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Query Health
Distributed Population Queries

Update to the HIT Policy Committee

Doug Fridsma – ONC Director, Standards & Interoperability
Anand Basu - ONC Director, Standards Division
Richard Elmore – ONC Coordinator, Query Health

September 14, 2011

Topics

- Background
- Policy

Vision

Enable a learning health system to understand population measures of health, performance, disease and quality, while respecting patient privacy, to improve patient and population health and reduce costs.

Context and Opportunity

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Context:

The nation is reaching critical mass of deployed Electronic Health Records (EHRs) with greater standardization of information in support of health information exchange and quality measure reporting.

The Opportunity: Improve community understanding of population health, performance and quality

- Enable proactive patient care in the community
- Deliver insights for local and regional quality improvement
- Facilitate consistently applied performance measures and payment strategies for the community (hospital, practice, health exchange, state, payer, etc.) based on aggregated de-identified data
- Identify treatments that are most effective for the community

The Challenge

- High transaction and "plumbing" costs
  - Variation in clinical concept coding, even within organizations
  - Lack of query standards
  - Lack of understanding of best business practices
- Centralizing tendency
  - Moves data further away from source
  - Increases PHI risk exposure
  - Limits responsiveness to patient consent preference – less actionable
- Limited to large health systems
  - With larger IT or research budgets
  - Few notable exceptions

Improve community understanding of patient population health

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Questions about disease outbreaks, prevention activities, health research, quality measures, etc

Query Health
Scope and Approach

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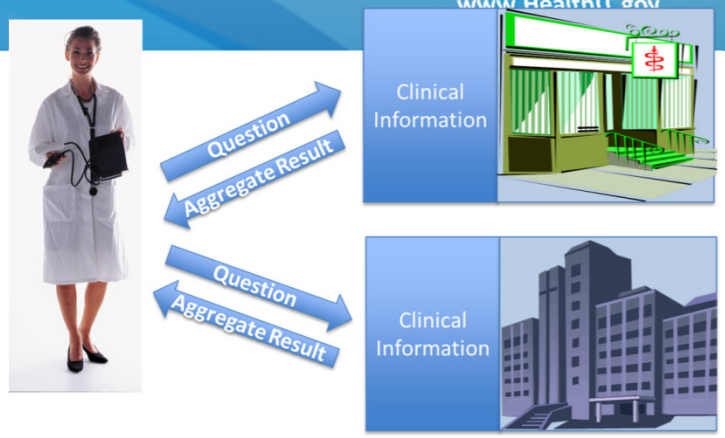

