August 2014

Final Report to the Secretary of Defense

Military Health System Review

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EXECUTIVE SUMMARY

On May 28, 2014, the Secretary of Defense ordered a comprehensive review of the Military Health System (MHS). The review was directed to assess whether: 1) access to medical care in the MHS meets defined access standards; 2) the quality of health care in the MHS meets or exceeds defined benchmarks; and 3) the MHS has created a culture of safety with effective processes for ensuring safe and reliable care of beneficiaries. This is the first time the MHS has taken an enterprise view of such scope in these areas.

Based on information analyzed during the review, the MHS provides good quality care that is safe and timely, and is comparable to that found in the civilian sector. However, the MHS demonstrates wide performance variability with some areas better than civilian counterparts and other areas below national benchmarks.

> "The report provided no evidence of substantive deficiencies in the safety, quality, and access to care at MHS that would warrant broad and urgent changes."
>
> Peter Pronovost, M.D., Ph.D., FCCM
> Johns Hopkins Medicine Senior Vice President for Patient Safety and Quality
> Director of the Armstrong Institute for Patient Safety and Quality

Together, the review's results and the professional inputs from six external experts indicate clear opportunities to improve health care delivery. By implementing effective strategies used by other high-performing organizations, the MHS can create an optimal health care environment that focuses on continuous quality improvement where every patient receives safe, high-quality care at all times.

The major recommendations in this report are directed at system enhancements to address areas of concern and to drive change that will foster creation of a high reliability health system. High reliability organizations, in general, are those where harm prevention and quality improvement are second nature to all in the organization. Such organizations recognize the risk of over simplification in complex systems: thus, implementation of the proposed recommendations should not be expected to result in immediate change. MHS governance can support performance improvement with better analytics, greater clarity in policy, and aligned training and education programs. However, improving outcomes is about decreasing performance variance at the individual facility level, which requires consistent leadership vigilance, with the goal of making the MHS a top-tier health care system.

The Military Health System

The MHS is a global, comprehensive, integrated system that includes combat medical services, health readiness futures, a health care delivery system, public health activities, medical education and training, and medical research and development. The fundamental mission of the MHS, providing medical support to military operations, is different from that of any other health system in the United States. The operational aspects of the MHS are divided among the three

Military Departments (Army; Navy, to include Marine Corps; and Air Force), with each Service and the Defense Health Agency controlling and operating their own medical centers, hospitals, and clinics worldwide.

As one of the largest health care providers in the United States, the MHS combines resources from both direct and purchased care components, facilitating ready access to health care for 9.6 million beneficiaries, including Service members, retirees, and their eligible family members. In Fiscal Year 2013, the direct care component of military treatment facilities (MTFs) consisted of 56 hospitals, 361 ambulatory care clinics, and 249 dental clinics, operating worldwide and employing 60,389 civilians and 86,051 military personnel. The purchased care component, which is used when care cannot be provided within the military system, includes civilian network hospitals and providers operated through TRICARE regional contracts.

Like every large health care system, the MHS is constantly responding and adapting to changing demographics, shifting policies, evolving standards for access and quality, advances in science and medicine, complex payment and cost considerations, rapidly evolving communications and information technology capabilities, and fluid patient expectations. In addition, the MHS recently reformed its governance structure in October 2013. All health care systems, including the MHS, are expected to engage in systematic performance reviews designed to assess new developments and to measurably improve the delivery of health care services and the health status of the population served. These factors combined warranted an assessment of the general state of care in the MHS in order to determine where improvement is possible.

Review Methods and Scope

The intent of the MHS review was to establish a baseline measure of MHS performance and to determine if that performance is comparable to top performing health care systems. The Deputy Secretary of Defense chartered a Department of Defense (DoD) working group, with substantial input from individual experts outside of DoD, to conduct this review (members are listed in Appendix 8). This review was also tasked with identifying gaps that prevent the MHS from being considered a leading health care system, and with offering recommendations to facilitate progress.

"The thoroughness of the approach to the Report was apparent in its inclusion of multiple data sources, stakeholders, and analysis methods."

Katherine L. Kahn, M.D.
Senior Scientist, RAND
Professor of Medicine
David Geffen School of Medicine
University of California, Los Angeles

Over a two-month period, subject matter experts collected and analyzed a variety of current metrics, compared them to existing national standards, and validated them by visiting selected military hospitals and clinics. The working group reviewed previous reports on the performance of the MHS with regard to access, quality, and safety and documented compliance with those recommendations. In addition, it reviewed all relevant policies—both

Service specific and issued by the Office of the Secretary of Defense. Three external health care systems provided their data to the MHS for the expressed purpose of comparison. During town hall gatherings of patients and staff at seven MTFs, the working group obtained impressions of how well the system provides timely access to health care, and the quality and safety of the care delivered. The collected information, methodology, and subsequent recommendations were reviewed by external experts to ensure that the review was comprehensive, the data honestly represented, and the conclusions, based on data analyses, were valid[1].

> "... , it is not possible to produce clinical quality or patient safety measures that can accurately rank care."
>
> Brent C. James, M.D., M.Stat.
> Chief Quality Officer and Executive Director Intermountain Institute for Health Care Delivery Research

All external reviewers acknowledged the challenge of comparing performance across health systems and noted that many of the challenges facing the MHS are similar to inherent challenges throughout U.S. health care.

Due to the restricted time for the review, not all areas of interest were investigated; many of these are noted in the report and by the external experts. For example, determining access for individuals with specific clinical conditions would provide additional information, but could not be completed in the time available. Other areas of special interest identified in the review are documented in the report and will need further evaluation.

Key Findings

The full analysis and findings of the review are found in the report and appendices. The findings fall into two categories, as summarized below: general findings that apply across the areas of access, quality, and safety, and findings specific to each area of concern.

General Findings

The new MHS governance structure has resulted in significant gains in terms of collaboration and alignment among the Services and the Defense Health Agency (pages 24-31). However, no single set of metrics is used across the enterprise to monitor performance in the areas of access, quality, and safety, nor are there performance reviews of the system as a whole in these areas. Moreover, the purchased care component is not aligned with the direct care component in terms of data collected or metrics used, making it difficult to draw comparisons between the two components.

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[1] For this review, external reviewers participated as individual experts in their personal capacities, and not as the employees or representatives of their affiliated institutions.

The review identified a major gap in the ability of the MHS to analyze systemwide health care information. Although the MHS has a wealth of data, the ability to analyze those data and use the results to guide decision making in quality and patient safety is nascent. Differences in interpretation of policy result in data incompatibility, which adds to the challenge. Without a common set of metrics, it is difficult to present systemwide data in a coherent fashion. Transparency goes hand in hand with a culture of safety, with a lack of transparency being the result of multiple factors. Finally, lack of a mechanism to recognize patient input at the enterprise level makes it difficult to act on feedback as to what the patient would find beneficial.

Although leadership and the local subject matter experts in the MTFs have a working knowledge of desired behaviors to promote a culture of safety, the same cannot be said uniformly about frontline clinical personnel.

Access to Care

On average, access to care meets the identified standards; however, performance varies across the system and purchased care data are incomplete. For example, in the direct care component, the average number of days for TRICARE Prime patients to obtain an appointment to a specialty care provider is 12.4 days (range 6 to 22 days), well under the identified standard of 28 days (pages 47-49). Access to an appointment for patients who need immediate, but not emergency care, averages less than the 24-hours standard for most of the direct care health facilities, but 11 do not meet the established access standard. Comparable purchased care data are not available, primarily due to alternative access measures defined by contract specifications, leaving a sizable blind spot for understanding access in the purchased care component.

> "Research indicates that using high tech technology and 'secure messaging' can improve access and quality of care, reduce medical cost, and improve patient satisfaction."
>
> Qi Zhou, M.D.
> Executive Director
> Performance Measurement Program Strategy
> & Quality Programs Oversight
> Blue Cross Blue Shield of Massachusetts

One important finding was the notable difference between data that reflect compliance with access standards and the reported satisfaction of patients with their ability to receive timely care in MTFs (pages 57-63). This issue will require additional study in order to understand the cause of this discrepancy.

A review of current policies showed that there is no MHS measure for evaluating office waiting times, an existing standard (pages 35-36). This deficiency was also noted for purchased care.

In addition to face-to-face encounters, the direct care component has other methods for accessing care, including secure messaging, web-enabled appointment booking, and the Nurse Advice Line (pages 52-55). These newer approaches will require ongoing monitoring to ensure that they are functioning as designed.

4

Quality of Care

Overall, the review of quality measures showed mixed results. Although there are areas in which the MHS excels, there is considerable variation across the system, both for specific clinical measures and for individual MTFs. Additionally, there is a general deficiency of data concerning clinical quality and outcome measures for care provided in the purchased care component.

All direct care component hospitals and clinics are accredited or certified by external agencies (pages 87-88). This provides a certain level of quality and safety assurance for patients and allows systems to objectively identify areas for performance improvement. In addition to seeking and obtaining accreditation and certification as an indicator of quality, the MHS has identified several nationally recognized health care quality performance measures and, unlike the private sector, mandates reporting on these measures by every direct care health facility, where appropriate.

HEDIS® measures (which assess outpatient preventive services and health outcomes) showed high variability across the MHS (pages 88-92). The HEDIS® measures chosen by the MHS for monitoring quality are selected to drive improved outcomes in specific areas. Once the MHS meets and sustains the desired target, the measure is "retired," the result being that current measures will skew toward underperformance.

> "Overall, MHS performance mirrors what we see in the private sector, a good deal of mediocrity, pockets of excellence, and some serious gaps."
>
> Janet M. Corrigan, Ph.D.
> Distinguished Fellow
> The Dartmouth Institute for
> Health Policy and Clinical
> Practice

Of the 18 HEDIS® measures monitored by the MHS, three were below the 25th percentile, and seven were between the 25th and 50th percentile. In 2013, 10 of the 18 measures showed statistically significant improvement, while 6 of the 18 measures showed statistically significant decline. Only 12 HEDIS® measures are monitored for the purchased care component; 11 of these are less than the NCQA 75th percentile benchmark.

Hospital quality performance as measured by The Joint Commission's ORYX data demonstrates a similar spectrum of results (pages 94-98). The MHS direct care component meets or exceeds target levels for a majority of measures, but needs improvement in a significant number of areas. In comparison, the purchased care component collects data for only 5 out of the 13 measures reported by the direct care component. This highlights the difficulty of making reliable comparisons of performance between direct care and purchased care, and among hospital systems in general.

National Perinatal Information Center (NPIC) data show that the direct care component has statistically lower rates of infant mortality and maternal trauma than the NPIC averages (NPIC's benchmark is comprised of 86 high-volume obstetric care hospitals) (pages 102-110). However,

on other measures (to include postpartum hemorrhage and undefined neonatal trauma), the MHS is performing statistically worse than the NPIC averages. In addition to the potential quality of care issues deserving further examination, administrative coding issues may confound the understanding of observed outcomes. Further review of individual clinical areas and specific facilities is required to determine the cause or causes of variance.

The National Surgical Quality Improvement Program (NSQIP), sponsored by the American College of Surgeons, collects voluntarily submitted risk-adjusted data from approximately 400 hospitals and compares the data against performance metrics for surgical morbidity and mortality. Of the 56 inpatient DoD MTFs, 17 facilities who met the volume criteria voluntarily participate in NSQIP. The MHS does not currently require participation in this program.

> "Until rank and file internalize their roles in promoting safety and preventing harm, performance will be mediocre. Leadership must declare and then demonstrate their commitment to a culture that encourages reporting, is not punitive, and is dedicated to improvement."
>
> Pamela F. Cipriano, Ph.D., R.N., NEA-BC, FAAN
> President
> American Nurses Association

Surgical mortality (death rate) is within the expected range at all 17 DoD MTFs that participate in NSQIP (pages 110-119). Surgical morbidity (surgical complication rate) was statistically higher than expected in 8 of 17 participating MTFs in 2013 and there was persistent poor performance in three MTFs. Three of 17 MTFs in the most recent reporting period are performing at the top tier nationally. Of note, only 10 percent of U.S. hospitals participate in the NSQIP and this may represent a unique subset of health care systems that are leading the way in high-quality surgical care.

Patient Safety

The MHS culture of safety is comparable to that found in the civilian sector based on averages from nationally standardized surveys of employee perceptions and patient response rates (pages 149-153). The MHS had lower averages in 5 of the 12 domains in the national Hospital Survey on Patient Safety Culture; staffing, teamwork within units, and organizational learning were of greatest concern.

The execution and content of root cause analysis (RCA) to understand the possible causes of adverse health events related to care (sentinel events) remains highly variable across the Services (168-175). In addition, there has been a failure to routinely follow up on reported RCAs to ensure that systemic issues identified were corrected.

The MHS has improved on measures for many hospital-acquired conditions through the national Partnership for Patients program (pages 160-164). Select safety measures, however, remain higher than average among MTFs compared to other health care systems (for example, central

line-associated bloodstream infection rates should have low rates with a goal of zero incidents). There is also no comprehensive plan to standardize requirements for monitoring device-related infections, such as those related to a catheter.

Fewer than 30 percent of staff actively reports patient safety events as identified by results from the 2011 Hospital Survey on Patient Safety Culture (pages 178-180). The Patient Safety Reporting System used to report patient safety events is not designed to record harm rates. Overall, the reviewers could not validate that current processes provide an accurate indication of the MHS' level rate of harm.

Recommendations

The following six major recommendations are based on review findings, supported by data, and validated by external review. In the body of the main report, additional recommendations within the Access, Quality, and Safety sections define specific action steps for performance improvement.

I.   Take immediate action to improve underperformance

Recommendation: The MHS should identify the cause of variance for MTFs that are outliers for one or more measures and, when due to poor performance, develop corrective action plans to bring those MTFs within compliance.

II.   Establish clear enterprise performance goals with standardized metrics and hold the system accountable for improvement

Recommendation: The MHS should develop a performance management system adopting a core set of metrics regarding access, quality, and patient safety; further develop MHS dashboards with systemwide performance measures; and conduct regular, formal performance reviews of the entire MHS, with the Defense Health Agency monitoring performance and supporting MHS governance bodies in those reviews.

> "The foundation for achieving top performance is already in place and is being enhanced with new approaches that will provide for system wide goals, measures, and review of performance."
>
> Pamela F. Cipriano, Ph.D., R.N., NEA-BC, FAAN
> President
> American Nurses Association

III. Make good decisions by relying on accurate data

Recommendation: The MHS should develop an enterprise-wide quality and patient safety data analytics infrastructure, to include health information technology systems, data management tools, and appropriately trained personnel. There should be clear collaboration between the Defense Health Agency's analytic capabilities, which monitor the MHS overall, and the Service-level analytic assets.

IV.   Show information to everyone – patients, providers, and policy makers

Recommendation: The MHS should emphasize transparency of information, including both the direct and purchased care components, with visibility internally, externally, and to DoD beneficiaries. Greater alignment of measures for the purchased care component with those of the direct care component should be incorporated in TRICARE regional contracts.

V.   Drive the necessary change with MHS governance

Recommendation: Through MHS governance, policy guidance can be developed to provide the Services with common executable goals. While respecting the Services' individual cultures, this effort would advance an understanding of the culture of safety and patient-centered care across the MHS.

> "Overall, the results are mixed. MHS meets or exceeds many internal and external standards and benchmarks in the areas of access, quality, and safety, but there is variability within MHS and some performance gaps."
>
> Janet M. Corrigan, Ph.D.
> Distinguished Fellow
> The Dartmouth Institute for Health
> Policy and Clinical Practice

VI.   Leverage common standards and processes to facilitate improvement

Recommendation: The MHS should continue to develop common standards and processes designed to improve outcomes across the enterprise in the areas of access, quality, and patient safety where this will improve quality, or deliver the same level of quality at decreased cost (i.e., better value).

Conclusion

The findings and recommendations in this report provide an approach for improving the performance of the MHS. Appendix 6.1 includes an action list and timelines for execution. Recommended actions are divided into those that can be acted on immediately, those that require the development of more integrated action plans, and those that require further study to permit comprehensive analysis and consideration of the information.

In addition, within three months of the completion of this report, the MHS will review the possible reasons why specific facilities are significantly underperforming on one or more measures. When variance is due to poor performance, a corrective action plan will be developed and submitted, taking into consideration the unique aspects of those facilities.

The foundation for improving performance in the MHS rests on combining the concepts of an integrated health care system with those of high reliability organizations. The MHS must continue to mature as an integrated health system, improving alignment among the Services and between the direct care and purchased care components, and placing particular emphasis on improving transparency related to access, quality of care, and patient safety. The principles of a

high reliability organization are operationalized through leadership engagement, a culture of quality and safety, robust process improvement through regular performance reviews, adoption of industry best practices, and minimization of undesirable variation across the system. These efforts should be linked to Service strategies, which may require revision of current policies. The high-level recommendations offered in this report, if implemented, will constitute major steps along the path to a high reliability organization.

Additional Considerations

For readers without a background in health care and statistics, there are caveats that should be considered when interpreting the data presented in this report. First, the review is an "as is" assessment based on available data whenever possible. Furthermore, in some cases the data were collected or aggregated differently than had previously been done at the facility or Service level. As is the case when looking at systems as large as the MHS, there are potential issues with conflicting data points, data integrity, and incomplete data.

An example of conflicting data points is in the area of access, where current access measures suggest that the direct care component compares very favorably to civilian care and yet the patient satisfaction data indicate that patients are more satisfied with access in the purchased care component. It takes time and effort to ensure data validity and accuracy in a system as large as the MHS, and further assessment is required. The same can be said of those areas where the data are incomplete. This was a particular challenge in attempting to assess the purchased care component. The ability of the MHS to evaluate the quality of care is dependent on the data provided by civilian providers. This is a major finding of the report and is addressed in the recommendations.

Finally, caution is advisable when using the data to assess where the MHS stands compared to U.S. health care in general, or against specific systems. There is no standardized data set used to evaluate health systems. The report demonstrates this fact in its attempt to compare the MHS with three premier U.S. health systems. Of the access, quality, and patient safety measures used in this review, no single measure was directly comparable across all four systems. As a result, the review used national benchmarks, where available, and other standards when a national benchmark could not be found. It is illustrative to note that most reporting of data regarding health care quality and patient safety is voluntary in the civilian sector. By participating in these initiatives, those hospitals and health systems have demonstrated a commitment to excellence that is above the norm.

For all of the above reasons, this report should be considered a step in the journey for the MHS, rather than an endpoint. Although the recommendations provide a clear path forward, further questions raised in this effort will be answered by more in-depth analysis in multiple areas. As has been emphasized throughout this summary, health systems are complex, and it would be unreasonable to expect that all of the answers to the questions raised as a result of this review would be found in 90 days.

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1. INTRODUCTION

The Military Health System (MHS) is a global, comprehensive, integrated system that includes combat medical services, peacetime health care delivery, public health services, medical education and training, and medical research and development. The Department of Defense (DoD) aims to ensure that all active and retired members of the military, as well as their families, receive prompt, safe, high-quality care at all times. As one of the largest health care systems in the United States, with total spending of more than $50 billion per year, the MHS includes both a direct care component, composed of DoD-operated and staffed health care facilities, and a purchased care component operated through TRICARE regional contracts.

The MHS shares many features with civilian health care systems. Like every large health care system, it is constantly responding and adapting to changing demographics, shifting policies, evolving standards for access and quality, advances in science and medicine, complex payment and cost considerations, rapidly evolving communications and information technology capabilities, and fluid patient expectations. The MHS serves diverse populations in every imaginable health care setting. It is unique in that it is structured and operationalized through an extensive array of statutory requirements, instructions, policies, and guidelines of DoD, the Military Departments (or Services, to include Army, Navy [including Marine Corps], Air Force), as well as TRICARE, the Department's health care benefits program. Moreover, it does not operate on a traditional reimbursement system as found in the civilian sector, and is subject to congressional authorization and appropriation processes that direct its activities and use of resources.

The MHS has faced multiple distinctive challenges over the past decade, including supporting deployment of a medically ready force fighting two wars, reorganization of governance structure, implementation of enterprise-wide common business processes, and creation of shared services in an integrated delivery system. Against the backdrop of an ever-changing health care landscape are new regulatory stipulations, increased security requirements, budgetary pressures, and base realignment and closure procedures. With each challenge, MHS leadership has responded, taking action to address opportunities and mitigate risks.

All health care systems, including the MHS, are expected to engage in systematic processes that lead to measurable improvement in health care services and the health status of the population served. From a systems perspective, the emphasis in the civilian sector is increasingly on the use of data to drive decision-making by identifying areas of variance and opportunity. In the areas of patient safety, quality, and access, this paradigm revolves around leadership's use of data analysis to drive process improvement. While significant gains have been made across U.S. health care, coordinated efforts are hindered by a lack of comparative data and accepted benchmarks, particularly in the areas of patient safety and access. The challenges inherent in these efforts are further discussed in the sections of this report comparing the MHS with similar civilian systems, but are mentioned here to highlight that the MHS is on the same journey as other top-level health systems in the United States; that is, driving toward the goal of becoming a high-performing, high reliability organization.

The Joint Commission[2] officers Chassin and Loeb describe specific initiatives that health care organizations can take to reduce errors and improve patient safety in a highly reliable fashion. Key components of these efforts include commitment of organizational leadership to patient safety and zero tolerance of harm, development of a functional culture of safety throughout the organization, and widespread deployment of process improvement tools.[3] The MHS continually monitors processes and outcome measures to assess the quality of clinical care provided to enrolled beneficiaries (see Section 4 on Quality of Care for details). Just as the MHS often leads the nation in health education, training, research, and technology, it also must lead in efforts to consistently deliver reliable performance and constantly improve quality and safety with each care experience.

On May 28, 2014, the Secretary of Defense ordered a comprehensive review of the MHS, with a specific focus on health care access, patient safety, and quality of care in both the direct care component and the purchased care component (see Appendix 1.1). The review was conducted by subject matter experts in the Services and the Defense Health Agency (DHA), with input from outside experts in the areas of patient safety and health care quality.

The scope of this review does not include health care provided in support of the Combatant Commands and deployed operational forces. Care provided to the Nation's Armed Forces in the course of military operations is widely considered to be world class and cutting edge and has been the subject of other reviews.[4] Moreover, the policies and organizational structures governing health care provided during military operations differ significantly enough from the nonoperational setting to warrant exclusion from this review. In addition, this review does not include dental care, wounded warrior care (which is subject to several ongoing mandated reviews), or beneficiaries enrolled in TRICARE Standard or Extra.[5]. (See Appendix 1.2 for the Terms of Reference for this review.) Finally, this review does not include the health care system serving our Nation's Veterans, which is administered separately through the Department of Veterans Affairs (see Figure 1.1).

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[2] The Joint Commission accredits and certifies more than 20,500 health care organizations and programs in the United States. Joint Commission accreditation and certification is recognized nationwide as a symbol of quality that reflects an organization's commitment to meeting certain performance standards.

[3] Chassin MR, Loeb JN. High reliability health care: Getting there from here. *The Milbank Quarterly*. 2013; 91(3):459-490.

[4] *See, for example*: U.S. Central Command, Pre-Hospital Trauma Care Assessment Team. *Saving Lives on the Battlefield: A Joint Trauma System Review of Pre-Hospital Trauma Care in Combined Joint Operating Area-Afghanistan (CJOA-A) Final Report.* January 30, 2013; Office of the Surgeon General, Department of the Army, United States of America. *Combat Casualty Care: Lessons Learned from OEF and OIF.* Fort Detrick, Maryland, 2012; Department of Defense. Guidance for the Development of the Force FY 2010-2015.

[5] TRICARE includes a variety of insurance-like arrangements for health care services. Beneficiaries can select which product best meets their needs.

Figure 1.1 Veterans Health Administration

Veterans Health Administration
Some military Veterans are eligible to receive care through a separate health care system than the MHS—the Veterans Health Administration (VHA), part of the Department of Veterans Affairs (VA). A Veteran is someone who has served in the active military, naval, or air service, and was discharged or released from service under conditions other than dishonorable, as specified in 38 U.S.C. 101(2). Active service includes full-time duty in the National Guard or a Reserve component, other than full-time duty for training purposes.

Veterans have a different status than those who retire from military service. A military retiree is any former member of the uniformed services who is entitled, under statute, to retired, retirement, or retainer pay. Examples include, but are not necessarily limited to, spending 20 or more years in the military or permanent retirement by reasons of physical disability. All military retirees are Veterans, but not all Veterans are military retirees. Some military retirees can receive care at VA facilities in addition to MHS facilities.

The number of Veterans who can be enrolled in the VHA health care program is determined by the amount of money Congress provides to VA each year. Since funds are limited, VA established eight priority groups to ensure that certain groups of Veterans can be enrolled before others. For example, highest priority is given to Veterans with Service-connected disabilities rated 50 percent or more and Veterans assigned a total disability rating for compensation based on unemployability.

VHA is an integrated health care system divided into 21 Veterans Integrated Service Networks, or VISNs — regional systems of care working together to better meet local health care needs and provide greater access to care. VHA consists of 150 medical centers, nearly 1,400 community-based outpatient clinics, community living centers, Vet Centers, and Domiciliaries. The combination of VA health care facilities and the more than 53,000 independent licensed health care practitioners who work within them provide comprehensive care to more than 8 million enrolled Veterans each year. The VHA has a medical care budget of more than $55 billion annually.[6]

Goals, Objectives, Methods, and Limitations of the Review

This review was conducted with the goals of assessing three central aspects of a quality health care system and developing recommendations for improved performance across the MHS. Objectives and methods for meeting these goals are summarized below. Greater detail on methods is provided in each of the subsequent sections regarding access, quality, and safety.

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[6] U.S. Census Bureau, American Community Survey PUMS, (2011). Prepared by the National Center for Veterans Analysis and Statistics.

Goals

Access to Care: To determine if the MHS provides ready access to medical care as defined by access standards in policies and guidance of the Office of the Assistant Secretary of Defense for Health Affairs (HA) and the military medical departments, and in TRICARE contract specifications.

Quality of Care: To determine if the MHS meets or exceeds benchmarks for health care quality as defined in HA and military medical department policies and guidance, and TRICARE contract specifications, with a particular focus on how the MHS performs relative to known national benchmarks.

Patient Safety: To determine if the MHS has created a culture of safety with effective processes for ensuring safe and reliable care of beneficiaries.

Objectives

1. Assess prior recommendations and findings from relevant internal and external reports, including the last 10 years of Government Accountability Office and DoD Inspector General reports, to determine identified problems, actions taken to remedy the problems, and whether the remedy has been sustained.
2. Review all relevant DoD, Military Department, and TRICARE policy standards and assess the degree to which the policies have been implemented.
3. Evaluate data to assess compliance with existing policy or national standards. Determine how the MHS can consistently exceed these standards. Determine if any variance from the standards is due to data inaccuracy or inconsistency.
4. Review education and training documentation of health care professionals and staff regarding the execution of policies and assess knowledge of existing standards.
5. Compare MHS performance to at least three civilian health systems, where standards are relevant and comparable.
6. Assess the experiences and perceptions of MHS patients regarding access, quality, and safety standards.
7. Determine the effectiveness of governance in policy and system performance.
8. Identify current resources for access, safety, and quality efforts to the extent possible.

Methods

A three-pronged approach was used to meet the goals and objectives listed above, organized around the themes of access, quality, and safety. In the first phase, relevant DoD instructions and Service policies were reviewed and internal and external reports were assessed to understand findings and recommendations made (see Appendix 1.3 for a list of documents reviewed). Additionally, enterprise-wide data were collected and metrics examined to determine the extent to which they align with DoD and Service policies to inform MHS leadership's understanding of MHS quality and performance. Details on the access, quality, and patient safety metrics used in the review can be found in corresponding report sections. The selected metrics were generally readily available from the military Services or DHA, applicable to defined data sources and

validated algorithms, consistent with national standards (where such standards exist), and in use by leading health care systems. The most recent annual data were analyzed, including the current year, when available, and trends for recent years were evaluated where possible.

Second, site visits of a cross section of military treatment facilities (MTFs)[7] were conducted with a primary goal of providing local validation of centrally collected data. An additional goal included review of potential gaps between processes and policy. The facilities chosen represent all three Services (Army, Navy, Air Force) and the National Capital Region Medical Directorate (NCR MD), are of varying size and scope, and have broad geographic distribution, including sites within and outside the continental United States (see Table 1.1). Site-specific data requests included the results of the last two Joint Commission surveys, any other regulatory site visit findings from the last three years, results of internal or external audits, the last two command inspection reports and command climate surveys, materials related to goals or strategic plans and relevant appointment access guidelines. (See Appendix 1.4 for site visit methodology.)

The site visit assessment team consisted of senior Service Flag/General Officers; senior enlisted leaders; subject matter experts for access, quality, and safety representing each Service; and contract support personnel. This team was kept largely intact for all facility visits to provide consistent assessments across all sites. Survey questionnaires were sent to regional Service medical leadership and presented to facility leadership, subject matter experts, health care staff, and patients for independent feedback. Team members met with local MTF leadership and subject matter experts at the sites and conducted walking rounds in order to interview health care staff and patients. Finally, an independent contractor conducted town hall meetings with MTF staff and beneficiaries with the intent to allow unfiltered feedback on facility performance with regard to access, quality, and safety (see Appendix 1.5 for town hall meeting summaries and quantitative analysis). In addition, a website was made available to the public to allow for additional comments to be submitted via e-mail (see Appendix 1.6). These anecdotal comments were analyzed for the report. Overall, the submitted comments mirrored the themes in the town hall meetings. Site visit reports were created with qualitative and quantitative assessments of facility specific performance. The site visit team also provided summaries with operational feedback to the MTFs so the facility could improve and/or sustain any of the areas that were observed during the visit.

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[7] The term "military treatment facilities (MTFs)" refers to the medical facilities of the Defense Health Agency and the Departments of the Army, Navy, and Air Force, including: academic medical centers (e.g., Walter Reed National Military Medical Center, Bethesda; San Antonio Military Medical Center); military community hospitals; and military clinics.

Table 1.1 MHS Review Site Visit Locations

Locations
10th Medical Group, Air Force Academy, Colorado Springs, Colorado
48th Medical Group, RAF Lakenheath Air Force Base, Lakenheath, England
Fort Belvoir Community Hospital, Fort Belvoir, Virginia
Madigan Army Medical Center, Joint Base Lewis-McChord, Washington
Naval Health Clinic Patuxent River, Naval Air Station Patuxent River, Maryland
Naval Medical Center San Diego, San Diego, California
Winn Army Community Hospital, Fort Stewart, Georgia

Source: MHS Review Group, July 2014

Third, three high-performing civilian health care systems—Geisinger Health System, Intermountain Healthcare, and Kaiser Permanente —were selected for the purpose of comparing the MHS against health systems with similar structure (providers and health plan), size and scope of care. The comparison was based on relevant and available metrics on access, quality and safety. (See Appendix 1.7 for table of comparison metrics.)

1. Geisinger Health System is an integrated health services organization widely recognized for its innovative use of the electronic health record, and the development and implementation of innovative care models including ProvenHealth Navigator, an advanced medical home model, and ProvenCare program. The system serves more than 3 million residents throughout 44 counties in central and northeastern Pennsylvania.[8] Geisinger Health System includes 11 hospitals (total 1,638 beds), 78 community practice and specialty clinics, 1,683 licensed providers, and 4,370 nurses. Its most recent operating budget was $3.4 billion.

