Integration of Clinical Practice Guidelines into the U.S. Military’s Global Electronic Health Record

Presented by:
Caterina E.M. Lasome, MSN/MBA, MHA, RN
Lieutenant Colonel, U.S. Army Nurse Corps
Deputy Chief Information Officer, Tripler Army Medical Center
Caterina.Lasome@us.army.mil
Integration of CPGs into the U.S. Military’s Global Electronic Health Record

• Objectives
  Upon completion of this presentation, the participants will be able to:
  – Discuss the U.S. Department of Defense (DoD) / Veteran’s Administration (VA) clinical practice guideline (CPG) development effort
  – Identify several DoD / VA approved CPGs
  – Identify the global electronic health record to be used by all Military Health System beneficiaries
  – Discuss the expected benefits of fully integrated CPGs
Integration of CPGs into the U.S. Military’s Global Electronic Health Record

- DoD / VA CPG development and approval effort
  - DoD/VA partnership established in 1990s
  - Working Group based on careful consideration of the readiness needs of the military and high-volume, high-cost health conditions treated in treatment facilities
  - Over 25 evidence-based guidelines developed and approved for use
  - Historically, a paper-based process in both organizations
Integration of CPGs into the U.S. Military’s Global Electronic Health Record

• DoD / VA approved CPGs (sample)
  – Tobacco Use Cessation
  – Asthma
  – Chronic Obstructive Pulmonary Disease (COPD)
  – Diabetes Mellitus (DM)
  – Pharmacologic Management of Chronic Heart Failure
  – Post-Deployment Health (PDH): Screening Health Exam
  – Post-Deployment Health (PDH): Medically Unexplained Symptoms (MUS)
  – Ischemic Heart Disease (IHD)
  – Post-Operative Pain
  – Health Promotion and Disease Prevention
  – Immunizations (Influenza, Pneumococcal)
  – Uncomplicated Pregnancy (UCP)
  – . . . . .
Integration of CPGs into the U.S. Military’s Global Electronic Health Record

• aCPG History
  – Congressionally directed project since 1999; collaborative effort by Tripler Army Medical Center and the Pacific Telehealth & Technology Hui
  – Goal: Automate approved DoD/VA CPGs in target EHRs
  – Initial level of effort focused on uncomplicated pregnancy, diabetes, tobacco use cessation, and depression
Integration of CPGs into the U.S. Military’s Global Electronic Health Record

- Global EHR to be used by all Military Health System beneficiaries is the Composite Health Care System (CHCS) II
  - Over 60% worldwide (triservice) deployment of Block I
  - Designed to create a Longitudinal Electronic Health Record for the Military Health System (MHS) that is:
    - Global
    - Longitudinal
    - Comprehensive
    - retrievable
    - Queriable
### Integration of CPGs into the U.S. Military’s Global Electronic Health Record

<table>
<thead>
<tr>
<th>BLOCK 1</th>
<th>BLOCK 2</th>
<th>BLOCK 3</th>
<th>BLOCK 4</th>
</tr>
</thead>
</table>
| • Encounter Documentation  
  • Order Entry and Results Retrieval\(^1\)  
  • Encounter Coding Support  
  • Consult Tracking  
  • Alerts and Reminders  
  • Role-based Security  
  • Health Data Dictionary  
  • Master Patient Index | • Release 1  
  - Dental Charting and Documentation  
  - Spectacle Request Transmission System II  
  • Release 2  
  - Ad Hoc Query Ability  
  - Common Access Card Integration\(^2\)  
  - aCPGs | • Replacement of Ancillary Functions of Legacy CHCS  
  - Pharmacy  
  - Laboratory  
  - Anatomic Pathology  
  • Radiology\(^3\)  
  • Enhanced Dental Functionality | • Inpatient Documentation, Order Entry and Results Retrieval  
  • Occupational Health Surveillance |

---

\(^1\) Block 1 provides an interface to Legacy CHCS  
\(^2\) Block 2 introduces advanced features  
\(^3\) Block 3 enhances the functionality with new capabilities.
Integration of CPGs into the U.S. Military’s Global Electronic Health Record

• Expected/realized benefits of integrated CPGs
  – Embedded clinical decision support
  – Enhanced patient safety
  – Improved continuity and standardization of clinical care delivery
  – Outcomes management (pending CDM availability)
Current aCPG efforts

