MHS GENESIS: Pharmacy Update

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Learning Objectives

1. Identify key aspects of MHS GENESIS and significant changes that will take place as MTFs migrate from Legacy Systems to PharmNET operations.
3. Explain how transitioning to MHS GENESIS will enhance patient care and elevate overall federal healthcare.
Overview

- Introduction & MHS GENESIS Overview
- Implementation/Change Management
- MHS GENESIS Pharmacy Modules
  - Outpatient Pharmacy
  - Inpatient Pharmacy
- Enterprise Perspective: Clinical Pharmacy, Supply Chain, Formulary Management, Operating Files, and Clinical Content
MHS GENESIS Background

- Contract Award: July 2015
- Program Office: Defense Healthcare Management System Modernization (DHMSM)
  - Oversees deployment of MHS GENESIS
    - Communication, testing, logistics, business operations, change management
- Contractor: Leidos Partnership for Defense Health (LPDH)
  - Leidos – Prime Contractor
  - Cerner
  - Henry Schein
  - Accenture
  - 30+ additional contractors
Initial Operating Capability (IOC) Sites

- 92nd Med Group, Fairchild AFB, Spokane, WA
  - Go-Live: 7 Feb 2017

- Naval Hospital, Oak Harbor, WA
  - Go-Live: 15 Jul 2017

- Naval Hospital, Bremerton, WA
  - + 3 Branch Health Clinics
  - Go-Live: 23 Sep 2017

- Madigan Army Medical Center, Tacoma, WA
  - + 5 Branch Health Clinics
  - Go-Live: 21 Oct 2017
The model depicted below outlines the Functional Community decision making and governance structure with the high level role for each level within the structure.

**Role**

- Functional Champions Leadership Group: Single Voice of the Customer / Service Functional Champions (Board of Trustees Flag-level board)
- Functional Advisory Council: Service CMIOs and/or Representative (06-level Functional Committee)
- Provides guidance related to executive decisions
- Serves as escalation point for unresolved issues
- Champions change, improvement and standardization initiatives at the local level

- Business Process Management: Identifies & communicates change impacts (Functional subcommittee)
- Champions creation of highly reliable processes & leading practice content
- Provides project guidance and support to DDWG and TSWAGs
- Design Decision WG: Serves as a multidisciplinary clinical advisory group
- TSWAGs represent the functional community and provide specialty expertise to design and standardization efforts. Supports adoption of leading practices

- Consumer of the Integrated MHS GENESIS (new EHR)
- Provide insights on the workflows, leading practices and the voice of the customer

**Functional Community Structure & High Level Roles**
Pharmacy Tri-Service Workflow Advisory Group (TSWAG)

- **Roles/Responsibilities**
  - Pre Go-live: Advised on clinical content development, review and approve testing scenarios/training materials and supported workflow redesign
  - During Go-Live: Some TSWAG members served as Super Users and provided Go-Live Support. This included coordinating and leading MHS GENESIS configuration/issue resolution decisions, over-the-shoulder training, and championing enterprise decisions
  - Post Go-live: Supporting on-going optimization and maintenance of clinical content and workflow redesign to include issue resolution & configuration changes/recommendations

- **Post Go-live Maintenance/Sustainment Activities**
  - Meet on a regularly basis (twice a week) as well as adhoc meetings and continual communication via emails
  - Participants → Tri-Service Pharmacy SMEs (to include IOC sites), DHMSM, DHA POD, & LPDH
  - Topics: IOC site issues, Remedy tickets, and LPDH-identified system sustainment tasks
Implementation/Change Management
Why Modernize?

Benefits

- Incorporate dental capability
- Replace legacy operational components
- Two-way communication
- Train like we fight

“Medically Ready Force...Ready Medical Force”
MHS High Reliability Operating Model

“Medically Ready Force... Ready Medical Force”
IOC Tests the Standards

- Planned IT infrastructure standardization
  - Support of the DHMSM deployment
  - Wired Network
  - Wireless Network
  - Application access
  - End user devices

- TSWAG processes were implemented at the IOC sites

- All future MHS deployments based on Tri-Service configurations/processes tested and refined in IOC

This is our opportunity to change the way healthcare is delivered to all Operational, Garrison, Reserves, and shore based units