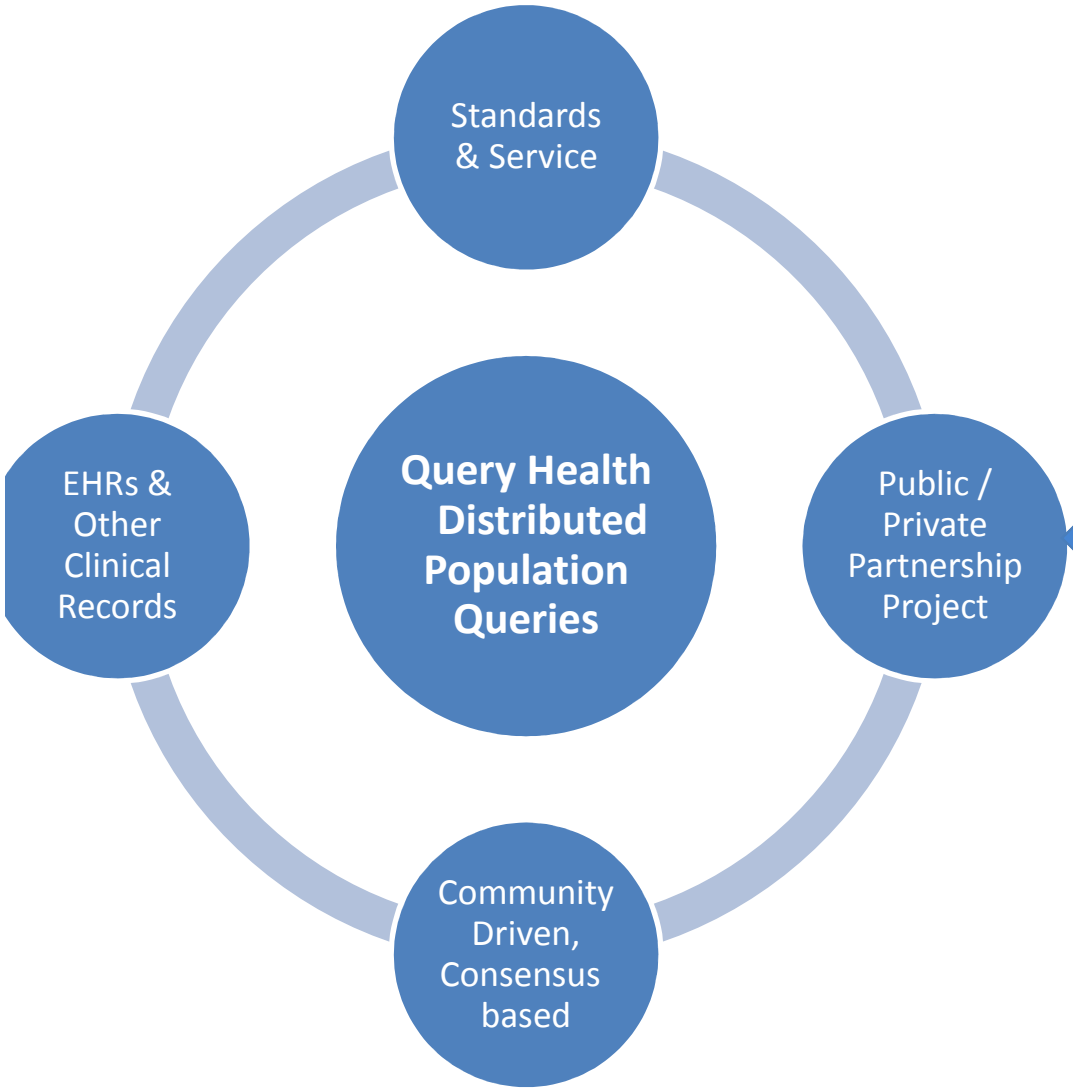

HIT Policy Committee: Policy Guideposts

Practice drives standards

1. **Rough consensus**
2. **Running code (open source)**
3. **Pilot**
4. **Specifications**
5. **Standards**

Query Health:
Example User Story – Case Control, Vaccine Efficacy

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	Individuals Who Contracted the Flu	Individuals Who Did Not Contract the Flu	Population Total
Received Vaccine	20	50	70
Did Not Receive Vaccine	80	10	90
Population Total	100	60	160

1. Quality Compliance : Number of patients over the age of 50 who have received the flu vaccine (NQF 0041).
2. Surveillance: Determine what patients have contracted the flu.
3. 2 x 2 of Vaccine and Flu Diagnosis
4. Refine Query (for example for H1N1).
   - Add GI symptom
   - Specify H1N1 vaccine

Query Health:
Example User Story – Case Control, Statin Efficacy

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	Hyper-lipidemic	Not Hyper-lipidemic	Population Total
Individuals Who Take a Statin	200	500	700
Individuals Who Do Not Take a Statin	800	100	900
Population Total	1,000	600	1,600

	Hyper-lipidemic	Not Hyper-lipidemic	Population Total
Patients on Medication A	50	300	350
Patients on Medication B	150	200	350
Population Total	200	500	700

1. Quality Compliance : Number of patients over the age of 18 who have been diagnosed with CAD and are taking a statin (NQF 0074)
2. Surveillance: Determine how many patients are hyperlipidemic.
3. 2 x 2 of Statin and Hyperlipidemia
4. Refine Query
   - Select two statins
   - Compare efficacy of two statins

