

RHIO Models and Public Health: How Do You Determine the Best Approach?

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What is a RHIO?

- A collaborative organization focused on health data exchange
- Participants: Physicians, labs, hospitals, pharmacies, patients, public health, payors
- Primarily driven by the private sector, but often has public health involvement (and may be driven by the public sector)
- Usually focused on clinical data exchange, but may focus on health services data in addition or instead
- Can span a metropolitan area, region, or a state

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RHIO/HIT-Public Health Alignment

American Health Information Community has defined “breakthrough areas” for progress:



Bio-Surveillance



Personal Health Record



Electronic Health Record



Chronic Care

← Confidentiality, Privacy & Security / Quality →

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RHIO/HIT-Public Health Alignment

Breakthrough areas were further refined:



Bio-Surveillance

↓
Transmission of Ambulatory Care & ER Visit Data to PH



Personal Health Record

↓
Patient Registration Summary and Medication History



Electronic Health Record

↓
Electronic Access to Lab Results for Clinical Care



Chronic Care

↓
Secure Messaging between Clinicians and Patients

← Confidentiality, Privacy & Security / Quality →

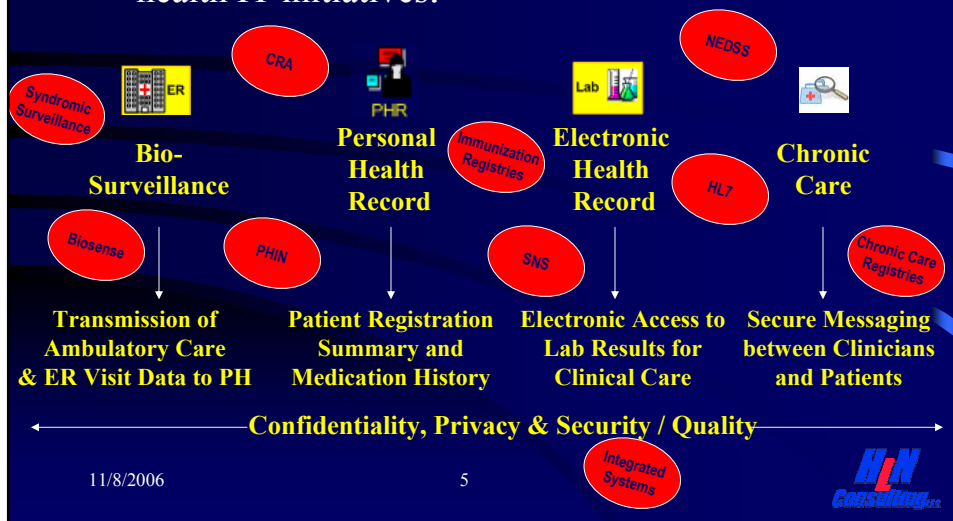
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RHIO/HIT-Public Health Alignment

These activities align well with current public health IT initiatives:



What Can Public Health Contribute to a RHIO?

- “Quick start” by leveraging existing activities
- Data, including consolidated data
- Expertise: de-duplication, databases, privacy, web applications, data exchange including HL7
- Existing relationships with many relevant stakeholders: providers, hospitals, payors, professional associations
- Governance: experience in negotiating and implementing data sharing agreements
- Childhood health data somewhat more contained and manageable than adult health data

RHIO Challenges

- Function
- Funding
- Governance
- **Technical Architecture**
- Identity Management
- Legal Issues

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Two Types of Integration

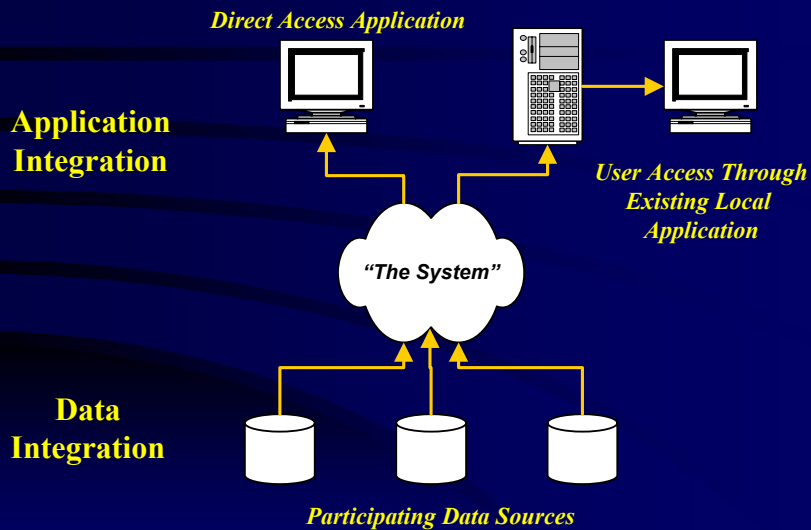
- **Data Integration**: forming valid relationships between data sources
- **Application Integration**: presenting a unified view of data to a user through a computer application

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Data versus Application Integration



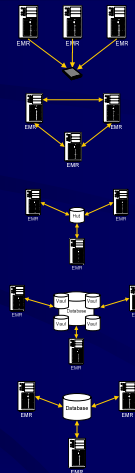
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Data Integration Models

