Lessons Learned in Implementing a Global Electronic Health Record

HIMSS Annual Conference
February 14, 2006

Speakers

• Victor Eilenfield, COL, USA, CHE
  Program Manager
• Dr. June Carraher, Col, USAF, MC
  Director, Implementation and Training

Clinical Information Technology Program Office
TRICARE Management Activity
Department of Defense (Health Affairs)

The Military Health System*

• Facilities
  - 70 Hospitals
  - 411 Ambulatory Care Centers
  - 417 Dental Clinics
  - 129,000 Employees
  - Across 37 U.S. States and Territories, 13 countries and 13 time zones

• Workload (weekly)
  - 1.8 M Outpatient Encounters
  - 2.1 M Prescriptions
  - 400,000 Dental Procedures
  - 19,500 Inpatient Admissions
  - 2,000 Births

• Supporting 9.2 M
  - Uniformed Service Members, retirees and their families

*As of November 2005
Our Challenge – A Herculean Task
Creating Worldwide Data and System Interoperability

- **9 million beneficiaries** residing on 102 databases supporting nearly **500 medical facilities**
- The data had to be normalized (computable) and available over **99 percent of the time** at healthcare sites worldwide
- Because physicians can't wait for computers to respond when providing care, most transactions had to **occur within 1 – 2 seconds**
- Other more complex system queries—sometimes traveling 12,000 miles to data repository—had to occur within 6 seconds

Our Challenge:
Implement EHR System While Continuing to Improve Support to the Military Health Mission

Operational Continuum
Military Medical Readiness
Sustaining Base Deployed

Train as we fight

Architecture of the Military EHR

Service Level Reporting
Medical Surveillance Data Repository
Defense Eligibility & Enrollment Center

AHLTA
CLINICAL DATA REPOSITORY

CPOE
Order Fulfillment

Generators (MTFs)

Service Members & Beneficiaries
Achievements of the Past Year

- AHLTA was in use at over half of 140 major healthcare facilities
- An increasing number of facilities were using AHLTA to electronically capture 100 percent of their outpatient encounters
- New EHR users were generating over 300,000 patient encounters a week using the new system

Where We Are Today*

- Worldwide deployment began in Jan 2004
- Currently operating at 81 of 139 Military Treatment Facilities
- Over 33,000 trained users to date
- Over 10 million encounters in clinical data repository
- 7.1 million patients with records online

* As of November 2005

Functionality of the Military EHR

Version in Use Today
- Outpatient encounter documentation
- Graphical support to computerized provider order entry
- Order entry to lab, rad, pharm, and pathology
- Alerts and reminders
- Drug interaction checks
- Medical problem list
- Autociting of relevant test or pharmacological data
- Exceptional security features
Functionality of the Military EHR

Future Releases
- **Block 1 Enhancements**
  - Enterprise-level population health reporting
  - Clinical practice guidelines
- **Block 2 Enhancements**
  - Interface with optical fabrication laboratories
  - Electronic dental record
- **Block 3 Enhancements**
  - Pharmacy capability
  - Lab and anatomic pathology
  - Radiology
  - Inpatient capability
  - Occupational health interface

A Longitudinal Health Record

- Pre-populated with **25 months** of clinical data
- Most commercial electronic health record implementations are *day forward* systems
- A substantial amount of data is immediately available to support clinical decision making

Pre-Populated Health History
Normalizes 102 Legacy Vocabularies

- **Current Status:** Each legacy site has distinct names for ancillary results
  - Example: serum cholesterol test as “CHOL” or “Total Cholesterol” or “Cholesterol”
- **EHR Approach:** Single-view of data for each patient
  - Results from each site for the same test (regardless of name) are mapped to a single concept in the central data repository
  - The EHR presents all results under a single, unifying name

Example of Synonym Problem

- Acute Sinusitis
- ACUTE SINUSITIS
- Acute sinusitis, NOS
- Sinusitis, acute
- Acute infection of nasal sinus, NOS
- Acute inflammation of nasal sinus, NOS
- C0149512 (UMLS)
- D2-01110 (SNOMED)

Supports a Structured Documentation Capability

- Enables symptom-based medical and bio-terror surveillance
- Improves population health
- Supports disease management
- Enhances force health protection
- Enables semantic interoperability
Example of Semantic Interoperability Challenge

COLD (NCID 68215)  A sensory perception:  
“I’m feeling cold”

