Military Medical Care Symposium:
Partnership for Continuity of Care Around the World

Session # MH6, February 11, 2019
James B. Peake, MD, CGI
Conflict of Interest

James B. Peake, MD

Has no real or apparent conflicts of interest to report.
Agenda

- Introduction
- Recap
- Military Health Unique Environment
- Challenges
- Changing Landscape
- Opportunities
- Cautions
- Purpose
Learning Objectives

• Summarize the information from the topics discussed to formulate the impact of these activities on continuity of patient care

• Recognize how interoperability, cyber security and data migration activities improve the experience of the military medical force and our patients
Military Medical Care Symposium: 
Partnerships for Continuity of Care Around the World

What’s Our Why?

James B. Peake, MD
Lieutenant General, USA (Ret)
SVP, CGI Federal
An Agenda of Perspectives

• MG Lee Payne – Clinical Champion – Asst Dir, CSA, DHA
• Surg Cdr Melanie Doherty
• Dr Schnitzer… civilian academics, DARPA, MITRE
• Glenn Lanteigne, CEO, Tectonic Advisory Services Inc
• Panel of our clinical boots on the ground
  – Andrew Harriman – Flight Nurse, GlobalMed Services
  – Brian Jones, DO Guidehouse
  – Kelly Christy, Col USAF
Perspectives
The Global Environment

- Terrorism
- Failed and Failing States
- Transnational Threats
- Asymmetric Challenges
- Rise of Major Military Competitor

Additional Images:
- Anthrax
- Ebola
- Submarine
- Weapons
PARADIGM SHIFT

INTEGRATED FROM FOX HOLE TO CONUS

VA

Medical Centers, Scientific Expertise

CONUS BASE

In Theater Health Services

Germany

Forward Medic

AO

Forward Surgical Tm

CARE IN THE AIR

In Theater Health Services

Active

Reserve

TDA

TO&E

Joint
U.S. military presence around the world
Select U.S. military deployments, according to the latest data

<table>
<thead>
<tr>
<th>Location</th>
<th>Service members</th>
</tr>
</thead>
<tbody>
<tr>
<td>Japan</td>
<td>58,886</td>
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<tr>
<td>Germany</td>
<td>44,857</td>
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<tr>
<td>South Korea</td>
<td>28,598</td>
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<tr>
<td>Italy</td>
<td>14,690</td>
</tr>
<tr>
<td>Afghanistan</td>
<td>14,000*</td>
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<tr>
<td>United Kingdom</td>
<td>10,121</td>
</tr>
<tr>
<td>U.S. - Mexico border</td>
<td>7,200*</td>
</tr>
<tr>
<td>Iraq</td>
<td>5,200*</td>
</tr>
<tr>
<td>Bahrain</td>
<td>4,836</td>
</tr>
<tr>
<td>Syria</td>
<td>2,000*</td>
</tr>
</tbody>
</table>

Notes
* – Afghanistan, Iraq and Syria totals are approximate as of Oct. 31. All others as of June 30.
ONE LONGITUDINAL RECORD
More Than Technology
What Outcome? Informed Decisions

MILITARY

Deployment Decisions
Assignment Eligibility
EFMP - Assignment Decision
Separation Decision

PROJECTING SYSTEM REQUIREMENTS

VETERANS AFFAIRS

Medical Care / Clinical DECISIONS
Benefits Determination
Research for Impact
TRANSITION

MORE THAN
PATIENT INFORMATION
WHAT WILL BE DIFFERENT ABOUT SURVEILLANCE

Hazard 1
- Type
- Location
- Time Period

Hazard 2
- Type
- Location
  - GRID A
- Time Period

Blue Force Tracking OVERLAY

Hazard 2
- Type
- Location
  - GRID B
- Time Period

ARCHIVE
Health Industry In America

Two GREAT Systems
Two GREAT Missions

HEALTHY & FIT
RETURN TO DUTY

SPECIALIZED RECOVERY
LONG TERM REHAB

REINTEGRATION

Health Information Ecosystem
GOAL: By the year 2020, ninety percent of clinical decisions will be supported by accurate, timely, and up-to-date clinical information, and will reflect the best available evidence.
DATA TO INFORMATION TO INSIGHT TO ACTION
Data

