



Health Information Technology Summit Healthcare Collaborative Network Briefing

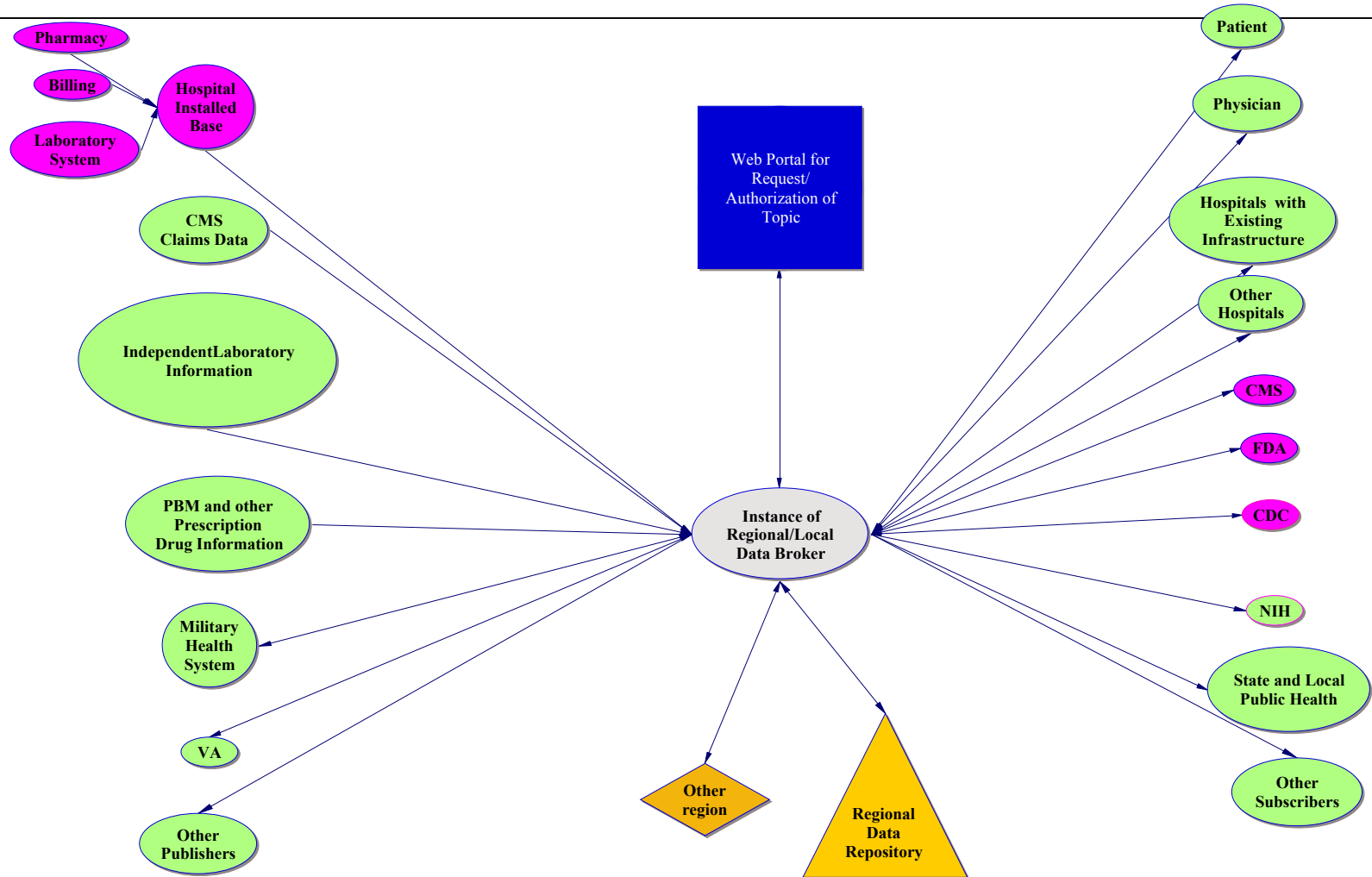
Ned McCulloch, Governmental Programs

HCN is a Coalition Effort to Drive a National Health Information Infrastructure

MARKLE FOUNDATION
CONNECTING FOR HEALTH
A Public-Private Collaborative

eHealth
Initiative

One Evolutionary Pathway for Regional Architecture



Capturing Quality Elements Electronically

Adobe Reader - [JAMA Article 2003.pdf]

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Table 1. Quality Indicators for Care of Medicare Fee-for-Service Beneficiaries

Topic	Indicator	Short Name	Sampling Frame for Denominator	Data Source
[Redacted]	[Redacted]	Aspirin 24 h	All Medicare patients with principal discharge diagnosis of acute myocardial infarction and no contraindications	Systematic random sample of up to 750 inpatient records per state
	[Redacted]	Aspirin disch		
	[Redacted]	BB 24 h		
	[Redacted]	BB disch		
	[Redacted]	ACEI in AMI		
	[Redacted]	Smoking		
[Redacted]	[Redacted]	PTCA, min	All Medicare patients with principal discharge diagnosis of heart failure	Systematic random sample of up to 800 inpatient records per state
	[Redacted]	Thrombolytic, min		
[Redacted]	[Redacted]	Afibrillation	All Medicare patients with any discharge diagnosis of atrial fibrillation	Systematic random sample of up to 750 inpatient records per state
	[Redacted]	Antithrombotic		
[Redacted]	[Redacted]	Nifedipine	All Medicare patients with principal discharge diagnosis of stroke (nifedipine and antithrombotic) or transient ischemic attack (antithrombotic)	Systematic random sample of up to 750 inpatient records per state
	[Redacted]	Antibiotic time		
[Redacted]	Antibiotic consistent with current recommendations	Antibiotic Rx	All Medicare patients with a discharge diagnosis of pneumonia	Systematic random sample of up to 750 inpatient records per state

8.5 x 11 in 2 of 9 100% 12:58 PM

- Currently Captured
- Captured by Independent Lab
- Captured by PBM or other Prescription Clearing House
- Captured in Unstructured Form
- Captured Electronically Where Bar Code Used in Medication Administration

• Additional data elements, including elements not currently captured electronically, utilized by CMS to establish contraindications and other aspects of measures.

