

# *RHIO Case Studies SW Tennessee*



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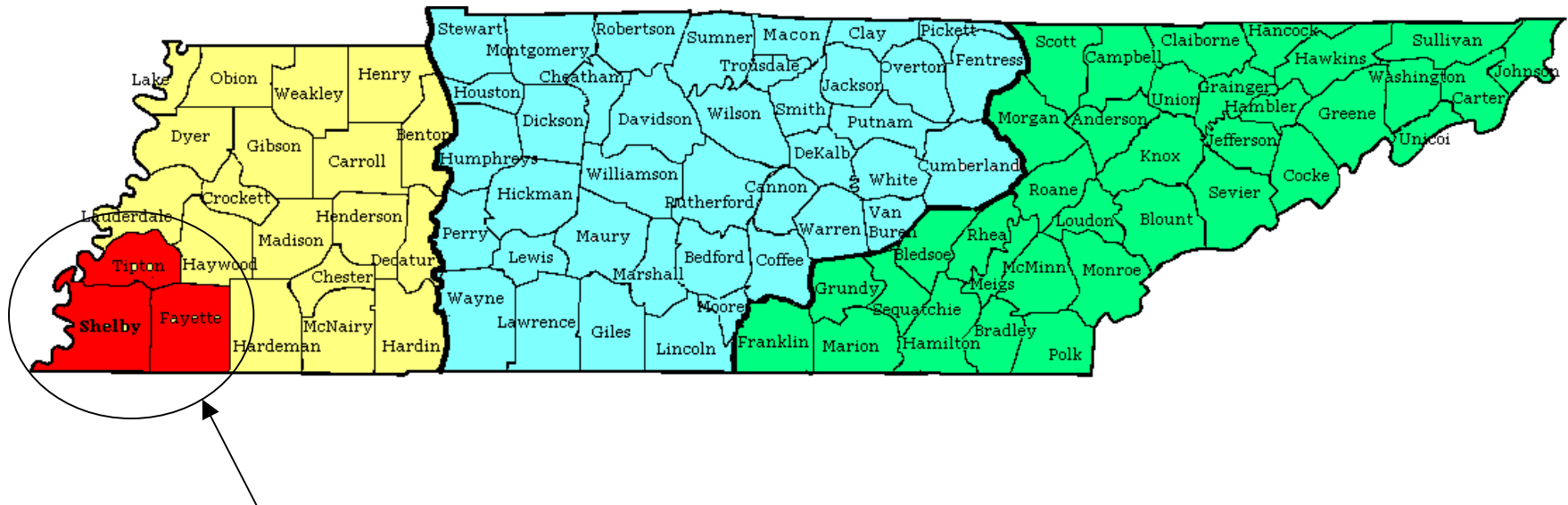


Vanderbilt Center for Better Health

Recent funding: AHRQ Contract 290-04-0006

*This presentation has not been approved by the Agency for Healthcare Research and Quality  
Portions of this presentation derive from a planning exercise conducted with Accenture*

## Example: West Tennessee



*All parties recognize that health care is regional and that a significant number of individuals seeking care in Tennessee are residents of one of the 8 bordering states*  
*Note – other regional initiatives and state-wide HIT initiatives funded by AHRQ or HRSA in the state include UT Memphis, UT Knoxville, Vanderbilt, and Kingsport-Johnson City.*



# Fayette, Shelby, and Tipton counties: 900,000+

## Three-County Region Population

| Payor          | Fayette | Shelby  | Tipton | Total   | % of Total |
|----------------|---------|---------|--------|---------|------------|
| Medicare       | 3,738   | 89,581  | 5,079  | 98,398  | 10%        |
| Medicaid       | 6,684   | 232,611 | 12,201 | 251,496 | 25%        |
| Uninsured      | 3,744   | 108,992 | 6,412  | 119,148 | 12%        |
| Comm./Self-pay | 17,036  | 477,080 | 29,744 | 523,860 | 53%        |
| Total          | 31,202  | 908,264 | 53,436 | 992,902 | 100%       |

***The uninsured population is expected to increase by ~36,000 within the three-county region due to the changes in the TennCare program.***

***20-25% of care in some hospitals to Arkansas and Mississippi residents***

Sources:

