

2010 Military Health System Conference

Lessons Learned and Best Practices: Tri-Service Medical Efforts

Sharing Knowledge: Achieving Breakthrough Performance
LTC William E. Geesey & COL Claude Hines
January 25, 2010



**Medical Communications for Combat
Casualty Care (MC4)**

**Defense Health Information Management
System (DHIMS)**

Agenda



- Medical Communications for Combat Casualty Care (MC4)
 - MC4 background and purpose
 - System capabilities & benefits
 - Challenges & lessons learned
 - Way ahead
- Defense Health Information Management System (DHIMS)
 - DHIMS background and purpose
 - Way ahead
- Q&A

Medical Information Management During Persian Gulf War (1990-91)



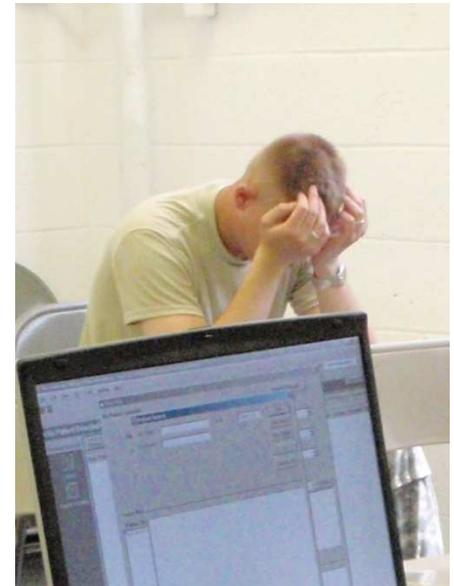
- No electronic medical record systems available
 - Fixed facilities: paper records
 - Tactical medical units: no documentation
- IM systems were available to fixed facilities; but,
 - Software did not address health care documentation
 - Software captured portions of health care (e.g., lab results)
 - often not included in patient's health care record
 - Facilities were independent and not networked
- IM systems were not available to tactical medical units
 - Laptop computers emerging at that time
 - Operating systems differed from main frames – software not compatible



Consequences of Lack of Health Care Documentation



- Gulf War Veteran's Illness
 - Could not do scientific studies to rule out/rule in vaccines/drugs as potential cause
 - Congressional testimony
- Less than optimal health care
 - Exploratory surgery
 - Repeated tests, procedures/vaccinations
- Difficulties getting benefits from Veterans Affairs
- Incomplete medical picture for tactical commanders
- Inefficient management of medical supplies



Why MC4 Exists...For the Soldier



1997

Special Report of the Presidential Advisory Committee on Gulf War Veterans' Illness, the President Directed:

"...Every Soldier, Sailor, Airman and Marine will have a comprehensive, life-long medical record of all illnesses and injuries they suffer, the care and inoculations they receive and their exposure to different hazards."



1997

TITLE 10; Section 1074f: Medical tracking system for members deployed overseas...

"The Secretary of Defense shall establish a system to assess the medical condition of members of the armed forces (including members of the reserve components) who are deployed..."



1999

MC4 PMO chartered to address Theater Medical Information Program (TMIP) U.S. Army Title 10 and emerging telemedicine requirements



2009

President Barack H. Obama

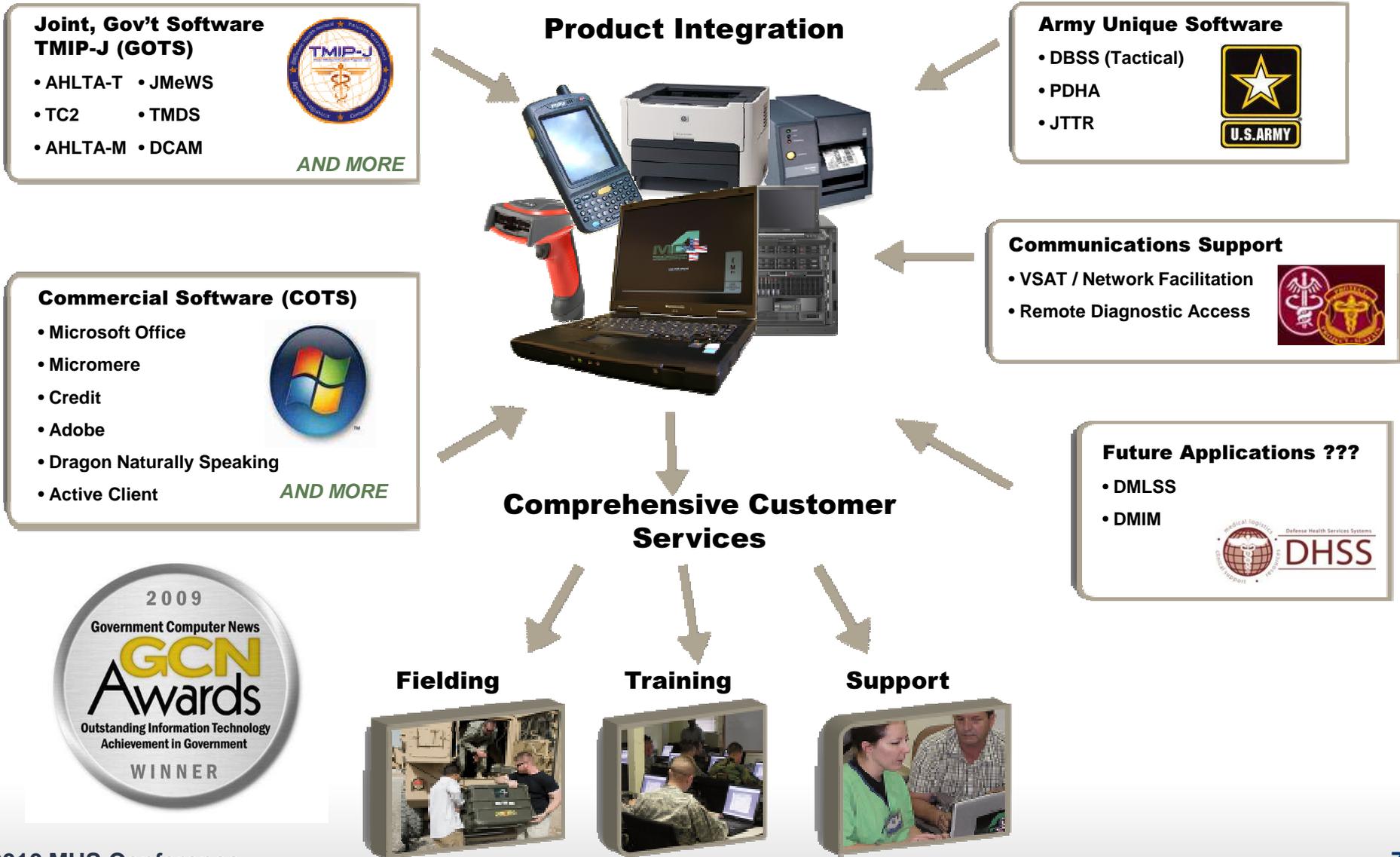
"To improve the quality of our health care while lowering its costs, we will make the immediate investments necessary to ensure that within five years, all of America's medical records are computerized. This will cut waste, eliminate red tape and reduce the need to repeat expensive medical tests." (January 2009)