Query Health Objective
Simple scalable secure use case

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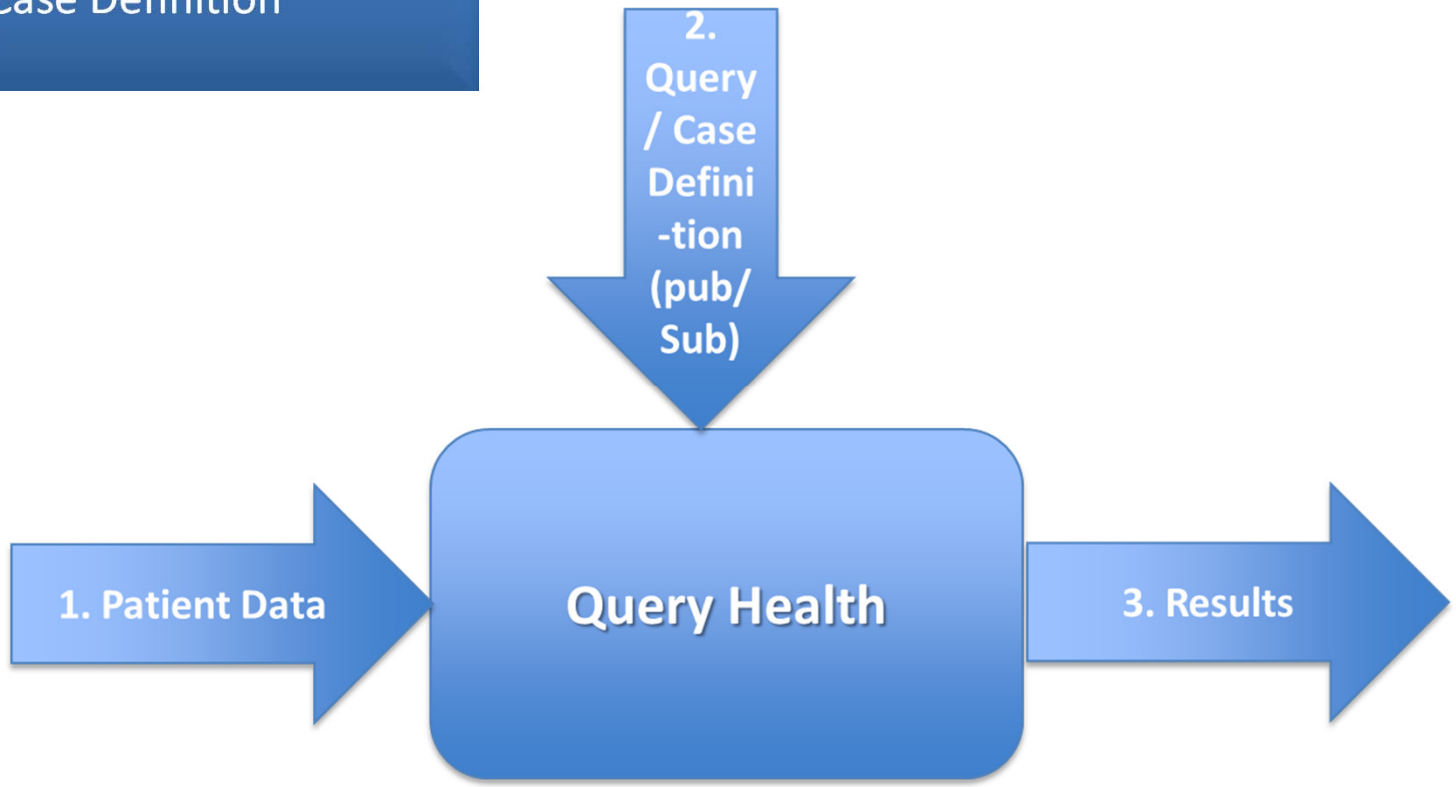
Establish Standards and Protocols for:

1. Patient Data
2. Query / Case Definition
3. Results



Query Health Org & Timeline

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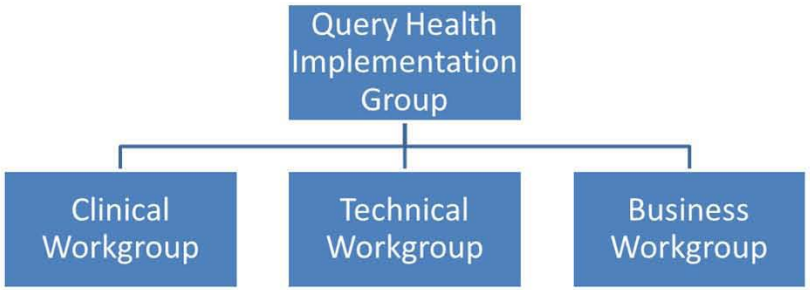

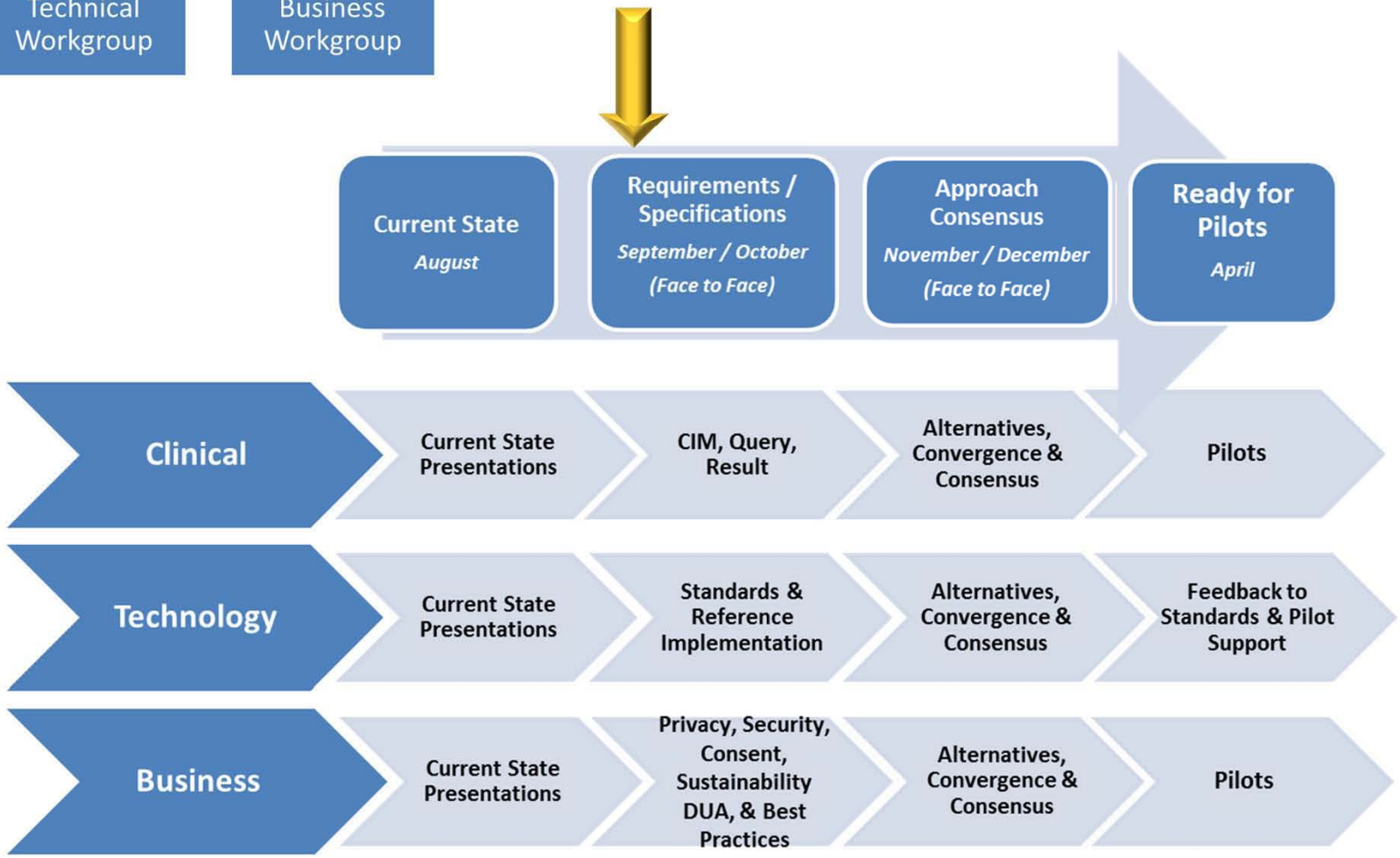

Community Participation

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Implementation Group
Tuesdays 1:30pm-3:00pm EDT (Starting 9/13)

Technical Work Group
Wednesdays 11am-12pm EDT (Starting 9/7)

Clinical Work Group
Wednesdays 12pm-1pm EDT (Starting 9/7)

Business Work Group
Thursdays 11am-12pm EDT (Starting 9/8)

First Face to Face Meeting
October 18-19

Download to your calendar at QueryHealth.org

Sign Up at
QueryHealth.org

Follow on Twitter
hashtag: **#QueryHealth**

Goals Alignment with: S&I Framework

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S&I Framework Governance

- Open Government Initiative
- Engaging leaders from providers, health IT vendors, states / HIOs, federal partners, and research community

Meaningful Use and Standards

- Standardized information models and terminologies, e.g., SNOMED, LOINC – vocabulary value sets associated with patient care and quality metrics
- CIM model to support user stories, leveraging S&I initiatives and existing distributed query models
- Transport approach will leverage the NwHIN

Goals Alignment with: Digital Infrastructure for a Learning Health System

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- ☑ Build a shared learning environment
- ☑ Engage health and health care, population and patient
- ☑ Leverage existing programs and policies
- ☑ Embed services and research in a continuous learning loop