• Clinical
• Management
• Training
• Personnel
• Surveillance

Analytics / BI

• Point of Care Decision Support
• Optimization
• Force Readiness
• Policy Development
• Preventive Measures
Protecting the Warfighter

- Environmental Hazards
- Industrial Hazards
- Heat/Cold Extremes
- Chemical Weapons
- Radiation
- Endemic Diseases
- Land mines
- Bio Weapons
- Fatigue
- Weapons Fire
One Hundred Fifteenth Congress of the United States of America

AT THE SECOND SESSION

Began and held at the City of Washington on Wednesday the third day of January, two thousand and eighteen

An Act

To authorize appropriations for fiscal year 2019 for military activities of the Department of Defense, for military construction, and for defense activities of the Department of Energy, to prescribe military personnel strengths for such fiscal year, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

(a) IN GENERAL.—This Act may be cited as the “John S. McCain National Defense Authorization Act for Fiscal Year 2019”.

(b) REFERENCES.—Any reference in this Act to any other Act of the 115th Congress shall be deemed to be a reference to the “National Defense Authorization Act for Fiscal Year 2019”.

SEC. 2. ORGANIZATION OF ACT INTO DIVISIONS; TABLE OF CONTENTS.

TITLE VII—HEALTH CARE PROVISIONS

Subtitle A—TRICARE and Other Health Care Benefits

Sec. 701. Cessation of requirement for mental health assessment of members after redeployment from a contingency operation upon discharge or release from the Armed Forces.

Sec. 702. Pilot program on treatment of members of the Armed Forces for post-traumatic stress disorder related to military sexual trauma.

Subtitle B—Health Care Administration

Sec. 711. Improvement of administration of the Defense Health Agency and military medical treatment facilities.

Sec. 712. Organizational framework of the military healthcare system to support the medical requirements of the combatant commands.

Sec. 713. Administration of TRICARE dental plans through the Federal Employees Dental and Vision Insurance Program.

Sec. 714. Streamlining of TRICARE Prime beneficiary referral process.

Sec. 715. Sharing of information with State prescription drug monitoring programs.

Sec. 716. Pilot program on opioid management in the military health system.

Sec. 717. Wounded warrior policy review.

Sec. 718. Medical simulation technology and live tissue training within the Department of Defense.

Sec. 719. Improvements to trauma center partnerships.

Sec. 720. Improvement to notification to Congress of hospitalization of combat-wounded members of the Armed Forces.

Subtitle C—Reports and Other Matters

Sec. 731. Extension of authority for Joint Department of Defense-Department of Veterans Affairs Medical Facility Demonstration Fund.

Sec. 732. Joint forces medical capabilities development and standardization.

Sec. 733. Inclusion of gambling disorder in health assessments of members of the Armed Forces and related research efforts.

Sec. 734. Report on requirement for certain former members of the Armed Forces to enroll in Medicare Part B to be eligible for TRICARE for Life.
Health System Management

- **(b) OBJECTIVES.**—In carrying out the requirement in subsection (a), the Secretary shall meet the following objectives: (1) The referral process shall model best industry practices for referrals from primary care managers to specialty care providers. (2) The process shall limit administrative requirements for enrolled beneficiaries.

- Beneficiary preferences for communications relating to appointment referrals using **state-of-the-art information technology** shall be used to expedite the process. (4) **There shall be effective and efficient processes to determine the availability of appointments at military medical treatment facilities** and, when unavailable, to make **prompt referrals to network providers** under the TRICARE program.
Joint Markets / Joint Operations

Multi Service Market Areas & Joint Medical Operations

Synergy, Efficiency, Quality

. . . Moving Beyond Artificial Boundaries
Multi Market Management

- Data
- Analytics
- Direct Care System **AND** the Network
- Population health

Legal Terms, Policy Requirements, Technical Specifications, And Governance Processes
NDAA 2017 legislation provides the opportunity to restructure the MHS to correct long-standing deficiencies with the MHS’s financial management systems, business processes, and material internal control and financial reporting that have continued to negatively affect the MHS’s ability to best manage the Defense Health Program (DHP). Having sound, standardized financial management practices and reliable, useful, and timely financial and performance information is important to ensure accountability over DHP’s extensive resources and efficiently and economically manage the MHS’s assets and budgets.
Avoiding the Pitfalls