2. Intermountain Healthcare is a nonprofit system of 22 hospitals, a Medical Group with more than 185 physician clinics, and an affiliated health insurance company, SelectHealth. Its 33,000 employees serve 660,000 patients and plan members in Utah and southeastern Idaho. Its most recent operating budget was $5.4 billion.

3. Kaiser Permanente, founded in 1945, is one of the nation's largest not-for-profit health plans, serving approximately 9.3 million members, with headquarters in Oakland, California. It includes providers and a health plan, offering health care in seven U.S. regions through 38 hospitals, 618 medical offices, 17,425 physicians, and 48,701 nurses. Its most recent operating budget was $53.1 billion.

To meet the requirements in the Terms of Reference for independent review, external experts were brought in to review the methodology and findings. The external experts are nationally

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[8] Geisinger website: http://www.geisinger.org/about/.

renowned leaders in health care with a wide breadth of education and training. Their collective portfolio includes experience and recognized success with large-scale quality and safety analyses, clinical quality improvement, strategy, and health care informatics. Experts were asked to review either methodology or findings. Originally, the MHS planned to include the external methodology experts during early stages of the review. However, because of the timeline, hiring process, and individual availability, their contributions were limited to a post-hoc evaluation of the methodology. The external experts tasked with reviewing the findings were available to the work groups to discuss the methodology as well as the findings and also were given access to the report of the MHS Review Group. (See Appendix 6.2 for the reports from the external experts.)

Data Analysis and Limitations

Data quality and analysis is a critical component of this review. Robust data analysis includes considerations of the following: variations in how a metric is defined; population demographics such as age and gender distribution; burden of illness in the population; environmental and geographic issues; and other factors influencing analyses and results. Even well-defined metrics may be substantially influenced by factors beyond the control of the medical facility. Without a context, isolated metrics and even groups of metrics may be improperly interpreted, resulting in erroneous conclusions, especially when comparing and ranking performance. External comparisons are often available for established standards or benchmarks of performance that are clearly defined and nationally recognized. Yet, identifying the most appropriate benchmark(s) and appropriately interpreting results given variable local context remains a challenge for many experts.

From a systems perspective, the emphasis in the civilian sector is increasingly on the use of data to drive decision-making by identifying areas of variation and opportunities for improving consistency. In the areas of patient safety, quality, and access, this paradigm revolves around leadership's use of analytics to drive process improvement. While significant gains have been made in this arena across U.S. health care, coordinated efforts are hindered by a lack of comparative data and accepted benchmarks, particularly in the areas of patient safety and access.

The three Services and DHA have varying degrees of analytical capability and resources. In conducting this review, personnel were assembled ad hoc to address the identified questions. The human resources required to perform a "deep dive" into external data related to access, quality, and safety is enormous and costly. In both the analysis of the performance of the MHS for the agreed upon measures, and in the attempt to compare MHS performance against other systems, a significant gap has been identified in the MHS; that is, analytic capability and capacity for systematically and routinely assessing quality and patient safety.

Comparing and contrasting different health care systems is a challenging endeavor. It requires detailed understanding and knowledge of the context and practices of the involved organizations. Even with defined metrics, there are differences in how data are collected and aggregated. If these challenges are surmounted one is still left with the lack of a standardized data set in a health system to globally measure performance. Seemingly identical or similar measures are useful as general indicators of performance, but have limited utility in ranking systems. While it

may be possible, with considerable work, to compare a valid set of metrics between two health systems, that does not translate into the ability to determine which health system has better quality; it only identifies which of the two systems performs better against that specific measure.

In support of this review, three external civilian organizations provided the MHS Review Group with access, quality of care, and patient safety data in an attempt to compare those organizations against the MHS. The effort to complete this task demonstrates the inherent challenges of comparing complex health care systems. Despite tremendous internal work and coordination, plus the willingness, cooperation, support, and effort of external institutions, the degree of data comparability was notably limited due to variations among definitions, processes, and objectives of the institutions. This situation illustrates the potential benefits of increased standardization throughout the health care community. Assessing and improving health care systems requires sufficiently robust, integrated, and coordinated information systems; a broad range of professional knowledge, skills, capabilities; and supportive organizational structures. (See Appendix 1.8 for data analytics summary.)

Organization of the Report

Following this section is an overview of the MHS and its governance, which provides the background context for the review. Next are focused assessments of performance in the MHS with regard to access, quality, and safety, and recommendations related to those findings. Detailed information regarding methodology and data related to each area of performance can be found in the appendix material. In considering the findings and recommendations of this report, important contextual background is necessary. The fundamental mission of the MHS, providing medical support to military operations, is different from that of any other health system in the United States.

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2. OVERVIEW OF DOD'S MILITARY HEALTH SYSTEM

Introduction

The Military Health System (MHS) provides a continuum of health services from austere operational environments through remote, fixed medical treatment facilities to major tertiary care medical centers distributed across the United States. Mission-critical aspects of the MHS include the ability to sustain an interdependent and self-supporting, responsive health care team. Force Health Protection is the critical support function of the MHS in providing a worldwide deployable defense force.

The MHS combines health care resources from both the direct and purchased care components to provide access to high-quality health care for the 9.6 million beneficiaries, including Service members of the seven uniformed services, National Guard and Reserve members, retirees and their eligible family members, survivors, certain former spouses, and other individuals, while maintaining the capability to support military operations worldwide (see Table 2.1). The percentage of beneficiaries using MHS services increased from 83.3 percent in Fiscal Year 2011 to 84.9 percent in Fiscal Year 2013.[9]

Where available and as space allows, eligible beneficiaries may obtain health care from military hospitals and clinics, referred to as military treatment facilities (MTFs), or from civilian providers. In Fiscal Year 2013, the MTFs included 56 hospitals, 361 ambulatory care clinics, and 249 dental clinics operating worldwide and employing 60,389 civilians and 86,051 military personnel.[10]

Table 2.1 Average Weekly Statistics in the MHS

MHS Statistics
20,000 inpatient admissions (5,000 direct care; 15,000 purchased care)
1.9 million outpatient visits (834,000 direct care; 1,042,000 purchased care)
2,288 births (943 direct care; 1,345 purchased care)
3.8 million health care claims processed
2.54 million prescriptions filled (926,554 direct care; 1.24 million retail pharmacies; 363,000 home delivery)
343,000 behavioral health outpatient services (61,000 direct care; 282,000 purchased care)
177,000 emergency room visits (28,000 direct care; 149,000 purchased care)

2014 MHS Review Group
Source: Military Health System Mart (M2), January 2014.

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[9] *DoD Evaluation of the TRICARE Program: Fiscal Year 2014 Report to Congress*. Accessed: July 28, 2014. Available at:
http://www.tricare.mil/tma/congressionalinformation/downloads/TRICARE%20Program%20Effectiveness%20(FY%202014)%201.pdf.

[10] *Ibid*.

Roughly half of health care in the MHS is provided in the direct care component at MTFs by uniformed service personnel, DoD civilians, and/or contracted civilian health care professionals.[11] Supplementing the direct care component, the purchased care component of TRICARE is composed of TRICARE-authorized civilian health care professionals, institutions, pharmacies, and suppliers who have generally entered into a network participation agreement with a TRICARE regional contractor. For Fiscal Year 2013, the purchased care network included 3,310 acute care hospitals and approximately 478,000 participating providers. Non-network care is delivered by TRICARE-authorized providers who may choose to "participate" in TRICARE on a claim-by-claim basis.

The purchased care component of TRICARE includes:

- TRICARE North Region administered by Health Net Federal Services
- TRICARE South Region administered by Humana Military
- TRICARE West Region administered by United Health Care Military and Veterans
- TRICARE Overseas administered by International SOS

The TRICARE Overseas Program (TOP) is DoD's health care program that provides health care support services to approximately 458,000 beneficiaries outside of the 50 States and the District of Columbia. Using discretionary authority, and recognizing the cultural differences in accessing care in host nation countries, the TOP contract requires the contractor to make its best effort to ensure that the TRICARE standards for access—in terms of beneficiary travel time, local community standards, appointment wait time, and office wait time for various categories of services contained in 32 C.F.R. § 199.17—are met for TOP Prime enrollees. Similar to the purchased care program in the 50 States and the District of Columbia, TOP is administered on a regional basis by the TOP Program Office and TRICARE Area Offices (Eurasia-Africa, Pacific, and Latin America/Canada), supported by a health care support contractor.

TRICARE offers beneficiaries a family of health plans, based on three primary options:

- TRICARE Prime is a health benefit similar to a health maintenance organization, offered in many areas. Each enrollee chooses or is assigned a primary care manager, a health care professional who is responsible for helping the patient manage his or her care, promoting preventive health services (e.g., routine exams, immunizations), and arranging for specialty care provider services as appropriate. Access standards apply to waiting times to get an appointment and waiting times in doctors' offices. A point-of-service option permits enrollees to seek care from providers other than their assigned primary care manager without a referral, but with significantly higher deductibles and cost shares than those under TRICARE Standard. Of the 9.6 million eligible DoD beneficiaries, 5.3 million use TRICARE Prime.

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[11] *Ibid*.

- TRICARE Standard is the non-network benefit, formerly known as the Civilian Health and Medical Program of the Uniformed Services (CHAMPUS), open to all eligible DoD beneficiaries, except active duty Service members. Beneficiaries who are eligible for Medicare Part B are also covered by TRICARE Standard for any services covered by TRICARE but not covered by Medicare. An annual deductible (individual or family) and cost shares are required.

- TRICARE Extra is the network benefit for beneficiaries eligible for TRICARE Standard. When non-enrolled beneficiaries obtain services from TRICARE network professionals, hospitals, and suppliers, they pay the same deductible as TRICARE Standard; however, TRICARE Extra cost shares are reduced by 5 percent. TRICARE Extra is not available overseas.

In addition to TRICARE benefits, some military families also rely on state and other federal programs (e.g., Medicaid, Medicare) to meet specific needs. For some "dual-eligible" beneficiaries, such programs provide home care, disposable supplies, respite care, and equipment that augment TRICARE. For "TRICARE-for-Life" beneficiaries – i.e., those eligible for Medicare who have both Medicare Parts A and B – TRICARE functions generally as a supplement to Medicare. Other non-medical programs available from the Military Departments and community programs provide additional resources for children connected to military families.

Beneficiary Demographics

TRICARE beneficiaries consist of two distinct populations: sponsors and dependents. Sponsors are typically active duty Service members, National Guard/Reserve members, or retired Service members. Thus, the sponsor is the person who is serving or who has served on active duty or in the National Guard or Reserves. "Dependent" is defined in 10 U.S.C. § 1072 and includes a variety of relationships, for example, spouses, children, and certain former spouses who have not remarried.

The Army has the most beneficiaries eligible for Uniformed Services health care benefits, followed (in order) by the Air Force and the Navy (including the Marine Corps)[12] (see Table 2.2). Although retirees and their family members constitute the largest percentage of the eligible population (56 percent) in the United States, active duty personnel (including Guard/Reserve Component members on active duty for at least 30 days) and their family members make up the largest percentage (66 percent) of the eligible population abroad.[13] Mirroring trends in the civilian population, the MHS is confronted with an aging beneficiary population, with roughly 22 percent of beneficiaries over age 65 and an additional 22 percent between the ages of 45 and

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[12] *Ibid*.

[13] *Ibid*.

64 in Fiscal Year 2013.[14] There is a roughly even distribution of beneficiaries by sex; 4.88 million male and 4.70 million female.

Table 2.2 Distribution of Beneficiaries across the Military Departments and National Capital Region Medical Directorate

Military Department/Agency	Army	Navy (including Marine Corps)	Air Force	National Capital Region Medical Directorate
Number of beneficiaries	3.9 million	2.81 million	2.61 million	500,000
Number of health care personnel (total/active duty)	95,000/45,000	63,000/40,000	61,000/33,000	10,823/4,494
Number of medical centers	8	2	3	1
Number of hospitals	14	16	10	1
Number of clinics	107 primary care	107	62 primary care	3
Appropriations (Fiscal Year 2013)	$11.7 billion	$9.59 billion	$5.9 billion	$1.3 billion

Source: 2014 MHS Review Group; *DoD Evaluation of the TRICARE Program: Fiscal Year 2014 Report to Congress,* July 2014. Available at: http://www.tricare.mil/tma/congressionalinformation/downloads/TRICARE%20Program%20Effectiveness%20(FY%202014)%201.pdf.

Policies for Priority of Access

Active duty personnel receive top priority access and are entitled to health care in a MTF in accordance with 10 U.S.C. § 1074. Dependents of active duty personnel are "entitled, upon request, to medical and dental care" on a space-available basis at a military medical facility (10 U.S.C. §1076). Further, 10 U.S.C. § 1074 states that "a member or former member of the uniformed services who is entitled to retired or retainer pay may, upon request, be given medical and dental care in any facility of the uniformed service" on a space-available basis. Thus, since 1958 priority has been given to active duty Service members and their dependents in receiving medical and dental care at any facility of the uniformed services over military members who are entitled to receive retired pay and their dependents (Public Law No. 85-861). Subsequent enactments gave priority to TRICARE Prime beneficiaries over TRICARE Standard beneficiaries.

DoD Military Medical Operations

Although not within the scope of this report, it is important to acknowledge that over the past 13 years of military operations, the one constant in the MHS is the importance of health care delivery across the full spectrum of operations in service to our warriors. As of May 2014, there

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[14] *Ibid*.

are nearly 1.4 million current members of the Armed Forces. Since the onset of the conflicts in Afghanistan and Iraq, until the end of 2013, 2.6 million troops have been deployed, all of who had to be medically ready, and uniformed medical personnel have deployed in support of combat operations on a continuous basis. Military medicine has achieved unprecedented outcomes despite the lethality of modern combat; the MHS has treated more than 52,000 Service members wounded in action,[15] and the total number of Service members killed in action is just more than 5,300, for a died of wounds rate of approximately 10 percent, the lowest in history.

The overall mortality rates are decreasing as Service members reach higher levels of medical care in a shorter period of time and thus survive longer after injury. Improvements in rapid evacuation from the battlefield and transport through the echelons of care—forward surgical team to combat surgical hospitals to regional medical centers to the continental United States (see Figure 2.1)—have resulted from advances in medical training of and equipment available to first responders and nonmedical personnel and from dramatic improvements in availability and capability of forward-deployed advanced surgical and critical care facilities. In the operational environment, military medicine has remained at the forefront of innovation while sustaining health care delivery practices to achieve desired clinical outcomes while promoting patient safety. Although deployed Forces are employed in remote and/or austere environments, the delivery of health care adheres to evidence-based, outcome-oriented management principles, which is overwhelmingly illustrated by the survival rate of our warriors on the battlefield.

Military medicine often leads in health care innovation and delivery, particularly in times of conflict; recent examples include advances in amputee care and en route critical care. However, as a comprehensive health system, it is influenced by, and must be responsive to, improvements in the civilian health care sector. While the emphasis in medicine must be on the personal interaction of the patient with his or her provider, the modern approach to the delivery of care requires an integrated perspective that incorporates a systems-based strategy to problem solving, while continuing to maintain an individualized approach to the patient. Although this report reviews patient satisfaction data, its main purpose is to evaluate the MHS as a system. This does not minimize the importance of each and every patient encounter; rather, it reflects the realities of time and scope.

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[15] Source: http://www.defense.gov/news/casualty.pdf.

Figure 2.1 MHS Global Distribution of MHS Direct Care Platform
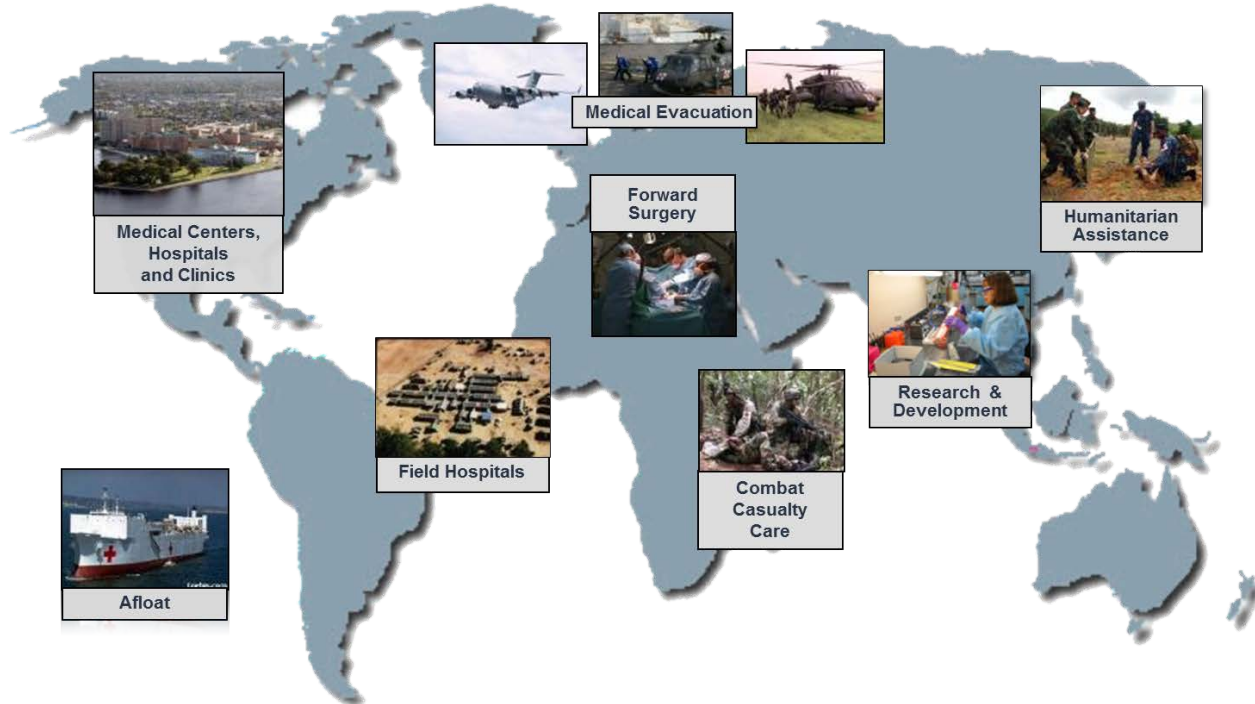
Source: 2014 MHS Review Group, July 2014

Overview of Military Health System (MHS) Governance[16]

The MHS can be described as a federated health care system with responsibility for the delivery of safe, high-quality care shared among the Office of the Assistant Secretary of Defense for Health Affairs (ASD(HA)), the Military Departments (Services), and the Defense Health Agency (DHA). This governance structure follows from DoD's overall organizational structure, with the MHS nested within the Department (see Figure 2.2). As demonstrated in Figure 2.2, the ASD(HA) reports to the Under Secretary of Defense for Personnel and Readiness (USD[P&R]), who in turn reports to the Secretary of Defense.

Army, Navy, and Air Force medical commands report through their Service Chiefs to their respective Military Department Secretary and then to the Secretary of Defense. The federated

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[16] In this report, terms such as MHS Governance, MHS governing bodies, governance structure, governing committees, and the like refer to the DoD management officials with authority over components or functions of the MHS (e.g., ASD(HA), Secretaries of Military Departments, Surgeons General, Director, DHA) and the governance councils referred to in DoD Directive 5136.13 (para. 5.a(1)) that provide advice and assistance to those officials.

approach with shared responsibilities can be seen all the way to the level of the MTFs. ASD(HA) manages the resources that fund the Service medical departments and thus the MTFs, primarily through the Defense Health Program (DHP) appropriation, but the MTFs are run by military commands, and therefore are under the direction and control of the Services. At the MTF level, the Services maintain responsibility to man, train, and equip those commands to meet mission requirements. At a high level, the MHS collaboratively develops a strategy to meet policy directives and targets, with the Service components and/or the DHA responsible for execution.

In response to the interest in improved coordination of the MHS and in stronger alignment among the Services, other DoD components with a health mission, and ASD(HA), the Deputy Secretary of Defense chartered a MHS Governance Task Force in June 2011 to conduct a review of MHS governance. The Task Force was charged with providing options for governance of the MHS as a whole, of enhanced multi-service medical markets, and of the National Capital Region health system. The Task Force submitted its report in September 2011, resulting in a Deputy Secretary of Defense memorandum of March 2012 ("Implementation of Military Health System Governance Reform"), which provided direction for a new governance structure for the MHS. As part of that effort, the prior governance structure of integrating councils reporting to the Senior Military Medical Action Council (SMMAC) was replaced by the present structure, which separates policy from execution (see Figure 2.2).

The Defense Health Agency (DHA) was established "… to assume responsibility for shared services, functions and activities of the MHS and other common clinical and business processes."[17] The Director of the DHA is required to carry out assigned functions in accordance with direction from the ASD(HA), "adopted with the advice and assistance of governance councils established by the USD(P&R) and ASD(HA), including senior representatives of the Military Departments." This structure has been in place since October 2013 and has already demonstrated significant gains in communication and alignment among HA, the Services, and DHA. The approach taken emphasizes collaborative work at all levels with representation of the Joint Staff and all Service components, greater involvement of General Officers and Senior Executives in leading the effort, closer alignment of DHA and the Services, and leveraging of the Medical Deputies Action Group (MDAG; see Figure 2.2) to provide advice and assistance on tactical management of the MHS.

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[17] Deputy Secretary of Defense Memorandum. March 11, 2013. "Implementation of Military Health System Governance Reform." Available at:
http://www.ausn.org/Portals/0/pdfs/Deputy%20SECDEF%20Carter%20Memo%20on%20DHA%20-MHS%20Transformation%203-2013.pdf.

Figure 2.2 Organizational Structure of the Military Health System within the Department of Defense

Source: 2014 MHS Review Group, July 2014

The MDAG is chaired by the Principal Deputy Assistant Secretary of Defense for Health Affairs, with representatives from the three Service components, Joint Staff, and HA at the deputy level. It advises and assists in the active management of the system while respecting each entity's authority and responsibilities, as illustrated in the following:

1) ASD(HA) serves as the principal advisor to the Secretary of Defense and USD(P&R) for all DoD health and force health protection policies, programs, and activities, and:
   a. Ensures the effective execution of the DoD medical mission, providing and maintaining readiness for medical services and support to members of the Military Services, including during military operations;
   b. Exercises authority, direction, and control over DoD medical personnel authorizations and policy, facilities, programs, funding and other resources in the DoD;
   c. Serves as resource manager for all DoD health and medical financial and other resources;
   d. Prepares and submits, in the DoD Planning, Programming, Budgeting and Execution process, a DoD Unified Medical Program budget to provide resources for the DoD MHS;
   e. May not direct a change in the structure of the chain of command within a Military Department or with respect to medical personnel assigned to that command.[18]

2) DHA is established as a Defense Agency, under the authority, direction, and control of the USD(P&R), through the ASD(HA) and:
   a. Manages TRICARE;
   b. Manages and executes the Defense Health Program appropriation and DoD MHS funding;
   c. Exercises management responsibility for shared services, functions, and activities of the MHS and its common business and clinical processes;
   d. Supports the effective execution of the DoD medical mission;
   e. Collaborates with the Military Departments to ensure an integrated and standardized TRICARE and health care delivery system[19]

3) Military Service Components are responsible for:
   a. Communicating Service-specific requirements and requests relating to shared services, activities, and functions to the Director, DHA;[20]
   b. Ensuring that the Service medical departments remain accountable for the delivery of patient care, and related medical and health services in facilities under their jurisdiction, consistent with this directive;[21]
   c. Manning, training, and equipping of Service assets to meet mission requirements.[22]

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[18] DoD Directive 5136.01, September 30, 2013. Available at:
http://www.dtic.mil/whs/directives/corres/pdf/513601p.pdf.

[19] DoD Directive 5136.13, September 30, 2013. Available at:
http://www.tricare.mil/tma/ams/downloads/513612p.pdf.

[20] *Ibid.*

[21] *Ibid.*

[22] Title 10, United States Code Sections 3013, 5013, 8013.

Figure 2.3 Governance Structure of the Military Health System
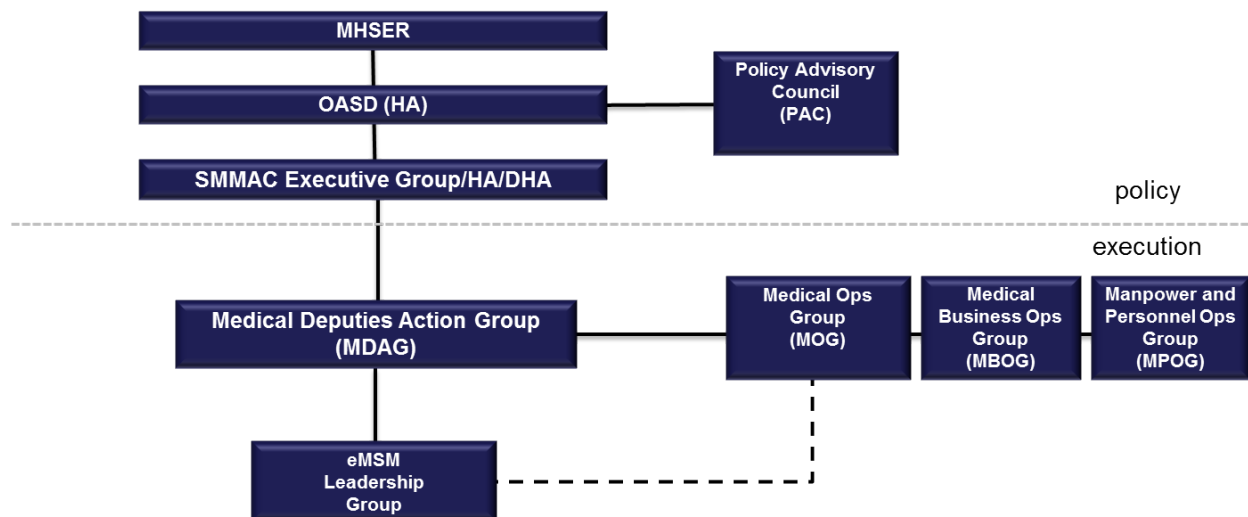
Source: 2014 MHS Review Group, July 2014

Figure 2.3 displays the governance structure within the MHS. The Military Health System Executive Review (MHSER) is comprised of senior-level DoD leadership and charged with providing input on strategic, transitional, and emerging issues in the MHS. It advises the Office of the Secretary of Defense and the Office of the Deputy Secretary of Defense on performance challenges and direction. It is chaired by the USD(P&R), and includes the Principal Deputy Under Secretary of Defense (Personnel and Readiness), the ASD(HA), the Service Vice Chiefs, Military Department Assistant Secretaries for Manpower and Reserve Affairs, the Assistant Commandant of the Marine Corps, the Director of Program Analysis and Evaluation, the Principal Deputy Under Secretary of Defense (Comptroller), the Director of the Joint Staff, and the Surgeons General (as ex-officio members).[23]

The SMMAC is chaired by the ASD(HA), and includes the Principal Deputy Assistant Secretary of Defense (Health Affairs), Military Department Surgeons General, DHA Director, Joint Staff Surgeon, and other attendees as required. The Council presents enterprise-level guidance and operational issues for decision-making by the ASD(HA).

The MDAG reports to the Council, which ensures that actions are coordinated across the MHS and are in alignment with MHS strategy, policies, directives, and initiatives.

Four supporting governing bodies, consisting of Flag/General Officers from the Service medical departments and Senior Executives from DHA, report to the MDAG. Each group has specific roles, but all are focused on sustaining and improving the MHS.

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[23] MHSER Charter. March 17, 2004. Available at:
ftp://98.130.80.93/HEALTH%20AFFAIRS%20DOD/DOD%20Academic%20Strategy/CASSCELLS%20PAPERS/
LIVE_LINK/MHSER%20Charter.pdf

- The Medical Operations Group (MOG) carries out assigned tasks and provides enterprise-wide oversight of the direct and purchased care systems.
- The Medical Business Operations Group (MBOG) provides a forum for providing resource management input on direct and purchased care issues.
- The Manpower and Personnel Operations Workgroup (MPOG) supports centralized, coordinated policy execution and guidance for development of coordinated human resources and manpower policies and procedures for the MHS.
- The Enhanced Multi-Service Markets (eMSM) Leadership Group provides a forum for managers of geographic MHS markets to discuss clinical and business issues, policies, performance standards, and opportunities.

Finally, the ASD(HA) is supported and advised by the Policy Advisory Council (PAC), composed of the Deputy Assistant Secretary of Defense (Health Affairs), the DHA Deputy Director, the Deputy Surgeons General, and a representative of the Joint Staff. The PAC provides a forum for supporting MHS-wide policy development and oversight in a unified manner.

The MTFs, as military commands, are controlled and operated by their respective Military Departments (Army, Navy, and Air Force). Two notable exceptions are Walter Reed National Military Medical Center and Fort Belvoir Community Hospital, which report to DHA and are not military commands. This configuration is the result of MHS governance reform. Coincident with establishment of DHA, the former Joint Task Force National Capital Region Medical transitioned to become the National Capital Region (NCR) Medical Directorate. NCR Medical Directorate (NCR MD) has oversight and responsibility for execution of patient safety and quality programs for the two NCR MD medical facilities.

Governance Reform Related to Performance Improvement

As described above, the major changes in MHS governance are the governance bodies (MHSER, SMMAC, MDAG, MOG, MBOG, MPOG; see Figure 2.3) and the standup of DHA. DHA's mission includes supporting greater integration of DoD's direct and purchased health care delivery systems in order to achieve better medical readiness, improved health, enhanced experience of care, and lower health care costs. It meets this mission through, among other activities, the shared services it provides in support of the MTFs, in the management of the Defense Health Program, and in providing an enterprise-wide view of the MHS for the governing bodies.

As a result of these recent reforms, the MHS is in transition, and work remains to be done in clarifying roles and relationships among the components and in establishing mechanisms to monitor and drive performance as a system. Presently, the overarching goals of the MHS are captured in the Quadruple Aim (concept modified from the Triple Aim of the Institute for Healthcare Improvement):

- Readiness (Goal – Increased 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
- Population Health (Goal – Better Health): keep people healthy and reduce the frequency of the visits to hospital and clinics
- Experience of Care (Goal – Better Care): provide a care experience that is safe, timely, effective, efficient, equitable, and patient- and family-centered
- Per Capita Cost (Goal – Lower Cost): create value by focusing on quality, eliminating waste, reducing unwarranted variation

While HA, DHA, and the Service medical departments all use the Quadruple Aim to define the overarching goals on which their respective strategies are based, there are differences in the specific metrics each Service uses to monitor performance in their respective MTFs, and in how measures are defined and how data are collected and reported. This results in challenges in assessing the performance of the MHS as an enterprise. Within MHS governance, the measures are reviewed by multiple committees, which all report to the MOG. (The MOG includes a synopsis of its discussion in its minutes, which are reviewed by the MDAG, whose minutes are in turn reviewed by the SMMAC.)

Governance is beginning to address variability in metrics used, as is evidenced by the adoption of a single dashboard for the enhanced multi-service markets (eMSMs). However, the eMSMs represent only 30 to 40 percent of the MHS and their analytical emphasis is weighted toward business metrics, in keeping with the eMSM focus on management of the market. The MDAG performs quarterly performance reviews of the eMSMs, and a summary of those reviews is then presented to the SMMAC. At the time of this report there were no scheduled reviews by the MHSER of specific MHS quality, patient safety, or access measures.

DHA and the Army, Navy, and Air Force medical departments shape performance improvement goals and align them to their respective strategic plans (see Appendix 2.1 for DHA and Service Performance Improvement activities). Each Service uses a variety of tools and methods throughout the medical department to the level of the MTF. Lean and Six Sigma® are the common frameworks and methodology used for performance improvement. Each of the Services uses a Service-specific web-based portfolio software management system for program management, tracking, and reporting.