- ☑ Anchor in an ultra-large-scale systems approach
- ☑ Emphasize decentralization and specifications parsimony
- ☑ Keep use barriers low and complexity incremental
- ☑ Foster a socio-technical perspective, focused on the population
- ☑ Weave a strong and secure trust fabric among stakeholders
- ☑ Provide continuous evaluation and improvement

Reference
IOM 2011. Digital Infrastructure for the learning healthcare system: Workshop series summary. National Academies Press.

Summer Concert Series

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popCCR

Approach for simplifying and integrating performance reporting and decision support

Michael Buck
NYC Dept. Of Health

Steven E. Waldren, MD
Open Health Data

Increasing Research Data Liquidity and Velocity through an Open-Source Framework

Ken Buetow, Ph.D.
Director, Center for Biomedical Informatics and Information Technology
National Cancer Institute

Query Health
Summer Concert Series
August 22, 2011

cancer Biomedical Informatics Grid® | caBIG

PopMedNet™

Distributed Networking Technologies for Population Medicine

ONC Summer Concert Series on Distributed Population Queries

Jeffrey Brown
Richard Platt

August 3, 2011

Department of Population Medicine
Harvard Pilgrim Health Care Institute / Harvard Medical School

An Introduction to DARTNet

Wilson D. Pace, MD, FAAFP
Caretaker, DARTNet

DARTNet
Informing Practice Improving Care

i2b2
Informatics for Integrating Biology & the Bedside

GSI Health

Overview of the Universal Public Health Node (UPHN)

Presenters:

Dr. Ivan Gotham - Director Bureau of Healthcare Network Systems Management
New York State Department of Health