1 – Kaiser Foundation - [www.statehealthfacts.org](http://www.statehealthfacts.org)

2 – The Tennessean – January 20<sup>th</sup>, 2005

3 – Medicare population calculated based on population over 65; data provided on

[www.fedstate.gov](http://www.fedstate.gov) University, 2005. Not to be distributed without permission

4 – Population analysis based on 2002 statistics



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# Trends: TennCare

## STATE-TO-STATE COMPARISONS

### Percent of Population Covered By Health Plan

| Rank | State          | %    |
|------|----------------|------|
| 1    | Tennessee      | 22.3 |
| 2    | Mississippi    | 20.3 |
| 3    | New Mexico     | 20.0 |
| 4    | Louisiana      | 19.6 |
| 4    | New York       | 19.6 |
| 6    | California     | 18.1 |
| 7    | South Carolina | 17.6 |
| 8    | Maine          | 16.9 |
| 9    | Arkansas       | 16.7 |
| 10   | Delaware       | 16.6 |

Source: Kaiser Statehealthfacts.org,  
U.S. Census Bureau

### Health Plan Expenditures as a Percent of Total Expenditures

| Rank | State         | %    |
|------|---------------|------|
| 1    | Tennessee     | 33.3 |
| 2    | Missouri      | 30.7 |
| 3    | Pennsylvania  | 29.5 |
| 4    | Maine         | 29.0 |
| 5    | New York      | 28.3 |
| 6    | Illinois      | 28.1 |
| 7    | Vermont       | 27.5 |
| 8    | New Hampshire | 26.4 |
| 9    | Mississippi   | 26.3 |
| 10   | Rhode Island  | 25.5 |

Source: National Association of State  
State Budget Officers

Source: Governor's Communications Office, "TennCare at-a-Glance," 10 January, 2005,  
<http://www.tn.gov/governor/tenncaredocs/011005%20TennCare%20At-A-Glance.pdf>



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# Trends: Urban Hospitals

## The Med on precipice of ruin

### Hospital CEO counting on state help

By Mark Watson  
[watson@gomemphis.com](mailto:watson@gomemphis.com)  
June 22, 2003

Divide The Med's cash balance by \$750,000 and that gives you the number of days Memphis's public hospital could operate - if it received no more money.

On June 16, that number was nine - up from six in January. But it's about 1/15th of the cash on hand to pay a day's worth of expenses available at comparable nonprofit hospitals across the country.

Advertisement

That's one measure of the financial health of the Regional Medical Center at Memphis, which is on track to record a deficit of as much as \$20 million when its fiscal year ends June 30.

Source: M. Watson, "The Med on the Precipice of Ruin: Hospital CEO Counting on State Help," The

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Commercial Appeal, 21 June, 2003.



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## Demand: American Nomads

- In 2002-03, 41 million Americans changed their residence (20% of these to another county, another 20% to another state)
- 21% of children age 4 or less moved during the same period
- 11% of a Medicaid Managed Care population sought care in an ED more than once a year. (average use for this group – 5 visits per year!)
- 20-25% of patients seeking care in two Memphis hospitals were from other states
- Tennessee borders 8 other states

### Sources:

1 – U.S. Census Bureau and J. P. Schachter, "Geographical Mobility: 2002 to 2003," <http://www.census.gov/prod/2004pubs/p20-549.pdf>

2 -- Data supplied by a Medicaid Managed Care Organization 07/2003-07/2004

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# Value to Region and Stakeholders