The DHA Director has the authority and responsibility to oversee Patient Safety and Quality, as outlined in DoD policy (DoDM 6025.13 and JTF 6025.01 Quality Manual). The Chief Medical Officer, who is also the Director of Health Care Operations in DHA, has responsibility for the programs and offices that support MHS enterprise efforts for improving patient safety and health care quality. Examples of the collaborative efforts in process improvement for patient safety and quality are illustrated below.

The DoD Patient Safety Program (PSP) is established under the Clinical Support Division, DHA. The DoD PSP manages its operations through the Patient Safety Improvement Collaborative (PSIC); PSIC is chaired by the PSP Director and includes representatives from

the three Services, NCR MD, Uniformed Services University, and the TRICARE Regional Offices (TROs). The Patient Safety Analysis Center (PSAC), within the Clinical Support Division, collects, maintains, analyzes, and submits reports on patient safety performance metrics submitted from the DoD MTFs. The PSIC supports the work of the MHS Clinical Quality Forum.

The Clinical Quality Forum (CQF) is a collaborative group with representation from all components of direct and purchased care. It has the responsibility to assess clinical quality across the MHS. CQF assessments are based on relevant clinical performance indicators for health care system performance, including beneficiary and stakeholder perceptions of care and activities focused on quality assurance, patient safety, and risk management events. Function-focused working groups and advisory panels under CQF provide insight, recommendations, and activities to enhance clinical quality and safety.

Additionally, the CQF develops, or may endorse, recommendations for clinical quality improvement for approval by the MOG and/or the MDAG. Each of the Services implements quality improvement efforts at MTFs throughout the world in accord with their organizational structure through Service leadership.

The new governance council structure has facilitated coordination among the Services. It is expected that this will translate into the Services coming to agreement in adopting a single approach in common areas. Examples of where this has already happened include the eMSM dashboard metrics and the patient-centered medical home model.

Component Responsibilities within the Military Health System

In sum, HA is responsible for policy, and the Services for execution. The appropriate level governance committee develops the recommended strategy to meet goals and the metrics used to measure progress toward those goals. If consensus cannot be reached, the issue is elevated to the next level of governance council for consideration, with the expectation that the MHSER is the final MHS forum for issues that cannot be resolved at a lower level. DHA supports governance by monitoring the performance of the enterprise and by providing analyses as requested to a governing body.

Many of the issues identified in this report are generated by differences among the MHS components in the data collected to monitor performance and make decisions. A common set of metrics, with targets that would roll up from the MTFs, through the Services and NCR MD, to MHS and DoD leadership, to include the MHSER and the Military Department Secretaries, would improve MHS's ability to identify variance and track performance as a system. Because measures and metrics are aspects of execution and implementation, the Services, through governance, are responsible for proposing a common set of measures to HA and meeting policy intent and direction. In this endeavor, DHA plays a supporting role. Once the metrics have been approved by HA, the Services and the MHS governing committees would conduct performance reviews.

Similarly, ideally, the Services through governance would generate a strategic plan to meet policy direction, which would then be reviewed and approved by HA, which has an oversight role to ensure that the plan meets the intent of policy. Again, DHA would support this effort with data analysis and administrative support when asked. This is an improvement over past governance, under which the entities responsible for execution of the strategic plan were not responsible for generating that plan.

Resource Support for Patient Quality, Access and Safety

Using Fiscal Year 2013 as a representative year, an analysis was performed to identify MHS resources primarily supporting patient quality, access, and safety. The results indicate that substantial personnel and funding are devoted to these important functions system wide. In aggregate, more than 9,800 full-time-equivalent staff and more than $875 million per year are reported as directly supporting quality, access, and safety efforts. Most of these resources fall within the In House Care Budget Activity Group, which accounts for resources supporting care within the MTFs. Based on FY 2013 actual values, it is estimated that up to 8 percent of In House Care staff—to include military, civilian, and contractors—and up to 11 percent of In House Care financial resources directly support quality, access, and safety initiatives.

Conclusions

The MHS is a unique global health care organization with multiple missions and layers of complexity. Oversight and governance are, by nature, complex given the missions of the Military Departments and DoD's obligations to provide health care for active duty Service members and their families, as well as retirees and their families. The following sections provide assessments of the MHS's performance with regard to access to care, quality of care, and patient safety, measured against its own metrics, as compared to other high-performing health care systems, and compared to national benchmarks. Findings identify successes as well as opportunities for improvement, combined with actionable recommendations.

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3.   ACCESS TO CARE IN THE MILITARY HEALTH SYSTEM

Introduction

Access to care is defined as "the timely use of personal health services to achieve the best health outcomes."[24]   Access to care is influenced by many factors, including community health care resources, insurance coverage, financial status, proximity to care, and technology. Timely access to health care is a universal concept applicable to all health systems; however, the definitions and measures of timeliness are not standardized nationally.

Unique to the MHS, access standards are identified in Section 199.17(p)(5) of 32 Code of Federal Regulations (32 C.F.R. § 199.17(p)(5)); see Appendix 3.1). These standards include:

- 30-minute drive time for primary care
- Specialty care appointments within four weeks
- Routine appointments within one week
- Urgent care appointments generally not to exceed 24 hours
- Emergency room access available 24hrs/7 days per week
- 60-minute drive time for specialty care
- Office wait times should not exceed 30 minutes unless emergency care is being rendered to another patient

MHS enrollees to Medical Treatment Facilities (MTFs) have options for accessing care, including MTF appointments, Secure Messaging, TRICARE Online booking, or referrals to the private sector if the MTF does not have capability or cannot meet the MHS access standards. The Nurse Advice Line enhances access for all MHS beneficiaries within the continental United States.

In the MHS, the direct care and purchased care components operate in tandem to meet the 32 C.F.R. § 199.17 standards for the 5.3 million enrolled TRICARE Prime beneficiaries. The purchased care component is a safety net to ensure that Prime beneficiaries have an avenue for care when the direct care component cannot provide it. Annually, direct care provides an average of 43.4 million office visits while the MHS spends more than $15 billion annually in purchased care.

The following summary was compiled by subject matter experts from each of the Services and from the Defense Health Agency (DHA), which also represents the National Capital Regional Medical Directorate (NCR MD). It includes a review of access governance in the MHS, an

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[24] Institute of Medicine, Committee on Monitoring Access to Personal Health Care Services (1993). *Access to Health Care in America.* Washington, D.C.: National Academies Press.

examination of policy gaps, a review of current access performance, analysis of seven site visits, and findings and recommendations.

Access to Care Governance

DHA is responsible for oversight of the purchased care component and regularly reviews contract performance for care delivered in the purchased care component, including available access data. In the direct care component, Service- and DHA-level guidance sets the conditions for MTF leadership to build and sustain a culture of continuous process improvement to ensure their access to care program is meeting standards set by DoD policy. Site visitors noted minor variation in governance on this issue among the seven MTFs. The Air Force has specific Group Practice Managers who are responsible for monitoring and managing access. The Army, Navy, and DHA generally have assigned MTF Access Managers.[25] MTF and clinic leaders are aware of their access performance and challenges, primarily through excellent communication with the access managers. Two of the seven sites had a multidisciplinary access to care group or committee for collaborative discussion and sharing of best practices to facilitate an organizational and strategic approach to access.

Ultimately, the commanding officer or director of each facility is responsible for access within the MTF, which is accomplished through performance monitoring reviews. Across Services and DHA, the total number of metrics used in access reviews varies; however, all review acute access in primary care, primary care manager (PCM) continuity, secure messaging enrollment, Nurse Advice Line calls/dispositions, and emergency department utilization. Information on access flows between the MTF commander, intermediate commands, headquarters, and the Service Surgeon General; however, access data are not consistently transmitted above the level of the Surgeons General across the Services.

Primary care access for all three Services and DHA is reviewed by the Medical Operations Group (MOG) through the Tri-Service Patient Centered Medical Home (PCMH) Advisory Board's quarterly update. The update includes data on PCM continuity, access metrics for same day and routine appointing, emergency department utilization, patient satisfaction, staff satisfaction, and quality metrics. Best practices are identified and shared across the Services and DHA. The MOG also receives monthly performance metrics on the recently launched Nurse Advice Line for CONUS beneficiaries.

In 2014, the MOG approved the formation of the MHS Access Improvement Work Group (MHS AIWG) to facilitate access standardization in primary and specialty care across the Services. The MHS AIWG is currently drafting a DoD Instruction to standardize access business rules at all MTFs (see AIWG charter in Appendix 3.2). The MOG also approved the formation of the Tri-Service Specialty Care Advisory Board to standardize specialty care product lines including

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[25] One small multidisciplinary clinic had someone from each department managing that department's access.

business rules for access, templates, secure messaging, operating rooms, and performance review metrics.

Policy Review and Identification of Gaps

The overarching guidance on access to care is set by 32 C.F.R. § 199.17, which has been in place since 1995. Critical supporting guidance includes Office of the Assistant Secretary of Defense (Health Affairs) (ASD(HA)) instruction, "TRICARE Policy 11-005, TRICARE Policy for Access to Care" (HA Policy 11-005) and the TRICARE program manuals. The policy review includes assessment of vertical gaps between higher and lower echelons and horizontal gaps between the Services and the NCR MD.

ASD(HA) – Overarching Guidelines

HA Policy 11-005 implements 32 C.F.R. § 199.17 and confirms the applicability of the guidance to overseas locations and to TRICARE Overseas Program (TOP) contractors. The policy also encourages the Services to use the *MHS Guide to Access Success* (2008) as guidance. Although not "policy" explicitly, the *Guide* remains central to the management of access within the MHS. HA Policy 09-15 directs each Service to implement the PCMH model of primary care, which includes enhanced access to care.

Military – Service-Level Instructions

Each of the Services and DHA has established policy letters, instructions, and directives for Service-specific guidance on meeting the access standards. (Summaries of DoD and Service-level policies and orders can be found in Appendix 3.3.)

TRICARE – Purchased Care Guidelines

The purchased care component is expected to meet access standards, administered through the TRICARE program manuals. Although evaluation of compliance is defined in the contract, it does not require the same level of detail required in the direct care component. For example, patient satisfaction with length of time to appointment is used as a surrogate measure of primary care access in lieu of detailed access to care compliance data.

External Reviews

A 10-year retrospective review of DoD Inspector General (IG) and Government Accountability Office (GAO) reports identified 34 potentially relevant documents, seven of which were related to access but only two of which were relevant to access for TRICARE Prime beneficiaries; however, neither addressed the 32 C.F.R. § 199.17 access standards. The remaining GAO reports focused on access to civilian providers for TRICARE Standard beneficiaries, for whom access standards are not defined by DoD regulation since beneficiaries are free to use any authorized provider. (Information on the GAO reports is found in Appendix 3.4.)

Vertical gaps are defined as inconsistencies between higher- and lower-level policies. One such gap was identified—neither the Services nor NCR MD have established a standardized methodology to assess the 30-minute office waiting times. This gap was also noted in the purchased care component. Review of Service and NCR MD policies found no significant horizontal gaps.

Education and Training

The Services have invested in access to care training for relevant personnel at a variety of levels. Currently, 12 distinct educational opportunities provide training on access management. This training is designed to develop expertise among all roles and levels of MTF staff and facilitates common goals to:

1. Implement and sustain a systematic, proactive, programmatic, and responsive access management program
2. Ensure all clinics/services meet or exceed the access standards
3. Create an access curriculum for all levels of the organization

Each of the Services has a course on access management. In addition, the MHS has implemented a Tri-Service Access Improvement Seminar. Given the redundancy of these courses, there is opportunity to standardize training across the Services. (Summaries of Service-level access courses are found in Appendix 3.5.)

The site visit team found that appointing staff members receive formal training on the Composite Health Care System (CHCS), which serves as the foundation for DoD's electronic health record. Medical appointments in MTFs are scheduled in CHCS, based on locally developed appointment templates. In addition, some MTFs have clinic-specific orientation to train new staff on standard operating procedures, along with on-the-job training. CHCS training appears to be standardized across the seven MTFs visited by the MHS Review Group, but clinic-level training ranges from formal and documented training to undocumented, informal on-the-job training. While all seven facilities provide training for call center booking agents and front desk clerks, some MTFs have organization-wide customer relations training during initial orientation and only a few require annual customer service training. Clinic leadership at all sites expressed a desire to learn more about clinic operations, including effective management of access and demand forecasting. Given that customer service at every contact point in a health care facility can have a direct effect on the patient experience, there is an opportunity to standardize customer service training.

Methodology

The MHS Review Group evaluated multiple data sources to explore access performance for the purposes of this review. Chosen metrics met the following criteria:

1. Established, readily available, and understood across the organization to the highest degree possible
2. Sufficient to assess compliance with 32 C.F.R. § 199.17

3. Relevant to access to care performance throughout the entire MHS, to include both the direct care and purchased care components
4. Include modes of enhanced access to virtual services provided to patients such as secure messaging or use of an online portal
5. Include patients' perception of and satisfaction with MHS access to care
6. Limited to primary care and specialty care as a whole, rather than by product line, due to time constraints for the review
7. Include on-site observations and interviews in order to validate other data sources

Measures to assess the direct care component were chosen based on ready availability through standard access reports housed at the TRICARE Operations Center (TOC) website. The TOC electronically collects appointment process details for all MTFs and provides MTF clinical staff and decision makers at all levels meaningful current and historical access reports using a DoD Common Access Card. Appointment processing and scheduling business rules built into CHCS are directly aligned with 32 C.F.R. § 199.17 and HA Policy 11-005.

The following TOC data were reviewed at the MHS and Service levels, by facility type (Medical Center, Hospital, and Clinic), by location (Overseas or United States), and by facility name:

1. Average number of days to acute appointments
2. Average number of days to third next available acute appointment (primary care)
3. Average number of days to third next available routine appointment (primary care)
4. Average number of days to specialty appointments
5. Average number of days to third next available specialty appointment
6. Percent of acute appointments meeting MHS access standards
7. Percent of specialty appointments meeting MHS access standards

The following metrics were used to assess enhanced access to care and satisfaction:

1. Percent appointments web-enabled for TRICARE Online (TOL) booking
2. Number of direct care enrollees in secure messaging
3. Percent of direct care enrollees registered in secure messaging who initiated contact with their PCM
4. Number of calls to the Nurse Advice Line
5. Percent of calls to the Nurse Advice Line by disposition
6. Satisfaction with Getting Care When Needed (Service Surveys)
7. Satisfaction with Access to Care (TROSS)
8. Satisfaction with Seeing a Provider When Needed (TROSS)
9. Satisfaction with Getting Care Quickly (HCSDB)
10. Satisfaction with Getting Care when Needed (HCSDB)

TRICARE regional contractors submit data on the purchased care component as part of the contract requirements. The current TRICARE contracts do not require the contractors to collect and report the same level of detail on access to care as is available in the direct care component. The contractors do not collect the same measures in the same way as the MHS direct care

components, and do not use the same information systems. Moreover, the overseas contract does not collect the same data as the U.S. contractors. Although comparisons between the direct and purchased care components are difficult, data were collected on the following metrics:

1. Number of enrollees per network provider - United States
2. Specialty care percentage within a 60-minute drive time - United States
3. Percent of appointments within 28 days - United States
4. Access to care composite (TRICARE Outpatient Satisfaction Survey [TROSS]) - United States
5. Seeing a provider when needed (TROSS) - United States
6. Getting care quickly composite (Health Care Survey for DoD Beneficiaries [HCSDB]) - United States
7. Getting needed care composite (HCSDB) -United States
8. Overseas network satisfaction data

The analysis also incorporated a review of external benchmarks, site visit information, town hall meetings, and regional reviews. Given that there are no national benchmarks for access, the MHS Review Group assessed national health plan standards, which vary widely. The California State Department of Managed Health Care set specific timelines for non-emergent access in 2002, which are used to benchmark the current MHS performance. (See access standards comparison in Appendix 3.6)

Direct Care Component Analysis

The following section presents performance in access metrics for the direct care component. (See Appendix 3.7 for FY 2014 access measures displayed by facility, and Appendix 3.8 for the analysis of percent of appointments meeting MHS standards). The data apply only to the care delivered in the MTFs and has been split to show access within primary care and specialty care across the MHS and the Services by facility type and geographic location. The 32 C.F.R. § 199.17 and California (CA) standards are displayed in Table 3.1.

Table 3.1 MHS vs. CA Standards Comparison

MHS Appointment Type	MHS Standard	CA Appointment Type	CA Standard
Acute	Generally within 24 hours	Urgent	48 hours
Routine	7 calendar days	Non-urgent primary care	10 business days
Specialty	28 calendar days	Non-urgent specialist	15 business days

2014 MHS Review Group
Source: California Department of Managed Care, June 2014

Acute Care

Average Number of Days to an Acute Appointment

Overall: As of April 2014, 88 percent of acute appointments planned in CHCS were delivered in primary care and 12 percent in specialty care. Thus, this metric is most applicable to primary

care for the direct care component, but it does include both primary and specialty care acute appointments. In Fiscal Year 2014 to date, the average number of days to an acute appointment is 0.97 days overall, outperforming both the MHS and CA access standards (see Figure 3.1).

The median was 0.46 days and there were four minor outliers and seven major outliers.[26] The four outliers with average days to acute care appointments greater than 1.18 days were 99th MDG- Federal O'Callaghan, 633rd Medical Group, NMC Portsmouth, and Ft. Belvoir Community Hospital. The seven major outliers with average days of 1.69 days or greater were 35th Medical Group, Leonard Wood ACH, Irwin ACH, Darnall AMC, NH Guantanamo Bay, NHC Hawaii, and Walter Reed National Military Medical Center. (See Appendix Table 3.10-1 and Appendix Figure 3.10-1.)

**Figure 3.1 Average Number of Days to Acute Appointment –
Overall: MHS Access Standard ≤ 1 Day**
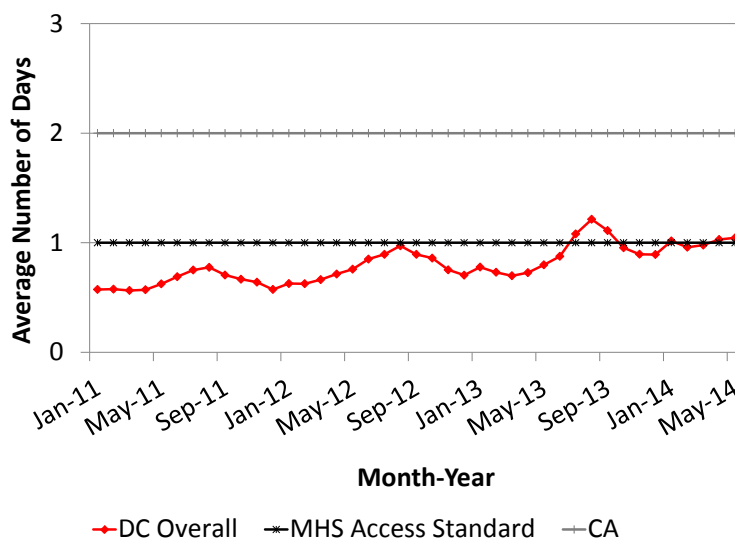
2014 MHS Review Group
Source: TRICARE Operations Center (TOC), June 2014

In general, the upward trend in the number of days to an acute care appointment reflects an increase in demand associated with the direct care component's transition to the PCMH model of care and the move to enhanced access. Previously, 24-hour appointments were reserved for acute health issues; now, more same day appointments allow health issues previously seen on a routine (7-day) basis to be seen on a 24-hour basis. By standardizing appointment templates, the direct care component increased total primary care appointments by five percent between FY 2011 and FY 2014. The direct care component also simplified appointment templates and

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[26] Outliers for MHS-level data were calculated based on the interquartile range (IQR), which is the difference between the first and third quartiles of observed data. Minor and major outliers were defined as 1.5 times beyond IQR and 3 times beyond the IQR, respectively.

reduced the number of appointment types, which increased the number of acute appointments by 35 percent.

Because most staff rotations occur in the summer months, the average number of days to an acute care appointment is higher from May to August each year. This trend may have been further exacerbated in July and August 2013, which coincided with civilian employee furloughs.

Civilian Comparison: Health System 3 reported an average days to acute care appointments of "less than one" day, which is consistent with the direct care component FY 2014 average performance of 0.97 days. Health System 3 reports that patients who have acute medical needs are able to be seen on a walk-in basis or are given an appointment for the same day. A recent Merritt Hawkins survey of 15 major U.S. metropolitan areas reported the time to see a family medicine provider of 18.5 days (the study did not specify acute or routine.)[27]

Service Level: There is variation in performance. All Services currently perform better than the CA access standard with the Air Force (0.55 days) outperforming the MHS access standard. Army (1.07 days), Navy (1.17 days), and NCR MD (1.64 days) did not meet the MHS access standard in FY 2014 (see Figure 3.2).

Figure 3.2 Average Number of Days to Acute Appointment – By Service: MHS Access Standard ≤ 1 Day
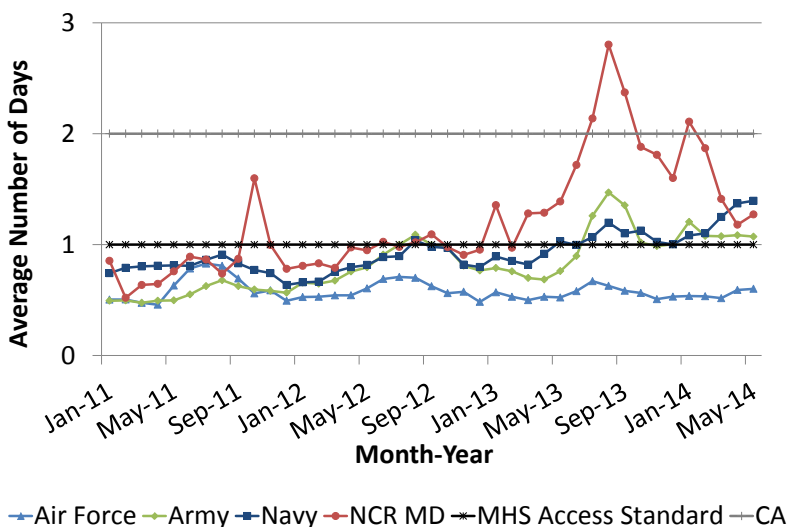
2014 MHS Review Group
Source: TRICARE Operations Center (TOC), June 2014

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[27] Merritt Hawkins 2014 Survey of Physician Appointment Wait Times and Medicaid and Medicare Acceptance Rates. (2014). Available at:
http://www.merritthawkins.com/uploadedFiles/MerrittHawkings/Surveys/mha2014waitsurvPDF.pdf.

Facility Type: There is variation in average days to acute appointments when data are broken out by facility type. The larger facility types show a higher average number of days to acute care appointments than hospitals and clinics. All three facility types performed better than the CA acute access standards (see Figure 3.3).

Figure 3.3 Average Number of Days to Acute Appointment – By Facility Type: MHS Access Standard ≤ 1 Day
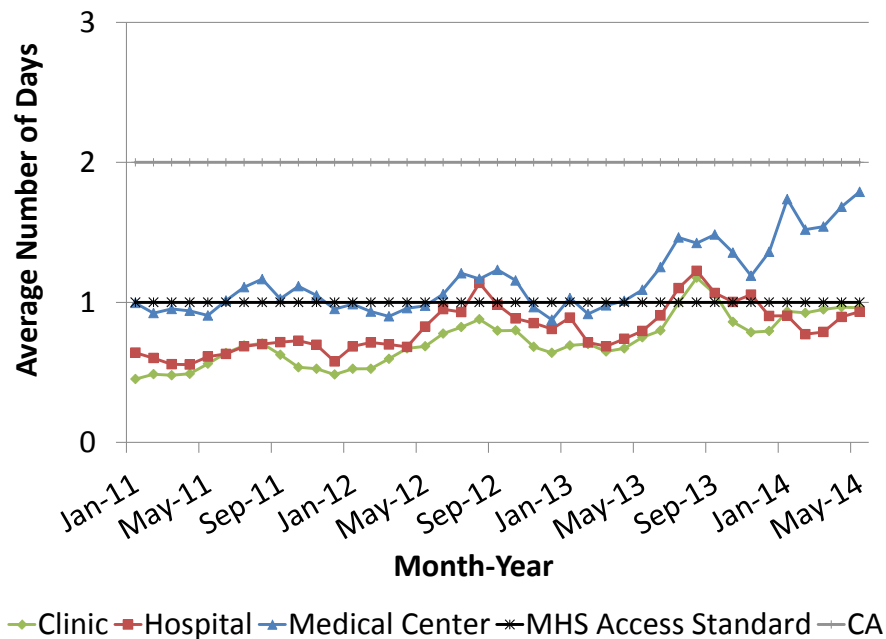
2014 MHS Review Group
Source: TRICARE Operations Center (TOC), June 2014

Location: Facilities located overseas performed better on average days to an acute care appointment than facilities located in the United States: 0.61 days in FY 2014 compared to 1.03 days. Both groups performed better than the CA access standard. Overseas locations may perform better as a result of having a pre-screened population and higher staffing levels. (See Appendix Figure 3.9-1.)

Average Number of Days to Third Next Acute Appointment in Primary Care

MHS Level: The average number of days to third next appointment is a *prospective* health care industry standard measure and is considered an excellent measure of overall appointment availability. The Agency for Healthcare Research and Quality (AHRQ) and the Institute for Healthcare Improvement recommend measurement of average number of days to third next acute and routine appointments in primary care settings as a more sensitive measure of ATC. In FY 2014 to date, the average number of days to the third next acute appointment is 1.86 days, down 11 percent from 2.09 days in FY 2012 (see Figure 3.4). The MHS and CA acute access standards are included as goals to work toward, as there is no standard for average number of days to third next appointment. The overall range of observations is 0.44 days to 5.62 days with 64 percent of MTFs performing better than the overall overage of 1.86 days. The median was

1.4 days and there were 6 minor outliers with average number of days to third next acute greater than 1.72 days (99th MDG- Federal O'Callaghan, 633rd Medical Group, 81st Medical Group, Darnall AMC, William Beaumont AMC, Walter Reed National Military Medical Center) and one major outlier with average number of days to third next acute greater than 3.44 days (60th Medical Group).[28] (See Appendix Table 3.10-2 and Appendix Figure 3.10-2.).

Figure 3.4 Average Number of Days to Third Next Acute Appointment (Primary Care) – Direct Care Component Overall
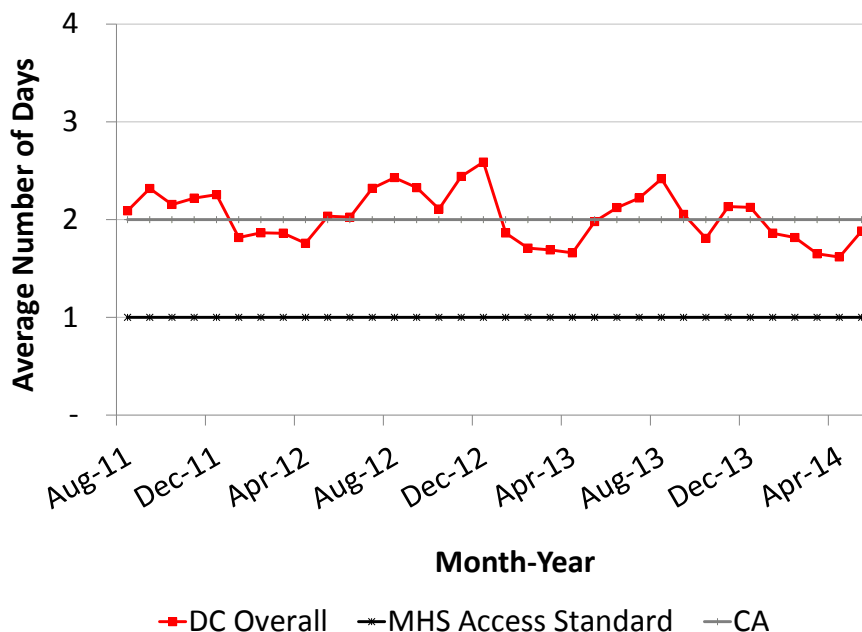
2014 MHS Review Group
Source: TRICARE Operations Center (TOC), June 2014

Civilian Comparison: The average number of days to the third next acute appointment of 1.86 days in direct care is better than Health System 2 and Health System 3, which averaged 9.02 days and 11.63 days, respectively.

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[28] Outliers for MHS-level data were calculated based on the interquartile range (IQR), which is the difference between the first and third quartiles of observed data. Minor and major outliers were defined as 1.5 times beyond IQR and 3 times beyond the IQR, respectively. See Appendix 3.10 for Outlier Analysis.

Service Level: There is variation among the Services in the average number of days to the third next acute appointment (see Table 3.2 and Figure 3.5). To better understand these differences, the percent of 24-hour appointments was reviewed and appears to have an inverse correlation to third next acute measure. All of the Services have improved performance since FY 2012.

Table 3.2 Average Number of Days to Third Next Acute Appointment (Primary Care) by Service and Percent of 24-Hour Care Appointments

	Navy	Army	Air Force	NCR MD
Average Number of Days to Third Next Acute Appointment	1.00	1.91	2.24	2.53
% Primary Care Appointments Available for 24-Hour Care	54%	46%	36%	30%

2014 MHS Review Group
Source: TRICARE Operations Center (TOC), June 2014

Figure 3.5 Average Number of Days to Third Next Acute Appointment (Primary Care) – By Service
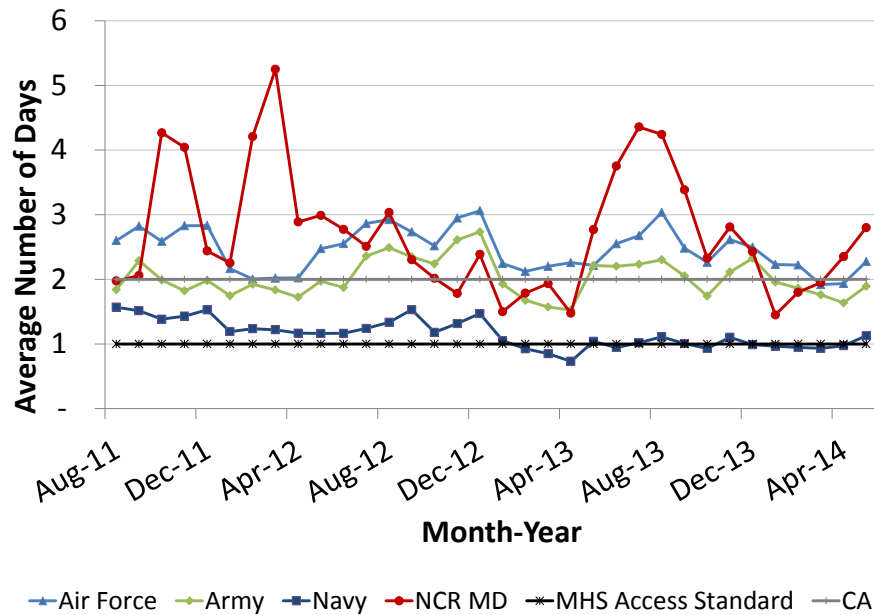
2014 MHS Review Group
Source: TRICARE Operations Center (TOC), June 2014

Facility Type: In general, the average number of days to third next acute appointment is higher in medical centers (2.6 days), compared to hospitals (1.5 days), and clinics (1.7 days) in FY 2014 (see Figure 3.6).