• We cannot repeat the institutionalization of:
  – Poor process
  – Old organizations
  – Inadequate training focused around system navigation
  – Poorly prepared leaders
  – Inflexible facilities

• IM/IT is a forcing function to shape behavior
The Surgeon General of each Armed Force shall, on behalf of the Secretary concerned, ensure that the uniformed medical and dental personnel serving in such Armed Force receive training and clinical practice opportunities necessary to ensure that such personnel are capable of meeting the operational medical force requirements of the combatant commands applicable to such personnel. Such training and practice opportunities shall be provided through programs and activities of the Defense Health Agency and by such other mechanisms as the Secretary of Defense shall designate for purposes of this paragraph.
Unpracticed skills are first addressed in the safety of simulation rather than with live patients.
Advanced Modular Manikin

Programmable internal controls
Different scenarios can be simulated with no external control from an instructor needed.

Weatherproof
Training can take place at night or in bad weather to more accurately mimic combat conditions.

Detachable "wounded" arm
Blood is pumped out of deep wound built into arm. Sensors measure and respond to tourniquet pressure.

Detachable limbs
Arms and legs with different problems and capabilities are interchangeable and snap on and off at connection points.

Sensors
Unit can monitor blood volume, airflow, as well as fluids administered and pressure applied by a trainee, and respond appropriately.

Detachable limbs
Arms and legs with different problems and capabilities are interchangeable and snap on and off at connection points.

1/16-inch rubbery silicon "skin"
Coating can make limbs rigid or floppy to simulate conscious, woozy, or unconscious states.
Doctors trained for battle zones
Medical Simulation

- Mannequin-based simulators can train medics and PAs on chest tube insertion and hemorrhage

- Computer-based training can incorporate haptics, tissue-tool interactions, and real-time graphics to augment reality (allows for embedded training)

- Virtual reality medical trainers present immersion environment superimposed over medical tasks for realistic embedded training capability in FCS
An Augmented Reality-Based Approach for Surgical Telementoring in Austere Environments

Dan Andersen, MS, Voicu Popescu, PhD, Maria Eugenia Cabrera, MS, Aditya Shanghavi, MS, Brian Mullis, MC USN (Ret.), Sherri Marley, BSN, RN, Gerardo Gomez, MD, Juan P. Wachs, PhD


**Published:** 01 March 2017

The development of combat trauma injuries by connecting local less-experienced surgeons in an austere environment is a challenging task. Telementoring systems force the local surgeon to remain in the operating field to receive expert guidance, at times even errors. The System for Telementoring Integrates Expert-created annotations directly into the view. The local surgeon views the operating field by video feed between the patient and the surgeon that is remote. The remote surgeon remotely adds graphical annotations to the video feed, which the local surgeon can use to perform the surgery more accurately.
HoloLens

2018 CAE Healthcare
Medical Simulation Enterprise (MSE)

DoD Medical Simulation Enterprise
(Integrated & Federated)
DoD // Inter-Governmental // Coalition Partner

Role 1
Preventative and Protective

Role 2
First Responder

Role 3
Forward Resuscitative

Role 4
Theater Hospital

Role 5
Definitive Care

Role 6
Rehabilitative Care

WarPREP
Warfighter Perform, Resilience, Effectiveness and Protection

POINTS
JETS

THOR
Theater Hospital Operations Replication

SHOTS
Simulated Hospital Operations & Treatment System

ReST
Rehabilitation Simulation for Treatment

POI

United States Army (USA)
United States Air Force (USAF)
United States Navy (USN)
United States Marine Corps (USMC)
U.S. Special Operations Command (USSOCOM)
Intergovernmental Coalition Partner
Other DoD

