



Volunteer eHealth Initiative



Case Study: SW Tennessee's experience with planning and implementing a Health Information Exchange

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This presentation has not been approved by the Agency for Healthcare Research and Quality*

Goals for the SRD/RHIO Project in Memphis

- **AHRQ's Goals**

- To identify and support statewide data sharing and interoperability activities aimed at improving the quality, safety, efficiency and effectiveness of health care for patients and populations on a discrete state or regional level
- To demonstrate measurable improvements in the quality, safety, efficiency and/or effectiveness of care resulting from the proposed data sharing and interoperability measures.
- To achieve milestones, including: Core entities and data elements, Milestones for "data exchange" and Programmatic linkages

- **Tennessee's Goals**

- To address the longitudinal care needs of Tennesseans
- To identify a clinical framework for exchange that may be applicable to the rest of the state
- To identify resources, technologies, and approaches required to further the aims of state and local government
- To advise the Governor on emerging health care information technology issues
- To have a demonstrable impact on the care of the less fortunate and on the institutions that provide care for these individuals

- **Memphis Community's Goals**

- To establish a locally-governed RHIO
- To meet the needs of its stakeholders
- To address specific clinical needs of community
- To be prepared to evolve as additional needs are identified
- To provide local management for major aspects of operations



Summary of Project

Funding Sources

September 21, 2004, Tennessee received a 5 year contract/grant from Agency for Healthcare Research and Quality (AHRQ) - total award is \$4.8 million

State of Tennessee provided additional funds in the amount of \$7.2 million for the same 5 year period

MidSouth eHealth Alliance will receive additional funding from the state to fund operations (e.g. Executive Director and local support staff)

Vanderbilt's Role

“Donated” the use of its technology for the project

Serves the functions of Project Management Office and Health Information Service Provider

Responsible for compliance with the AHRQ contract

Also supports as requested other HIT activities across the state at a planning level

Initial Participating Organizations

- Baptist Memorial Health Care Corporation – 4 facilities
- Methodist - Le Bonheur Children's Hospital
- Methodist University Hospital
- The Regional Medical Center (The MED)
- Saint Francis Hospital & St. Francis Bartlett
- St. Jude Children's Research Hospital
- Shelby County/Health Loop Clinics (11 primary care clinics)
- UT Medical Group (200+ clinicians)
- Memphis Managed Care-TLC (MCO)



Where and How We Started

- Our state and specifically Governor Phil Bredesen considered HIT as one way to help with our TennCare (TN Medicaid) crisis
 - February 2004 Governor Phil Bredesen in his State of TennCare address to the legislature discussed the urgent need to reform TennCare. As one example of reform he introduced the idea of Health Information Technology (HIT) applied in the Memphis region
 - July 2004 the Governor announced the Volunteer eHealth Initiative as a 6 month planning initiative to determine the value of HIT for the state
 - June 2004 the state and Vanderbilt apply for an Agency for Healthcare Research and Quality (AHRQ) State Regional Demonstration (SRD) contract
 - August 2004 an planning initiative that is 80% focused on SW Tennessee (Shelby, Fayette, and Tipton Counties) and 20% on the rest of the state. Planning effort was funded by the state.
 - One of the first steps in the planning was to create an infrastructure to support a planning process. Over time this infrastructure evolved to support the AHRQ project



Where and How We Started

- Tennessee was one of five states to receive a 5 year contract/grant from ARHQ on September 21, 2004
 - Planning effort was refocused to approximately 95% Memphis and 5% rest of the state
 - Met AHRQ milestone for 25% data exchange in October 2005 and on track to meet the 50% data exchange milestone in October 2006
- The community “claimed” ownership of the RHIO in early 2005
 - Governing board was formed
 - *The board celebrated its first anniversary in February and elected a new set of officers*
 - Board adopted the name MidSouth eHealth Alliance
 - Board and community focused on “start up issues” (e.g. incorporation, application for not-for-profit status, policy and procedure, funding, resources, etc.)
 - Work groups were refocused from planning to detail design and implementation.



