MidSouth eHealth Alliance

April 2009

History

- At the request of Governor Bredesen the Memphis community healthcare leaders participated in a planning effort in August 2004. The focus was to better understand how a Regional Health Information Organization (RHIO) would benefit the citizens of Memphis (and across Tennessee) in terms of cost and quality. During the planning effort, the leadership identified the need for a formal organization and structure.
- The MidSouth eHealth Alliance held its first board meeting in February 2005, incorporated as a nonprofit in the summer of 2005 and received 501(c)(3) status in March 2006.
- The first site (The Regional Medical Center – "The MED") began accessing the system for patient care on May 23, 2006. There was data available (inpatient, outpatient, ED) from 13 other hospitals at the time.
- The Health Loop and Christ Community Health Services began accessing the system in February 2008.
- 14 emergency departments had access to the system as of summer of 2008.
- Operations are governed by a comprehensive set of privacy and participation agreements
- Costs to participants less that $50,000 per hospital (in time and effort)
- Overall annual operating cost – under $3 million

Organizations Contributing Data (as of April 2009):

Baptist – 5 facilities (including one in Southaven, MS)

Methodist – 7 facilities

St. Francis – 2 facilities

St. Jude Children's Research Hospital – 1 facility

The MED – 1 facility

Christ Community Health Services – 4 clinics (they are working to add a 5th clinic in April or May)

The Health Loop – 11 clinics (may reduce to 10 clinics in April)

UTMG - 400+ providers

Users (as of March 2009)

All of the 14 emergency departments continue to access the system including those in Fayette and Tipton counties and one in Southaven, MS.

15 ambulatory clinics have access to the system.

Hospital based hospitalists have access to the system at Baptist, Methodist, The MED, and St. Francis.

Number of active users:

- Hospitalists - 18
- Nurses - 131
- Physicians clinicians - 222

Data Available (note: inpatient, outpatient and emergency room data are represented)

- Patient demographics
- Patient encounter information (data of service, reason for visit, provider seen)
- Diagnostic Codes
- Lab results
- Imaging results
- Cardiac study results
- Discharge summaries
- Other dictated reports such as History and Physicals, Operative Reports, and Emergency Department Notes

The Database (April 2009)

Total number of encounter records: 4,704,000

Total # of patients: 1,284,000

Total # of patients with clinical data: 1,018,000

Monthly Encounter Data: 140,000

Monthly ICD-9 admission codes (Chief complaints): 34,000

Monthly labs: 2,400,000

Monthly microbiology reports: 26,000

Monthly chest x-ray reports: 35,000

Ambulatory Systems Strategy

Key to the success of the Exchange will be the addition of ambulatory sites so that Exchange will have available all or nearly all important clinical information about high risk populations. This will accelerate disease management programs, inform resource allocation decisions, and aid in measuring impact of care.

The six – twelve month rollout plan includes extending to eleven ambulatory practices many with multiple locations. The number of users accessing the system is estimated to increase by 585 users.

Technology

Now running "stand alone" on a secure facility through Informatics Corporation of America (ICA), chosen because it is the same model as the Vanderbilt system. Memphis is not tied to this platform upon expiration of the AHRQ contract.

Does not require "one standard"

Does not pose significant burden on providers

Can extend and scale as needs and standards evolve.

Prescription Medication Hub

An open-source medication hub has been developed and can take patient identifier information, transmit it securely through the Indianapolis Exchange to SureScripts, and return a prescription medication history. At present, such histories are available for under 20% of patients seen because the primary source is claims. When SureScripts completes its interfaces and data sharing efforts with retail pharmacies, this number will approach 100%.

Security and Privacy Design and Implementation

- Data sharing and participation agreements are consistent with new ARRA legislation
- Governance body is capable of expanding use agreements for public health, personal health records, case management, and other functions.
- Integration with State authentication strategy
- Integration with State MPI
- Definning and developing "trusted zones" that will allow clinicians to access the exchange through their provider's primary systems.

