The Military Electronic Health Record

Large-Scale Implementation Case Study

The Health Information Technology Summit

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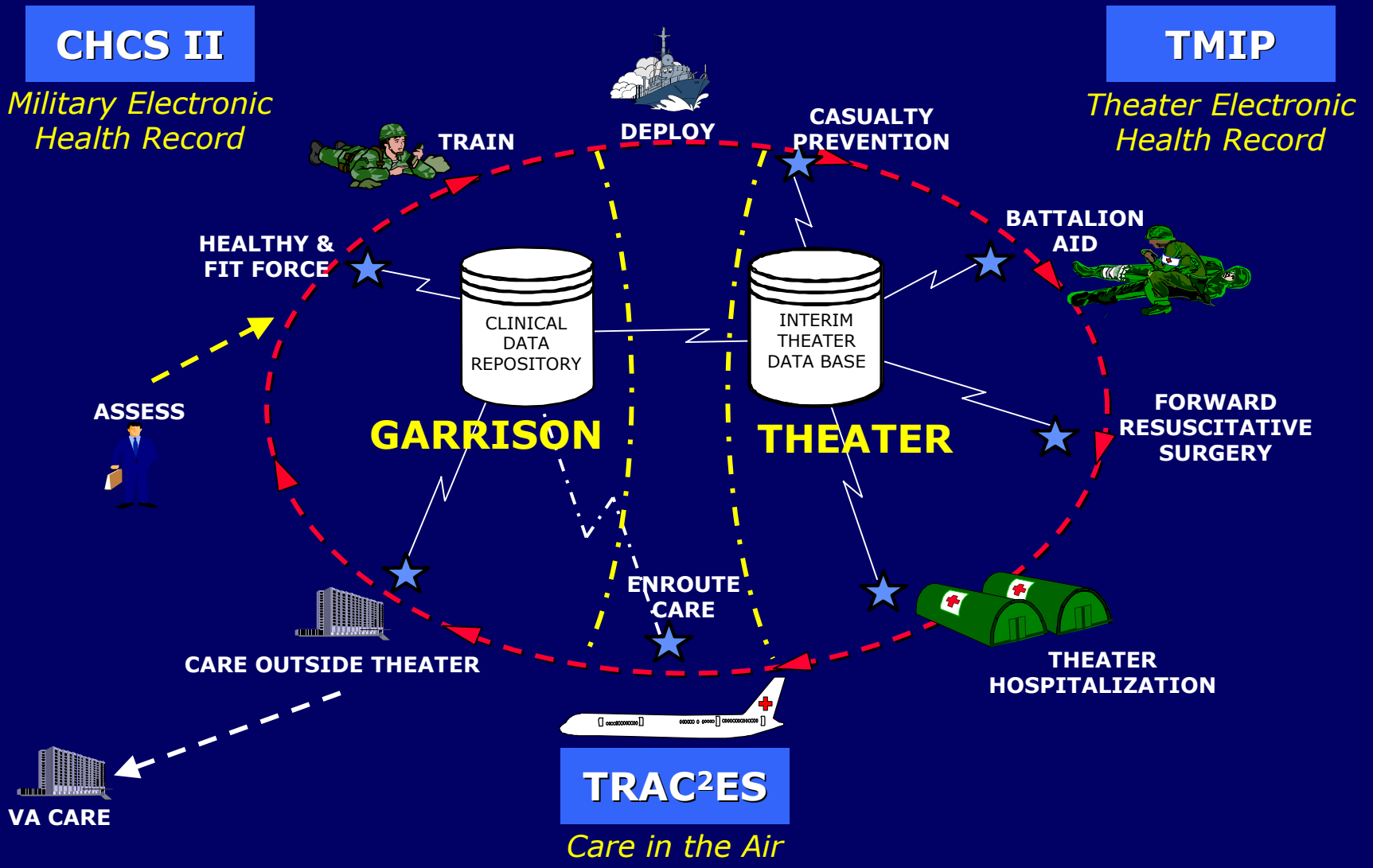
Integrating the Military Electronic Health Record

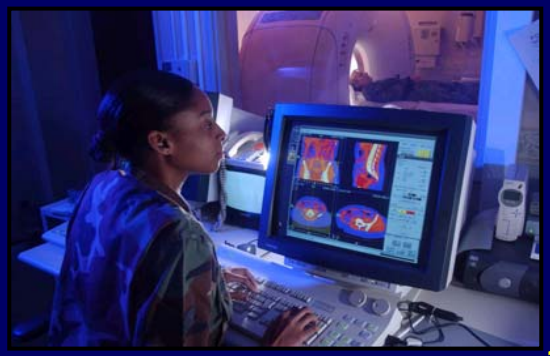


Who Are We?
Military Health System Statistics

- 8.9 million eligible beneficiaries
  - Active duty military
  - Family members (spouses & children)
  - Retirees
  - Other eligible populations
- 75 hospitals & medical centers
- 461 medical clinics
- 132,000 personnel
- 1.46 million outpatient visits/week
- 1.99 million prescriptions/week
- 2,013 births/week