Figure 3.6 Average Number of Days to Third Next Acute Appointment (Primary Care) – By Type of MTF
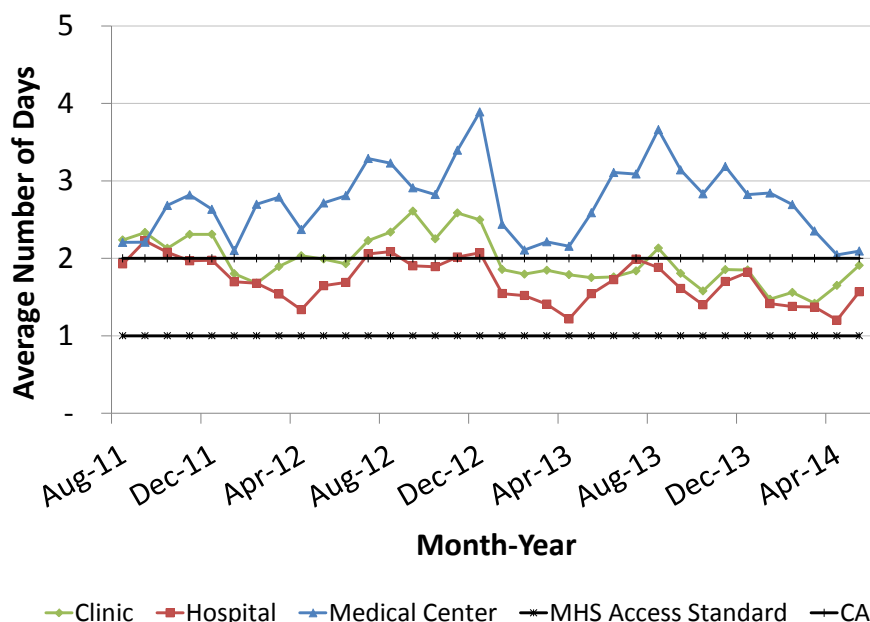
2014 MHS Review Group
Source: TRICARE Operations Center (TOC), June 2014

Location: The average number of days to third next acute appointment is lower in overseas facilities compared to those in the United States in FY 2014: 0.8 days compared to 1.9 days. (See Appendix Figure 3.9-2.)

Routine Care

Average Number of Days to Routine Appointment

This review does not include average days to routine appointments because the direct care component's ability to schedule a routine appointment under different appointment categories makes data aggregation difficult. Due to the direct care component's transformation to the PCMH model of primary care, 86 percent of routine appointments are classified as established (EST) appointments with the remaining 14 percent classified as routine (ROUT). As a result, routine access to care is evaluated through the Average Days to Third Next Routine Appointment in Primary Care measure, which includes both ROUT and EST appointment types.

Average Number of Days to Third Next Routine Appointment in Primary Care

MHS Level: In FY 2014 to date, the average number of days to the third next routine appointment is 6.22 days, down 6 percent from 6.62 days in FY 2012 (see Figure 3.7). The CA access standard is 10 business days, which converts to 14 calendar days for comparison to the MHS access standard. The overall range of observations is 0.7 days to 12.5 days with 64 percent of MTFs performing better than the overall overage of 6.2 days. The median is 5.3 days and there were 3 minor outliers with average number of days to third next routine greater than 11.3 days (72nd Medical Group, 45th Medical Group, 99th MDG Federal O'Callaghan) and no major outliers beyond 15.5 days. (See Appendix Table 3.10-3 and Appendix Figure 3.10-3.)

Figure 3.7 Average Number of Days to Third Next Routine Appointment (Primary Care) Overall
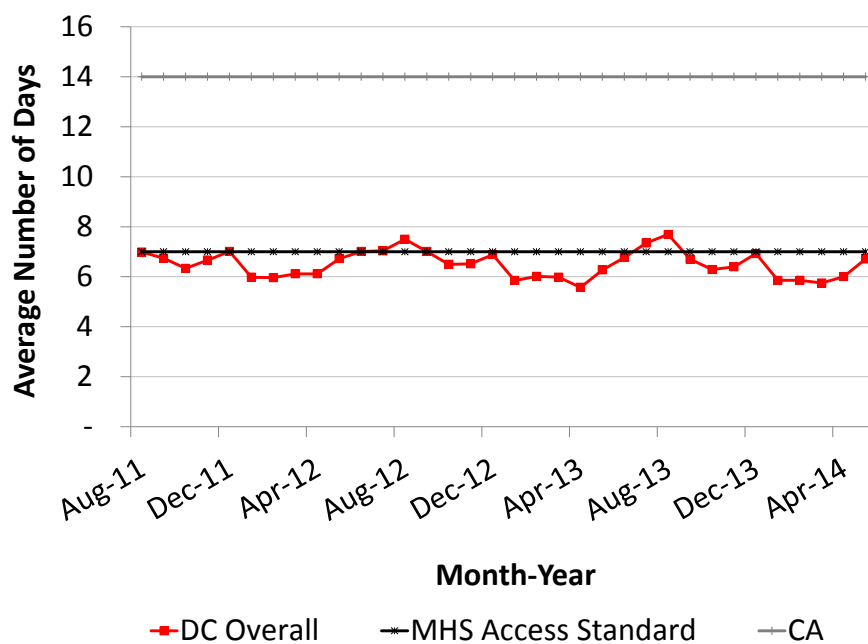
2014 MHS Review Group
Source: TRICARE Operations Center (TOC), June 2014

Civilian Comparison: The average number of days to the third next routine appointment of 6.2 days in direct care is better than Health System 2 and Health System 3, which averaged 9.0 days and 14.2 days, respectively.

Service Level: The FY 2014 average number of days to the third next routine appointment is 5.6 days for the Navy, 5.8 days for the Army, 6.9 days for the Air Force and 9.2 days for the NCR MD (see Figure 3.8).

Figure 3.8 Average Number of Days to Third Next Routine Appointment (Primary Care) – By Service
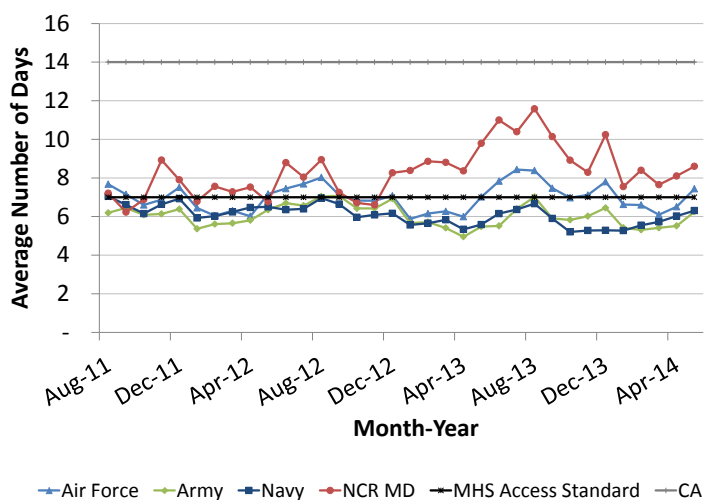
2014 MHS Review Group
Source: TRICARE Operations Center (TOC), June 2014

Facility Type: The average number of days to third next routine appointment is higher in medical centers (7.2 days), compared to hospitals (5.3 days) and clinics (5.7 days) in FY 2014 (see Figure 3.9).

Figure 3.9 Average Number of Days to Third Next Routine Appointment (Primary Care) – By Type of MTF
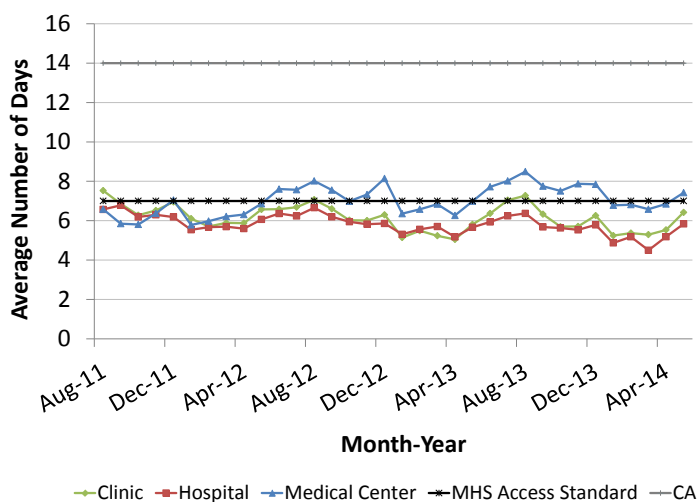
2014 MHS Review Group
Source: TRICARE Operations Center (TOC), June 2014

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Location: The FY 2014 average days to the third next routine appointment at overseas facilities is 5.2 days compared to facilities in the United States at 6.3 days. (See Appendix Figure 3.9-3.)

Specialty Care

Average Number of Days to Specialty Appointment

MHS: The FY 2014 average number of days to specialty appointment is 12.4 days, which outperforms the MHS access standard of 28 days and the CA specialty access standard of 15 business days (21 calendar days) (see Figure 3.10). The overall range of observations is 6.5 days to 18.0 days with 67 percent of MTFs outperforming the overall overage of 12.4 days. The median is 11.6 days and there was one minor outlier with average number of days to specialty appointment greater than 15.7 days (52nd Medical Group) and no major outliers beyond 22.8 days.[29] (See Appendix Table 3.10-4 and Appendix Figure 3.10-4.)

Figure 3.10 Average Number of Days to Specialty Appointment – Overall: MHS Access Standard ≤ 28 Day
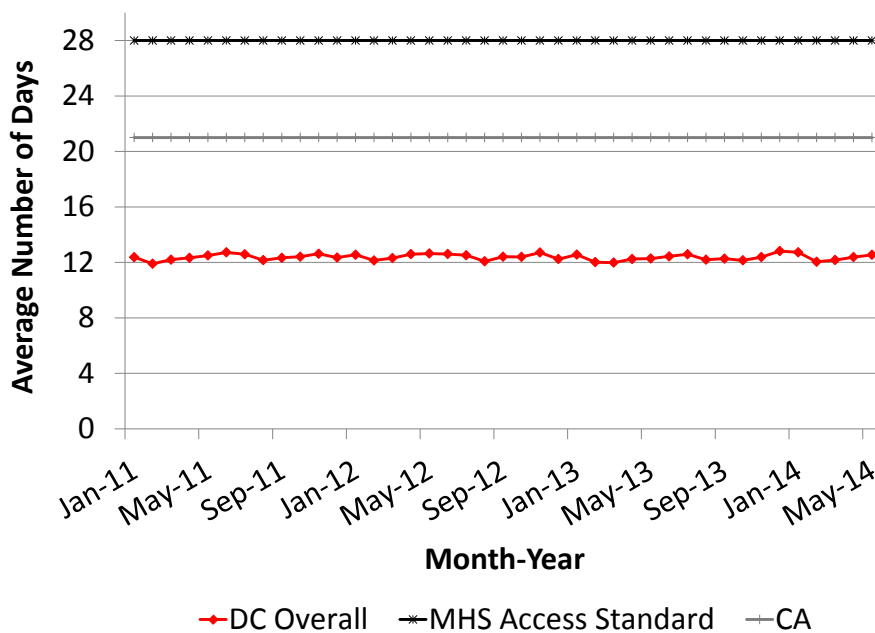
2014 MHS Review Group
Source: TRICARE Operations Center (TOC), June 2014

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[29] Outliers for MHS-level data were calculated based on the interquartile range (IQR), which is the difference between the first and third quartiles of observed data. Minor and major outliers were defined as 1.5 times beyond IQR and 3 times beyond the IQR, respectively. See Appendix 3.10 for Outlier Analysis.

Civilian Comparison: The average of 12.4 days to a specialty appointment in direct care is better than Health System 3, which reported an average days to specialty care appointments of 22.3 days. The recent Merritt Hawkins survey of 15 major U.S. metropolitan areas reported a wait time to see a specialty provider of 18.5 days.

Service-Level: The FY 2014 average number of days to a specialty appointment is 11.8 days for the Navy, 12.2 days for the Army, 13.1 days for the Air Force, and 14.7 days for NCR MD (see Figure 3.11).

Figure 3.11 Average Number of Days to Specialty Appointment – By Service: MHS Access Standard ≤ 28 Day
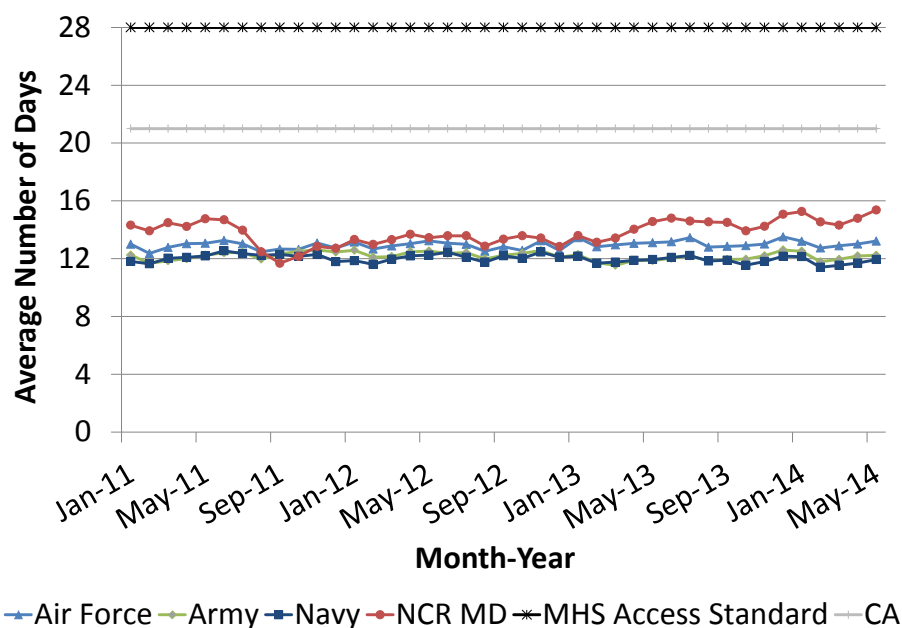
2014 MHS Review Group
Source: TRICARE Operations Center (TOC), June 2014

Facility Type: In FY 2014, the average number of days to specialty appointments in clinics, hospitals, and medical centers is 10.7 days, 12.8 days, and 13.6 days, respectively (see Figure 3.12). All three facility types meet both the MHS access standard of 28 days and the CA specialty access standard of 15 business days (21 calendar days).

Figure 3.12 Average Number of Days to Specialty Appointment – By Facility Type: MHS Access Standard ≤ 28 Day
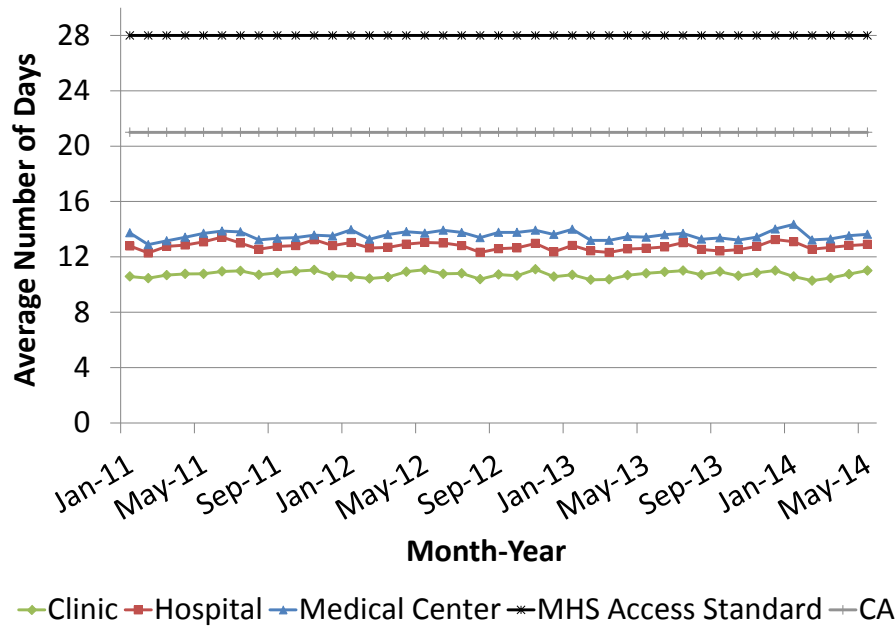
2014 MHS Review Group
Source: TRICARE Operations Center (TOC), June 2014

Location: MTFs located overseas had only slightly better performance compared to facilities located in the United States. The FY 2014 average number of days to specialty appointment overseas is 11.5 days compared to 12.5 days in facilities located in the United States. Both groups performed better than the MHS access standard of 28 days and the CA specialty access standard of 15 business days or 21 days. (See appendix Figure 3.9-4.)

Average Days to Third Next Specialty Care Appointment

MHS Level: In FY 2014 to date, the average number of days to the third next specialty care appointment is 12.4 days (see Figure 3.13). The median is 11.5 with a range from 3.1 days to 37.1 days. There is one minor outlier with average days to third next specialty appointments greater than 21.5 days but still within access standard (27th Special Operations Medical Group) and one major outlier beyond 28.5 days (423 MDS-RAD Alconbury). (See Appendix Table 3.10-5 and Appendix Figure 3.10-5.)

Figure 3.13 Average Number of Days to Third Next Specialty Care Appointment – Overall
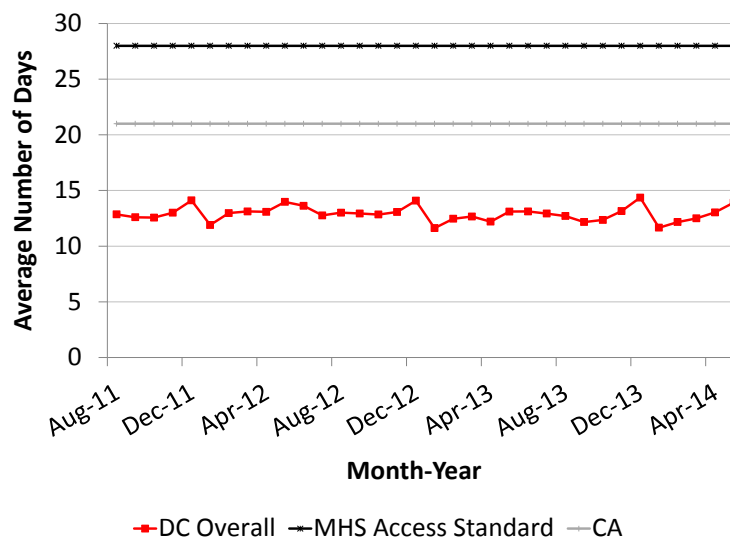
2014 MHS Review Group
Source: TRICARE Operations Center (TOC), June 2014

Civilian Comparison: The average number of days to the third next specialty appointment of 12.9 days in direct care is better than Health System 2, which averaged 16.7 days.

Service Level: The FY 2014 average number of days to the third next specialty care appointment averages 12.1 days for the Navy, 12.6 days, for the Army, 14.0 days for the Air Force, and 16.7 days for the NCR MD (see Figure 3.14).

Figure 3.14 Average Number of Days to Third Next Specialty Care Appointment – By Service
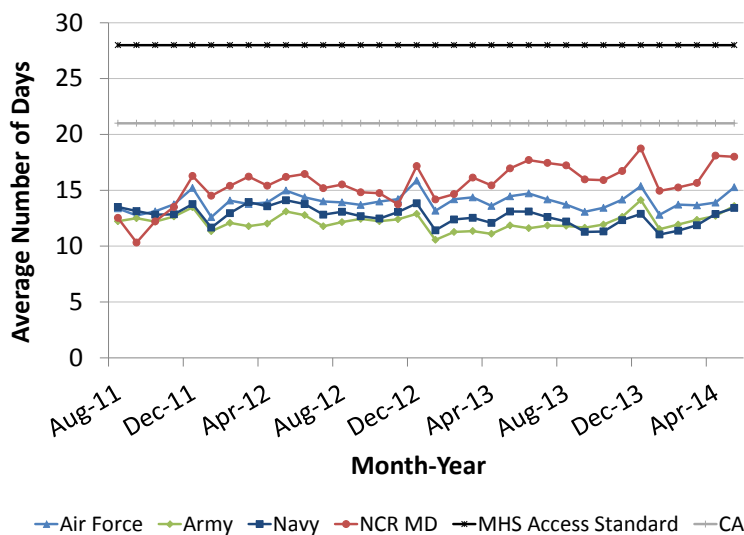
2014 MHS Review Group
Source: TRICARE Operations Center (TOC), June 2014

Facility Type: In general, the average number of days to third next specialty care appointment is higher in medical centers (14.2 days), compared to hospitals (12.1 days), and clinics (11.9 days) in FY 2014 (see Figure 3.15).

Figure 3.15 Average Number of Days to Third Next Specialty Care Appointment – By Facility Type
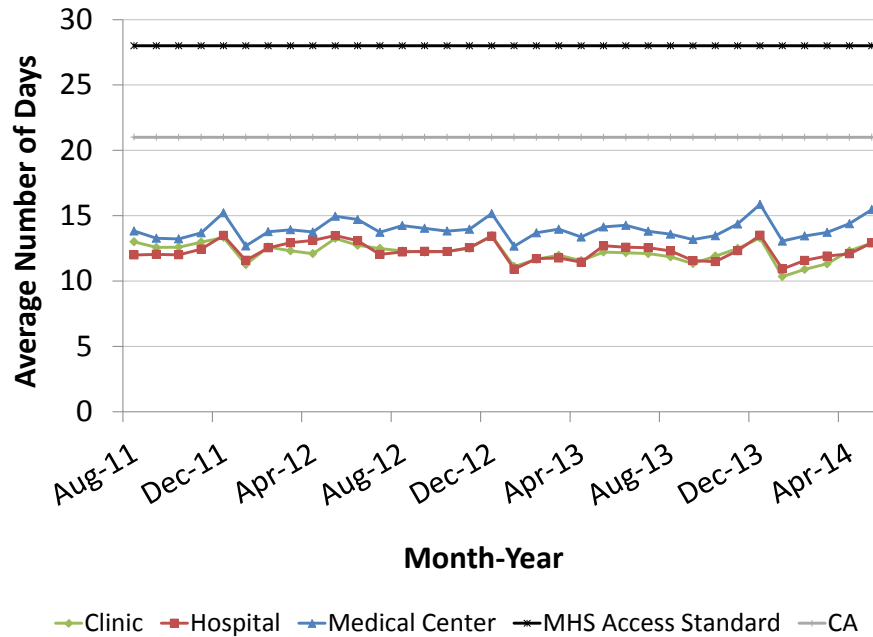
2014 MHS Review Group
Source: TRICARE Operations Center (TOC), June 2014

Location: The FY 2014 average number of days to third next specialty care appointment at overseas facilities is 11.5 days compared to facilities in the United States at 13.2 days. (See Appendix Figure 3.9-5 showing performance from August 2011 to May 2014.)

TRICARE OnLine (TOL) Booking: Web-Enabled Appointments

TOL is a web portal available to MTF enrollees for making appointments and for viewing personal health information 24 hours a day. Each month, more than 700,000 appointments, approximately 65 percent of available appointments, are web-enabled for TOL booking. This overall percentage of TOL web-enabled appointments has been stable over the past three years (see Figure 3.16). In the direct care component, nearly three percent of appointments are booked using TOL. This rate has not changed in three years.

Figure 3.16 TRICARE On-Line (TOL) Web-Enabled Appointments: MHS Overall
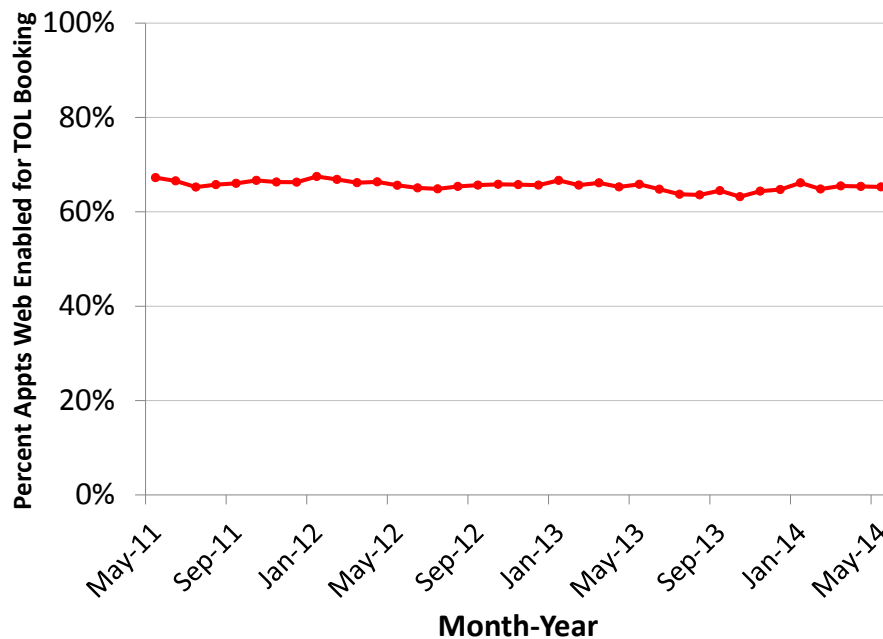
2014 MHS Review Group
Source: TRICARE Operations Center (TOC), June 2014

Secure Messaging (SM): Number of MTF Enrollees Registered

The direct care component has enhanced access through SM, which broadens the relationship between the patient and their PCM. Patient satisfaction with SM is 97 percent and more than 86 percent of SM satisfaction survey respondents agreed that using SM interaction allowed them to avoid an unnecessary trip to the clinic, emergency department, or urgent care facility. SM was fully implemented across primary care clinics in January 2014; specialty care implementation began in February 2014. As of June 2014, more than 1 million MTF enrollees were registered in SM, a growth of 53 percent in FY 2014 compared to FY 2013 (see Figure 3.17).

Figure 3.17 Number of MTF Enrollees Registered in Secure Messaging – By Service,

August 2010 – May 2014
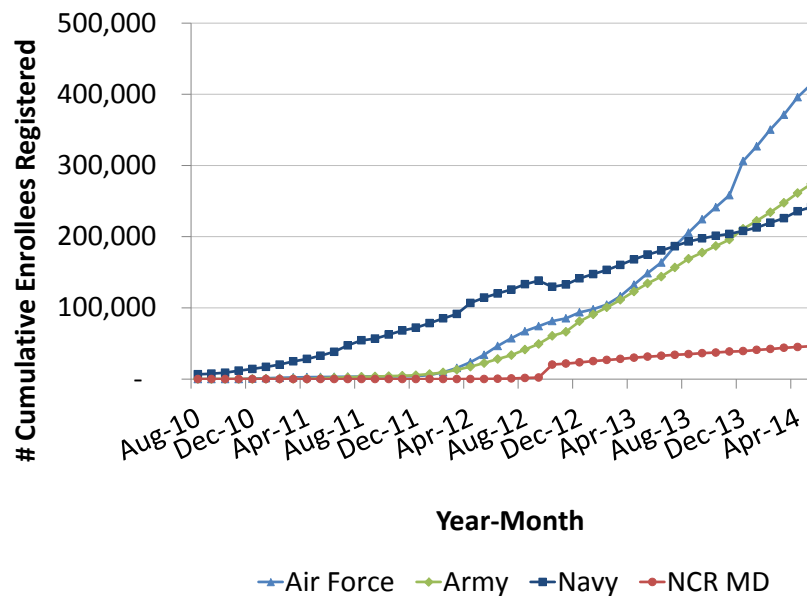
2014 MHS Review Group
Source: Relay Health Reports, June 2014

Percent of Enrollees Registered in Secure Messaging Who Initiated Contact with PCM

Percentages-to-date by type of patient-initiated clinical messages are reported in Table 3.3.

Table 3.3 Type of Patient-Initiated Clinical Message

Type of Patient-Initiated Message	Percent of Total
Question for PCM	56%
Appointment Requests	17%
Rx Refill Requests	16%
Laboratory Result Requests	7%
Referrals	4%

2014 MHS Review Group
Source: Relay Health reports, June 2014

The current direct care component policy is for patient-initiated messages to be answered within 72 hours. The FY 2014 average response time is 35 hours. In FY 2014, 17 percent of users have initiated a clinical message to request an appointment (see Table 3.4).

Table 3.4 Registered Users Initiating a Secure Message to PCM, FY14

MHS Group	Percent of Total
MHS Overall	17%
Army	21%
Navy	15%
Air Force	14%
NCR MD	26%

2014 MHS Review Group
Source: Relay Health reports, June 2014

Nurse Advice Line (NAL)

In March 2014, the MHS began the phased rollout of a 24-hour a day, 7-day a week NAL to enhance access to care for beneficiaries. All beneficiaries calling the NAL receive advice, health care finder assistance, and, if indicated, direct MTF primary care appointing. If an appointment cannot be obtained within the time recommended based on the triage end point and the clinical judgment of the NAL's professional registered nurses, the patient will be advised to seek care in the network. A formal survey process will begin after full implementation; however, initial informal feedback from patients and staff has been overwhelmingly positive. Call volume is steadily increasing to an average of over 1,000 calls per day currently (see Figure 3.18).

On average to date, 12 percent of NAL callers were referred to private sector emergency departments, 25 percent to private sector urgent care facilities, 23 percent to the MTF (PCMH, urgent care [UC] or emergency department [ED]), and 40 percent to self-care (the patient did not need an appointment, just advice). If the MTF is unavailable, the NAL refers the patient to the private sector for urgent care. Notably, 1.3 percent of all calls to date have resulted in a decision to activate the emergency medical system (EMS) response. The most common reasons for activating EMS are chest pain, neurological problems, and breathing problems.

Figure 3.18 Nurse Advice Line (NAL) Calls Triaged 28 March to 25 July 2014
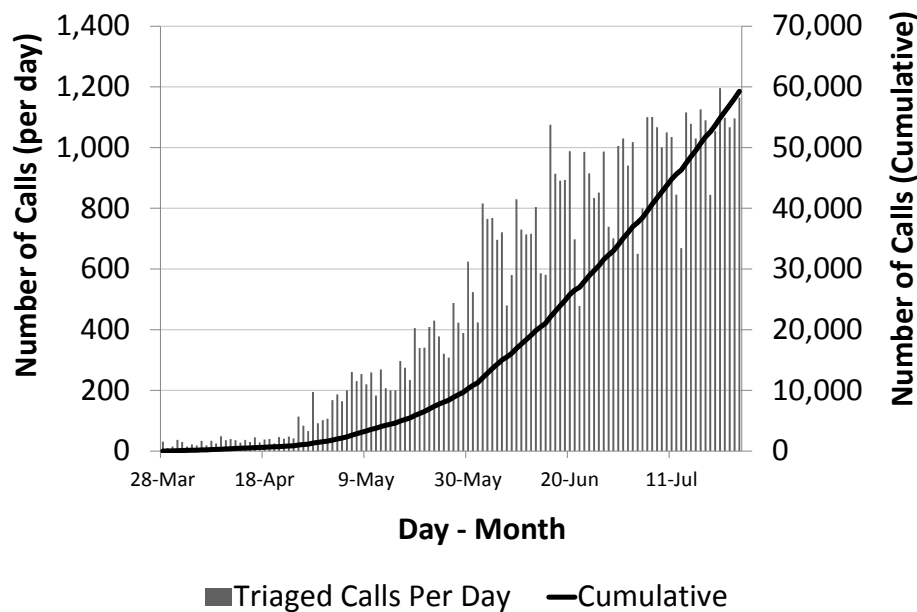
2014 MHS Review Group
Source: NAL Live Web Repository, June 2014

Emergency Department and Urgent Care Center Utilization by MTF Enrollees in the Purchased Care Network

If primary care cannot be delivered in the MTF within MHS access standards, HA Policy 11-05 states that patients are to be offered an appointment in the purchased care network. To assess access in the direct care component, the percent of care offered in both components for MTF enrollees was reviewed. In FY 2014, 79 percent of MTF enrollee primary care was delivered in the PCMH and 10 percent elsewhere in the MTF (direct care Emergency Department [ED] or Urgent Care [UC] resources). Approximately 11 percent of MTF enrollee primary care was delivered in the purchased care network: 4 percent was delivered in purchased care EDs and 7 percent in purchased care UC. Since FY 2011, the percentage of MTF enrollee primary care delivered in the PCMH has increased from 73.5 percent to 78.6 percent while the percent of primary care delivered in the purchased care network (ED and UC) has decreased from 14 percent to 11.1 percent (see Figure 3.19).