“Medically Ready Force...Ready Medical Force”
Change Management – Personnel

- 4,500 total man hours over 6 months in preparation for the new record system readiness
- Tri-Service standardized workflows incorporated as part of training
- Issue Resolution
  - Every end user is a sensor and highly engaged in identifying problems, solutions, and elevating those to the resolution process
  - Program changes are no longer nodal, and must be considered on a DoD, and even Federal Pharmacy level
    - No more separate Frankenstein Systems
- Expectations must be set early for a positive attitude and an open mind. No one likes change!
Typical Implementation Timeline for D2D Implementation – MedCOI

Day 0 - 60
- Host kick-off call for D2D
- Performs Circuit and Last Mile survey, and Enclave Site Survey
- Provides Site Specific Implementation Plan (SIP), PPS, and IP Plan

Day 61 - 201
- Install security architecture
- Install Med-COI circuits and last mile connections
- Install and setup mJAD infrastructure
- Build and configure System Center Configuration Manager (SCCM) infrastructure
- Install and setup Local Core Infrastructure (LCI)
- Install Local Area Network (LAN) / Wireless LAN (WLAN) Stub network (AF Only)
- Enable Air Force (AF) 3rd party switch (ENFAAS) to communicate with Med-COI security architecture

Day 208 - 328
- Execute the IP Plan to transition site’s networks/systems into the enclave
- Transition into Desktop as a Service (DaaS) configuration and desktop centralized enterprise management (this includes deployment of Windows 10 [WIN10])
- Transition into LAN / WLAN centralized enterprise management
- Transition into DHA Cybersecurity accountability and reporting
- Clean-up temporary firewall rules
- Decommission remaining network aware devices on Non-classified IP Router Network (NIPRnet)
- Decommission NIPRnet circuits

Source: DHA J6
IOCs Lessons Learned - Infrastructure

From implementations at the IOC sites (Fairchild AFB, NH Oak Harbor, NH Bremerton and Madigan AMC), the following are some lessons learned to be applied heading into Future Implementation Sites.

1. Med COI transition timeline in relation to MHS GENESIS integration activities
2. Network Readiness: VLAN / switch port/ wall jack
3. EUD readiness: Correct GPOs and software versions
4. Print server queue configuration
5. External system support contracts
6. Implementing “Grease Boards” or “Tracking Boards”: Hardware, Locations, Facilities Coordination

Source: DHMSM PMO
MHS GENESIS Deployment Activities Overview

- **Current State Assessment (CSA)**
  - Pre-brief to prepare for CSA event
  - Review of current state of processes and technology
  - Begin technical assessment including hardware, software, and network
  - Identifying connections between child and parent facilities and impacts based on shared services such as radiology reads, labs, referrals etc.

- **Command Executive Brief**
  - Explain to the Commander the process, and roles and responsibilities to deploy MHS GENESIS, including command support needed
  - Introduce Engagement Lead and Clinical Lead. (This team will work with the site to prepare for next events)
  - 1 day per hospital

- **Model Systems Review (MSR) Kickoff**
  - Explain the plan to the site resources identified by the Commander.
  - Explain the process to larger team
  - 1-2 Day event

- **Model Systems Review (MSR)**
  - Solution Architect led review of Model System with support from Clinical
  - Introduce Data Collection Workbooks
  - Complete technical assessment, including devices and infrastructure
  - Identifies Start Stop Continue actions
  - 1-2 week event

- **System Validation Session**
  - Review of System with localized Data

- **Integration Validation Session**
  - Connect test systems
  - Execution of Patient Experience Scripts
  - Scanfest, Lab QC and training start

- **Cutover**
  - Connect production systems
  - Deploy PCs, peripherals, and printers
  - Validate port/switch connections to VLANs
  - Build Print queues

- **Go-Live**
- **Command Center**
  - Activity to transition from Deployment to sustainment.

Source: DHSMSPMO

“Medically Ready Force...Ready Medical Force”
Existing IOC Interfaces

Some of the existing interfaces that have been established at enterprise, regional, and MTF levels.

<table>
<thead>
<tr>
<th>Enterprise</th>
<th>MTF Operational</th>
<th>Radiology</th>
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<tr>
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<td>PACS – Fuji</td>
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<tr>
<td>JLV</td>
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<td>Reference Labs</td>
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<table>
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<td>AudioCARE</td>
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Source: DHMSM PMO

"Medically Ready Force...Ready Medical Force"
Outpatient Pharmacy
Paradigm Shift

“Medically Ready Force...Ready Medical Force”
MHS GENESIS is a Suite of software that relies on connections to function optimally.
Outpatient Interfaces