## Overall Value

### Providers

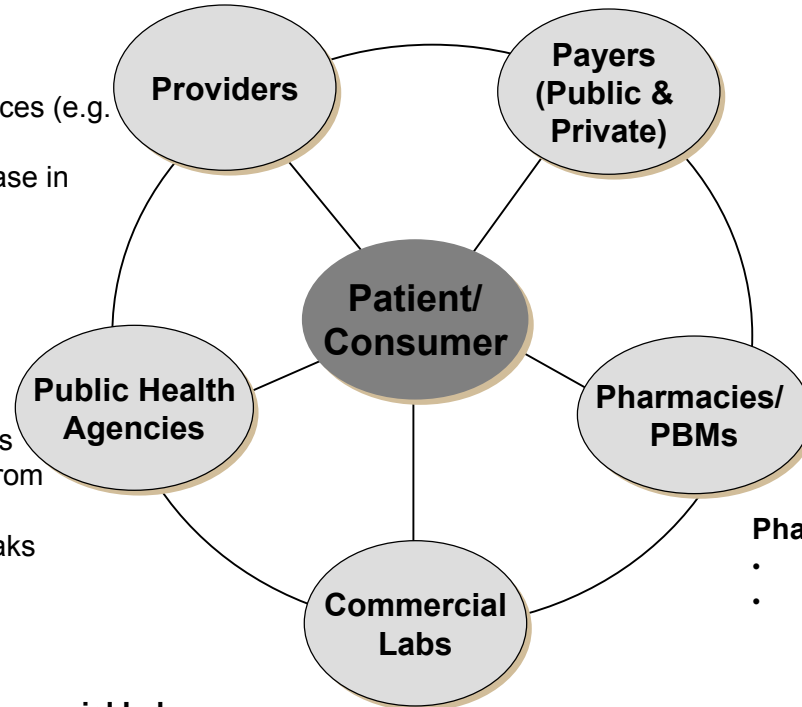
- Timely access to relevant data for improved decision making
- Rapid access -- anywhere, anytime
- Reduced clerical and administrative costs
- More efficient and appropriate referrals
- Increased safety in prescribing/ monitoring compliance; alerts to contraindications
- Better coordinated care
- Potential additional revenue sources (e.g. preventive care)
- Enhance revenue through decrease in rejected claims

### Payers

- Improved customer service
- Improved disease and care management programs
- Improved information to support research, audit and policy development

### Patient

- Improved quality of care through better informed caregivers
- Safer care
- Decreased cost of care



### Public Health Agencies

- More comprehensive data
- Greater participation by physicians
- Easier integration of information from disparate sources
- Early detection of disease outbreaks or cases that suggest a local epidemic
- Outcomes analysis
- Bio-terrorism preparedness