LaRoy Jones – CEO, GSI Health

Vincent Lewis – Principal Architect, GSI Health

August 9, 2011

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OBSERVATIONAL MEDICAL OUTCOMES PARTNERSHIP

The Observational Medical Outcomes Partnership: Demonstration of distributed population queries

Patrick Ryan, Marc Overhage, Tom Scarnecchia
on behalf of OMOP Research Team
August 29, 2011

An Overview of the Indiana Network for Patient Care, a Distributed, Federated Model for Querying and Exchanging Health Care Data

Shaun Grannis, MD, MS FAAFP
The Regenstrief Regenstrief Institute
Indiana University School of Medicine
August 29, 2011

Indiana Health Information Exchange

Regenstrief Medical Informatics
The Source for Medical Informatics

Query Health
i2b2 / SHRINE Presentation

Isaac Kohane MD, Ph.D.
Shawn Murphy MD, Ph.D.

BioSense 2.0 Introduction

Building a Community-Controlled and Shared PH Surveillance Environment

Query Health Series
Friday, August 26th, from 1:30-3pm

Taha A. Kass-Hout, MD, MS
Deputy Director for Information Science and BioSense Program Manager
Division of Notifiable Diseases and Healthcare Information (DNDHI, Proposed)
Public Health Surveillance Program Office (PHSPO)
Office of Surveillance, Epidemiology, and Laboratory Services (OSELS)
Centers for Disease Control & Prevention (CDC)

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Office of Surveillance, Epidemiology, and Laboratory Services
Public Health Surveillance Program Office

ISDS
INTERNATIONAL SOCIETY for DISEASE SURVEILLANCE

Distribute

A Novel Approach to Rapid Regional and National Sharing of Surveillance Data

David Buckeridge, MD PhD FRCPC
Medical Consultant, Montreal Public Health and INSPQ
Associate Professor, Epidemiology and Biostatistics, McGill University
President and Board Chair, International Society for Disease Surveillance
ONC Query Health Series, August 26th, 2011

The Hub Population Health System: Ad-Hoc Queries and Alerts

Jesse Singer DO, MPH
Michael D Buck, PhD

Primary Care Information Project
New York City Department of Health and Mental Hygiene &
NYC Regional Extension Center

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mbuck@health.nyc.gov

August 25, 2011

NYC Health | Primary Care Information Project

Primary Care Information Project | 0

hQuery

The MITRE Corporation

Andrew Gregorowicz
August 8th, 2011

MITRE

Approved for Public Release

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Summer Concert Series: Challenges