A National Alert on Bioterrorism

Daschle: 'They were trying to kill someone'

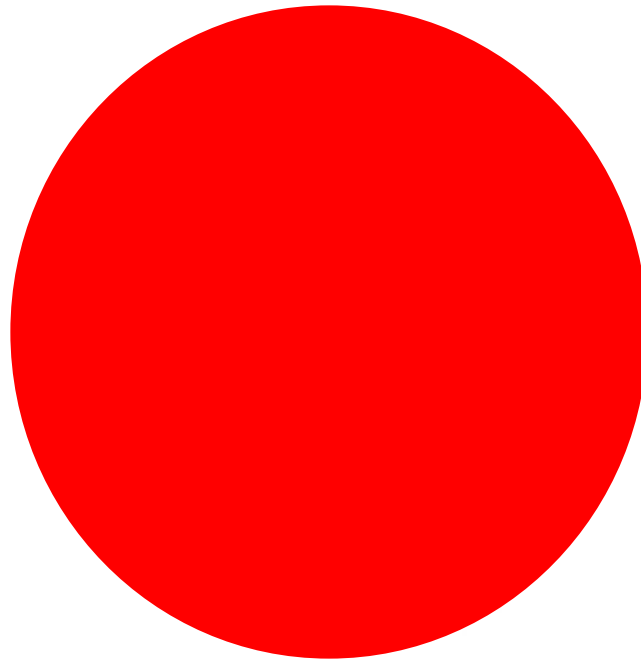
October 16, 2001 Posted: 10:25 PM EDT (0225 GMT)



WASHINGTON (CNN) -- Parts of eight floors of the Hart Senate Office Building were closed Tuesday as authorities searched for anthrax. The move comes a day after a letter sent to Senate Majority Leader Tom Daschle's office in that building field-tested positive for the potentially deadly bacterium.

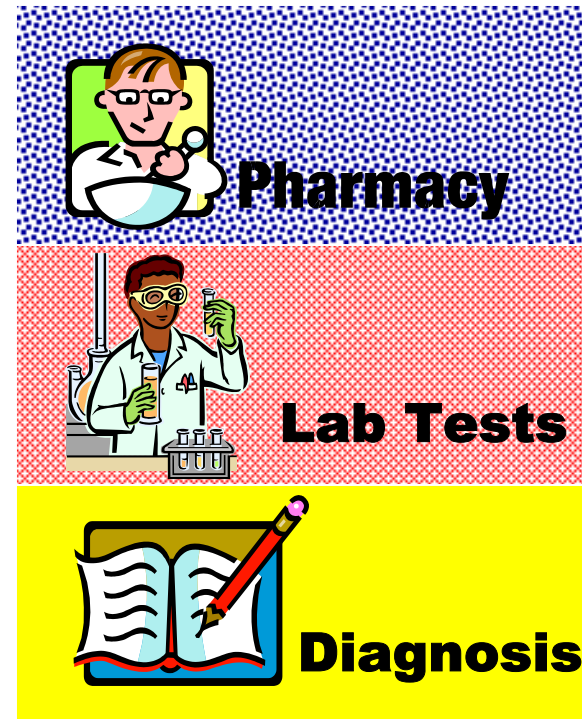
Quality of care continues to be a priority

31% of Medicare Patients with Myocardial Infarction were not Administered β –blockers within 24 hours of admission.

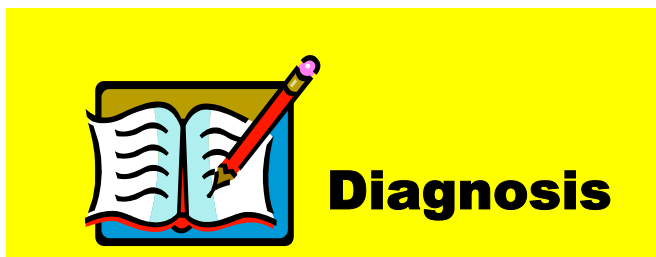


Certain Electronic Clinical Information Widely Present in Hospitals

HL7 Messages



Integrating Available Clinical Information Can Solve Spectrum of Health Reporting Needs



Federal healthcare agencies and industry leaders participated in the initial HCN demonstration

Leverage Acceptable Data Sharing Protocols

**NY Presbyterian
Hospitals**

**Vanderbilt
University
Medical Center**

**Wishard
Memorial**

MedStar Health*

**HRSA
IBM**

**CDC
CMS
FDA**

Current:

- 7 Hospitals
- 3 Agencies
- Aug 2004 – 2800 messages sent
- Evaluations planned to continue through early 2005

