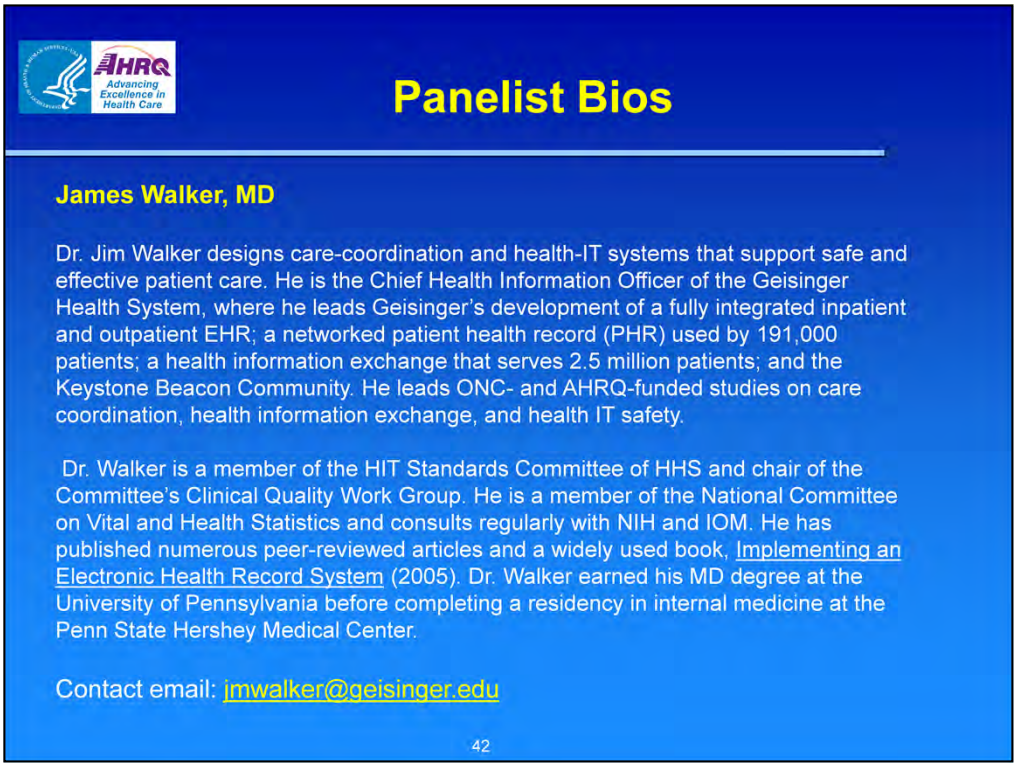
Panelist Bios
Chris Muir, MPA

Chris Muir joined the Office of the National Coordinator for Health Information Technology (ONC) in January 2007. Currently, he is the State Health Information Exchange (HIE) Cooperative Agreement Program Manager responsible for grantee oversight and support for all 56 states and territories.

Chris is also the Project Officer for ONC's technical assistance contract with Deloitte Consulting, which provides technical assistance to all the grantees in the State HIE Cooperative Agreement Program. Previous to ONC, Chris was the Strategic Projects Manager for the State of Arizona, CIO's Office. Chris led key information technology projects including Arizona's Health-*e* Connection initiative.

Chris received an undergraduate degree in Political Science and a master's in Public Administration from Arizona State University.

Contact email: Christopher.Muir@hhs.gov



Panelist Bios
James Walker, MD

Dr. Jim Walker designs care-coordination and health-IT systems that support safe and effective patient care. He is the Chief Health Information Officer of the Geisinger Health System, where he leads Geisinger's development of a fully integrated inpatient and outpatient EHR; a networked patient health record (PHR) used by 191,000 patients; a health information exchange that serves 2.5 million patients; and the Keystone Beacon Community. He leads ONC- and AHRQ-funded studies on care coordination, health information exchange, and health IT safety.

Dr. Walker is a member of the HIT Standards Committee of HHS and chair of the Committee's Clinical Quality Work Group. He is a member of the National Committee on Vital and Health Statistics and consults regularly with NIH and IOM. He has published numerous peer-reviewed articles and a widely used book, Implementing an Electronic Health Record System (2005). Dr. Walker earned his MD degree at the University of Pennsylvania before completing a residency in internal medicine at the Penn State Hershey Medical Center.