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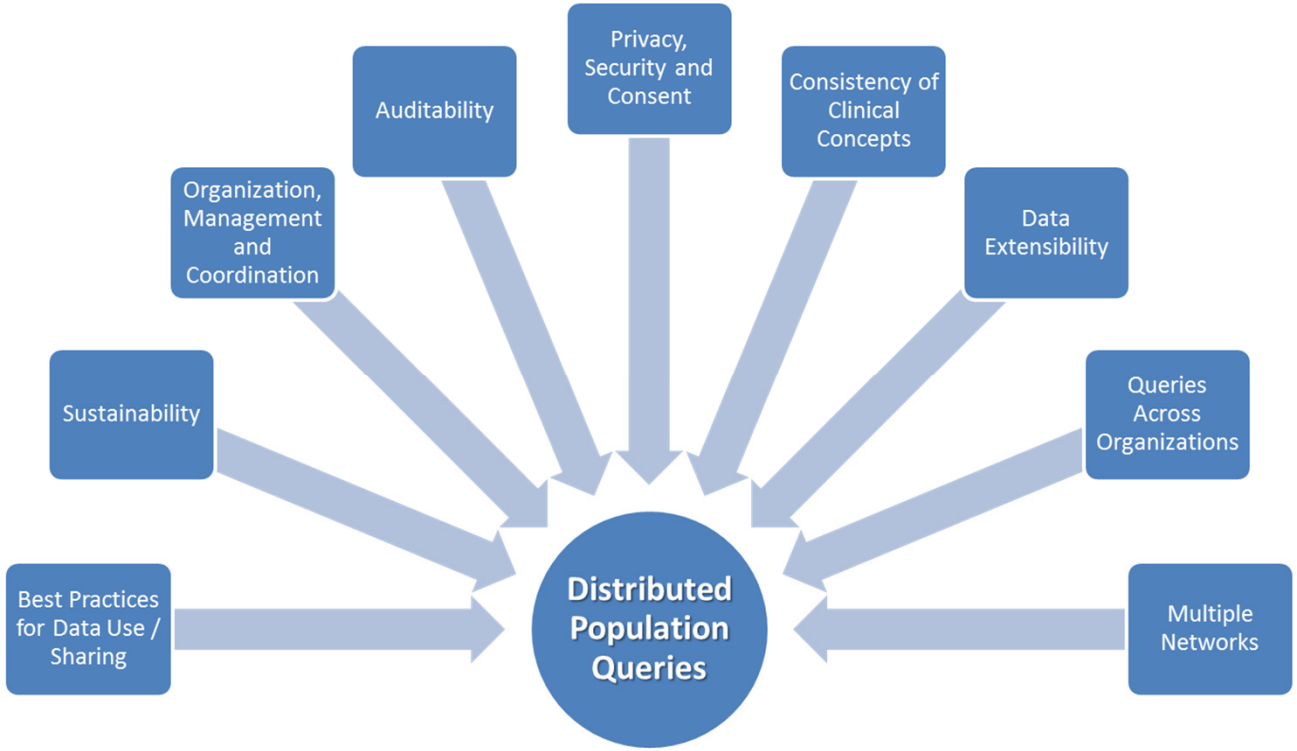

"The hardest part of distributed queries isn't the technology, it's the policy and governance"

From several distributed query practitioners

How the HIT Policy Committee can help

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- Purpose of this presentation is to get HIT Policy Committee valuable input
- Policy Committee and Privacy & Security Tiger Team
  - Provide policy guidance
  - Receive updates and monitor progress
- Help needed: Policy Sandbox for initial pilot
  - Reference implementation work will start later in 2011
  - Providing needed time for review

Policy Sandbox

- Initial set of Policy Sandbox ideas
  - Modeled after previous S&I initiatives
  - In consultation with Joy Pritts, Jodi Daniel, Doug Fridsma and their staff
  - Not new and not foreign
  - Applies to initial Query Health pilot
- Abundance of caution

