

USING ENTERPRISE ARCHITECTING TO INVESTIGATE A COMPLEX, MULTILEVEL ENTERPRISE AND CREATE A FRAMEWORK FOR ENTERPRISE TRANSFORMATION

by

Elizabeth Cilley Southerlan

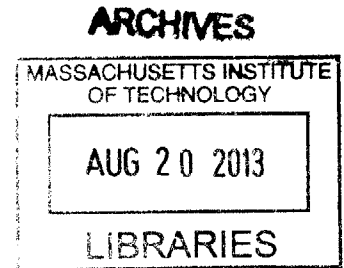
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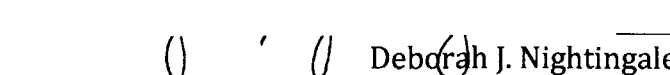
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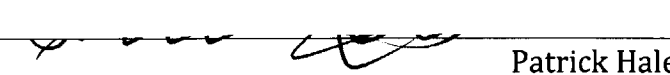


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ABSTRACT

The Department of Defense (DoD) presented a need to transform its Military Psychological Health Enterprise (MPHE) at multiple levels. It had been established that Enterprise Architecting would be used as an approach to perform the transformation but the way in which the multiple levels of the enterprise would be transformed had yet to be determined. The study began with an investigation into the current state of a low-level component of the MPHE. This investigation invoked Enterprise Architecting techniques to determine the as-is state of this low-level enterprise. Then, the results of the Enterprise Architecting analysis were combined with multilevel analysis techniques to create a framework that supported transformation of a complex, multilevel enterprise. It was determined that upon using Enterprise Architecting techniques to identify the dominant views of a low-level component of a multilevel Enterprise, the structure of the levels the enterprise as well as the interactions between the levels can be used to understand the impacts of decisions made at higher levels of the enterprise. In the specific case of the DoD MPHE, the dominant views were found to be Organization, Process, and Information. By investigating these dominant views in more depth, the ways in which its resources interacted while performing relevant tasks in this micro-level enterprise (Camp Lejeune MPHE) were determined. This information was transformed into objective data, which was then combined with the information about how the levels of the DoD MPHE interact to suggest a framework for modeling potential future states of the enterprise. This will support both the design and selection of a transformation plan for the enterprise. The descriptive application of the suggested framework provided in this thesis supports both the design and selection of a transformation plan for the enterprise.

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Chapter 1: Introduction

1.1 Context

Engineering Systems is an emerging field of research that applies approaches from engineering, social sciences, and management to create solutions for complex socio-technical challenges (Nightingale and Rhodes, 2012). The ability to understand organizational behavior, and how to transform this behavior, is one of the greatest challenges of Engineering Systems approaches. Any organization, whether for-profit, not-for-profit, private or public fits Hastings' definition of a system (2004) which states *a system is a collection of pieces whose collective function is greater than the function of the individual pieces*. Enterprise Architecting is a subfield of Engineering Systems; it is a field that emphasizes the application of holistic thinking to "design, valuate and select" the future state of an enterprise (Nightingale and Rhodes, 2012). The term *Enterprise* in the title is meant to imply that the field utilizes an *enterprise perspective* to approach the system, in which there is a particular focus on relationships and interactions among the elements of the system. Enterprise Architecting serves as a tool to allow organizations, to achieve improved future states by first understanding their current state in terms of 8 specific elements or views. These views are strategy, policy/external factors, organization, process, knowledge, information and related technology, and products/service. The purpose of this report is to apply Engineering Systems approaches, specifically Enterprise Architecting principles, to understanding a portion of a familiar complex multi-level enterprise of particular relevance in the U.S. at this time. Although beyond the scope of this report, this analysis can provide a framework to better understand the entire complex enterprise and ultimately provide the framework for enterprise transformation. We will specifically look at the behavioral health services provided by the Department of Defense.

Many enterprises, if not most, carry out their actions at multiple levels. An example of a multilevel enterprise is the United States Department of Defense (DoD). As seen in Figure 1, The DoD enterprise is composed of three levels.

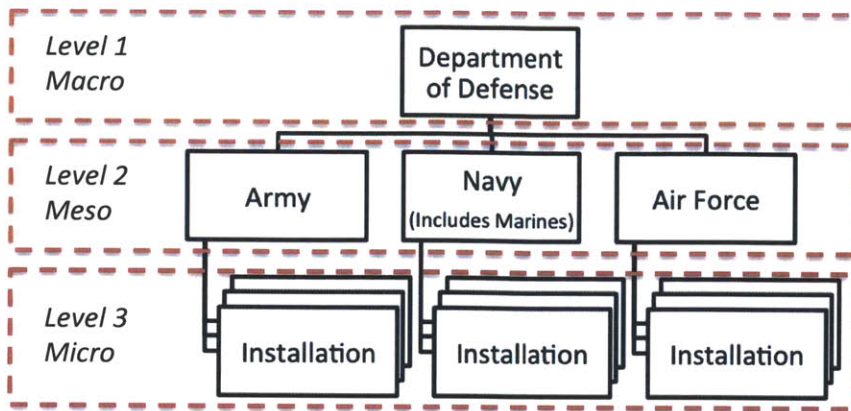


Figure 1 | DoD Multiple Levels

While this is a relatively broad view of the DoD, Figure 1 represents not only the multiple levels at which the DoD operates, it also demonstrates that each of the levels is comprised of one or more systems (organizations) that are managed and operated independently but make up a large system that delivers over all value. Hence, the DoD enterprise would be classified as a system-of-systems (SoS). (Rhodes et al, 2009).

In order to apply the principles of Enterprise Architecting to SoS enterprises to support transformation, the current state of the entire enterprise must be understood. This is a complex process, as each system within the enterprise must be understood in terms of the Enterprise Architecting views. Gathering information pertaining to the 8 views of each system is important and understanding the interactions between each of the views is just as important when preparing for a transformation. In the case of SoS enterprises, the interactions between the views within each system must be understood as well as the interactions between the views across the systems and across the levels.

1.2 Motivation

The Department of Defense (DoD) is America's oldest and largest government agency; as such, it is also the nation's largest employer. The DoD employs over 1.4 million men and women on active duty and 718,000 civilian personnel. There are 1.1 million serving on National Guard and Reserve forces and more than 2 million military retirees. The underlying mission of the DoD is to *provide military forces needed to deter war and to protect the security of our country*. (About, 2012) As with most employers, the DoD offers healthcare services to those that are employed in active duty or as civilians, as well as

military retirees and the family members of active employees and retirees. These services are offered through the Military Health System (MHS). The environment in which many of the service members are immersed is one of persistent and prolonged conflict. This creates unique challenges for the caregivers within the MHS who are tasked with ensuring the physical and psychological well being of the service members and their families.

A challenge of particular interest to the MHS is the treatment of post-traumatic stress disorder (PTSD). This study addresses the treatment available and provided to service members suffering from PTSD. It has been notably difficult to estimate the true prevalence of PTSD among service members. A recent article in the *Journal of Traumatic Stress* (2010) performed an analysis on multiple PTSD prevalence studies for service members deployed to Iraq and/or Afghanistan. The majority reported a prevalence ranging from 5 to 20%. Both the prevalence and cause of PTSD are poorly understood. The unknown prevalence of PTSD is of economic concern, in that without a true estimate of the number of service members affected by PTSD, it is impossible for the DoD to supply (create and fund) treatment programs that match the demand (prevalence) of the disorder. Without understanding the true prevalence of PTSD it is very difficult to determine the true causes for the disorder. Knowledge of the causes can lead to a better determination of the "at risk" population, which in turn can support preventive actions and decrease the number of service members, and their families, actually affected by PTSD.

The Department of Defense and the Massachusetts Institute of Technology (MIT) have partnered, via the Sociotechnical Systems Research Center (SSRC), in a research effort to address key questions about the Military Psychological Health Enterprise. Four objectives or goals must be accomplished in order to complete this effort. The objectives are as follows:

1. Develop models of the current Military Psychological Health Enterprise (MPHE) to capture the dynamics of value creation and delivery to key stakeholders.
2. Determine the levers of change in the Military Psychological Health Enterprise.
3. Create future enterprise designs that better meet the quadruple aims of readiness, per capita cost, experience of care, and population health (Berwick, 2010).
4. Prioritize and guide actions to achieve the desired future enterprise.

The hypothesis of the SSRC research effort is that the MHS's MPHE can achieve more efficient delivery and effective outcomes by using an integrated system enterprise approach to manage the delivery of behavioral health to service members and their families. Enterprise architecting tools and methods will be used to systematically assess the current or "as-is" state of the MHS and to then determine the most value added future state and an efficient transformation plan.

As stated in the Section 1.1, the DoD is a multilevel system-of-systems (SoS). Recall, from Figure 1, that there are three main levels of the system, the Macro, Meso, and Micro levels. The MHS mirrors the hierarchy of the DoD, in that it is active at the same three levels. As such, the MHS is composed of several high-level organizations, each of which can be broken down into lower level command offices and units. In order to achieve the first objective, of developing models of the current Military Psychological Health Enterprise (MPHE), the SSRC research effort uses Enterprise Architecting to apply holistic thinking when mapping out the as-is state of the MHS. Enterprise Architecting provides a systematic approach to understanding this enterprise by elaborating and describing its constituent elements (Nightingale and Rhodes 2004).

A DoD Instruction was issued on February 27, 2012 that outlines the timeline of establishing policy, assigning responsibilities, and prescribing procedures to outline a psychological and mental¹ health initiative within the military. This Instruction supports the motivation for this thesis, as the findings of the research will directly support the development of the items listed in the Instruction by describing the as-is state of a selected military installation. The MPHE policies, responsibilities, and procedures are in the midst of being created, so for clarification within this thesis, the Military Psychological Health Enterprise will be defined as the sum of all constituent elements of the MHS that contribute to psychological and mental healthcare provided to members of the military and their families. For further clarification, "behavioral health" will be used to include both psychological and mental components of health.

¹ The World Health Organization (WHO) does not denote a difference between psychological and mental health. It defines mental health as "state of well-being in which every individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his community," the terms are only used specifically in this paper because they were specifically used in the DoD Instruction issued in February 2012.

In addition to supporting the first objective of the project, this thesis will also support the fourth objective, which pertains to the actual transformation of the enterprise. The support for this objective will come from the analysis performed on the as-is state of an installation and how this information can be used to understand the impact of making higher-level changes on lower levels of an SoS Enterprise.

The MHS can be classified as a SoS Enterprise, with multiple systems being operated on multiple hierarchal levels. However, when it comes to providing healthcare, the lowest level systems do not operate completely independently. Due to the size and complexity of the entire MPHE within the DoD's MHS, effort will be made to determine how the information collected at a lower-level demonstrator site can be utilized to support a transformation plan that can be scaled to the size of the entire enterprise. Camp Lejeune, a Marine Corps base in North Carolina, received recommendation from high-level Marine and Navy medical general officers and was chosen as a demonstrator site, at which the initial transformation process will begin.

Camp Lejeune is a Marine Corps Base located in southeastern North Carolina. According to the Military Installations website (2012), the Camp occupies about 153,439 acres with 14 miles of beach along the Atlantic Ocean and is home to approximately 131,000 people. The population breakdown between Active Duty Marines, Family Members, Civilians, and Retirees and their Family Members can be seen in Figure 2. As seen in the figure, the majority of the population, a combined 75%, is composed of Active Duty Marines and their Family Members (35% and 40% of the population, respectively).

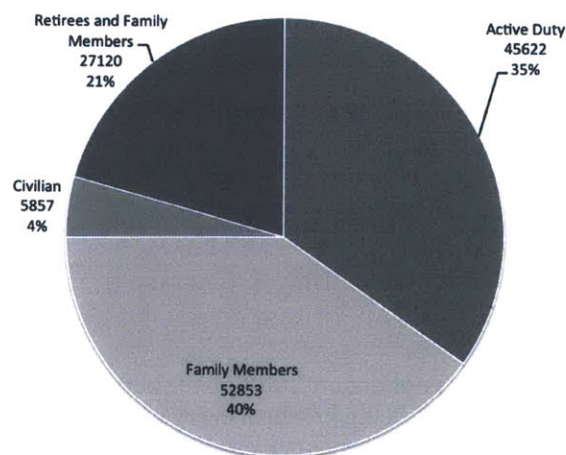


Figure 2 | Camp Lejeune Population Breakdown

The Marine Base offers a number of services to its residents. Marine and Family Services are offered through the Marine Corps Community Service (MCCS) organization located on base. Youth Services are offered through the Camp Lejeune Child, Youth and Teen Programs (CYT). Family housing is offered through the Camp Housing Services. Employment services are offered through Career Resource Management Center (CRMC). Medical Services are provided by the Naval Hospital at Camp Lejeune. (Military Installations, 2012)

Camp Lejeune is a major Marine expeditionary force base that is actively pursuing new behavior health models. The SSRC team is tasked with determining the as-is state of the MPHE enterprise at Camp Lejeune and developing a future state enterprise as well as a transformation plan.

There is a specific need, presented by the DoD to transform their enterprise at multiple levels. It has all ready been established that Enterprise Architecting will be used an approach to perform the transformation but what has yet to be determined is the way in which the multiple levels of the enterprise will be transformed. It can be assumed that the DoD is not the only enterprise composed of multiple levels so the motivation for a tool to present a framework for multilevel transformation is greater than this project. This tool will be developed and piloted during the DoD PTSI project but will have greater application in the field of sociotechnical systems.

1.3 Objectives

The objectives of this research effort are two-fold. The first is to support the development of an improved future state for the DoD's MPHE by using Enterprise Architecting to investigate the current state of the MPHE at the selected demonstrator site, Camp Lejeune . The second has a broader application: to combine the use of Enterprise Architecting tools with multilevel analysis techniques to create a framework that supports transformation of a complex, multilevel enterprise.

As mentioned in Section 1.2, the DoD MHS is a SoS Enterprise. It is made up of multiple systems being operated on multiple hierarchal levels. Recall Figure 1 for the multiple levels of the DoD. The DoD MHS hierarchy parallels the DoD's hierarchy as

direction flows down from the Macro level to the Meso level, by way of policies,. The Meso level is then responsible for creating and managing processes that are executed at the Micro level to ensure the direction given at the Maco level is followed. This flow of direction between levels is depicted in Figure 3.

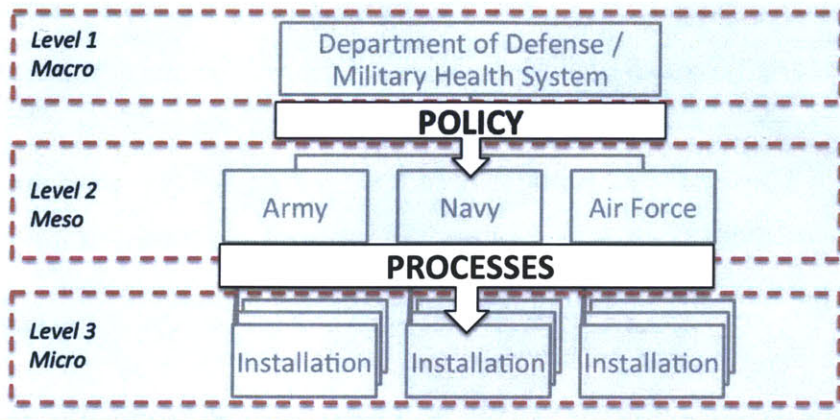


Figure 3 | Flow of direction between levels of DoD Military Health System

It is believed that this type of top-down direction flow exists within other complex, multilevel enterprises. Examples could include nation-wide healthcare systems and nation-wide retail companies. Each of these will likely receive direction from the executive, or macro, level of the organization that is communicated to the regional, or meso, level (e.g. country regions, states, or demographics). Each of the regional levels will then be responsible for creating and managing processes to ensure the executive direction is fulfilled. It should be noted that, in the case of the DoD MPHE, the lowest level systems do not operate completely independently. This is assumed to be true for other complex, multilevel enterprises.

While this research effort is motivated by two objectives, it is believed that fulfilling the first objective will directly support fulfillment of the second. The DoD MPHE is a complex, multilevel enterprise and this research effort will focus specifically on using Enterprise Architecting to understand and investigate a micro-level component of this system, Camp Lejeune. The information collected will be analyzed using multilevel analysis tools to develop a framework to support transformation of the DoD's MPHE. This

framework will combine Enterprise Architecting with multilevel analysis tools in a way that will be transferable to other complex, multilevel enterprises.

1.4 Scope

The scope of this project is defined by its objectives as well as the enterprise in which the research is being completed, the DoD MPHE. The first objective of the project is to use Enterprise Architecting to understand and evaluate the as-is state of the MPHE at the demonstrator site Camp Lejeune, a micro-level enterprise of the system. In order to understand the lowest level of this system-of-systems, we will first be treating Camp Lejeune as the enterprise of study. For this objective, the scope will include the components, and their interactions, of the micro-level enterprise that contribute to the MPHE only. The second objective is to combine the information gathered about the micro-level enterprise with multilevel analysis tools to propose a framework that will support a transformation of all levels of the DoD enterprise. For this objective, the scope will be widened to also include *assumed* information about the meso- and macro-levels of the enterprise. This information will be used to demonstrate how the framework can be used to understand and demonstrate the interactions and flows between the levels. All assumptions will be stated to facilitate any necessary modifications for future applications when more knowledge about each level of the enterprise is known.

1.5 Approach

This research effort is completed in two main phases. The first phase employs Enterprise Architecting to understand the as-is state of a micro-level enterprise. Following the assessment, potential application of multilevel analysis tools are investigated to determine how information gathered about the micro-level enterprise can be used to develop a framework that supports a multilevel transformation. The second phase presents the process used to develop a framework for multilevel enterprise transformation.

Each of these phases is presented in a descriptive, rather than prescriptive, fashion in Chapters 3 and 4. The first phase is described in Chapter 3. The as-is assessment is presented in Sections 3.1 through 3.3. In these sections the current state of the MPHE at

Camp Lejeune is described in term of Enterprise Architecting. The main takeaways of the assessment are summarized and presented in Section 3.4.

The second phase is described in Chapter 4. The potential application of multilevel analysis tools is investigated and described in Section 4.1. The steps of the framework are presented in Section 4.2. This section outlines all the steps, including those in the first phase that are used to create, as well as implement the framework. An application example is described through an overview of the framework as it was applied to the DoD MHS via the demonstrator site, Camp Lejeune. Chapter 5 summarizes the findings of this thesis and proposes future uses for the proposed framework.

Chapter 2: Literature Review

The desired goal of this research is to propose a framework that supports transformation of a complex multilevel enterprise. This requires the understanding and application of tools from the field of engineering systems. This research particularly utilizes Enterprise Architecting, a subfield of systems engineering (Nightingale and Rhodes, 2012), to assess the as-is state of a low-level component of the whole enterprise. Then, multilevel analysis techniques are utilized to construct the desired framework that uses the information gained about the as-is state of the low-level component to guide an enterprise-wide transformation. This chapter reviews literature pertaining to engineering systems, Enterprise Architecting, and multilevel analysis.

2.1 Engineering Systems

Engineering Systems is a relatively new field of study that utilizes engineering, social science, and management approaches to research and design solutions for complex socio-technical challenges (Nightingale and Rhodes, 2012). Hastings (2004) claims that those involved in the field of Engineering Systems are interested in systems with specific characteristics. These characteristics state that the system must be technologically enabled, it must include a large number of interconnections and components and it must be complex. The system must also be dynamic, meaning it involves multiple time scales and uncertainty, and it must interact socially and naturally with technology. The system may also have emergent properties. Hastings goes on to argue that in order to understand Engineering Systems specific abilities are required. In addition to holding an enterprise perspective, these abilities include possessing an interdisciplinary perspective across technology, management and social science and being able to incorporate system properties (e.g. sustainability and flexibility) and perspectives from different stakeholders into the design process.

Hastings' claims are consistent with those expressed in an MIT Open Access Article about the Engineering Systems Matrix (Bartolomei, et al, 2012). This article states that those in the Engineering Systems field are not tackling new problems, they are seeking a way to integrate the disciplines also mentioned by Hastings (technology, management and social science). This integration should allow for the discovery of principles and properties

of these complex systems.

Bartolomei (2012) also presents the DoD as a hierarchal engineering system, or enterprise. He attributes this to the way in which its constituent components work to achieve localized goals that, in turn, support the global goals of the enterprise. He cautions that due to multiple layers of hierarchy higher order levels of complexity may exist within the DoD than might exist within a less hierarchal enterprise. Rouse (2003) specifically addresses the use of Engineering Systems hierarchal enterprises. He claims that the key to successful hierarchal decomposition of a complex enterprise is to manage its complexity by dividing and conquering. based on the This claim leads us to the following portion of the literature: Enterprise Architecting. This subfield of Engineering Systems provides an approach that accomplishes just what Rouse suggests: dividing and conquering an enterprise in order to understand its components and how they interact.

2.2 Enterprise Architecting

Enterprise Architecting is a subfield of Engineering Systems that applies holistic thinking to design, valuate, and select an optimal future state structure for an enterprise to realize its value proposition and desired behaviors. (Nightingale and Rhodes, 2007) Enterprise Architecting proposes that greater perspective of an enterprise can be gained by using eight “views” to assess the enterprise. By understanding how the components of an enterprise contribute to this views, the complexity of the enterprise as a whole can be reduced. (Nightingale and Rhodes, 2012) These views include strategy, organization, policy and external factors, information, infrastructure, knowledge, processes, and products/services. The eight views and a high level representation of their interactions are illustrated in Figure 4; they are defined in Table 1.

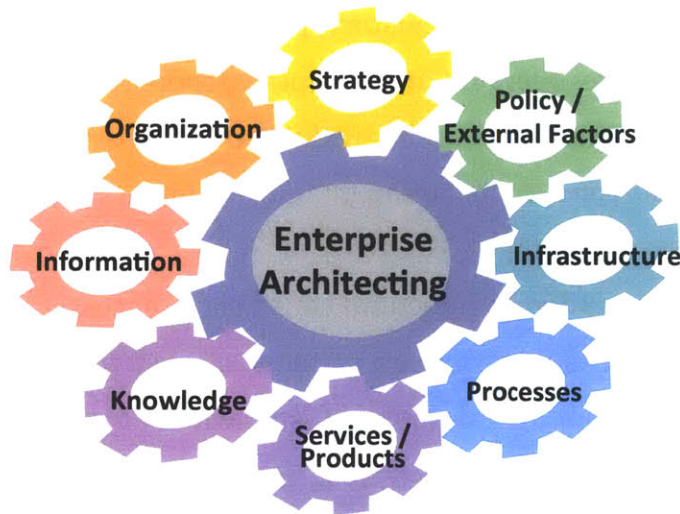


Figure 4 | Enterprise Architecting Views (Nightingale and Rhodes, 2012)

As depicted in Figure 4, the views work together to create a well working enterprise. That is why it is important to understand the as-is state of each view in order to fully understand the as-is state of the entire enterprise.

Table 1 | Enterprise Architecting Views Defined (Nightingale and Rhodes, 2012)

VIEW	DESCRIPTION
Strategy	Goals, vision and direction of the enterprise, including business model and competitive environment.
Organization	Organizational structure as well as relationships, culture, behaviors, and boundaries between individuals, teams, and organizations.
Policy / External Factors	External regulatory, political, and societal environments in which the enterprise operates.
Information	Information needs of the enterprise
Infrastructure	Flows of information and system/technologies for information availability.
Knowledge	Implicit and tacit knowledge, capabilities, and intellectual property resident in the enterprise.
Processes	Core processes by which the enterprise creates value for its stakeholders.
Services/Products	Services and/or Products produced by the enterprise for use by its stakeholders.

In addition to the eight views, Nightingale and Rhodes (2012) also state that it is important to consider the ecosystem in which the enterprise resides as well as the stakeholders that are involved with the enterprise. They describe the ecosystem as “the

exogenous element that is characterized by the external regulatory, political, economic, and societal environment in which the enterprise operates and competes/cooperates with other related enterprises.” The enterprise stakeholders are individuals or groups that are affected by the enterprise based on their personal contribution to and/or benefit from the enterprise.

Rhodes, et al (2009) state that a descriptive architectural construct is necessary to architect new and future states of complex enterprises, or systems of systems. They present a framework that was developed through descriptive studies of real-world enterprises. The intent of the framework, shown in Figure 5, is to provide a generalized representation of how the enterprise views interrelate as well as influence each other. This framework was constructed based on years of research; however, the exact relationships and flows should be adapted to fit specific enterprises based on their nature and context. *The solid lines show primary relationships and influences of the elements or views, and the dotted lines are secondary ones.*

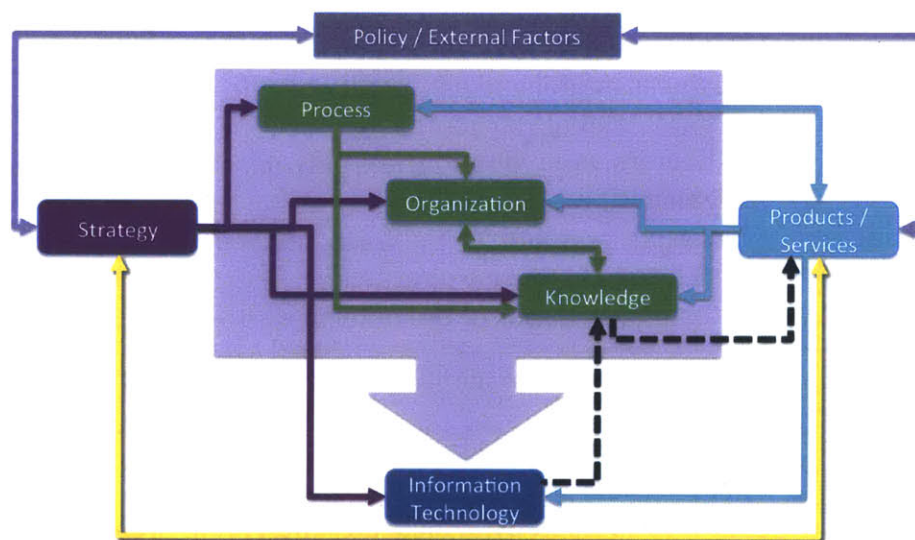


Figure 5 | Enterprise Architecting Framework (Nightingale and Rhodes, 2007)

Enterprise Architecting is a valuable approach to understanding complex socio-technical systems because the properties of enterprises do not allow for traditional decomposition approaches. (Nightingale and Rhodes, 2004) The eight views can be leveraged to develop an as-is state of an enterprise which can support the development of improved “could be” states. By developing multiple “could be” states, the stakeholders are afforded active involvement in selecting the final “could be” state of their enterprise. When a final “could be” state is selected, Enterprise Transformation is used to attain the new state. Nightingale and Rhodes (2012) propose that Enterprise Transformation “provides successful strategies and implementation approaches for transformation of an enterprise from “as is” to “to be” state.” Enterprise Architecting will be used in this research effort to assess the as-is state of a system within a larger system, or enterprise, so that a “could be” state and its transformation plan can be constructed.