Overview of Planning Process

- In June and July, stakeholders in the SW Tennessee region and across the state were identified. If appropriate and possible they were contacted by Dr. Mark Frisse
- Planning process started August 1, 2004 and ended January 31, 2005
- Five work groups were formed in the SW Tennessee region. They met a minimum of once a month and the Governor's office was involved in all steps of the planning phase.
 - CEO/Leadership group
 - Clinical
 - Technology
 - Privacy and Security
 - Financial
- Held two large meetings to facilitate the planning effort
 - October 2004 – Statewide Design Shop in Nashville with stakeholders from across the state.
 - November 2004 – Memphis Design Shop in Memphis with stakeholders in Memphis.



ARQH Milestones/Contract Deliverables

Identification of key stakeholders	October 2004	Completed
Identification of core clinical data elements and core entities	November 2004	Completed
Evidence of programmatic linkages (a) state and regional programs (b) federal programs (c) emergency preparedness	November 2004	Completed
Formation and meeting of Technical Advisory Panel	December, 2004	Completed
Medicaid/TennCare program analysis	September 2005	Completed
Demonstrate and report 25% completion of proposed core data sharing	October, 2005	Completed
Draft Evaluation Plan	April 2006	In progress
Demonstrate and report 50% completion of proposed core data sharing	October, 2006	In progress
Demonstrate and report 100% completion of proposed core data sharing (Challenge in this year will be allergies & medication history)	October, 2007	
Start the evaluation	November 2007	In progress
Submit proposal for sustainability	October, 2008	In progress