- MHS GENESIS - Outpatient pharmacy automation interfaces
  - Innovations, Parata, ScriptPro, GSL, AudioCARE
    - Concurrently interfacing with MHS GENESIS & CHCS
- Pharmacies will process legacy refills in CHCS for up to 1 year
- CHCS will not “Push” data to MHS GENESIS
- New prescriptions will be entered in MHS GENESIS
- Refills processed through AudioCARE/CHCS
  - Anticipate diminishing requirement with majority complete after 6-9 months
Outpatient Pharmacy – Workflow

- Pharm Tech $\rightarrow$ Pharmacist Verification 1 (PV1) $\rightarrow$ Automation $\rightarrow$ Pharmacist Verification 2 (PV2) $\rightarrow$ Dispense
  - Pros: Information RPh validated prior to automation
  - Cons: Bottleneck at PV1, patient not able to validate rejected claims

- Pharm Tech V $\rightarrow$ Automation $\rightarrow$ Pharmacist Verification 2 $\rightarrow$ Dispense
  - Pros: Claim adjudication at the window, faster fill to verify time
  - Cons: Errors caught at PV2 are lengthy to correct
Outpatient Pharmacy – Patient Profile

“Medically Ready Force...Ready Medical Force”
Outpatient Pharmacy – Claims Adjudication

"Medically Ready Force...Ready Medical Force"
Outpatient Pharmacy – Batch Refill

Refill Work Queue

Record count: 20

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<tr>
<th>Action</th>
<th>Batch Refill Status</th>
<th>Pick Up Date/Time</th>
<th>Dispense Priority</th>
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Batch Processing

Submit Cancel

“Medically Ready Force...Ready Medical Force”
DoD Uniform Formulary vs Local Formulary
- Medical Necessity/Prior Authorization criteria defaulted to DoD Uniform Formulary
- ESI approval/rejection criteria defaulted to DoD Uniform Formulary
- Drug File indicators locally controlled

Prior Authorization process
- Reject 75
  - MTF-Approved PA
    - Fax
    - Phone
  - Provider Submitted PA
    - Fax
    - Phone
    - [www.covermymeds.com/epa/express-scripts](http://www.covermymeds.com/epa/express-scripts)
PowerChart Formulary Tools

Search: hydrochlorothiazide

Advanced Options

Type: Prescriptions

Search within: All

- bisoprolol-hydrochlorothiazide 10 mg-6.25 mg oral tablet
  1 tabs, Oral, Daily, # 90 tabs
- bisoprolol-hydrochlorothiazide 10 mg-6.25 mg oral tablet
  2 tabs, Oral, Daily, # 60 tabs
- bisoprolol-hydrochlorothiazide 10 mg-6.25 mg oral tablet
  2 tabs, Oral, Daily, # 180 tabs
- candesartan-hydrochlorothiazide 16 mg-12.5 mg oral tablet
  1 tabs, Oral, Daily, # 90 tabs
- candesartan-hydrochlorothiazide 16 mg-12.5 mg oral tablet
  1 tabs, Oral, Daily, # 30 tabs
- candesartan-hydrochlorothiazide 32 mg-12.5 mg oral tablet
  1 tabs, Oral, Daily, # 90 tabs
- candesartan-hydrochlorothiazide 32 mg-12.5 mg oral tablet
  1 tabs, Oral, Daily, # 30 tabs
- candesartan-hydrochlorothiazide 32 mg-25 mg oral tablet
  1 tabs, Oral, Daily, # 90 tabs
- candesartan-hydrochlorothiazide 32 mg-25 mg oral tablet
  1 tabs, Oral, Daily, # 30 tabs
- captopril-hydrochlorothiazide 25 mg-15 mg oral tablet
  1 tabs, Oral, Daily, # 90 tabs
- captopril-hydrochlorothiazide 25 mg-15 mg oral tablet
  1 tabs, Oral, Daily, # 90 tabs
- captopril-hydrochlorothiazide 25 mg-25 mg oral tablet
  1 tabs, Oral, Daily, # 90 tabs
- captopril-hydrochlorothiazide 50 mg-15 mg oral tablet
  1 tabs, Oral, Daily, # 90 tabs
- captopril-hydrochlorothiazide 50 mg-25 mg oral tablet
  1 tabs, Oral, Daily, for blood pressure, # 90 tabs
- captopril-hydrochlorothiazide 50 mg-25 mg oral tablet
  1 tabs, Oral, Daily, # 90 tabs
Inpatient Pharmacy
Inpatient Medication Management Process
System Highlights