2.3 Multilevel Analysis

In 1985 Denise Rousseau, a professor of Organizational Behavior, published a paper called “Issues of Level in Organization Research.” In this paper she states based on the increasing bureaucratization and advancement in technology researchers must advocate a multilevel approach when studying organizations. The idea of multilevel implies a hierarchal relationship between constituent bodies of an enterprise. In many cases, such as the DoD, this hierarchal relationship is expressed most distinctly by levels of leadership. For the purpose of researching these multilevel enterprises, it is helpful to create models to represent abstractions of enterprise levels. Multilevel models are used to describe relations at one level of an enterprise that are generalizable to other levels (Rousseau, 1985).

A more recently published article by Rousseau (2010) addresses the considerable progress made in multilevel analysis. She states, “what once seemed dauntingly complicated now appears to be more tractable.” She believes this progress has occurred because of five main reasons:

1. Humans increased ability to think organizationally
2. The use of heuristics to describe and make sense of organizational observations
3. Self-organizing processes that occur with systems

4. Cross-level interventions that have been used to implement change in complex organizations
5. The development and acceptance of models and statistical procedures used to conduct multilevel research.

Rousseau's fifth reason is the subject of many other scholars' research and will be further vetted in this thesis. Chan (1998) builds on this point by proposing compositions models that can be used to distinguish the functional relationships among entities belonging to different levels of an enterprise. His framework offers guidance around organizing, evaluating, and developing multilevel research theories. Morgeson and Hofmann (1999) build upon Chan's framework to describe the structure and function of the entities that make up a multilevel enterprise. In this case, structures are emerging properties as a result of interactions between entities belonging to all levels of an enterprise while functions can be described in terms of the output of an entity or group of entities belonging to an enterprise. Functions are useful for determining the inter- and intra-lever interactions between enterprise entities.

In his PhD thesis, Nicol (2010) addresses the use of process models. He states they are useful in "representing reality" in a way that is analytically useful. He cautions, however, that process models have generally only been applicable across a single dimension, or level, of an enterprise. This prohibits the user from understanding how these processes operate within larger processes. Larger processes take place in multilevel, complex enterprises as was seen in Section 1.3; leadership presents its direction from a high level and large processes are employed to ensure the direction is carried out by way of smaller, single dimension, processes. Nicol presents a Multi-Domain Process Matrix (MDPM) to provide a mechanism that synthesizes the physical, organizational, and information flow control for processes performed at many levels of an enterprise. The MDPM also allows the analysis of each of these domains separate from each other. He claims this model is made possible by each of the domains having network representations. The domains can also be jointly analyzed using a "projection layer." The projection layer depicts an aggregation of all the domains as well as the interactions between the domains.

Nicol's MDPM provides a beneficial perspective of an enterprise. It is a perspective that highlights how individual constituents of a multilevel, complex enterprise that may

appear to lack interaction on a single level may actually interact via constituents on another level of an enterprise. This perspective of an enterprise is complimentary to the perspective provided by Enterprise Architecting. This report will outline an approach for combining Enterprise Architecting techniques with the multilevel analysis tool, MDPM to support the transformation of a multilevel enterprise.

2.4 Why these tools

Distinguishing the levels that make up an enterprise, as well as their internal systems, allows for an Enterprise Architecting approach to be used to first gather information about the as-is state of each system and then analyze their subsequent inter- and intra-level relationships. Rhodes et al (2009) stated, "In order to architect a new or future instantiation of the SoS, a descriptive architectural construct is needed to enable a holistic perspective to be taken." So, by creating the foundation with Enterprise Architecting, multilevel analysis tactics can be applied to create a framework that will support transformation to a more value added future state. The multilevel relationships between Enterprise Architecting views can be identified in the lower, or micro, level of an enterprise and used to predict the impact of making changes at higher levels of the enterprise. This will support the architect's ability to select an optimal future state for all levels of the enterprise.

Chapter 3: Enterprise Architecting Application

This section outlines the Enterprise Architecting techniques used to assess the current state of a micro-level component of the DoD's Military Health System (MHS) enterprise, Camp Lejeune.

3.1 Research Elemental Views

To begin the research at Camp Lejeune, the demonstrator site, Enterprise Architecting tools were used to assess the as-is state of the enterprise. For the purposes of the low-level assessment, the Military Psychological Health Enterprise (MPHE) at Camp Lejeune is defined using these tools and will serve as the low-level enterprise under investigation. While the MPHE at Camp Lejeune is a component of the much larger Military Psychological Health Enterprise, it still satisfies Nightingale and Rhodes (2004) enterprise definition of being "a complex and highly integrated system that is comprised of processes, organizations, information, and supporting technologies with multifaceted interdependencies and interrelationships across its boundaries."

To begin the analysis, it is necessary to understand Camp Lejeune's position within the DoD enterprise as well as the Military Psychological Health Enterprise at this level of the multilevel SoS enterprise. To do this, information from both a high level as-is analysis of the DoD MPHE organizational architecture and an onsite investigation of the MPHE at Camp Lejeune was reviewed and compared to additional information available via DoD, Navy, Marine, and Camp Lejeune publications and web sites. It should be noted that the information collected from the previously performed analyses is predominately anecdotal (from stakeholder interviews). This information is used to aid the as-is analysis of Camp Lejeune with the intent to present a framework for a large-scale transformation; it should be further vetted prior to conducting actual transformations, at any level of the enterprise.

The ecosystem of the enterprise, the MPHE at Camp Lejeune, is a system within a greater system. Recall that the DoD is a three level SoS enterprise consisting of three main levels: Macro (DoD), Meso (US Armed Forces), and Micro (Installations), recall from Figure 1. Camp Lejeune and its components rests within the Micro level of the DoD enterprise as a Marine Installation under the command of the U.S. Navy, see Figure 6.

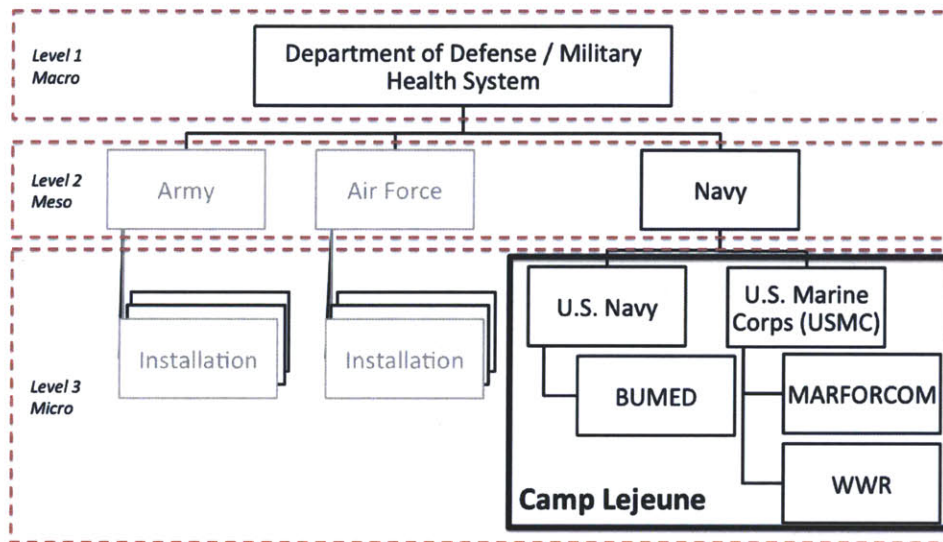


Figure 6 | Camp Lejeune is Installation in DoD SoS Enterprise

Recall the flow of direction between levels of the enterprise from Figure 3 in Section 1.3. Direction flows down from the Macro level to the Meso level, by way of policies. The Meso level is then responsible for creating and managing processes that are executed at the Micro level to ensure the direction given at the Macro level is followed. The MPHE of Camp Lejeune is not quite as straight forward, as the infrastructure for the Psychological Health Services is still being developed (DoD Instruction, 2012); however, based on the Camp Lejeune ESAT it is understood that there are three main stakeholder groups that are involved with Psychological Health at Camp Lejeune. Those stakeholders are the Navy Bureau of Medicine and Surgery (BUMED), the Marine Corps Forces (MARFORCOM), and the Wounded Warrior Regiment (WWR). It should be noted that each of these groups contributes behavioral health services in a very different fashion than the others, so their organizational representation is not straightforward. Keeping that in mind, Figure 6 depicts how the MPHE fits within the DoD enterprise at the Camp Lejeune installation level.

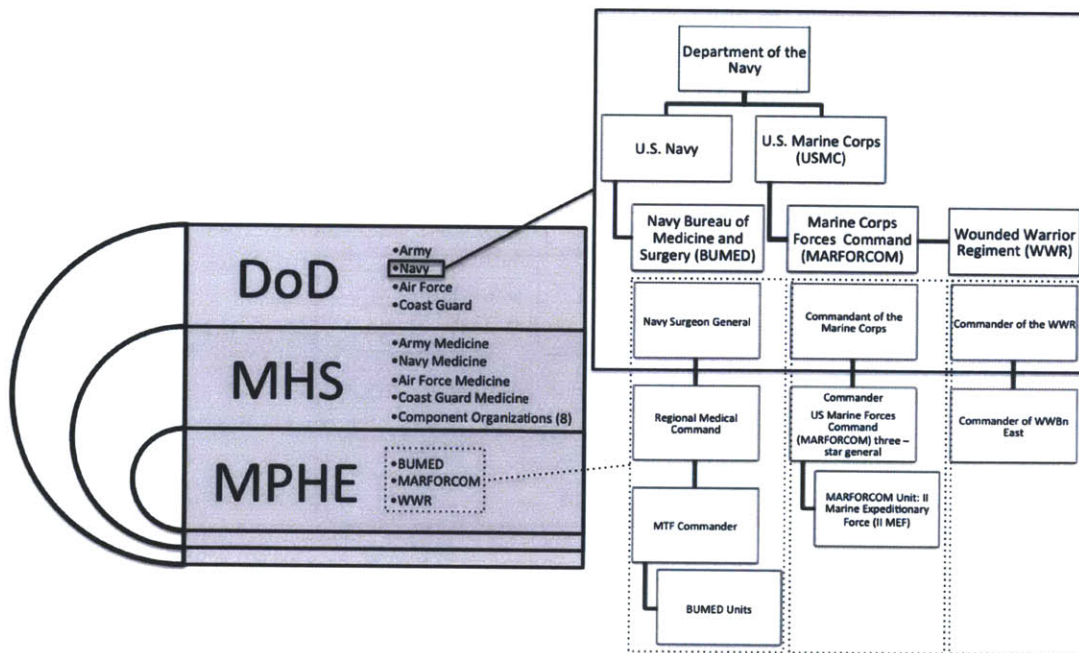


Figure 7 | DOD - MPH - MPHE and Camp Lejeune Hierarchy

The left side of Figure 7 depicts how the Military Health System (MHS) is contained within the Department of Defense (DoD) – as there are other components in addition to the MHS that make up the DoD. The left side also shows that the Military Psychological Health Enterprise (MPHE) is contained within the MHS – as there are also additional components that make up the MHS. The left side of the figure also depicts the major US Armed Services within the DoD: Army, Navy, Air Force, and Coast Guard. Each of these Armed Services has MHS organizations operating under their respective Service Surgeon General.² The right side of the figure provides an organizational representation of the MPHE stakeholders at Camp Lejeune. The US Marine Corps falls under Department of Navy’s command line. Both the Navy and Marine Corps offer behavioral health services to Marines at Camp Lejeune. The Navy’s contribution is offered through the Naval Hospital at Camp Lejeune, which is a military treatment facility (MTF) that conducts business for BUMED. The Marine’s contribution is offered through the command line’s personnel (MARFORCOM) and (WWR). Each of these three stakeholder groups contributes to the behavioral health services provided to Marines at Camp Lejeune and is therefore aligned to the MPHE level in Figure

² Information obtained from:
[http://www.health.mil/About MHS/Organizations/Index.aspx](http://www.health.mil/About_MHS/Organizations/Index.aspx)

7. The line of command for each stakeholder is viewed in the dotted lines on the right side of the figure.

To continue with the as-is analysis of the MPHE as Camp Lejeune, a more thorough understanding of all MPHE stakeholders is necessary. Figure 8 and Figure 9 depict key MPHE stakeholder groups, found in the ESAT, at a higher level than Camp Lejeune. Water drop models are used to demonstrate importance of and relationships between MPHE stakeholders. Each model in the figures contains an instructional key to explain how the models should be read. Figure 8 maps out the relationships between MHS leadership that contribute to MPHE while Figure 9 maps out the relationships between stakeholders involved with delivering and receiving care in the MPHE.

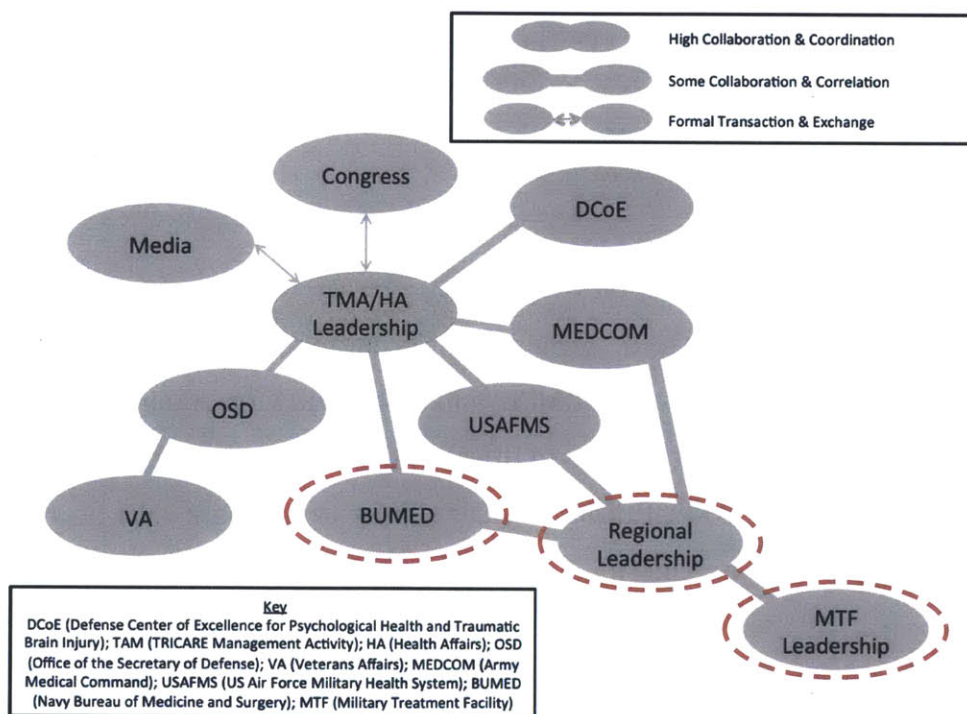


Figure 8 | MPHE Stakeholder Water Drop Model: MHS Leadership

The water drop model of Figure 8 provides information about the MPHE stakeholders at Camp Lejeune that align most with BUMED. The Naval Hospital at Camp Lejeune is aligned to the BUMED, Regional Leadership, and MTF leadership, seen in Figure 8, depicted by the red dashed circles.

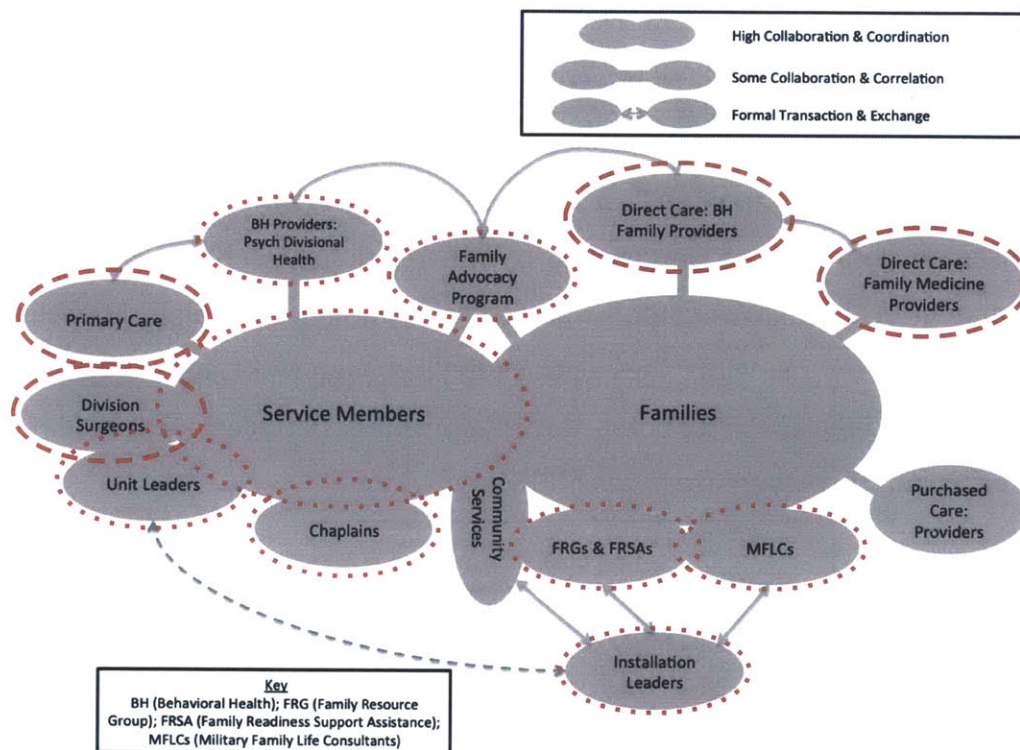


Figure 9 | MPHE Stakeholder Water Drop Model: Execution of Care

The water drop model of Figure 9 provides information about the MPHE stakeholders at Camp Lejeune that align with BUMED and MARFORCOM. Again the red dashed circles depict the stakeholders most aligned to BUMED; the red dotted circles depict the stakeholders most aligned with MARFORCOM services. The stakeholders that do not have any specified alignment cannot be classified as belonging to a specific stakeholder group at this time.

At this point the ecosystem and the stakeholders of the enterprise have been identified. The next step is to dive deeper into the as-is state of the MPHE at Camp Lejeune by investigating the enterprise in terms of the eight views Enterprise Architecting. The views seen in Figure 4 and detailed in Table 1 will be used to document the as-is state of the enterprise as well as provide guidance for unique areas within the enterprise that require focus. By sorting information into these views the complexity of the whole enterprise will be reduced which will provide unique perspectives to address the needs of the stakeholders. (Nightingale and Rhodes, 2012).

3.1.1 Strategic Objectives of Camp Lejeune MPHE

The strategy of an enterprise consists of the enterprise’s strategic goals, vision and direction of the enterprise including the business model, enterprise metrics, and objectives (Nightingale, 2009). Information gathered from an onsite visit stated that a single, unified set of strategic objectives does not currently exist in the MPHE at Camp Lejeune. This is not surprising, as the DoD recently sent out the Instruction to appoint psychological health leadership. The MPHE components (recall from Figure 7) will serve as a guide for the strategic investigation. This component breakdown will also serve as the framework for the as-is state assessment for the MPHE at Camp Lejeune. The strategic groups contributing to the MPHE at Camp Lejeune identified during an on-site visit are the Navy Bureau of Medicine and Surgery (BUMED), Marine Corps Forces (MARFORCOM), and the Wounded Warrior Regiment (WWR). The organizational charts that detail where each of these groups resides within the Department of the Navy can be seen in Figure 10.

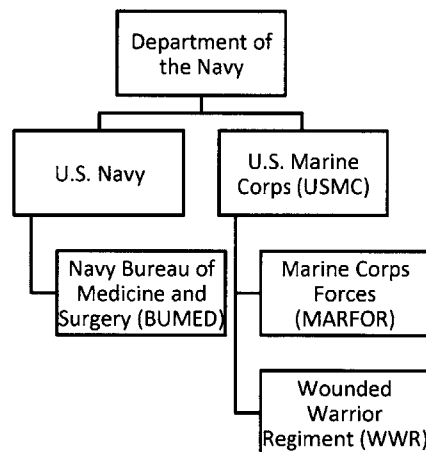


Figure 10 | MPHE Strategic Groups

Information has been collated to summarize findings from a weeklong visit at Camp Lejeune. During this visit, 23 interviews were conducted with MPHE stakeholders. This information also serves as a frame of reference for the as-is assessment of Camp Lejeune. This information is predominately anecdotal and is used to aid the as-is analysis of Camp Lejeune with the intent to present a framework for a large-scale transformation; it should be further vetted prior to conducting actual transformations, at any level of the enterprise.

Broadly, BUMED’s main responsibility is medical care at Camp Lejeune while MARFORCOM’s main objective it to maintain combat ready personnel and units. The WWR

is program specifically created to aid wounded, ill, and injured warriors back to health. It should be noted that the contributions of each strategic group vary greatly as compared to the others. The goal of this assessment is to understand all contributions to the MPHE at Camp Lejeune, regardless of size and objectives of the governing bodies making the contributions.

The following sections use Enterprise Architecting to highlight the contributions each group makes to the behavioral health (BH) care that is given to Marines at Camp Lejeune. Each strategic group is assessed separately according to the eight views of Enterprise Architecting. The following criteria, known as the views' anatomy (Nightingale and Rhodes, 2007) are used to collect information about each view:

- Structure (elements and relationships)
- Behavior (dynamic behavior)
- Artifacts (documentation and objective evidence)
- Measures (metrics and analytics)
- Periodicity (frequencies and cycles)

It was observed that while the strategic groups differ in most views, the policies issued that influence Marine BH care originate from either the DoD or Department of the Navy and the infrastructure used to collect information about Marine BH is regulated by the DoD. Therefore the Policy / External Factor and Infrastructure views are relatively standard across all groups. A summary of these views is presented following the individual assessments. Sections 3.1.2 through 3.1.5 present the summarized as-is state findings. The tables used to collect and sort the findings can be found in the appendices.

3.1.2 BUMED

Navy Bureau of Medicine and Surgery (BUMED)

The Navy Bureau of Medicine and Surgery provides institutional medical support for the behavioral health enterprise at Camp Lejeune. BUMED's primary objective is to care for service members, families, retirees, and eligible civilian employees. The strategic objectives of BUMED are aligned with the Military Health System's Quadruple Aim:

- **Readiness:** *Ensuring that the total military force is medically ready to deploy and that the medical force is ready to deliver health care anytime, anywhere in support of the full range of military operations, including humanitarian missions.*
- **Population Health:** *Reducing the generators of ill health encouraging healthy behaviors and decreasing the likelihood of illness through focused prevention and the development of increased resilience.*
- **Experience of Care:** *Providing a care experience that is patient and family centered, compassionate, convenient, equitable, safe, and always of the highest quality.*
- **Responsibly Managing the Total Cost of Health Care:** *Creating value by focusing on quality, eliminating waste, and reducing un-warranted variation; considering the total cost of care over time, not just the cost of an individual health care activity.³*

VIEW: Strategy

As stated, BUMED's strategy is aligned to the MHS's Quadruple Aim, which directly supports the delivery of BH care to Marines and is executed under the Navy Surgeon General's line of command. In the 2012 MHS Stakeholder Report, Surgeon General of BUMED claimed to have laid out three strategic objectives in addition to Quadruple Aim. The first is to give more attention to the value provided to the beneficiaries, in this case the Marines needing BH care. The second objective is to enhance the informatics capability of the healthcare system; this applies to the way in which BH information is stored and managed. The third objective presented by the Surgeon General is to work more closely with fellow Surgeons General; this should support knowledge sharing about BH care delivery across the enterprise.

³ Overview - FY13 Defense Budget: Managing the Military Health System. Accessed: <http://www.naus.org/documents/FY2013%20Budget%20MHS%20TRICARE%20Costs%20Extract.pdf> on December 16, 2012.