- Delivery of baseline aCPG functionality with release 840 (Fall 2005)
- Tripler to become the “center of excellence” for aCPG functionality (designated by the Army Medical Department Surgeon General)
- Ongoing research to determine effectiveness/impact of aCPGs on patient outcomes, provider satisfaction, and clinical documentation (and hence, coding/revenues)
- Integrating aCPGs into clinical workflow
  - Patient-specific data retrieval generating actionable clinical reminders
  - Filtered against a provider and a clinic
  - Point of care decision support (medic, nurse, and provider levels)
  - Registry for patient panel and condition tracking
aCPG Demonstration
Nurse/Medic View
Screening
Patient Specific Reminders
<table>
<thead>
<tr>
<th>Reminder</th>
<th>Ordered</th>
<th>Due</th>
<th>Default Order/Documentation Details</th>
<th>Default Dx</th>
<th>Most Recent Resul</th>
<th>CPG</th>
</tr>
</thead>
</table>

**Actionable Orders**
ALEXANDER, VIOLET 20/202-45-5743 45yo F Col, DOB: 25 Jan 1959

Date: 09 Nov 2004 0930 EST
Primary Provider: USER, TEST
Patient Status: Outpatient

Reason for Appointment: cough & fever, HTN followup
Appointment Comments: middle age illnesses/perimenopause

Active Family History: No Active Family History Found.
Allergies: No Allergies Found.

Active Medications:
- AMLODIPINE (NORVASC) 5MG—PO 5MG TAB
  Status: Active, Sig: QD, Refills Left: 6/6, Last Filled: Not Recorded
- HCTZ (EIDIVASCURE TIC)PO 25MG TAB
  Status: Active, Sig: QD, Last Filled: Not Recorded
- FERROUS SULFATE—PO 325MG TAB
  Status: Active, Sig: QD, Last Filled: Not Recorded

CPG Autocite:
- Hemoglobin A1c (Diabetes CPG)
  Date: 6 Jun 2004, Value: 8.3, Goal: <8.0
- LDL (Diabetes CPG, Hyperlipidemia)
  Date: 14 Apr 2004, Value: 114, Goal: <100

Screening Written by USER, TEST @ 02 Dec 2004 2318 EST
Reason For Appointment: cough & fever

Vitals Written by USER, TEST @ 02 Dec 2004 2334 EST
BP: 122/86, HR: 72

A/P Written by USER, TEST @ 03 Dec 2004 1027 EST
1. Patient Counseling: Adequate Calcium Counseling Completed, Mammogram Screening Completed
   Laboratory(ies): HGB A1C (Routine), LIPID PANEL (Routine)
Provider
On-the-fly editing of a reminder for a patient

- **Edit** →

![Reminder Schedule](image1)

- **Add** →

![Reminder Schedule](image2)

- **Delete** → Inactivates reminder for that patient
aCPG Templates & Order Sets

• Documentation templates configured for aCPGs at Enterprise (MHS) level
• Order Sets configured for the CPG at MTF level
• Both require minimum essential requirements
Registry
Manual Registration via File-menu
Configuration
(Enterprise level)
CPG Setup

Protocol

Preconfigured Items
- Adequate Calcareous Counseling
- Anti-coagulation and Vision Screen
- Anemia Screen
- Anti-Tobacco Counseling
- Baby Bottle Caries Counseling
- Ballistic Laser Protection Spectacle (bliss) Inserts (Army)
- Blood Lead Screening/Surveillance

Blood Pressure Screen
- Blood Type
- Breast Exam Screen
- Breast Feeding & Iron Counseling

Schedule
- Timing: Recurring
- Due within:
- Duration: Indefinite

Optional
- Encounter Terms: 3
- Goal: < 7
- Comments:
- Web Link:

Add
Defining the Auto-Registry

Entries here will be "looked for" in encounters at encounter sign time. When found, that patient will automatically be registered to this CPG (if they are not already registered).

Diagnoses
- Diabetes Mellitus
- Diabetes Nephropathy
- Diabetes Retinopathy
- Diabetes Type II
- Diabetes Type II Uncomplicated, Controlled
- Diabetes Type II Uncontrolled
- Diabetes Type II Controlled

Orders can only be specified at the local MTF level.
Future Needs

• Patient education
  – How to standardize and incorporate?
• Surveys and forms to be used with aCPGs
• Disease management capabilities
  – Case management
• Connecting to the patient via web-based applications
• Establishment of a robust CPG clinical review body
Integration of CPGs into the U.S. Military’s Global Electronic Health Record

Mahalo & Aloha