### Pharmacies/PBMs

- Reduced administrative costs
- Increased medication compliance

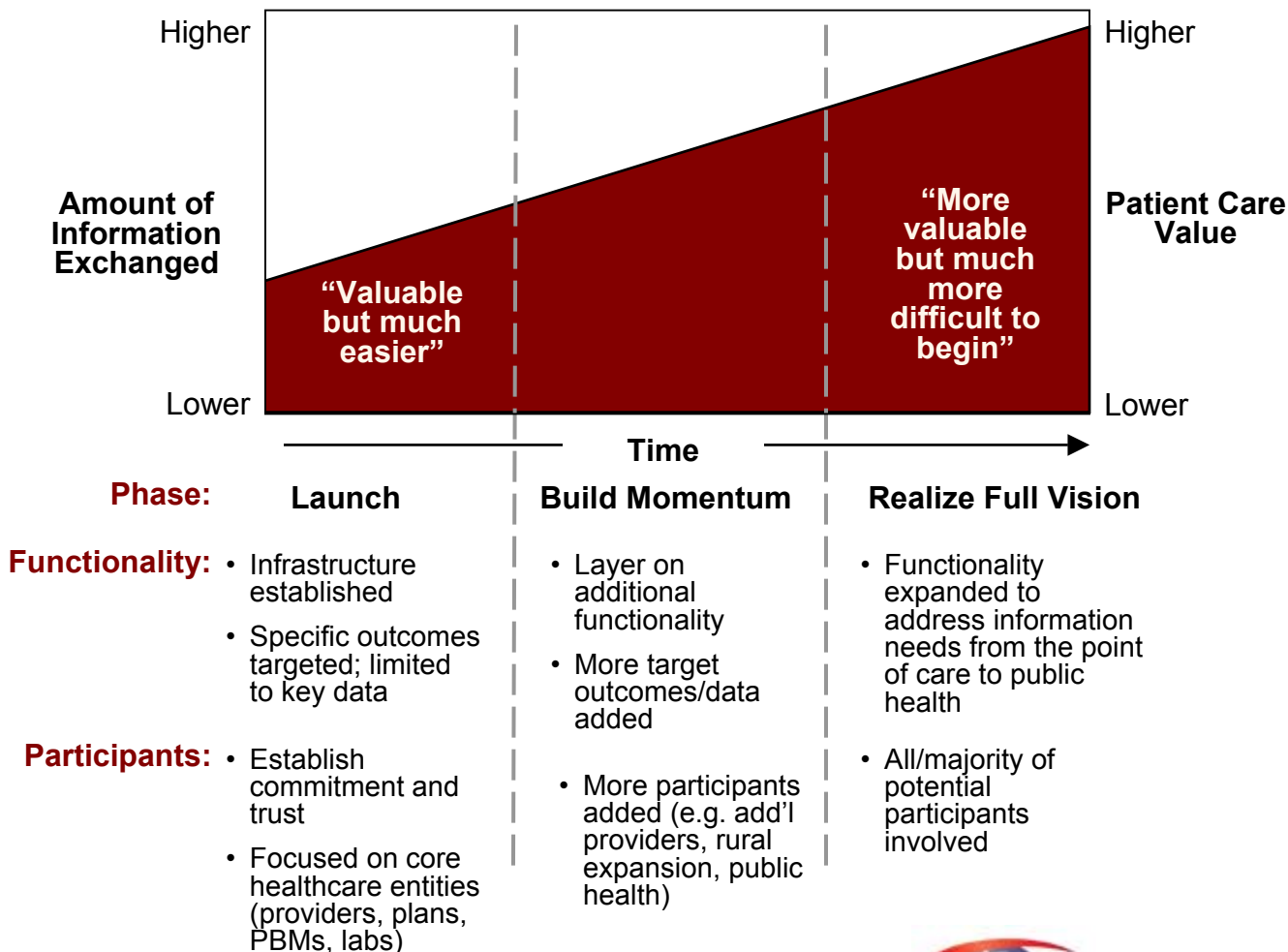
### Commercial Labs

- Enhanced public relations; exclusive contracts
- Decreased write-offs from unnecessary tests
- Decreased EDI costs; increase efficiencies



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# An Initial Provider-Centric Approach



*"It is more important to first build the highway than the hotel or fast food place,"* Clem McDonald, MD, FACP, Regenstrief Institute, Indianapolis, IN.





# Value of Integration

***The infrastructure being established will create opportunities to improve data collection and aggregation processes with the public health arena***

| <b>Public Health Area</b>                       | <b>Opportunities</b>   |
|---|--|
| Immunizations                                   | <ul style="list-style-type: none"><li>• Increase automation and volume of data collected in the State Immunization database (TWIS) from provider sources through integration with the Volunteer eHealth Initiative RHIO</li><li>• Provide physicians with ability to see complete immunization records within RHIO to limit number of applications to access</li></ul> |
| Newborn Screening and Lead Poisoning Prevention | <ul style="list-style-type: none"><li>• Difficult to submit or receive information. Today must use mail or telephone to request information</li><li>• Secure access through the internet can improve value</li></ul>   |
| Child Health                                    | <ul style="list-style-type: none"><li>• Integration of the immunization, newborn screening, genetics, and lead poisoning data to provide a holistic view of clinical history</li><li>• Enables improved continuity in care for patients who change physicians or move to a different area of the state</li></ul>   |
| Disease Surveillance                            | <ul style="list-style-type: none"><li>• May simplify reporting infectious diseases to appropriate agencies</li><li>• Potential to improve early identification of public health threats</li></ul>  |
| Home Visitation Programs                        | <ul style="list-style-type: none"><li>• More integrated information will ease in transitions of care from hospital to home and support other home visitation programs</li></ul>  |

# Regional Clinical – Technology Interaction

## Outcomes evaluated

Bold Items indicate priorities

- **Asthma**
- **Group B Strep**
- Cancer Screenings
- **Diabetes Management**
- **Immunizations**
- Hypertension
- Post MI care
- Congestive Heart Failure
- **Sickle Cell Pain Management**
- Depression
- **Medication Management**
- **Reducing Redundant Testing**
- Well Child Screening
- ER Utilization