A DoD Instruction was issued on February 27, 2012 with subject title “DoD Directors of Psychological Health” (DPH), that outlined the timeline of establishing policy, assigning responsibilities, and prescribing procedures to outline a psychological and mental health initiative within the military. This instruction contains a policy that is pertinent to all views across all strategic groups. The policy states: *It is DoD policy that a psychological health leadership and advocacy structure, focused on operational readiness and integration of health promotion and clinical services, shall be established throughout the DoD, and Directors of Psychological Health (DPHs) shall be designated in key positions across the Military Services, including the RC.*

Additional artifacts used to support the strategy of BUMED include publications around Triple and Quadruple Aim as well as documents pertaining to programs supporting the Quadruple Aim (e.g. Patient Centered Medical Home). There are also specific policies and instructions issued by the Department of the Navy (DoN) concerning the delivery of BH care. These artifacts will be reviewed in greater detail in the Policy / External Factor section.

The previously mentioned Stakeholders Report presents results for measures aligned with Quadruple Readiness. Measures associated with Readiness are specific to MPHE and presented in the report under the subject of “Assessing and Improving Psychological Health.” This report is generalized across the whole DoD MHS enterprise, but it is worth noting that the three metrics used in the report to measure progress are

1. PTSD Referral Rate
2. PTSD Engagement Rate
3. PTSD Remission Rate

Further investigation regarding the measures and periodicity of BUMED strategy at Camp Lejeune should be performed. As seen, some reports and policies address specific measures and reporting requirements and standardization; however, these exact measures and periods of reporting are not yet known.

VIEW: Organization

BUMED is housed within the U.S. Navy. This is different from the other two strategic groups as both MARFORCOM and WWR are housed within the U.S. Marine Corps, recall Figure 10.

The organizational behavior of BUMED is carried out by the BUMED units on the installation. BUMED units report to the Military Treatment Facility (MTF) Commander, who reports to the Regional Medical Command, which in turn reports to the Navy Surgeon General. In interviews, the providers mentioned a correlation between system changes and command changes. One interviewee stated “we have had three changes in directors in the past three years – every time someone new comes in – they see changes.”

As with most enterprises, the main artifacts of the organization take the form of organizational charts. These charts are available publically, on the Internet, at almost all levels of the enterprise. The DPH Instruction mentioned in the previous section directly influences the BUMED MPHE organization at Camp Lejeune by stating that an installation-level leader, or DPH, (most likely from MARFORCOM) should coordinate BH clinical and counseling services to increase the integration and communication between the medical providers and line leaders as well as increase awareness about all of the BH referral options that are available. The Installation DPH also reports to the MTF commander regarding staffing, processes, and resources available and needed to ensure adequate services are provided to the installation.

Two additional policies that influence the organizational behavior of the BUMED BH organization were provided to the research team. The subjects of these policies are Mental Health Evaluations of Members of the Armed Forces and Substance Abuse Prevention and Control. More information pertaining to these policies can be found in the Policy / External Factors section. Further investigation regarding the measures and periodicity of BUMED organization should be performed.

VIEW: Information / Knowledge

This section presents the findings for both the Information and Knowledge views. The structure for how exactly how information is obtained and stored by BUMED about a Marine’s BH and how this information becomes knowledge that is shared within the BUMED organization is unclear. However, it was stated many times during the interviews that there is a believed lack of structure for this process, which leads to lack of communication between BUMED BH care providers and other BH stakeholders.

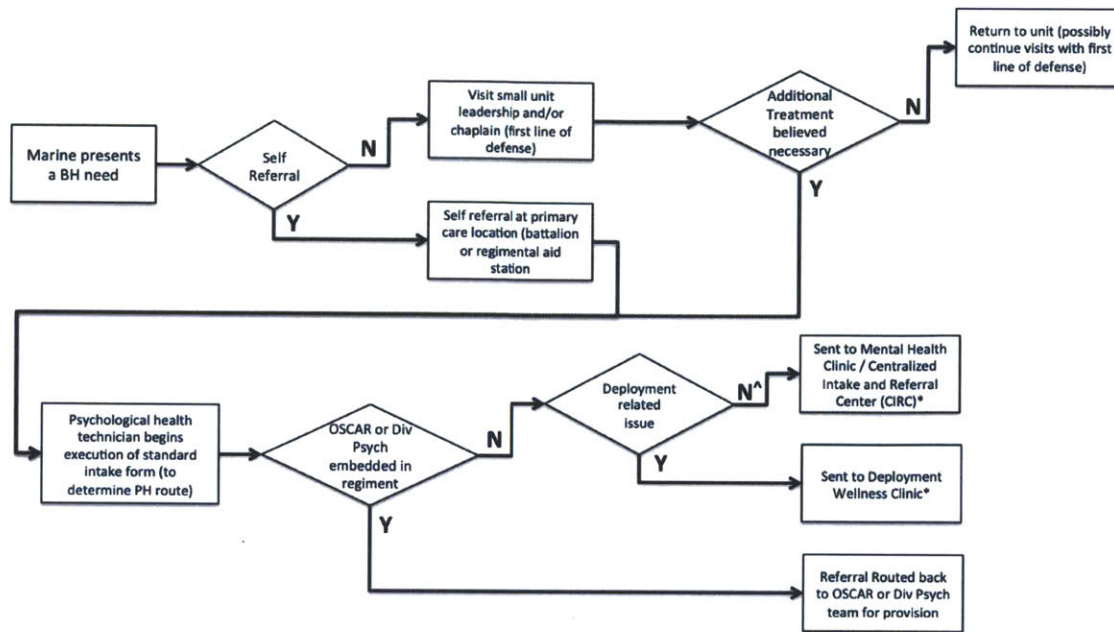
There are many resources within the BUMED organization that are responsible for collecting BH information from Marines. These resources include Psychological Health Technicians, Clinical Social Workers, and Medical Health Providers at Deployment Health and Wellness Clinics⁴, CIRC, Mental Health Clinics, Substance Abuse Rehabilitation Program, Multidisciplinary Treatment Teams and Spiritual Wellness Groups. These resources are also responsible for recording and reviewing the BH information collected using Armed Forces Health Longitudinal Technology Application (AHLTA), the military's electronic medical record system.

The USD P&R DPH Instruction directed those responsible for PH to ensure information is shared in a consistent and efficient manner. The second strategic objective detailed by the Surgeon General of BUMED also impacts the information and knowledge of the BUMED system. He has stated a personal goal to enhance the informatics capability of the healthcare system. This applies to the way in which BH information is stored and managed. Metrics to monitor adherence to this instruction given by the USD P&R and the Surgeon General, as well as the periodicity of the reporting, are not known at this time but should be further investigated.

VIEW: Process

At Camp Lejeune, Marines can receive behavioral health care from three different clinics within BUMED. The Marine's path through the BH process is depicted in Figure 11 and will be addressed again in the MARFORCOM Process view section.

⁴ Both terms "Deployment Health Center" and "Deployment Wellness Center" were found to be used inconsistently in reports about Camp Lejeune. They are treated as separate and unique entities in this report and are described as such; however, this should be further vetted to confirm.



[^]Two licensed, clinical social workers allocate marine to actual provider using centralized scheduling system
^{*}Routed to TRICARE network if time to be seen > 28 days

Figure 11 | Marine's path through BH Process at Camp Lejeune

The criteria for determining which clinic should be used are based on the nature of the BH issue. If the issue is deployment related, the Marine is referred to the Deployment Health Center. If the issue is not related to deployment the Marine is either sent to the Centralized Intake and Referral Center (CIRC) or Mental Health Clinics within MTF for non-deployment related issues. A psychological health technician guides the Marine to the correct clinic and then, if the issue is non-deployment related, clinical social workers direct the Marine to either CIRC or Mental Health Clinics.

Marines with BH issues are referred into the BUMED system by MEF non-clinical care providers or by self-referrals, made at the battalion aid stations. These referrals are routed through a centralized scheduling system by a psychological health technician. If the Marine's regiment has a behavioral health provider (Operational Stress Control and Readiness (OSCAR) or Division Psychiatrist) the referral is routed to the appropriate unit; if no such provider exists, the Marine is sent to the Deployment Health Center for deployment related issues or the Mental Health Clinic at the MTF or providers at the Centralized Intake and Referral Center (CIRC) for all other issues.

Two clinical social workers allocate Marines to either MTFs or CIRC. These two resources are responsible for the behavioral health MTF triage process. They review all

referrals, which include information about where the initial health or non-health provider intended for the Marine to go. The social workers are responsible for deciding which department/program and type of provider (e.g. psychologists, psychiatrists) the Marine should see. This is a redundancy in the process caused by lack of visibility to the providers regarding what resources are available to see the Marine.

In the event that on-post providers are unable to meet access to care standards, defined as 28 days for treatment in specialty care, the Marine is referred to an off-post provider in the TRICARE network for outpatient care. In this process the specialty care provider works with TRICARE, the military's health insurance company, to find an off-post provider with the ability to provide care within the required time frame.

In addition to processes directly related to behavioral health treatment, BUMED executes processes that may have an indirect impact on a Marine's behavioral health. These processes are mostly around training. They include Entry Level Training; Marine Air-Ground Task Force (MAGTF) training and B Billet Training, or Category B MOS. MAGTF training contains tasks that allow resources to identify possible BH issues during a Marine's transition period, pre-deployment training program (PTP), and deployment and non-MAGTF phases of duty. B Billet Training is a short-term duty assignment that takes place away from unit. It was noted that unit leaders as well as Marines believe this is a good opportunity to address medical issues because a Marine is "not missing work and not letting others down." However, at Camp Lejeune training for a B Billet often occurs at a significant distance from the main base. This distances the Marine from BUMED BH resources at Camp Lejeune and may contribute to a lack of consistent care.

The main artifacts involved in the BUMED processes are the referral documents that facilitate a Marine's entry into the system. There are also policies and instructions that are directly related to the BUMED BH processes at Camp Lejeune. The subjects of these policies are listed below; they are defined in greater detail in the policy external/factor section.

Process Policies/Instructions:

- Mobile Medical Augmentation Readiness Team (MMART) Manual
- Mental Health Evaluations of Members of the Armed Forces
- Implementation of TRICARE Prime Access Standards for Mental Health

- Substance Abuse Prevention and Control
- Policy Guidance For Traumatic Brain Injury (TBI): Definition And Reporting
- Implementation of Enlisted Administrative Separation Policy - Personality Disorder
- Provides clinical practice guidelines
- Standardization of Substance Abuse Rehabilitation Program Intake, Treatment, Discharge, and Continuing care Forms
- Small Arms Training And Qualification

Since the BH processes described in this section are used to outline the delivery of BUMED BH care delivery services, the measures for the processes are addressed in the Services/Products section. Further investigation regarding periodicity of BUMED processes should be performed.

VIEW: Services / Products

BUMED offers two main behavioral health services through its Military Treatment Facilities (MTF). As stated in the Process view, the criteria for determining which services should be used are based on the nature of the BH issue and whether it is deployment related or not. The Mental Health Clinic offers services for non-deployment related behavioral health issues while the Deployment Health Center offers for deployment related behavioral health issues.

BUMED maintains a hospital and a set of clinics with specialty care staff to augment the medical providers within the Marine Expeditionary Force (MEF) units. There are four main programs under BUMED that are operated by the Naval Hospital's Mental Health Department. For the purpose of this research effort, these programs will be considered services offered within BUMED and to the II MEF units. Figure 12 contains a hierarchal illustration of these programs. Since the BH programs are relatively new, the hierarchy should be rechecked as the project continues.

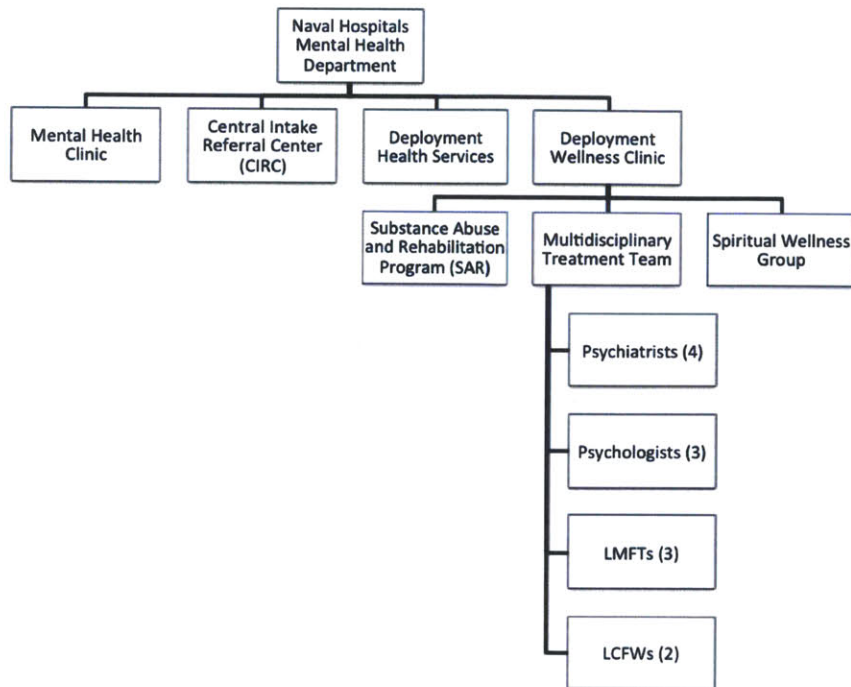


Figure 12 | Camp Lejeune Naval Hospital's Mental Health Department Services

The mission of the Mental Health Clinic is to provide timely, optimal behavioral health services and maintain the highest state of readiness with the active duty population. If a Marine's regimentt does not have a BH provider (OSCAR or Division Psychiatrist), and his BH issue is not deployment related, he is sent to either the Mental Health Clinic at the MTF or psychiatric providers at CIRC for all other issues. The Central Intake Referral Center (CIRC) houses psychiatric care providers. If an issue is deployment related, the Marine is sent to Deployment Health Services. Deployment Health Services also provides mandatory screening services to the MEF prior to and following deployment. This service is not used to treat behavioral health issues but may be useful in detecting them.

A divide between the Green-suit (Marine) and Blue-suit (Navy) providers was noted in interviews. It was stated that there is a certain expectation for Green-suits to serve as principle caregiver to the units they served and not refer or pass any cases to Blue-suits; but, it was also noted that there are not enough Green-suits to handle the caseload size. There was also frustration expressed regarding the fact that the clinics are housed within MTFs which, the interviewees stated, aren't effectively located around the enterprise site.

The Deployment Wellness Center (DWC) is a hospital function at that provides treatment and assessments/screenings. The DWC handles behavioral health issues

specifically related to deployments. It is know for being an advocate for Marine if it seems a Marine isn't getting support from commander. It was also noted from the interviews to have lack of resources. The Deployment Wellness Clinic has three subordinate programs/services that cater to behavioral health, they are a Substance Abuse and Rehabilitation Program (SARP), Multidisciplinary Treatment Team, and Spiritual Wellness Group.

SARP follows the naval hospital's line of command. It is a short-term care program designed to meet the individual needs of active duty personnel, family members, and retirees. Its services include screening, counseling, referrals to outpatient or inpatient programs, and professional training for other providers. It was noted during the site visit that SARP receives 90% of referrals from small unit commanders and therefore works closely with unit Substance Abuse Commanding Officers (SACO) at battalion level and OSCARs. It was noted that it could take weeks for a Marine to get an appointment, another resource issue. The Multidisciplinary Treatment Team provides diverse BH treatment through a robust program consisting of psychiatric medication management to individual and group evidence based therapy. The Spiritual Wellness Group provides BH services to MEF and family members in a spiritual context. The groups meet in sizes of up to 15 members and act as segue to medical treatment programs.

Similar to the Process view, the main artifacts involved in the BUMED processes are the referral documents that facilitate a Marine's entry into the system. The policies presented in the Process view are also applicable to the Service view and are explained in greater detail in the Policy / External Factor section.

During the interviews, many metrics were listed as measures used to track BUMED performance, they are listed below (since this list is anecdotally sourced, it should be verified as the project continues):

- Access to care
- Timeliness of care
- Relative Value Units: Measures provider productivity to determine if supply is appropriate to demand. One RVU earned per patient encounter.
- PDHA/PDRHA (Post Deployment Health Assessment/ Post Deployment Health

Reassessment)

- Risk Behavior Manifestations:
 - Positive Urinalyses
 - Deaths
 - Accidents
 - STDs
 - Suicide Gestures
 - AWOLs
 - Drug Offenses
 - Alcohol Offenses
 - Traffic Violations
 - Crimes Against Persons
 - Crimes Against Property
 - Spouse Abuse
 - Child Abuse
 - Financial Problems

Typical reporting artifacts, such as dashboards and quarterly reports, should be further investigated to understand exactly which measures are being used as well as the periodicity of the reporting cycles.

3.1.3 MARFORCOM

Marine Corps Forces Command (MARFORCOM): II Marine Expeditionary Force (II MEF)

The MARFORCOM unit at Camp Lejeune is the II Marine Expeditionary Force. In addition to adhering to the Marine Corp's mission to be a "force in readiness," the unit's specific mission is as follows:

When directed, II Marine Expeditionary Force deploys and is employed as a Marine Air Ground Task Force (MAGTF) in support of Combatant Commander (CCDR) requirements for contingency response or Major Theater War. With appropriate augmentation, II MEF serves as the core element of a Joint Task Force (JTF); prepares and deploys combat ready MAGTF's to support CCDR presence and crisis response; and supports service and CCDR initiatives as required.

The MARFORCOM is the war-fighting branch of this enterprise. While the unit is not directly in the Naval Hospital chain of command, it is still concerned with the behavioral health of its Marines since behavioral health plays a significant part in personnel and unit readiness.

VIEW: Strategy

The main beneficiary of the Camp Lejeune MPHE, the Marines receiving BH care, is a part of the II Marine Expeditionary Force (MEF). The MEF is a combined arms force consisting of ground, air and logistics forces. The II MEF has more than 62,000 Marines and Sailors and must be able to provide BH care to any of those in need in order to fulfill its overall strategy of keeping its personnel and unit ready for combat.

If a MEF Marine has a behavioral health need, he is instructed to seek counsel/care from his small unit leadership and/or chaplain. If elevated care is needed, the Marine may be referred by his leadership or chaplain or refer himself to be seen by a medical asset housed within the BUMED Military Treatment Facilities.

The DoD DPH Instruction issued in February of 2012 by the Under Secretary of Defense for Personnel and Readiness (USD P&R) specifically affects the MPHE of the MEF at Camp Lejeune. The Instruction states: *It is DoD policy that a psychological health leadership and advocacy structure, focused on operational readiness and integration of health promotion and clinical services, shall be established throughout the DoD, and Directors of Psychological Health (DPHs) shall be designated in key positions across the Military Services, including the RC.* The Instruction includes responsibilities at all levels of the enterprise, including the installation level. The main objective of the DPH Instruction is to increase the quality of BH services delivered to Marines by ensuring these services are integrated across all groups involved in providing them.

The II MEF also offers information about how it works to achieve its strategic objectives on its website. The site contains information about its mission statement and Force Preservation programs. Further investigation regarding performance against these objectives should be completed. measures and periodicity of BUMED strategy at Camp Lejeune should be performed. Personnel and unit readiness encompasses a great number of factors and behavioral health is one of those, it is unclear how this is measured.

VIEW: Organization

MARFORCOM is housed within the U.S. Marine Corps; II MEF reports to the Commander, U.S. Marine Forces Command (MARFORCOM), a Three-Star General, who in-turn reports to the Commandant of the Marine Corps.

The II MEF is comprised of four basic components. The first of these components is the II MEF Headquarters group, which contains personnel and equipment necessary for the effective planning and execution of operations. The second and third are ground and aviation combat elements: the 2nd Marine Division and the 2nd Marine Aircraft Wing, respectively. The fourth is a combat support service element: the 2nd Marine Logistics Group. All members of this chain of command, from Marine peers to small unit leadership to senior leadership, play a part in the MPHE of the MEF at Camp Lejeune.

Marines that were interviewed at Camp Lejeune indicated that there is room for improvement in the communication among all of the behavioral health stakeholders at Camp Lejeune. This includes communication between the small unit leadership and senior leadership as well as across the stakeholders external to the MEF chain of command but internal to the behavioral health system (e.g. BUMED providers).

The main artifacts of the MARFORCOM organization take the form of organizational charts. These charts are available publically, on the Internet⁵, at almost all levels of the enterprise. The DPH Instruction from the USD P&R directly influences the MARFORCOM MPHE organization at Camp Lejeune by stating that each military installation must designate an individual to serve as the “principal consultant and advocate” for PH. The creation of this installation-level role is meant to facilitate the coordination of BH care providers across all strategic groups to increase the BH care delivered to Marines and their families.

Two additional policies that influence the organizational behavior of the MARFORCOM MPHE organization were provided to the research team. The subjects of these policies are Mental Health Evaluations of Members of the Armed Forces and Substance Abuse Prevention and Control. More information pertaining to these policies can be found in the Policy / External Factors section. The Instruction states that “advocacy structure, focused on operational readiness and integration of health promotion and clinical services, shall be established throughout the DoD” which supports the need for measures and reporting structures. Further investigation regarding the measures and periodicity of II MEF organization should be performed.

⁵ Find organizational charts here: <http://www.iimef.Marines.mil/UnitHome.aspx>

VIEW: Information / Knowledge

This section presents the findings for both the Information and Knowledge views. The structure for exactly how information is obtained and stored by MARFORCOM about a Marine's BH and how this information becomes knowledge that is shared within the organization is unclear. However, it was stated many times during the interviews that there is a believed lack of structure for this process, which leads to lack of communication between II MEF BH care providers and other BH stakeholders.

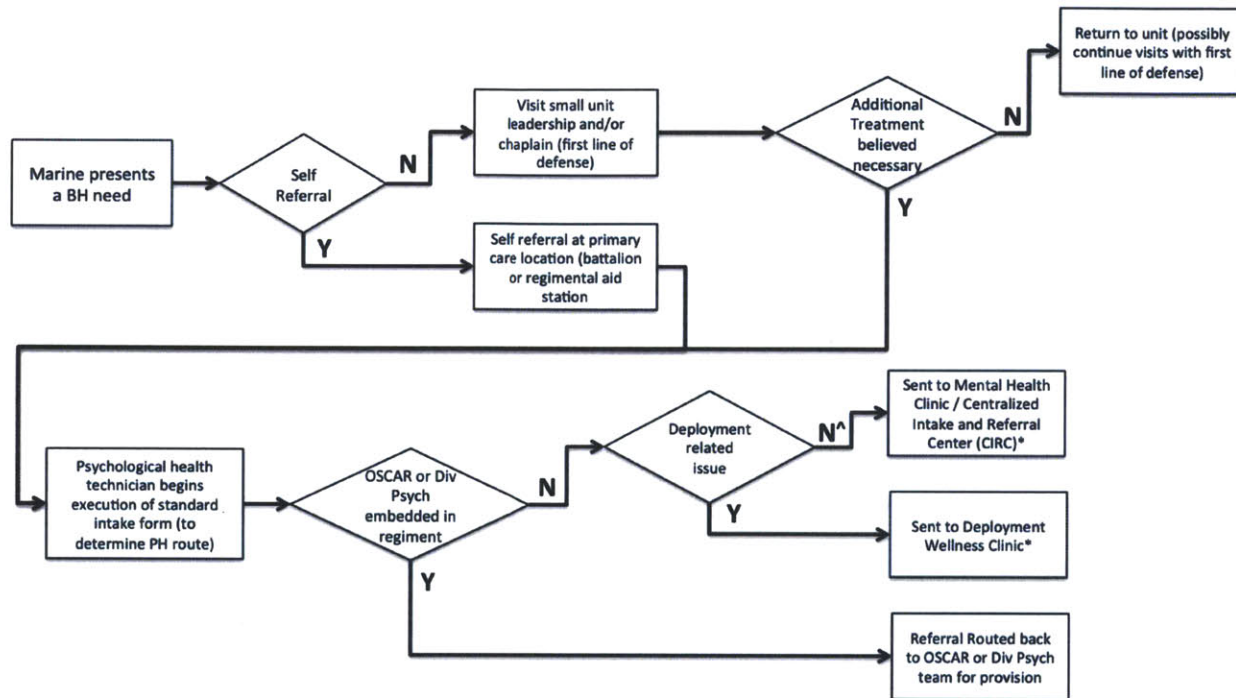
Six resources within the II MEF were identified as those responsible for gathering information about a Marine's BH. These resources include the Marine himself, the Battalion Chaplain, the unit Medical Officer, MEF Commanding Officer, MEF Sergeant Major, an OSCAR team member (to be described in more detail in the Services / Products section), and the peers of the Marine needing BH care. All but the last of that list can refer a Marine directly to the BUMED system. Internal knowledge must exist to determine whether or not a Marine should be referred to BUMED. These criteria should be investigated further to check for standardization as well as effectiveness. The USD P&R Instruction regarding DPH should influence the way in which BH information is collected stored as well as how BH knowledge is shared internally and externally to the II MEF MPHE. The Instruction describes the Installation DPH as a position that will ensure military and non-military BH services are coordinated and integrated. The coordinating councils present at Camp Lejeune should be researched.

During the interviews, many comments were made regarding a lack of communication between small unit commanders and leadership as well as between command lines and medical providers. A specific point was made about the leadership's lack of understanding when it comes to the complexity of getting a Marine through the mental health pipeline. In addition to communication issues present within IIMEF, it was also mentioned that the communication between Divisional Psychiatry (a MARFORCOM asset) and BUMED has a lot of opportunity for improvement.

VIEW: Process

The BH processes aligned to the II MEF take place in three ways. The most traditional process occurs when a Marine presents a behavioral health need to his unit command and

is referred, or refers himself, to medical assets within the BUMED system. This process was explained during a site visit in 2011; Figure 13 depicts the process that was described during the visit and adjusted to align with additional findings about the BH strategic groups Camp Lejeune.