MC4's Mission

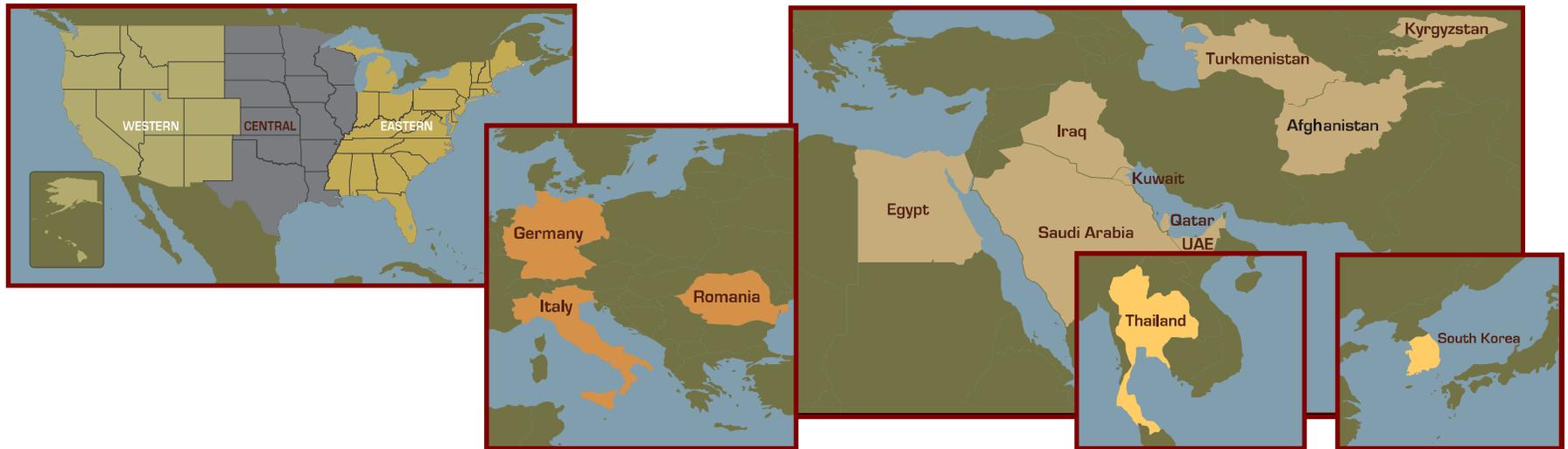


- Medical Communications for Combat Casualty Care (MC4) integrates, fields and supports a comprehensive medical information system, enabling lifelong electronic medical records, streamlined medical logistics and enhanced situational awareness for Army tactical forces

What MC4 Does...



MC4's Global Operations



- **Region Support Offices train and support deployable units**
 - CONUS - Ft. Bragg, Ft. Hood, Ft. Lewis
 - OCONUS - Germany & South Korea
 - Helpdesk for worldwide assistance (24/7)
 - 44,000 trained
 - 35,500 systems fielded to 2,400 units with medical personnel (Stryker Brigades, Army National Guard and Reserves, and all active divisional units)

- **MC4 Technical Support Teams (OIF/OEF) provide support for 750 units with medical personnel**
 - Army, Air Force, Navy & Special Forces users in 15 countries, including U.S.
 - Iraq
 - Kuwait
 - Afghanistan
 - Qatar
 - Saudi Arabia
 - Turkmenistan
 - Kyrgyzstan
 - UAE

MC4 Electronic Medical Record: Capabilities & Benefits



Capabilities:

- Point of injury, inpatient and outpatient medical recording, post-deployment health assessments
- Laboratory, radiology & pharmacy notes
- Patient tracking and reporting, retrieval of previous records
- Digital medical references
- Allergy and drug interaction tools and warnings
- Store-and-forward capability

Benefits to Medical Staff:

- Quick, accurate access to patient histories and forward casualty resuscitation information
 - Avoidance of duplicate tests
 - Less redundant procedures/vaccinations
 - No exploratory surgery
- Automated process for patient tracking and reporting

Impact on Service members:

- Secure, accessible, lifelong medical history
- Improved continuity of care/**better experience of care**
- Easier access to Veterans Administration medical benefits
- Peace of mind



MC4 Medical Logistics: Capabilities & Benefits



Capabilities:

- Automates the maintenance and ordering of class VIII (medical) supplies at lower levels of care
- Access to product quality control alerts
- Interfaces with current DoD medical logistics systems (DMLSS, TAMMIS & TEWLS)
- Store-and-forward capability



Benefits to Deployed Medical Unit:

- Secure, centralized means of ordering medical supplies
- Logisticians and non-logisticians can efficiently and electronically exchange, catalog, order and status information with their supply activity
- Digitally process follow-ups, submit cancellations, post receipts, set operating stock levels, reorder points and track on-hand balances
- Reduced costs, saves time from duplicate orders and misplaced supplies



Impact on Service members:

- Medical supplies readily available for treatment

MC4 Medical Surveillance: Capabilities & Benefits



Capabilities:

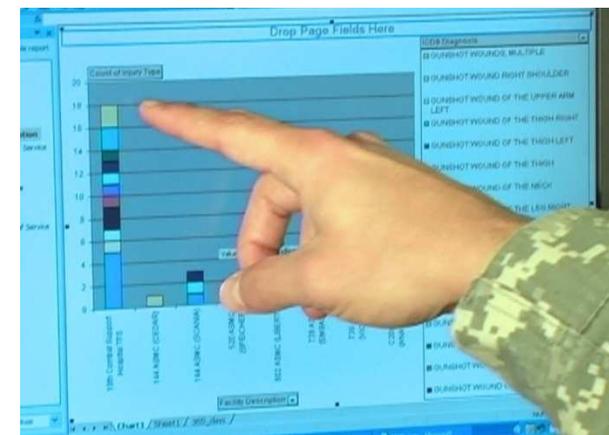
- View roll-up data and identify trends on **population health**
- Reallocate human and material resources based on needs and requirements in reports, **increase readiness**
- Use geographic data to determine if locations are the source of illnesses or injuries

Benefits to Combatant Commanders:

- Provides medical situational awareness, medical surveillance and force health protection decision support
- Improved data mining leads to new protective equipment and medical procedures developed faster
- Trend analysis helps improve medical care at the point of injury and in treatment facilities

Impact on Service members:

- Better tactical and medical decisions impact Service members' mission and health



MC4 Challenges



- Commercial off-the-shelf, Government off-the-shelf, Army-unique and future software applications working together
- Replicating battlefield conditions in a test environment
- Theater and garrison communication infrastructures
- Hardware durability and sustainability
- User, command and technical support knowledge management
- Training mission a moving target (PROFIS fillers, Reserves, 90-day rotators)
- Managing business practice and technological change in a volatile environment



MC4 Lessons Learned



- War fighter needs are ever-changing
- No one system works for everyone
- Train at every level and phase
- Invest in comprehensive, experienced technical support
- Change to EMR requires policies, command emphasis, best business practices and Standard Operating Procedures
- Remain flexible, adaptable and communicate in all directions



MC4 Way Ahead



- Enhance customer support
 - Improve system application training
 - Strengthen system support
 - Facilitate best practices & knowledge management
- Manage system changes dynamically
 - Rapidly implement new technologies (virtualization, thin clients, remote maintenance, mobile hardware, wireless)
 - Implement CMMI & LSS
- Broaden use of MC4 system
 - Involve MC4 in readiness exercises
 - Include MC4 in Army schools
 - Diversify system responsibilities



More Information on the Web



Public Web site
www.mc4.army.mil
 MC4 Program Mission Overview
 News & Background Information
 Photos & Videos



User's Monthly Newsletter –
The Gateway
www.mc4.army.mil/mc4newsletter
 System Updates
 Unit & User Stories from the Field
 System Tips & FAQs



User's Web site – MC4 Helpdesk
www.mc4.army.mil/help
 Tips & software downloads
 Get MC4 training and support
 Technical information
 Give MC4 feedback

Battlefield EMR Video



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Defense Health Information Management
System (DHIMS)

DHIMS in the Department of Defense (DoD)



Department of Defense



Military Health System

Joint Medical Information Systems Office of the Chief Information Officer

**Defense Health
Support System**

**Defense Health
Information
Management System**

**Tri-Service Infrastructure
Management
Program Office**



DHIMS Program Office

- Develops clinical information management applications for the Sustaining Base and extends those capabilities to the Theater of Operations
- Provides comprehensive health information technology solutions that seamlessly captures, manages and shares health care data for the U.S. Military's Electronic Health Record (EHR)

“To provide a world class health information management system that seamlessly captures, manages and shares health information in support of the military's Electronic Health Record for our Service Members, their families, Combatant Commands, and the user community” – mission