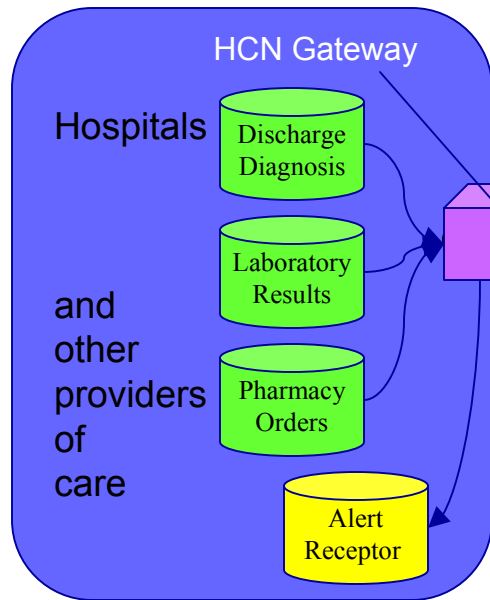
Promote Clinical Reporting Standards

* MedStar hospitals connected are: Franklin Square Hospital Center; Good Samaritan Hospital; Harbor Hospital Center; Union Memorial Hospital

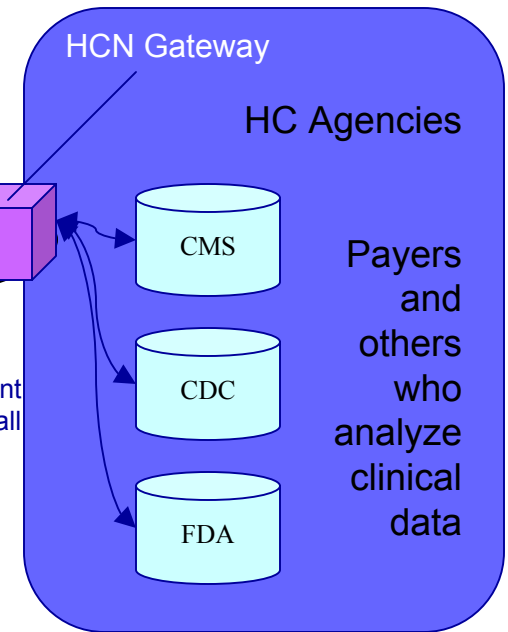
The HCN architecture is designed leverage open standards, be flexible and scalable, and facilitate easy adoption at participant sites

Demonstration Project Architecture for HCN Solution

Data Source Organizations



Data Review Organizations



Internet Portal
for participant management

Integration Broker
data routed quickly, reliably and securely

Participant Network Firewall

Participant Network Firewall

At the participant site the gateway filters, links, and maps data elements based on business rules they approve

Key Design Elements

- HCN uses existing data available in most provider settings (ICD, CPT, LOINC, NDC via HL7)
- Data Review Organizations request data
- Data Source Organizations approve Reviewers' requests for data
- Solution will be compliant with HIPAA regulations and transmit non-directly identifiable data; and meets highest security standards around authentication and encryption
- The system uses open standards and a non-proprietary implementation approach

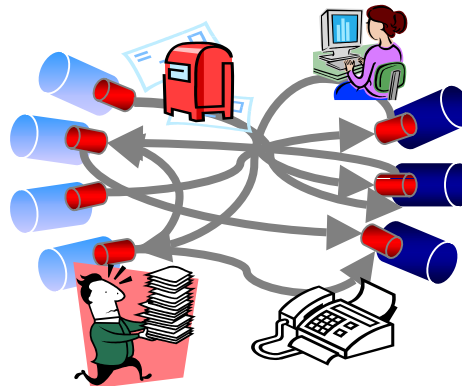
For the healthcare industry to respond rapidly to health risks, and create operating efficiencies, it must immediately enhance its ability to gather, analyze, and disseminate critical health data

Improving the US Healthcare Data Dynamic

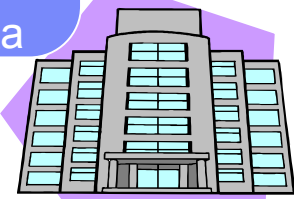
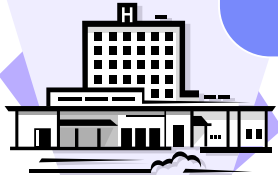
Most hospital networks communicate across facilities and with other healthcare players inefficiently on a one to one basis either through direct/closed EDI connection, email, fax or paper

Today's mess

Hospitals and Other Providers of Care



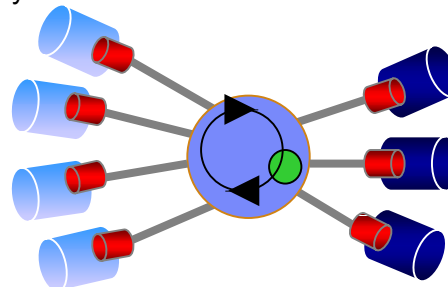
Health Agencies, Health Plans and others who need clinical data



A desired future state will enable an automatic sharing of data across an electronic interconnected network allowing multiple players to access information at the same time using open standards

Tomorrow's Goal

Hospitals and Other Providers of Care



Open standards two way message flow

Health Agencies, Health Plans and others who need clinical data

Challenges that HCN Participants Overcame

Sample HCN Message for Stroke Patient (partial)

Message submitted successfully for publication:

Submission time: 2003-08-08 12:25:09.921

Publisher ID: 'Provider 1'

Publish Topic: 'Stroke Diagnosis'

Rule Name: 'Stroke Diagnosis'

Patient ID: '123153'

Message Timestamp: '2003-08-08T12:26:17-07:00'