## Data Elements

Detailed requirements for each element to be defined

Bold items indicate greatest significance

- **Medications**
- Problem list
- **Lab Results**
- **Radiology Results**
- **Cardiology Results**
- Weight
- **Allergies**
- **Encounter data**
  - Where was patient seen
  - When was patient seen
  - What was done during visit

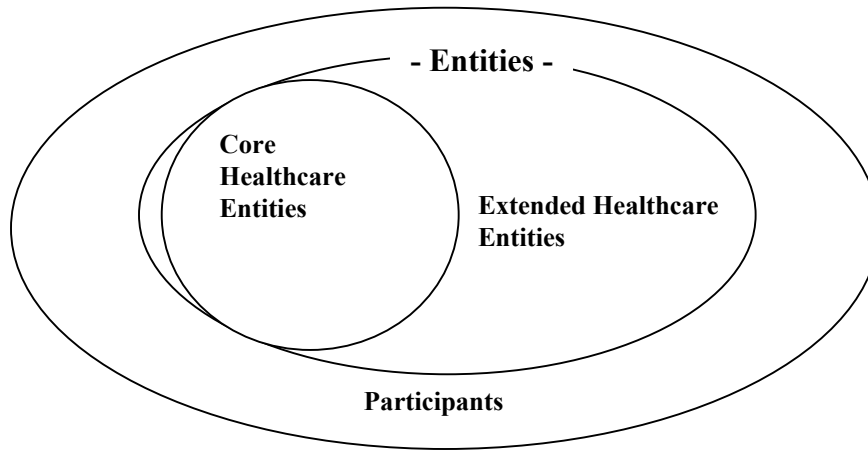


# Proposed Initial Entities

## Stakeholders

### Core Healthcare Entities

- Baptist Memphis
- Le Bonheur Children's Hospital
- Methodist University Hospital
- The Regional Medical Center (The MED)
- Saint Francis Hospital
- St. Jude Children's Research Hospital
- Shelby County/Health Loop
- UTMG
- LabCorp
- Memphis Managed Care-TLC
- OmniCare



### Extended Healthcare Entities

- BCBSTN
- Better Health Plans of Tennessee
- First Health
- RxHub
- SureScripts
- Memphis Pathology Lab
- Remaining Tennessee Baptist and Methodist Facilities
- Others

### Participants

- Christ Community Health Services
- Kindred Healthcare (Nursing Home)
- Memphis Children's Clinic
- Health Choice, LLC
- County Public Health Departments
- Immunization Program
- Memphis Community Programs
- Shelby, Tipton and Fayette County Governments
- TN Department of Health
- Others

Source:

1 -AHRQ submission Nov 29,

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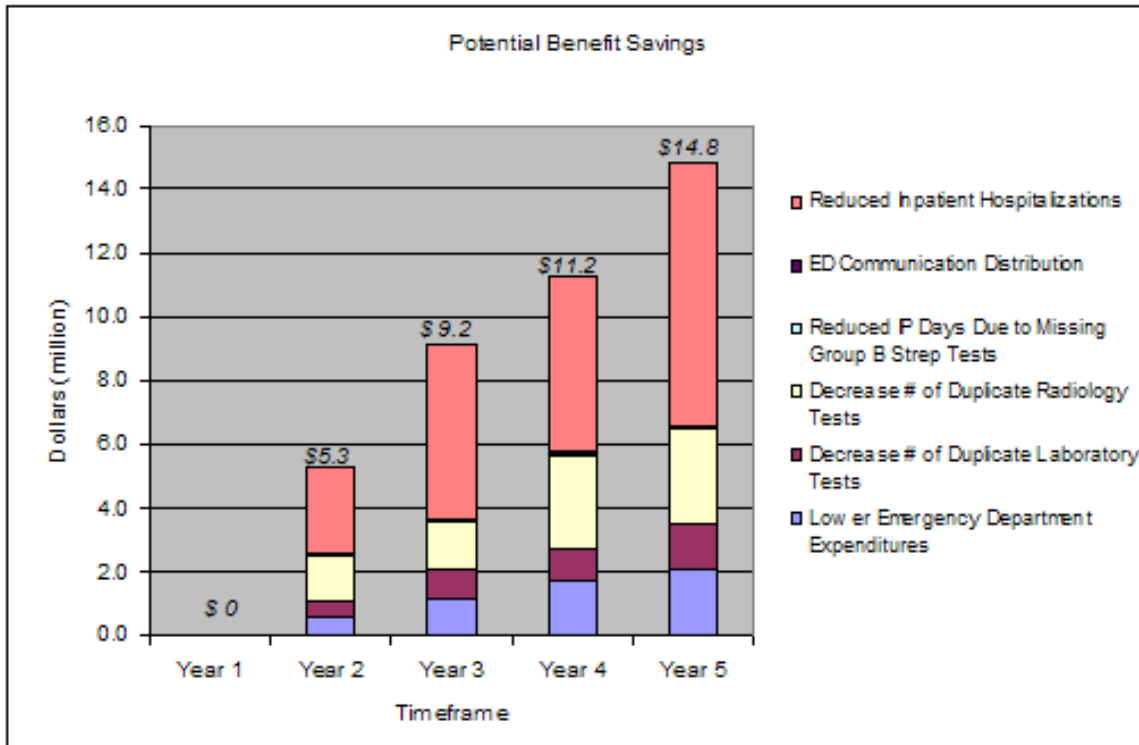
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# Value to a Participating Hospital