Program Office Diversity of Skills

- **Multi-disciplinary dedicated professionals** (Military, Public Health Service, Government Civilians, and Contractors)

CLINICAL

- Physician
- Physician Assistant
- Nurses
- Dentist
- Dental Assistant
- Physical Therapist
- Pharmacist
- Lab Officer
- Dietitian
- Optometrist
- Social Worker

ADMINISTRATIVE

- Medical Logistician
- Health Service Maintenance Technician
- Healthcare Administrator
- Finance/Contracting
- Strategic Communications

TECHNICAL

- Medical Information Systems Officer
- Engineers
- Information Assurance
- Risk Management
- Quality Assurance
- Configuration Management
- Architecture
- Testers

- Acquisition trained staff: PMP, ACQ Level I-III, CPHIMS

DHIMS Information Management/Information Technology (IM/IT) Areas of Responsibility



- **Ancillaries**
 - Laboratory, Radiology, Pharmacy
- **Blood Management**
- **Case Management**
- **Clinical Decision Support**
- **Consults/Referral Management**
- **Dental**
- **DoD/VA Data Sharing**
- **Health Surveillance**
- **Imaging**
- **Inpatient**
- **Longitudinal Health Record**
- **Medical Command and Control**
- **Medical Planning**
- **Medical Readiness**
- **MEDLOG Support**
- **Order Entry/Results Retrieval**
- **Outpatient**
- **Patient Administration**
- **Patient Tracking**
- **Personal Health Record**
- **Population Health**
- **Preventive Health**
- **Spectacle Requisition**
- **Tele-Health**
- **Theater Occupational/Environmental/Radiological Health**
- **Trauma Registry Documentation**
- **Traumatic Brain Injury/Behavioral Health (TBI/BH)**
- **Utilization Management**
- **Veterinary Medicine**
- **Workload Accounting**

Service Member Health Care Continuum from Recruitment to Transition to Veteran Care



Recruitment



Accession/Training



Routine Care



Electronic Health Record

Personal Health Management

Transition & Benefits Assessment



**Readiness/
Pre-Deployment**



**Care at home/
Post-deployment**



Care in Transit

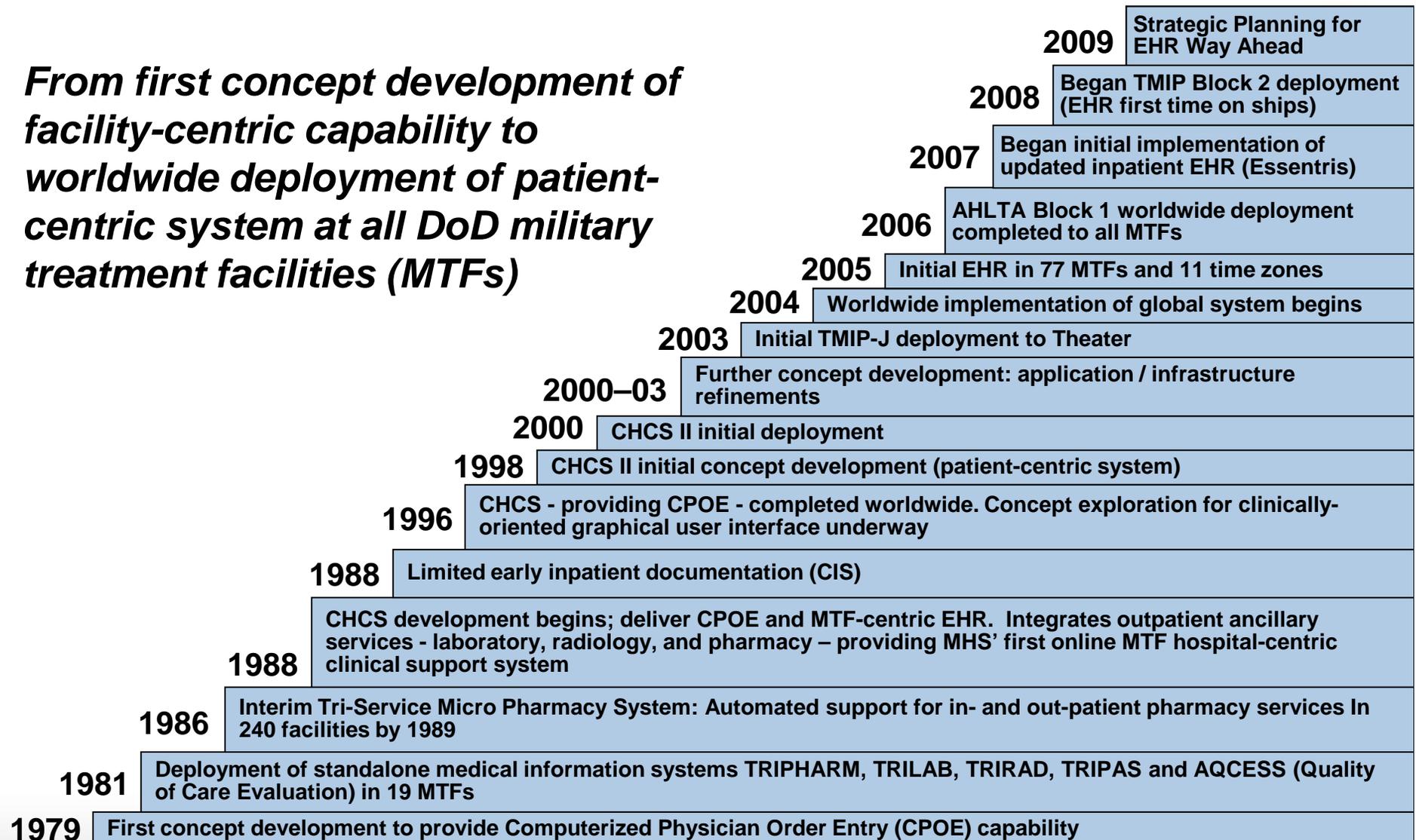


Deployed/Theater Care

Evolution of DoD's Electronic Health Record



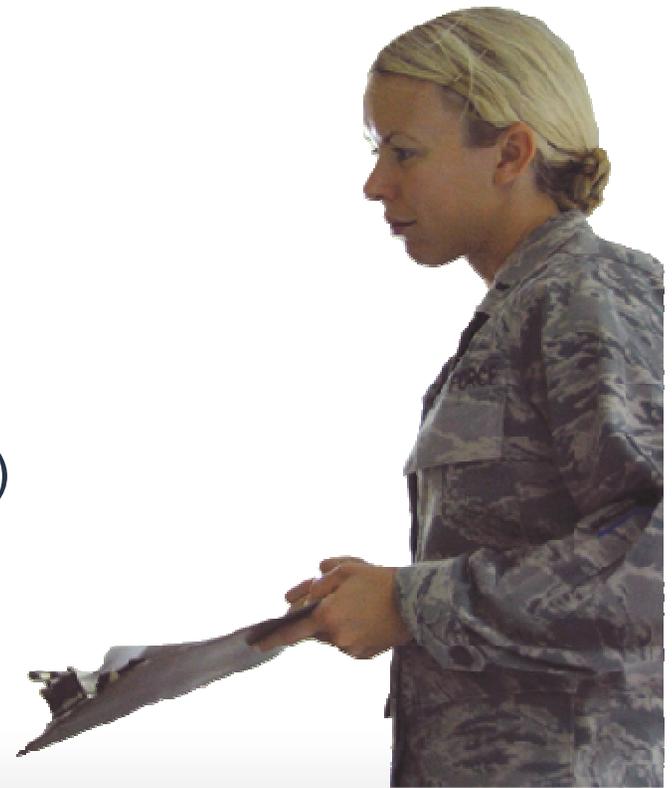
From first concept development of facility-centric capability to worldwide deployment of patient-centric system at all DoD military treatment facilities (MTFs)