COLD (NCID 1005480)  A pulmonary diagnosis:  
Chronic Obstructive Lung Disease

COLD (NCID 1005313)  An upper respiratory viral infection:  
“I have a cold”

The Military EHR understands the differences in these constructs and places this data in the correct context for providers.
Lessons Learned in Implementing a Global EHR
Col June Carraher

On the Local Level
Communicating the Big Ideas that Drive Successful Implementation

- Get Public Affairs involved
  - Using existing communications vehicles to reach out to providers and patients
- Send out updates as you go
  - Issue clinical champion notes hospital wide
- Develop mail groups
  - Communicate key messages to staff so they can help promote awareness throughout the hospital and among the patient community
- Communicate problems or issues to the program office when they cannot be resolved locally

Communicate Well and Often with Providers and Beneficiaries

- Communication is key to managing expectations
- The community hospital in Heidelberg, Germany, approached this challenge by communicating with hospital staff and patients
  - To ensure their awareness of the potential for reduced appointment availability
  - To enlist the help of the beneficiary population in minimizing the effect of fewer appointments on the hospital's ability to provide urgent and acute care
Communicate Well and Often with Providers and Beneficiaries

- Near term reduction in appointment demand was achieved by asking patient community to consider putting off routine annual physicals during initial EHR ramp up period
  - To communicate this message, the Heidelberg EHR implementation team worked closely with their Public Affairs Officer who helped them reach out to their target audiences through the base newspaper and in other forums
- Heidelberg’s outreach program was so effective that very few complaints were received about decreased appointment availability

Promoting Success Step by Step
Lessons Tied to Rollout Phases

Review of specific lessons that can be applied
  - Before implementation
  - During implementation
  - After implementation

Those Important First Steps

- Gaining user acceptance
  - Dealing with motivating and fear factors
  - Overcoming provider concerns
- Identifying clinical champions
Before Implementation
Gaining User Acceptance

- Even a superb EHR is in troubled waters without widespread user acceptance
- Successful adoption of the EHR begins long before the product's implementation
- Requires active engagement of practicing clinicians
- Demands strong informal leaders as clinical champions

What Motivates Providers?
What Concerns Providers?

Impacts on doctor and patient interactions
- Fear of patient reaction
- System reliability and stability
- Work flow changes
- Impact on productivity
- Impact on coding
- Work load accreditation
- Ensure interoperability with other key systems (coding, billing, and consult referral systems)
- Business process impact of transition to paperless record management

- The impact of using a computer in the exam room
  - There is now a third party participant in each patient visit – the computer
- The potential loss of control over where patient information is stored
  - System must have redundancy as well as demonstrated high reliability
Overcoming Provider Concerns

- At each phase, provide info and demo of EHR – target demo to audience’s specific concerns
- Emphasize goal is better patient care, and give real life examples
- Acknowledge EHR will change day-to-day operations, and solicit thoughts on best options
- Realistically identify learning curve, and time to return to baseline productivity

Overcoming Provider Concerns

- Help the practice define transition of record management strategy before training
- First plan how the practice will handle initial decrease in productivity
- Then actively market the strategy to the patient population, insurers, regional health offices, and colleagues who will be affected
- Adoption of EHR is facilitated by a flexible and evolving practice strategy

Identify Clinical Champions

Essential to EHR Success

- Eager and willing to commit time to the process
- Conduit for issue resolution and communication
- Enthusiastically looks for ways to get buy-in and downplay resistance to change
  - e.g., hosting demos or clinic activation meetings, and serving as the hospital representative for EHR meetings
Middle Management
Staying the Course in the Midst of Implementation

- Group must meet often to review successes and frustrations
  - It is OK to tweak processes
- Establish interim goals and rewards
- Reinforce expectation of 100% utilization
- Share individual successes
  - Talk up incidents in which the EHR improved the care of a patient

AD: After Deployment
Maintaining Post-Implementation Momentum

- Maintain periodic (less frequent) meetings
- Focus on monitoring desired outcomes
  - Return to baseline productivity
  - Increased collections due to better coding
  - Decreased hospitalization rate for asthmatics
  - Cost savings by avoidance of redundant tests or x-rays
  - Gains in patient satisfaction ratings
- Make use of EHR a condition of employment
- Ensure effective training is provided to new office staff members

The Military Health System
We Welcome Your Questions

- Q & A Period

- For more information, please visit the AHLTA exhibits in the consolidated Military Health System booth #8800 in the HIMSS demonstration area