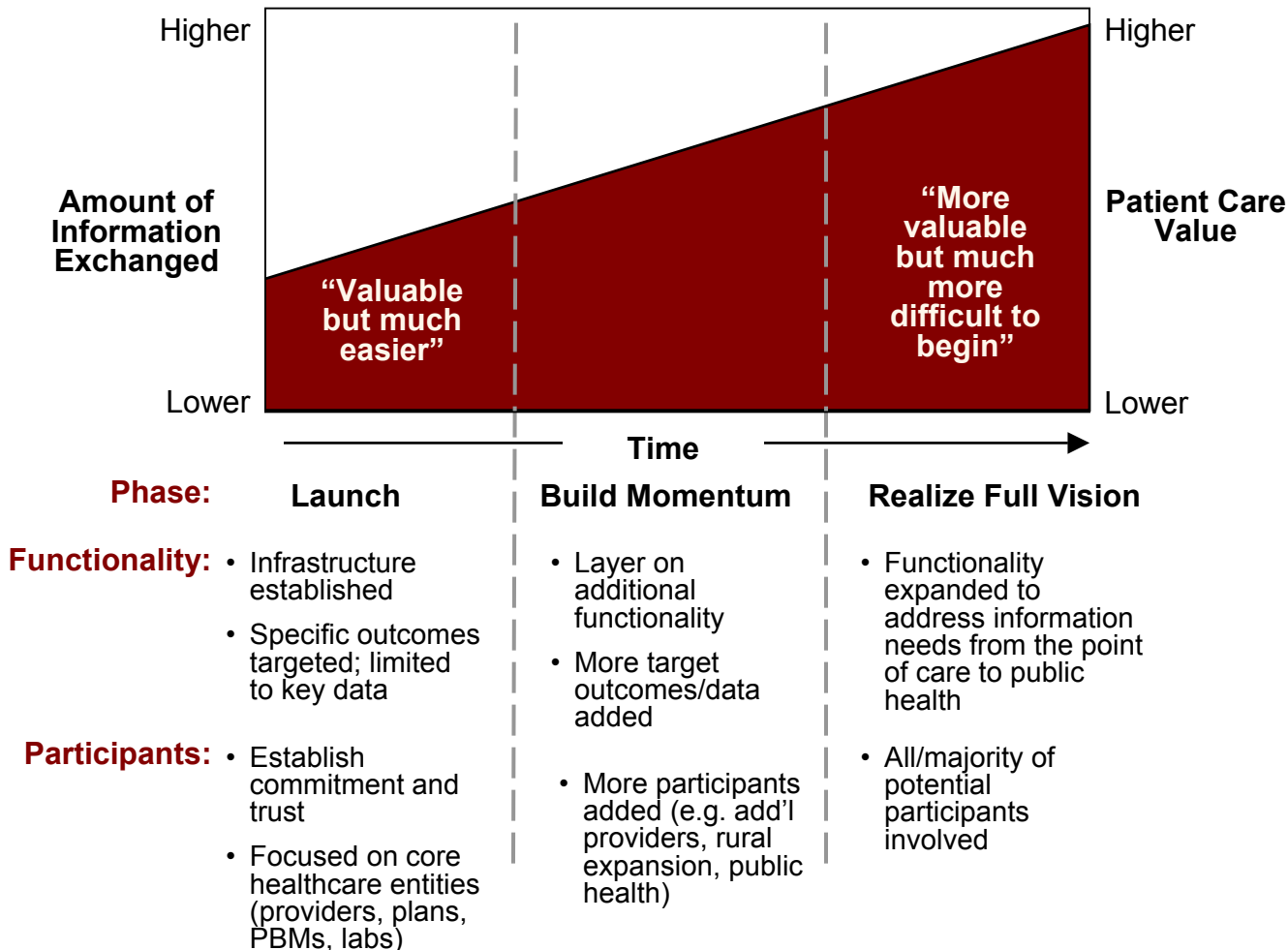
Planning Assumptions

- Entities will participate as data contributors and end-users for a 5 year period and participate in planning efforts around sustaining the Clinical Data Exchange for the long-term.
- Governance will be a neutral organization at a neutral site determined by agreement of the board.
- The proposed architecture imposes minimal data exchange requirements upon the entities publishing data to a vault.
- Participating entities will own and maintain the data stored in their individual data vault.
- Vanderbilt University will be responsible for aggregating data published by the participating entities and implementing the aggregation algorithms, data display, and reports.
- Participating entities will take part in a testing effort to validate data aggregation and algorithms.
- Early deployment will be focused on select care settings where value is self-evident.
- The Clinical Data Exchange is not intended to replace existing clinical systems.
- General application training materials (e.g., login and basic navigation) will be provided by the Volunteer eHealth Initiative to ensure consistency across the deployed care settings.
- Entities will be responsible for incorporating process changes and delivering training to support adoption and utilization of the Clinical Data Exchange into the clinical workflow.
- Long-term operational support needs from participating entities are still being determined, therefore the ability to fill operational FTE needs is not being assessed.
- Long-term goal will be to incorporate data into participating entities' current systems.



Approach: Establish trust and architecture; then expand to other stake holders and sites

Begin with the end in mind. . .



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

For more information: www.volunteer-ehealth.org

The clinical focus areas identified a need to exchange five key elements which can also support additional clinical outcomes

Data Elements or Categories

The outcome prioritization process identified that medication and test results provide incremental value and motivate a clinician to utilize the RHIO

Core Data Elements have been identified based on the value they bring and will be audited for AHRQ purposes to monitor progress against data exchange milestones

Core Data Element	Example Scope
Medications	Prescribed drug, Dosage, Date filled
Lab Results	Final results in text format with minimal standardization
Diagnostic Codes	ICD-9 code for a service/discharge date to serve as a proxy for a problem list
Encounter Data	When, Where and What (CPT codes)
Allergies	Type, Date and recorder (RN, MD)

Additional elements have been identified to further enhance the clinical value of the data exchange. Elements will be pursued based on contributed value and time/resource availability

- *Formalized Problem List*
- *Provider List*
- *Immunizations*
- *ER Reports*
- *Discharge summary*
- *Clinical Notes*
- *Radiology Results*
- *Radiology Images*



Core Entities and Data Elements

Core Entity	Patient ID Data	Lab Results	Encounter Data	Diagnostic Codes	Medications	Allergies
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	✓		✓	✓		
Memphis Managed Care-TLC	✓	✓	✓	✓	✓	

