

Strategy Research Project

Options for a Joint Medical Readiness System

by

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United States Army War College
Class of 2013

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REPORT DOCUMENTATION PAGE				Form Approved OMB No. 0704-0188	
The public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden, to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0704-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.					
1. REPORT DATE (DD-MM-YYYY) xx-03-2013		2. REPORT TYPE STRATEGY RESEARCH PROJECT		3. DATES COVERED (From - To)	
4. TITLE AND SUBTITLE Options for a Joint Medical Readiness System				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S) Colonel Larry Fletcher United States Army				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Mr. Denis Kaufman Department of National Security and Strategy				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) U.S. Army War College 122 Forbes Avenue Carlisle, PA 17013				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION / AVAILABILITY STATEMENT Distribution A: Approved for Public Release. Distribution is Unlimited.					
13. SUPPLEMENTARY NOTES Word Count: 5,907					
14. ABSTRACT Each Department of Defense service has its own medical readiness automated system. The system supports data entry, data reporting, and data sharing. None of the service systems support a mature data interface to transfer data between the various systems. There are a number of impacts to DoD by having service specific systems. First, service member's data may not be entered into their service system if they go to an alternate service clinic. Second, inability to provide medical readiness reports to support joint task forces or multiservice units or installations. Third, DoD is unable to manage the health and readiness of the force without each service providing reports. This paper will provide analysis for each service medical readiness system and determine if there is a benefit to having a DoD medical readiness system.					
15. SUBJECT TERMS Information Systems					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT UU	18. NUMBER OF PAGES 34	19a. NAME OF RESPONSIBLE PERSON
a. REPORT UU	b. ABSTRACT UU	c. THIS PAGE UU			19b. TELEPHONE NUMBER (Include area code)

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Abstract

Title: Options for a Joint Medical Readiness System

Report Date: March 2013

Page Count: 34

Word Count: 5,907

Key Terms: Information Systems

Classification: Unclassified

Each Department of Defense service has its own medical readiness automated system. The system supports data entry, data reporting, and data sharing. None of the service systems support a mature data interface to transfer data between the various systems. There are a number of impacts to DoD by having service specific systems. First, service member's data may not be entered into their service system if they go to an alternate service clinic. Second, inability to provide medical readiness reports to support joint task forces or multiservice units or installations. Third, DoD is unable to manage the health and readiness of the force without each service providing reports. This paper will provide analysis for each service medical readiness system and determine if there is a benefit to having a DoD medical readiness system.

Options for a Joint Medical Readiness System

Over the past 10 years, the military services medical departments have developed automated systems and tools to document and report medical readiness for service members. Before developing automated systems, providers and units manually reviewed medical records and created local spreadsheets to track, manage, and report medical readiness. The process proved cumbersome, redundant, and produced obsolete data, especially during predeployment processing when timeliness and accuracy is critical. Today, each military service – Air Force, Army, and Navy funds and manages its own medical readiness data system to track and report medical readiness of its individual service members and units. The automated systems provide data entry, unique medical readiness reports, and data logic to meet service and DoD policies and regulations.

This paper will address the current individual medical readiness requirements, current service and DoD medical readiness systems, and processes for tracking and managing medical readiness. The paper will then provide information that will assist the reader in determining if this is indeed the best approach for managing joint medical readiness amongst the services. Finally, the paper will discuss the pros and cons of the current and potential processes including effects on timely and accurate data during readiness processing and data reporting; government savings; improvement of force health protection; and maintenance of service systems and flexibility of system changes that leaders need to manage reports.

There are notable risks with multiple service medical readiness systems. First, there are significant costs to managing the changes for the medical readiness systems as well as every DoD system that uses the data to manage the readiness of the force.

Every policy change requires modifications to the medical readiness system, and many of the changes are redundant between the systems. Second, there are safety and health protection. The medical readiness systems are limited to the service and service members they support. Failures to update medical readiness data for members of sister services may result in duplicate tests, unnecessary immunizations, or worse, overlooked requirements, all putting the service member at risk. There is no interoperability between the various service systems to ensure data transfer, data synchronization, and accurate reporting above the service level.