[^]Two licensed, clinical social workers allocate marine to actual provider using centralized scheduling system
^{*}Routed to TRICARE network if time to be seen > 28 days

Figure 13 | Process Map of BH Referral Process at Camp Lejeune

A Marine, and in most cases his family, can receive behavioral health services by getting referred, or referring themselves, to either BUMED medical services or MEF/unit services. The MEF services are mostly voluntary and have limited interaction with the BUMED medical services; the latter point is concerning.

The second way in which a Marine at Camp Lejeune may receive BH care takes place external to BUMED medical treatment via the Force Preservation effort. This effort is outlined to maximize the combat readiness of Marines II MEF. The issues of most concern are: general safety, substance abuse, Combat Operational Stress Control (COSC), and suicide prevention. These services offered to prevent these issues are described in the Services/Products section. While these issues may exist independent of PTSD, studies have shown that many incidents of PTSD are revealed by way of these issues.

The third way in which a Marine at Camp Lejeune participates in BH care is through a mandatory physical and psychological health screening scheduled with a Deployment Health Care provider in the BUMED system. Prior to his appointment, the Marine must complete the online screening. It is unknown how the information collected from either of the screenings is managed and used outside of the screening. This screen must take place between 90 and 180 days after returning from any deployment but it was noted in interviews with Marines that this decompression process does not take place fully in many cases.

The main artifacts involved in the II MEF BH processes are the referral documents that facilitate a Marine's entry into the BUMED system. It is unknown whether the II MEF BH resources have their own tracking system for Marines that receive BH care from only II MEF resources or from both II MEF and BUMED. This potential lack of information storage is concerning. MARFORCOM also has post and pre-deployment guides for those enlisted and their family members. These guides are the Welcome Home Commanders Resource Guide, Post Deployment Health ReAssessment (PDHRA), TBI & PTSD, and Marine PDHRA. There are also policies and instructions that are directly related to the MARFORCOM BH processes at Camp Lejeune. The subjects of these policies are listed below; they are defined in greater detail in the policy external/factor section.

Process Policies/Instructions:

- Mental Health Evaluations of Members of the Armed Forces
- Substance Abuse Prevention and Control
- Policy Guidance For Traumatic Brain Injury (TBI): Definition And Reporting
- Implementation of Enlisted Administrative Separation Policy - Personality Disorder
- Standardization of Substance Abuse Rehabilitation Program Intake, Treatment, Discharge, and Continuing care Forms
- Small Arms Training And Qualification

Since the BH processes described in this section are used to outline the delivery of MARFORCOM BH care delivery services, the measures for the processes are addressed in

the Services/Products section. Further investigation regarding frequency to process reviews should be performed.

VIEW: Services

As previously stated, the BH process aligned to the II MEF takes place in three ways. The Marine receives BH care by either being referred to the BUMED system, through Force Prevention Programs, or possibly during a mandatory post-deployment physical and psychological assessment. The services delivered by the BUMED system are addressed in the BUMED Process and Services/Products sections.

The Force Preservation programs support personnel and unit readiness. For the purpose of this research effort, these programs will be considered services offered within or to the II MEF unit. The following is a list of MEF behavior health services and their summary descriptions:

- Family Readiness Officer (FRO) – a civilian hired to support commander in communication and managing families; the FRO helps Marines manage the needs of their family while staying focused on their mission.
- Substance Abuse Control Officer (SACO) – a position held by a Marine Corps officer, embedded in unit, to provide substance abuse education/prevention, urinalysis screening and assistance to the commander on substance abuse related matters.
- Substance Abuse Counseling Centers – provide screening and assessment services to Marines seeking to be referred; after screening, Marines can enter the system at any of three levels:
 - Early Intervention (difficulty with addiction)
 - Outpatient (pattern of abuse)
 - Intensive Outpatient (diagnosed as dependent)
- Suicide Prevention via “R.A.C.E Training” classes which present a framework to recognize and react to those in danger of committing suicide.
- Naval Center Combat Operational Stress Control (NCCOSC) – BUMED program that works to promote resilience of Marines. They also investigate best practices in diagnoses and treatment of PTSD and TBI. NCCOSC’s initiatives are informed by science and provide measureable, robust results.

The following services are not aligned to Force Preservation but are services offered to MEF that may provide behavioral health assistance:

- Division Psychiatry – clinic available to 2nd Marine Division Marines and sailors. The clinic provides access to therapy (group and individual) and medication to struggling service members, usually post-deployment.
 - Marines must get a referral from the Medical Officer (MO) at their battalion aid station to see Division Psych.
- Operational Stress Control and Readiness (OSCAR) program – launched by Division Psychiatry (expanded psych services to 2nd, 6th, and 8th Marine Regimentts). OSCAR teams provide team training to each unit which is meant to help sensor BH programs for the commander to identify and refer Marines that need it; a filtering mechanism (understaffed); These professionals are not primarily mental health professionals, but are meant to serve primarily as an educational function.
- Chaplain – assigned to each Division, Airwing, or Logistics Group to ensure the spiritual fitness of their Marines while they are deployed. They are also available to Marines and their families while in garrison. They often provide a back door for the system to autocorrect as Marines and family members may feel more comfortable speaking with someone outside of a medical setting.
- Military OneSource – a free service provided by DoD to MEF and families to provide them with information on “every aspect of military life.” They offer both website and phone access.
- Human Factors Program – proposed as enterprise standard for USMC; believed to include all BH Stakeholders within each unit.

Marine Corps Community Services (MCCS) is a service organization that is dedicated to promoting readiness and retention of Marines and their families. They accomplish this by delivering valuable programs, products, and services to the Camp Lejeune community in a positive manner. Many of the employees at MCCS used to work at social services; this service is also limited in resources. According to the website, MCCS offers the following services:

- Community Counseling

- Resilience Education
- Family Advocacy Program (FAP)
- Sexual Assault Prevention and Response (SAPR)
- Military Family Life Consultant (MFLC) service – MFLCs are licensed professional mental health coordinators who work with military personnel and their families by providing non-medical solution focused counseling. There are only 2 at Camp Lejeune for 47,000 Marines.
- Families overcoming stress (FOCUS) Project
- Exceptional Family Member Program (EFMP)
- Financial Management Program
- New Parent Support Program

While the intent of all of these programs is to provide Marines and their families with adequate and various BH care, the amount causes some concern about the continuity of care between each of the programs.

Similar to the Process view, the main artifacts involved in the II MEF processes are the referral documents that facilitate a Marine's entry into the system as well as documents that provide information about each of the II MEF programs. Many of these programs have their own websites listing their missions, objectives, FAQs, etc. The MCCS website contains national information about organization as well as organization chart. The website also serves as an information hub for Marines and their families regarding fitness, family team building travel, transition support, recreating, prevention, and education.

The policies presented in the Process view are also applicable to the Service view and are explained in greater detail in the Policy / External Factor section. The measures and periodicity of each service have not yet been detailed. An additional study, that is both mutually exclusive and collectively exhaustive, should be performed to understand the main similarities and differences between the services. This information can provide information regarding redundancies, and hence, effectiveness of the services independently and collectively which will compliment this research effort by also supporting enterprise transformation.

3.1.4 WWR

Wounded Warrior Regiment (WWR): Wounded Warrior Battalion East (WWBn-East)

The WWR was established in 2007 with a mission to provide and facilitate comprehensive and coordinated medical and non-medical support to wounded, ill, and injured Marines and their family members throughout the phases of recovery. There are two WWBn, one in Camp Lejeune and one in Camp Pendleton, California. Both of these battalions are administratively and operationally controlled by the Regimental Headquarters element, which is located in Quantico, Virginia.

The WWR makes the smallest contribution to the MPHE at Camp Lejeune, as it requires Marines to complete a multistep and selective application process to enter the program. However, as stated in Section 1.4, the scope of this research includes the components, and their interactions, of the micro-level enterprise [Camp Lejeune] that contribute to the MPHE. The Regiment has recently received positive reviews from the Inspector General's Assessment of DoD Wounded Warrior Matters (2012) so neither its size of contribution nor size of organization should deter the team from including it in the research effort.

VIEW: Strategy

In addition to supporting the strategic missions of both the DoD and Department of the Navy, the WWBn-E is dedicated to taking care of wounded, ill and injured (WII) Marines and their families by utilizing its resources to ensure care of our Wounded Warriors throughout the recovery and transition process⁶. The WWR Strategic Plan for 2011-2012 states five specific goals, laid out by the Commanding Officer, that the WWR should strive to achieve. These goals are to promote morale and self-sufficiency, to set up WII Marines for successful transitions, to expand strategic communications, to coordinate access to available and emerging treatment options, and to sustain program efficacy. The Plan clearly defines these goals and also provides objectives, associated with each goal that should be accomplished in order to achieve the goals. The fourth goal of coordinating access to treatment options specifically affects the MPHE at Camp Lejeune, as it requires a

⁶ Can be accessed: http://www.woundedwarriorregiment.org/WWBNEast/units_east.cfm

Psychological Health Program Coordinator to advise the WWF CO about medical issues affecting marines.

The motto of the WWR is “Still in the fight” which is believed to help redirect focus of a wounded warrior to “ability not disability.” A Marine Corps Order disseminated in November of 2007 stating all Marine Corps activities will be familiar with processes for caring for WII Marines. A similar Instruction was issued by BUMED in May of 2011 that directs BUMED resources involved with a Marine’s BH care to aid programs, such as WWR, in whatever ways are necessary to improve the quality of care.

A number of policies and reports have been issued at the DoD level regarding BH care for WII armed service personnel. The WII policies and reports apply to three areas of WII Marine BH care: Disability Evaluation System, Transition Assistance Program, and Care Coordination and will be addressed in further detail in the Policy section. Other than the objectives listed for each strategic objective in the 2011-2012 Plan, it is unclear whether specific measures are present to track progress against WWR objectives. The strategic plan is a yearly report.

VIEW: Organization

Like the II MEF, the WWR is housed within the U.S. Marine Corps. The commander of the WWBn reports the commander of the WWR.

Organizational artifacts exist in the form of organizational charts for the entire WWR staff as well as for the WWBn-E Task Organization. It is unclear how the organization is measured as whole; however, since one of the roles of the WWR team members is to assist the Marine with goal creation and tracking it can be assumed that if it is not all ready being performed, organizational tracking is possible. The frequency of this tracking is unknown.

VIEW: Information / Knowledge

This section presents the findings for both the Information and Knowledge views. The structure for exactly how information is obtained and stored by WWR about a Marine’s BH and how this information becomes knowledge that is shared within the organization is not clearly defined; however the high level of coordination required to accomplish the WWR mission suggests relatively standard processes are in place.

In order to coordinate care, the WWBn-East teams must have access to all Marine's health-related records. Information must be available regarding the needs of the Marines. This requires the support of both BUMED and MARFORCOM BH systems. It can also be assumed that all staff has sufficient training to assist Marines in their recovery and transition. A method to communicate the current state of Marine's health must be established but a communication plan between BUMED and MARFORCOM systems is not apparent. The BUMED Instruction supports the existence of such a communication plan but does not demand it.

The success of the WWR program is heavily dependent upon each Marine's progress through the program. For this reason, the individual progress is reported on a daily basis. Additional reports, and their exact reporting frequency, pertaining to collective progress are not apparent but most likely exist. This should be further investigated to better understand the information and knowledge views of the WWR.

VIEW: Process

Marines must complete a predefined referral process to get into the WWR program. Once in the program, they work with the WWR team to create personal recovery plans and goal that parallels the Marines' Integrated Disability Evaluation System (IDES). The IDES was created to provide wounded Marines with a standardized process to follow as they recover (or do not recover) to determine whether or not they are fit to perform active duty. The 'integrated' portion of IDES refers to the fact that this is joint effort between the VA and the DoD to facilitate a smooth transition from one system to the other. An overview of the pilot process can be seen in APPENDIX F.

A Marine must receive three primary components during the WWR referral process/application. These components include a questionnaire filled out by the II MEF medical officer, comments from a medical case manager, and an endorsement from unit commander. All completed packages (referrals) are presented to WWBn Commanding Officer (CO), who has the ultimate decision authority, for review and approval on a weekly basis.

Once accepted, a Marine is expected to complete 3 phases of the WWR program. He begins with treatment/reconditioning, followed by the Integrated Disability Evaluation

System (IDES), and ending with reintegration. The sub-components of IDES include: medical evaluation board (MEB), physical evaluation board (PEB), and a transition phase.

Marine Corps Orders and BUMED Instructions have been issued that demand compliance and support from II MEF and BUMED at Camp Lejeune throughout a Marine’s WWR journey. The exact processes followed by either II MEF or BUMED are not known at this time. This information would be helpful to understand what information is important to a Marine’s recovery from a BH issue.

The WWR Strategic Plan for 2011-2012 provides a list of regimental tasks that are reported to “ensure program success.” This task list can be seen in Figure 14.

TASKS
1. Ensure qualified Section Leaders provide daily accountability, mentoring, and leadership to help WI&I Marines reach their recovery goals.
2. Ensure qualified WI&I Marines are assigned an RCC in order to develop and execute a Comprehensive Transition Plan (CTP) that will assist Marines in achieving a smooth transition to return to full duty or civilian life.
3. Vet charitable events and activities to meet the needs and interests of our WI&I Marines and their family members.
4. Implement a Warrior Athlete Reconditioning Program (WAR-P) and when appropriate, require that all WI&I Marines participate to the fullest extent of their abilities.
5. Annually participate in the Department of Defense Warrior Games.
6. Improve awareness, coordination and partnerships among Marine reservists, reserve leaders, and WWR staff to ensure reserve WI&I Marines’ and their family members’ medical and non-medical needs are addressed in order to ease the recovery process.
7. Leverage new technologies to improve the connection between WI&I Marines and prospective employers.
8. Foster and expand partnerships with employers, academia, and government (local, state, and federal) to enhance the career and education opportunities for WI&I Marines and families.
9. Identify innovative, non-traditional methods and adopt creative approaches (i.e. social networking, smart phone access, on-line training) to effectively communicate with WI&I Marines and family members and train staff members.
10. Inform senior leaders of the Navy and Marine Corps of emerging or alternative therapies for TBI / PTS, and advocate for their support and approval.
11. Advocate for policy changes within the Marine Corps and Department of Defense that would benefit of WI&I Marines and their family members.
12. Develop and initiate research studies to assess WWR programs and services in order to provide objective data to appropriately inform decisions and actions.
13. Ensure and maintain partnerships for critical interfaces and information assurance for all WWR systems and external applications (website, Employment Toolbox, Marine Corps Wounded, Ill, and Injured Tracking System (MCWIITS), Recovery Coordination Program-Support Solution (RCP-SS), Marine Corps Medical Entitlement Data System (MCMEDS), Comprehensive Health Care System (CHCS), and Marine For Life (M4L).

Figure 14 | WWR Regimental Tasks Presented in the WWR Strategic Plan 2011-2012

All of the tasks listed in Figure 14 can loosely be applied to the delivery of BH care but Task number 10 is very specific in its application to BH. It also mentions each of the main BH strategic groups that contribute to the MPHE at Camp Lejeune.

As stated in other views, a Marine's personal progress through the program is tracked on a daily basis. Information pertaining to collective progress and other collective measures should be investigated.

VIEW: Services

The holistic view taken by the WWR captures both physical and mental injuries leading to a population of service members with a diverse set of needs. The program offers services that are designed to address the mind, body, spirit, and family of the Marine needing BH care. WWR care teams consist of individuals who work together to ensure medical and non-medical care is coordinated properly to afford the Marine maximum recovery.

As outlined in the Organization section, the WWR Care Teams consists of five main roles that are dedicated to providing BH to WII Marines. The Primary Care Manager (PCM) provides coordinates medical care. He is responsible for maintaining the Marine's health records as well as referring Marines to specialists when necessary. The Medical Case Manager (MCM) / Nurse Case Manager (NCM) role is staffed by a nurse or social worker. The MCM/NCM is responsible for bringing medical practitioners together and coordinating access to specialists and non-routine medical services. The Marine Section Leader (SL) is responsible for providing accountability and tracking information of Marine's progress through the WWR's Mind, Body, Spirit and Family Lines of Operations programs. These items are tracked on a daily basis. The SL also serves as a mentor and advocate for Marines by providing the small unit leadership and discipline that is necessary to support mental, physical, and emotional healing. The Recovery Care Coordinator (RCC) is a non-medical role that belongs to a subject matter expert that helps Marine and family define recovery, rehabilitation, and reintegration goals. The RCC is also responsible for developing and executing the Marine's Comprehensive Recovery Plan (CPR). The District Injured Support Coordinators (DISC) are Mobilized Marine Reservists. They are geographically dispersed to assist Reserve and former WWR Marines through face-to-face contact with Marine and family and VA coordination assistance. They also assist by informing Marines and their

families of local education and employment resources. Additionally, DISCs identify VA Operation Iraqi Freedom (OIF) / Operation Endurance Freedom (OEF) Coordinators to help coordinate combat Veteran medical care. Each of these roles also supports the Marine through the IDES process.

The WWR regiment provides robust information regarding the services included in the program. The WWR also includes a service specific to the unique needs of Reserve Marines. This is outlined by the Reserve Medical Entitlements Determination (RMED) Section on the website. The tasks listed in Figure 14 can also be attributed to services performed by the WWR as completion of these tasks increases the BH care delivered to Marines.

A Marine's progress through the program is tracked and monitored daily. The metrics and mechanisms used to track progress against the goals, objectives, and tasks listed in the Strategic Plan are not clearly defined. This should be further vetted to determine whether or not they exist.

3.1.5 Views Common to all Stakeholder Groups

VIEW: Policy / External Factors

The policies issued that influence Marine BH care originate from the Macro (DoD) or Meso (Department of the Navy) level of the enterprise as a result of mandates. The exact way in which they are disseminated and rolled out across the BH strategic groups should be further researched. A clear "policy tree" does not exist for any of the strategic groups; however, policies and instructions issued by the Department of Defense and Navy and structured by year and category. The subjects of most of the BH policies and instructions are indirectly related to MPHE at Camp Lejeune as there are very few policies specified toward behavioral health. The response to new and changing policies has been observed as sluggish throughout whole MHS; this trend seems to increase farther down the hierarchy.

A list of policies, memoranda, and training documents was given to the PTSI research team in support of the project by Barry Adams, USN. The list was used in combination with additional research to create a robust and categorized inventory of policies that influence the MPHE at Camp Lejeune. This list contains the directive name, the subject, and purpose (when available) of each policy and is sorted into three groups:

Policies Specific to MPHE, Policies Directly Related to MPHE, and Policies Indirectly Related to MPHE.

MPHE POLICY LIST

Policies Specific to MPHE:

- USD(P&R) 6490-09 – addresses Military Psychological Health leadership, responsibilities, milestones, etc: *a psychological health leadership and advocacy structure, focused on operational readiness and integration of health promotion and clinical services, shall be established throughout the DoD, and Directors of Psychological Health (DPHs) shall be designated in key positions across the Military Services, including the RC.*

Policies Directly Related to MPHE:

- SECNAVINST 6320.24A – Mental Health Evaluations of Members of the Armed Forces: Department of Navy (DON) policy, assign responsibility, and prescribe procedures for the referral, evaluation, treatment and administrative management of service members who are directed by their commands for mental health evaluation and/or assessment of risk for potentially dangerous behavior.
- MCRP 6-11C/NTTP 1-15M Combat and Operational Stress Control (COSC) publication – Navy and Marine Corps Combat and Operational Stress Control Doctrine: Provide unified COSC doctrine to Navy and Marine Corps
- NAVMED POLICY 08-001 – Implementation of TRICARE Prime Access Standards for Mental Health: Directs implementation of TRICARE Prime access standards for mental health and establishes monitoring and reporting requirements to support Health Affairs (HA) Policy Memo 07 -022 of 9 October 2007.
- NAVMED POLICY 07-021 – Policy Guidance For Traumatic Brain Injury (TBI): Definition And Reporting: Initial guidance for newly established TBI reporting requirements. These measures represent a unified step toward the diagnosis and treatment of TBI within DoD. Dec 2007

Policies Indirectly Related to MPHE:

- BUMEDINST 6440.6 – Mobile Medical Augmentation Readiness Team (MMART) Manual: provide the basic policies and procedures for rapidly augmenting the Operating Forces with organized teams of Medical Department personnel for limited

(non-mobilization), short-term (less than 180 days) military operations, humanitarian relief missions, and fleet and Fleet Marine Force (FMF) scheduled deployments

- BUMEDINST 5353.4A – Standards for Provision of Substance Related Disorder Treatment Services: To establish a uniform set of standards for the provision of substance related disorder treatment services within the Department of the Navy (DON).
- NAVMEDCOMINST 5350.1 – Substance Abuse Prevention and Control: To provide guidelines and assign responsibilities for coordinating the policies relative to substance abuse among COMNAVMEDCOM military and civilian personnel.
- NAVMED POLICY 08-026 - Implementation of Enlisted Administrative Separation Policy - Personality Disorder: This memorandum directs the implementation of a change in the Enlisted Administrative Separation Policy for those Service Members that have served, or are currently serving, in an imminent danger pay area who may be exhibiting symptoms consistent with Personality Disorder.
- OPNAV 1720.4A – Suicide Prevention: Addresses Navy Suicide Awareness and Prevention policy and programs.
- DoD/VA Clinical Practice Guidelines – Provides clinical practice guidelines OPNAV 5350.4E Drug and Alcohol and BUMED NOTE 5353 – Standardization of Substance Abuse Rehabilitation Program Intake, Treatment, Discharge, and Continuing care Forms
- Combat and Operational Stress First Aid (COSFA) training – Official training manual for Combat and Operational Stress First Aid (COSFA) training
- Caregiver Occupational Stress Control (CgOSC) Unit Assessment Training - Instructs the process for conducting unit assessments using the Combat Stress First Aid modules
- Caregiver Occupational Stress Control (CgOSC) Stress Coping Brief - Caregiver Occupational Stress Control (CgOSC) Way Ahead module
- Caregiver Occupational Stress Control (CgOSC) Leadership Brief - Caregiver Occupational Stress Control (CgOSC) brief for Commanding Officers and staff

- Caregiver Occupational Stress Control (CgOSC) Executive Steering Committee/Board of Directors Brief - Caregiver Occupational Stress Control (CgOSC) Executive Steering Committee/Board of Directors Brief for Medical facilities and commands
- DoDD 1332.18: Guidance for Separation and Retirement for Physical Disability Policy
- DoDD 1332.38: Physical Disability Evaluation Policy
- DoDI 6040.44: Physical Disability Board of Review Policy
- DoDD 1332.35: Transition Assistance for Military Personnel Policy
- DoDI 1332.36: Pre-Separation Counseling Policy
- DoDI 1332.37: Public and Community Service Policy
- DoDI 1300.24: Recovery Coordination Program (RCP)
- Marine Corps Order 6320.2E: Administration and Processing of Injured/Ill/Hospitalized Marines

While some policies contain instruction around measures, it is unclear whether measures are in place to track compliance. Policies and Instructions are usually issued to accompany DoD mandates, but a specific periodicity is not apparent.

VIEW: Infrastructure

Since the Infrastructure view is the view that uses technology to enable communication and information sharing between BH strategic groups, it is helpful to assess the Infrastructure view in one section for all groups. The infrastructure used to collect information about Marine BH is regulated by the DoD and should therefore be relatively standard across each of the BH strategic groups at Camp Lejeune. However, based on research and anecdotal comments regarding communication issues, it is assumed that each group has a different type of access afforded to it.

Information sharing is a key element of the BH care delivery process. The Defense Health Information Management System (DHIMS) was created to enable this vital sharing process. The system relies on information technology solutions to capture, manage, and share military health care data. DHIMS has products/solutions for both Garrison Hospital Systems and Theater Systems. The Garrison system supports products to maintain the

military's electronic medical records, to electronically perform ancillary processes such as appoint scheduling and prescribing medications, and to facilitate point-of-care data capture. The Theater system supports products that allow for mobile capturing and tracking of health data as well as decision support for those performing medical tasks in a combat environment. The Theater Medical Information Program (TMIP) supports the sharing of health data between Garrison and Theater systems. However, it is not clear whether the information collected in Garrison or Theater is standardized and easily accessible. DHIMS also supports products aimed specifically at Wounded Warriors. These products include a neurocognitive assessment tool and Health Artifact and Image Management Solution (HAIMS) which provides global visibility and access to health documents and images.

Medical record sharing and pharmacy data sharing are executed primarily electronically through the Armed Forces Health Longitudinal Technology Application (AHLTA). Clinical notes, dispositions, referrals, and consults move electronically through this system from provider to provider for both primary and specialty care. For inpatient care within the military treatment facility a second information system, Essentris, is utilized. Essentris data is Opel for providers outside the MTF, but providers wishing to access the system must attend a one half day training event in order to become credentialed for that system. It was mentioned in the interviews that the AHLTA System was developed for primary care and thus is limited in its capabilities for the transmission of specialty care data which has been acknowledged by both primary and specialty care providers throughout the system. This type of data capturing is especially important in BH care delivery, especially across multiple provider groups.

Providers in the TRICARE network do not have access to the AHLTA system. So, if a Marine is referred off post an information gap between on-post and off-post providers is almost unavoidable. A particular vulnerability produced by this gap is occurs when a Marine is prescribed psychotropic drugs by a caregiver in the TRICARE. As a result, Marines are now required to report information about prescriptions received from an off-post provider to their medical officer within 72 hours, with non-compliance resulting in non-judicial punishment. Knowledge of this information is important because certain medications can render a Marine non-deployable.