Policy Sandbox

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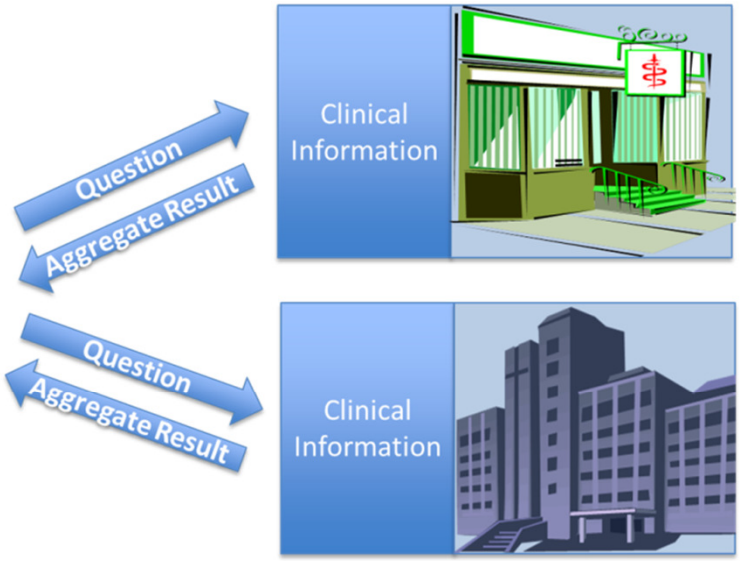
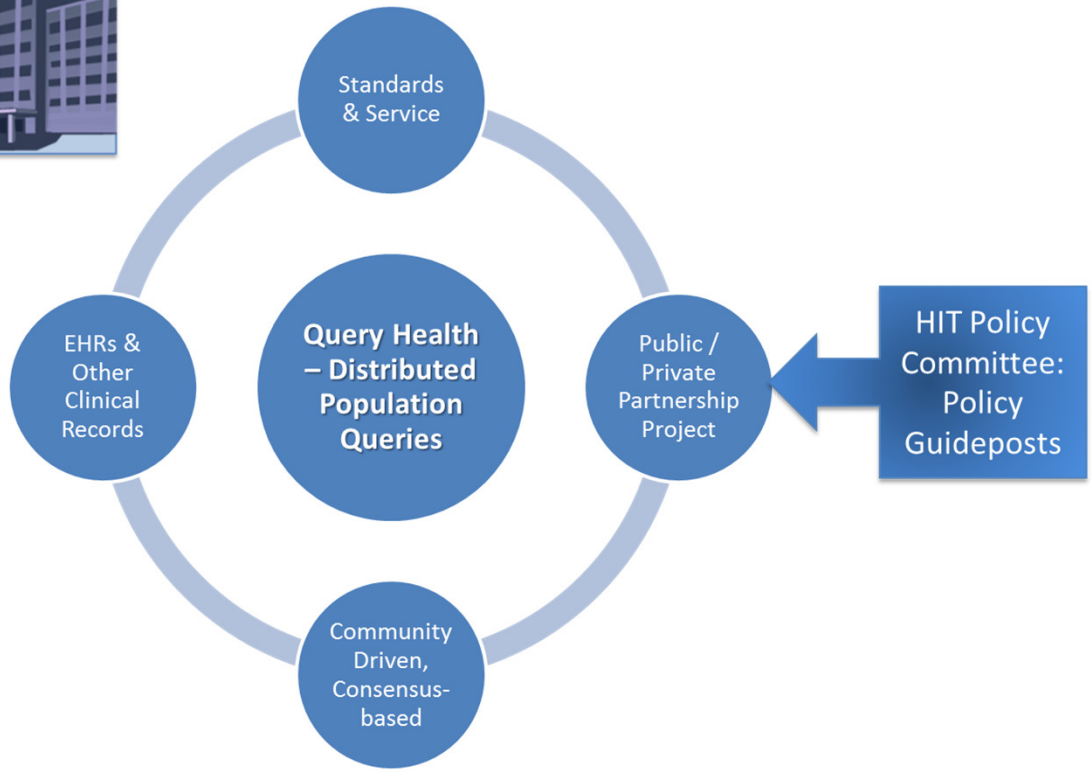
Query requests and responses shall be implemented in the pilot to use the least identifiable form of health data necessary in the aggregate within the following guidelines:

1. **Disclosing Entity:** Queries and results will be under the control of the disclosing entity (e.g., manual or automated publish / subscribe model).
2. **Data Exchange:** Data being exchanged will be either 1) mock or test data, 2) aggregated de-identified data sets or aggregated limited data sets each with data use agreements[1] or 3) a public health permitted use[2] under state or federal law and regulation.
3. **Small cells:** For other than regulated/permitted use purposes, cells with less than 5 observations in a cell shall be blurred by methods that reduce the accuracy of the information provided[3].

Notes:

1. It is understood that de-identified data sets do not require a data use agreement, but in the abundance of caution, and unless otherwise guided by the Tiger Team or HIT Policy Committee, the pilot will have data use agreements for de-identified data.
2. For a public health permitted use, personally identifiable health information may be provided by the disclosing entity to the public health agency consistent with applicable law and regulation.
3. The CDC-CSTE Intergovernmental Data Release Guidelines Working Group has recommended limiting cell size to three counts presuming a sufficiently large population. This is also reflected in Guidelines for Working with Small Numbers used by several states.

Query Health Recap

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