DoD's Health Care Information Support for the Warfighter Mission



- Medical Situation Awareness for Command and Control
- Force Health Protection
- Medical Readiness
- **Transient Patient Population**
- **Transient Healthcare Team**
- Austere Environments
 - Theater Operations
 - Shipboard Operations
 - Medical/Aeromedical Evacuation
- Security Requirements
 - Secret Internet Protocol Router (SIPRNet)
 - DoD Information Assurance Posture
- DoD Acquisition Process
 - Interdependencies with other departmental programs





DoD EHR Family of Systems: Today

- **AHLTA-Garrison Outpatient Documentation**
 - Covers every time zone
 - 77,000+ active users
 - 110,000+ end user devices
 - 148,000+ new encounters daily
 - 9.5 million+ beneficiaries with clinical data
 - 50+ Terabytes (mostly non-image)
 - White House Medical Unit
- **Essentris® Inpatient Documentation**
 - 29 Sites
 - 62% MHS Inpatient Beds
- **AHLTA-Theater (As of 30 Dec 2009)**
 - 15 Theater Hospitals
 - 262 Forward Resuscitative sites
 - 12 U.S. Naval Ships
 - 8.28 million orders of ancillary services (laboratory, radiology, pharmacy)
 - 3.08 million outpatient encounters captured in AHLTA-Theater

Supporting transient patient populations and transient health care teams



AHLTA 3.3 Highlights

- **OB Summary** module providing relevant current and past pregnancy information
- **Pediatric growth charts**
- **Drawing tool** capability (e.g., ophthalmology and dermatology)
- **Clinical practice guidelines**
- Ability to **digitally capture patient signatures**
- **Health history** modules always present for viewing
- Improved **telephone consults** module improving workflow
- **Streamlined alerts and notifications**
- Improved **coding support**
- Improved management of default **templates and problem lists**
- Availability of **Post-Deployment Health Reassessment data**
- **Improved transition time** between encounter sub-modules

Essentris® Inpatient Documentation



- Supports **Inpatient and Emergency Department documentation**
- Deployed at MHS sites
 - In FY2011, Essentris will cover more than 90% of inpatient beds
- Information is shared with the VA
- Integrates with medical equipment (e.g., fetal monitors, physiological monitors)





AHLTA-Theater (Block 2 Release 1)

- **Extends the sustaining-base electronic medical record (AHLTA) capability, look and feel to the Theater of Operations**
 - Outpatient/Inpatient encounter documentation
 - Point of injury, Theater hospital, shipboard
 - Can work in a low/no communication environments (store and forward)
 - Interfaces with SAMS, TC2 and AHLTA-Mobile
 - Bed and Order Management
 - Theater Admin/Theater Security (create clinics and manage users)
 - Able to import patient demographic data from Authoritative Data Source
 - Drug-Drug/Drug-Allergy interaction screening
 - Alternate Input Method



White House Medical Unit (WHMU)

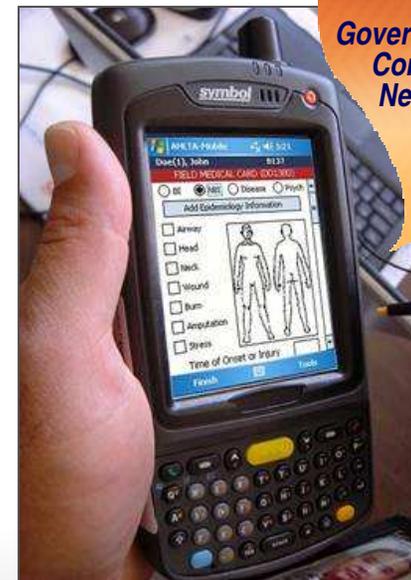
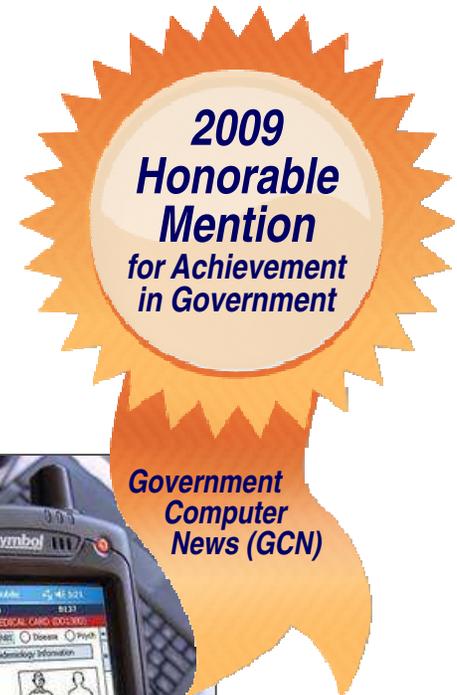


- WHMU serves the President, Vice President, their families and provides emergency coverage to White House visitors and guests
- Providers use **AHLTA-Theater (virtualized) and Theater Medical Data Store (TMDS)**
- Access **AHLTA-Garrison and the Composite Health Care System (CHCS)** through a remote connection with the National Naval Medical Center (NNMC), Bethesda, Md.
 - CHCS enables DoD providers to electronically perform patient appointment processes and scheduling, order laboratory tests, retrieve test results, authorize radiology procedures and prescribe medications
- DHIMS continues to provide training and on-site support



AHLTA-Mobile (Block 2 Release 1)

- DoD's enterprise-wide **first responder tool** intended to support medical documentation at point of injury
 - Mobile handheld platform
 - Point of injury documentation
 - Automated medical coding
 - Medical reference
 - Clinical decision support
 - Feeds AHLTA-Theater
 - Enhanced data mapping and data availability in AHLTA-Theater



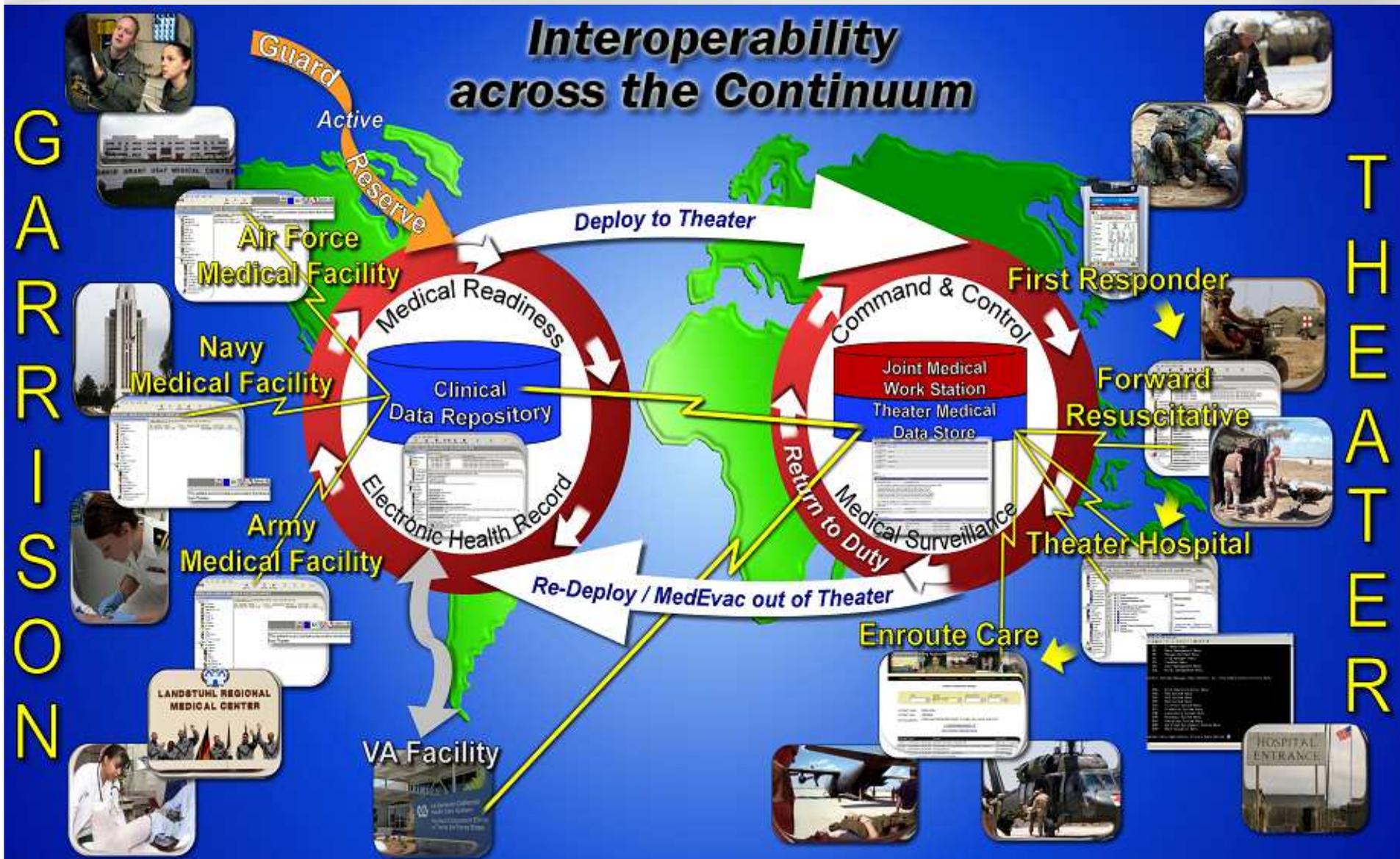
Joint Task Force – Bravo, Soto Cano Air Base, Honduras