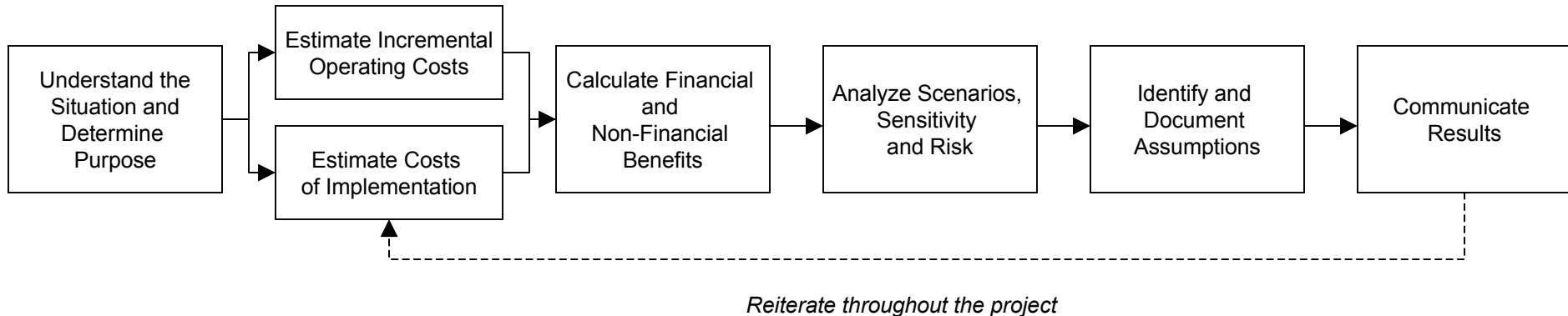
*Available patient population will grow as EMR roll-out continues through 2006



To understand the financial value that could be realized from implementing data exchange, a business case was created based on the initial data to be exchanged and clinical focus areas

Business Case Approach

As the project progresses, the initial business case will be further defined and updated to reflect the current assumptions, costs and benefits.



Key Financial Measures derived from the initial data and clinical focus areas

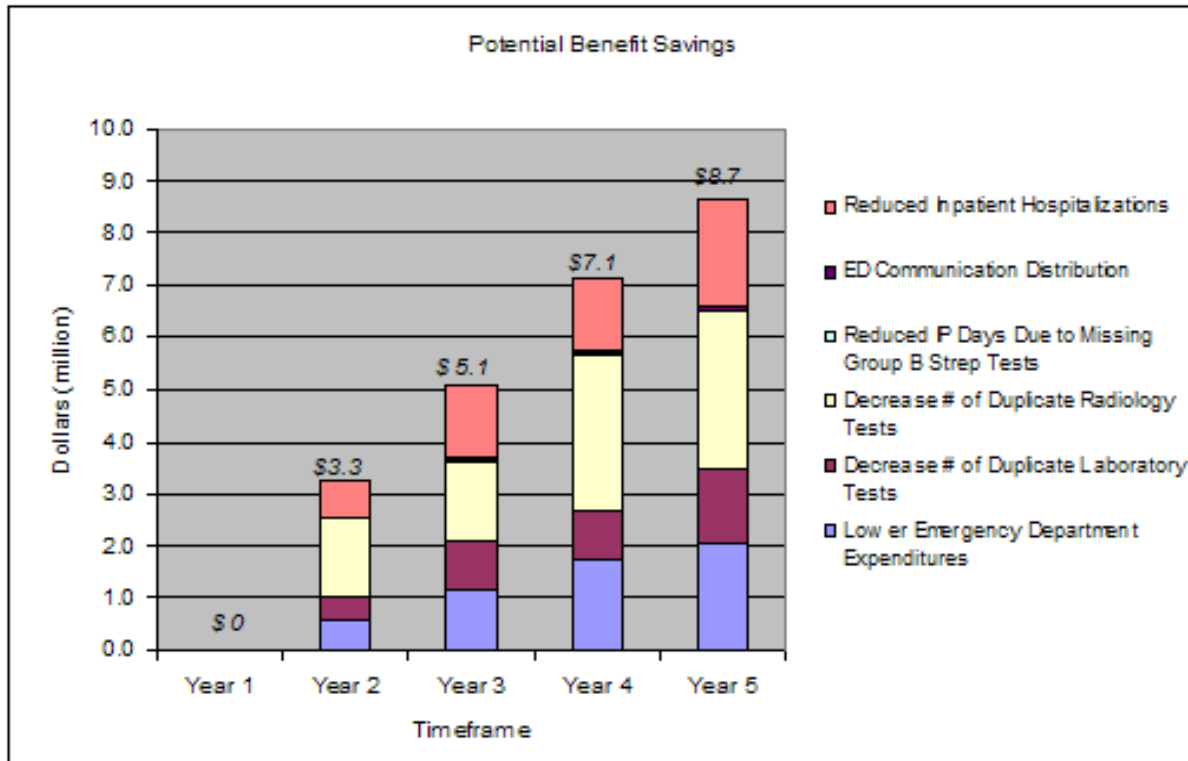
- Lower emergency department expenditures
- Decrease number of duplicate laboratory tests
- Decrease number of duplicate radiology tests
- Reduced inpatient days due to missing Group B Strep tests
- ED communication distribution
- Reduced inpatient hospitalizations