Message:

```
'MSH|^~\&|<XXX>||<XXX>||200307190843||RDE^O11||<XXX>|2.4|
PID||123153^^^&Provider 1||<XXX>|<XXX>|F|||||||<XXX>|<XXX>|
PV1|||<XXX>|||<XXX>|<XXX>|<XXX>|||||HNA|||<XXX>|<XXX>|||||||<XXX>|||||||<XXX>|
ORC|NW|100|18491559||SC|^QD&0900^INDEF^200307190900^^R^0||200307190839|<XXX>|<XXX>|<XXX>|
RXE||0000429160^PANTOPRAZOLE EC TAB 40 MG^L|40|^MG|TABLET EC||||1|EA|
RXR|^ORAL|'
```

Microbiology reports in
unstructured data

```
'MSH|^~\&|<XXX>||<XXX>|<XXX>|20030719084337||ORU^R01|<XXX>|<XXX>|2.4|
PID||123153^^^&Provider 1||<XXX>||<XXX>|F|||||||<XXX>|
PV1|||<XXX>|
ORC|RE|||||||<XXX>|<XXX>|<XXX>|<XXX>|||<XXX>|
OBR||T44676BCBLUD037F^1|600-7^L OINC^BLOOD
CULTURE: NO GROWTH OF BACTERIA OR FUNGI AFTER 4 DAYS|||||F|
OBX|1|TX|36484^BLUD^MED|0|SPECIMEN DESCRIPTION: BLOOD|||||F|
OBX|2|TX|60187^NGB4^MED|0|CULTURE: NO GROWTH OF BACTERIA OR FUNGI AFTER 4 DAYS|||||F|
```

```
'MSH|^~\&|HHSZ1^21022||E 0000||20030723120022||ADT^A03|<XXX>|<XXX>|2.3|||NE|NE|
EVN|A08|<XXX>||<XXX>|<XXX>|
PID|<XXX>||123153^^^&Provider 1||<XXX>|<XXX>|<XXX>|F|<XXX>|||<XXX>|<XXX>|<XXX>|<XXX>|<XXX>|<XXX>|<XXX>|
PV1|<XXX>|||<XXX>|||<XXX>|<XXX>|<XXX>|<XXX>|||<XXX>||<XXX>|<XXX>|<XXX>|<XXX>|<XXX>|<XXX>|<XXX>|<XXX>|<XXX>|
DG1|<XXX>||9|430^SUBARACHNOID HEMORRHAGE^I9|<XXX>|<XXX>|A|<XXX>|<XXX>|<XXX>|<XXX>|
DG1|<XXX>||9|430^SUBARACHNOID HEMORRHAGE^I9|<XXX>|<XXX>|P|
DG1|<XXX>||9|401.9^HYPERTENSION NOS^I9|<XXX>|<XXX>|S|
DG1|<XXX>||9|307.9^SPECIAL SYMPTOM NEC/NOS^I9|<XXX>|<XXX>|S|
', 'MSH|^~\&|<XXX>|<XXX>||20030723190145||ADT^A03|<XXX>|<XXX>|2.3|||<XXX>|<XXX>|
EVN|A03|<XXX>||<XXX>|<XXX>|
PID|<XXX>||123153^^^&Provider 1||<XXX>|<XXX>|<XXX>|F|<XXX>|||<XXX>|<XXX>|<XXX>|<XXX>|<XXX>|<XXX>|<XXX>|
PV1|<XXX>|||<XXX>|||<XXX>|||<XXX>|||<XXX>|<XXX>|<XXX>|<XXX>|||<XXX>||<XXX>||<XXX>||<XXX>||<XXX>|<XXX>|
```

HCN Participants have different questions and capabilities - HCN is responsive to their wants and constraints

Selected data element examples requested for the HCN demonstration project by Agencies

CDC

Surveillance for outbreak triggers:

Anthrax
Respiratory
Viral tests

CMS

Quality of care monitoring:

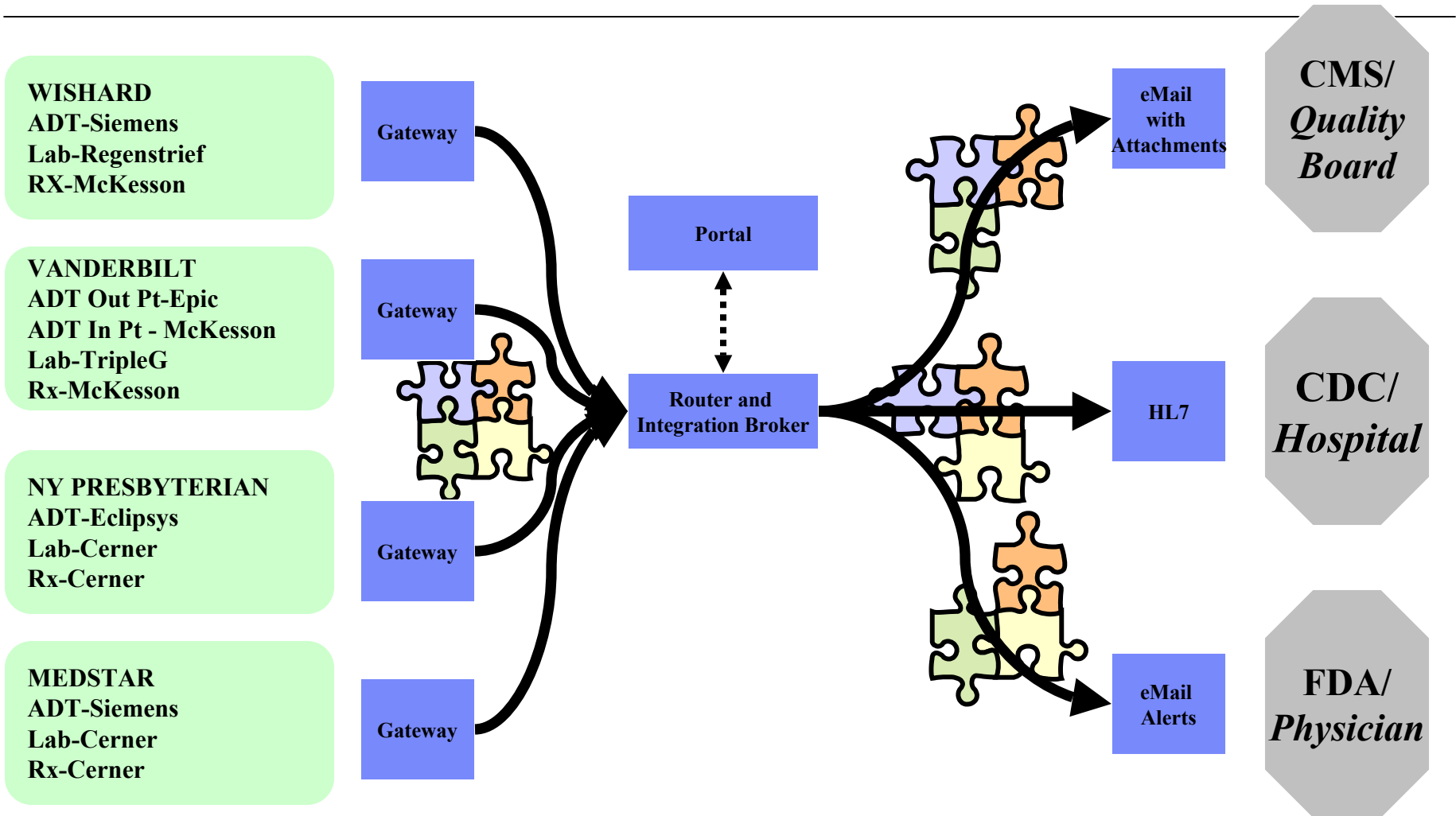
Ace Inhibitors prescribed for myocardial infarction patients

FDA

FDA adverse drug event detections:

Pregnancy tests for thalidomide recipients

A Variety of Clinical Information Systems exchange Data Sources Among Current and Future HCN Participants



Privacy and Security

- No External Storage of Data
- Comply with HIPAA
 - Relevant Legal Agreements
 - Transmit Limited Data Sets including zip code and date/times
- Use pseudo-identifiers
 - Maintain identifier synchronization inside the sender's firewall
- Security
 - SSL
 - Data encryption
- Utilize advisory group made up of experts and members of Privacy and Security Working Group

Legal Agreements are Resource Demand

In HCN, for each --

1 Hospital

1 Interface

4 Legal Agreements

4 Legal Agreements

4 Legal Agreements

4 Legal Agreements

Today's Agenda -- Email Traffic Highlights Potential Value and Current Obstacle

>>> Dave ROPER 05/19/04 07:55AM >>>

Richard,

We have received and successfully extracted the three sets of files you resent for 5/2, 5/9 and 5/16. Please continue to send weekly data files to this same e-mail address until we can settle upon a long term solution. Many thanks for your help with this,

RISA Hayes" <Risah@coqio.sdps.org>
05/19/2004 07:32 PM

Hello Mary & Richard,

After numerous conversations between various CFMC and CMS staff, we have finally determined that we can absolutely no longer, under any circumstances, receive data from you (or anyone actually) via email due to HIPAA regulations. Receipt of all encrypted and/or password protected data is no longer allowed via email. CMS says that the best solution is for IBM to register on QualityNet Exchange. I can help you through that process, which will take approximately 7-10 days to complete.

This solution is relatively painless, but will require you to have a document notarized - I assume you have access to a notary.