Integrated, Federated

DoD Medical Simulation Enterprise (MSE) (Integrated & Federated)
DoD // Inter-Governmental // Coalition Partner

Integrated
Federated
REPETITION REINFORCEMENT

ENVIRONMENTAL RELEVANCE

INTEGRATION OF PROCESSES

BASIC SKILL

INTEGRATION OF STEPS

TEACH

CORRECT

ASSESS

DO

NEW TECHNOLOGY, PROCEDURES, STANDARDS

SKILL SUSTAINMENT
Lessons learned

• Artz, C.P. 1956. *Battle casualties in Korea; studies of the Surgical Research Team*. Volume III. *The battle wound; clinical experiences*. Army Medical Service Graduate School, Walter Reed Army Medical Center. Washington: GPO.


Vietnam - 1968
Convalescent Care in Theater

U.S Army, 6th Convalescent Center
Cam Ranh Bay, RVN  Oct 1968 - May 1969
STRATEGIC EVACUATION
OPERATION IRAQI FREEDOM /
OPERATION ENDURING FREEDOM

12 HOURS TO
48 HOURS

DOOR TO DOOR – ICU TO ICU
Army Medical Footprint

- **Combat Service Support, (-) Medical**
- **Medical**
- **Combat**
- **Combat Support**
- **Other**

**DS/DS**
- **OEF**
  - DNBI = .107
  - % = Personnel Assets in Theater
  - DNBI Episodes / 1000 Soldiers

- **OIF**
  - DNBI = .143

- **%** = Personnel Assets in Theater

% = Personnel Assets in Theater
DNBI Episodes / 1000 Soldiers
Red team hackers crack MHS Genesis

By Adam Mazmanian  |  Feb 04, 2019

Department of Defense cybersecurity testers were able to crack into MHS Genesis, the $5.5 billion commercial electronic health record system being deployed to host the medical records of 9.5 million beneficiaries worldwide.

The system “is not survivable in a cyber-contested environment,” according to the unclassified summary of a report from the Director of the Operational Test and Evaluation released publicly on Jan. 31.

The adversarial assessment conducted in September 2017 through June 2018, DOT&E said, determined that weaknesses in the system’s design, development, and operational configuration persist. Researchers at Carnegie Mellon University’s SANS Institute used a proprietary tool they developed to break into the system.
Power of Information

Knowledge

Act Decisively

What we don’t know WILL hurt!
Peacetime Health System

Efficiently Managing A Delivery System

Efficiently Managing Contracts

Provide a readiness training platform

Efficiently Managing Shared Services

Supporting the Warfighting Force

Medically Ready Force

Ready Medical Force
- Force Structure
- Recruiting
- Retention
- Training

Integrating into the Formations

Guard & Reserve Integration

Flowing into the TPFDL

DHA SERVICES

[Diagram showing the integration of Peacetime Health System and Supporting the Warfighting Force with services and processes like efficient management of delivery systems, contracts, shared services, readiness training platform, and integration into the TPFDL.]
Please complete online session evaluation

FYI

Wednesday – 13 February
10:00 am – 11:00 am
EHR: The Road to Transforming Military & Veteran Health Care

Speakers:

Stacy Cummings, Program Executive Officer for the Program Executive Office, Defense Healthcare Management Systems

John Windom, VA Executive Director for the Office of Electronic Health Record Modernization (OEHRM)

Session 112, W304E
STRATEGIC PRINCIPLES

• SEAMLESS - SUPPORT READINESS
• BUSINESS CASE
• BENCH MARKING
• CHOICES – PROVIDERS / PATIENTS
• INTERCHANGEABLE, INTEROPERABLE, REUSABLE
• INFO WHEN AND WHERE NEEDED / PROTECTED
• PROCESS REENGINEERING
• UNIFORM DATA PROCESSES AND TECH STANDARDS
• USER-BASED RAPID PROTOTYPING
• OFF THE SHELF WHEN POSSIBLE
• DATA ENTERED ONCE AS BY PRODUCT OF PROCESS
• CONSISTENT, EASY, ACCEPTABLE TO USERS
• INCREMENTAL DEPLOYMENT - UNIFORM BENEFIT