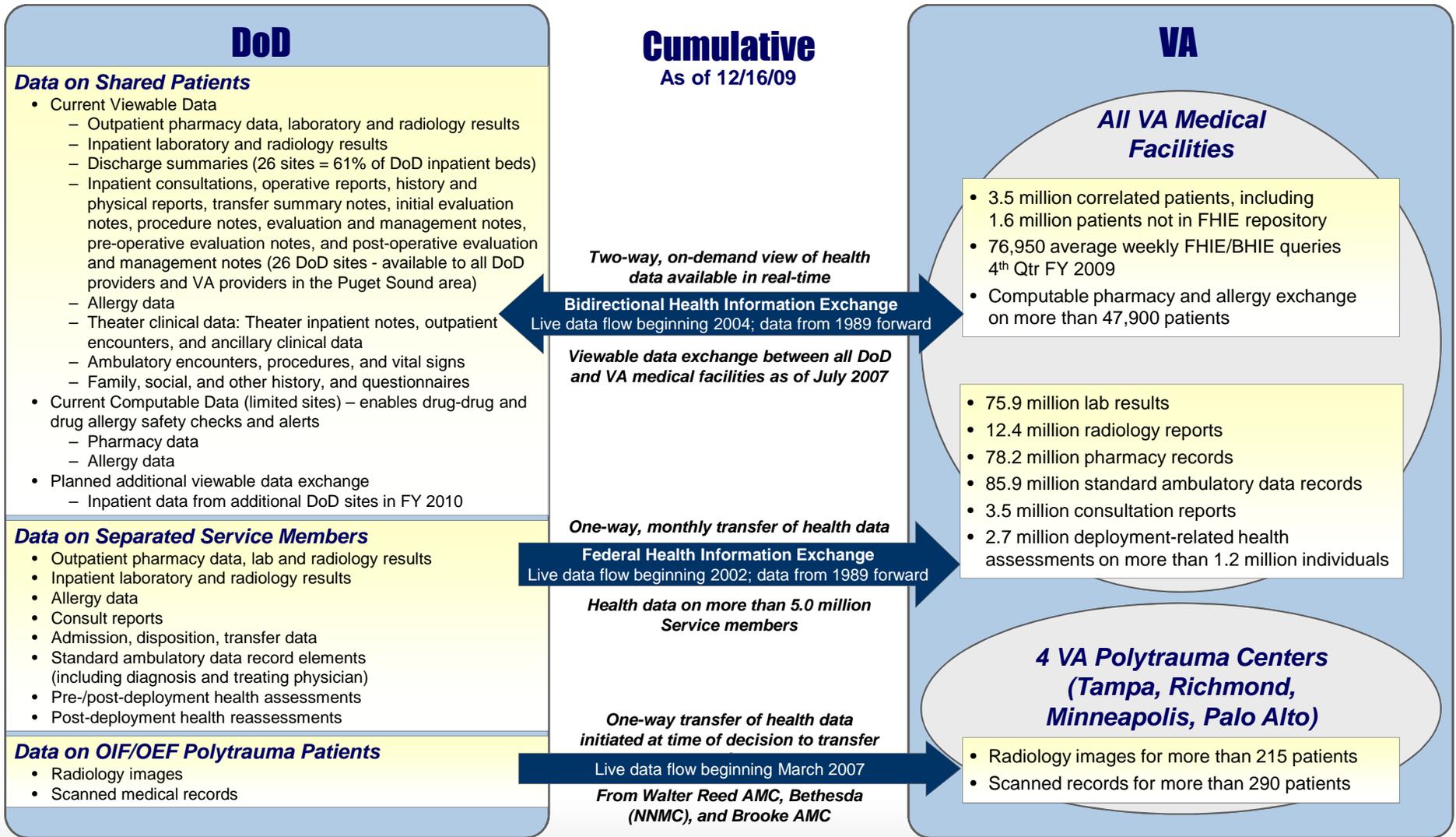
- DHIMS team deployed **TMIP Block 2 Release 1 (B2R1)** software and hardware to JTF-Bravo at request of USSOUTHCOM/SG
 - Implemented electronic medical record capability
- Week 1 - Set up, configuration, on-site preparation and “one on one training”
- Week 2 - **Went live 27 April 2009**
 - Provided “over the shoulder” training
- Possible transition to Army (MC4) for future sustainment
- Successful implementation
 - 1,026 encounters to date



Continuum of Care



Data Sharing -- Health



What's coming in 2010??



DoD Electronic Health Record (EHR) Improvements





What's Coming in 2010 (cont'd)

- **AHLTA 3.3 Service Pack 1** – provides more than 200 user requested fixes including enhanced printing, web enabled modules and initial medication reconciliation capabilities

The screenshot displays the AHLTA 3.3 Service Pack 1 Medication Reconciliation Worksheet interface. The main window is titled "Med Recon Print" and shows patient information: BORST, SARAH ANN, Age: yo, Date: 27 Aug 2008 12:44. The worksheet asks "Are you still taking these medications?" and lists two medications: Ibuprofen (Motrin Eq.) Tablet 600 mg Oral PRN #30 RF1 and Aspirin (ZORprin Eq.) Tablet Controlled/Sustained Release 800mg Oral TAKE ONE TABLET TWICE A DAY. Each medication entry includes fields for "Still Taking As Prescribed", "Not Taking", and "Taking, But Not As Prescribed", along with a "Comments" field. A section at the bottom asks "Please list any other medications you are taking, including Over The Counter medications & herbals (include Dosage)". A secondary window titled "Medication Worksheet View" is also visible, showing a list of medications with instructions like "Please Pick-Up these Prescriptions" and "Please Continue These Medications".