What Do We Have in Place?
Composite Health Care System I (CHCS I)

- Full computerized provider order entry (CPOE) and results retrieval for medications, laboratory tests, and radiology procedures
- Also integrates appointing, coding, and other administrative functions
- Fully operational since 1993
- 102 host systems serving 500+ hospitals and medical clinics
- Institution-centric



What Are We Working on Now?
Composite Health Care System II (CHCS II)

- Enterprise-wide, scalable, patient-centric medical and dental information system
- Comprehensive electronic health record
- Secure, role-based access
- Structured documentation
- Global database
- Clinical functionality for Theater

The Military Electronic Health Record
Implementing IOM Recommendations

Easiest To Implement		*Harder To Implement*		*Most Difficult To Implement*
Problem Lists	Automated History & Physical	Ergonomic Presentation	Clinical Specialty Needs	Intelligent Support for Delivery of Care
		Multimedia/Image Data Storage	Confidentiality, Privacy, & Audit Trails	Clinical Problem Solving
Simultaneous User Views in the EHR	Multiple Formulary Lists			Clinical Reasoning & Rationale Documentation
		Clinical Data Dictionary	Clinical Data Repository	Longitudinal & Timely Linkages to Other Records
Continuous Authorized User Access	Point-of-Care Facility Input Mechanisms			Multiple PMS/EDI Financial Links
		Health Status & Functional Level Measurements	Links to Other Patient Records	Cost Measuring/ Quality Assurance
Access to Local & Remote Information	Icon-Generated Text	Multiple Controlled Vocabularies and Coding Structures		Direct Entry by Physicians

NOTE: Categories based on 1991 and 1997 IOM study and *Advance for Health Information Executives,* April 2002.

The Military Electronic Health Record
Deployment Lessons

- Pre-Deployment Planning
- Marketing
- Business Process Reengineering (BPR)
- Training
- Roll-Out
- Go Live
- Support

Pre-Deployment Planning

- Plan ahead!
- Perform site surveys that include the following:
  - Technical -- End-user device placement, physical plant changes, network and infrastructure
  - Ergonomic -- End-user device type, physical workflow
- Identify early adopters
- Discuss impact to productivity now

Marketing

- Identify and use clinical champions early and throughout the buildup and roll-out
- Emphasize marketing -- Bad information travels fast
- Keep stakeholders informed and up to date
- Manage rumors
- Discuss competing interests

Business Process Reengineering

- Implementation
  - Stage 1 -- Individual use
  - Stage 2 -- Identify and integrate handoffs
  - Stage 3 -- “Shakedown cruises”
- Optimization
  - Stage 4 -- Workload redistribution
  - Stage 5 -- Add telephone consults and ancillaries
  - Stage 6 -- Add wellness and reporting

Training

- Treat training like a development process
- Don’t underestimate the power of a strong training program for easing roll-out
- Consider a modular approach with multiple levels of training
- Evaluate team-based vs. role-based training
- Collect requirements, develop a plan, build curriculum, test the methodology, validate the process
- Start as soon as a fieldable version is ready because training is time consuming and laborious

Roll-Out

- Start slow and learn lessons before ramping up
  - Consider field tests to plan the roll-out
- Use clinical champions
  - Clinically-respected, early adopter (not the computer whiz)
- Keep information flowing
  - Technical and functional support available and visible on site
  - Frequent visits to the front lines to sense the atmosphere, assist users, and control rumors
- Consider incremental implementation but plan carefully

Go Live

- Maximum support (including emotional support) available on initial *go live*
- Expect the unexpected
- Rehearse to minimize bottlenecks
  - Be sure of handoffs and workflow on the new system
  - Walk through (not just talk through) complete process
- Understand the diffusion of technology curve and personalities involved
- On-site, implementation assistance for technical and functional
- "Leadership at the deckplates" -- Clinicians from Central Office should make on-site appearances on a regular basis

Support

- Plan for sustainment
- Continue training
  - New users
  - Advanced users
  - Super users
- Use buddy help to the maximum extent
- Make help readily available, especially in the first few months
- Make providers' ability to perform their jobs the top priority

Conclusion

- Understand needs and demands of your medical population
  - EHR will support the military's large and diverse population
- Look for ways to expand your existing capabilities
  - EHR is a quantum leap beyond the 10 year old MHS CPOE
- Work the project both top-down (executive buy-in) and bottom-up (support users) continuously
- Plan to accommodate growing knowledge as you progress (don't expect to know everything when you start)
- Human factors are the highest priority
- Technology should support change, not drive it