Finances

The full operational costs are approximately $3.0 million per year. With a one-million population, this is $3.0 PMPY. This should be viewed in the context of an estimated health care spend of $7,400 PMPY.

Impact

Use

As of January 2009 system use is slightly up to 4% (from 3.5%) across all sites in the Emergency Department. St. Francis has hit a high of 14% (up from 13% in December.) Primary care usage has increased slightly, from an average of 5% to 5.6. Usage is generally higher if the patient has been seen elsewhere within the past days or weeks.
Note that we do not expect 100% usage. This system is designed to answer questions when histories are not sufficient to solve whatever acute or chronic problem is encountered in the care setting. In the coming months, we will add an analysis of usage patterns (i.e., what parts of the system are being used, and how that differs between ED and primary care.)

Avoidable Duplicate Tests

Based on preliminary analyses, using all data from all sites to examine the impact of the HIE system on each *high-stability test* (HST), we see a modest yet significant decrease in the proportion of avoidable duplicates for 4 HSTs: CT Head, CT Abdomen, Ankle X-Ray, and HbA1c. These decreases are significant but less that 5% depending on the test.

/* Further data under analysis. We do not want to release these data at this juncture */

Complaint-specific Impact

Very early analyses have been conducted for one condition—chest pain. That analysis has disclosed that two of the three highest volume sites, Baptist and St. Francis, saw significant reductions in the percent of patients admitted. By contrast, the admission rate was slightly higher at Methodist, which may be either due to a difference in the way MSeHA is used (for example, if it is used after a decision to admit is made) or in the types of patients seen at each site. We are examining this further.

Influence of the MidSouth eHealth Alliance

- MidSouth eHealth Alliance's work product (e.g. policies, data sharing agreements) and lessons learned have been shared with exchanges in Alabama, Arkansas, California, Colorado, Connecticut, Delaware, Florida, Georgia, Hawaii, Illinois, Indiana, Kansas, Kentucky, Louisiana, Maryland, Michigan, Mississippi, Missouri, Montana, Ohio, Nebraska, New Jersey, New Mexico, New York, South Carolina, Rhode Island, Texas, Utah, and Washington.
- The MidSouth eHealth Alliance structure, approach, work product and lessons learned are the core for another exchange in Nashville, Tennessee.

Publications about the MidSouth eHealth Alliance by Vanderbilt Regional Informatics Personnel

1. Coffman T, Porter JP, Frisse ME. Reducing HIE Costs through Real-Time Data Feed Visualizations. AMIA Annual Symposium proceedings / AMIA Symposium. 2008:913.
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3. Johnson KB, Gadd C, Aronsky D, Yang K, Tang L, Estrin V, et al. The MidSouth eHealth Alliance: Use and Impact in the First Year. AMIA Annual Symposium proceedings. 2008:333-7.
4. Frisse ME. Perspective: Health Information Technology: One Step at a Time. Health affairs (Project Hope). 2009;28(2):w379–w84.
5. Frisse ME. Information Technology Platform Requirements for a Learning Healthcare System. Washington Institute of Medicine; 2009.
6. Frisse ME, Lloyd TC, Swarr EC. Project HealthDesign: Rethinking the Power and Potential of Personal Health Records (PHR): A Design Consultancy Perspective Case Study. Journal of the American Medical Informatics Association. 2009; Submitted for review.
7. Fahey C. Long Term Care Workshop: Creating Solutions for New York State. New York: CUNY; 2008 October, 2008.
8. University of Puerto Rico. Planning for Health Care Improvement for the People of Puerto Rico; 2008.
9. Penfield SL, Anderson KM, Edmund M, Belanger M. Toward Health Information Liquidity: Realization of Better, More Efficient Care from the Free Flow of Health Information. Washington: Booz Allen Hamilton; 2009 January.