What's Coming in 2010 (cont'd)

- **AHLTA-Theater Service Pack 2** – addresses a number of Service requested fixes, improves performance, reliability and system administration
- **AHLTA Forms** – provides IBM workplace forms capabilities to AHLTA to include Service specific forms (e.g., Navy Individual Medical Readiness (IMR), Patient Movement Request (PMR))



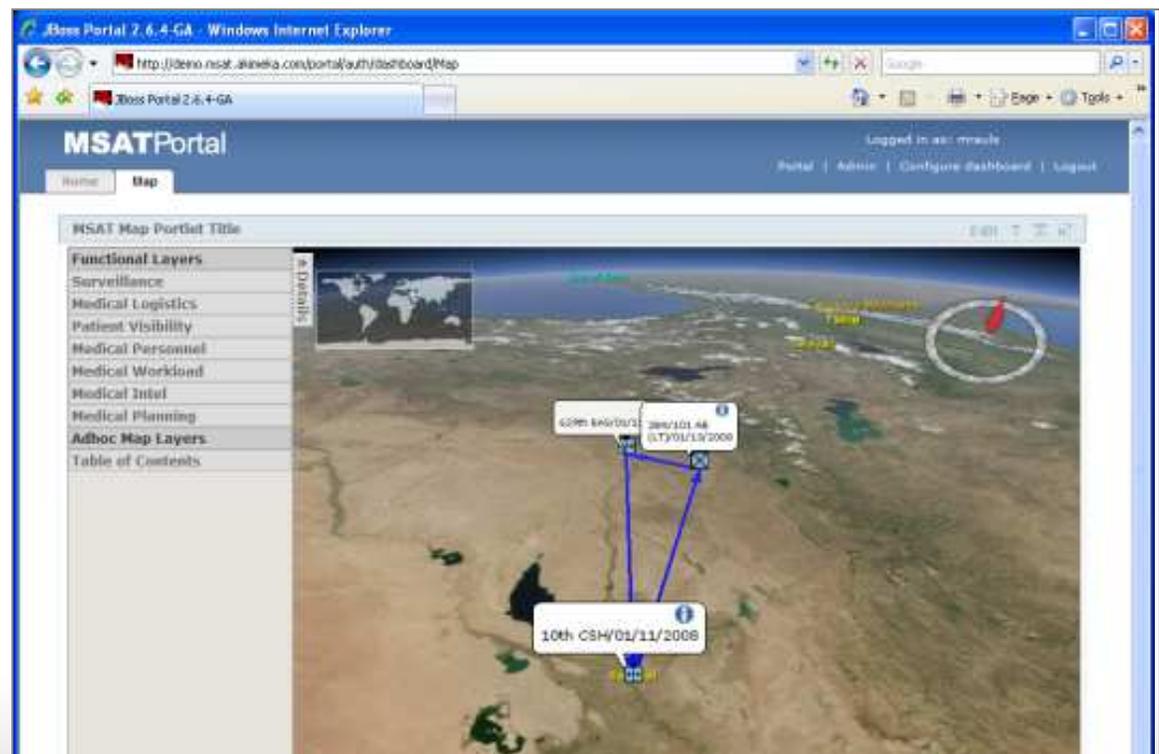
What's Coming in 2010 (cont'd)

- **Essentris Expansion** – expands enterprise deployment of the MHS Inpatient documentation system with Emergency Department capabilities and data sharing with the VA
- **TMOP/CMOP interface** - supports the transfer of prescription refill information from CHCS military treatment facilities (MTFs) to either the Tricare or VA Mail Order Pharmacy program
- **Joint Medical Analysis Tool (JMAT) 2.0** – modernizes and web enables medical planning which supports medical requirement estimation, scenario development, course of action analysis, risk assessment and collaborative planning



What's Coming in 2010 (cont'd)

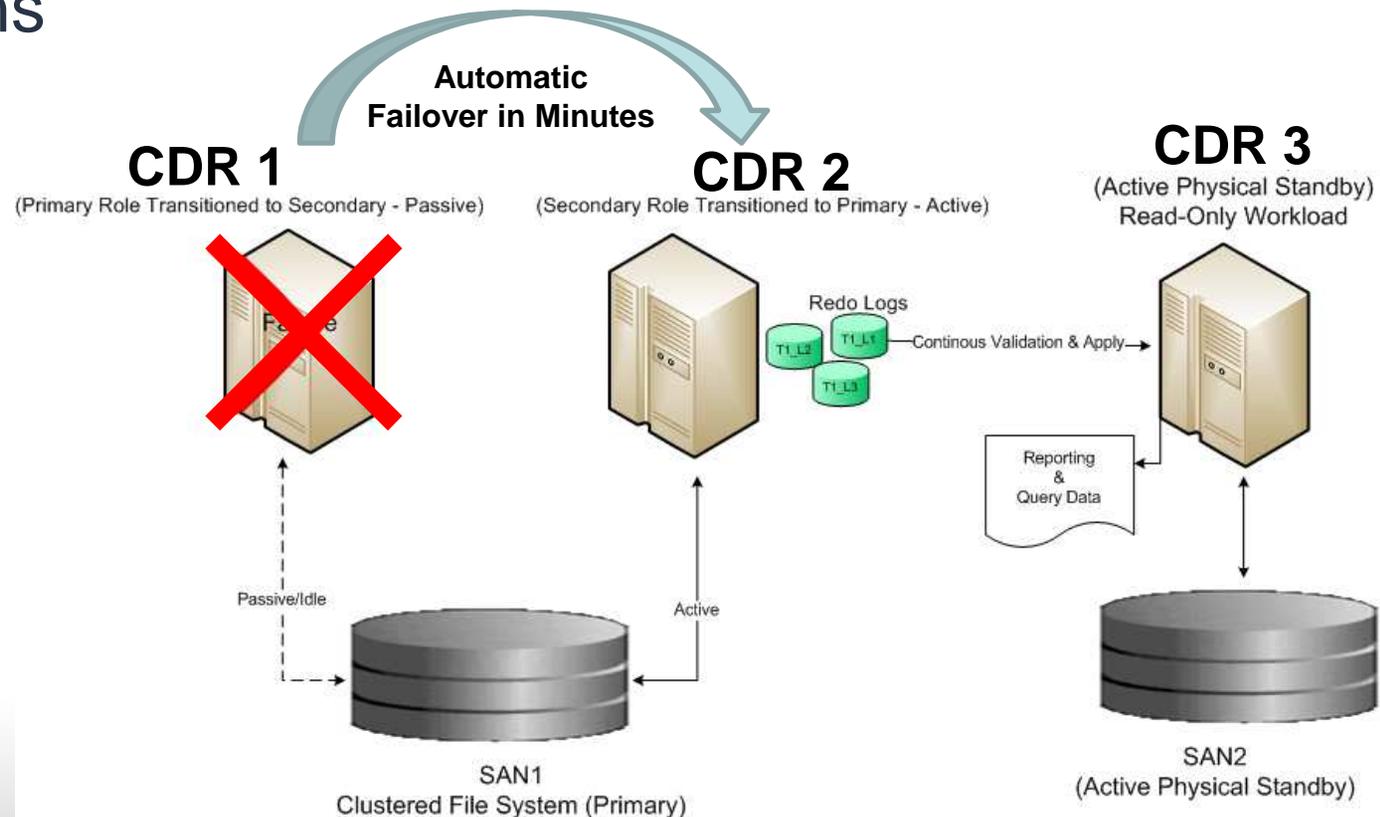
- **Medical Situational Awareness in the Theater (MSAT)** – provides COCOM and Joint Task Force (JTF) Surgeons and their staffs actionable knowledge and enhanced medical situational awareness for critical decision making





What's Coming in 2010 (cont'd)

- **CDR Stabilization** – improves the back end systems to bring greater reliability and accessibility to the information within the CDR. A major feature is hot failover for AHLTA which provides better continuity of operations





What's Coming in 2010 (cont'd)

- Neurocognitive Assessment Tool - NCAT provides means to test, document, monitor and report on traumatic brain injury