3.2 X-Matrix of Enterprise

The previous sections presented subjective information that was collected about the as-is state of the MPHE at Camp Lejeune. In order to take the next step toward creating a reusable framework that supports enterprise transformation, this information must also be presented in an objective fashion that allows for some mathematical analysis. To accomplish this, the subjective information is further examined to find similarities that will allow for standardized groupings of information, or data points. By using Enterprise Architecting to perform the as-is assessment, and grouping information into views, this task has all ready been partially addressed. To perform the necessary additional “grouping,” another Enterprise Architecting tool is used: an X-Matrix.

An X-Matrix is used as part of the Enterprise Architecting as-is analysis to provide insight to the relationships between four dimensions of an enterprise. In most cases, the four dimensions are: strategic objectives, metrics, stakeholder values, and key processes. However, since there are three main strategic groups of interest in the BH enterprise at Camp Lejeune these groups replace “strategic objectives” and since there was an emphasis on the lack of resources in the MPHE at Camp Lejeune, and likely redundancies in BH processes, BH resources replaces “metrics” on this X-Matrix.

The four dimensions are listed at the main intersection of the matrix, as seen in Figure 15. The main intersection of this matrix is a bit off center because the resources and tasks outnumber the strategic groups and BH values. The colors of the cells in the matrix depict the level of relationship between the intersecting dimensions. A blue cell indicates a strong relationship, a yellow cell indicates a weak relationship, and a blank cell indicates no relationship; see Table 2 for relationship criteria. For example, looking at the resource and key processes dimensions: the Medical Case Manager weakly contributes to “Contribute to BH knowledge gathering about Marine” and the Medical Officer strongly contributes to “Directing Marine to specific organization.”

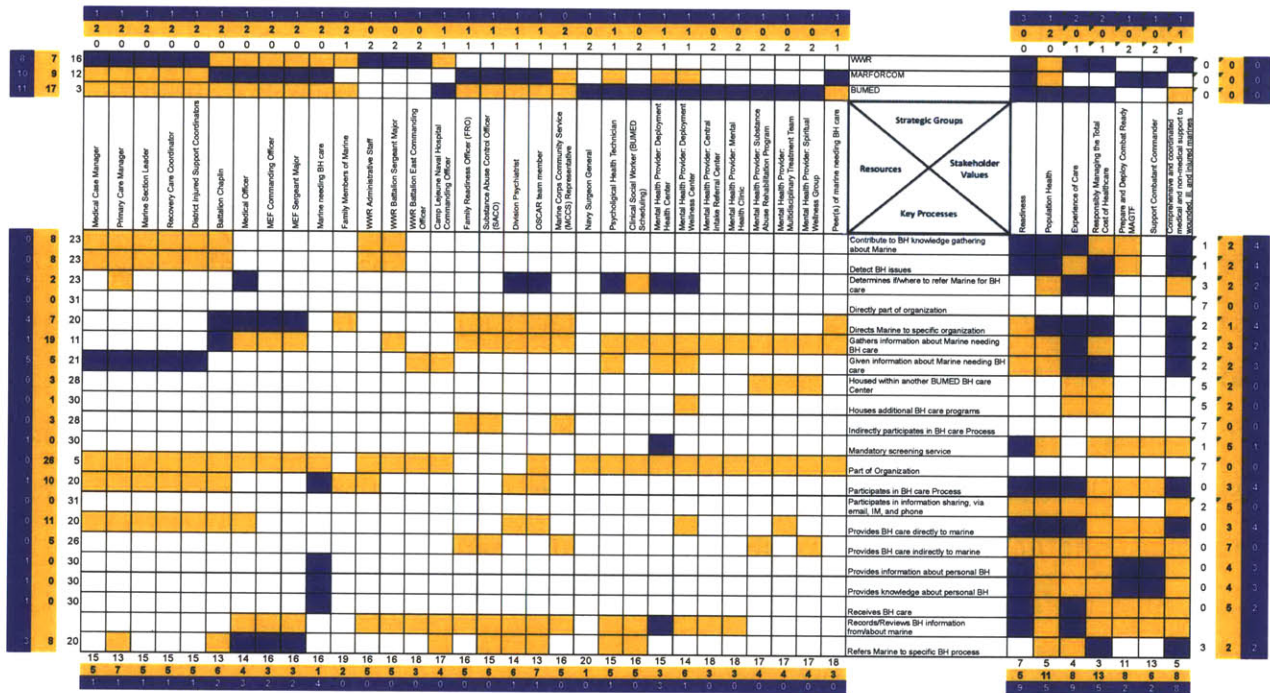


Figure 15 | Camp Lejeune MPHE X-Matrix

Table 2 | X-Matrix Relationship Criteria

Dimension A	Dimension B	Criteria for Strong Rel.	Criteria for Weak Rel.	Criteria for No Rel.
Resources	Strategic Groups	Part of chain of command	Interacts with group	Does not interact with group
Resources	Key Processes	Performs process for own strategic group and for other group(s)	Performs process for own strategic group	Does not perform process
Stakeholder Value	Strategic Groups	Contained within group's strategic objectives	Supported by group's strategic objectives	Not supported by group's strategic objectives
Stakeholder Value	Key Processes	Directly supported by key process	Indirectly supported by key process	Not supported by key process

The numbers listed on the sides and above the matrix are the tallies of each of the possible relationship values (strong, weak, or none). These numbers provide insight to the strength of the relationship between a specific entity of a dimension and all entities of another dimension. For example, in the Camp Lejeune X-Matrix, the BUMED strategic group has a strong relationship with 11 BH resources, a weak relationship with 12 BH resources, and no relationship with 7 BH resources.

This X-Matrix is helpful because it provides a visual representation of the relationships between the groups, resources, values, and processes at Camp Lejeune that

are involved with providing BH care to Marines. Based on the relationship definitions given in Table 2, the information presented in the X-Matrix can be summarized by quadrant. The top left quadrant depicts the alignment between the resources and the BH strategic groups. This is fairly evenly distributed and the only ways to impact this quadrant would be to change the number of resources involved or to change the way in which the resources interact with the other strategic groups. Moving to the right, the top and bottom right quadrant display the alignment between stakeholder values and the strategic groups and BH tasks, respectively. The lack of white cells supports that there is a good alignment between the stakeholder values and both strategic groups and tasks. Finally, the bottom left quadrant displays the most interesting results. The amount of white cells in this quadrant indicate a lack of alignment between the BH resources and BH tasks being performed; meaning, there is little overlap between the two. This may suggest a lack of continuity in the BH care that is received by Marines.

3.3 Identify Dominant Views

At this point, each of the strategic groups has been assessed in terms of the eight views of Enterprise Architecting and an X-Matrix was created to provide insight to the relationships between four dimensions of the enterprise: strategic groups, resources, stakeholder values, and key processes. The information obtained from these analyses can be used to compare the contributions made by each strategic group to the enterprise views. This information can provide insight to the views that dominate, or influence, the enterprise as it currently stands. It should be noted that the views identified as dominant were determined based on information available at the time of the analysis and should not discount the possible dominance of additional views if future research suggests as such.

This is accomplished by first creating another matrix to depict how each task/process, performed by each resource, contributes to the state of a specific view. A snapshot of the BUMED matrix can be seen in Figure 16; the full matrices can be seen in APPENDIX B.

BUMED		
Resources\Tasks	Information	Knowledge
Division Psychiatrist		Determines if/where to refer Marine for BH care
OSCAR team member		Determines if/where to refer Marine for BH care
Marine Corps Community Service (MCCS) Representative		
Navy Surgeon General		
Psychological Health Technician	Gathers information about Marine needing BH care	Determines if/where to refer Marine for BH care
Clinical Social Worker (BUMED Scheduling)	Gathers information about Marine needing BH care	Determines if/where to refer Marine for BH care
Mental Health Provider: Deployment Health Center	Gathers information about Marine needing BH care	Determines if/where to refer Marine for BH care
Mental Health Provider: Deployment Wellness Center	Gathers information about Marine needing BH care	Determines if/where to refer Marine for BH care
Mental Health Provider: Central Intake Referral Center	Gathers information about Marine needing BH care	
Mental Health Provider: Mental Health Clinic	Gathers information about Marine needing BH care	
Mental Health Provider: Substance Abuse Rehabilitation Program	Gathers information about Marine needing BH care	
Mental Health Provider: Multidisciplinary Treatment Team	Gathers information about Marine needing BH care	
Mental Health Provider: Spiritual Wellness Group	Gathers information about Marine needing BH care	
Peer(s) of marine needing BH care		

Figure 16 | Resource and Task Contribution to Views Matrix, BUMED Snapshot

Resources are used as row labels and the EA views are used as column headers. Cells of the matrix are edited when a resource contributes to a particular view. The cell that corresponds to both resource and view is filled out with the task completed by the resource that contributes to the view. For example, the top row of Figure 16, should be read “The Division Psychiatrists contributes to the Knowledge view of the BUMED and enterprise by determining if/where to refer a Marine for BH care.” Then, to determine the total contribution to an enterprise made by a resource, the number of entries made in each column is summed. This analysis was performed for each strategic group and plotted to show the total amount of resources contributing to views of each strategic group’s enterprise as well as the Camp Lejeune MPHE enterprise (It is assumed that if a resource contributes to a view of the BUMED enterprise, he also contributes to the same view of the Camp Lejeune MPHE enterprise). A graph summarizing the data captured in the resource/task matrix (Figure 16) is shown in Figure 17.

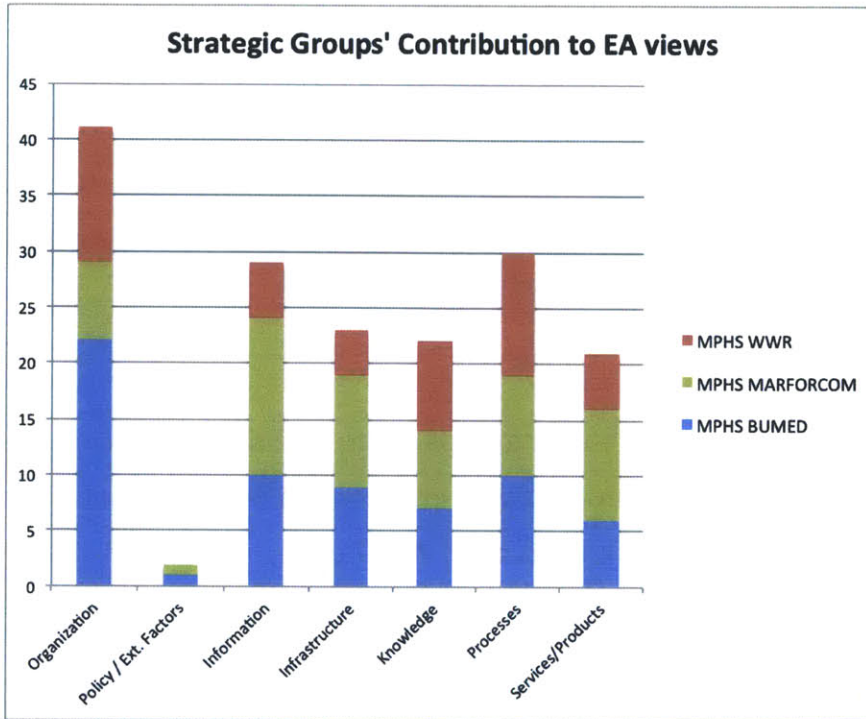


Figure 17 | Strategic Groups' Contribution to EA Views

As seen in Figure 17, the Organization view is the most dominant view, or the view with the highest level of resource contribution. The Process and Information views are close and are second and third as far as dominance goes. The Policy / External Factors view is the least dominant but this is not surprising since the policy is created and delivered from a higher level of the enterprise as we saw in Section 3.1.5. An interesting observation can be made from the graph about the correlation of dominant views to the areas that were mentioned to have the most issues in the as-is analysis. For example, there were many comments made about the lack of resources, which is heavily tied to the Organization view.

In addition to identifying the dominant views of the enterprise, this analysis also provides insight to the level of contribution made by each strategic group to each level. From the graph it can be concluded that resources interacting with BUMED contribute most to the Organizational view, while resources interacting with MARFORCOM contribute most to the Information, Infrastructure, and Services/Products views and resources interacting with the WWR contribute most to the Knowledge and Process views.

It should be noted that while each of the resource contributions is not weighted (e.g. based on time spent performing certain tasks or number of people filling each resource

type), this summary view provides insight into the areas that have the greatest influence on the enterprise; this information is vital to enterprise transformation (Nightingale and Rhodes, 2012). In addition, the graph highlights potential disconnects between the major strategic groups. For example, BUMED has the largest resource contribution to the organizational view but the least contribution to the knowledge view; this could suggest redundancies in BH process.

3.4 Key Takeaways

Categorizing information about the three stakeholder groups of the MPHE at Camp Lejeune into views uncovered certain relationships and interactions between the views of each stakeholder. Based on the as-is analysis of the Enterprise Architecting views and the x-matrix, it can be concluded that all of the BH stakeholders share a common interest in improving the MPHE. And, that much of the area for improvement lies within the interaction between these stakeholder groups as well as a common understanding of what needs to be done in order to accomplish this. There is a shared desire to provide Marines at Camp Lejeune with the BH care they need to recover as well as continue to serve. Since this desire is shared by the main stakeholder groups as well as the individual resources within these groups a plan for transformation must deliver results that is observed and experienced by these groups.

As a result of the desire to provide Marines with BH care, each strategic group has made unique contributions to the space. For example, MARFORCOM has an initiative called "Force Preservation" whose objective is to maximize the combat readiness of Marines II MEF. The issues of most concern are: general safety, substance abuse, Combat Operational Stress Control (COSC), and suicide prevention. While these issues may exist independent of PTSD, studies have shown that many incidents of PTSD are revealed by way of these issues. As Force Preservation is a MARFORCOM run initiative, the interaction between its programs and BUMED programs is said to be minimal and far from standardized. This makes it very difficult, if not impossible, to provide a Marine with continuous BH care.

It is also important to consider the flow of direction and interaction between levels of the large SoS Enterprise (recall Figure 3) when preparing for transformation. Recall that the DoD MHS hierarchy parallels the DoD's hierarchy. The direction flows down from the Macro level to the Meso level, by way of policies. The Meso level is then responsible for creating and managing processes that are executed at the Micro level to ensure the direction given at the Macro level is followed. This information, combined with the results of the as-is analysis of the micro-enterprise (Camp Lejeune MPHE), shapes the Enterprise Architecture (recall Figure 5) of the current state of the micro-enterprise; see Figure 18.

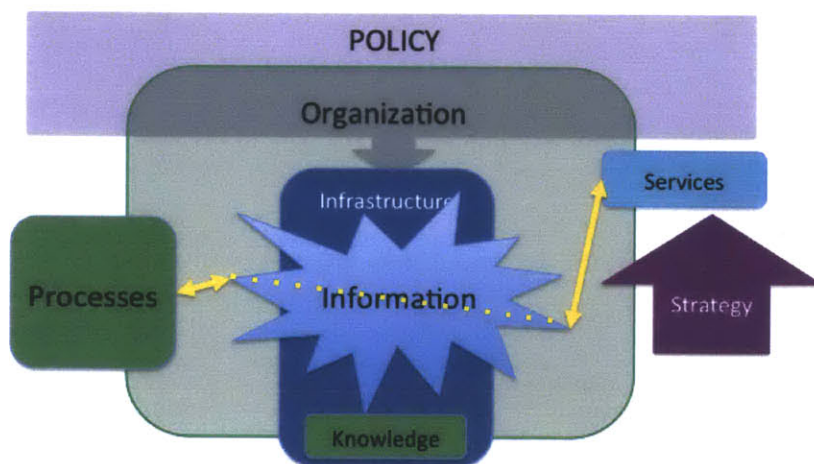


Figure 18 | Enterprise Architecture of Current State of Camp Lejeune MPHE

Figure 18 depicts the current state architecture at Camp Lejeune. The policy, which is driven from a higher level of the enterprise, has the greatest effect on the organization and infrastructure at Camp Lejeune. The organization is the largest and most influential view of the enterprise, as it interacts with all other views. It influences the way in which the BH processes are carried out which are linked to the BH services through the information that is captured during the processes, most of which should be stored in the enterprise infrastructure (DHIMS). However, it was noted that there are gaps in the way in which information is exchanged between people within the organization, which hinders the knowledge sharing that takes place within the organization. Finally, it was concluded that all BH strategic groups have a desire to improve the MPHE at Camp Lejeune, which leads to an increasing number of BH services being offered.

In summary, all BH stakeholders believe it is important to improve the BH care delivered to Marines. There are three main strategic groups providing BH care at Camp

Lejeune: BUMED, MARFORCOM, and WWR. These groups, while strategically aligned, are not managing their internal resources in a way that maximizes the BH care given to the Marines. To address the opportunities for improvement, it is necessary to understand the ways in which the BH resources interact while performing BH tasks in this micro-level enterprise. This information can provide insight to how each strategic group is impacted by decisions made at higher levels of the SoS enterprise. Multilevel analysis tools can be applied to gain visibility to these interactions and, in turn, how micro-level enterprises are impacted by the meso- and macro-levels. This application is addressed in Chapter 4.

Chapter 4: Multilevel Analysis Application

The first part of this chapter, Section 4.1, introduces an approach for using multilevel analysis techniques that can be combined with Enterprise Architecting tools to create a framework that supports transformation of a SoS Enterprises consisting of multiple levels. The second part of this chapter, 4.2, provides a descriptive account of the process used to combine these techniques and tools. Each subsection of Section 4.2 will define and describe a specific step taken to create and apply the framework to the PTSI demonstrator site, Camp Lejeune. A descriptive approach is used because this framework was created and applied concurrently.

4.1 Approach for Multilevel Framework

By using Enterprise Architecting to investigate the as-is state of the MPHE at Camp Lejeune and sort information about the enterprise into views, the needs of each stakeholder group were brought to a forefront. However, Camp Lejeune is only a small part of the DoD's MHS enterprise and the initial goal of the full research effort is to help MHS achieve more efficient delivery and effective outcomes by using an integrated system enterprise approach to manage the delivery of physiological services to service members and their families. Recall the diagram viewed previously in the as-is analysis now in Figure 19.

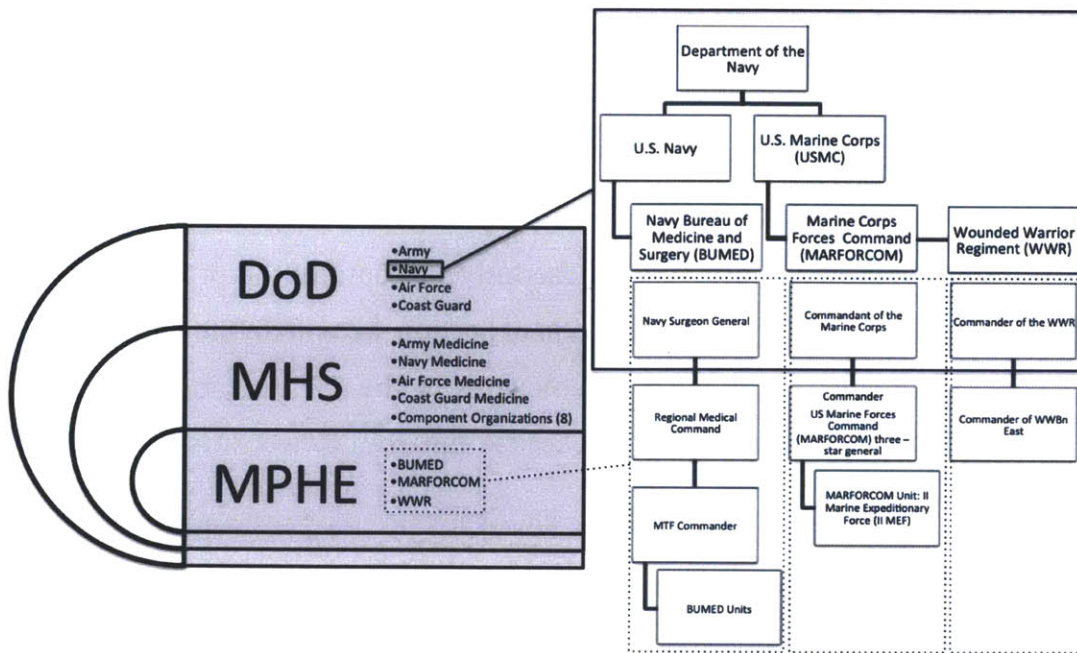


Figure 19 | Camp Lejeune Represents Lowest Level in DoD MHS SoS Enterprise

The number of variables (e.g. stakeholders and tasks) and their interactions observed during the as-is assessment of the MPHE at Camp Lejeune can best be represented by matrices. Matrices will provide the visibility needed to determine where changes should be made. Assessing the as-is state of each of the strategic groups from the perspective of the 8 views (from Enterprise Architecting) is advantageous to the transformation plan. It introduces an additional and beneficial level of complexity to the matrix view by providing visibility to the interactions between levels of the enterprise. Multilevel matrices can be used to account for this additional level of information.

The key takeaway from the assessment, as mentioned in Section 3.4, is that the BH stakeholders at Camp Lejeune share a desire to improve the BH care delivered to Marines. The three main strategic groups providing BH care at Camp Lejeune are BUMED, MARFORCOM, and WWR and while these groups may have similar desires there is still great opportunity to improve the BH care given to Marines, individually and collectively.

The following variables should be included in the matrices:

- Enterprise Architecting Views (8)
- Strategic Groups (SG) providing BH care (3)
- BH Resources belonging to each SG (21)
- BH Tasks completed by each SG (31)

To set up the matrix, the axes and levels must be determined. There are multiple ways this can be done; the trick is to determine which will provide the most important and actionable information.

As seen in the literature review, multilevel analysis is not a new kind of analysis. While many of the published works pertaining to multilevel analysis are written with information technology multilevel systems as the subjects, there have been a few recent publications looking at sociotechnical multilevel systems. Rob Nicol's thesis (2010) proposes a framework that represents organization, processes, and information elements of a multilevel enterprise in an analytically useful way. He accomplishes this using a Multi-Domain Process Matrix model (MDPM); see Figure 20.

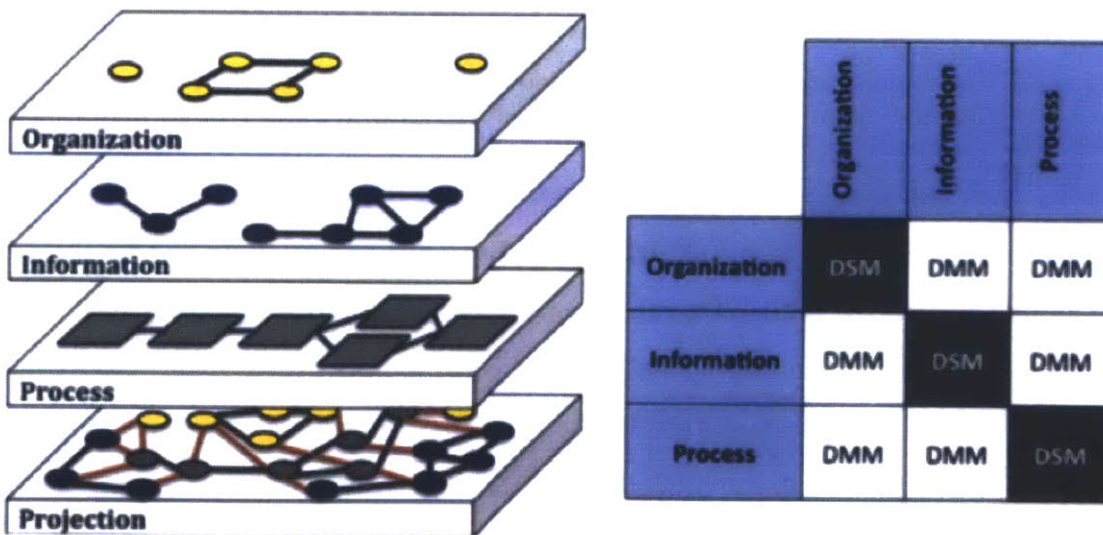


Figure 20 | MDPM Structure (Nicol, 2010)

Nicol notes that while each of the elemental views is useful by itself to those directly involved in the elements, none of them are able to depict the systems level view that is necessary to understand the systems emergent properties. This notation resonates with

the MHS of the DoD in multiple levels. As we see have seen in the enterprise diagram and view DSMs, there are many intra- and inter-level interactions occurring across the views outlined in the as-is state of the MPHE at Camp Lejeune and across the levels of the entire enterprise. Inspired by Nicol's MDPM framework, I propose that by identifying the interactions between the major contributors to the Enterprise Architecting views in the lower level of an enterprise, the impact of making changes at higher levels can be predicted by also identifying the how these contributors interact with the views of higher levels. Not only will this provide an ability to observe the intra- and inter-level complexities, this will also support the architect's ability to select an optimal future state for all levels of the enterprise.

In order to support this goal, the tactics used to collect and represent the as-is state of the MPHE at Camp Lejeune must be combined with a multilevel analysis tools. I propose that this combination will support a transformation framework that can be scaled to encompass the multiple tiers of systems that exist above Camp Lejeune within the DoD's MHS. A descriptive outline of this framework is presented in Chapter 4.

4.2 Application of Multilevel Framework

This section defines and describes the specific steps taken to create and apply the multilevel transformation framework to the DoD's MPHE by first gathering information about the demonstrator site, Camp Lejeune.

4.2.1 Gather Information about levels of SoS Enterprise

The first step in this process is to gather information pertaining to the levels of the system-of-systems enterprise that is going to be transformed, in this case, the Military Psychological Health Enterprise of the Department of Defense. It is not necessary to perform an in-depth analysis of each level, but it is important to understand two things about the SoS Enterprise:

1. Number/Structure of levels
2. Interaction between levels

The number of levels within an enterprise provides insight to the number of stakeholders involved with decision-making as well as the hierarchy that is used to

approve and execute any decisions made. This is important to know when planning an enterprise transformation (Nightingale and Rhodes, 2012). This information should be readily available, as it should align with the organizational structure of the enterprise. Organization charts or matrices can be used to determine levels.