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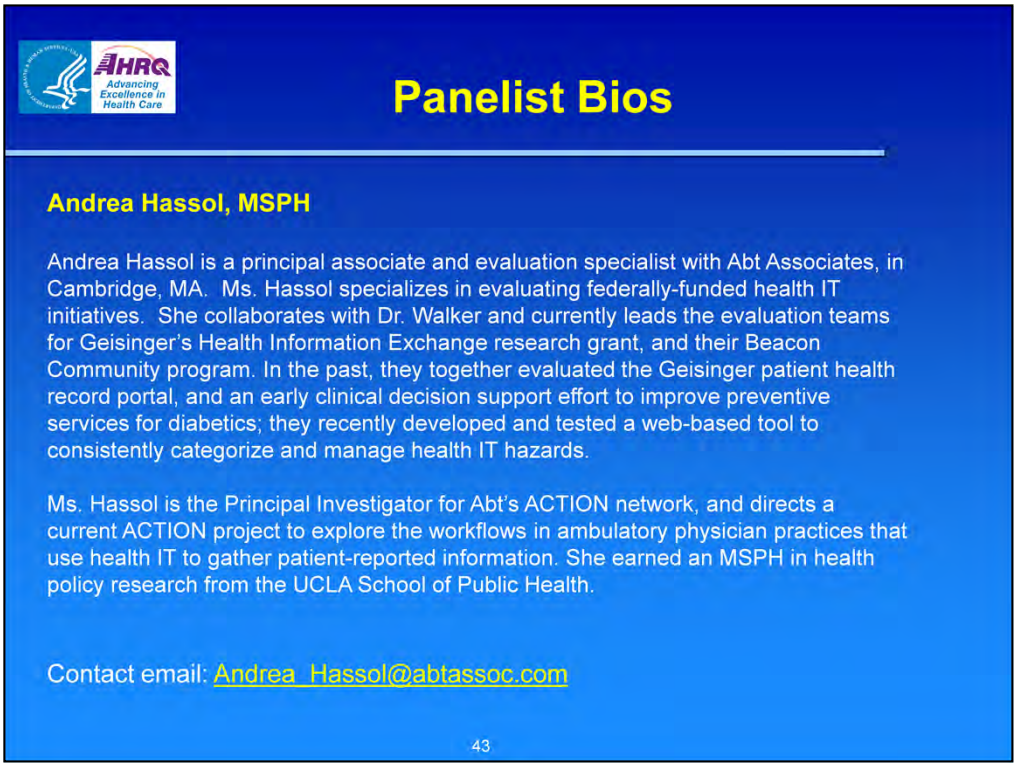

Panelist Bios
Andrea Hassol, MSPH

Andrea Hassol is a principal associate and evaluation specialist with Abt Associates, in Cambridge, MA. Ms. Hassol specializes in evaluating federally-funded health IT initiatives. She collaborates with Dr. Walker and currently leads the evaluation teams for Geisinger's Health Information Exchange research grant, and their Beacon Community program. In the past, they together evaluated the Geisinger patient health record portal, and an early clinical decision support effort to improve preventive services for diabetics; they recently developed and tested a web-based tool to consistently categorize and manage health IT hazards.

Ms. Hassol is the Principal Investigator for Abt's ACTION network, and directs a current ACTION project to explore the workflows in ambulatory physician practices that use health IT to gather patient-reported information. She earned an MSPH in health policy research from the UCLA School of Public Health.

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Panelist Bios
Mark Belanger, MBA

Mark Belanger leads MAeHC's statewide health information exchange projects for Massachusetts, New Hampshire, North Carolina, and Missouri. Mark has expertise in healthcare strategic planning and multi-stakeholder workgroup facilitation as well as deep experience in the healthcare information industry. Prior to joining MAeHC, Mark was a member of the Booz Allen Hamilton Healthcare and IT practice where he led large and complex multi-stakeholder healthcare information technology projects in the U.S. and Australia.

Mark holds a Masters in Business Administration from Babson College and a Bachelors in Music Education from the University of New Hampshire.

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