Hi all,

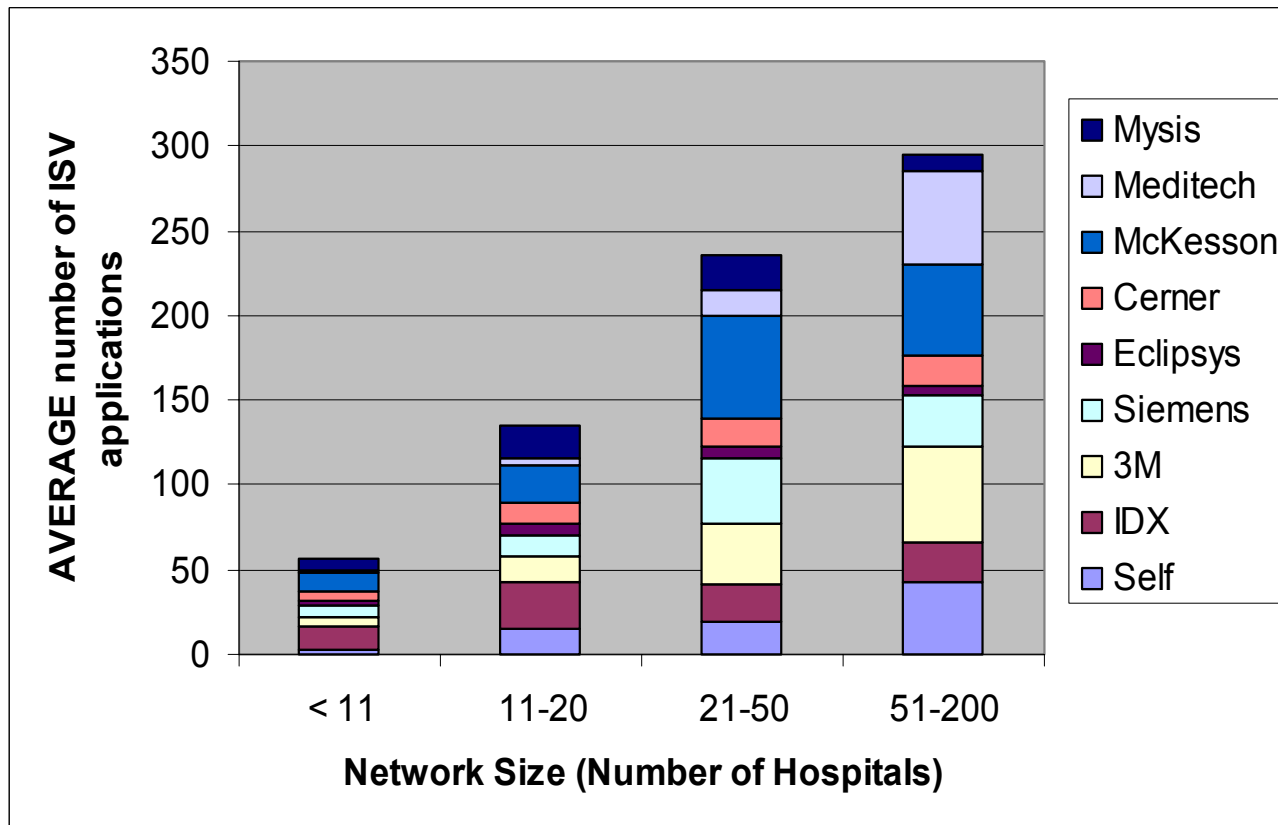
Per our discussion, on Monday's call, regarding the secure/HIPAA compliant delivery of patient identifiers, I'm sending you CFMC's mailing address:

Colorado Foundation for Medical Care
2851 South Parker Road
Suite 1000
Aurora, CO 80014-2723