There is continued discussion among the DoD and service leadership to develop interoperability between the service medical readiness systems. Service Medical Readiness Program Managers indicate the need for flexibility to modify the medical readiness system to support service specific individual medical readiness (IMR) requirements as well as the leadership's unique reporting needs.¹

Currently, DoD is merging many of the DoD installations as Joint Bases where units from two or more services are collocated.² For example, Joint Base McGuire-Dix-Lakehurst hosts tenants from the Air Force, Army, and Navy. The installation may have one location for medical readiness processing; however, providers enter the data for the medical readiness actions into the service member's specific system. This requires staffs maintain access and knowledge to multiple systems. If the provider does not have access to the system, they must direct the service member to have the information uploaded by their service health provider at some point in the future.

Since Goldwater-Nichols, DoD has created joint task forces (JTF) to support unique mission requirements anywhere in the world.³ The integrated units must achieve

and maintain a high level of medical readiness. Current service systems do not provide an efficient process for the JTF Commander to track and manage the medical readiness of the unit.

Service Medical Readiness Program Managers prepare routine medical readiness reports to DoD and Congress. The DoD then merges the data to create a consolidated report. If there is no synchronization of the logic and interpretation of the report requirements, the service systems may provide non-comparable data rendering this information unusable when merged at the DoD level.

Background

In December 1998, the Joint Chiefs of Staff (JCS) Memorandum, "Deployment Health Surveillance and Readiness", established baseline standardized individual medical readiness requirements for all service members.⁴ In addition, the document facilitated the services tracking unique requirements based on occupational needs. Prior to the JCS memorandum, each service determined their basic medical readiness requirements for readiness as well as predeployment. During this time, there were no automated ways to track these requirements leading to duplicate tests (unnecessary costs), procedures (i.e. immunizations) and repeated workload -- all leading to clinical and fiscal insufficiencies. As the focus and criticality of individual medical readiness improved, the services began developing automated tools to manage and report medical readiness. Additionally, service members used medical facilities and resources at locations not associated with their service. Over time, the need for standardized requirements and interoperability became self-evident.

In 1998, a newly founded DoD IMR Working Group provided recommendations for standardized IMR requirements. The Working Group continues to meet quarterly

and provide recommendations on medical readiness. The charter of the Working Group is to monitor, revise, evolve, and otherwise improve IMR elements and supporting processes.⁵

The JCS Memorandum documented the standard IMR requirements for readiness for all service members. The current standardized IMR requirements for all services are as follows:⁶

- Current Periodic Health Assessment
- Current HIV test
- DNA on file
- Dental class 1 or 2
- Current immunizations
 - Hepatitis A, Hepatitis B, influenza (in season), and Tetanus-Diphtheria
- No temporary or permanent deployment-limiting conditions
- Medical equipment (when applicable)
- Eye glass inserts for protective mask, hearing aid with battery
- Predeployment Health Assessment (0-90 days prior to deployment)
- Post Deployment Health Assessment (during redeployment)
- Post Deployment Health Reassessment (90-180 days after redeployment)

Service Specific Medical Readiness Requirements

The DoD IMR Working Group recognized there were service specific medical readiness requirements beyond the established DoD requirements.⁷ The services have always had the flexibility to track and manage additional IMR requirements for their service members. This ensures service members meet additional requirements for their

military occupation, gender, or age specific requirements. Additionally, services may develop their own periodicity for individual medical readiness requirements. For example, an Army Reserve Component Soldier must complete an HIV test every five years, while an Active Component Soldier must complete the test every two years.

Deployment Limiting Conditions

The critical aspect to medical readiness is tracking service members with health conditions that may limit deployment to a theater of operation. Conditions that can make a service member non-deployable may be temporary or permanent. Each service establishes unique policies, as well as automated tools, to determine if a service member meets readiness and deployment requirements as well as board actions required for final disposition. It is critical that any future automated tool development consider integration with the service process and automated system(s) responsible for determining deployability, functioning within military occupation, and retention within the service.