NCAT Performance Report			Test Date: August 04, 2009 2:53 PM								
ID: *****2222 Name: SAM EDWARD SAMUELS Rank: Service: OTHER DOD PERSONNEL Status: DEFENSE CONTRACTOR			CLINICAL POST-INJURY Setting: GARRISON								
Age: 40 Gender: M Session: 3			SUMMARY PERFORMANCE INDICATOR Source: Comparison Group 								
NCAT <small>Neurocognitive Assessment Tool For Clinical Use (NCA-FCU)</small>			(AVERAGE OR ABOVE) (BELOW AVERAGE) (CLEARLY BELOW)								
DISCLAIMER The information provided in this report does not represent medical advice, diagnosis, or a prescription for treatment. Providers should use these results in conjunction with a complete medical examination.*											
HISTORY <table border="0"> <tr> <td>Injury cause(s):</td> <td>Resulting in:</td> <td>Symptoms Right after Injury: Headaches</td> </tr> <tr> <td>Fight</td> <td>Dazed, confused, saw stars Bleeding from the ears</td> <td>Symptoms Now While Resting: none recorded. Symptoms Now after Exertion: none recorded.</td> </tr> </table>						Injury cause(s):	Resulting in:	Symptoms Right after Injury: Headaches	Fight	Dazed, confused, saw stars Bleeding from the ears	Symptoms Now While Resting: none recorded. Symptoms Now after Exertion: none recorded.
Injury cause(s):	Resulting in:	Symptoms Right after Injury: Headaches									
Fight	Dazed, confused, saw stars Bleeding from the ears	Symptoms Now While Resting: none recorded. Symptoms Now after Exertion: none recorded.									
PROVIDER OBSERVATIONS MACE: Interval between current and previous injury:											
PERFORMANCE AT A GLANCE											
			Comparison Group: Military: For 1 Dragg Both Sexes All Ages								
Comparison to BASELINE	SCALE (DOMAIN)		AVERAGE OR ABOVE	BELOW AVERAGE	CLEARLY BELOW						
[?]	Simple Reaction Time (REACTION TIME)	[?]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						
[?]	Simple Reaction Time (R) (REACTION TIME)	[?]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						
[?]	Procedural Reaction Time (PROCESSING SPEED)	[?]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						
[?]	Code Substitution - Learning (LEARNING)	[?]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						
[?]	Code Substitution - Delayed (DELAYED MEMORY)	[?]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						
[?]	Mathematical Processing (WORKING MEMORY)	[?]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						
[?]	Matching to Sample (SPATIAL MEMORY)	[?]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						
			SLEEP (1-7) Score: 7 - Very sleepy and cannot stay awake much longer.								
			MOOD (0-100) 69 HAPPINESS 47 VIGOR 50 FATIGUE 47 RESTLESSNESS 67 ANXIETY 56 DEPRESSION 58 ANGER								
REFERENCE Category lower limits for Below Average (9th percentile, 80.5 standard score) and Clearly Below Average (2nd percentile, 70 standard score) are based on Hannay, H. J., & Lezak, M. D. (2004). The neuropsychological examination: Interpretation. In M. D. Lezak, D. B. Howieson, & D. W. Loring (Eds.), <i>Neuropsychological Assessment</i> (pp. 133-156). New York: Oxford University Press.											



What's Coming in 2010 (cont'd)

TBI Tracking in TMDS

TMDS (PREPROD) | View TBI Assessments - Windows Internet Explorer

https://tmds-preprod.fhpr.osd.mil/tmds/patientTbiUpdate.do

File Edit View Favorites Tools Help

TMDS (PREPROD) | View TBI Assessments

Male 11/11/1988 21 USAF SSGT

TBI Assessments

Expand All

MACE (1) Create

	Date	Note	Reporting Facility	Attachments	Author
Edit	01/23/2010 0001 hrs	MACE score: 9 Referral: Yes Referral Location: WRAMC Note Title: MACE Note: Suffered IED Blast 2 days ago	332 EMDG-BALAD (JPTA_IRA1)	0 attachment(s)	OT NICK ZITO

ANAM (1) Create

	Date	Note	Reporting Facility	Attachments	Author
Edit	01/23/2010 0001 hrs	Baseline: Unknown Referral: Yes Referral Location: BAMC Note Title: ANAM Note: IED BLAST 2 DAYS AGO	332 EMDG-BALAD (JPTA_IRA1)	0 attachment(s)	OT NICK ZITO

Other (1) Create

	Date	Note	Reporting Facility	Attachments	Author
Edit	01/23/2010 0001 hrs	Title: BLAST EVAL Referral: Yes Referral Location: NNMC BETHESDA Note: IED BLAST 3 DAYS AGO	332 EMDG-BALAD (JPTA_IRA1)	0 attachment(s)	OT NICK ZITO

MTBI Medical Event History

No MTBI medical event history for patient ZZZ, DALE

start TMDS (PREPROD) | Vi... Inbox - Microsoft Out... Screenshot - Messag... RE: Screenshot - Mes... Microsoft PowerPoint ... Internet 100% 5:11 PM



What's Coming in 2010 (cont'd)

- **Health Artifact and Image Management Solution (HAIMS)** – provides global visibility of PACS images and scanned or attached artifacts

The screenshot displays the HAIMS web interface on the left and the HAIMS Medical Image Viewer (hMIV) on the right. The web interface shows a search results table for patient BROWN, PATIENT. The table includes columns for Select, Availability, Type, Date, Title, Versions, Format, Description, Modality, Confidentiality, and Practice Setting. The hMIV displays two medical images: a chest X-ray on the left and a CT scan on the right. The hMIV interface includes a toolbar with various tools such as Home, Annotate, Cine, View, Report, Reload, Slices, Panning, Magnifier, WinLevel, Zooming, Invert, Rotate, Flip, and Header.

Select	Availability	Type	Date	Title	Versions	Format	Description	Modality	Confidentiality	Practice Setting
<input type="checkbox"/>	✓	Image	10 Jul 2	Bilate...						Outpatient Plastico...
<input type="checkbox"/>	✓	Image	04 Jul 2	Varic...						Outpatient Plastico...
<input type="checkbox"/>	✓	Image	28 Jun 2	Slice...						Outpatient Plastico...
<input type="checkbox"/>	✓	Enovu...	21 Jun 2	Diabe...					Sensitive	outpatient practice...
<input type="checkbox"/>	✓	Enovu...	15 Jun 2	Eval...						Outpatient Medica...
<input type="checkbox"/>	✓	Enovu...	28 May 2	Prop...						Outpatient Medica...
<input type="checkbox"/>	✓	Enovu...	25 May 2	Eval...					Sensitive	cardiology clinic
<input type="checkbox"/>	✓	Image	18 May 2	Cardi...						cardiology clinic
<input type="checkbox"/>	✓	Image	09 May 2	EKG						
<input type="checkbox"/>	✓	Enovu...	02 May 2	Eval...						emergency depart...
<input type="checkbox"/>	✓	Enovu...	01 May 2	ER V...						emergency depart...
<input type="checkbox"/>	✓	Summ...	28 Apr 2	DIC S...						
<input type="checkbox"/>	✓	Proce...	21 Apr 2	Anthro...					Sensitive	24-Hour Observati...
<input type="checkbox"/>	✓	Medic...	05 Dec 2	Dent...						outpatient dental c...
<input type="checkbox"/>	✓	Image	31 Oct 2	Basal...					Sensitive	dermatology clinic



What's Coming in 2010 (cont'd)

- **Clinical Case Management and Disability Evaluation System** – provides automated tools to support documentation, linking, monitoring, and advocating for Service Members and their families helping case managers better coordinate multiple services in a therapeutic manner across the continuum of care, disability evaluation process and benefits assessment
- **Universal Immunization Tracking System** – consolidates Service immunization systems into a single system within the clinical workflow with reporting to Service readiness systems



What's Coming in 2010 (cont'd)

- **Secure Behavioral Health** – provides secure group and individual behavioral health documentation within the AHLTA workflow

The screenshot displays the AHLTA web interface within a VMware Player. The browser address bar shows 'SHEPSIX.ONE: AHLTA (Privacy Act of 1974/FOUO) ***Failover Mode - Enterprise Data Not Available***'. The patient information at the top reads 'DOE, JOHN 20/899990002 21yo MALE DOB: 18 Sep 1988'. The left sidebar contains a 'Folder List' with categories like Desktop, Appointments, Search, List Management, CHCS-I, EWSR, Web Browser, Co-signs, Tasking, Template Management, SMITH, JAMES H, Demographics, Health History, Allergy, Lab, Meds, Radiology, Problems, Immunizations, MODS/MEDPROS, and BH NOTE. The main content area is titled 'DOE, JOHN - BH I' and includes a header with '20/899990002 21yo M DOB: 18 Sep 1988' and navigation links for 'BH Notes Log Off', 'Provider Inbox', and 'Change Patient Context'. Below the header are tabs for 'Notes', 'Alerts', 'Assessment Metrics', 'Treatment Plans', and 'Patient Summary'. The 'Create Note' form is active, showing fields for 'Provider' (PROVIDER, 1), 'Clinic' (AHLTA-T Clinic), 'Note Date' (20 Oct 2009 08:42), 'Status' (In Progress), and 'Assessments' (No Assessments Found). The 'Title of Note' is 'Anxiety Followup', 'Treatment Intensity' is 'Low', and 'Risk of Harm to Self/Others' is 'Low'. A large text area for the 'Behavioral Health Note' is present, with a character count of 40000 remaining. At the bottom, there are 'Cancel', 'Save Draft', and 'Sign' buttons.