## Overall Benefit

The exchange of to EDs in 12 hospitals may (or may not!) save \$40.5 million.



| Financial Measures                                 | Dollar Savings (millions) |
|--|---------------------------|
| Reduced inpatient hospitalization                  | \$22.0                    |
| ED communication distribution                      | \$0.1                     |
| Reduced IP days due to missing Group B strep tests | \$0.1                     |
| Decrease in # of duplicate radiology tests         | \$9.0                     |
| Decrease in # of duplicate lab tests               | \$3.8                     |
| Lower emergency department expenditures            | \$5.5                     |
| <b>Total Benefit</b>                               | <b>\$40.5</b>             |

Notes:  
1 – Source, Vanderbilt & Accenture Study

# Sample 600-bed hospital

*We believe that even if we have over-estimated our savings by one or even two orders of magnitude, there will still be financial benefit to a hospital ED*

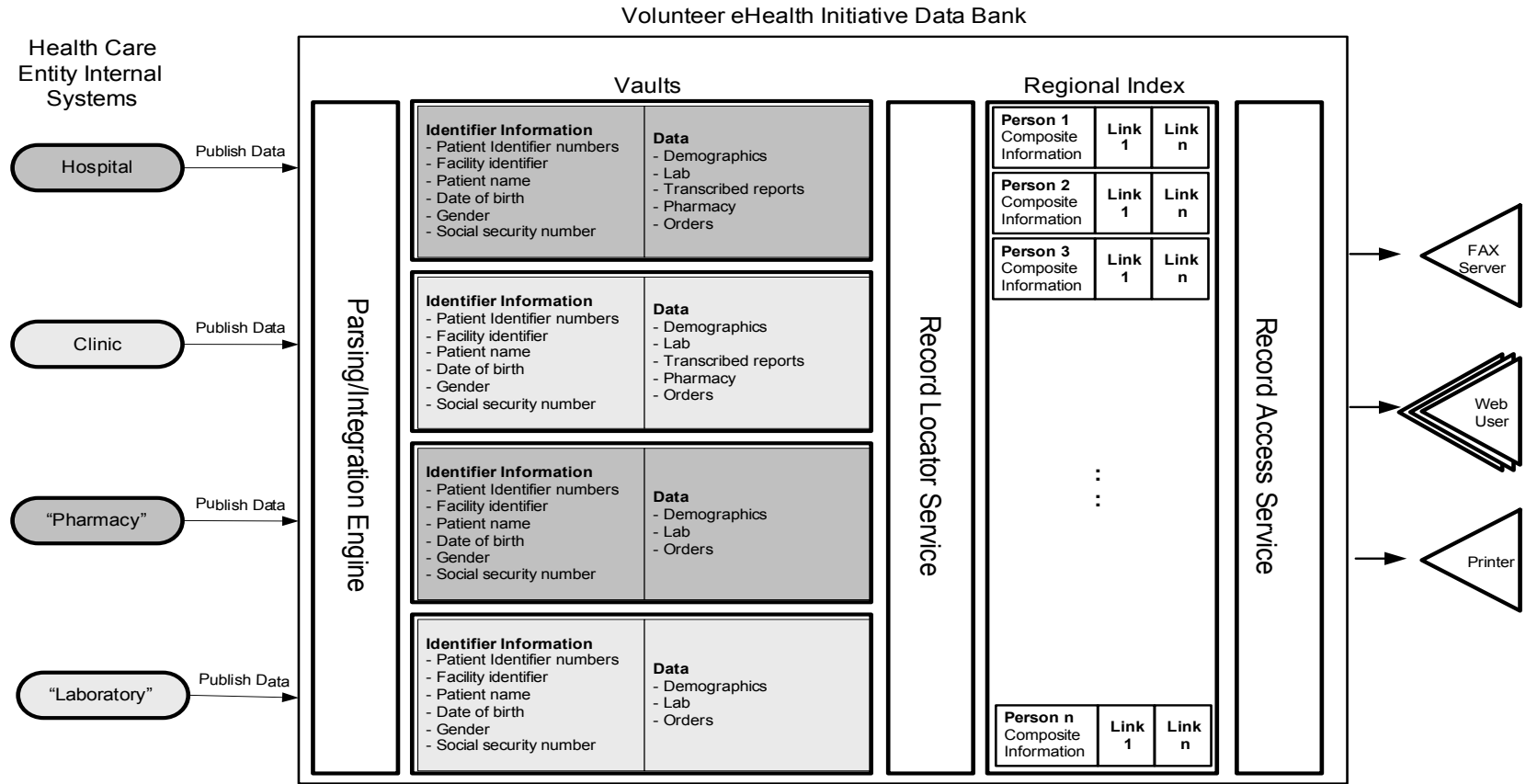
| Financial Measures                                 | Dollar Savings<br>(thousands) |
|--|-------------------------------|
| Reduced inpatient hospitalization                  | \$3,367                       |
| ED communication distribution                      | \$12                          |
| Reduced IP days due to missing Group B strep tests | \$40                          |
| Decrease in # of duplicate radiology tests         | \$1,489                       |
| Decrease in # of duplicate lab tests               | \$636                         |
| Lower emergency department expenditures            | \$60                          |
| <b>Total Benefit</b>                               | <b>\$5,604</b>                |

### Assumptions

- Licensed Beds: 600
- Radiology Procedures: 200,000
- ER Visits: 50,000
- Admissions: 20,000
- Births: 4,000



# A technical blueprint of the information exchange shows data flow and management from the point of data publication to the regional view.



Data is published from data source to the exchange

- Participation Agreement
- Patient Data
- Secure Connection
- Batch / Real-Time

Exchange receives data & manages data transformation

- Mapping of Data
- Parsing of Data
- Standardization of Data
- Queue Management

Organizations will have a level of responsibility for management of data

- Issue Resolution
- Data Integrity
- Entities are responsible for managing their Data