DoD and Service Systems

Background

Services fund and manage their own automated systems for medical readiness data entry as well as data reporting. The services designed systems to be flexible and allow rapid modifications for new medical readiness requirements to meet DoD or service unique policies and guidance. Each service system provides the ability to add personnel data from other services, civilians, and contractors. The service provider can then capture the IMR data for the individual from another service; however, the data does not transfer to the member's service system. The exception is the Air Force and Army, which currently provide data entry for service members from the alternate

service. For example, an Air Force provider can determine the readiness status for Army personnel, but only for identical medical readiness requirements. The provider enters the data into the Air Force system and then electronically transfers to the Army system.

Army

The Army uses an automated system called the Medical Protection System (MEDPROS). This system tracks and manages medical readiness requirements for all Army Soldiers. Additionally, it generates tiered reports for Soldiers, Units, Major Commands, and Components. Over 70 inbound and outbound interfaces support current data for reporting. MEDPROS contains demographic data for all Air Force personnel and allows data entry and reporting for Air Force personnel. MEDPROS provides a distributed (standalone) application to support data entry where limited capabilities exist.⁸

Navy

The Navy uses a system called the Medical Readiness Reporting System (MRRS). This system tracks and manages medical readiness requirements for all Navy and Marine personnel. MRRS provides data entry as well as data reporting for all Navy and Marine personnel.⁹

Air Force

The Air Force uses a system called the Aeromedical Services Information Management Systems (ASIMS). ASIMS tracks and manages medical readiness requirements for all Air Force personnel. Approximately 15 external interfaces support the data within ASIMS. The medical readiness systems are intertwined with the other

personnel and medical systems used to support medical and personnel readiness.

ASIMS provides a data entry as well as a data reporting capability.¹⁰

DoD Clinical System

Armed Forces Health Longitudinal Technology Application (AHLTA) is the DoD clinical system used by all services to manage patient care and the Electronic Medical Record. The DoD clinics and providers worldwide use AHLTA to document patient encounters and provides an inclusive medical record for service members.¹¹ AHLTA does not exchange data with any service medical readiness system. Providers must enter the medical readiness data into the service system and into AHLTA. The Reserve Components do not exclusively use AHLTA and only have viewing access. AHLTA does have provider portals with the Army system, MEDPROS, discussed later in this paper.

DoD Reporting Systems

The services provide data to DoD to track and manage the readiness of the force. This information identifies units prepared for deployment as well as funding allocation for medical readiness.

DRRS

The Defense Readiness Reporting System (DRRS) tracks and manages the Unit Status Report (USR) for all units in DoD.¹² The medical readiness data provides critical information to the personnel readiness portion of the USR. Each service manages an interface with DRRS and provides daily transfer of IMR data. Each service provides the exact same data elements to DRRS to ensure standardized reporting.

DoD IMR

The DoD IMR Working Group provides quarterly reports to the principles at the Office of the Secretary of Defense (OSD).¹³ The reports provide the status and trends on medical readiness of each service and DoD. The reports only include the common IMR requirements outlined in Department of Defense Instruction 6025.19.¹⁴ The IMR requirements and data logic to calculate each requirement are not standardized. For example, each service provides a status to determine if immunizations are current; however, the immunizations each service requires may be different.

Data Integration

DEERS

The Defense Eligibility and Enrollment Reporting System is the DoD authoritative source for all immunizations and centrally manages all immunization data.¹⁵ When administered, providers enter the immunization data in the service specific system. Each day, the service systems transfer all immunizations to DEERS. For immunizations entered into a medical readiness system for personnel of another service, DEERS provides all immunization data to the appropriate service system. The process to transfer immunization data from DEERS to the service system is 24-48 hours.

MEDPROS and AHLTA Portal

As noted above, AHLTA does not exchange IMR data with any service medical readiness system. However, the Army does provide a medical readiness portal for AHLTA providers. The portal allows AHLTA providers the ability to access medical readiness records for Army personnel without logging into MEDPROS. Providers select the IMR link from the Soldier record within AHLTA. MEDPROS presents the Soldiers medical readiness record and allows the provider to update the record. The benefits of

this process are the system does not require the provider to log into MEDPROS and the system provides point of service data entry into the Soldier's record. The disadvantage is the process does not transfer data back to the service member's record in AHLTA.