ATTN: Risa Hayes, Project Manager

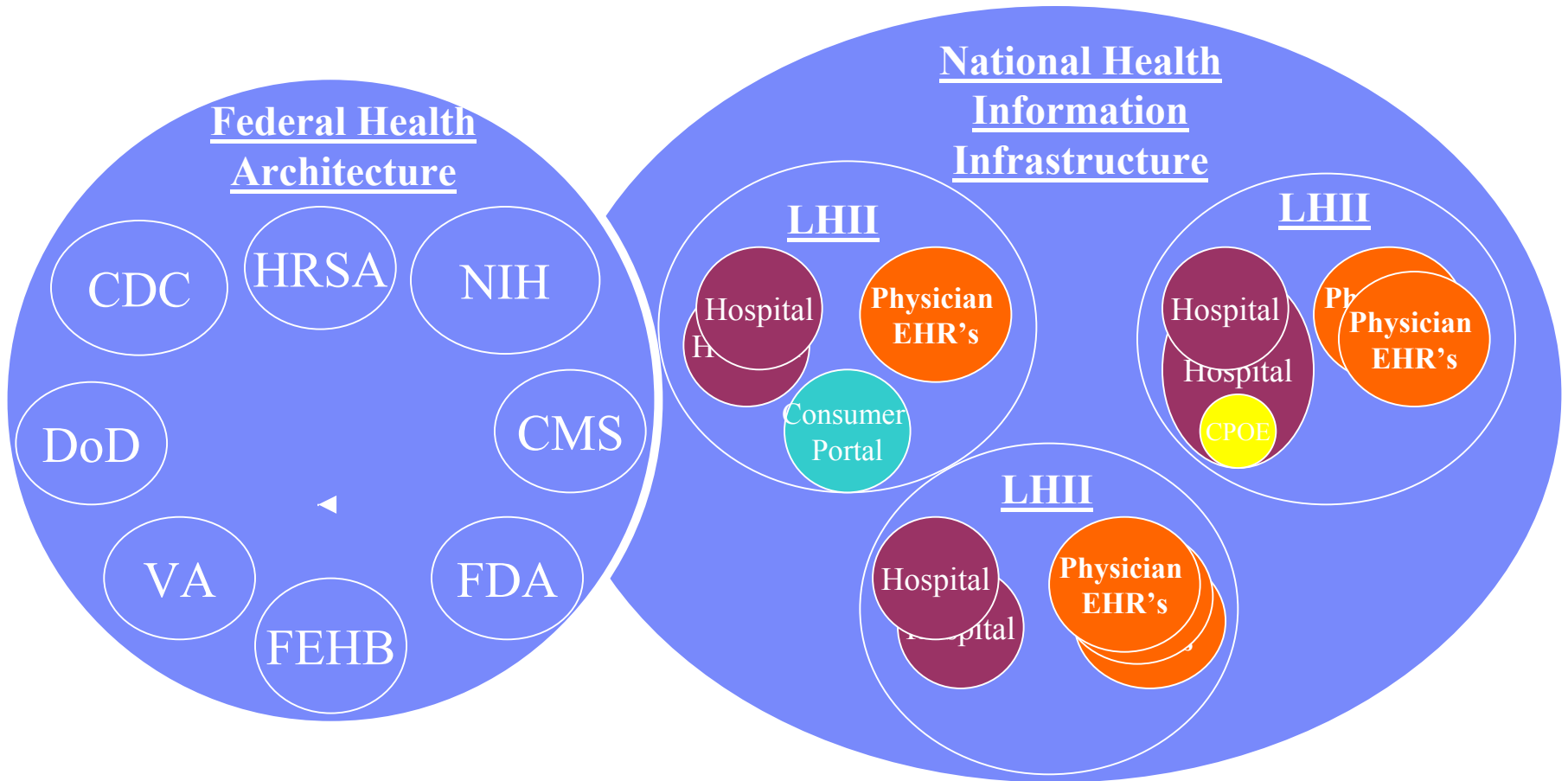
Integration is the critical strategy

*No Single EHR application dominates in the top 100 provider networks
(ranging in size from a few hospitals to over 100 hospitals)*



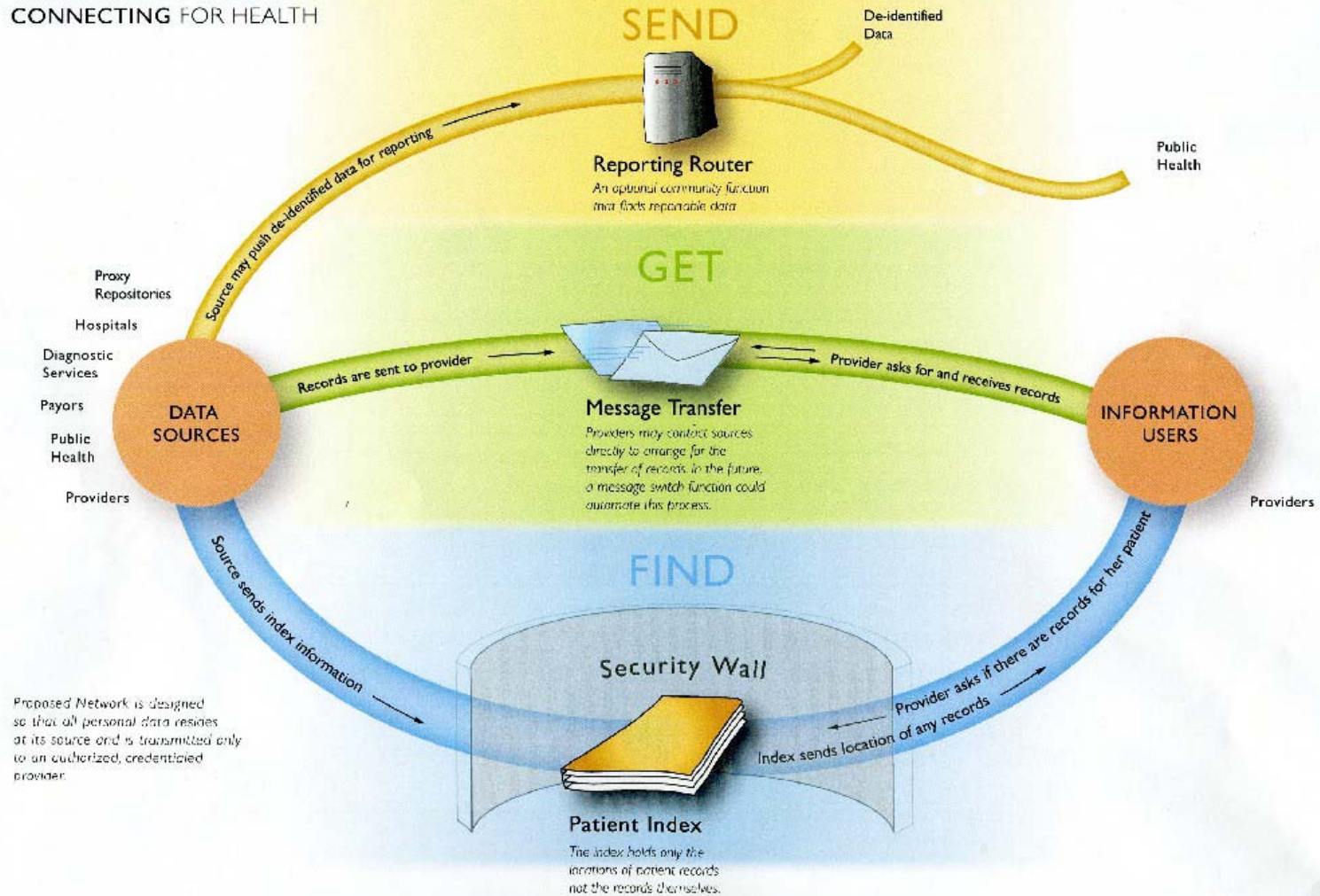
*Rip-and-replace
to standardize
systems in
provider networks
is be very
expensive, driving
demand for cross-
platform
standards-based
integration*

Separate Federal and Public Infrastructures Federated with Pointers to Distributed Storage