- Standardized content developed for enterprise
  - Drive CPOE consistent with Tri-Service concurrence & evidence based practice
    - PowerPlans & Dosing Sentences (PowerChart CPOE)
    - Formulary IV Sets (pharmacist order verification)
    - Nurse Review & eMAR display (PowerChart)
    - Barcode Medication Administration + Nurse Witness

- Provider Favorites
  - Enterprise plans saved to favorites (Favorite Plans)
  - Individual provider favorites
  - Saved favorites can be shared

“Medically Ready Force...Ready Medical Force”
Inpatient Provider Order Entry - PowerPlans

“Medically Ready Force...Ready Medical Force”
Inpatient Provider Order Entry – PowerPlans 1
Inpatient Provider Order Entry – PowerPlans 2
Inpatient Provider Order Entry – PowerPlans 3

“Medically Ready Force...Ready Medical Force”
Inpatient Provider Order Entry – PowerPlans 4

“Medically Ready Force...Ready Medical Force”
Inpatient Provider Order Entry – PowerPlans 5

“Medically Ready Force...Ready Medical Force”
Inpatient Provider Order Entry – PowerPlans 6

“Medically Ready Force…Ready Medical Force”
Inpatient Provider Order Entry – PowerPlans 7

“Medically Ready Force...Ready Medical Force”
Inpatient Pharmacist Order Verification
PowerChart - PPM
Inpatient Pharmacist Order Verification
Med Manager – Patient Profile

“Medically Ready Force...Ready Medical Force”
Inpatient Pharmacist Order Verification
Med Manager – Product Search/Selection

“Medically Ready Force...Ready Medical Force”
Inpatient Pharmacist Order Verification
Med Manager – Final Order Screen

“Medically Ready Force...Ready Medical Force”
Pharmacy MAR View

“Medically Ready Force...Ready Medical Force”
Inpatient Provider Order Entry

Dose Sentences

“Medically Ready Force...Ready Medical Force”
Inpatient Provider Order Entry
Order Details
Inpatient Provider Order Entry
Dose Calculator

vancomycin

Dose Values:
1) Target dose: 20 mg/kg
2) Calculated dose: 1.403 mg
3) Dose adjustment: 1.403 mg 100 %
4) Final dose: 1.403 mg
5) Standard dose: 1.500 mg
6) Rounding rule: Nearest tenth
7) Route: IV Piggyback

Reference Data:
- Date of birth: 05/08/1973 (44 Years)
- Sex: Male
- Ethnicity: Not Hispanic
- Height: 175 cm
- Actual weight: 70 kg
- Adjusted weight: 70.465 kg
- Serum creatinine: 1.2 mg/dL
- GFR (est.): 78.29 mL/min
- Body surface area: 1.85 m²

Order Comments:

Dose Forms:

“Medically Ready Force...Ready Medical Force”
Clinical Pharmacy Services
Pharmacy Consults 1

- Discharge Med Rec
- Drug-related adverse events
- Identify medications
- Medication history consult
- Medication recommendation needed
- Patient education
- Pharmacist toxicology consult
- Verification of allergies

Pharmacy to dose
- Vancomycin
- Gentamicin
- Tobramycin
- Amikacin
- Warfarin
Possible ADE
- Risk for Respiratory Depression
- IV to PO conversion
- Serum creatinine increase
- Hypo/Hyperglycemia
- Leukopenia
- Cumulative drug administration
  - Acetaminophen >4,000 mg/24 hours
- C. Difficile
  - Positive result &/or other rules
- Low SBP + hypotensive drug
- Hypokalemia + potassium-altering drug
- Vitamin K order + INR >4
- Supratherapeutic drug levels
  - Theophylline, lidocaine
- Drug administration events
  - Epinephrine (IM or Subcutaneous)
  - Naloxone (excludes drip)
  - Flumazenil
  - Sodium polystyrene sulfonate
Clinical Pharmacy Services
Clinical Worklist

- Antibiotic monitoring
- Renal insufficiency
- Anticoagulation monitoring
- Glucose management
- Antiepileptic drugs
- Cardiac drugs (digoxin, dofetilide)
- Transplant drugs
- Monitored Drugs (high risk)
- Possible ADE
## Clinical Pharmacy Services

### Order Intervention

#### Clinical Interventions

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<thead>
<tr>
<th><strong>Intervention Type</strong></th>
<th><strong>Clinical Importance</strong></th>
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<tbody>
<tr>
<td>Adverse drug reaction</td>
<td>Potentially severe</td>
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<tr>
<td>Dose too low</td>
<td>Potentially minor</td>
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<tr>
<td>Dose too high</td>
<td>Lifetime or no clinical importance</td>
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<tr>
<td>Dose too high-normal</td>
<td>Other</td>
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<tr>
<td>Dose too high-weight</td>
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</table>