Data Usage

The DoD uses IMR data to support critical processes. The following are four ways medical readiness data supports the readiness of service members.

Readiness Reporting

Commanders and leaders at all levels rely on the IMR data to provide the current readiness posture for their unit. Each service system provides unique logic to calculate readiness based on component status (active or reserve), age, gender, military occupation, and rank. The reports use demographic data from the personnel system. Commanders can view data from the service member level as well as data aggregated at various levels of Command. Additionally, based on the medical readiness requirements established by each Geographical Combatant Commander (GCC) for each area of operation, the medical readiness system provides readiness status based on the unique medical requirements for a selected region.

Funding

Each service uses the IMR data to project funding requirements to support medical readiness. In the time of constrained resources and the need to maintain the highest state of readiness, DoD must ensure adequate funding for medical readiness programs. The services use the current readiness status, existing and projected policy mandates affecting medical readiness, and anticipated deployments to determine resource and medical personnel shortfalls or gaps required to provide quality service.

Deployability/Retention Determination

For a service member with a permanent medical condition, a board will determine retention in the military. If the service member meets retention standards, a similar board will determine deployability to an austere environment. Each service determines the medical policy and standards for worldwide deployability as well as retention in the military.

System Interfaces

The service medical readiness systems are not standalone stovepipe applications. Each medical readiness system supports several interfaces required to manage the data in and out of the system. The System Interface Agreements (SIAs) document the inbound interfaces needed to populate personnel demographic data, medical readiness data from other sources, and administrative data to manage the system. For example, all DNA data comes from the Armed Forces Repository of Specimen Samples for the Identification of Remains (AFRSSIR) as the authoritative source. In addition, the SIAs document the outbound interfaces for providing medical readiness data to many service and DoD systems. Each system change, such as a new IMR requirement or change to the logic requires an update to each impacted inbound and outbound SIA. All changes to the interface requires extensive testing between the systems, updating the SIA to reflect changes, and synchronizing effective date of the system change with other system(s) impacted by the change.

Current Limitations/Disadvantages

There are several disadvantages, as well as limitations, for DoD to manage multiple IMR systems.

Data Entry for Other Services

As outlined above, the DoD is moving to joint military bases as a means to reduce operational costs and support joint operations and training. The tenant military services on the installations must maintain clinics or personnel to manage data entry for the various service members assigned to the installation. For example, Dunham Clinic at Carlisle Barracks is an Army clinic that supports all services. The clinic providers primarily use AHLTA and MEDPROS. Both providers and data entry clerks must obtain access to all service medical readiness systems to enter the data at point of service or request the service member provide the information to a clinic for their service to update the medical readiness system. This is a critical point of failure for two reasons. First, the supporting clinic does not know the IMR requirements to ensure the service member meets readiness standards. The second reason is the potential for the IMR data does not populate the appropriate service medical readiness system, resulting in the service member showing as not medically ready and possibly requiring duplicate or unnecessary tests or procedures in the future.

Data Reporting

It is critical for JTFs, multiservice units, or Installation Commanders to know the readiness for the service members within their organization. The current disparate systems require Commanders to manually create spreadsheets or merge reports from the service component medical readiness systems. The service medical readiness systems use various IMR requirements and logic, further complicating the process.

Control of System Changes

Based on the changing geographical threat, environmental risks, and epidemiological recommendations, the DoD and services routinely modify the policies

for medical readiness and deployment standards. The policy changes may be at the DoD, service, unit type, or even individual level. When DoD makes policy changes, each service modifies the medical readiness system impacted by the change to capture and provide reports based on the new requirement. The policy changes require each IMR system to update the data entry logic, reporting logic for all impacted reports, system interfaces for external systems that use the data, plus the subsequent testing for each change. There are multiple points of failure with each system change. First, the services must ensure adequate funds are available to support the contractor changes to the system. Second, each logic change may affect one or more external system interfaces that use the IMR data. This requires the service medical system and the external system to synchronize when changes become effective. This is a significant risk since the service IMR system does not control change schedules for the external systems. If the external system is not able to make timely modifications, this may affect fielding of the new requirements in the IMR system.