Figure 3.19 MTF Enrollee Primary Care Workload, by Venue of Care, FY11 – FY14
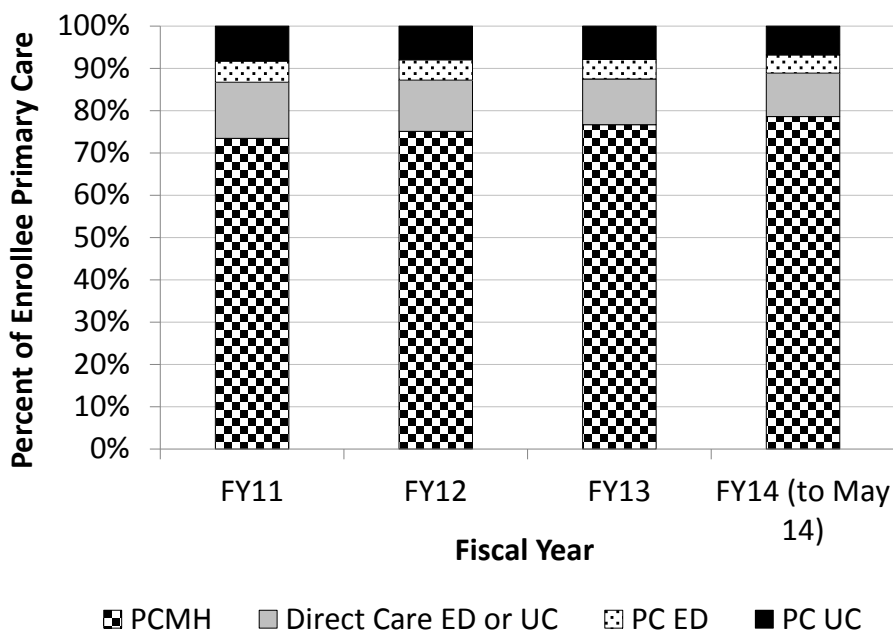
2014 MHS Review Group
Source: Military Health System Mart (M2), June 2014

Patient Satisfaction Surveys

The Army, Navy and Air Force each measure patient satisfaction with access to care through Service-specific surveys. Additionally, the DoD evaluates patient satisfaction with access to care through the results of two surveys, TRICARE Outpatient Satisfaction Survey (TROSS) and Health Care Survey for DoD Beneficiaries (HCSDB).

Service-Specific Survey Results: Each Service has a patient satisfaction survey that asks about patient satisfaction with "getting care when needed." Service surveys have averaged 85 percent satisfaction with this question over the last two years. Service-specific surveys average 636,000 responses annually (25-percent response rate) (see Figures 3.20 and 3.21).

In the direct care component, analysis demonstrated a correlation between both lower average number of days to third next acute and third next routine appointments and higher PCM continuity. It also showed a lower average number of days to third next acute and third next routine each correlated with higher patient satisfaction. Finally, higher PCM continuity correlated with higher patient satisfaction. (See Appendix 3.11 for correlation analyses.)

Figure 3.20 Satisfaction with "Getting Care When Needed" (Service Surveys) Overall, FY12 Q1 – FY14 Q1
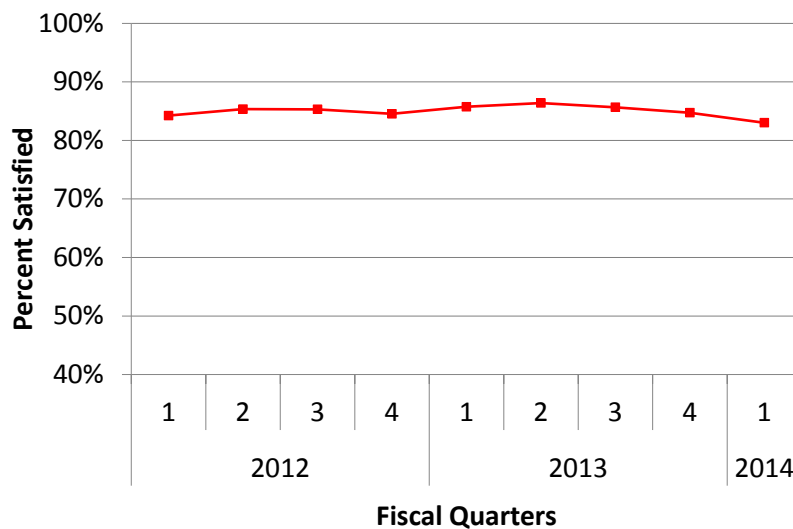
2014 MHS Review Group
Source: Air Force Service Delivery Assessment (SDA); Army Provider Level Satisfaction Survey (APLSS); Patient Satisfaction Survey (PSS), June 2014

**Figure 3.21 Satisfaction with "Getting Care When Needed" (Service Surveys) – By Service*,
FY12 Q1 – FY14 Q1**
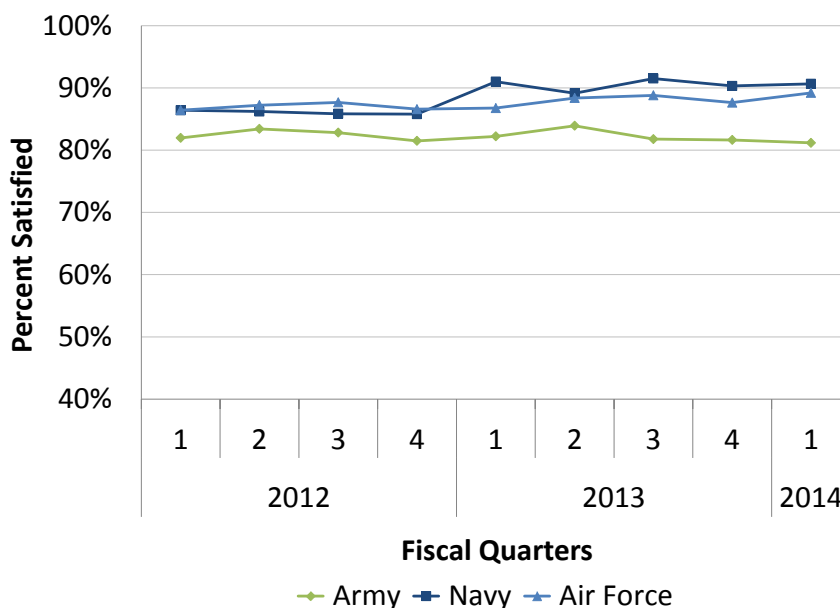
2014 MHS Review Group
Source: Air Force Service Delivery Assessment (SDA); Army Provider Level Satisfaction Survey (APLSS); Patient
Satisfaction Survey (PSS), June 2014
*Each Services' patient satisfaction survey collects data using different modes. AHRQ reports that
collection modes for patient satisfaction data produce significantly different response rates and
satisfaction scores.

TROSS: The TROSS is sent randomly to MHS beneficiaries following outpatient encounters
with a MTF (including DHA facilities) or civilian provider. Respondents include TRICARE
Prime enrollees and those not enrolled but eligible for TRICARE through other plan options,
such as TRICARE Standard or Extra. Responses are defined as direct care if the patient received
the outpatient care at an MTF and purchased care if the care was received from a civilian
provider, regardless of the patient's TRICARE plan. In this report, two TROSS questions are
evaluated, one composite and one standalone question (Note: satisfaction with network access is
analyzed in the purchased care section). TROSS metrics are compared to benchmarks
established by AHRQ through the Consumer Assessment of Healthcare Providers and Systems
(CAHPS). The MHS compares to the CAHPS 75th percentile for its TROSS access to care
composite. There is no benchmark for the TROSS question asking whether the patient gets care
when needed. (See Appendix 3.11 for specific questions asked on the TROSS and HCSDB
including the CAHPS percentiles.)

TROSS Overall Access to Care: Over three quarters of FY 2013, the average satisfaction
ratings for direct care matched the contemporaneous CAHPS benchmark of 60 percent (see
Figures 3.22 and 3.23). Only the NCR MD demonstrated substantial variation, falling below the
CAHPS benchmark. TROSS surveys average 64,700 responses annually with a response rate of
19.2 percent for the direct care component.

Figure 3.22 TROSS – Satisfaction with Access to Care – Direct Care, FY11 Q1 – FY13 Q4
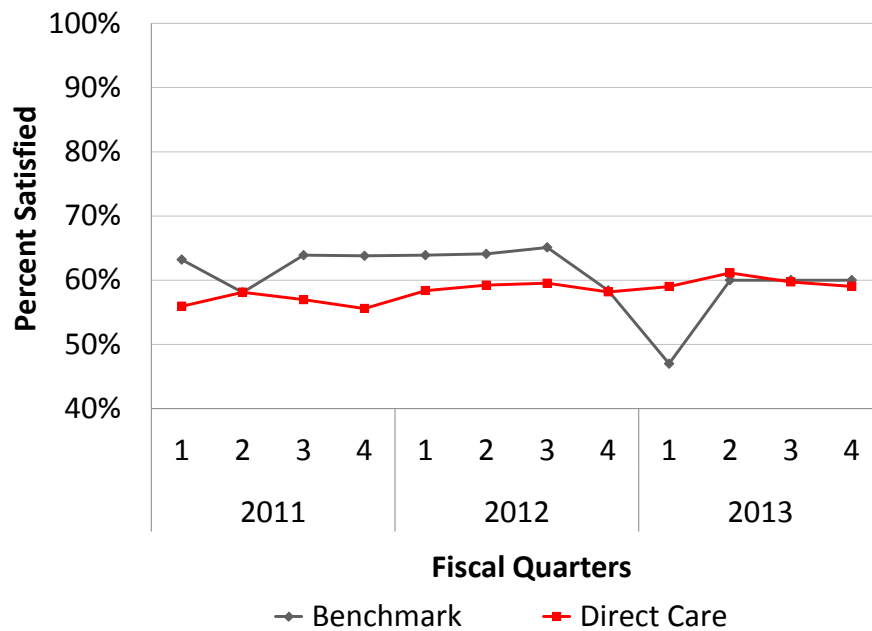
2014 MHS Review Group
Source: Department of Defense TRICARE Outpatient Satisfaction Survey (TROSS), June 2014
*Benchmark changes quarterly

Figure 3.23 TROSS – Satisfaction with Access to Care – By Service, FY11 Q1 – FY13 Q4
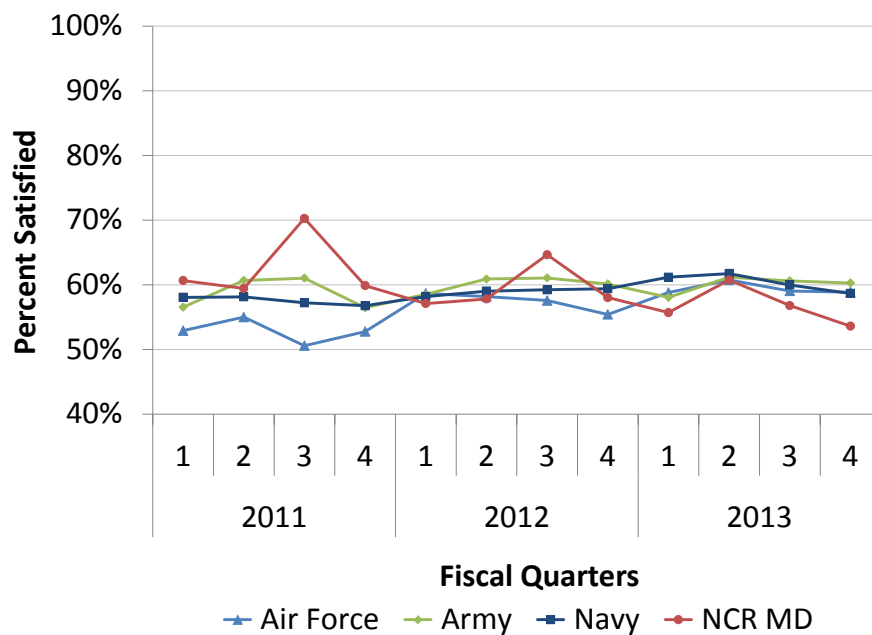
2014 MHS Review Group
Source: Department of Defense TRICARE Outpatient Satisfaction Survey (TROSS), June 2014

Seeing Provider When Needed. Figures 3.24 and 3.25 display patient satisfaction with "seeing provider when needed." Across the direct care component, beneficiaries report higher satisfaction with "seeing provider when needed" than with their overall access. There is no CAHPS benchmark for this measure of satisfaction.

Figure 3.24 TROSS – Satisfaction with "Seeing Provider when Needed." Direct Care, FY11 Q1 – FY13 Q4
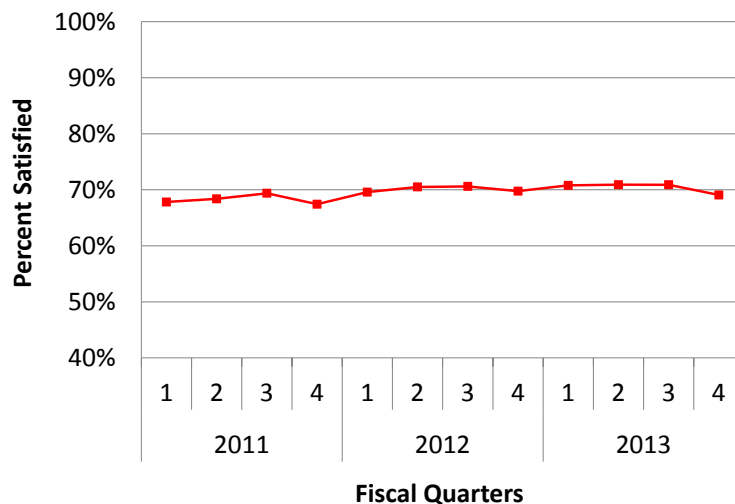
2014 MHS Review Group
Source: Department of Defense TRICARE Outpatient Satisfaction Survey (TROSS), June 2014

Figure 3.25 TROSS – Satisfaction with "Seeing Provider when Needed," by Service, Direct Care, FY11 Q1 – FY13 Q4
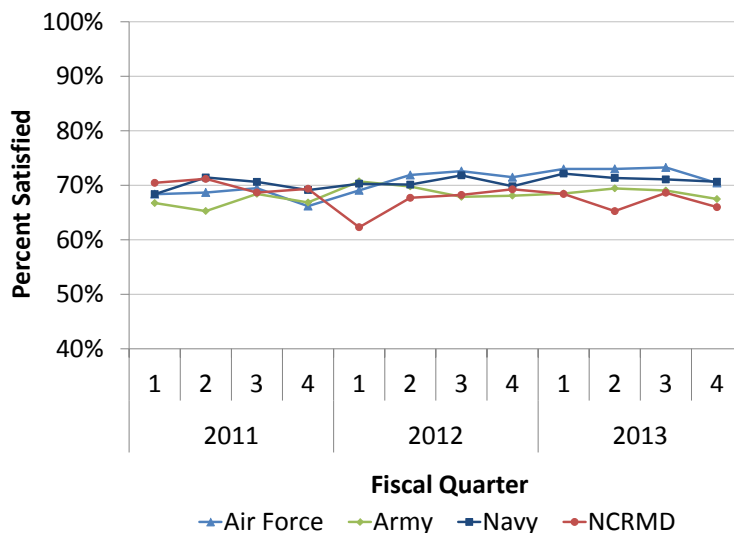
2014 MHS Review Group
Source: Department of Defense TRICARE Outpatient Satisfaction Survey (TROSS), June 2014

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TROSS Patient satisfaction with "seeing provider when needed" is higher than overall satisfaction with access. This indicates that satisfaction with supplemental ATC measures included in the overall access composite, such as time spent in the waiting room and communication with a provider, contribute substantially to the overall access to care score. The degree to which these factors contribute to a patient's perception of access should be further analyzed.

HCSDB: HCSDB is sent randomly to all MHS-eligible users and non-users, independent of whether they had a recent encounter. Respondents include those enrolled to TRICARE Prime (MTF and network enrollees) and non-enrolled beneficiaries who may receive care in MTFs or through the purchased care system. For this report, only the HCSDB results for Prime enrollees are presented (Note: Prime beneficiaries enrolled to the network are presented in the purchased care section). Beneficiary responses to two composite questions that address the beneficiary's ability to "get care quickly" and "get needed care" are evaluated. The HCSDB response rate is 18 percent. (See Appendix 3.12 for questions and CAHPS benchmarks.)

HCSDB Getting Care Quickly. Satisfaction with "getting care quickly" has remained relatively constant over time. Over the past four years MTF-enrollee satisfaction ranges from 71 to 74 percent and is below the CAHPS benchmark of 86 percent. Figures 3.26 and 3.27 display Service-level satisfaction with "getting care quickly". Three of the Services remained relatively constant over time, although the NCR MD demonstrates variation in satisfaction and has lower satisfaction with "getting care quickly" than the other Services. There were no HCSDB data available in FY 2013 Q4. No information was available on the number of HCSDB respondents or response rate.

Figure 3.26 HCSDB – Satisfaction with "Getting Care Quickly", FY10 Q1 – FY14 Q2
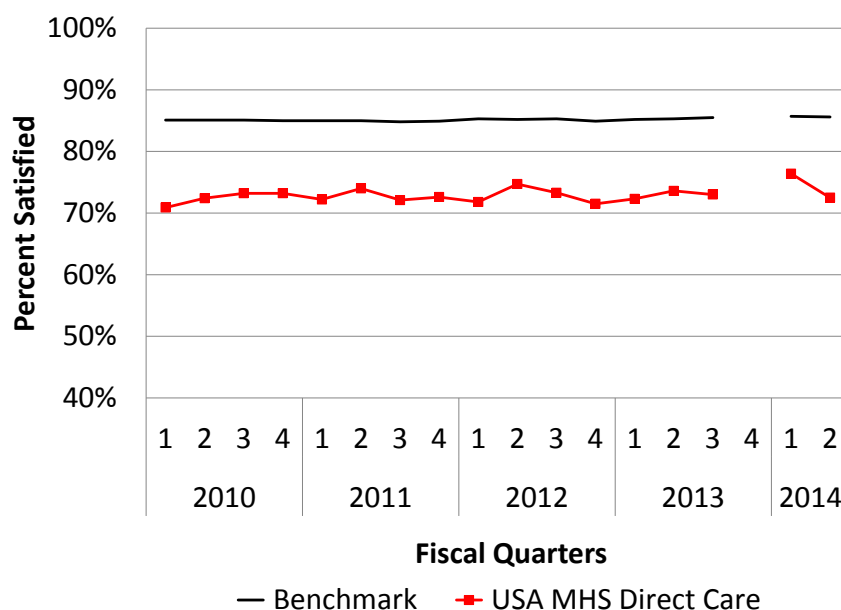
2014 MHS Review Group
Source: Health Care Survey of Department of Defense Beneficiaries (HCSDB), June 2014

Figure 3.27 HCSDB – Satisfaction with "Getting Care Quickly" – by Service, FY10 Q1 – FY14 Q2
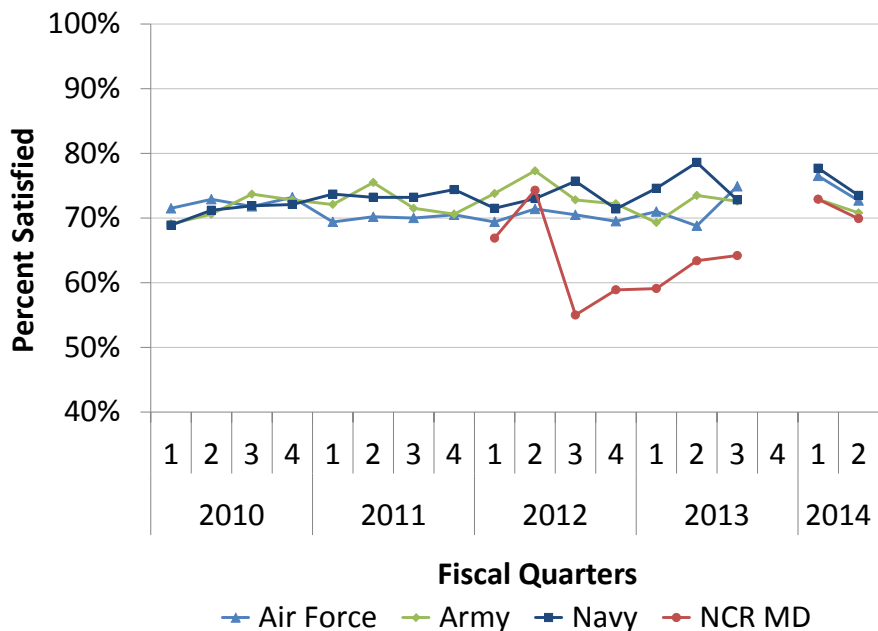
2014 MHS Review Group
Source: Health Care Survey of Department of Defense Beneficiaries (HCSDB), June 2014

HCSDB Getting Care When Needed. Patient satisfaction with "getting care when needed" does not differ greatly from satisfaction with "getting care quickly." Over the past four years, MTF-enrolled patient satisfaction ranges from 71 to 76 percent and has remained below the CAHPS benchmark of 85 percent in each quarter. Figures 3.28 and 3.29 display Service-level satisfaction with 'getting care quickly". On average, the Services have remained at or above 70 percent satisfaction for the past four years while the NCR MD remained below 70 percent until the most recent survey quarter. No information was available on the number of HCSDB respondents or response rate.

Figure 3.28 HCSDB – Satisfaction with "Getting Care When Needed", FY10 Q1 – FY14 Q2
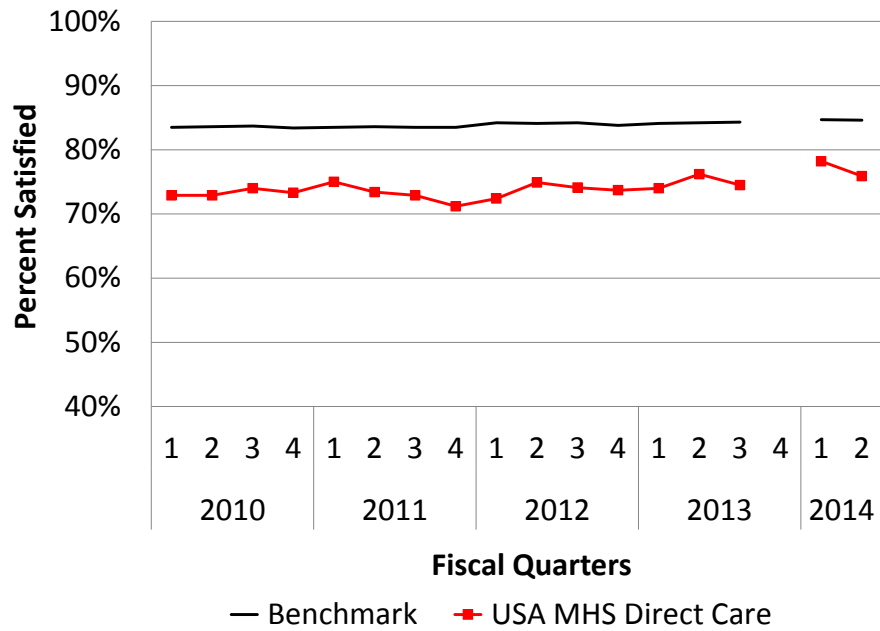
2014 MHS Review Group
Source: Health Care Survey of Department of Defense Beneficiaries (HCSDB), June 2014

Figure 3.29 HCSDB – Satisfaction with "Getting Care when Needed" – by Service, FY10 Q1 – FY14 Q2
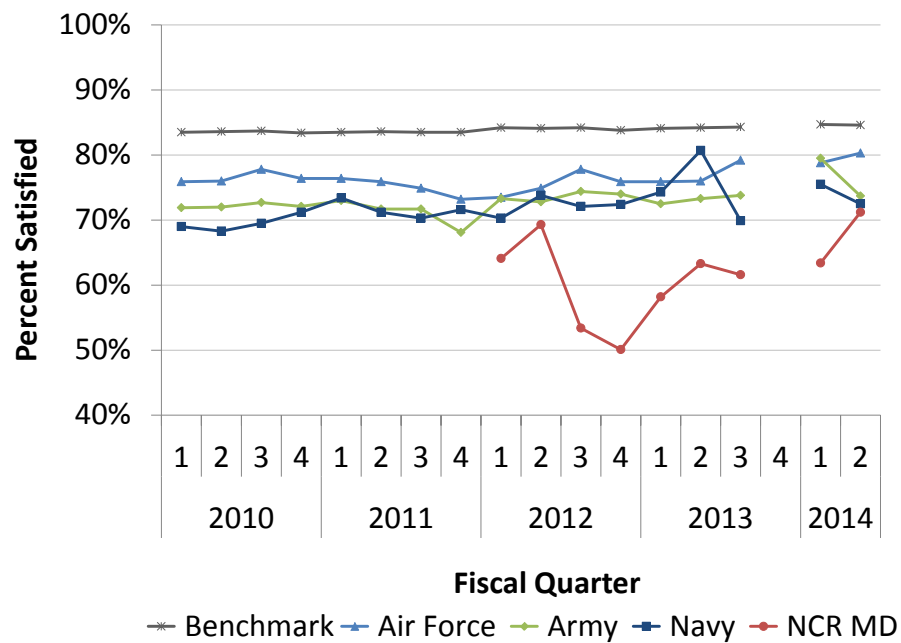
2014 MHS Review Group
Source: Health Care Survey of Department of Defense Beneficiaries (HCSDB), June 2014

Purchased Care

TRICARE Prime beneficiaries are entitled to seek medical care in the purchased care sector if that care is not available at the MTF. The current TRICARE contracts do not require TRICARE regional contractors to provide the same level of data on access to care as is available in the direct care component. The TRICARE regional contractors do not collect primary care access data; however, they do report the percent of specialty appointments meeting the MHS access standard. In addition, there is variation in reporting among the TRICARE regional contractors.

Each of the three regional contractors in the United States is required to develop a network of contract providers to serve Prime beneficiaries living within 40 miles of an MTF (Prime Service Areas [PSA]). This same network of providers also serves as the TRICARE Extra network for beneficiaries using TRICARE Standard. Although regional contractors are not required to contract with providers outside of PSAs, they are encouraged to do so to further expand the TRICARE Extra network. To evaluate whether patients receive a high degree of access to network providers in the United States, several measures are analyzed, including network adequacy (number of network providers and drive time to a provider), 28-day Access Standards Reports provided by the contractors, and patient satisfaction.

Overseas network care is managed by the TOP contractor, International SOS. Data indicating whether 28-day access standards are met are not available; however, the robustness of a network can be assessed based on the number of contracted providers and the percentage of claims paid to network providers. Survey data are also collected to determine whether patients are satisfied with network care overseas. Like in the United States, if a specialist is not available, the contractor is contractually responsible for locating a non-network provider.

Network Adequacy (United States)

In the United States, the number of contract network providers within a PSA is based on the TRICARE-eligible beneficiary population within that PSA. Figures 3.30 and 3.31 show the number of providers per enrolled beneficiary within each region's PSAs. Most of the increase in the number of providers per enrolled beneficiaries is largely attributed to the change to the new contractor in the West region, which has a larger network of providers. It should be noted that these figures represent network providers. In cases where a contracted specialist is not available, the contractor has contractual responsibility to locate a non-network provider for Prime-enrolled beneficiaries. Since FY 2011, more than 97 percent of referrals were to a network provider or the MTF in each of the three regions, with only 3 percent to non-network providers.

Figure 3.30 Primary Care Providers per 1,000 Enrolled Beneficiaries (Restricted to beneficiaries living in Prime Service Areas), FY11 Q1 – FY13 Q3
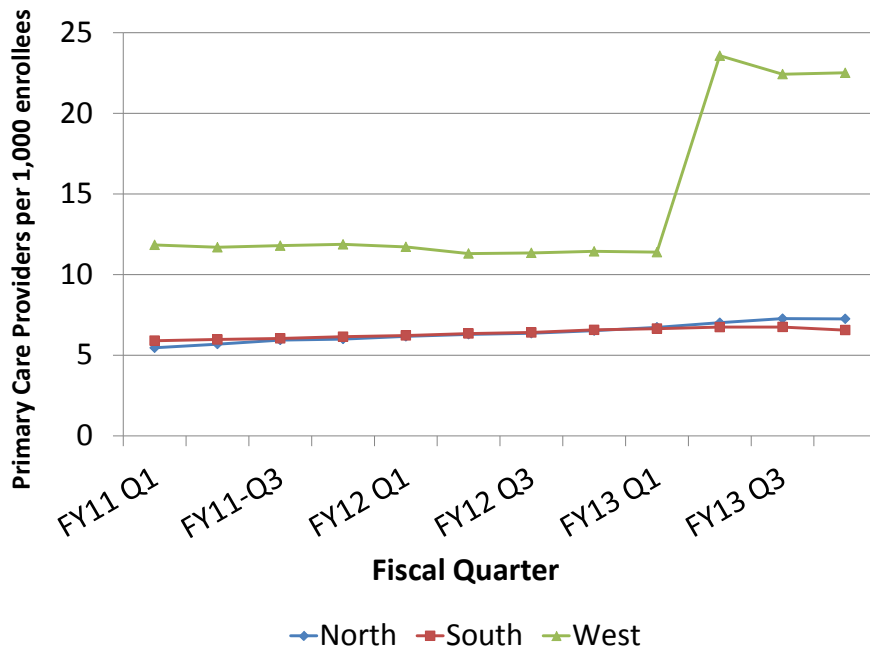
2014 MHS Review Group
Source: Regional Managed Care Support Contractors Data System, June 2014

Figure 3.31 Specialty Care Providers per 1,000 Enrolled Beneficiaries (Restricted to beneficiaries living in Prime Service Areas), FY11 Q1 – FY13 Q3
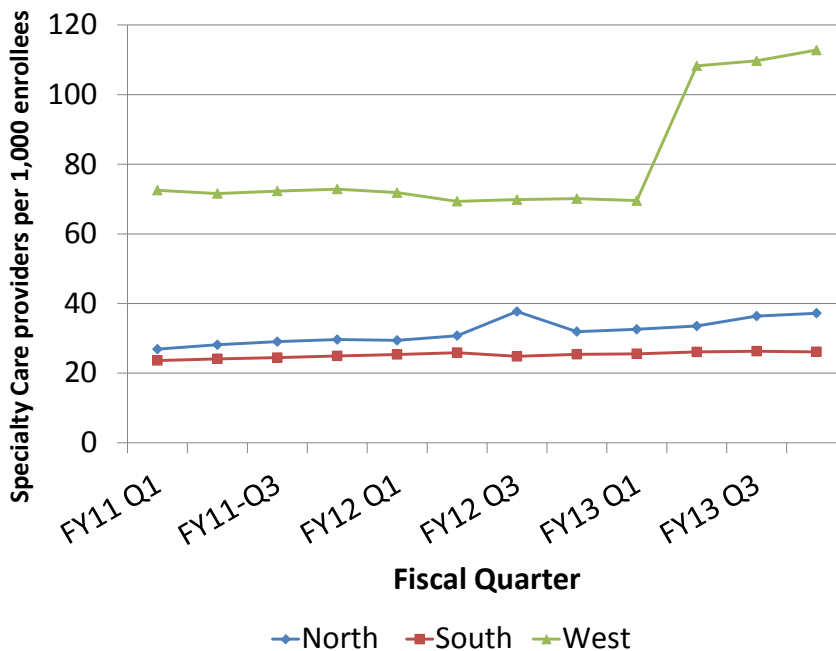
2014 MHS Review Group
Source: Regional Managed Care Support Contractors Data System, June 2014

The percentage of patients driving greater than 60 minutes for a specialist appointment is another measure to evaluate network adequacy. Contractors are required to refer patients to non-network providers before requiring the patient to drive greater than 60 minutes. If a specialist is not available within 100 miles of the patient's PCM, the Prime Travel Benefit provides reimbursement for travel expenses. Figure 3.32 indicates that in 81 of the 102 PSAs, patients are able to see a specialist within 60 minutes of their home over 90 percent of the time. In six PSAs, patients must drive more than 60 minutes over 25 percent of the time.

