Using Enterprise Architecture To Improve Healthcare Delivery and Build Better Information Systems

Brief to NDIA
April 3rd, 2003
Agenda

- Overview of Enterprise Architecture (EA)
- MHS Enterprise Architecture
- Using EA to support Strategic and Capital Planning
- Linking MHS ES with the FMMP EA
- Using EA to build better IT Systems
  - Common Infrastructure Patterns
• This is not an IM/IT Talk
• This is about documenting how we do our business of monitoring, analyzing, managing and changing the delivery of healthcare without duplicative business processes … optimal efficiency and effectiveness
• You should think this is important (OMB does and funding will be determined by whether you have an architecture and your requirements align with it)
• By the way, it also helps you build better, faster and less costly IM/IT systems
The Burning Issue
Too Much Information!

“A weekday edition of the *New York Times* contains more information than the average person was likely to come across in a lifetime in seventeenth century England.”

The complexity of managing a large, geographically dispersed healthcare is beyond the capacity of the unassisted human brain.
How Many of You Could Answer the Following Questions?

• What are the roles and training requirements of various members of a PCM team?
• What is the end to end business process for enrolling a patient and what information systems support it?
• I am looking to optimize my Critical Care Product line. How can I easily find out if anyone else in Navy Medicine has experience in doing this?
• If you change a data element in CHCS or DOES, will it affect any other business processes or IM/IT systems?
Benefits of an Enterprise Architecture

• EA Business (Operational) Component: Critical
  ✓ Documents your organizational goals and business processes and aligns resources with them
  ✓ Serves as a framework for knowledge management

• EA IM/IT Components (System and Technical): Supportive
  ✓ Aligns IT systems with organizational goals
  ✓ Crucial to interoperability of systems
  ✓ Avoids duplication of functions in different systems
  ✓ Allows for development of Common Services
MHS Enterprise Architecture Strategy

Operational Architecture
The Business View
- Access to Care
- Provision of Health Services
- Managing the Business
- Population Health Management

Systems Architecture
- Infrastructure Services
- Data Repositories
- Applications
- Perimeter Security Mechanisms
- Transport

Technical Architecture
Joint Technical Architecture (JTA)
- XML
- ANSI X.12
- Health Level 7
MHS Enterprise Architecture Demo

http://www.tricare.osd.mil/architecture
MHS IM/IT Investment Portfolio Process Made Easier With an Enterprise Architecture

MHS Enterprise Architecture

-- C4ISR --

Program Executive Office, MHS IT
Execute approved IT program

MHS Information Management Proponent Committee (08/SES)
Ensure alignment with strategic objectives and approve portfolio

Program Objective Memorandum — Budget Estimate Submission — President’s Budget — Annual Execution

Functional Integration Work Group
(HA, Army, Navy, Air Force, TMA, JS Functional Experts)
Integrate and prioritize functional requirements
- Scoring Criteria (Value/Risk)
- Readiness
- Life Cycle Mgmt

MHS IM/IT Investment Portfolio

RM/CIO/OT Unified Review (06/GS-15)
Review and endorse requirements and recommend portfolio

CIOs Review
Army
Navy
Air Force
TMA

Optimization Team Review
Army
Navy
Air Force
TMA

Resource Managers Review
Army
Navy
Air Force
TMA

MHS Strategic Priorities

Program Objective Memorandum — Budget Estimate Submission — President’s Budget — Annual Execution
Welcome to the Virtual Optimized Clinic. We represent a revolution in healthcare.

The entire DoD Military Health System (MHS) has changed to preventionist health delivery: all three branches of the military are working together to focus, promote, and enact this change to Population Health Improvement (PHI) and to create one integrated health system for our fighting forces and their families.

The Military Health System Web Site is the Official Web Presence of the TRICARE Management Activity.
The contents of this page were updated on 11/09/2001 10:24:00.
MHS Architecture and DOD’s Financial Management Modernization Program (FMMP)

- FMMP is really DOD’s EA for the sustaining base
- MHS has been working closely with DOD to map our EA to the evolving DOD Enterprise Architecture
Manage Access to Health Care

HRM

Future Medical Logistics function

Health Service Profile

Health Service Profile Request

Health Service Materiel Reservation

LOG

Beneficiary

Beneficiary Correspondence Dialogue

Insurance Verification Dialogue

Dynamic Asset Management Visibility

Benefit Administrator (Third Party Provider)
Understanding the Strategic Value of Standards-Based Architecture and Platforms such as TRICARE Online
MHS Common Operating Environment Concept

**Infrastructure Strategy**
MHS Capabilities map-to one or more of several Infrastructure pattern types

**Quality Data**

**Infrastructure Pattern Types**
- Client Server
- Web based
- Decision Support
- MTF Hub

**Application Suites**
- Services
  - Central Program
  - MTF
  - MCSC
  - VA
  - Other

**Infrastructure Patterns (Platform Profiles) include:**

**Components**
- Server Hardware
- Operating System
- Database System
- Messaging Components
- Ports and Protocols
TRICARE Online - Secure Portal to MHS Resources and Services

- Managed Care Support Contractors
  - Registration
  - Network Providers
  - Referrals/Consults
  - Claims

- HealthGate Content Repository
  - Health Information
  - Drug Information
  - Drug-Drug Interaction Checker

- Composite Health Care System
  - Appointments
  - Pharmacy
  - Lab Data
  - Radiology Data
  - E-mail

- Defense Enrollment Eligibility Reporting System
  - Enrollment
  - Master Patient Index
  - Other Health Insurance

- Personal Health Journal
  - Accessible Health Journal
  - Health Risk Assessment
  - Disease Tracking Tools

- Internet & Defense Information Systems Network

- Welcome to TRICARE Online - Microsoft Internet Explorer

- TRICARE is the healthcare program for active duty and retired service personnel, their eligible family members and survivors. TRICARE combines both military and civilian services to deliver high-quality healthcare.

- TRICARE Online is brought to you by your local Medical Treatment Facility, its civilian Managed Care Partner, and the Department of Defense. These entities form the TRICARE Healthcare Team dedicated to providing you with the best care possible.

- TRICARE Online is currently in prototype testing at Camp Lejeune Naval Hospital, Cherry Point Naval Hospital, Okinawa Army Community Hospital, Fort Carson, and Malcolm Grow Medical Center.

- TRICARE Online is a prototype web site in its early stages of development. As we begin to use it, we expect problems or "bugs" to surface. We ask for your patience and understanding as you make use of the system. This is your opportunity to make a difference in the way the Military Health System takes care of its own. If you experience any problems while using this website, have any questions, or feel there is room that we can do better, please do not hesitate to call the TRICARE Management Activity Call Center at 1-888-DODENET. Agents are available from 7:30 am to 6:30 pm, Monday - Friday to assist you.
IT Benefits of Standards-Based Enterprise Architecture

- Any application wrote to standard specifications described in the Application Integration Guides can be easily integrated onto base platforms with no additional hardware and no new DITSCAP requirement
- Speed to market is greatly increased and costs are reduced
- Enterprise Wide Applications such as TOL’s Learning Management System can be leveraged for ALL web-based training platforms
- Applications can be displayed based on Roles (Segmentation possible by Service, specialty, etc.)