Funding

The services fund and manage the contract for each IMR system. The contractor is responsible for day-to-day operations to ensure the system is operational and performance is within the prescribed standards. In addition, the contractor is responsible for all changes to the system based on new IMR requirements or new technologies. The current process to add or change IMR requirements is not cost effective or efficient. For instance, a system change for a new immunization will require each service to update their IMR system, modify the technical process that provides the data to DEERS, test the data interface to ensure there are no issues, and update the corresponding documentation (such as user guides and SIAs). This will be the same

process for all system interfaces affected by the new immunization. For example, the Army recently made system changes to MEDPROS for rabies vaccine; the changes modified the vaccine logic to calculate the due date for the next rabies vaccine. The cost for the technical changes, testing, and documentation was approximately \$45,000. The system changes took approximately two months to complete. This does not include costs for meetings, administrative government costs, and costs incurred by DEERS to receive the information. The vaccine changes were required for all DoD and service systems to ensure data and logic synchronization. This example of modifying the logic for an immunization currently in the system, is small in cost, scope, and complexity when compared to adding new requirements, automated forms, or major functionality.

Options

As outlined above, concerns about the lack of an integrated medical readiness system are not new. Each service component Medical Readiness Program Manager agrees a centralized medical readiness system for data entry and data reporting is the optimal solution. The political environment, cost, policy implications, and need for an agile system are factors for consideration when planning and implementing a centralized medical readiness system. Below are three options for consideration that provide various levels of data integration for medical readiness reporting and data entry. The options provide noteworthy advantages, disadvantages, and considerations to support further analysis or decision-making.

Option 1: Centralized System for Data Entry and Reporting

Overview

Provide a centralized medical readiness system for all military service personnel. Users will enter medical readiness data as well as generate reports from a single system. The services will have the ability to modify the system logic for each IMR requirement to comply with service specific policies and reporting needs. The system can provide a customized front end (what the user sees) based on the service of the provider or service member presenting at the clinic. For example, the Air Force provider's screen may be blue with unique filters or verbiage displayed on the screen or reports.

Data Entry

Providers will enter the medical readiness data for each service member into a centralized database. There are significant advantages to this approach:

- Data is current and updated real time with visibility of changes to all service component providers.
- Reduce the risk of duplicate processing, tests, or procedures.
- Medical personnel maintain access to one system allowing providers to process and treat all service members in any medical clinic.

Data Reporting

The centralized database will manage the medical readiness data, as well as the logic to calculate the medical readiness status for all service personnel. The centralized database will ensure the logic changes to determine deployability to a geographical

region are synchronized and accurate. This approach will enhance reporting capabilities for leaders.

- The Geographical Combatant Commander can establish different IMR requirements and standards for service members coming into an area of operation.
- JTF Commander can track and manage the medical readiness and deployability for the unit or individuals.
- Installation Commanders or Military Treatment Facility Commanders at Joint Bases can better track and manage medical readiness for all service members.
- Support DoD and Congressional requests for medical readiness data to track, manage and resource the readiness of the force. The centralized database will ensure identical logic used to provide reports.

Data Integration

There are many system interfaces providing data to as well as receiving data from the service medical readiness systems. The DoD will reestablish each interface to interact only with the centralized database. Although it can be a significant initial effort to move the interfaces, future changes to the readiness logic or data will require only one update. The existing external databases that interface with all service medical readiness systems, such as AFRSSIR for DNA data, would benefit from this option, as it would reduce the number of interfaces from three to one.

Cost Impact

There are significant costs to implement policy changes for IMR requirements. Currently, the services must update each system to ensure accurate data entry and reporting, modify impacted interfaces, and perform testing. The centralized database will reduce the costs and time required to implement the required changes. In addition, there are operations and maintenance costs to ensure day-to-day operations of each service system. A centralized system will reduce those costs.