What's Coming in 2010 (cont'd)

- **Common Graphical User Interface (GUI)** – initial deployment will serve as a portal or launch point for medical capabilities. Unifies the users view by integrating data from multiple systems into user customizable portlets
- **Single Sign-On** - integrates the users workspace by allowing a single sign on between medical applications
- **Context Management** – extends the user workspace integration by maintaining the same patient (context) between each application (e.g. AHLTA, CHCS, TMDS)

MHS Enterprise GUI with SSO and CM



Ralph Jones

Military Health System Welcome LTC Ralph Jones | Log Out

Patient Info

Patient Search
[My Recent Patients](#)
[Patient Search](#)
[My Clinic](#)

Patient Data
Patient Summary
[Nursing View](#)
[Surgical View](#)
[Allergies](#)
[Radiology](#)
[Laboratory](#)
[Microbiology](#)
[Orders](#)
[Med Reconciliation](#)
[Vitals](#)

Patient Demographics

Smith, Johnny FMP + SSN: 20-296-66-8777 Sex: M Rank: E4 Provider: Smith, John
 DOB: 03/09/1981 (28 Y) [Face Sheet](#) [Flags](#) [Reminders](#)

Meds/Allergies/Problems - Vista

Allergies/Adverse Reactions

Causative Agent	Source	Reaction	Symptoms	Originated
Spironolactone	VA San Diego	Adverse Reaction	Rash	04/13/2008
Penicillin	VA San Diego	Adverse Reaction	Itching	02/25/2007
Chocolate	VA Puget Sound	Allergy	Diarrhea	02/25/2007

Problems

Problem	Source	Status	Recorded
Gout (274.9)	VA San Diego	Chronic	03/28/2008
Heart Valve Replacement Status (V43.3)	VA Puget Sound	Active	04/20/2007
Congestive Heart Failure (428.0)	VA Puget Sound	Active	04/13/2007
Diabetes Mellitus Type II (250.0)	VA Puget Sound	Chronic	04/12/2007
Tobacco Use Disorder, Remission (305.1)	VA North Chicago	Active	09/08/2006

Active Medications

Medication	Source	Dose	Route	Schedule	Order Date	Ordered By	Status
Non-VA Aspirin Tab	VA San Diego	81 MG	Oral	QAM	07/11/2009	Smith, John	Active
Captopril	VA San Diego	25 MG	Oral	TID	06/12/2008	Jones, Larry	Active
Albuterol 0.5 ML %	VA San Diego	0.5 ML 0.5%	Oral	Q4H PRN	08/18/2008	Smith, John	Active
Digoxin	VA Puget Sound	0.25 MG	Oral	QDAY	05/21/2009	Brown, Robert	Active

Clinical Results - AHLTA

Recent Lab Results

Test Name	Result	Date/Time	Source
LDL Cholesterol Blood (0 - 130 MG/DL)	103	08/03/2009 13:05	Camp Pendleton
HDL Cholesterol Blood (40 - 60 MG/DL)	63 H	08/03/2009 13:05	Camp Pendleton
Triglyceride (0 - 249 MG/DL)	209	08/03/2009 13:05	Camp Pendleton
Cholesterol (0 - 199 MG/DL)	136	08/03/2009 13:05	Camp Pendleton
Glucose (60 - 110 MG/DL)	112 H	08/03/2009 13:05	Camp Pendleton
CO2 Blood (23 - 31 meq/L)	25	07/23/2009 10:00	Camp Pendleton

Vitals

Vital	Value	Date/Time	Source
Temperature	98.4 F	08/03/2009 10:00	Naval Med Center San Diego
Pulse	78	08/03/2009 10:00	Naval Med Center San Diego
Resp	16	08/03/2009 10:00	Naval Med Center San Diego
Pulse Ox %	98	08/03/2009 10:00	Naval Med Center San Diego
Blood Pressure	132/78	08/03/2009 10:00	Naval Med Center San Diego
Height	71 in	06/03/2009 13:00	Naval Hosp Camp Pendleton
Weight	173 lbs	06/03/2009 13:00	Naval Hosp Camp Pendleton
BMI	24.6	06/03/2009 13:00	Naval Hosp Camp Pendleton
Pain	4	06/03/2009 13:00	Naval Hosp Camp Pendleton



What's Coming in 2010 (cont'd)

- **AHLTA Virtualization Pilot** – leverages Citrix virtualization technologies to improve access, stability and speed
 - Simplifies deployment updates and maintenance of the application
- **Automated Duplicate Patient Reduction** – initial deployment will reduce duplicate patient records using automated tools to ensure the highest integrity of patient information and proper identity
- **Common Development and Testing Environment** – provides a common framework for integrated vendor and Service software development with improved production representative testing environment



What's Coming in 2010 (cont'd)

- **Virtual Lifetime Electronic Record (VLER)**
Phase I – leverages the Nationwide Health Information Network (NHIN) to improve health data sharing between the DoD, VA and network care
 - Phase 1a shares data between DoD, VA and Kaiser Permanente in San Diego
 - Phase 1b will expand sharing in the Hampton Roads, Virginia area between DoD, VA and other entities (Sentara, Riverside and Bon Secours)

On April 9, 2009, President Obama directed DoD and VA to create a VLER that *"will ultimately contain administrative and medical information from the day an individual enters military service throughout their military career and after they leave the military."*



What's Coming in 2010 (cont'd)

- **Bidirectional Health Information Exchange (BHIE) version 5** – improves and expands DoD and VA information sharing
 - Leverages national standards such as the Nationwide Health Information Network (NHIN)
- **Consolidated Health Assessment Review Tool (HART)** - modernizes, consolidates and integrates multiple health assessment questionnaires into a single common point of entry & reporting tool



What's Coming in 2010 (cont'd)

- **North Chicago (NC) Federal Health Care Center (FHCC)** – integrates AHLTA/CHCS with VA's VistA to work cooperatively in a combined facility
 - Capabilities include Single Patient Registration, Single Sign-On with Context Management between DoD and VA systems, and Orders Portability (Pharm, Lab, Rad)
 - Implement ESB technology to perform messaging, translation and terminology mapping

DoD Electronic Health Record - Strategy



Stable Comprehensive Enhanced Health Care Record

Long Term

Enhance
Care

Ability to continuously improve the quality and efficiency of health care administered to our beneficiaries

Stable Comprehensive Health Care Record

Mid Term

Comprehensive

One-stop point for providing, viewing and maintaining a complete longitudinal health care record

Stable Health Care Record

Near Term

Stabilize

Efficiently perform their duties in a timely manner, regardless of location, time of day or network issues

Speed, Reliability and User Interface



What's next?

RFP for AHLTA/CHCS Critical Fixes



- Not just another fix but a **fundamental restructuring** of AHLTA and CHCS to work together as one logical system
- **Addresses user generated priority fixes** for AHLTA & CHCS to include Ancillary change requests and Theater improvements
- **Better flexibility** and ergonomics (more intuitive) to accommodate the clinical workflow
- Re-architected to **improve speed, reliability** and responsiveness from the user point of view
- Simplified to **improve maintainability and deployability**
- **Improved interoperability framework** to better share data across the continuum of care within the DoD and with trusted health partners using industry standards



Stay tuned...



Questions???

LTC William E. Geesey

Medical Communications for
Combat Casualty Care (MC4)

www.mc4.army.mil

COL Claude Hines

Defense Health Information
Management System (DHIMS)

<http://dhims.health.mil>