**Associated Order(s)**

**Initiated By**
- Nurse
- Pharmacist
- Physician
- Other

**Clinical Importance**
- Potentially severe
- Potentially minor
- Lifetime or no clinical importance
- Other

**Prescriber Response**
- Accepted
- Corrected prior to contact
- Modified
- No response
- Not accepted
- Patient dismissed before response
- Pending
- Other

**Prescriber**

**Patient Clinical Outcome**
- Not applicable
- Avoided potential risk
- Negative outcome from recommendation
- No change from recommendation
- Patient responded to recommendation
- Pending
- Unknown
- Other

**Pharmacist Intervention Time**
- < 1 Minute
- 1-5 Minutes
- 6-15 Minutes
- 16-30 Minutes
- > 30 Minutes

**Additional Information**

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"Medically Ready Force...Ready Medical Force"
Inpatient Pharmacy Services Challenges & Opportunities

- Workflow Monitor & Med Requests
  - Product verification now more automated
  - Floors requesting missing dose more streamlined
  - Time consuming - adoption of new workflow & additional processes

- BCMA
  - Dedicated structure needed

- Infusion Pumps
  - Transitioned library to alignment with enterprise Pharmacy IV Sets
  - End goal is full integration (interoperability)

- Reports
  - Early stages – canned reports in Discern Analytics 2.0
  - Workflow Monitor Turnaround, Pharmacist Order Verification Turnaround
Enterprise Perspective: Clinical Pharmacy, Supply Chain, Formulary Management, Operating Files, and Clinical Content
Clinical Pharmacy

- Clinical pharmacist role, access to:
  - Prescribing and documentation
  - Point-of-Care result testing
  - Scheduling for t-cons and walk-ins
  - Filling/distribution

- Anticoagulation Clinics

- Standardized notes/forms from Legacy systems
Pre-implementation data collection

Last scan prior to perpetual inventory implementation
- Full inventory scan
- Max levels as a baseline

National contract items
- Identification
- Maintenance

Controlled Substance reporting needs
GOAL: Leverage MHS GENESIS capabilities to move toward uniform delivery of the pharmacy benefit across all points of service

- Systematic application of benefit & P&T rules
- Targeted adaptations to retail rules to fit MTF mission
  - MTF Pharmacies are a hybrid, combining outpatient pharmacy services and in-house care (outpatient dispensing + clinic medication administration)
  - MTF Pharmacies have unique mission requirements e.g. day supply limits (deployments)
Provide new tools to the MTF pharmacies to support a uniform benefit and provide information to guide decision making

- Outbound ePrescribing to enable use of other points of service
- Prescription Processing Edits:
  - P&T Benefit Rules to administer uniform benefit
  - High Cost Edit to prevent accidental “fat finger” entries or potential fraud or diversion
  - Reject CMS sanctioned provider prescriptions to prevent fraud
  - Data Integrity Edits to eliminate retrospective clean-up efforts
  - Use of rejects to prompt evaluation of a clinical issues, allow for use of override codes, and require correction of data elements
Centralized MHS Genesis Profile
- Sites will see full Genesis medication profile, not only local

Rejects
- Advisory messages/warnings will still be used for lower level DURs
- More severe interactions and other issues will result in a reject; the pharmacy must address the issue before medication can be dispensed
- Process to resolve rejects varies
  - Pharmacy enters override codes
  - Correct data errors
  - Contact ESI
MTF Specific Rules: Rejects

Will not reject for:

- DEERS ineligibility (most cases, non-eligible when DEERs is down)
- OTCs (Pending standardization efforts)
- Brand-named drug with generic availability
- Tier 3/Non-Formulary Medications
- Diabetes Supplies (PA rule still apply)
- Syringes
- Smoking Cessation Products
Separate files include:

- Drug file – outpatient
  - Cost, Uniform Formulary status
  - Drug file – inpatient
  - More attributes than outpatient drug entry
- Drug file – supply chain
  - National Contract identifier
- Order Catalog – Controls prescriber view
- Pharmacy file
- Provider file
Drug-Drug Interactions:
- Current status and approach: different configurations based on setting
- Maintenance

Drug Duplicate Alerts:
- Impact of ingesting historical prescription data
- Current configuration changes

Dose Range Checking:
- Pediatric and Neonatal content
Questions?