Time Impact

There are two timesaving benefits with a centralized database. As previously outlined, it takes considerable effort to integrate medical readiness changes. Each service must implement, test, and synchronize the changes – affecting the ability to make modifications in a timely manner. There will be one system change with a centralized database, drastically reducing fielding time of new requirements. The second time benefit is the data entry and reporting management. The centralized system will allow providers to maintain access to one medical readiness system, reducing data entry time and learning curve for system changes. In addition, the centralized database will allow the JTF and Installation Commander to view the medical readiness for all personnel without accessing multiple systems.

Other Considerations

This option does not adequately address the unique system integrated processes for data and service member procedures. There are unique interconnections and integration points for each medical readiness system, providing a seamless workflow process for service members with readiness and deployment limiting conditions. If this

option is considered, a centralized medical readiness system must address each touch point and process to ensure no loss of readiness tracking, processing, or visibility for service members in a board process. The intricacy and continual changes to the personnel process by each service adds a level of complexity to this option. This may be the main reason DoD has not previously moved forward with developing a centralized medical readiness system.

Option 2: Centralized System for Data Entry and Service Level Reporting

Overview

Provide a medical readiness system that allows data entry into a centralized database and reporting at the service level. Users will enter medical readiness data into a centralized system for all service members. The centralized database will provide the medical readiness data to the service systems for reporting. The services will have the ability to modify the data entry logic for each IMR requirement to comply with service specific policies. The key to this option is medical providers can identify medical readiness shortfalls for all service members and update the information into a single system. The services will have more flexibility to provide unique and customized reports to manage the readiness of their units.

Data Entry

Providers will enter the medical readiness data for each service into a centralized database. Users will enter all IMR data into a centralized database for all service personnel that present themselves in any medical treatment facility. The key benefit is DoD will make one system modification for each policy change to the medical readiness requirements. In regards to data entry, this approach would have the same advantages as Option 1.

Data Reporting

The medical readiness data will transfer data from the centralized data entry database to the current service medical readiness system. The services will develop unique reports to track and manage medical readiness. This will provide services the ability to customize reports, provide extemporized reports, develop metrics and trend analysis, and address data variances for reports provided to DoD and Congress prior to submission. Unlike Option 1, service level reporting will not support JTF Commanders or Installation Commanders with an inclusive report for all service personnel assigned. In addition, each reporting system must implement, test and synchronize delivery of all changes to the medical readiness requirements.

Data Integration

As with Option 1, each incoming and outgoing interface will now exchange information with the centralized database. There are significant upfront costs to reestablish the interfaces with the centralized database, but there are long-term savings.

Cost Impact

The services will modify medical readiness reporting systems for each medical readiness policy change. However, a centralized data entry system could take advantage of the shared requirements and logic among the services, while still allowing for service specific business rules and elements. There is a cost to ensure changes to the centralized database are properly tested and synchronized with each service medical readiness reporting system. As previously mentioned, there will be significant cost for each external interface to exchange data with the centralized database.

Because the reporting systems will remain at the service level, the services will fund routine operations and maintenance for each reporting system.

Time Impact

Policies for medical readiness consistently change, adding new or modifying current IMR requirements for emerging threats. It is critical to document the new requirements in the service member's record as quickly as possible. The centralized data entry system will support rapid modifications to allow providers to document the new requirement for all service members. The centralized system will allow providers to maintain access to one system, reducing data entry time and learning curve for system changes. There are two disadvantages for time. First, JTF Commanders and Installation Commanders will be required to access multiple systems to track and manage the medical readiness status for units and personnel. Second, services must provide readiness reports to DoD or Congressional requests. DoD must consolidate the reports and ensure the data and logic is the same.

Other Considerations

Similar to Option 1, a centralized database for data entry and service level reporting will not support the integrated and automated processes to manage the current workflow for service members with readiness and deployment limitations.

Option 3: Service System Data Entry and Centralized Reporting

Overview

This option provides a medical readiness system that allows reporting from a centralized database and data entry at the service level. Users will enter medical readiness data into the service system. The service's data entry system will routinely synchronize information with the centralized database for medical readiness reporting.