The MPHE had not yet been defined but through discussion with stakeholders, was determined to parallel the structure of the DoD, see Figure 21. This information was gathered from public information available on the DoD website and verified with enterprise stakeholders.

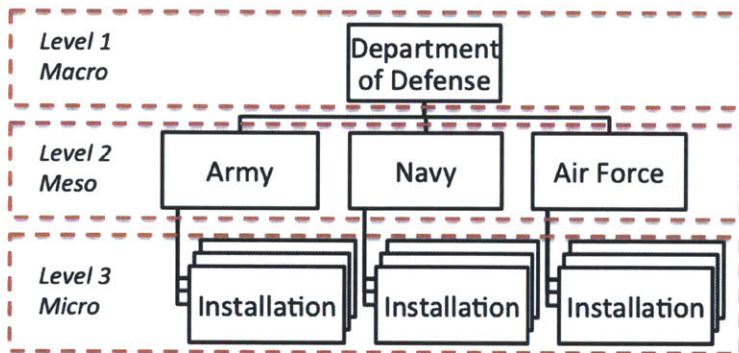


Figure 21 | Levels of DoD Enterprise

The way in which the levels of an enterprise interact is important to the transformation because it provides insight to how changes at one level may impact other levels. The interaction between levels will be further vetted in later steps of the framework, but having a high-level understanding of what information flows between each of the levels is very helpful. In the case of the DoD MPHE it was discovered through stakeholder interviews that the direction flows down from the Macro level to the Meso level, by way of policies. The Meso level is then responsible for creating and managing processes that are executed at the Micro level to ensure the direction given at the Macro level is followed, see Figure 22.

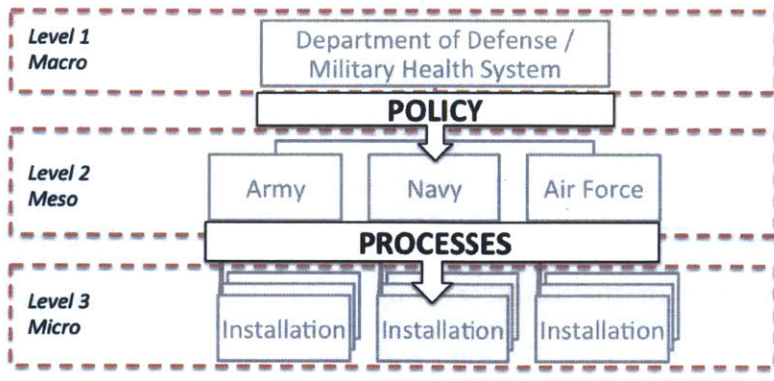


Figure 22 | Interactions between Enterprise Levels

After gathering high-level information about the levels of the enterprise and how they interact, the assessment should become more focused.

4.2.2 Select Enterprise of Focus

Due to the size and complexity of most SoS Enterprises, it may be infeasible to propose and execute a transformation plan for the entire enterprise. The dynamic properties of large systems (Hastings, 2004) also make transformation challenging at such large scale. This research project proposes to focus first on a smaller, lower-level component of the enterprise and use the information collected at this level to support a transformation plan that can be scaled to the size of the entire enterprise.

Enterprise stakeholders should be consulted to determine where to focus the efforts of the project. Camp Lejeune, a Marine Corps base in North Carolina, received recommendation from high-level Marine and Navy medical general officers and was chosen as a demonstrator site, at which the initial transformation process for the DoD MPHE will begin. This demonstrator site is now the enterprise of focus.

4.2.3 Assess Current State of Selected Enterprise

After selecting an area of focus, or demonstrator site, an in-depth analysis is performed on the newly selected enterprise. The as-is state analysis was performed for the MPHE at Camp Lejeune using Enterprise Architecting tactics. Based on information from previously performed investigations, the as-is analysis of the MPHE at Camp Lejeune focused on three different BH stakeholder groups: Navy Bureau of Medicine and Surgery (BUMED), the Marine Corps Forces (MARFORCOM), and the Wounded Warrior Regiment (WWR). The detailed analysis can be found in Chapter 3. Each of these groups has resources, values, and key

processes that are involved with providing BH care to Marines at Camp Lejeune. The interaction between these “dimensions” was analyzed using an X-Matrix, another Enterprise Architecting tool, seen in Figure 15 in Chapter 3.

A key point from the analysis, as summarized in Section 3.4, is that these groups, while strategically aligned, need to improve the way in which their resources contribute to the overall BH care given to Marines. This information is vital for creating a transformation plan. The next step is to determine how the information gained about each of the views can contribute to the transformation plan.

4.2.4 Evaluate Interactions between View Contributors

The goal of this step is to gain visibility to the interactions between the strategic groups that takes place because of their respective resources and tasks. Since this type of visibility requires the analysis of two axes (resources and tasks) across three levels (strategic groups), a visual tactic similar to that used by Nicol (2010) in his multi-domain process matrix (MDPM), is employed. First, the information from the left side of the X-Matrix is translated to three matrices, placed side by side, each specific to the strategic groups; see Figure 23.⁷

The rows of the matrix represent the resources of the enterprise and the columns represent the tasks performed by the resources. A cell is filled to denote that a resource performs a certain task. There are three sets of the same columns to denote alignment of a task to each of three strategic groups. Since it is possible for a resource to complete a BH task that is aligned to a process outside of his strategic group, the cells are color coded to denote the resources alignment. For example, the cells shaded blue in the BUMED columns (the left side columns) are BH tasks, performed by BUMED resources, aligned to the BUMED system, these cells can be found in section 1 of the large matrix. The cells shaded green in section 4 of the matrix represent tasks aligned to the BUMED system performed by MARFORCOM resources.

⁷ See the X-Matrix, Figure 15, for the detailed tasks (which appear in the column headers of Figure 23. The same matrix, but divided by strategic group, can be found in APPENDIX H.

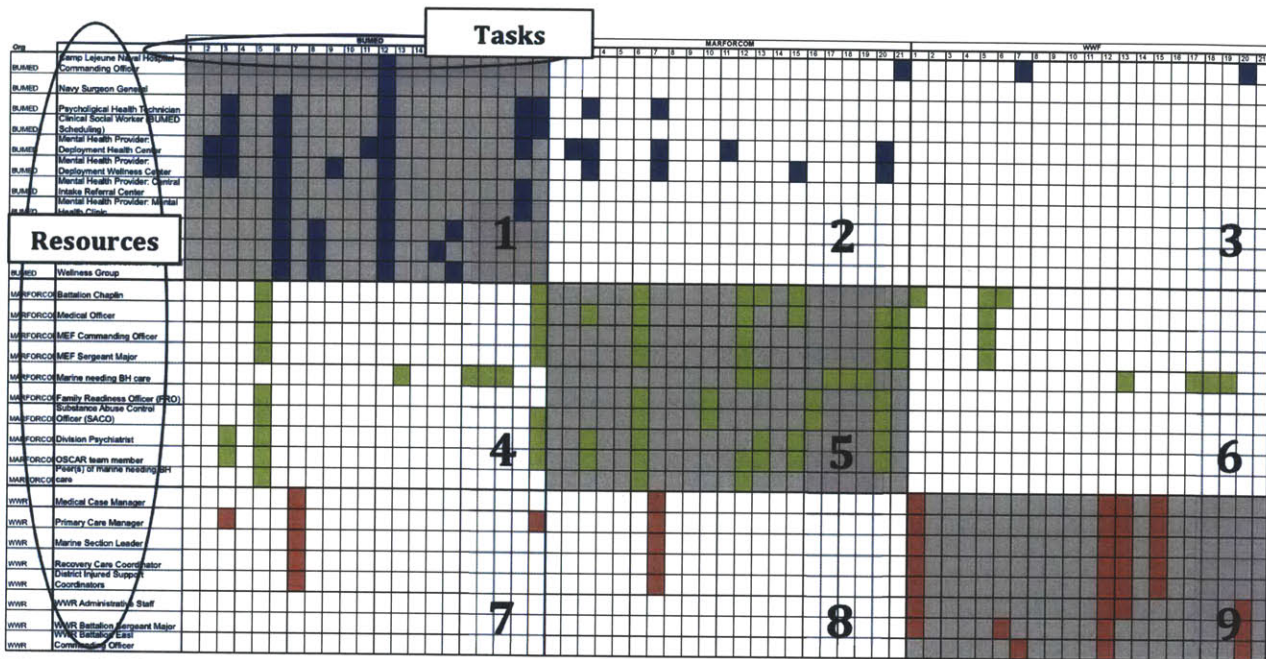
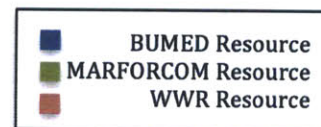


Figure 23 | Resources and Tasks, by Strategic Group, Matrix



The visual in Figure 23 provides two important pieces of information about the enterprise. The first is the occurrences of BH tasks across resources – the number of cells filled in per column is equal to the number of resources responsible for performing a certain BH task within a strategic group. The second piece of information provided pertains to the resources performing BH tasks that are aligned to strategic groups other than their own. These resources act as “interfaces” between the strategic groups and highlight where the interactions are taking place. This is valuable information for enterprise transformation as it reduces the uncertainty around who will be affected by certain changes to the enterprise.

4.2.5 Identify Specific Interactions with Higher Levels of Enterprise

In order to understand how decisions made at higher levels of the SoS Enterprise will impact the lower levels, the inter- and intra-level interaction between entities of the multilevel enterprise should be modeled. This can be accomplished by applying multilevel analysis tools to the objective data captured from the as-is analysis.

The information gathered in the as-is analysis about the micro-level Enterprise Architecting views can be used to identify the interactions between levels. To identify the interactions between Camp Lejeune and the higher levels of the DoD Enterprise, the interactions between the levels, as identified in Section 4.2.1 are revisited. Recall that the

Macro (DoD) level of the enterprise establishes and disseminates policies to the Meso level to provide direction. The Meso level, then, communicates the direction from the Macro level and creates or modifies processes to facilitate compliance at the Micro level. So, the cross-level interaction between the Macro and the Meso level of the enterprise is based on the relationship between the policies of the Macro level and the processes of the Meso level. This hierarchy of flow, as it related to Camp Lejeune, is seen in Figure 24.

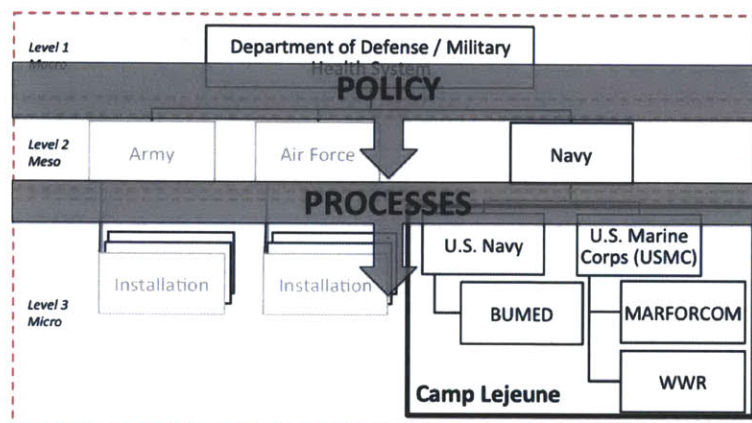


Figure 24 | Hierarchy of Flow from DoD to Camp Lejeune

To continue this line of thought, recall the dominant views of the Micro level demonstrator site, Camp Lejeune. The dominant views were Organization, Process and Information. To understand the interactions between the Organization and Process views at the Micro level, tasks were identified and plotted against the resources performing them using a combination of matrices (see Figure 23). The insights from the Resource and Task Matrices about interactions between strategic groups can be combined with the information collected about the flow of direction from the higher levels of the enterprise. This is accomplished by using an approach similar to Nicol’s MDPM. The information in Figure 23 is separated into new matrices, according to strategic group resources, and translated into three three-dimensional matrices. By separating the matrices in this fashion, the color-coding can be reassigned so that a change in color does not represent a change in resource alignment it represents a task alignment, see Figure 25. In Figure 25, which is the new BUMED Resource and Task Matrix, the green and red cells represent BH tasks completed by BUMED resources that are aligned to MARFORCOM and WWR processes, respectively.

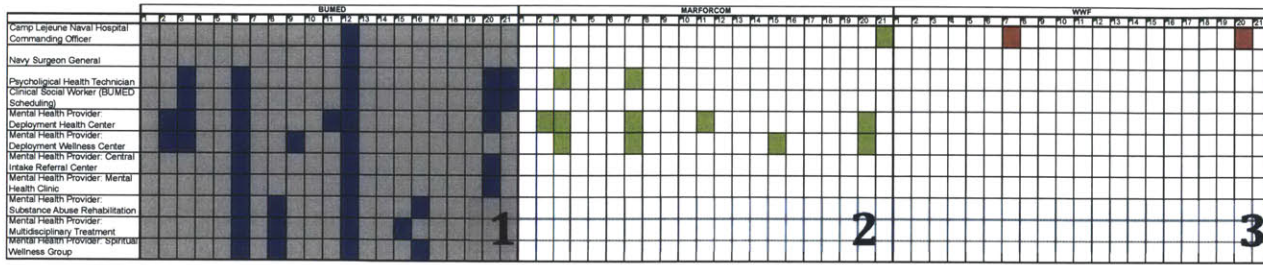


Figure 25 | Modified Resource and Task Matrix: BUMED Resources

This color manipulation allows for the setting up of the multilevel matrix which is depicted in Figure 26.

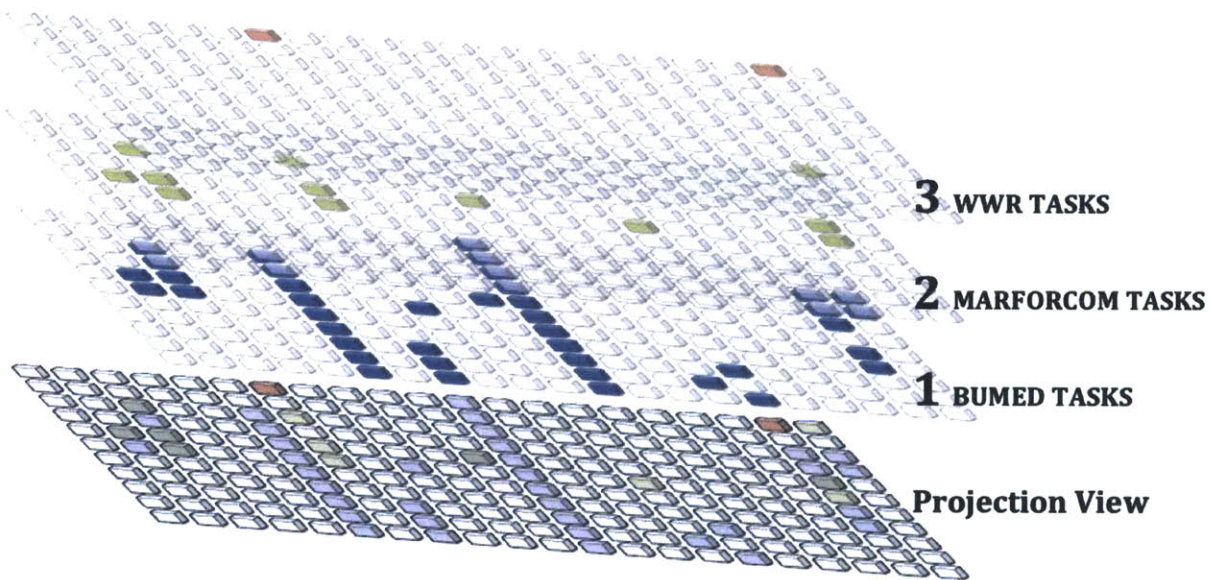


Figure 26 | Multilevel Matrix for BUMED Resources

The matrix originally created to depict the interaction between BH resources and tasks (Figure 23) provided insight to the interactions between the strategic groups. This information insinuates that if a change is made in a process that is aligned to a specific BH strategic group, there is a mechanism available to determine whether or not another BH group will be affected by this change. Using the data collected from the first Resource and Task matrix (Figure 23), a multilevel matrix can be created to depict the impact a of a change in process on all strategic groups, regardless of which strategic group the process is aligned. This concept is summarized in Figure 27, which synthesizes the interactions

between each level of the enterprise and the interactions between the BH strategic groups at the Micro level of the enterprise.

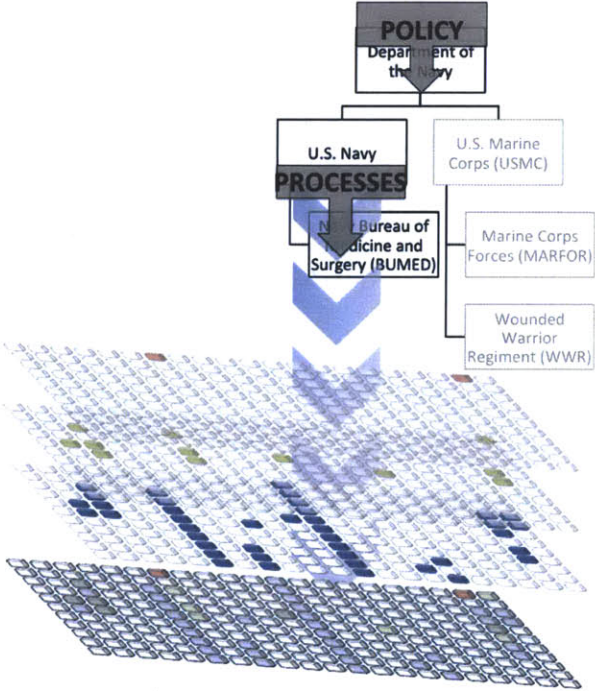


Figure 27 | Multilevel Impact Observed

Chapter 5: Conclusion and Future Work

5.1 Summary

This thesis was composed in response to a specific need, presented by the DoD to transform their enterprise at multiple levels. Two objectives were proposed to respond to this need. The first was to support the development of an improved future state for the DoD's MPHE by using Enterprise Architecting to investigate the current state of the MPHE at the selected demonstrator site, Camp Lejeune. The second was to combine the use of Enterprise Architecting tools with multilevel analysis techniques to create a framework that supports transformation of a complex, multilevel enterprise. The scope of this thesis was defined by its objectives as well as the enterprise in which the research was being completed, the DoD MPHE.

Enterprise Architecting was employed to understand the as-is state of a micro-level enterprise. Following the assessment, the application of multilevel analysis tools was investigated to determine how information gathered about the micro-level enterprise could be used to develop a framework that supported a multilevel transformation. This framework was then presented through a descriptive application using the MPHE at Camp Lejeune as the Mico-level component of the DoD's Military Health System, the complex, multilevel SoS Enterprise of interest.

It was found that by using Enterprise Architecting to identify the dominant views of a low-level component of a multilevel SoS Enterprise, the structure of the levels the enterprise as well as the interactions between the levels can be used to understand the impacts of decisions made at higher levels of the SoS enterprise on its low-level components. In the specific case of the DoD MPHE, the dominant views were found to be Organization, Process, and Information. Further investigation into these views led to understanding how the ways in which the BH resources interacted while performing BH tasks in this micro-level enterprise (Camp Lejeune MPHE). This investigation provided insight to how each strategic group is impacted by decisions made at higher levels of the SoS enterprise. This insight can be used to model the potential future states of an enterprise. This will support both the design and selection of a transformation plan for the enterprise.

5.2 Future Use of Framework

As stated in the summary, the insight gained from combining Enterprise Architecting tools with multilevel analysis techniques can be used to support the transformation of a multilevel SoS enterprise. This support can come in the form of both approaches and modeling tools.

The approaches that can be derived from the insight provided by this thesis can support an extension to the Enterprise Architecting approach that is used to assess the current state of an enterprise. This thesis outlined a way in which the subjective information received during the as-is analysis was transformed into objective data. In the specific case of investigation, the interactions between resources of the Camp Lejeune MPHE were quantified and analyzed to provide visibility to how changes made at higher levels of the SoS Enterprise (the DoD MPHE) would impact the Camp Lejeune MPHE. While BH resources and their subsequent BH tasks were used as the quantifiable data in this application, there is potential to use different types of information as quantifiable data. For example, the metrics used by enterprises to measure performance may also be considered objective data and may be able to used to model similar impacts of changes made at different levels of a multilevel SoS enterprise.

It is recommended that when applying the framework outlined in this thesis the dominant views of the enterprise, as determined during the Enterprise Architecting as-is analysis, be used as reference when abstracting the objective data from the analysis. This will ensure that the data being used to model the as-is and potential future states of the enterprise have a strong presence throughout the enterprise.

APPENDIX B: Resources and Tasks Across EA Views
 Resources and Tasks across Enterprise Architecting views, from BUMED perspective:

MPHS BUMED								
Resources/Tasks	Strategy	Organization	Policy / Ext. Factors	Information	Infrastructure	Knowledge	Processes	Services/Products
Medical Case Manager								
Marine Section Leader								
Recovery Care Coordinator								
District Injured Support Coordinators								
Battalion Chaplain		Directs Marine to specific organization					Refers Marine to specific BH process	
Medical Officer		Directs Marine to specific organization					Refers Marine to specific BH process	
MEF Commanding Officer		Directs Marine to specific organization					Refers Marine to specific BH process	
MEF Sergeant Major		Directs Marine to specific organization					Refers Marine to specific BH process	
Marine needing BH care				Provides information about personal BH		Provides knowledge about personal BH	Participates in BH care Process	Receives BH care
Family Members of Marine		Directs Marine to specific organization						
WWR Administrative Staff								
WWR Battalion Sergeant Major								
WWR Battalion East Commanding Officer								
Camp Lejeune Naval Hospital Commanding Officer		Part of Organization						
Family Readiness Officer (FRO)		Directs Marine to specific organization						
Substance Abuse Control Officer (SACO)		Directs Marine to specific organization					Refers Marine to specific BH process	
Division Psychiatrist		Directs Marine to specific organization				Determines if/where to refer Marine for BH care	Refers Marine to specific BH process	
OSCAR team member		Directs Marine to specific organization				Determines if/where to refer Marine for BH care	Refers Marine to specific BH process	
Marine Corps Community Service (MCCS) Representative		Directs Marine to specific organization						
Navy Surgeon General		Part of Organization						
Psychological Health Technician		Part of Organization		Receives personal information from marine	Reviews information about Marine BH	Determines if/where to refer Marine for BH care	Refers Marine to specific BH process or additional BH care	
Clinical Social Worker (BUMED Scheduling)		Part of Organization		Receives personal information from marine	Reviews information about Marine BH	Determines if/where to refer Marine for BH care	Refers Marine to specific BH process	
Mental Health Provider: Deployment Health Center		Part of Organization	Mandatory screening service	Receives personal information from marine	Reviews information about Marine BH	Determines if/where to refer Marine for BH care		Detect BH issues
Mental Health Provider: Deployment Wellness Center		Part of Organization		Receives personal information from marine	Houses additional BH care programs	Determines if/where to refer Marine for BH care		Detect BH issues
Mental Health Provider: Central Intake Referral Center		Part of Organization						
Mental Health Provider: Mental Health Clinic		Part of Organization		Receives personal information from marine	Records information about Marine BH			
Mental Health Provider: Substance Abuse Rehabilitation Program		Part of Organization		Receives personal information from marine	Housed within another BUMED BH care Center			Provides BH care indirectly to marine
Mental Health Provider: Multidisciplinary Treatment Team		Part of Organization		Receives personal information from marine	Housed within another BUMED BH care Center			Provides BH care directly to marine
Mental Health Provider: Spiritual Wellness Group		Part of Organization		Receives personal information from marine	Housed within another BUMED BH care Center			Provides BH care indirectly to marine
Peer(s) of marine needing BH care		Directs Marine to specific organization						

Resources and Tasks across Enterprise Architecting views, from MARFORCOM perspective:

MPHS MARFORCOM								
Resources/Tasks	Strategy	Organization	Policy / Ext. Factors	Information	Infrastructure	Knowledge	Processes	Services/Products
Medical Case Manager								
Marine Section Leader								
Recovery Care Coordinator								
District Injured Support Coordinators								
Battalion Chaplin		Part of Organization		Receives personal information from marine			Participates in BH care Process	Provides BH care directly to marine
Medical Officer		Part of Organization		Receives personal information from marine	Records information about Marine BH	Determines if/where to refer Marine for BH care	Refers Marine to additional BH care	Provides BH care directly to marine
MEF Commanding Officer		Part of Organization		Receives personal information from marine	Reviews information about Marine BH			
MEF Sergeant Major		Part of Organization		Receives personal information from marine	Reviews information about Marine BH			
Marine needing BH care		Part of Organization		Provides information about personal BH		Provides knowledge about personal BH	Participates in BH care Process	Receives BH care
Family Members of Marine								
WWR Administrative Staff								
WWR Battalion Sergeant Major								
WWR Battalion East Commanding Officer								
Camp Lejeune Naval Hospital Commanding Officer								
Family Readiness Officer (FRO)				Receives personal information from marine	Records information about Marine (may or may not include BH info)		Indirectly participates in BH care Process	Provides BH care indirectly to marine
Substance Abuse Control Officer (SACO)				Receives personal information from marine	Records information about Marine (may or may not include BH info)		Indirectly participates in BH care Process	Provides BH care indirectly to marine
Division Psychiatrist				Receives personal information from marine	Records information about Marine BH	Determines if/where to refer Marine for BH care	Participates in BH care Process	Provides BH care directly to marine
OSCAR team member		Part of Organization		Receives personal information from marine	Records information about Marine BH	Determines if/where to refer Marine for BH care	Participates in BH care Process	Provides BH care directly to marine
Marine Corps Community Service (MCCS) Representative				Receives personal information from marine	Records information about Marine (may or may not include BH info)		Indirectly participates in BH care Process	Provides BH care indirectly to marine
Navy Surgeon General								
Psychological Health Technician						Determines if/where to refer Marine for BH care	Refers Marine to specific BH process	
Clinical Social Worker (BUMED Scheduling)								
Mental Health Provider: Deployment Health Center			Mandatory screening service	Receives personal information from marine	Reviews information about Marine BH	Determines if/where to refer Marine for BH care		Detect BH issues
Mental Health Provider: Deployment Wellness Center				Receives personal information from marine	Reviews information about Marine BH	Determines if/where to refer Marine for BH care		Support Marine with BH issues
Mental Health Provider: Central Intake Referral Center								
Mental Health Provider: Mental Health Clinic								
Mental Health Provider: Substance Abuse Rehabilitation Program								
Mental Health Provider: Multidisciplinary Treatment Team								
Mental Health Provider: Spiritual Wellness Group								
Peer(s) of marine needing BH care		Part of Organization		Receives personal information from marine				