Figure 3.32 Percent of Patients in a PSA Required to Drive More than 60 Minutes to see a Specialist
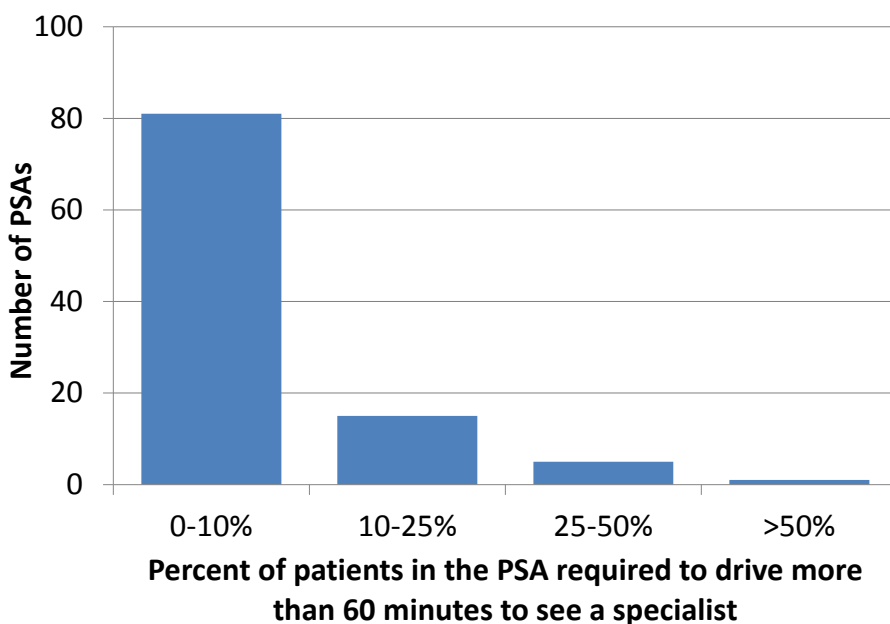
2014 MHS Review Group
Source: Regional Managed Care Support Contractors Data System, June 2014

28-Day Access to Network Care (United States)

Network compliance with specialty care access standards is measured by the percentage of specialty referrals with an appointment within 28 days. This measure includes all referrals originating within an MTF and sent to a network provider, as well as those referred from within the network. This metric does not take into account the administrative time to process the referral and is based on when the patient made the appointment; these two factors may contribute to the appointment being outside the 28-day standard. The 28-day access standard is tracked within the 102 PSAs. Figure 3.33 plots the percentage of referrals meeting the 28-day access standard for each PSA. In FY 2013, an average of 68 percent of specialty appointments met the MHS access standard and there is an upward trend in the number of specialty appointments meeting the 28-day standard. There is variation across PSAs with averages ranging from 53 percent to 84 percent.

Figure 3.33 Percentage of Network Referrals Meeting 28 Day Access Standard, by PSA (Each point represents one PSA), FY11 Q1 – FY14 Q4
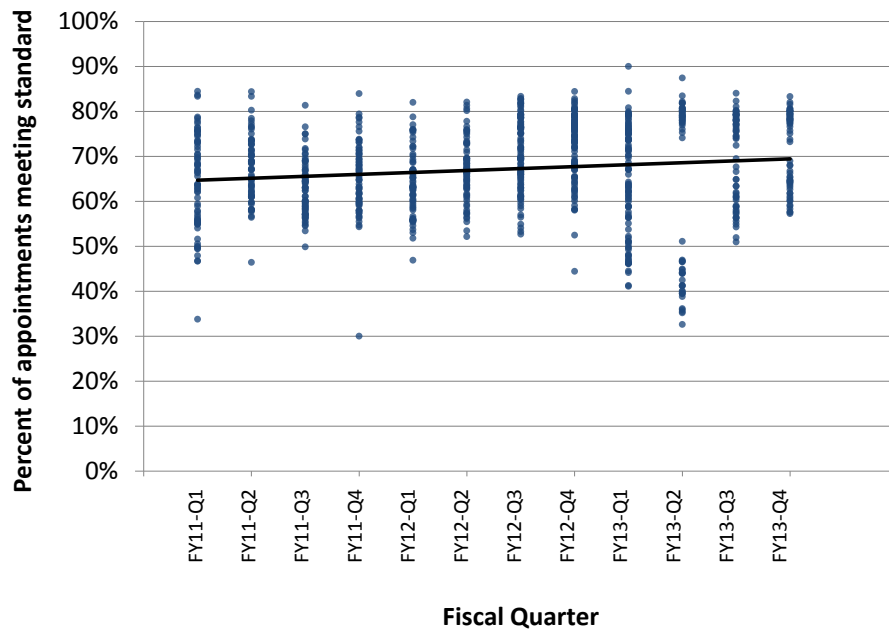
2014 MHS Review Group
Source: Regional Managed Care Support Contractors Data System, June 2014

Patient Satisfaction with Network Access to Care (United States)

Satisfaction with access to care in the network is measured by TROSS and HCSDB. The results in Figure 3.34 and Table 3.5 demonstrate that patient satisfaction with access to care in the network is consistently close to CAHPS benchmarks. Note that HCSDB results are available through Q2 of FY 2014, but TROSS results are only available through FY 2013. The break present in the HCSDB results is because the survey was not fielded in Q4 of FY 2013.

Figure 3.34 U.S. Network Satisfaction: Four Satisfaction Measures, FY10 Q1 – FY14 Q1
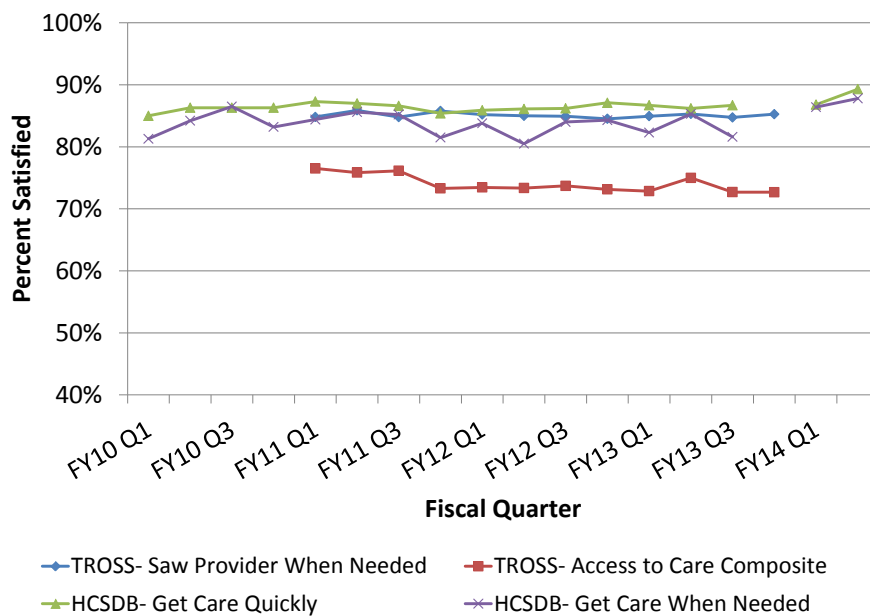
2014 MHS Review Group
Source: Department of Defense TRICARE Outpatient Satisfaction Survey (TROSS), June 2014

Table 3.5 CAHPS Benchmarks

Benchmark	Percent
TROSS-Access to Care Composite (FY 2013)	60%
HCSDB-Get Care Quickly (FY 2014)	86%
HCSDB-Get Care When Needed (FY 2014)	85%

2014 MHS Review Group
Source: Consumer Assessment of Healthcare Providers and Systems, June 2014

Access to Network Care (Overseas)

Network adequacy overseas is measured by the number of providers and the percent of referrals seen by a network provider. The total number of network providers has remained stable since 2012 at approximately 9,300, and more than 83 percent of the claims processed were from TOP network providers. Any TOP-enrolled beneficiary who cannot be appointed to a network provider is referred to a non-network provider.

Overseas network satisfaction is also evaluated through patient survey data. The two questions are:

1) If you were referred to a specialist in the last 60 days, how satisfied were you with International SOS' coordination of the referral?

2) If you received services from a civilian network provider, how satisfied were you with the service you received?

Figures 3.35 and 3.36 display quarterly results for these two questions. Responses are measured on a 1-6 scale, with 6 being "completely satisfied." The mean satisfaction score for civilian network providers and specialists is close to 5, increasing slightly over 3 years. Since this is a unique military contract, the data can only be compared with previous satisfaction surveys.

Figure 3.35 Satisfaction with International SOS Coordination of Specialty Care, FY11 Q2 – FY13 Q4
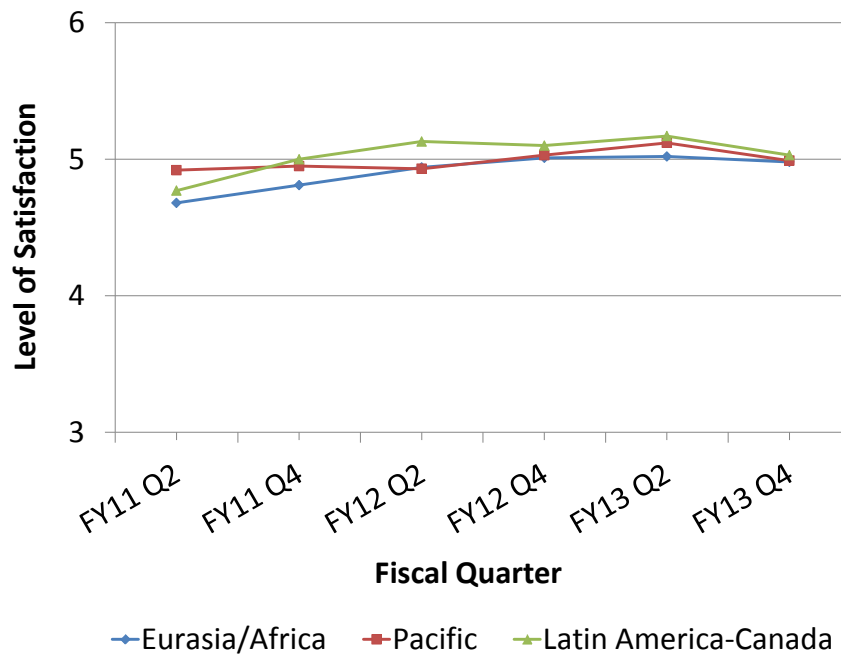
2014 MHS Review Group
Source: TRICARE Overseas Program Contractor Data Systems, June 2014

Figure 3.36 Satisfaction with Civilian Network Care, FY11 Q2 – FY13 Q4
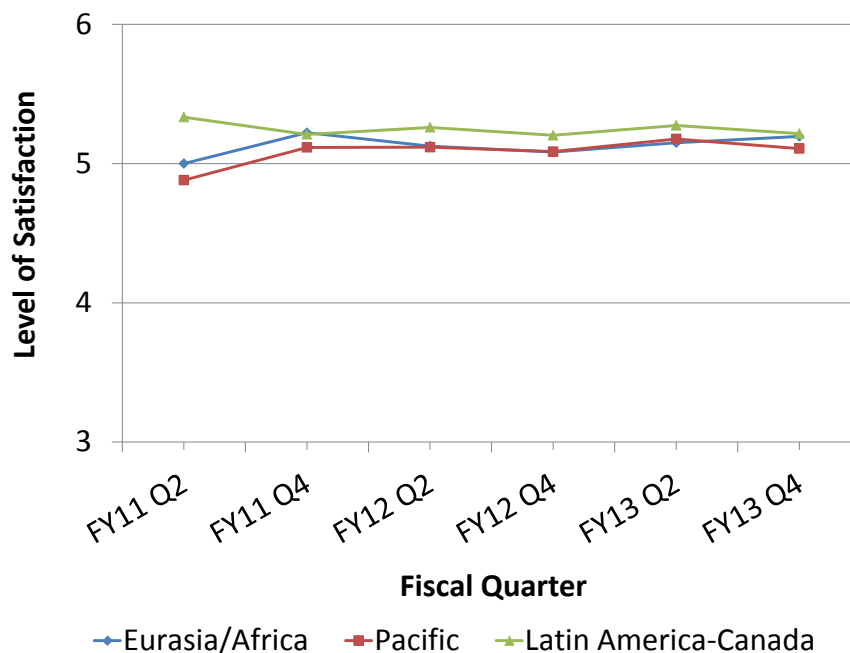
2014 MHS Review Group
Source: TRICARE Overseas Program Contractor Data Systems, June 2014

Site Visit Information

Introduction

The site visits were conducted to validate if the access to care data correlated with execution of policy, performance measures, and patient experiences. The site visits demonstrated that MTF executive leadership, as well as clinic leadership and staff, are aware of their patients' experiences and perceptions of access at the majority of sites. It was also apparent that there is a patient-centered culture driven by the leadership of every facility, as witnessed during the executive leadership sessions.

The patient-centered culture was repeatedly observed when clinics found a way to get a patient the care they needed despite there being limited or no appointments available. Rather than ask the patient to call back at a later time or date, scheduling clerks, nurses, and providers would collaborate to identify options for the patient to obtain care. As an example of patient-centeredness, one MTF provides patients with historical average wait times for network care to assist the patient in making an informed decision about where they would like to be seen. It is standard practice across all seven MTFs to schedule any patient follow-up visit at the clinic checkout desk before the patient departs. If this was not possible (e.g., the requested follow-up appointment date was beyond the published schedule), a reminder list was employed by several clinics. Though these lists were not used by all MTFs, those that were used were managed appropriately, allowing the MTF to effectively facilitate future appointments.

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Most sites had a centralized access management group that monitored all clinics and provided regular access analysis and training down to the clinic leadership level. Staffing of these functions varied among sites. Although leadership was keenly aware of the information the access to care management group provided, most of the frontline staff was unaware of clinic performance.

Regional and Headquarters Leadership Survey

The Regional Headquarters leadership completed a survey to capture its perspectives on subordinate facility performance and processes. The survey included eight questions on access, five scored on an objective Likert scale and three with a narrative. The Likert scale responses from worst to best: Not at all, partially, neutral, effective, and very effective. On the five objective questions, the headquarters indicated an 83-percent level of confidence that subordinate MTFs performance relative to access is "effective" or "very effective." On the narrative questions, the regional level reported focused efforts on regular performance reviews with initiatives to improve access.

On-site: Leadership, Staff, Patients

MTF leadership demonstrated several initiatives focused on improving access to care, including informing executive and other MTF staff members on performance to drive improvement. These initiatives included presentations to the executive leadership by clinic managers, provider scorecards based on performance metrics, and updates at weekly clinical business forums. Other initiatives focused on changing daily operations to be more patient-centered, including modification of operating hours and provider duty hours as well as employing providers dedicated to seeing walk-ins.

MTF leadership and staff across the majority of facilities were aware of specific access issues, which appeared to be aligned with their patients' perceptions of access. Most of the MTFs relied on the purchased care network to meet patients' same day primary care needs when appointments were no longer available. While all sites had processes for referring to either an UC center or neighboring MTF, the majority of patients expressed that they prefer to be seen in the MTF and are more satisfied with the care they receive when seen by their PCM. Same day access is also limited due to staff members converting same day appointments to accommodate follow-up needs. In a few clinics, same day appointments are only opened first thing in the morning, so patients are told to call back to get a same day appointment. While staff usually followed the UC referral processes when unable to offer an appointment during the initial contact, staff and patients acknowledged that patients are asked to call back on occasion. Additionally, the move to a simplified appointment system in primary care has caused confusion in the use of specific appointment types related to appointment time frames (routine versus follow-up care). This confusion was not apparent in specialty clinics; however it was noted that there are no standards for the time to procedure.

The greatest challenge faced by the smaller facilities visited is staffing shortages, some of which are brought on by the annual permanent change of station season, but also by other unavoidable events, including resignations, furloughs, retirements, illness/injury, and deployments. Same day

appointment availability is most heavily affected by these shortages. Additionally, the civilian employee hiring process is lengthy and cumbersome, which is a key factor in access degradation in some of these facilities.

Patients at a few sites stated that access to specialty care within the network or other direct care facilities in the area was inconvenient. While the complaint was related to the driving distance involved either in highly congested areas or very remote areas, it was still within the 60-minute drive time standard. One active duty member from an operational platform expressed frustration at navigating the system to see a specialist.

TOL and SM are demand management tools that can be used to reduce face-to-face appointments and access demand, in addition to increasing patient convenience. There was variance in prioritizing web-enabled appointing and education of TOL. On the other hand, SM is becoming increasingly useful to MTFs and the majority of sites are aggressively marketing its functionality for patients. MTFs have increased enrollment in SM by 38 percent in the last year. All MTFs would benefit from increased marketing and utilization of both the TOL appointing function and the use of SM for enhanced patient access to primary care; increased TOL appointing allows patients to book 24 hours a day, seven days a week, rather than just when the appointment desk is open during duty hours and allows patients to communicate and have virtual visits with their PCM in lieu of face-to-face visits.

Site Visit Survey Results

In reviewing the data from the site visit surveys, it is evident that regional headquarters and MTF leadership are aligned in their understanding of access within the MTF (Figure 3.37). At most MTFs, there was equal knowledge of access practices and performance between MTF mid-level managers and the clinic staff interviewed. At all but two sites, the perspectives of the subject matter experts (SMEs) and staff are in line with the patients' perspectives. Of note, at one of these two sites, patients and staff had a more positive view of access than did the SMEs.

Figure 3.37 Access: Perceptions Among Regional Headquarters, MTF Leaders, Subject Matter Experts (SMEs), Staff Members and Patients During Seven MHS Site Visits, 2014
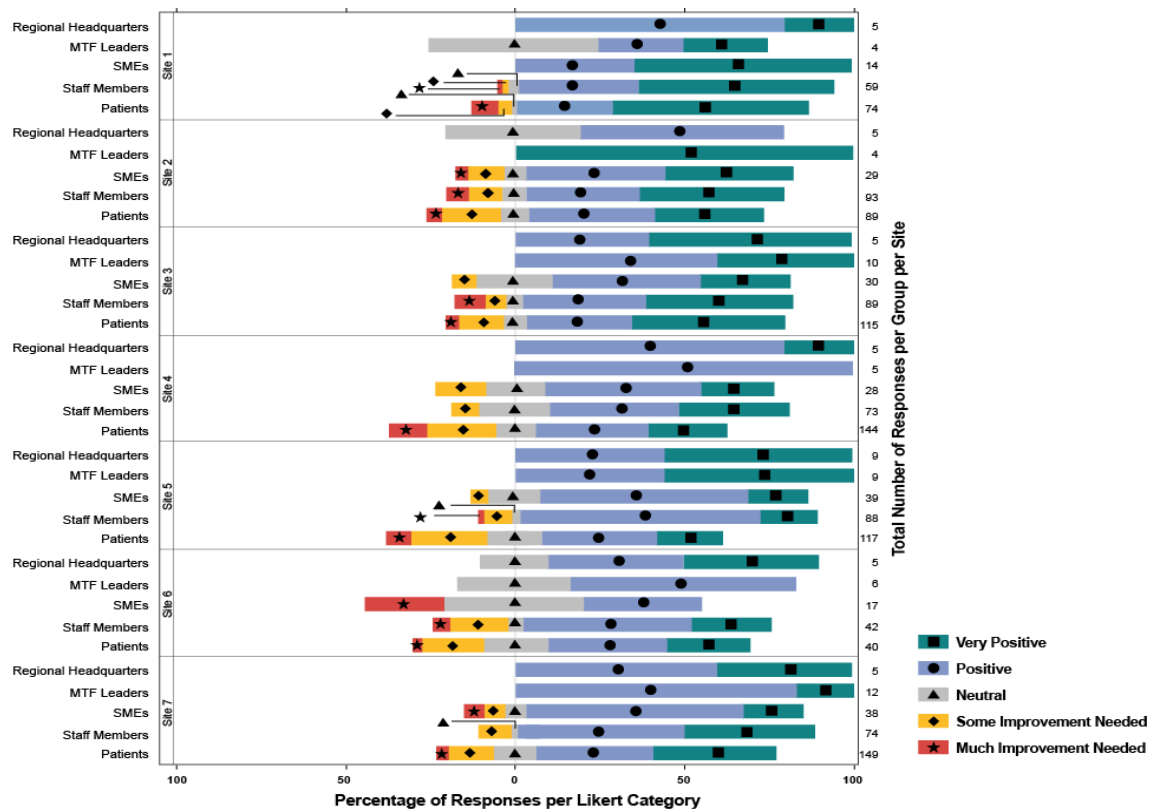
2014 MHS Review Group
Source: MHS Site Visit Survey, June - July 2014

Staff Town Halls

Staff town halls were conducted to assess staff knowledge and experience with access policies and procedures. The theme across all sites indicated there are various levels of success and challenges in meeting access standards. Staffing shortages (seasonal and persisting) and variations in schedule management practices among clinics were most often cited as challenges to meeting demand. Several comments indicated that schedules fill up very quickly after being released. Staff in primary care and specialty care often had different perspectives and challenges. Staff demonstrated good understanding of access issues within their areas and is doing everything within their control to take care of the beneficiary.

Beneficiary Town Halls

Beneficiary town halls included a mix of beneficiary categories and were conducted to assess experience with access to care at the MTF and in the purchased care component. An identified theme at the site visits was that patients expressed difficulty in obtaining appointments. Of the 100 comments about access, 29 percent of responses were positive and 71 percent were negative. Identified problem areas included difficulty in getting an appointment when wanted, being told

to call back for an appointment, or difficulty in obtaining a specialty appointment. A variety of primary and specialty care clinic types were identified at town halls as presenting access challenges; no single clinic type was consistently identified. Some beneficiaries expressed challenges when they called the MTF appointment line and were more successful in obtaining an appointment when they went to the clinic in person. In addition, beneficiaries at several sites reported they were referred to an ED or UC center to obtain care when acute appointments were not available at the MTF. Beneficiaries reported SM is a welcome addition and a useful option for contacting their provider. They also expressed a wish that more providers would use SM. Overall, the participating beneficiaries expressed a range of experiences that identified areas of MTF performance that should be sustained and others that should be improved.

Access to Care: Overall Findings and Recommendations

Based on the analysis of MHS access data, the MHS provides ready access to medical care as defined by access standards in policies and guidance of HA, the military medical departments, and in TRICARE contract specifications. In accordance with DoD's access standards, MTFs have made significant progress in the last three years to increase MTF access to care capacity within the direct care component. The majority of patients in the direct care component receive medical care within MHS access standards. In addition to face-to-face encounters, the direct care component has multiple modalities for accessing care and assistance, including Secure Messaging, TRICARE On-Line, and a purchased care safety net. Satisfaction surveys demonstrate that the majority of patients reported being satisfied with access to care. There is variance between satisfaction scores in the direct care and purchased care components, depending on which survey tool is used. In addition, the town hall respondents reported instances of access challenges, which present opportunities for further exploration and improvement. Access policy has achieved significant standardization in primary care over the past four years. Vertical alignment in access policy is noted, and site visits revealed a strong patient-centered culture across all levels of staff.

Specific findings are provided below:

1. The MHS provides ready access to medical care as defined by access standards in the policies and guidance of HA, the military medical departments, and in TRICARE contract specifications.
2. The review looked at specialty care as a whole, not individual product lines. Variance in specialty care business practices was noted on site visits.
3. There is variation in business process standardization, as evidenced in town hall meetings where some patients reported difficulty in getting an appointment or were asked to call back for an appointment.
4. 32 C.F.R. § 199.17 requires a level of detail not available for the purchased care component under current TRICARE contracts. While data are limited, the surrogate access measure is patient satisfaction. There are no access data available for non-Prime enrolled beneficiaries (TRICARE Standard / Extra). In the review, it was noted that the GAO and DoD IG reports focused on access for non-enrolled beneficiaries in the

purchased care component; however, none focused on access for TRICARE Prime enrollees.

5. There are multiple patient satisfaction survey tools (Service-specific surveys, TROSS, HCSDB) used across the MHS with varying response rates and results.
6. There is variation in reporting of purchased care access data from each of the TROs to the Services.
7. There is no standardized MHS measure for evaluating office waiting times, as required by 32 C.F.R. § 199.17.
8. There is variation in the promotion of SM and TOL as methods for enhanced access to care in the direct care component.
9. Each Service has developed its own training courses for access, clinic, and group practice management. The Services' customer service training is not standardized.

Recommendations to Improve Access to Care

1. **MHS governance should increase the focus on the standardization of specialty care in the direct care component through the following: a) create the Tri-Service Specialty Care Advisory Board, b) fund requirements to standardize specialty product lines, c) establish business rules for access, and d) define performance review metrics for specialty care product lines.**
2. **MHS governance should standardize MHS direct care component access to care business practices by replacing the MHS Guide to Access Success with a MHS policy memorandum and subsequent DoD Instruction.**
3. **MHS governance should commission an external study to evaluate purchased care access for TRICARE Prime enrollees as it relates to 32 C.F.R. § 199.17. This study should include a review of all available data and recommend metrics for incorporation into current and future TRICARE contracts.**
4. **MHS governance should continue implementation of the Joint Service survey tool, refining access satisfaction questions to include satisfaction with office wait times.**
5. **MHS governance should standardize reporting on access from the TRICARE Regional Offices to the Services.**
6. **MHS governance should promote Secure Messaging and TRICARE On-Line through direct care component standardized business processes and a strategic marketing approach.**
7. **MHS governance should standardize both access to care and customer service training across the direct care component.**

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4.   QUALITY OF CARE IN THE MILITARY HEALTH SYSTEM

Introduction

The Military Health System (MHS) has embraced the Institute of Medicine (IOM) definition of quality as "the degree to which health care services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge."[30] The IOM has set forth six aims for improving the delivery of health care: "safe, effective, patient-centered, timely, efficient and equitable."[31] All Department of Defense (DoD) policies and implementation guidance regarding health care quality are based on these IOM constructs as stated in Health Affairs (HA) Policy 02-016[32] and further elaborated in DoD Instruction and Manual 6025.13.[33] [34]

HA Policy 02-016 frames the assessment and review of the MHS quality of health care. First, is the foundation for the delivery of high-quality care in place and robust? Second, what are the measurable process and outcomes of care performance of DoD's health care system? Third, how is the health care delivery system and the quality of health care provided viewed by DoD beneficiaries, military leadership, and Congress?

It is the goal of this review to determine if the MHS meets or exceeds benchmarks for health care quality as defined by the Office of the Secretary of Defense (OSD), Service policies and guidance, and TRICARE contracts.

Quality of Care Governance

Issues related to the quality of clinical care are brought to the MHS governance through the Clinical Quality Forum (CQF), a collaborative forum with representation from the direct care and purchased care components. The CQF has the responsibility for assessing clinical quality across the MHS, based on relevant clinical indicators for health care system performance, including beneficiary and stakeholder perceptions of care, and activities focusing on quality improvement, patient safety, and risk management events. Additionally, the CQF develops, or may endorse, recommendations for clinical quality improvement for approval by Medical Operations Group (MOG), Medical Deputies Action Group (MDAG) or Senior Medical

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[30] Institute of Medicine. (1990). *Medicare: A Strategy for Quality Assurance*. Vol. 1. Washington, D.C: National Academy Press.

[31] Institute of Medicine. (2001). *Crossing the Quality Chasm: A New Health System for the 21st Century*. Washington, D.C: National Academy Press.

[32] Health Affairs. HA Policy 02-016: Military Health System Definitions of Quality in Health Care. May 2002.

[33] Department of Defense. DoD Manual 6025.13: Medical Quality Assurance (MQA) and Clinical Quality Management in the Military Health System (MHS), October 2013.

[34] Department of Defense. DoD Instruction 6025.13: Medical Quality Assurance (MQA) and Clinical Quality Management in the Military Health System (MHS), February 2011.

Management Advisory Committee (SMMAC) (see Section 2 of this report regarding MHS governance).

Following the establishment of the Defense Health Agency (DHA), the CQF began reporting its recommendations for clinical quality improvements to the MOG, which in turn engages in a process to evaluate recommendations and convey those deemed appropriate to senior military leadership.

Each of the Services implements quality improvement efforts at its respective MTFs in line with its organizational processes through Joint Operational Commands, Regional commands, or in the case of the Air Force, Field Operating Agencies.

Policy Review

Subject matter experts (SMEs) from the Departments of the Army, Navy, Air Force, and DHA conducted a review of documents addressing the quality of care in the MHS, to include: 1) legislation that sets authority for the MHS and DoD on matters of quality, 2) DoD issuances addressing quality of care within DoD or the Services, 3) DoD publications guiding the delivery of services, including memoranda, operational or implementation guidance, 4) studies examining quality of care, 5) studies or reviews pertaining to quality of care in the MHS performed by the Government Accountability Office (GAO) after 2003, and 6) studies and reviews performed by the Department of Defense Inspector General (DoD IG) after 2003. The review focused on whether policies were within the scope of quality of care and identified the policy intent and agencies responsible for implementation (see Table 4.1). These policies and practices were contrasted among Services and differences identified between overarching DoD requirements and Service policies. (For a complete list of policies reviewed for this report, see Appendix 4.1.)

Table 4.1 Numbers of Policies, Instructions, Resources and Manuals Reviewed

Level of Authority	Number Reviewed
Legislation	8
Department of Defense	18
Army	28
Navy	14
Air Force	20
National Capital Region	1

Source: 2014 MHS Review Group, July 2014

DoD Policy Guidance

DoD policy is guided by statutory and regulatory requirements:

- 10 United States Code (U.S.C.) 55 § 1102 defines medical quality assurance records, peer review, and the type and extent information is protected from disclosure outside DoD.[35]

- 32 Code of Federal Regulations (C.F.R) 199.15, "*Quality and Utilization Review Peer Review Organization Program*" establishes rules and procedures to review the quality, completeness, and adequacy of purchased care provided, as well as its necessity, appropriateness and reasonableness. Furthermore, it defines the requirements for external peer review in the purchased care component.