The services will be able to modify the medical readiness report logic to comply with service specific reporting needs. The key to this option is that JTF Commanders and Installation Commanders can quickly determine the medical readiness status for assigned service personnel. The reports can provide status for readiness, deployment, or GCC specific requirements. The services will continue to manage the external interfaces and automated workflows for service personnel. Services will make modifications to each data entry system to support policy changes.

Data Entry

Data entry for medical readiness will remain with each service. When changes to medical readiness policy occur, the services will update their data entry systems. The services will be responsible to implement, test, and synchronize fielding of new medical readiness requirements. In addition, providers and medical personnel must maintain access to multiple systems to support military personnel from other services.

Data Reporting

The centralized database will manage all medical readiness data for reporting. The service's data entry system will routinely synchronize with the central reporting database to ensure reporting current data. This option will allow Commanders and leaders at all levels to track and manage the medical readiness of all personnel assigned to the unit or installation. In addition, a centralized reporting system will provide trend analysis data for medical, health prevention, and behavioral health concerns. The services may lose some flexibility for service unique or ad hoc reporting capability. In addition, the data reported to the Commander may not be real time based on the synchronization schedule with the service systems.

Data Integration

This option has the least impact on the current external interfaces, as they will remain at the service level. However, DoD will not realize the long-term cost and time benefit of centrally managing external interfaces.

Cost Impact

The service's data entry systems will require modifications for each change to medical readiness requirements. When medical readiness policy changes occur that require modifications to the data entry system, the services may need to maintain two versions of the system -- the current version as well as a version with the new changes. The centralized reporting database may not accept the new data until all services are prepared to implement the new requirement. There are significant costs to maintaining two versions of a system. There is no impact to cost for data interfaces, as they would remain at the service system.

Time Impact

As outlined above, this option may negatively affect release of data entry and reporting modifications with increased cost to maintain two versions of a system. In addition, providers and medical personnel must maintain access to multiple data entry systems as well as understanding of system changes and major upgrades. For medical readiness reporting, JTF Commanders and Installation Commanders can accurately manage and track the medical readiness for assigned personnel.

Other Considerations

Data entry at the service level and a centralized reporting system best supports the integrated and synchronized processes within each service system. These

processes are critical to tracking and managing service members with medical conditions. The critical concern with this option is providers will not have visibility of the medical readiness status or conditions for a member from a different service.

Option Analysis

The matrix below provides a comparison of the three options. Each option compares the various criteria outlined above and provides a numeric ranking. The lower number indicates the more favorable option.

	Data Entry	Data Reporting	Data Integration	Cost	Time	Complexity	Acceptability	Total
Option 1	1	1	1	1	1	3	3	11
Option 2	2	3	2	2	2	2	2	15
Option 3	3	2	3	3	3	1	1	16

Figure 1: Option Comparative Analysis

Recommendation

Option 1 provides the optimal solution to support long-term cost savings and an efficient process for data entry, data reporting, and data management. The services must maintain the flexibility to integrate the medical readiness system with other service systems or actions to process service members. The processes and integrated points with each system are dynamic and change often. Both Option 1 and 2 requires integration of each of these processes with the centralized database. This will require significant initial time and initial cost to develop, test, document, and implement each integrated process. In addition, the services manage the external inbound and outbound interfaces to support data transfer and synchronization. Many of the interfaces are at the DoD level and are redundant between the services. Option 1 and 2 will require DoD to establish each interface with the centralized database. In the long term, Option 1 and 2 will save significant time and money to modify the interface once

(development, testing, and documentation) for all medical readiness policy changes. However, the process to accomplish this is significant and there may be great resistance to change, making this the best overall option logically but most difficult to execute.