PROPOSED NETWORK

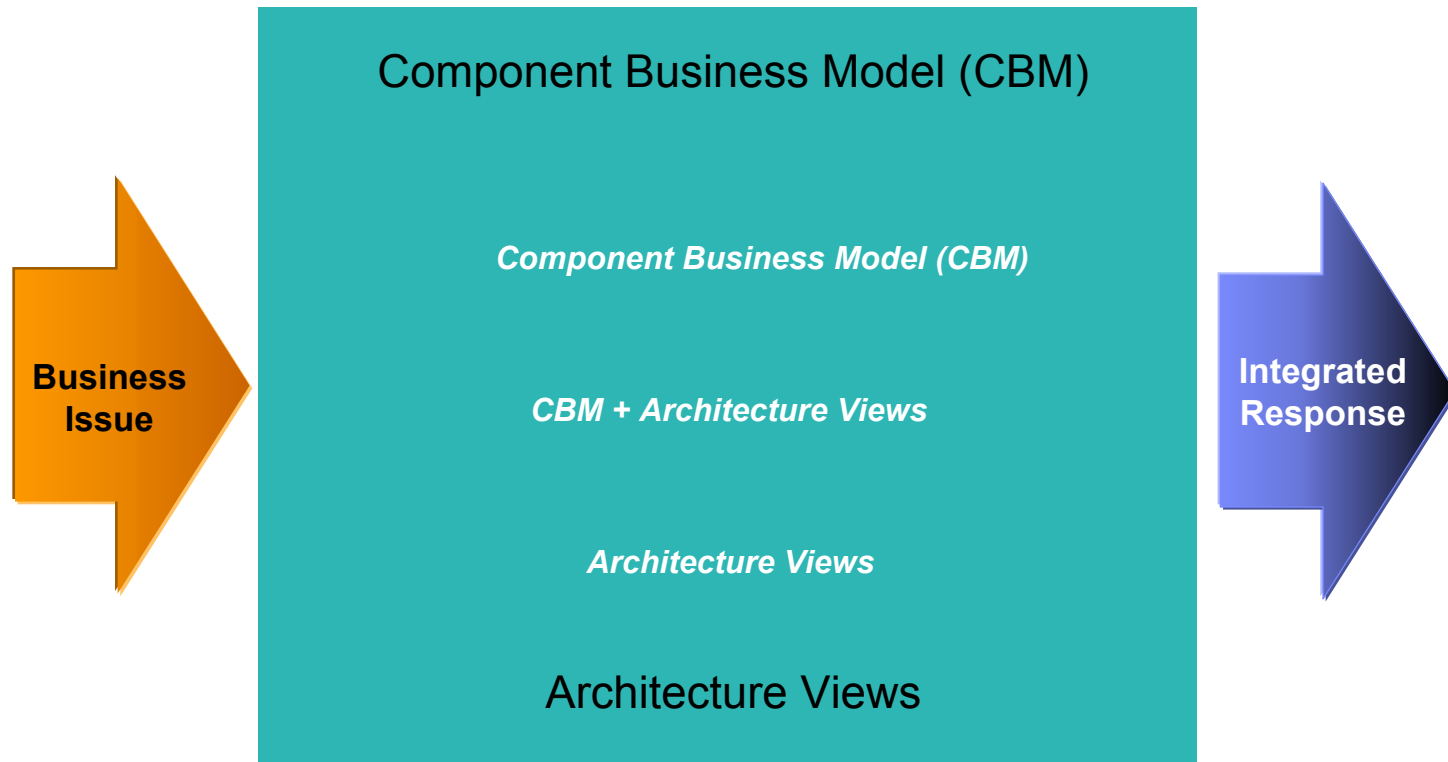
THE MARKLE FOUNDATION
CONNECTING FOR HEALTH



Which Pipes to Connect First -- Prioritizing Data Integration

Type of Data		Agency or other data user						Total Priority*
		CMS	FDA	CDC	NIH	AHRQ	Physician	
Diagnosis	Discharge	High	High	Medium	High	High	Medium	16
	Admitting Complaint	Medium	Low	High	Medium	Medium	High	13
	Provider Notes	Medium	Low	Medium	Medium	Medium	High	12
Drug	Order	Medium	Medium	High	High	High	High	16
	Dispense	Medium	Medium	Low	Medium	Medium	Low	11
	Administration	High	Medium	Medium	Medium	Medium	High	14
Laboratory	Blood levels, titers, and other structured (coded) data	High	High	High	High	High	High	18
	Culture reports and other unstructured (free text) data	Low	High	High	High	High	High	16
	Genomic	Low	High	Low	High	Low	High	12
Radiology		Low	High	High	High	Medium	High	
Demographic	Next of Kin	Low	Low	High	Medium	Low	High	11
	Home Address	High	Low	High	Medium	Medium	Medium	13
		24	25	30	30	26	32	

To address your grantees' business issues, develop an approach that effectively links business and technology



Summary

Design and Scope of Rapid Demonstration

- **Data comes from existing clinical systems and Existing Clinical Processes with no double entry or new user interfaces**
- **Data is not stored externally**
- **Records filtered and transmitted based on business rules agreed upon by the individual hospitals and each agencies. Different rules and data standards for each participant permissible.**
- **Data coded and transmitted using open standards, but gateway can provide mapping between structured data standards and limited text matching.**
- **Data elements are existing priorities for agencies, providers, payors, and others (current quality reporting measures, key drugs with associated clinical lab results, public health requirements)**
- **Privacy and security included in design**
- **Processed information can be passed back to provider at the same time as it is sent to agencies.**
- **Openness to participation: any provider, vendor, or federal agency that wishes to participate can because the open standards provide a common basis for exchange of information.**
- **Resulting health information linkages for standards based reporting from clinical information systems is step on critical path toward national health information infrastructure**

Questions or Further Information?

Ned McCulloch

nmcculloch@us.ibm.com

202-515-4019

IBM
1301 K Street, N.W.
Washington DC 20005