DoD Instruction 6025.13 and DoD Manual 6025.13, "*Medical Quality Assurance (MQA) and Clinical Quality Management in the MHS*," provide the Services with guidance on clinical quality. DoDM 6025.13 establishes medical quality assurance programs, implements policy, assigns responsibilities, and provides procedures for managing DOD Medical Quality Assurance (MQA) and clinical quality management. This manual requires the implementation of a performance measurement system for clinical quality in every MTF as a dedicated program to confirm quality-of-care outcomes and identify opportunities for improvement.

DoDI 5010.43, "*Implementation and Management of the DoD-Wide Continuous Process Improvement/Lean Six Sigma (CPI/LSS) Program*," establishes policy, assigns responsibilities and provides guidance for implementation of CPI/LSS programs. It requires that all DoD components implement CPI/LSS as an essential tool for improving their operating effectiveness, apply its methodologies and practices to ensure cost-effective management, and implement enhanced processes and technologies. Furthermore, this instruction requires that demonstrated performance improvements be documented in a transparent fashion for managerial review, assessment, and knowledge sharing.

HA Policy 10-008, *"Policy Memorandum for Military Health System Health Care Quality Assurance Data Transparency,"* requires the MHS to ensure that quality assurance information is clear, transparent, and readily available to MHS providers, as well as to its beneficiaries.

Army Policy Guidance

Army Regulation (AR) 40-68 implements DoDI 6025.13 guidance on care quality, DoDM 6025.13, DoDD 6000.14, and other DoD guidance. This consolidated regulation prescribes policies, procedures and responsibilities for the U.S. Army Medical Department (AMEDD) Clinical Quality Management Program (CQMP). The CQMP continuously and objectively

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[35] The peer review process refers to the assessment of the quality of medical care carried out by a health care professional, including any such assessment of professional performance, any patient safety program root cause analysis or report, or any similar activity.

assesses individual and institutional performance, aiming to improve the health care provided to eligible DoD beneficiaries.

AR 40-68 includes DoD and statutory policies addressing medical services quality management requirements and organizational performance improvements. It refers to the Joint Commission (TJC) requirement for an organized, self-governing medical staff to provide direction and oversight of the quality of care, treatment, and services delivered by privileged providers. Separately, AR 5-1, *"Management of Army Business Operations,"* further establishes policy and responsibilities for management and measurement of business operations, including Medical Command (MEDCOM) quality-of-care efforts, and continuous improvement efforts.

The Army Medicine 2020 Campaign plan establishes the framework through which AMEDD will achieve a responsive and reliable health service and move toward an integrated and standardized process across the organization with clear performance metrics. The Army Information Paper *"Quality and Patient Safety Program Army Medical Department (AMEDD),"* describes the process to oversee and enforce AMEDD Quality and Patient Safety policies. The Clinical Performance Assurance Directorate (CPAD) monitors that process and reports directly to the Deputy Commanding General of Operations. The CPAD provides education, training, standardization, and leadership visibility to AMEDD's Quality, Patient Safety and Risk Management programs. The CPAD provides professional education to all levels of leadership through courses at the AMEDD Center and School. CPAD provides monthly educational Video Teleconferences (VTC) with all facility quality leads and provides newsletters, milBook, and SharePoint sites to support mentoring at the MTF level. Additionally, CPAD monitors measures of quality within MTFs, Services, and the MHS, comparing them to civilian benchmarks. CPAD further submits near real-time actionable data to the MTFs and devises specific interventions based on data collected. Lessons learned are collected through MHS-level committees and pushed to the Regional leads for dissemination to the field. The CPAD combined with the MEDCOM command inspection program and other self-inspection systems ensure the execution and implementation of policies. CPAD is the MEDCOM lead to develop initiatives, policies, and standards, in close collaboration with the MHS, DHA, Air Force, and Navy.

Navy Policy Guidance

BUMED Instruction 6010.13 provides guidance for Navy's Quality Assurance (QA) program. It applies to all health care personnel providing services in naval MTFs, outlines basic component activities and functions, and requires all medical personnel to participate in ongoing monitoring and evaluation to assess quality of care provided. Furthermore, BUMED 6010.13 requires all MTFs to implement a QA program and maintain TJC accreditation. This QA program is intended to identify patient care improvement opportunities, identify and decrease risk to patients and staff, and provide justification for resource needs. It also monitors and analyzes QA data to identify patterns or processes requiring additional scrutiny.

A separate instruction, BUMED 6000.2E, further establishes policy, publishes procedures, and assigns responsibility for the accreditation of Navy MTFs. It requires that all fixed MTFs and

freestanding ambulatory clinics achieve and maintain TJC accreditation. Possible accreditation programs include Hospital, Ambulatory Care, Behavioral Health Care, and Home Care.

The Navy Surgeon General is responsible for policy and initiatives to support higher authority mandates. Within the Bureau of Medicine and Surgery (BUMED) Clinical Operations Directorate (BUMED-M3) TJC survey reports are analyzed and actionable recommendations are made. Between triennial TJC surveys, a trained team of Navy TJC fellows completes monitoring of compliance with standards and quality goals. Interpretation, feedback, consultation on findings, and any identified performance issues are submitted to senior leaders. Validation of standards compliance is ongoing.

Air Force Policy Guidance

The Air Force Surgeon General (AF/SG)[36] assists the Secretary of the Air Force in development of policies, plans, and programs, establishing requirements, and providing resources to the Air Force Medical Service (AFMS). The AF/SG prepares policies and issues official guidance and procedures to ensure implementation of those policies. The AF/SG manages Quality and Safety programs through the Air Force Medical Operations Agency (AFMOA) and the Directorate of Healthcare Operations (HAF/SG3). Elements of quality and patient safety are integrated throughout AFMS governance and are incorporated into the AFMS Strategic Plan. Additionally, the AF/SG is responsible for Coordinating with the Assistant Secretary of Defense for Health Affairs (ASD[HA]) on Air Force health and medical matters, and for providing guidance to Major Command (MAJCOM) Surgeons.[37]

Air Force Instruction 44-119, "Medical Quality Operations," the central Air Force policy implementing DoD 6025.13, establishes policy and delegates broad oversight responsibility for the Quality/Process Improvement, Patient Safety, Risk Management, Professional Staff Management (Credentialing/Privileging) and Adverse Actions programs in the AFMS to Air Force Medical Operations Agency, Clinical Quality Management Division. This instruction outlines the roles and responsibilities of Air Force MTFs for Continuous Process Improvement (CPI) as implemented within the facilities. This policy requires all active duty fixed hospitals and freestanding ambulatory clinics to maintain accreditation by nationally recognized civilian agencies.[38] AFI 44-119 requires that MTFs maintain ongoing self-inspection activities and procedures.

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[36] Pursuant to 10 USC §§ 8031-8038, and as documented by paragraph 4.3 of AFMD 1, Headquarters Air Force, and this Headquarters Air Force (HAF) Mission Directive. Documented by: Air Force Surgeon General. Air Force Mission Directive 1, paragraph 4.3.

[37] Air Force Surgeon General. Air Force Mission Directive 1-48. November 2011.

[38] *The Joint Commission* (TJC) serves as the civilian accrediting agency for Air Force inpatient facilities. The Accreditation Association for Ambulatory Health Care (AAAHC) serves as the civilian accrediting agency for Air Force outpatient facilities.

AFMOA executes AFMS policies and strategies by engaging MAJCOMs and MTFs, whereas MTFs are responsible for executing AFMS policies, with oversight provided by their respective MAJCOM Surgeon and AFMOA. According to AFI 90-201, the Air Force Inspection System, Unit Effectiveness Inspections, and Wing Commander Self-Inspection Programs are regularly conducted to document mission readiness and compliance with Air Force policy. Additionally, accreditation and certification assessments by independent civilian agencies, as well as regular performance management forums conducted by AFMOA are used as means of monitoring MTF compliance with AFMS policies, accreditation standards, and performance against national performance benchmarks.

Defense Health Agency/National Capital Region Medical Directorate (NCR MD) Policy Guidance

The Joint Task Force Clinical Quality Manual (JTF-CQM) 6025.01 implements DoDI 6025.13 guidance on care quality. This manual sets procedures and responsibilities for the administration of the Clinical Quality Management Program by the NCR MD and describes the relationships between NCR MD and the Military Services for quality management. Revisions to the manual are managed collaboratively by the NCR MD Quality Management Department and Quality Working Group.

The Director, NCR MD is responsible for the quality of health care delivered to all beneficiaries in the NCR MD. The Director establishes CQMP policy and serves as the governing body for the health care facilities. The NCR MD Quality Management department provides corporate guidance, monitors quality and patient safety outcomes, and collaborates with MTFs to ensure effective administration of the quality programs. Such programs include risk management, risk avoidance, safety practices, incident monitoring/management, adverse privileging/practice actions, sentinel events, and malpractice claims. MTF Directors ensure that hospitals maintain comprehensive Clinical Quality Management and Patient Safety Programs and compliance with the accrediting agency standards and reporting to NCR MD.

Policy Guidance for Purchased Care

Clinical quality management guidance for purchased care is found in the TRICARE Operations Manual (TOM) Chapter 7 (Utilization and Quality Management) and 32 CFR 199.15. DHA establishes the TRICARE policies that are followed and implemented by the purchased care contractors. The three TRICARE regional contractors (North, South, and West Regions), the six designated providers, and the TRICARE overseas contractor must develop a yearly clinical CQMP. The plan provides the framework for the contractor to objectively define and measure the quality of care received by beneficiaries, and is followed by an annual report. Furthermore, this guidance requires that contractors monitor and report National Quality Forum (NQF) Serious Reportable Events (SREs) and the Agency for Healthcare Research and Quality (AHRQ) Patient Safety Indicators.

The CQMP plan must address several key elements, including the organization's structure and staffing and qualifications for quality management staff. It must fully address the quality review process, to include how grievances and potential quality issues are investigated and resolved. Also, it must describe how quality improvement and patient safety initiatives are selected and

monitored, and the measureable objectives it will use for internal monitoring and improvement of its clinical quality program.

Annual CQMP plans and reports are monitored and reviewed by the quality management staff from the TRICARE Regional or Area Offices and DHA to ensure compliance with contract requirements, and ensure high-quality and safe care is being provided to TRICARE beneficiaries in the purchased care network.

Review of Internal and External Studies on Quality of Care

The MHS Review Group identified 51 studies and reports on MHS care quality, which included studies designed and conducted by DHA and those conducted by independent organizations. Of the studies identified, 28 were found to be pertinent and within scope of this review. A discussion of findings and summaries of reports examined can be found in Appendix 4.2. Key findings from the review of these reports include:

1. The lack of clinical quality and outcome data on care rendered in the purchased care component has been identified as a significant gap. Reporting from civilian facilities and individual providers to the Government is voluntary. The current DHA/contracting reimbursement methodology does not provide the flexibility required to incorporate quality performance reporting into reimbursement rate negotiations for contractors.
2. New MHS governance provides a better forum for collaborative work among the components on quality efforts.
3. The MHS lacks a defined process for communicating relevant study findings and recommendations and for tracking programs and outcomes across the enterprise.
4. Gaps were identified in the MHS data system's ability to support efficient, bidirectional transmission of data between inpatient and outpatient electronic records.

▶ **Recommendation for Responding to Prior Reviews of MHS Quality**

    a. **DHA should integrate requirements for purchased care clinical quality data on TRICARE beneficiaries into the TRICARE Operations Manual and future TRICARE regional contracts.**

Gap Analysis

DoDI 6025.13, *Medical Quality Assurance (MQA) and Clinical Quality Management in the Military Health System (MHS)* and its supporting manual, DoDM 6025.13, are focused on credentialing, privileging, risk management, and patient safety but lack specificity regarding quality measurement and process improvement.

1. There are gaps in the enterprise process to validate that the Services and MTFs are compliant with the implementation of policies and directives disseminated from ASD(HA). An example of this gap is the inconsistent and incomplete implementation of HA Policy 11-003, Policy for Comprehensive Pain Management. The new MHS governance system can work effectively to standardize policy implementation across

      DoD; the variation in Comprehensive Pain Management has been identified by the MOG, which has consolidated the working groups focused on pain management to implement a DoD-wide policy.

2. There is disparity in how the Services monitor and document policy compliance, with no clear guidance in DoD and Service-level policies. The differences among Services (other than accreditation and certification by civilian agencies) contribute to difficulty in DHA oversight of quality in the direct care component. The Army has established a Clinical Assurance Performance Directorate that reports to the SG to ensure standardization in all MTFs. Previously, the Command chain monitored policy compliance, and this new Directorate will serve as an enforcement agency for policy. The Navy utilizes trained TJC Fellows to survey each MTF in their area of responsibility in between the TJC triennial survey (and as needed) to assess compliance with standards. In the Air Force, MTF compliance with policies is measured by military inspections (Unit Effectiveness Inspections) and by regular Performance Management Forums with AFMOA. The new Air Force Inspection System, with revised Air Force Instructions and Self-Inspection Checklists will reduce variability and clarify policy guidance, put compliance oversight in the hands of commanders, and refocus the biennial Unit Effectiveness Inspections.

3. The third significant gap relates to lack of clear policy on required education and training to optimally prepare personnel at all levels in quality management. While each Service has developed policy and/or programs related to education and training in quality, this is not directed from HA or DHA.

► **Recommendations to Address Gaps in Training and Compliance with Policies**
   a. **ASD (HA) and DHA should develop policy guidance in support of DoDI and DoDM 6025.13 with specific direction on quality measurement, performance improvement, and requirements for education and training.**
   b. **ASD (HA) should develop policy guidance to manage and track compliance of the Services and DHA with applicable DoD policies and directives.**

Purchased Care Gap Analysis

In American medicine, primary responsibility for quality of care rests with providers, not insurance carriers or government programs that reimburse those providers. Nonetheless, policies and procedures governing the reimbursement programs should reinforce those provider responsibilities. The lack of clinical quality and outcome data on care rendered in the purchased care component is a significant gap. Reporting from civilian facilities and individual providers to the Government is voluntary. Current best business practice occurs when payers (health insurance companies) have the flexibility to negotiate reimbursement rates that include quality data reporting. The Centers for Medicare & Medicaid Services (CMS) (Advantage Programs) and Veterans Affairs (civilian sector contracts) have introduced changes in their reimbursement rates that include clinical quality data reporting.

Education and Training

All Service components and the purchased care sector conduct a wide variety of training on quality and performance improvement. The complete assessment of education and training efforts is located in Appendix 4.3.

Not unexpectedly, variation among the Services exists in the conduct and monitoring of training. Services vary in their visibility of training completion. The Services have invested significantly in Lean/Six Sigma performance improvement training to provide the necessary skills to drive performance improvement throughout the system. The MHS Review Group concluded the following regarding training related to care quality:

1. Although there is quality training occurring in the Services, there is no clearly prescribed DoD policy specific to quality training and education.
2. There is no clearly defined quality of care career development pathway.
3. There has been a significant investment in Lean/Six Sigma performance improvement training.

▶ **Recommendations Regarding Quality of Care Training**

   a. **The DHA Education and Training Directorate should conduct an in-depth review and needs assessment of quality training to adequately assess the efficacy of training.**
   b. **MHS governance should determine the requirements to guide the development and implementation of a quality expert career path.**

Data Analysis

The measures of quality care used for this analysis were selected to support alignment of the MHS with the goals and philosophies of the Institute of Medicine, the Institute for Healthcare Improvement, National Quality Forum (NQF), and the Agency for Healthcare Research and Quality (AHRQ). The criteria for selecting performance measures and respective data sources include:

- Health care quality measures were selected based on their acceptance and use by the national health care community, the domains of quality addressed (safety, timeliness, effectiveness, efficiency, equity, and patient-centered), and the availability of the defined data elements.
- Performance measures were required to have defined national benchmarks, whenever possible.
- Data sources were used if they provided quality of care information for either direct care, purchased care, or both.
- Data sources were selected to provide information on the satisfaction and perception of patients regarding MHS quality of care.

The measures of quality presented in this report include:

Accreditations and Certifications: Accreditation and certifications reflect whether MHS systems have met nationally recognized guidelines and requirements for quality, safety, and uniform processes.

Healthcare Effectiveness Data and Information Set (HEDIS®): The MHS compares its performance in selected measures against national HEDIS® benchmarks for this measure set, which is utilized by more than 90 percent of health plans in the United States.

Quality of Care in the Purchased Care Component Using Hospital Compare: Hospital Compare is a consumer-oriented website that contains information about the quality of care at more than 4,000 Medicare-certified hospitals in the United States. The MHS tracks several process-of-care measures common to the direct care and purchased care components.

ORYX National Hospital Quality Measures: ORYX is a set of measures used by TJC in its hospital accreditation process, in which all military hospitals participate.

Prevention Quality Indicators (PQI): The Prevention Quality Indicators (PQI) are measures of potentially avoidable hospitalizations for ambulatory care sensitive conditions; they are an indicator for the quality of ambulatory care provided.

Thirty-Day Readmissions: Hospital readmissions within 30 days may occur due to an unrelated diagnosis or a planned course of treatment, or may reflect incomplete care, or a complication of care during the initial admission.

National Perinatal Information Center (NPIC): The National Perinatal Information Center (NPIC) utilizes MHS direct care data to compare the quality of care provided to pregnant women and newborns against averages of metrics derived from data submitted by 86 participating hospitals. Because many perinatal metrics do not have national benchmarks, the MHS uses NPIC averages for comparison.

National Surgical Quality Improvement Program (NSQIP): NSQIP is a voluntarily reported, data-driven, case-mix adjusted, risk-adjusted, outcome-based program developed by the American College of Surgeons to measure and improve the quality of surgical care.

Inpatient Mortality Measures: The quality of inpatient care is measured using the AHRQ developed Inpatient Quality Indicator (IQI) measure set, which contains a number of condition-specific mortality measures. In addition, risk-adjusted mortality ratios were calculated for all inpatient MTFs based on a commonly accepted (Elixhauser) methodology.

Experience of Care: The experience of care measures use survey data to determine beneficiary satisfaction with MHS health care. AHRQ CAHPS and Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) comparable questions were used to allow comparison to civilian systems and benchmarks.

Accreditation and Certification

Accreditation and certification serve as a formal declaration that programs and personnel within the MHS have met standardized guidelines and requirements relative to quality, safety, and uniform quality management system processes. Further, they demonstrate the commitment of the MHS to providing the highest quality of care. For the purposes of this report, the Services provided accreditation and certification information for their MTFs in a number of categories. Categories included accreditation and certification information on health care services, such as primary care, laboratory and blood banks, radiology and nuclear medicine, medical and surgical subspecialties (oncology, hyperbaric medicine, and trauma care), and advanced medical and dental education.

MHS-Level Discussion

All MTFs that sought TJC accreditation obtained it. In 2013, of the civilian facilities that sought TJC accreditation in the United States overall, 7.3 percent of ambulatory programs, 5.1 percent of home care, and 4.8 percent of hospitals were not accredited. All standalone ambulatory health centers within the direct care component are accredited either by TJC or the Accreditation Association for Ambulatory Heath Care (AAAHC). In addition, direct care facilities participate in more than 7 laboratory and blood bank certification programs, more than 6 radiology and nuclear medicine certification programs, more than 11 subspecialty certification programs, and more than 20 advanced medical and dental education recognition programs.[39] All MTF-based laboratories are inspected by the College of American Pathologists (CAP) and 100 percent are accredited. Hospitals and laboratories in the purchased care component are contractually required to be inspected and accredited by a CMS-recognized accreditation body.

Service-Level Discussion

For the Patient Centered Medical Home (PCMH) Initiative, 76 percent of the Army facilities, 100 percent of the Navy facilities, 87 percent of the Air Force facilities, and both NCR MD facilities have received at least one National Committee for Quality Assurance (NCQA) or AAAHC recognition (data not shown). Only 10 percent of U.S. primary care practices, close to 7,000 in total, are recognized as PCMHs by NCQA. Accreditations and certifications by type and service are displayed in Appendix Table 4.4-1. Variations among the Services can be explained by differing requirements and policies. The services continue to work on obtaining national recognition to obtain PCMH practice. This continues to vary due to service specific timelines as goals for completion.

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[39] Several facilities reported participating in certification programs but were not specific in the type of program; hence the use of the term "more than n programs."

Facility Type, Location, and Other Discussions

Results indicate that there are no substantial variations in accreditations and certifications by geographic location with OCONUS MTFs accredited by U.S. certification organizations.

Additional findings include:

1. One hundred percent of the MTFs are accredited. However, it is noted that aggregation and analysis of accreditation findings is not currently shared across the MHS. The Services currently have education and training with industry programs that allow officers to complete a fellowship with TJC. Post training utilization of these fellows varies by Service.

▶ **Recommendations Regarding Accreditation and Certification**

   a. **MHS governance should establish a mechanism to aggregate and communicate accreditation findings across the MHS**.
   b. **MHS governance should evaluate the utility of adding additional fellowship opportunities with TJC or other nationally recognized programs, and the Services should explore optimizing and standardizing Service fellow utilization by aligning training with follow-on assignment after fellowship completion.**

HEDIS® Measures of Performance

NCQA developed and maintains HEDIS®, a tool used by more than 90 percent of U.S. health plans to measure performance on important dimensions of care and service using 81 measures across 5 domains of care. HEDIS® allows consumers to compare an individual health plan's performance to other plans and to national benchmarks. HEDIS® measures are reported as the percentage of eligible patients receiving a service and then compared to the national NCQA benchmark percentiles. In this report, average national Health Maintenance Organization (HMO) performance data for 2012 are also provided for comparison purposes.[40] A comparison of HEDIS® results by MTF facility type (medical center compared to community hospital) was not performed.

The MHS compares its performance in selected measures against the national HEDIS® benchmarks (see Appendix Table 4.4-2).[41] DHA adheres to the specifications to collect and calculate performance for each measure, and is audited annually by a NCQA-certified HEDIS® auditor for compliance.

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[40] National Committee for Quality Assurance. (2013). *Improving Quality and Patient Experience. The State of Health Care Quality.*

[41] Data obtained from the most recent year as published in: Annual Quality Compass, 2014. National Committee for Quality Assurance. Available at: http://store.ncqa.org/index.php/data-and-reports/quality-compass-2014.html. Accessed July 25, 2014.

The MHS, through the Clinical Measures Steering Panel, identifies which HEDIS® measures to review based on data availability[42] and their relevance to the health plan, the Services, and MTFs. The MHS has selected 18 HEDIS® measures to review in the direct care component, and 12 for review in the purchased care component.[43] If the MHS consistently performs above the 90th percentile on a given measure over a period of several years, routine data collection for that measure may be discontinued, and the measure replaced with a new one. Performance on this "retired" measure is examined periodically to ensure continued success.

MHS-Level Discussion: In comparing the performance of the MHS across the 18 selected HEDIS® measures with national benchmarks, only one measure—comprehensive diabetes care, Glycosylated Hemoglobin (HbA1c) <7 percent for a selected population—outperformed the NCQA 90th percentile benchmark, the stated MHS goal for all HEDIS measures. Five of the measures were between the 75th and 89th percentile of their NCQA benchmarks. Three measures were below the NCQA 25th percentile: cholesterol management for patients with cardiovascular conditions (LDL-C screening); comprehensive diabetes care (HbA1C screening); and comprehensive diabetes care (LDL cholesterol screening). While many MTFs fall below the 50th percentile for certain measures, they actually exceed the national average for performance. In addition, it is important to consider that in reviewing HEDIS® data, there may only be a few percentage points of performance that separate a facility from the next higher or lower quartile. Of note, between 2012 and 2013, the MHS demonstrated statistically significant improvements on 10 of the 18 measures, while there were statistically significant declines in performance on 6 HEDIS® measures (see Appendix Table 4.4-3).

Among the measures below the NCQA 50th percentile benchmark in 2013, several improved between 2012 and 2013: the management of antidepressant medication for the continuation phase; LDL-C control for patients with cardiovascular conditions; diabetic HbA1C screening; diabetic LDL screening; and well-child visits.

Service-Level Discussion: Navy MTFs led the MHS in the number of HEDIS® measures above the 75th percentile (12 of 18) with 72 percent of measures showing significant improvement from 2012 to 2013 (data not shown). Army MTFs closely followed with 10 of 18 above the 75th percentile, 9 of which showed significant improvement from 2012 to 2013. Among Air Force MTFs, 7 measures were above the 75th percentile, with only 27 percent of the measures improving statistically from 2012 to 2013. In the two National Capital Region MTFs, 8 measures were above the 75th percentile NCQA benchmarks (year-over-year changes in performance were not calculated because only 2013 data were available) (see Appendix Table 4.4-4). Given the distribution of the results among the Services, there may be Service-specific processes and practices that account for some of the differences in the HEDIS® rates.

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[42] All data are currently obtained administratively through a hybrid methodology that involves chart abstraction.

[43] The six exclusions for purchased care are due to the inability to obtain laboratory values from claims data required to calculate these measures.

Location: Notable differences were found on HEDIS® measure performance among MTFs located in the continental United States (CONUS) and those outside (OCONUS). Among OCONUS MTFs, 9 of the 18 measures were above NCQA's 75th percentile, in contrast to 6 among CONUS facilities (see Appendix Table 4.4-5). It should be pointed out that overseas facilities only enroll active duty Service members and their families, which may help explain why overall performance appears to be better than in CONUS facilities. In addition, most overseas facilities are small, there is less opportunity to use other health insurance with civilian providers to obtain preventive services, and providers may have greater opportunities to ensure their patients receive preventive services in a timely manner (Appendix Table 4.4-7 and Appendix Table 4.4-8).

Purchased Care*:* The purchased care component only monitors 12 HEDIS® measures due to the unavailability of required clinical data elements. Appendix Table 4.4-6 shows purchased care HEDIS® measures as compared to NCQA national benchmarks and the HMO national average for 2012, with 7 of the 12 measures monitored falling below the NCQA 25th percentile, as well as the 2013 national HMO average. Four of the 12 monitored measures were above the 50th, but below the 75th NCQA percentile. There are mitigating factors that can account for some of the considerable lag between HEDIS® measure performance in the purchased care component compared to direct care (see Appendix 4.4: HEDIS® Methodological Considerations).

Comparison to External Health Systems: HEDIS® data for the MHS were compared to data from three external health plans for the same period (2013). In the MHS, data are collected from both direct and purchased care components for 12 measures; for 6 additional measures, data are collected from the direct care component only (chlamydia screening, cholesterol management, diabetes <=9, <7, <8, diabetes LDL Control) (Table 4.2). There are inaccuracies in the data collected from the purchased care component due in part to the inability to capture clinical data that may be lacking in the MHS Population Health Portal, and the inability to accurately exclude beneficiaries that may have other health insurance from rate calculations. Data were not available from Health System 2 for 7 measures (asthma medication and the six components of comprehensive diabetes care). Of the available data, the MHS performed above the benchmark percentile in 8 instances, at the same benchmark percentile in 11 instances, and below the benchmark percentile in 28 instances.

Table 4.2 Comparison of HEDIS® 2013 Data for MHS Against External Comparison Organizations (Health Systems 1, 2, and 3)

HEDIS® Measures	MHS 2013	HS 1 2013	HS 2 2013	HS 3 2013	MHS 2013 Percentile	HS 1 2013 Percentile	HS 2 2013 Percentile	HS 3 2013 Percentile
Antidepressant Medication Management: Acute Phase	68.51	72.73%	76.16	63.59	50th	75th	90TH	25th
Antidepressant Medication Management: Continuation Phase	46.08	54.20%	67.67	47.55	25th	75th	90TH	25th
Use of Appropriate Medications for People With Asthma: Asthma Medication Rate	94.71	94.01%	NA	94.33	75th	75th	NA	75th
Breast Cancer Screening	68.88	79.05%	79.39	70.01	25th	90th	90th	25th
Cervical Cancer Screening	76.87	86.75%	82.15	76.83	25th	90th	75th	25th
Chlamydia Screening in Women: Total Rate	59.72	71.14%	47.73	28.86	75th	90th	50th	< 25th
Cholesterol Management for Patients with Cardiovascular Conditions: LDL Control (<100 mg/dL)	59.57	76.72%	73.25	68.19	25th	90th	90th	75th
Cholesterol Management for Patients with Cardiovascular Conditions: LDL Cholesterol Screening	77.56	95.64%	93.42	86.52	< 25th	90th	75th	25th
Colorectal Cancer Screening	69.82	75.77%	75.59	70.98	75th	90th	90th	75th
Comprehensive Diabetes Care: Poor Glycemic Control (HbA1c >9 percent)— Lower rates signify better performance	78.2	78.86%	NA	77.55	50th	75th	NA	50th
Comprehensive Diabetes Care: HbA1c <7 percent for a Selected Population	53.53	41.05%	NA	45.41	90th	25th	NA	50th
Comprehensive Diabetes Care: Good Glycemic Control (HbA1c <8 percent)	70.38	66.59%	NA	64.78	75th	50th	NA	50th
Comprehensive Diabetes Care: HbA1c Screening	84.89	94.13%	NA	92.7	< 25th	75th	NA	50th
Comprehensive Diabetes Care: LDL Cholesterol Control (<100 mg/dL)	55.8	63.61%	NA	55.66	75th	90th	NA	75th
Comprehensive Diabetes Care: LDL Cholesterol Screening	80.69	92.01%	NA	81.75	< 25th	90th	NA	< 25th
Follow-Up After Hospitalization for Mental Illness: Within 30 Days Post-Discharge	74.84	84.44%	85.87	71.55	25th	75th	75th	25th
Follow-Up After Hospitalization for Mental Illness: Within 7 Days Post-Discharge	58.46	75.26%	75	48.75	25th	75th	75th	< 25th
Well-Child Visits (Ages 0–15 Months): Six or More Well-Child Visits	79.15	84.45%	96.98	79.57	25th	50th	90TH	25th

🟩 Indicates 90th percentile 🟨 Indicates 75th percentile 🟧 Indicates 50th percentile 🟥 Indicates 25th percentile 🟫 Indicates lower than 25th percentile

2014 MHS Review Group
Source: HEDIS - MHS Population Health Portal, June 2014

Findings related to MHS performance on HEDIS® measures include:

1. Purchased care data show that 7 of the 12 HEDIS® measures monitored fall below the NCQA 25th percentile benchmark, and 4 were in the 50th percentile. The measures identified for improvement include breast and cervical cancer screening, cholesterol screening, comprehensive diabetes care (Hb A1c screening and LDL-cholesterol screening), and mental health follow up.

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2. The MHS collects data on 18 HEDIS® measures for direct care and 12 measures for purchased care. NCQA has 81 HEDIS® measures. Direct care outperformed the NCQA 90th percentile benchmark for 1 HEDIS® measure. Five of the direct care HEDIS® measures were between the 75th and 89th percentile of the NCQA benchmarks. Two measures are at the 50th percentile while 7 are between the 25th and 50th percentile. Three measures were below the NCQA 25th percentile. When comparing OCONUS to CONUS MTFs in 2013, overseas facilities performed better on nine measures and similarly on five measures.
3. Between 2012 and 2013, the MHS demonstrated statistically significant improvements on 10 of the 18 measures, while there were statistically significant declines in performance on 6 HEDIS® measures.