Resources and Tasks across Enterprise Architecting views, from WWR perspective:

Resources/Tasks	MPHS WWR							
	Strategy	Organization	Policy / Ext. Factors	Information	Infrastructure	Knowledge	Processes	Services/Products
Medical Case Manager		Part of Organization				Contribute to BH knowledge gathering about Marine	Participates in BH care Process	Provides BH care directly to marine
Marine Section Leader		Part of Organization				Contribute to BH knowledge gathering about Marine	Participates in BH care Process	Provides BH care directly to marine
Recovery Care Coordinator		Part of Organization				Contribute to BH knowledge gathering about Marine	Participates in BH care Process	Provides BH care directly to marine
District Injured Support Coordinators		Part of Organization				Contribute to BH knowledge gathering about Marine	Participates in BH care Process	Provides BH care directly to marine
Battalion Chaplin		Directs Marine to specific organization		Receives personal information from marine		Contribute to BH knowledge gathering about Marine		
Medical Officer		Directs Marine to specific organization					Refers Marine to specific BH process	
MEF Commanding Officer		Directs Marine to specific organization					Refers Marine to specific BH process	
MEF Sergeant Major		Directs Marine to specific organization					Refers Marine to specific BH process	
Marine needing BH care				Provides information about personal BH		Provides knowledge about personal BH	Participates in BH care Process	Receives BH care
Family Members of Marine							Participates in BH care Process	
WWR Administrative Staff		Part of Organization			Works out of group specific office	Contribute to BH knowledge gathering about Marine	Participates in BH care Process	
WWR Battalion Sergeant Major		Part of Organization		Gathers information about Marine needing BH care	Participates in information sharing, via email, IM, and phone	Contribute to BH knowledge gathering about Marine		
WWR Battalion East Commanding Officer		Part of Organization		Given information about Marine needing BH care	Works out of group specific office			
Camp Lejeune Naval Hospital Commanding Officer		Indirectly part of specific organization		Given information about Marine needing BH care	Participates in information sharing, via email, IM, and phone		Refers Marine to specific BH process	
Family Readiness Officer (FRO)								
Substance Abuse Control Officer (SACO)								
Division Psychiatrist								
OSCAR team member								
Marine Corps Community Service (MCCS) Representative								
Navy Surgeon General								
Psychological Health Technician								
Clinical Social Worker (BUMED Scheduling)								
Mental Health Provider: Deployment Health Center								
Mental Health Provider: Deployment Wellness Center								
Mental Health Provider: Central Intake Referral Center								
Mental Health Provider: Mental Health Clinic								
Mental Health Provider: Substance Abuse Rehabilitation Program								
Mental Health Provider: Multidisciplinary Treatment Team								
Mental Health Provider: Spiritual Wellness Group								
Peer(s) of marine needing BH care								

APPENDIX C: BUMED EA View Tables

The following tables were used to assess the as-is state of the BUMED strategic group in terms of Enterprise Architecting view anatomy:

Strategy

Category	Description
Structure	BUMED's strategy is aligned to the MHS'S Quadruple Aim.
Behavior	The strategy is executed under Navy Surgeon General line of command.
Artifacts	Publications around Triple and Quadruple Aim as well as those that support the Quadruple aim, such as: Patient Centered Medical Home, moving form Healthcare to Health, and emphasis on Patient Safety. Policies and Instructions related to BH were outlined and summarized in a Repository by Marry D. Adams of US Navy on May 16, 2011, these are outlined in the Policy / External Factors Section.
Measures	Some policies address specific measures for reporting requirements and standardization; however, these exact measures are not yet known
Periodicity	Unknown

Organization

Category	Description
Structure	BUMED is housed within the U.S. Navy while both MARFORCOM and WWR are housed within USMC.
Behavior	BUMED units on the installation report to the Military Treatment Facility (MTF) Commander, who reports to the Regional Medical Command, which in turn reports to the Navy Surgeon General. In interviews, the providers discussed that system changes are a result of command changes. One interviewee stated "we have had three changes in directors in the past three years – every time someone new comes in – they see changes."
Artifacts	Org Charts: DoD, Joint Chief of Staff, Defense Agencies, Military Departments Policies/Instructions: <ul style="list-style-type: none"> • Mental Health Evaluations of Members of the Armed Forces • Substance Abuse Prevention and Control
Measures	Unknown
Periodicity	Unknown

Information / Knowledge

Category	Description
Structure	It is unclear how information and knowledge are shared internally to BUMED and externally with MEF units and WWR. All medical information should be entered into AHLTA
Behavior	Many comments were made during interviews regarding lack of communication between healthcare providers and other stakeholders. There were also comments about the lack of awareness for all of the behavioral health services available within BUMED and MEF.
Artifacts	DoD Instruction - sent 2/27/12 with intent to est. Policy, assign responsibilities, and

	prescribe procedures in PH and MHD (metal health disease)
Measures	Unknown but should be determined by DPH Instruction
Periodicity	Future: plan for establishing visible leadership and advocacy for PH within departments should first be reported ~August 2012 then updated annually

Process

Category	Description
Structure	<p>Marines can receive behavioral health care from three different clinics within BUMED:</p> <ul style="list-style-type: none"> • Deployment Health Center for deployment related issues • Centralized Intake and Referral Center (CIRC) for non-deployment related issues • Mental Health Clinics within MTF for non-deployment related issues <p>Marines are routed through the system by a psychological health technician and then clinical social workers (for non-deployment related issues).</p>
Behavior	<p>BUMED receives Marines with behavioral health issues via referrals from MEF non-clinical care providers or self-referrals made at the battalion aid stations. These referrals are routed through a centralized scheduling system by a psychological health technician. If the Marine's regimentt has a behavioral health provider (OSCAR or Division Psychiatrist) the referral is routed to the appropriate unit; if no such provider exists, the Marine is sent to the Deployment Health Center for deployment related issues or the Mental Health Clinic at the MTF* or providers at the Centralized Intake and Referral Center (CIRC)* for all other issues.</p> <p>*Two clinical social workers allocate Marines to either MTFs or CIRC. These two resources are responsible for the behavioral health MTF triage process. They review all referrals, which include information about where the initial health or non-health provider intended for the Marine to go. The social workers are responsible for deciding which department/program and type of provider (e.g. psychologists, psychiatrists) the Marine should see. This is a redundancy in the process caused by lack of visibility to the providers regarding what resources are available to see the Marine.</p> <p>In the event that on-post providers are unable to meet access to care standards, defined as 28 days for treatment in specialty care, the Marine is referred to an off-post provider in the TRICARE network for outpatient care. In this process the specialty care provider works with TRICARE, the military's health insurance company, to find an off-post provider with the ability to provide care within the required time frame</p> <p>In addition to processes directly related to behavioral health treatment, there are also processes that may have an indirect impact on a Marine's behavioral health that are housed within BUMED. These processes are mostly around training:</p> <ul style="list-style-type: none"> • Entry Level Training: Marine Air-Ground Task Force (MAGTF) training which includes transition period, pre-deployment training program (PTP), and deployment and non-MAGTF phases • B Billet Training, or Category B MOS: short term duty assignment that takes place away from unit. There is a belief that this is a good opportunity to address medical issues because a Marine is "not missing work and not letting others down." However, at Camp Lejeune training for a B Billet often occurs away from the main base at a significant distance from any behavioral health resources. This contributes to a lack of consistent care.
Artifacts	<p>Referral documents</p> <p>Training program outlines</p> <p>Policies/Instructions:</p> <ul style="list-style-type: none"> • Mobile Medical Augmentation Readiness Team (MMART) Manual • Mental Health Evaluations of Members of the Armed Forces • Implementation of TRICARE Prime Access Standards for Mental Health

	<ul style="list-style-type: none"> • Substance Abuse Prevention and Control • Policy Guidance For Traumatic Brain Injury (TBI): Definition And Reporting • Implementation of Enlisted Administrative Separation Policy - Personality Disorder • Provides clinical practice guidelines • Standardization of Substance Abuse Rehabilitation Program Intake, Treatment, Discharge, and Continuing care Forms • Small Arms Training And Qualification
Measures	See Service Measures
Periodicity	Unknown

Services / Products

Category	Description
Structure	<p>BUMED offers two major behavioral health services through its Military Treatment Facilities (MTF):</p> <ol style="list-style-type: none"> 1. Mental Health Clinic offers services for non-deployment related behavioral health issues 2. Deployment Health Center offers for deployment related behavioral health issues
Behavior	<p>BUMED Maintains a set of clinics and a hospital with specialty care staff to augment the medical providers within the MEF units. It is also responsible for credentialing medical facilities and providers owned by the other stakeholders within the MHS enterprise at Camp Lejeune.</p> <p>There are four main programs under BUMED that are operated by the Naval Hospital's Mental Health Department. For the purpose of this research effort, these programs will be considered services offered within BUMED and to the II MEF units. The following is a list of the BUMED behavior health services and their summary descriptions, see Figure 12 for an organizational illustration:</p> <ul style="list-style-type: none"> • Mental Health Clinic – mission is to provide timely, optimal behavioral health services and maintain the highest state of readiness with the active duty population. A divide between the Green-suit (Marine) and Blue-suit (Navy) providers was noted in interviews. It was stated that there was a certain expectation for Green-suits to serve as principle caregiver to the units they served and not refer or pass any cases to Blue-suits; however, there are not enough Green-suits to handle this. There was also frustration expressed regarding the fact that the Clinics are housed within MTFs which aren't effectively located around the enterprise site. • Central Intake Referral Center (CIRC) – houses psychiatric care providers; if the Marine's regimentt has a behavioral health provider (OSCAR or Division Psychiatrist) the BH referral is routed to the appropriate unit; if no such provider exists, the Marine is sent to the Deployment Health Services for deployment related issues or the Mental Health Clinic at the MTF or psychiatric providers at CIRC for all other issues. • Deployment Health Services – provides mandatory screening services to the MEF prior to and following deployment. This service is not used to treat behavioral health issues but may be useful in detecting them. • Deployment Wellness Center (DWC) – hospital function at that provides treatment and assessments/screenings. The DWC handles behavioral health issues specifically related to deployments. It is know for being an advocate for Marine if it seems a Marine isn't getting support from commander. Also noted to have lack of resources. The Deployment Wellness Clinic has three subordinate programs/services that cater to behavioral health, they are: <ul style="list-style-type: none"> ○ Substance Abuse and Rehabilitation Program (SARP) – follows naval hospital's line of command. It is a short-term care program designed to

	<p>meet the individual needs of active duty personnel, family members, and retirees. Services include screening, counseling, referrals to outpatient or inpatient programs, and professional training for other providers. Receives 90% of referrals from command; works closely with SACO at battalion level and OSCARS. It may take weeks for a Marine to get an appointment.</p> <ul style="list-style-type: none"> ○ Multidisciplinary Treatment Team – provides diverse treatment through a robust program consisting of psychiatric medication management to individual and group evidence based therapy ○ Spiritual Wellness Group – provides services to MEF and family members in a spiritual context. The groups meet in sizes of up to 15 members and act as a segway to medical treatment programs.
Artifacts	<ul style="list-style-type: none"> • Referral practices • Defense Enrollment Eligibility Reporting System (DEERS) is used to track service members path through BUMED programs <p>See Process Policies</p>
Measures	<p>BUMED metrics should be investigated further. The following metrics were listed in a site interview but should be confirmed:</p> <ul style="list-style-type: none"> • Access to care • Timeliness of care • Relative Value Units: Measures provider productivity to determine if supply is appropriate to demand. One RVU earned per patient encounter. • PDHA/PDRHA (Post Deployment Health Assessment/ Post Deployment Health Reassessment) • Risk Behavior Manifestations: <ul style="list-style-type: none"> ○ Positive Urinalyses ○ Deaths ○ Accidents ○ STDs ○ Suicide Gestures ○ AWOLs ○ Drug Offenses ○ Alcohol Offenses ○ Traffic Violations ○ Crimes Against Persons ○ Crimes Against Property ○ Spouse Abuse ○ Child Abuse ○ Financial Problems
Periodicity	<p>Reporting on these services via dashboards, reports, etc is unknown and should be investigated.</p>

APPENDIX D: MARFORCOM EA View Tables

The following tables were used to assess the as-is state of the MARFORCOM strategic group in terms of Enterprise Architecting view anatomy:

Strategy

Category	Description
Structure	II MEF is a MARFORCOM unit operating out of at Camp Lejeune. It is one of three MEFs in the Marine Corps. A MEF is a combined arms force consisting of ground, air and logistics forces. It possesses the capability for projecting offensive combat power ashore while sustaining itself in combat without external assistance for a period of 60 days. With more than 62,000 Marines and sailors, II MEF is representative of the largest and most powerful Marine Air-Ground Task Force (MAGTF).
Behavior	If a MEF Marine has a behavioral health need he is instructed to seek counsel/care from his small unit leadership and/or chaplain. If elevated care is needed, the Marine may be referred (or self-refer) to be seen by a medical asset housed within the BUMED Military Treatment Facilities.
Artifacts	<p>Unit Website (http://www.iimef.Marines.mil/UnitHome.aspx) contains information about Marines, II MEF and components, including:</p> <ul style="list-style-type: none"> • Mission statement of both II MEF and MARFORCOM • Force Preservation <p>USD P&R DoD DPH Instruction: Installation Level statements:</p> <ul style="list-style-type: none"> • Secretary of Military Dept shall: <ul style="list-style-type: none"> ○ “Ensure that each military installation has a designated individual who serves as the installation’s principle consultant and advocate for psychological health and under the authority of the installation commander convenes meetings of all installation resources that support psychological health.” ○ “Task Military Service IGs to evaluate compliance with Military Service and installation-level DPH staffing, roles, and functions and with oversight in areas of critical importance to meet the identified needs of Service members and their families. Military Service IGs must include subject-matter experts on programs related to psychological health to ensure compliance with the Military Services’ psychological health strategic plan.” • General - The DPH Program...: <ul style="list-style-type: none"> ○ “Ensures that clinical mental health services provided in military treatment facilities (MTFs) and mental health specialty clinics are integrated with other counseling and supportive services at the installation level, and from Federal, State, and territory, as well as military and non-military organizations external to the installation (e.g., Military OneSource, Military and Family Life Consultants, and TRICARE Network).” ○ “Provides an installation-level leader to coordinate these clinical and counseling services and resources and to ensure that medical providers and line leaders are aware of the referral options available for particular psychosocial, spiritual, and family issues.” • Each military installation commander (or comparable activity commander or head, as determined by the head of the DoD Component involved) shall have a designated individual who serves as the installation’s principal consultant and advocate for psychological health and under the authority of the installation commander convenes meetings of all installation or local DoD resources that support psychological health <ul style="list-style-type: none"> ○ For purposes of this Instruction, the installation-level psychological health

	<p>consultant will be called an "Installation DPH." However, the Military Services may use existing titles for the designated individual performing this role.</p> <ul style="list-style-type: none"> ○ The position preferably should be full-time and devoted to developing and implementing the Military Service's strategic plan for psychological health; however, at installations where the mission or tempo is more suited to a part-time position, the roles and responsibilities of the DPH may be assigned as a significant additional duty. ○ The individual may be military, civilian, or a Public Health Service officer as necessitated by the Military Services' organizational and operational needs. The DPH must be a licensed mental health professional. <ul style="list-style-type: none"> • The responsibilities of the Installation DPH include: <ul style="list-style-type: none"> ○ Apprise the installation commander or local major command of the status of psychological health in the local beneficiary population, and the degree to which needs for prevention, early intervention, and treatment are being met. ○ Report to the installation commander or local major command and the MTF commander about the adequacy of staffing and organizational processes and resources needed to meet the psychological health of the installation, and recommend courses of action to ensure that services and access to those services are provided throughout the deployment cycle and other surge situations. ○ Ensure coordination of military and non-military services, using existing coordinating councils where appropriate, between the various programs for Service members and their families providing support for psychological health, including but not limited to family advocacy, chaplains, family centers, Casualty Assistance Calls Offices, and TRICARE. • Where different Military Service installations exist in proximity or different Service components operate at the same installation, the Service DPHs should establish a standing committee to ensure coordination of services to facilitate equitable coverage and access to care for all Service members and their families, regardless of Military Service affiliation.
Measures	Personnel and unit readiness encompasses a great number of factors and behavioral health is one of those, it is unclear how this is measured.
Periodicity	Unknown

Organization

Category	Description
Structure	<p>II MEF is a MARFORCOM unit at Camp Lejeune. Both MARFORCOM and WWR are housed within USMC while BUMED is housed within the U.S. Navy. The support received from all members of this chain of command (from peers to small unit leadership to senior leadership) plays a part in the behavioral health system of the MEF.</p> <p>Commanding General: Major General Raymond C. Fox Deputy Commanding General: Brigadier General John K. Love Command Master Chief: Master Chief (FMF) Tammy R. Heap Sergeant Major: Sergeant Major Robert "Grant" VanOostrom Chaplain: Captain Steve Brown</p> <p>II MEF is comprised of four basic components: (1) II MEF Headquarters Group containing personnel and equipment necessary for the effective planning and execution of operations.</p> <ul style="list-style-type: none"> • Commanding Officer: Colonel James B. Stopa

	<ul style="list-style-type: none"> • Sergeant Major: Sergeant Major Joseph D. SHaw <p>(2) A ground combat element, the 2nd Marine Division.</p> <ul style="list-style-type: none"> • Commanding General: Brigadier General James W. Lukeman • Sergeant Major: Sergeant Major Bryan K. Zickefoose • Command Master Chief: Master Chief (FMF/SW) Frank E. Johnson <p>(3) An aviation combat element, the 2nd Marine Aircraft Wing.</p> <ul style="list-style-type: none"> • Commanding General: Major General Glenn M. Walters • Assistant Wing Commander: Brigadier General Gary L. Thomas • Sergeant Major: Sergeant Major Christopher G. Robinson • Command Master Chief: Command Master Chief Nathan P. Whidden <p>(4) A combat service support element, the 2nd Marine Logistics Group.</p> <ul style="list-style-type: none"> • Commanding General: Brig. Gen. Edward D. Banta • Chief of Staff: Col. Jeffrey M. Reagan • Command Sergeant Major: Sgt. Maj. George W. Young Jr. • Command Master Chief: CMDCM Russell W. Folley
Behavior	<p>II MEF reports to the Commander, U.S. Marine Forces Command (MARFORCOM), a Three-Star General, who in-turn reports to the Commandant of the Marine Corps.</p> <p>Marines that were interviewed at Camp Lejeune indicated that there is room for improvement in the communication among all of the behavioral health stakeholders at Camp Lejeune. This includes communication between the small unit leadership and senior leadership as well as across the stakeholders external to the MEF chain of command but internal to the behavioral health system (e.g. BUMED providers).</p>
Artifacts	<p>Unit Website (http://www.iimef.Marines.mil/UnitHome.aspx) contains information about location and component structure.</p> <p>USD P&R Instruction:</p> <ul style="list-style-type: none"> ○ The DPH Instruction directly influences the MPHE organization at Camp Lejeune by stating that each military installation designate an individual to serve as the “principal consultant and advocate” for PH. ○ Designates specific roles for psychological health advocacy at the installation, Military Departments, and DoD level to provide consultation to operational leadership and facilitate coordination of clinical, counseling, and other services promoting the psychological health of Service members and their families.
Measures	This should be known based on the instruction demands...
Periodicity	Life cycle of leadership is unknown

Information / Knowledge

Category	Description
Structure	It is unclear how information and knowledge are shared internally within MEF and externally with BUMED and WWR.
Behavior	<p>Many comments were made during interviews regarding lack of communication between small unit commanders and leadership as well as between command lines and providers. A specific point was made about leadership’s lack of understanding when it comes to the complexity of getting a Marine through the mental health pipeline.</p> <p>It was also stated that the communication between Divisional Psychiatry and BUMED had a lot of room for improvement.</p>
Artifacts	<p>DoD Instruction - sent 2/27/12 with intent to est. Policy, assign responsibilities, and prescribe procedures in PH and MHD (mental health disease)</p> <p>Strategic Objective stated by BUMED Surgeon General to enhance the informatics capability of the healthcare system, this applies to the way in which BH information is stored and</p>

	managed.
Measures	Unknown
Periodicity	Future: plan for establishing visible leadership and advocacy for PH within departments should first be reported ~August 2012 then updated annually

Process

Category	Description
Structure	<p>The behavioral health processes aligned to the II MEF take place in three ways:</p> <ol style="list-style-type: none"> 1. A Marine presents a behavioral health need and is referred (or self-referred) to medical assets within the BUMED system. This process is detailed in Figure 13. 2. External to BUMED medical treatment, a Force Preservation effort is outlined to maximize the combat readiness of Marines II MEF. The issues of most concern are: general safety, substance abuse, Combat Operational Stress Control (COSC), and suicide prevention. While these issues may exist independent of PTSD, studies have shown that many incidents of PTSD are revealed by way of these issues. 3. Marines must complete a physical and psychological health screening between 90 and 180 days after returning from any deployment from March 2004 to present. This screening is scheduled with a Deployment Health Care provider aligned to BUMED. Prior to his appointment, the Marine must complete the online screening. <ol style="list-style-type: none"> a. It as noted in interviews with Marines that this decompression process does not take place fully in many cases.
Behavior	A Marine, and in most case his family, can receive behavioral health services by getting referred, or referring themselves, to either BUMED medical services or MEF services. The MEF services are mostly voluntary and have limited interaction with the BUMED medical services; the latter point is concerning.
Artifacts	<ul style="list-style-type: none"> • Referral Documents • Welcome Home Commanders Resource Guide • Post Deployment Guide Sheets: Post Deployment Health ReAssessment (PDHRA), TBI & PTSD, Marine PDHRA • HIPAA – Commanding officers see HIPAA is an obstacle when they want to access information from providers. <p>Process Policies/Instructions:</p> <ul style="list-style-type: none"> • Mental Health Evaluations of Members of the Armed Forces • Substance Abuse Prevention and Control • Policy Guidance For Traumatic Brain Injury (TBI): Definition And Reporting • Implementation of Enlisted Administrative Separation Policy - Personality Disorder • Standardization of Substance Abuse Rehabilitation Program Intake, Treatment, Discharge, and Continuing care Forms • Small Arms Training And Qualification
Measures	Time to see patient (greater than 28 days, patient goes to TRICARE)
Periodicity	TRICARE referral: 28 days OSCAR referrals are reviewed for approval on a weekly basis

Service / Products

Category	Description
Structure	<p>As stated in the strategy view, the behavioral health processes aligned to the MEF take place in three ways:</p> <ol style="list-style-type: none"> 1. A Marine with behavioral health need is referred (or self-referred) to medical assets within the BUMED system. This process is detailed in Figure 13 2. Force Preservation programs (external to BUMED medical treatment)