A data exchange across the core healthcare entities can achieve significant dollar savings over a five year period.

Overall Benefit

The exchange of data among the core healthcare entities has potential to reach \$24.2 million in savings.



Financial Measures	Dollar Savings (millions)
Reduced inpatient hospitalization	\$5.6
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
Total Benefit	\$24.2

If data is exchanged across all facilities within the three-county region, the overall savings has potential to reach \$48.1 million.

Notes:

1 – Core healthcare entities include: 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

Where we are today...

- **State of Tennessee**
 - Convening a statewide HIT coordinating council to address issues such privacy, legal, interoperability and standards, and sustainable business models
 - Council will be appointed through an executive order
 - Council will begin meeting in second quarter of 2006
- **MidSouth eHealth Alliance**
 - Board celebrated one year anniversary in February
 - Formally incorporated in August 2005
 - Granted not-for-profit status (501 (c) (3)) by the IRS on March 8, 2006
 - Once funding is secured from the state, will recruit for an Executive Director
- **Working towards initial use in one test Emergency Department in Memphis for May 2006**
 - ED is principal focus for early efforts because it presents a financial return to participating hospitals. It is also a state-wide priority
 - ED will be used to pilot technology approaches but is not an “final product” for the data exchange
 - Have 11 production data feeds and 2 test data feeds
 - *Data is housed at Vanderbilt and pushed via VPN connection. Most is real time 4 feeds are batched every 24 hours*
 - *Will bring on 4 additional Emergency Departments over the summer of 2006*
 - *Will bring on the remaining Emergency Departments (8) through the end of 2006 and first quarter 2007*



Where we are today...

- Work groups are active and focused on implementation for initial use and beyond
 - Privacy and Security
 - *Working on a Regional Data Exchange agreement. (Started this process in November 2005)*
 - *Defining and developing policy and procedures*
 - Technical
 - *Increasing the number of production data feeds as well as the amount of data being sent*
 - *QA of production data*
 - Financial
 - *Focused on Sustainability Business Model*
 - *Linking efforts with the Evaluation Team*
 - Clinical
 - *Giving feedback on web browser interface to reflect the needs of a regional data exchange effort in the Memphis community*
 - *Identifying the next area of focus after the Emergency Department*



Lessons Learned...

- Be willing to start small and grow big
- Start where the energy is
- Have a vendor management strategy
- I already knew this but...
 - Collaboration and trust are not built overnight but can be achieved when the parties are willing to work together and take ownership in the process
 - Don't discount the naysayer – listen
 - Don't short cut the process by eliminating the planning but be willing to jump into implementation too.
 - It is very easy to talk about what the technology can and should do but actually making it work is a different story
- **Do not underestimate the security, privacy and legal issues!**
 - Be prepared to address what the law says and what the community wants to do. The Memphis community started with legal advice but felt strongly some of the privacy issues boiled down to ethics not law.
 - Budget for legal fees
- There may not be an answer to the question