1. Smart Card
2. Peer to Peer
3. Information Broker
4. Partitioned Warehouse
5. Central Warehouse

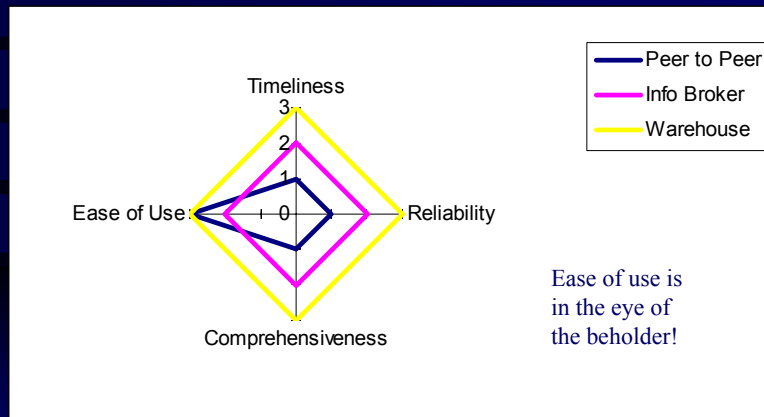


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Relative Model Strength



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Key Challenges

- Central Model: Security, privacy, and ownership concerns
- Distributed Model: Technical readiness and data use limitations

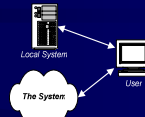
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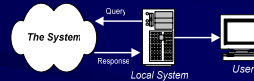


Application Integration Models

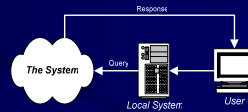
1. Independent Application



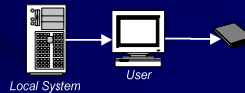
2. Data Exchange/Local Application



3. Direct Access via Local Application



4. Access via Smart Card



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How to select an architecture?

- Data Source Capability: Examine the capability of potential data providers
- Data Use Profile: Evaluate the ways in which the integrated data will be utilized

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How to select an architecture?

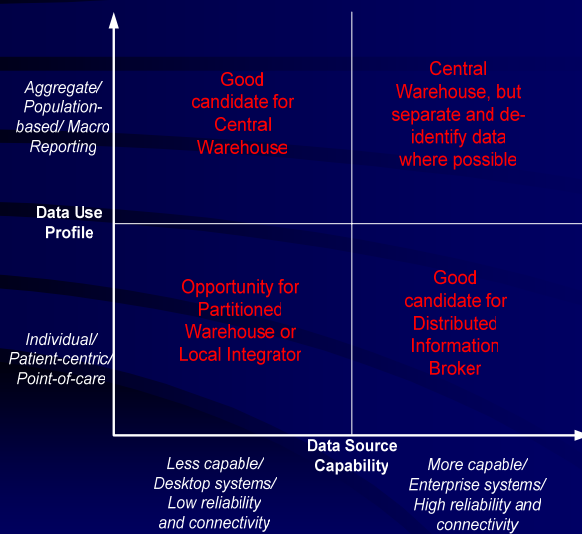
- Data Source Capability
 - Large hospitals? Laboratory networks? Pharmacy Benefit Managers?
 - Small practices?
- Data Use Profile: Evaluate the ways in which the integrated data will be utilized
 - Public health reporting? Bio-surveillance?
 - Practice-based reporting? Pay-for-performance?
 - Clinical data at point-of-care?
 - Patient-based services? Personal Health Record?

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Data Source vs. Data Use Profile



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Implementation Challenges

- Messaging: a method of communication between systems or applications
- Distributed communication allows us to build integrated or interoperable systems
- Some examples:
 - medication data from PBM to ER
 - immunization data from physician's office to health department

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Messaging Strategies

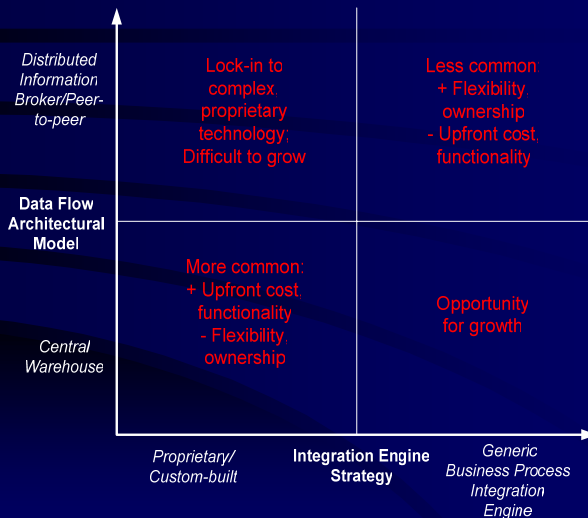
- Messaging standards: HL7, LOINC, SNOMED
- Message process modeling: When to send a message? Who to send it to? What to do upon receipt?
- Examples, again:
 - medication data from PBM to ER
 - immunization data from physician's office to health department
- Standards for process modeling are gaining momentum

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Strategy Comparison



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For more information, see:

<http://www.hln.com/resources/rhio.php>

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