In view of this, the DoD may want to consider Option 3. Although it appears according to the matrix to be the less favorable when compared to Option 1 and Option 2, resistance to change would be less. Option 3 would allow reporting from a centralized database and data entry at the service level. It will allow JTF Commanders and Installation Commanders to generate reports and effectively track and manage the medical readiness of units. DoD can track medical readiness trends for policy decisions and health prevention programs. In addition, Option 3 allows DoD to integrate, through an iterative process, additional capabilities found in Option 1 or Option 2. Option 3 does not address data entry into a centralized database and does not allow providers to support all service personnel. However, there are alternatives for DoD and the services to consider supporting data entry for any service member at a location. As previously mentioned, the Air Force and Army currently provide data entry for service members from the alternate service. For example, an Air Force provider can determine the readiness status for Army personnel, but only for identical medical readiness requirements. The provider enters the data into the Air Force system and then electronically transfers to the Army system. DoD should consider improving the process for the Army and Air Force by implementing the same process for the Navy and Marines. While not an optimum solution, this alternative will allow providers to enter medical readiness data at the point of service for any service member, improve

centralized reporting and meet minimal resistance. Second, consideration is a near real time data exchange with the centralized medical readiness reporting system to display the service member's data. This will allow the provider to determine the medical readiness status for the service member.

Conclusion

This paper provided an overview of current systems, as well as options for a centralized system. It presented the pros and cons of various options, reducing costs and providing a centralized database that supports joint medical readiness mission. It provided options to reduce costs, streamline system changes that support policy changes, improve medical readiness, and reduce health risks.

Future exploration into this topic should include expansion of the Army's AHLTA portal. As outlined earlier, AHLTA users can already access the Army's MEDPROS system through a seamless portal that presents the various MEDPROS data entry screens to the provider. The current drawback is the process will limit access for some users and reserve component personnel. Again, this may be a future focus for an alternate solution to a Joint Medical readiness module.

Now and in the future, DoD must globally support full spectrum operations within constrained budgets and a smaller force. Doing so will require developing and managing joint military operations as well as joint infrastructure support. Commanders and leaders need to track and manage the medical readiness for joint task forces, joint base installations, and DoD to ensure modular units can quickly deploy to any theater of operation to support a wide range of missions. There is no doubt of the need to streamline the process; the challenge is how to get there.

Endnotes

¹ Dr Rebecca Hall, US Air Force, Medical Readiness Program Manager and Ms Audrey Luken, US Army, Medical Readiness Program Manager, telephone interview by author, January 10, 2013

² Army News Service, "Three Army Posts Transform to Joint Bases," October 2, 2009, <http://www.army.mil/article/28260/three-army-posts-transform-to-joint-bases/>, (accessed 5 January 2013)

³ U.S. Joint Chiefs of Staff, *Joint Task Force Headquarters*, Joint Publication 3-33 (Washington DC: U.S. Joint Chiefs of Staff, July 30, 2013) I-1

⁴ The Joint Chiefs of Staff, "Deployment Health Surveillance and Readiness," memorandum for Undersecretary of Defense for Personnel and Readiness, Washington DC, December 4, 1998

⁵ U.S. Department of Defense, *Individual Medical Readiness*, Department of Defense Instruction 6025.19 (Washington DC: US Department of Defense, January 3, 2006) Ibid., 3.

⁶ Ibid., 4.

⁷ Ibid., E3.

⁸ Ms Audrey Luken, US Army, Medical Readiness Program Manager, telephone interview by author, December 19, 2012

⁹ Medical Readiness Reporting System Home Page, <https://mrrs.bol.navy.mil/> (accessed December 20, 2012)

¹⁰ Dr Rebecca Hall, US Air Force, Medical Readiness Program Manager, telephone interview by author, January 10, 2013

¹¹ Armed Forces Health Longitudinal Technology Application Home Page, <http://www.ahlta.us/> (accessed December 20, 2012)

¹² Defense Readiness Reporting System Home Page, <http://www.drds.org/index.php> (accessed December 20, 2012)

¹³ U.S. Department of Defense, *Individual Medical Readiness*, Department of Defense Instruction 6025.19 (Washington DC: US Department of Defense, January 3, 2006) 3

¹⁴ Ibid., 4.

¹⁵ Stephen Hufnagel, "iEHR Joint Immunization Capability – RFI," August 5, 2012, <http://www.osehra.org/discussion/iehr-joint-immunization-capability-rfi> (accessed January 18, 2013)