Data bank compiles and aggregates the patient Data at the regional level

- Compilation Algorithm
- Authentication
- Security
- User Access

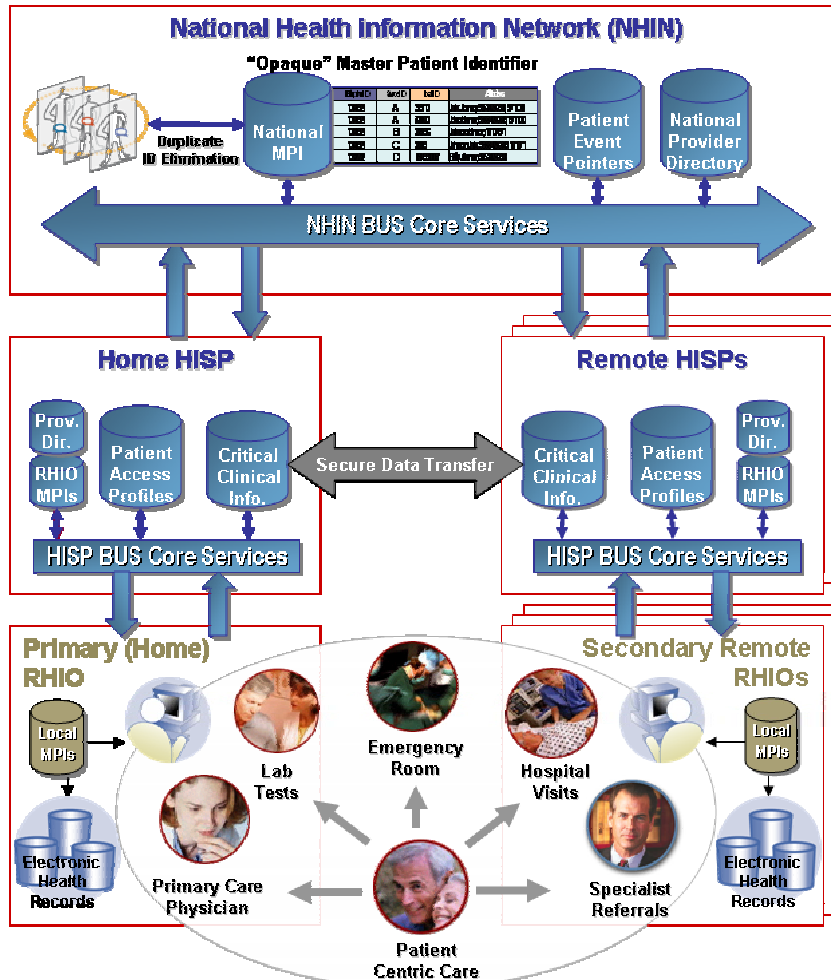


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# RHIOs and HISPs

NHIN Conceptual Data Architecture



## Regional Health Information Organization

- Multi-stakeholders organizations enable the exchange and use of health care information for the general good
- Business organization
- Three-county region is a RHIO

## Health Information Services Provider

- Technical services organizations
- Can contract with a range of organization types including RHIOs
- Vanderbilt is the RHIO's HISP



## Lessons Learned: the Need for RHIOs

- A community emphasis requires a new organizational framework focused on the individual and requiring the participation of all providers of care for that individual
  - Identity – who is Dr. X? Who is patient Y?
  - Authority – can Dr. X. see my records?
  - Standards – can systems “talk” to each other?
  - Certification – do systems use standards?
  - Quality – am I getting the care I need?
  - Legal – Stark, HIPAA, safe harbor compliance





## Lessons Learned: HISPs

RHIOs in turn Require Health Information Services Providers (HISPs)

- Provide technical services to a RHIO
- Assure evolution and compliance
- Can work across RHIOs or other organizations to gain economies of scale
- Work upward – to the national level – to assure that the technology standards employed will communicate with others as individuals move from one RHIO to another.



## Everyone Must Play a Part

### State

- Encourage information exchange coverage across the State
- Set standards and policies as required for statewide interoperability
- Work in collaboration with neighboring states
- Provide financial support as appropriate
- Ensure compliance with Federal Standards across projects
- Facilitate negotiation and data collection from sources that can benefit all regions (e.g., RxHub, SureScripts, National Lab Companies)

### Regional Information Exchange

- Facilitates collaboration among participating stakeholders
- Contains information from all participating stakeholders
- Coordinates data publication from stakeholders
- Provides neutral governance organization
- Sets and implements regional policy (e.g., security, authorization, privacy, and authentication)
- Identification management and support for regional patient identification
- Pursues opportunity to expand exchange capabilities such as patient portal access or decision support

### Participating Organization

- Agrees to participate in a regional information exchange
- Serves as a medical data source
- Publish information to the exchange and/or utilizes information from the exchange
- Supports Entity workflow
- Encourages use and adoption
- Governs decision making as it relates to the organization
- Identification management and support for organization patient identification





## The Trillion Dollar Question

- Can we as consumers be empowered to own their system?
- Can we develop a system where our health information is under our control and not used as a barrier to our pursuit of better medical care?
- Can our health care system evolve in this direction without major regulatory pressure?
- Can financial benefits be realized? (one person's savings is another's revenue loss)
- Is “transformation” possible without obsolescence in some sectors of the health care system?