<p>Behavior</p>	<p style="text-align: center;">3. Post-deployment physical and psychological assessment.</p> <p>When a Marine is referred into the BUMED system to receive their services, she follows the process outlined in Figure 13</p> <p>The Force Preservation programs support personnel and unit readiness. For the purpose of this research effort, these programs will be considered services offered within or to the II MEF unit. The following is a list of MEF behavior health services and their summary descriptions:</p> <ul style="list-style-type: none"> • Family Readiness Officer (FRO) - a civilian hired to support commander in communication and managing families; the FRO helps Marines manage the needs of their family while staying focused on their mission. • Substance Abuse Control Officer (SACO) - a position held by a Marine corps officer, embedded in unit, to provide substance abuse education/prevention, urinalysis screening and assistance to the commander on substance abuse related matters. • Substance Abuse Counseling Centers - provide screening and assessment services to Marines seeking to be referred; after screening, Marines can enter the system at any of three levels: <ul style="list-style-type: none"> ○ Early Intervention (difficulty with addiction) ○ Outpatient (pattern of abuse) ○ Intensive Outpatient (diagnosed as dependent) • Suicide Prevention via "R.A.C.E Training" classes which present a framework to recognize and react to those in danger of committing suicide. • Naval Center Combat Operational Stress Control (NCCOSC) - BUMED program that works to promote resilience of Marines. They also investigate best practices in diagnoses and treatment of PTSD and TBI. NCCOSC's initiatives are informed by science and provide measureable, robust results. <p>The following services are not aligned to Force Preservation but are services offered to MEF that may provide behavioral health assistance:</p> <ul style="list-style-type: none"> • Division Psychiatry - clinic available to 2nd Marine Division Marines and sailors. The clinic provides access to therapy (group and individual) and medication to struggling service members, usually post-deployment. <ul style="list-style-type: none"> ○ Marines must get a referral from the Medical Officer (MO) at their battalion aid station to see Division Psych. • Operational Stress Control and Readiness (OSCAR) program - launched by Division Psychiatry (expanded psych services to 2nd, 6th, and 8th Marine Regimentts). OSCAR teams provide team training to each unit which is meant to help sensor BH programs for the commander to identify and refer Marines that need it; a filtering mechanism (understaffed); These professionals are not primarily mental health professionals, but are meant to serve primarily an educational function. • Chaplain - assigned to each Division, Airwing, or Logistics Group to ensure the spiritual fitness of their Marines while they are deployed. They are also available to Marines and their families while in garrison. They often provide a back door for the system to autocorrect as Marines and family members may feel more comfortable speaking with someone outside of a medical setting. • Military OneSource - a free service provided by DoD to MEF and families to provide them with information on "every aspect of military life." They offer both website and phone acces. • Human Factors Program - proposed as enterprise standard for USMC; believed to include all BH Stakeholders within each unit. <p>Marine Corps Community Services (MCCS) is a service organization that is dedicated to promoting readiness and retention of Marines and their families. They accomplish this by delivering valuable programs, products, and services to the Camp Lejeune community in a</p>
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	<p>positive manner. Many of the employees at MCCS used to work at social services; this service is also limited in resources. According to the website, MCCS offers the following services:</p> <ul style="list-style-type: none"> • Community Counseling • Resilience Education • Family Advocacy Program (FAP) • Sexual Assault Prevention and Response (SAPR) • Military Family Life Consultant (MFLC) service – MFLCs are licensed professional mental health coordinators who work with military personal and their families by providing non-medical solution focused counseling. There are only 2 at Camp Lejeune for 47,000 Marines. • Families overcoming stress (FOCUS) Project • Exceptional Family Member Program (EFMP) • Financial Management Program • New Parent Support Program
Artifacts	<p>Many of these programs have their own websites listing their missions, objectives, FAQs, etc.</p> <p>MCCS website contains national information about organization as well as organization chart. The website also serves as a information hub for Marines and their families regarding fitness, family team building travel, transition support, recreating, prevention, and education.</p> <p>See Process Policies</p>
Measures	<p>Due to the amount of BH services offered by II MEF, an independent investigation into the measures used by each services/program should be conducted but has not been attempted at the time of this report.</p>
Periodicity	Unknown

APPENDIX E: WWR EA View Tables

The following tables were used to assess the as-is state of the WWR strategic group in terms of Enterprise Architecting view anatomy:

Strategy

Category	Description
Structure	While a mission is published for WWR, there is not a published set of strategic objectives or general strategy. The WWR supports the strategic missions of both the DoD and Department of the Navy (DoN).
Behavior	Carried out through the Commandant of the Wounded Warrior Regiment under the line of the US Marine Corps.
Artifacts	<p>Motto: "Still in the fight" helps redirect focus of a wounded warrior to ability, not disability.</p> <p>The WWR Strategic Plan for 2011-2012 states five specific goals, laid out by the Commanding Officer, that the WWR should strive to achieve. These goals are to promote morale and self-sufficiency, to set up WII Marines for successful transitions, to expand strategic communications, to coordinate access to available and emerging treatment options, and to sustain program efficacy. The Plan clearly defines these goals and also provides objectives, associated with each goal that should be accomplished in order to achieve the goals.</p> <p>BUMEDINST 5430.8A: BUMED Instruction directing BUMED resources involved in Marine care to provide whatever information is necessary to improve quality of care given to Marine</p> <p>MCO 6320.2E: Marine Corps Commandant Order stating all Marine Corps activities will be familiar with processes for caring for WII Marines</p> <p>WII Policies⁸:</p> <p>Disability Evaluation System</p> <ul style="list-style-type: none"> • DoDD 1332.18: Guidance for Separation and Retirement for Physical Disability Policy • DoDD 1332.38: Physical Disability Evaluation Policy • DoDI 6040.44: Physical Disability Board of Review Policy <p>Transition Assistance Program</p> <ul style="list-style-type: none"> • DoDD 1332.35: Transition Assistance for Military Personnel Policy • DoDI 1332.36: Pre-Separation Counseling Policy • DoDI 1332.37: Public and Community Service Policy <p>Care Coordination</p> <ul style="list-style-type: none"> • DoDI 1300.24: Recovery Coordination Program (RCP) <p>WII Reports</p> <ul style="list-style-type: none"> • Report to Congress on the Comprehensive Policy Improvements to the Care, Management and Transition of Recovering Service Members (NDAA Section 1611 and 1615) • The Foundations of Care, Management and Transition Support for Recovering Service Members and Their Families (DoD Policy) • Assessment of Consolidation of Disability Evaluation Systems - REPORTS • Pilot Initial Report • Initial Report on Army Action Plan in Response to Deficiencies in the Army PDES

⁸ List of WW policies and reports found here:
<http://prhome.defense.gov/WWCTP/Reports.aspx>

	<ul style="list-style-type: none"> • Disability Advisory Council (DAC) Charter, September 24, 2008 • Assessments of Continuing Utility and Future Role of the Temporary Disability Retired List • Pilot Interim Report • Report on Reduction in Disability Ratings by the Department of Defense • Final Report on Army Action Plan in Response to Deficiencies in the Army
Measures	It is unclear whether measures are present to track progress against WWR objectives
Periodicity	Unknown, seems sporadic

Organization

Category	Description
Structure	<p>Both MARFOR and WWR are housed within USMC while BUMED is housed within the U.S. Navy.</p> <p>The WWR Care Teams consist of the following roles:</p> <ul style="list-style-type: none"> • Primary Care Manager (PCM) • Medical Case Manager (MCM) / Nurse Case Manager (NCM) • Marine Section Leader (SL) • Recovery Care Coordinator (RCC) • District Injured Support Coordinators (DISC)
Behavior	<p>The commander of the WWBn reports the commander of the WWR.</p> <p>The care team works together to coordinate the Marine's medical and non-medical care. Each role has specific duties:</p> <ul style="list-style-type: none"> • Primary Care Manager (PCM): provide/coordinate medical care, maintain health records, refer/approves Marine to specialist when necessary • Medical Case Manager (MCM) / Nurse Case Manager (NCM): nurse or social worker responsible for bringing medical practitioners together and coordinating access to specialists and non-routine medical services. • Marine Section Leader (SL): provide accountability and tracking information of Marine's progress through the WWR's Mind, Body, Spirit and Family Lines of Operations programs on a daily basis; also serve as mentor and advocate for Marines by providing small unit leadership and discipline necessary to support mental, physical, and emotional healing. • Recovery Care Coordinator (RCC): non-medical resource subject matter expert that helps Marine and family define recovery, rehabilitation, and reintegration goals. Also responsible for developing and executing Comprehensive Recovery Plan (CPR). • District Injured Support Coordinators (DISC): Mobilized Marine Reservists that are geographically dispersed to assist Reserve and former WWR Marines by providing face-to-face contact with Marine and family, VA coordination assistance, and informing Marine of local education and employment resources. They also identify VA OIF/OEF Coordinators to help coordinate combat Veteran medical care.
Artifacts	Org Charts: WWR staff and WWBn-E Task Organization
Measures	<ul style="list-style-type: none"> • Accountability and Tracking information of Marine's progress through the WWR's Mind, Body, Spirit and Family Lines of Operations • Individuals goals for recovery, rehabilitation, and reintegration
Periodicity	Daily reports on accountability and tracking info

Information / Knowledge

Category	Description
Structure	The specific structure is unknown, but based on the high level of coordination

	that is required to accomplish the WWR mission, there must be one in place.
Behavior	In order to coordinate care, the WWBn-East must have access to all marine's health-related records. Information must be available regarding the needs of the marines. All staff should have sufficient training to assist WW in their recovery and transition and a method to communicate the current state of marine's health must be established.
Artifacts	Reports about individual progress
Measures	Set per individual Program wide measures most likely exist
Periodicity	Some individual reports come out as often as daily, others are weekly and monthly.

Process

Category	Description
Structure	To get into the WWR program, Marines must complete a rigid application process; once in the program, they work with the WWR team to create personal recovery plans and goals.
Behavior	To be assigned to a WWR element a Marine must receive 3 primary referral components: <ul style="list-style-type: none"> • Questionnaire filled out by medical officer • Must include comments from a medical case manager • Must have endorsement from unit commander. All completed packages are presented to WWBn CO, who has the ultimate decision authority, for review and approval on a weekly basis. Once accepted, there are 3 phases: treatment/reconditioning, Integrated Disability Evaluation System (IDES), and reintegration; The 'integrated' portion of IDES refers to the fact that this is joint effort between the VA and the DoD to facilitate a smooth transition from one system to the other. The sub-components of IDES include: medical evaluation board (MEB), physical evaluation board (PEB), and a transition phase. 9-Block meeting is an internal meeting used to develop actions that promote effective transitions for Marines. A good part of the meeting is spent discussing "high risk" Warriors but there are not clear criteria regarding "high risk" at this time.
Artifacts	Marine Corps Order 6320.2E: Administration and Processing of Injured/Ill/Hospitalized Marines (November 2007)
Measures	Personal Progress tracked daily
Periodicity	Daily, others??

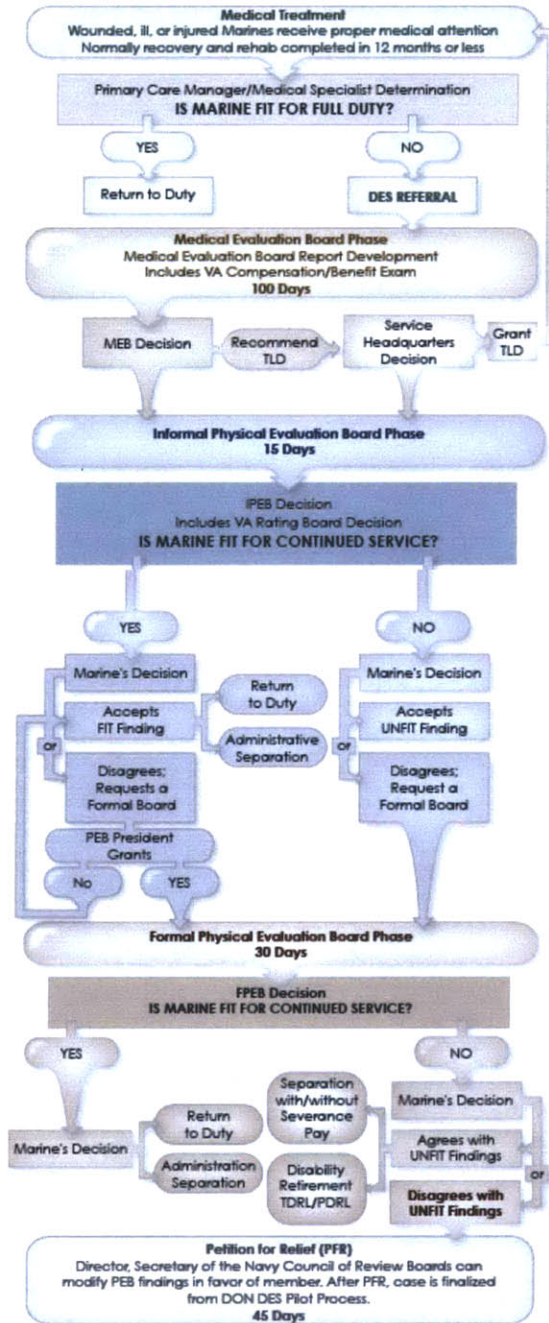
Services / Products

Category	Description
Structure	The holistic view taken by the WWR captures both physical and mental injuries leading to a population of service members with a diverse set of needs. Care team consists of individuals who work together to ensure medical and non-medical care is coordinated properly to afford the Marine maximum recovery.
Behavior	Provides behavioral health related treatments and services as part of its holistic approach to address mind, body, spirit, and family. These services include (but are not limited to): <ul style="list-style-type: none"> • Recovery Care Coordinators • District Injured Support Coordinators • Traumatic Service members' Group Life Insurance Claims

	<ul style="list-style-type: none"> • Marine Corps Wounded Warrior Attorneys • Warrior Athlete Reconditioning Program <p>Also provides support for the Integrated Disability Evaluation System (IDES).</p>
Artifacts	<p>Website describes program</p> <p>Because of the unique needs of Reserve Marines, the WWR has the Reserve Medical Entitlements Determination (RMED) Section to specifically assist wounded, ill or injured (WII) Reservists.</p>
Measures	<p>Personal progress, Successful Completion</p> <p>Progress against Objectives, Goals, and Tasks??</p>
Periodicity	<p>Daily progress</p> <p>Yearly Report</p>

APPENDIX F: DES PILOT PROCESS CHART

DES PILOT PROCESS CHART



APPENDIX G: EA Views Common to all BH Strategic Groups

Policy

Category	Description
Structure	<p>No clear policy tree for any of the strategic groups</p> <p>Policies and Instructions are issued from Department of Defense and Navy and structured by year and category.</p> <p>The subjects of the BH policies and instructions are indirectly related to MPHE at Camp Lejeune as there are very few policies specified toward Psychological Health.</p> <p>Policy Subjects: Combat behavior health directives, DoD Joint Force Mental Health, VA Mental Health, Substance Abuse, Suicide Prevention</p>
Behavior	<p>Both Policies and Instructions are mostly driven by DoD mandates.</p> <p>Sluggish response to new and changing policies has been observed throughout whole MHS; this trend seems to increase farther down the hierarchy</p>
Artifacts	<p>Policies Specific to MPHE:</p> <ul style="list-style-type: none"> • USD(P&R) 6490-09 – addresses Military Psychological Health leadership, responsibilities, milestones, etc: <i>a psychological health leadership and advocacy structure, focused on operational readiness and integration of health promotion and clinical services, shall be established throughout the DoD, and Directors of Psychological Health (DPHs) shall be designated in key positions across the Military Services, including the RC.</i> <p>Policies Directly Related to MPHE:</p> <ul style="list-style-type: none"> • SECNAVINST 6320.24A – Mental Health Evaluations of Members of the Armed Forces: Department of Navy (DON) policy, assign responsibility, and prescribe procedures for the referral, evaluation, treatment and administrative management of service members who are directed by their commands for mental health evaluation and/or assessment of risk for potentially dangerous behavior. • MCRP 6-11C/NTTP 1-15M Combat and Operational Stress Control (COSC) publication – Navy and Marine Corps Combat and Operational Stress Control Doctrine: Provide unified COSC doctrine to Navy and Marine Corps • NAVMED POLICY 08-001 – Implementation of TRICARE Prime Access Standards for Mental Health: Directs implementation of TRICARE Prime access standards for mental health and establishes monitoring and reporting requirements to support Health Affairs (HA) Policy Memo 07 -022 of 9 October 2007. • NAVMED POLICY 07-021 – Policy Guidance For Traumatic Brain Injury (TBI): Definition And Reporting: Initial guidance for newly established TBI reporting requirements. These measures represent a unified step toward the diagnosis and treatment of TBI within DoD. Dec 2007 <p>Policies Indirectly Related to MPHE:</p> <ul style="list-style-type: none"> • BUMEDINST 6440.6 – Mobile Medical Augmentation Readiness Team (MMART) Manual: provide the basic policies and procedures for rapidly augmenting the Operating Forces with organized teams of Medical Department personnel for limited (non-mobilization), short-term (less than 180 days) military operations, humanitarian relief missions, and fleet and Fleet Marine Force (FMF) scheduled deployments • BUMEDINST 5353.4A – Standards for Provision of Substance Related Disorder

	<p>Treatment Services: To establish a uniform set of standards for the provision of substance related disorder treatment services within the Department of the Navy (DON).</p> <ul style="list-style-type: none"> • NAVMEDCOMINST 5350.1 - Substance Abuse Prevention and Control: To provide guidelines and assign responsibilities for coordinating the policies relative to substance abuse among COMNAVMEDCOM military and civilian personnel. • NAVMED POLICY 08-026 - Implementation of Enlisted Administrative Separation Policy - Personality Disorder: This memorandum directs the implementation of a change in the Enlisted Administrative Separation Policy for those Service Members that have served, or are currently serving, in an imminent danger pay area who may be exhibiting symptoms consistent with Personality Disorder. • OPNAV 1720.4A - Suicide Prevention: Addresses Navy Suicide Awareness and Prevention policy and programs. • DoD/VA Clinical Practice Guidelines - Provides clinical practice guidelines OPNAV 5350.4E Drug and Alcohol and BUMED NOTE 5353 - Standardization of Substance Abuse Rehabilitation Program Intake, Treatment, Discharge, and Continuing care Forms • Combat and Operational Stress First Aid (COSFA) training - Official training manual for Combat and Operational Stress First Aid (COSFA) training • Caregiver Occupational Stress Control (CgOSC) Unit Assessment Training - Instructs the process for conducting unit assessments using the Combat Stress First Aid modules • Caregiver Occupational Stress Control (CgOSC) Stress Coping Brief - Caregiver Occupational Stress Control (CgOSC) Way Ahead module • Caregiver Occupational Stress Control (CgOSC) Leadership Brief - Caregiver Occupational Stress Control (CgOSC) brief for Commanding Officers and staff • Caregiver Occupational Stress Control (CgOSC) Executive Steering Committee/Board of Directors Brief - Caregiver Occupational Stress Control (CgOSC) Executive Steering Committee/Board of Directors Brief for Medical facilities and commands • DoDD 1332.18: Guidance for Separation and Retirement for Physical Disability Policy • DoDD 1332.38: Physical Disability Evaluation Policy • DoDI 6040.44: Physical Disability Board of Review Policy • DoDD 1332.35: Transition Assistance for Military Personnel Policy • DoDI 1332.36: Pre-Separation Counseling Policy • DoDI 1332.37: Public and Community Service Policy • DoDI 1300.24: Recovery Coordination Program (RCP) • Marine Corps Order 6320.2E: Administration and Processing of Injured/III/Hospitalized Marines
Measures	While some policies contain instruction around measures, it is unclear whether measures are in place to track compliance
Periodicity	Policies and Instructions are usually issued to accompany DoD mandates, but a specific periodicity is not apparent

Infrastructure

Category	Description
Structure	<p>Medical records sharing and pharmacy data sharing are executed primarily electronically through AHLTA. Clinical notes, dispositions, referrals, and consults move electronically through this system from provider to provider for both primary and specialty care.</p> <p>For inpatient care within the military treatment facility a second information system, Essentris, is utilized. Essentris data is Opel for providers outside the MTF, but providers</p>

	wishing to access the system must attend a one half day training event in order to become credentialed for that system.
Behavior	<p>Defense Health Information Management System (DHIMS) was created to enable this vital sharing process. The system relies on information technology solutions to capture, manage, and share military health care data. DHIMS has products/solutions for both Garrison Hospital Systems and Theater Systems.</p> <p>Garrison system: supports products to maintain the military's electronic medical records, to electronically perform ancillary processes such as appoint scheduling and prescribing medications, and to facilitate point-of-care data capture.</p> <p>Theater system: supports products that allow for mobile capturing and tracking of health data as well as decision support for those performing medical tasks in a combat environment. The Theater Medical Information Program (TMIP) supports the sharing of health data between Garrison and Theater systems.</p> <p>It is not clear whether the information collected in Garrison or Theater is standardized and easily accessible.</p> <p>DHIMS also supports products aimed specifically at Wounded Warriors. These products include a neurocognitive assessment tool and Health Artifact and Image Management Solution (HAIMS) which provides global visibility and access to health documents and images.</p> <p>System was developed for primary care and thus is limited in its capabilities for the transmission of specialty care data which has been acknowledged by both primary and specialty care providers throughout the system. Flow chart should be drawn.</p> <p>When a patient is referred off post, providers in the TRICARE network do not have access to this system resulting in an information gap between on-post and off-post providers. Information sharing is a key element of this process, and the inability of psychotropic drug prescribers in the TRICARE network to access AHLTA has been identified as a vulnerability of the system. As a result, Marines are now required to report information about prescriptions received from an off-post provider to their medical officer within 72 hours, with non-compliance resulting in non-judicial punishment. Knowledge of this information is important because certain medications can render a Marine non-deployable.</p>
Artifacts	MHS Systems Overview
Measures	You must be registered in the Defense Enrollment Eligibility Reporting System (DEERS) to be eligible for TRICARE. There are concerns about accuracy of DEERS.
Periodicity	Frequency of updates to the system is unknown

APPENDIX H: List of BH Tasks performed at Camp Lejeune

Task #	Task
1	Contribute to BH knowledge gathering about Marine
2	Detect BH issues
3	Determines if/where to refer Marine for BH care
4	Directly part of organization
5	Directs Marine to specific organization
6	Gathers information about Marine needing BH care
7	Given information about Marine needing BH care
8	Housed within another BUMED BH care Center
9	Houses additional BH care programs
10	Indirectly participates in BH care Process
11	Mandatory screening service
12	Part of Organization
13	Participates in BH care Process
14	Participates in information sharing, via email, IM, and phone
15	Provides BH care directly to marine
16	Provides BH care indirectly to marine
17	Provides information about personal BH
18	Provides knowledge about personal BH
19	Receives BH care
20	Records/Reviews BH information from/about marine
21	Refers Marine to specific BH process

APPENDIX I: Resource and Task Matrices, BUMED

	BUMED																				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Medical Case Manager							█														
Primary Care Manager							█														
Marine Section Leader							█														
Recovery Care Coordinator							█														
District Injured Support Coordinators							█														
Battalion Chaplain					█																█
Medical Officer					█																█
MEF Commanding Officer					█																█
MEF Sergeant Major					█																█
Marine needing BH care												█					█	█	█		
Family Members of Marine					█																
WWR Administrative Staff																					
WWR Battalion Sergeant Major																					
WWR Battalion East Commanding Officer																					
Camp Lejeune Naval Hospital Commanding Officer												█									
Family Readiness Officer (FRO)					█																
Substance Abuse Control Officer (SACO)					█																█
Division Psychiatrist			█		█																█
OSCAR team member			█		█																█
Marine Corps Community Service (MCCS) Representative					█																
Navy Surgeon General																					
Psychological Health Technician			█																		█
Clinical Social Worker (BUMED Scheduling)			█																		█
Mental Health Provider: Deployment Health Center		█	█								█										█
Mental Health Provider: Deployment Wellness Center		█	█							█											█
Mental Health Provider: Central Intake Referral Center																					█
Mental Health Provider: Mental Health Clinic																					█
Substance Abuse Rehabilitation Program																	█				
Multidisciplinary Treatment Team																█					
Mental Health Provider: Spiritual Wellness Group																█					
Peer(s) of marine needing BH care					█																

APPENDIX J: Resource and Task Matrices, MARFORCOM

	MARFORCOM																				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Medical Case Manager																					
Primary Care Manager																					
Marine Section Leader																					
Recovery Care Coordinator																					
District Injured Support Coordinators																					
Battalion Chaplin																					
Medical Officer																					
MEF Commanding Officer																					
MEF Sergeant Major																					
Marine needing BH care																					
Family Members of Marine																					
WWR Administrative Staff																					
WWR Battalion Sergeant Major																					
WWR Battalion East Commanding Officer																					
Camp Lejeune Naval Hospital Commanding Officer																					
Family Readiness Officer (FRO)																					
Substance Abuse Control Officer (SACO)																					
Division Psychiatrist																					
OSCAR team member																					
Marine Corps Community Service (MCCS) Representative																					
Navy Surgeon General																					
Psychological Health Technician																					
Clinical Social Worker (BUMED Scheduling)																					
Mental Health Provider: Deployment Health Center																					
Mental Health Provider: Deployment Wellness Center																					
Mental Health Provider: Central Intake Referral Center																					
Mental Health Provider: Mental Health Clinic																					
Substance Abuse Rehabilitation Program																					
Multidisciplinary Treatment Team																					
Mental Health Provider: Spiritual Wellness Group																					
Peer(s) of marine needing BH care																					

APPENDIX K: Resource and Task Matrices, MARFORCOM

	WWF																				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Medical Case Manager	█											█	█		█						
Primary Care Manager	█											█	█		█						
Marine Section Leader	█											█	█		█						
Recovery Care Coordinator	█											█	█		█						
District Injured Support Coordinators	█											█	█		█						
Battalion Chaplin	█				█	█															
Medical Officer					█	█															
MEF Commanding Officer					█	█															
MEF Sergeant Major					█	█															
Marine needing BH care													█				█	█	█		
Family Members of Marine												█	█								
WWR Administrative Staff	█											█	█								█
WWR Battalion Sergeant Major	█					█						█	█								█
WWR Battalion East Commanding Officer							█					█	█								█
Camp Lejeune Naval Hospital Commanding Officer							█														█
Family Readiness Officer (FRO)																					
Substance Abuse Control Officer (SACO)																					
Division Psychiatrist																					
OSCAR team member																					
Marine Corps Community Service (MCCS) Representative																					
Navy Surgeon General																					
Psychological Health Technician																					
Clinical Social Worker (BUMED Scheduling)																					
Mental Health Provider: Deployment Health Center																					
Mental Health Provider: Deployment Wellness Center																					
Mental Health Provider: Central Intake Referral Center																					
Mental Health Provider: Mental Health Clinic																					
Substance Abuse Rehabilitation Program																					
Multidisciplinary Treatment Team																					
Mental Health Provider: Spiritual Wellness Group																					
Peer(s) of marine needing BH care																					

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