▶ **Recommendations Related to MHS Performance on HEDIS® Measures**

a. **DHA Health Plans should give purchased care contractors the authority to use supplemental databases to improve the capture of clinical information for purchased care enrollees.**
b. **DHA Health plans should evaluate alternative methods of incentivizing contractors and/or providers to improve the provision of clinical preventive services and HEDIS® performance. This may require statutory or regulatory changes, since new, innovative payment mechanisms may have to be developed to encourage compliance.**
c. **MHS governance should assess the value of expanding the number of HEDIS® measures monitored to evaluate care provided to enrolled beneficiaries.**
d. **MHS governance should establish policy to guide processes for verification of clinical data and capture in AHLTA (DoD's outpatient electronic health record) regarding preventive services that are obtained outside of the direct care component.**
e. **DHA should develop plans to improve Other Health Insurance documentation in DEERS for all beneficiaries to ensure those with Other Health Insurance are not included in HEDIS® calculations.**
f. **MHS governance should develop a strategy for MTFs to maximize the use of "action lists" generated by the MHS Population Health Portal to ensure beneficiaries receive clinical preventive services in a timely manner.**

Quality of Care in the Purchased Care Component

TRICARE contractors provide quality of care oversight for services provided to beneficiaries in the TRICARE network. This activity includes credentialing of network providers, validating accreditation status of participating facilities, and addressing quality of care concerns through established procedures. Hospital accreditation is a requirement (32 C.F.R. § 199.6) to become a TRICARE-authorized provider and is also required for network credentialing. Due to disparate information systems used by network providers, accurate measurement of the quality of care provided in the purchased care component is not possible. However, information provided by network facilities on websites such as Hospital Compare serves as an excellent surrogate for the quality of care received by TRICARE beneficiaries at those facilities.

Hospital Compare is a consumer-oriented website that contains information about the quality of care at more than 4,000 Medicare-certified hospitals in the United States. Established by CMS and the Hospital Quality Alliance, the website supports the improvement of hospitals' quality of care and assists consumers in making informed decisions about their health care.[44] Hospital Compare contains information regarding the timeliness and effectiveness of care, as well as information on readmissions, complications, and deaths. The vast majority of TRICARE network hospitals participate in the Hospital Compare program.

Each of the TRICARE Regional Offices uses Hospital Compare data in its performance of quality oversight of purchased care. This information provides MTFs with baseline knowledge of the quality of care provided by network hospitals in its area of service. The MHS tracks several care measures common to the direct care and purchased care components that are highlighted on the Hospital Compare website. The measures monitored for both direct and purchased care are displayed in Table 4.3.

Table 4.3 National Hospital Quality Measures Monitored for Both Direct and Purchased Care

Measures
Acute Myocardial Infarction (AMI)
Heart Failure (HF)
Pneumonia (PN)
Surgical Care Improvement Project (SCIP)
Children's Asthma Care (CAC)

2014 MHS Review Group
Source: DoD Joint Commission and Hospital Compare Database, June 2014

Hospitals reporting on Hospital Compare do not differentiate TRICARE beneficiaries from other patients. MHS National Hospital Quality Measures - Hospital Compare are reviewed annually by the Services and DHA staff at the Quarterly Clinical Measures Steering Panel meeting.

MHS-Level Discussion: A review of the Hospital Compare data reveals that TRICARE network hospitals are performing at or above the national benchmarks on a composite measure of Hospital Compare performance (see Figure 4.1 and Appendix Figures 4.4-1)

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[44] Medicare Hospital Compare. Available at: www.hospitalcompare.hhs.gov. Accessed July 25, 2014.

Figure 4.1 Purchased Care Compliance Rate, FY09 – FY12[45]
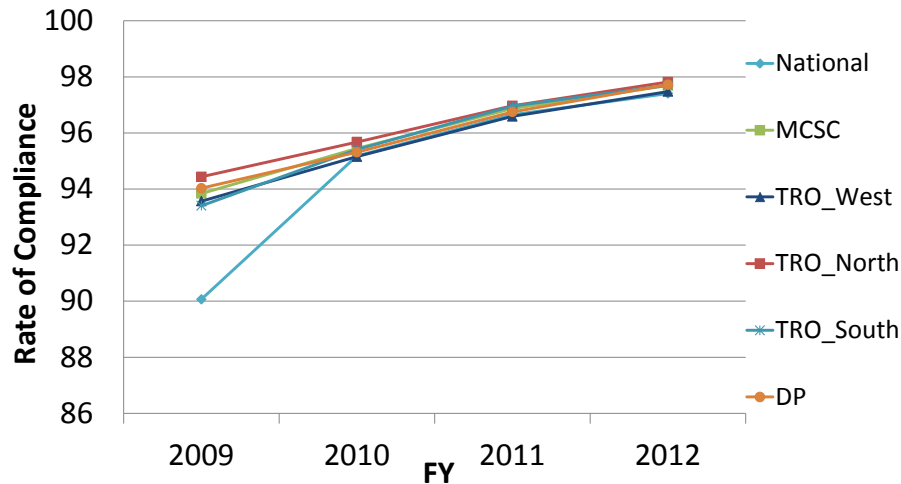
2014 MHS Review Group
Source: MHS MART (M2) Comprehensive Ambulatory/Professional Encounter Record (CAPER), July 2014

▶ **Recommendation Regarding Quality Data in the Civilian Network**

   a. **DHA should integrate requirements for purchased care clinical quality data on TRICARE beneficiaries into the TRICARE Operations Manual and future TRICARE regional contracts.**

ORYX® – National Hospital Quality Measures

The Joint Commission (TJC) is the accrediting agency for military hospitals; Table 4.4 shows the core measures of hospital quality used to meet TJC accreditation requirements.

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[45] Note: DP indicates Designated Providers/US Family Health Plan.

Table 4.4 TJC Core Measure Sets Monitored for both Direct and Purchased Care

Acute Myocardial Infarction (AMI)	Hospital Outpatient (OP)
Heart Failure (HF)	Stroke (STK)
Pneumonia (PN)	Venous Thromboembolism (VTE)
Surgical Care Improvement Project (SCIP)	Immunization (IMM)*
Children's Asthma Care (CAC)	Substance Use (SUB)*
Perinatal Care (PC)	Tobacco Treatment (TOB)*
Hospital Based Inpatient Psychiatric Services (HBIPS)	Emergency Department (ED)*[46]

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Prior to January 2014, TJC required accredited hospitals to submit data on four core measure sets each quarter. Currently, TJC requires data on six measures to be submitted.[47] All accredited hospitals with one or more patients in the measure population must submit data on acute myocardial infarction (AMI), heart failure (HF), perinatal care (PC), and Surgical Care Improvement Project (SCIP) measures. Accredited hospitals with 1,100 or more annual births must also submit PC data. Facilities select one or two additional measure sets to complete the six core measure set requirement. A number of smaller military hospitals may be required to select as many as four additional measures sets to meet the requirement.

CMS National Hospital Quality measures (with similar specifications to TJC measures) are used to evaluate the process of care in TRICARE network hospitals (purchased care). DHA selected the measures of AMI, PN, SCIP, and children's asthma care (CAC) for Service review to align with data available on CMS Hospital Compare. Two additional measures were also selected for abstraction across the Services: PC was selected due to the high volume of births in military hospitals, and hospital-based inpatient psychiatric services (HBIPS) was selected because these patients represent high-risk populations.

Table 4.5 shows the composite results for 13 ORYX® measures, with direct care having a lower rate for 9 of the measures but outperforming in PC and venous thromboembolism (VTE) measures.

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[46] Asterisk indicates measures introduced in 2012, therefore only two years of data were available for analysis.

[47] Core Measure Sets. The Joint Commission. http://www.jointcommission.org/core_measure_sets.aspx. Accessed: July 25, 2014.

Table 4.5 Composite Measures for 13 ORYX Measures

Composite Measure Set	National	Purchased Care	Direct Care
Heart attack care (AMI)	98.97%	95.30%	97.03%
Children's asthma care (CAC)	95.97%	98.80%	87.37%
Heart failure (HF)	97.49%	96.70%	94.79%
Inpatient psychiatric services (HBIPS)	91.56%	ND	87.08%
Hospital outpatient department (OP)	97.84%	ND	85.41%
Perinatal care (PC)	63.58%	ND	74.30%
Pneumonia care (PN)	97.54%	96.90%	94.30%
Surgical care (SCIP)	98.64%	98.00%	97.50%
Stroke care (STK)	96.75%	ND	96.04%
Venous thromboembolism care (VTE)	92.28%	ND	94.77%
Immunization (IMM)	91.17%	ND	74.01%
Substance use (SUB)	60.13%	ND	43.26%
Tobacco treatment (TOB)	88.17%	ND	85.52%

2014 MHS Review Group; ND indicates "No Data"
Source: DoD Joint Commission Core Measure Database, June 2014

A deeper analysis of the results shows the direct care component was significantly below the national average for the following measures over most of the 2010 to 2013 period, which contributes to low composite measures: AMI-8a (primary percutaneous coronary intervention), CAC3 (home management plan of care given to patient/caregiver), HF1 (discharge instructions), PN3b (blood cultures performed in the ED prior to initial antibiotic in hospital), SCIP2a (prophylactic antibiotic selection for surgical patients), SCIP Card-2 (surgery patients on beta-blocker therapy prior to arrival who received a beta-blocker during the perioperative period), SCIP VTE-2 (surgery patients who received appropriate venous thromboembolism prophylaxis within 24 hours prior to surgery to 24 hours after surgery), IMM 1a (pneumococcal immunization rate), and IMM 2 (influenza immunization) (see Appendix Figures 4.4-2).

Purchased care rates are for FY 2012 and include all patients serviced at the network civilian hospitals, not just patients enrolled to TRICARE.

Index scores based on TJC calculations for control limits are used to evaluate whether an MTF's process of care is stable (in statistical control) because only common cause variation exists or an MTF's process of care is unstable (out of statistical control) because special cause variation exists (see Appendix Table 4.4-9a and Appendix Table 4.4-9b for additional information).

Direct Care Performance: As a system, the direct care component is excelling in 16 measures, showing improvement or meeting target levels on 26 other individual measures, and requiring improvement on 18 measures. (See Appendix Table 4.4-9c, which presents the direct care scores for individual measures that made up each set of core measures over the period, 2010 to 2013.

For example, the direct care component obtained perfect, or significantly better, scores for all but one of the stroke measures.)

The most recent year of performance shows that 23 of the 55 hospitals included in this analysis (42 percent) are meeting or exceeding TJC requirements on all composite measures. (See Appendix Table 4.4-10 for description of measures). Eight of the 55 hospitals (15 percent) need improvement on one composite measure. The remaining 24 of 55 hospitals (43 percent) need improvement on two or more composite measures (Appendix Table 4.4-11).

Service Level, Facility Type, Location, and Other Discussions: There are 55 direct care facilities included in this analysis. The breakdown by Service, facility type, and geographic location is as follows:

- 22 Army, 18 Navy, 13 Air Force, 2 DHA
- 15 Medical Centers, 40 Hospitals
- 41 CONUS, 14 OCONUS

At a minimum, facilities must maintain a composite rate of 85 percent on accountability measures to meet TJC compliance. All facilities, (100 percent) meet this requirement. Facilities are considered *Top Performers* when they maintain a composite rate of 95 percent (see Appendix Table 4.4-12).

Comparison to External Health Systems: When direct care rates were compared to HS1, HS2, and HS3 rates for AMI, HF, PN and SCIP, the direct care component of the MHS was found to have the lowest rates on 17 of 20 measures. In most instances, direct care rates were within five percentage points of the other health organizations. Measures showing the largest differences were AMI 7a (50 percentage points below), AMI 8a (36 to 43 percentage points below), HF 1 (7 to 10 percentage points below), PN 6a (12 to 22 percentage points below), and SCIP Card 2 (8 to 10 percentage points below). HS1 is clearly a top performer, consistently maintaining a rate of 100 percent across several measures. The direct care component is outperforming HS2 and HS3 on PC and VTE measures (see Appendix Table 4.4-13).

In summary:

- During the entire reporting period, all MTFs achieved the mandatory composite performance rate of at least 85 percent on ORYX accountability measures. Two MTFs were TJC Top Performers in 2010; four in 2011 and four in 2012. Most of these were in the Core Measure areas of SCIP and VTE. The MHS is consistently falling significantly below the national average on nine measures.

▶ **Recommendations Regarding MHS Performance on National Hospital Quality Measures**

    a. **DHA Health Information Technology should prioritize electronic health record upgrades by aligning needed data elements into Essentris (the inpatient electronic**

     health record). All inpatient MTFs should have the capability to remotely access health records to facilitate expeditious and timely data extraction for clinical measure calculation.

   b. **MHS governance should establish goals and processes for increasing the number of MTFs achieving The Joint Commission Top Performer status annually.**

Prevention Quality Indicators (PQI)

AHRQ develops and maintains PQIs, which are measures of potentially avoidable hospitalizations for ambulatory care sensitive conditions. These are conditions for which good outpatient care can potentially prevent the need for hospitalization or for which early intervention can prevent complications or more severe disease. The PQIs are population-based measures that also account for important hospitalization-related factors. Even though these indicators are based on hospital inpatient data, they provide insight into the quality of outpatient health care services. PQIs include the indicator measures presented in Table 4.6.

Table 4.6 PQI Indicator Measures

PQI Measures
PQI 01 Diabetes Short-Term Complications Admission Rate
PQI 02 Perforated Appendix Admission Rate
PQI 03 Diabetes Long-Term Complications Admissions Rate
PQI 05 COPD or Asthma in Older Adults Admissions Rate
PQI 07 Hypertension Admission Rate
PQI 08 Congestive Heart Failure Admission Rate
PQI 09 Low Birth Weight
PQI 10 Dehydration Admission Rate
PQI 11 Bacterial Pneumonia Admission Rate
PQI 12 Urinary Infections Admission Rate
PQI 13 Angina without Procedure Admissions Rate
PQI 14 Uncontrolled Diabetes Admissions Rate
PQI 15 Asthma in Younger Adult Admission Rate
PQI 16 Lower Extremity Amputations (AMP) Among Patients with Diabetes Rate
PQI 90 Overall PQI Composite

2014 MHS Review Group
Source: Military Health System Mart (M2), July 2014

MHS and Service-Level Discussion: The PQIs are a relatively new set of measures in the direct care component. The Services have had minimal exposure to these measures and have not integrated them into ongoing quality programs. In addition, the MHS lacks a policy that governs the use of the PQI indicators. While PQI data have not been reviewed by the Services, DHA has collected and reviewed these data and preliminary conclusions have been drawn.

A review of MTF performance on the PQI measures from 2010 to 2013 demonstrates overall good performance with 89 percent of direct care PQI measures meeting or exceeding the national AHRQ benchmarks. Service-level compliance rates for specific measures are outlined in Table 4.7. (Note: Data not available for PQI 09 - Low Birth Weight.)

At the Service level for the same time period, NCR MD and Navy demonstrated 90 to 92 percent of their measures better than the AHRQ benchmarks, and the Army and Air Force achieved 87 to 89 percent of their measures better than the AHRQ benchmarks. The only measure with significantly low performance across all services was PQI 02-Perforated Appendix Admission Rate.

Table 4.7 PQI Compliance Rate by Service (2010 – 2013)

PQI Indicator	Air Force	Army	Navy	NCR
PQI 01 - Diabetes Short-Term Complications Admission Rate	92.57	87.37	91.72	91.53
PQI 02 - Perforated Appendix Admission Rate	63.86	65.61	67.72	64.10
PQI 03 - Diabetes Long-Term Complications Admission Rate	94.75	92.49	95.89	100.00
PQI 05 - COPD or Asthma in Older Adults Admission Rate	99.31	98.14	99.00	100.00
PQI 07 - Hypertension Admission Rate	77.01	78.99	87.49	74.58
PQI 08 - Congestive Heart Failure Admission Rate	95.34	94.15	95.18	100.00
PQI 10 - Dehydration Admission Rate	73.44	73.34	84.19	77.97
PQI 11 - Bacterial Pneumonia Admission rate	86.52	79.92	87.08	100.00
PQI 12 - Urinary Infections Admission Rate	81.96	77.19	85.72	86.44
PQI 13 - Angina without Procedure Admission Rate	84.34	79.45	90.37	62.71
PQI 14 - Uncontrolled Diabetes Admission Rate	93.95	93.28	96.83	93.22
PQI 15 - Asthma in Younger Adult Admission Rate	99.01	96.41	98.53	100.00
PQI 16 - Lower Extremity AMP Among Patients with Diabetes Rate	99.11	98.74	99.12	100.00
PQI 90 - Overall PQI Composite	97.22	89.23	93.60	100.00
Color legend	>90	80-89	70-79	<70

2014 MHS Review Group
Source: Military Health System Mart (M2), July 2014

Review of available data demonstrated no meaningful difference overall between CONUS and OCONUS PQI values for any of the Services.

► **Recommendation Regarding MHS Performance Against PQI Measures**

   a. **MHS governance should implement provider level PQI education followed by an evaluation of MTF utilization of AHRQ PQI measures and implementation of a monitoring program requiring improvement plans as indicated.**

Thirty-Day Readmissions

Hospital readmissions within 30 days may occur due to an unrelated diagnosis or a planned course of treatment. An increased focus on readmissions has occurred across the health care industry due to the perception that some are the result of poor care or a lack of coordinated care and thus may be avoidable. A MTF initiative to study and improve 30-day readmissions is an example of successful collaboration within the DoD and with external partners through the framework of Partnership for Patients (PfP).

The direct care component established a plan to implement readmissions prevention strategies in 2011. Given the lack of a nationally recognized standard methodology in the measurement of readmission, the Air Force Health Informatics Division developed a research-based methodology to assess MTF readmission rates. The methodology used observed rates (without risk-adjustment), and followed several prominent research studies, which excluded cancer patients, obstetric and perinatal patients, rehabilitation patients, as well as patient transfers.

Expanding on the efforts from PfP, DHA recently initiated a registry identifying inpatients at high risk for readmission. Within 24 hours of admission, MTF staff can view the names of patients in high readmission risk categories in the Population Health Portal. Post-discharge follow-up appointment tracking is included on the site as well as data on the facilities' top readmission diagnoses and rates.

MHS-Level Discussion: MTFs performed well over the past four years, achieving a 10-percent reduction in rate of readmissions overall (from 9.8 to 8.8 percent). However, continued improvement is required to meet the PfP goal of a 20-percent reduction in readmissions. There are no national benchmarks available with this research-based methodology; however, standardized readmission measures have since been established and are now available. DHA is transitioning to the NCQA HEDIS® all-cause readmissions measure.

Service-Level Discussion: From 2010 to 2013 results indicate that each Service showed improvement in reducing readmissions. The Army and Air Force had the greatest reduction in readmissions, but also had the highest readmission rates in 2010. The Navy improved slightly, having an initial overall readmission rate of 8.45 percent, the lowest among the Services. Though the NCR MD inpatient facilities were not completely realigned until 2012, their readmissions rate decreased by 6 percent over the same period (Table 4.8).

Table 4.8 Readmission Rates According to Services, 2010 – 2013

Branch	2010	2011	2012	2013	Percent Change (2010 to 2013)
AIR FORCE	10.77	10.22	9.30	9.40	- 12.73
ARMY	10.04	9.44	8.54	8.74	- 12.96
NAVY	8.45	8.61	8.25	8.37	- 0.92
NCR	10.56	11.81	9.58	9.85	- 6.73

2014 MHS Review Group
Source: MHS Population Health Portal, June 2014

Facility Type, Location, and Other Discussions: Both military medical centers (MEDCEN) and smaller hospitals achieved reduced readmissions from 2010 to 2013 (Table 4.9). The variance in readmission rates is not directly attributed to size as MEDCENs and hospitals are found on both ends of the spectrum (better than expected and worse than expected). (See Appendix Figure 4.4-3 for facility-specific rates).

Table 4.9 Readmission Rate According to Facility Type, 2010 – 2013

Facility Type	2010	2011	2012	2013	Percent Difference	Percent Change
MEDCEN	10.93	10.56	9.70	9.83	-1.10	-10.10
HOSPITAL	7.48	7.08	6.11	6.42	-1.06	-14.17

2014 MHS Review Group
Source: MHS Population Health Portal, June 2014

Location: Readmission rates for OCONUS facilities were similar to the overall rate of smaller hospitals, since the majority of overseas facilities are classified as small hospitals.

Comparison to External Health Systems: Hospital Compare data indicate the U.S. national unplanned readmission rate is 16 percent. Data were provided by two health systems for comparison. The readmissions methodology used by both was all cause 30-day readmission rate. As the methodologies used to calculate the data differ for the health systems, Hospital Compare, and the MTFs, the readmission rates are not comparable. However, reviewing the percent change in the readmission rates indicates the MTFs are doing well in reducing readmission rates (Table 4.10).

Table 4.10 Readmission Rate Comparison to External Health Systems, 2010 – 2013

Health Plan	2010	2011	2012	2013	Percent Change
MHS (Unadjusted)	9.80	9.40	8.60	8.80	-10.20
HS2 (Average)	10.54	10.85	11.18	11.06	1.04
HS3 (Non-Medicare)	6.73	6.33	6.31	6.22	-7.60
HS3 (Medicare)	11.52	11.91	11.80	11.61	1.00

2014 MHS Review Group
Source: MHS Population Health Portal, June 2014

In summary, all Services demonstrated reduced 30-day all-cause readmission rates as part of a coordinated, collaborative effort through the PfP initiative. However, the goal of a 20-percent reduction was not met.

▶ **Recommendations Regarding Readmission Rates**

    a. **MHS governance should establish an implementation plan for the MHS Population Health Portal readmissions site to ensure maximum utilization so as to reduce avoidable readmissions.**

    b. The DHA Healthcare Operations Directorate should complete transition to the HEDIS® All-Cause Readmission standardized measure, which is risk-adjusted and has national benchmarks.

National Perinatal Information Center (2010-2013)

Within the MHS, 52 MTFs provide inpatient obstetrical care and deliver approximately 50,000 infants annually. The purchased care obstetrical facilities deliver an additional 50,000 infants; however, this section describes measures related to direct care only.

The National Perinatal Information Center (NPIC) provides the MHS with quarterly direct care data, presented as comparisons to averages of civilian hospitals participating as members in the NPIC/Quality Analytic System proprietary Perinatal Center Data Base (PCDB). NPIC averages are based on 86 civilian facilities. Data points are provided for 10 descriptive measures and 10 comparative measures. The comparative measures have a comparable NPIC average and provide a reasonable and accepted assessment of quality of obstetric care (Table 4.11).

Table 4.11 National Perinatal Information Center – Executive Summary Measures

Descriptive Measures	Comparative Measures
Maternal	**Maternal**
1) Total number of deliveries 2) Percent of induction of labor 3) Percent of Cesarean Section 4) Percent of operative deliveries – broken down to percent of forceps and vacuum 5) Maternal readmission to other than delivery site	1) Percent of inductions less than 37 weeks of pregnancy with medical indications 2) Percent of Cesarean Section less than 37 weeks of pregnancy with medical indications 3) Patient safety indicator 18 (OB trauma with instruments) 4) Patient safety indicator 19 (OB trauma without instruments) 5) Vaginal delivery with shoulder dystocia 6) Postpartum hemorrhage 7) Maternal readmission to delivery site
Neonatal	**Neonatal**
1) Total number of neonate 2) Percent of neonates born in hospital (inborn) 3) Percent inborn less than 1500 grams 4) Percent of neonates with non-routine bed days 5) Inborn readmission to any facility	1) Inborn readmission to birth facility 2) Patient safety indicator 17 (injury to neonate) 3) Inborn mortality greater than or equal to 500 grams

2014 MHS Review Group
Source: National Perinatal Information Center, July 2014

MHS-Level Discussion

Descriptive Measures: During the past four years the number of deliveries in the direct care component has remained consistent at 50,000 annual deliveries. Army (21 facilities) delivers 52 percent of infants, Navy (17 facilities) delivers 31 percent, Air Force (12 facilities) delivers 12 percent, and the NCR MD (2 facilities) delivers 5 percent of infants (Appendix Tables 4.4-14a and Appendix Table 4.4-14b). For the past four years, the percent of Cesarean section (C-

section) deliveries in the MTFs (across all Services) has remained lower than the NPIC average (26 percent in the MTFs in 2013 as compared to 35 percent for NPIC average) and the rate of obstetrical forceps deliveries in the MTFs has been higher than the NPIC average for the past four years (Appendix Table 4.4-14c). The MHS average of forceps deliveries has been somewhat stable over the past four years (1.5 percent, 1.8 percent, 1.5 percent, and 1.5 percent) while the NPIC average has decreased each year over the past four years from a high of 1.1 percent in 2010 to a low of 0.9 percent in 2013.

While there is no optimal benchmark for operative vaginal delivery rates, the finding that MTF providers perform a higher number of forceps vaginal deliveries is in accord with the American Congress of Obstetricians and Gynecologists (ACOG) position that supports the use of forceps and vacuum deliveries when safe and indicated to help reduce rates of C-section deliveries.[48]

Comparative Measures

Percent of Inductions and C-section Deliveries Prior to 37 Weeks Gestation with a Medical Indication: Delivery of infants prior to 37 weeks of pregnancy is considered preterm delivery. The direct care component outperformed the NPIC average for each of the past four years in the appropriate delivery of preterm infants (Appendix Figures 4.4-4a and 4.4b). High rates in these two measures (over the NPIC averages) indicate that in the vast majority of cases, the direct care component performs induction of labor or C-sections in preterm mothers only when medically indicated.

Patient Safety Indicators (PSIs) 18 and 19: AHRQ defines PSIs to track potential harm events. PSI 18 and 19 are measures of injury to the mother during vaginal delivery. The direct care rate for PSI 18 (injury during delivery with instruments) has been lower than the NPIC average from 2010 to 2013, with the exception of 2012, when it was higher (Appendix Figure 4.4-5). The direct care rate for PSI 19 (injury during deliveries without instruments) was lower than the NPIC average each year from 2010 to 2013 (Appendix Figure 4.4-6). The PfP initiative to reduce harm addressed the need to decrease harm events for PSI 18 and 19, including SAFER PASSAGES, a mnemonic tool developed by the Air Force to assist delivering providers. A 22-percent reduction in the rate of PSI 18 and an 8 percent reduction in PSI 19 were observed during the implementation of this initiative (2012 to 2013) from the 2010 baseline.

Shoulder Dystocia: Shoulder dystocia is neither predictable nor preventable and risk factors (e.g., obesity and gestational diabetes) are increasing in the population as a whole. The direct care and NPIC rates of shoulder dystocia have each increased 0.25 percent from 2010 to 2013 and the direct care rate has remained above the NPIC average since 2010 (Figure 4.2).

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[48]Safety Prevention of Primary Cesarean Delivery. American College of Obstetrics and Gynecology. Available at: http://www.acog.org/Resources-And-Publications/Obstetric-Care-Consensus-Series/Safe-Prevention-of-the-Primary-Cesarean-Delivery. Accessed: July 25, 2014.

Figure 4.2 Annual Rate of Vaginal Deliveries Coded with Shoulder Dystocia, CY10 – CY13
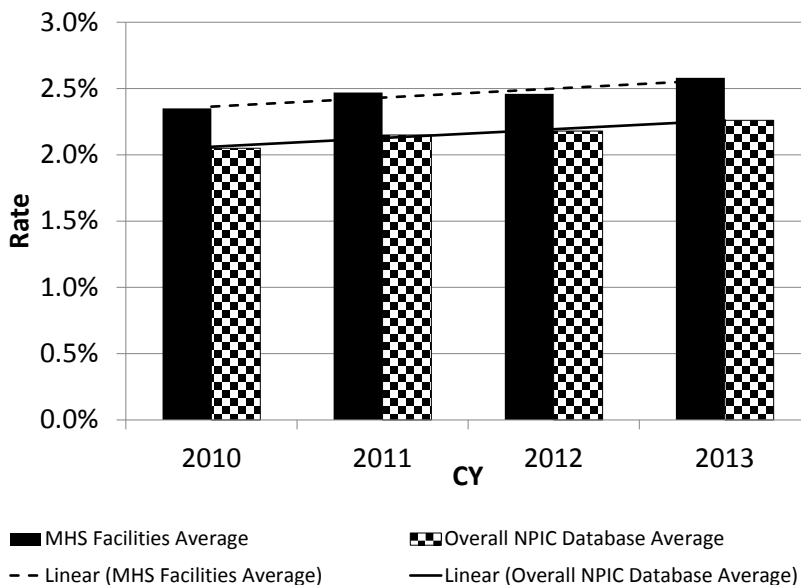
2014 MHS Review Group
Source: National Perinatal Information Center/Quality Analytic Services (NPIC/QAS), July 2014.

Postpartum Hemorrhage (PPH): The direct care component averages of PPH have increased and have remained significantly higher over the past four years as compared to the NPIC average, which has remained flat since 2010 (Figure 4.3).

Figure 4.3 Annual Postpartum Hemorrhage Rate, CY10 – CY13
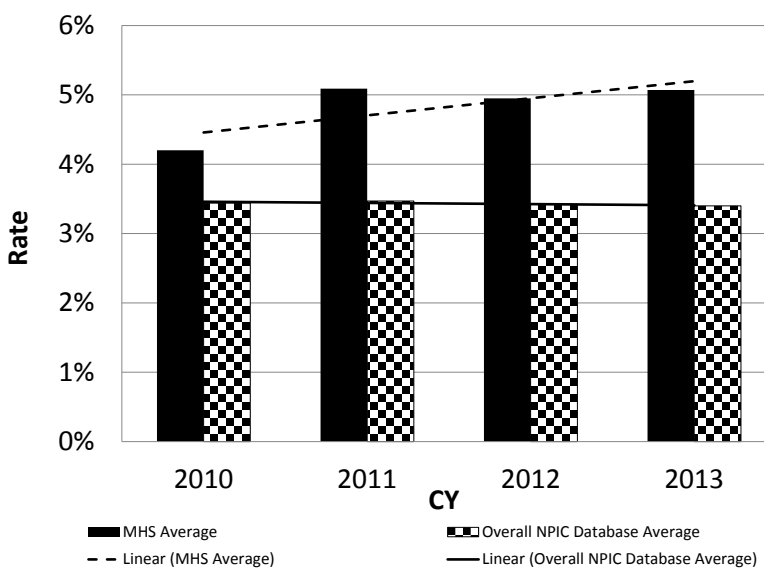
2014 MHS Review Group
Source: National Perinatal Information Center/Quality Analytic Services (NPIC/QAS), July 2014.

Review of the direct care perinatal program revealed that existing education and training capabilities that address shoulder dystocia and PPH have been implemented but have not yielded the desired level of improvement. The Mobile Obstetric Emergencies Simulator (MOES) is a comprehensive in-situ obstetric emergency simulation platform. The Association of Women's Health, Obstetrics and Neonatal Nursing (AWHONN) and the American Academy of Family Physicians (AAFP) have training programs that support collaborative care and have been used as foundational training for obstetrical staff.

Postpartum and Infant Readmission to Delivery Site: These measures examine the rate of postpartum readmission to MTF within 42 days post discharge or infant readmission to the delivery site at less than 29 days of age (Appendix Figure 4.4-7 and Appendix Figure 4.4-8). The direct care average has been higher than the NPIC average for both measures in the past three years; maternal readmission was lower for the direct care component than NPIC in 2010.

AHRQ PSI 17: PSI 17 measures birth trauma, injury to infant, per 1,000 newborns, excluding certain categories of infants with specific conditions.[49] This metric is based on coding of one of six specific conditions or the category of "other specified birth injury." Direct care average annual rate of PSI 17 injury to neonates has remained higher than the NPIC average from 2010 to 2013 (Figure 4.4). A closer look at data from 2013 illustrates a consistent issue with this metric (Figure 4.5). The overall direct care rate for PSI 17 in 2013 was 0.4 percent compared to 0.2 percent for the NPIC average, but the category of "other specified birth injury" accounted for more than 65 percent of the 227 direct care PSI 17 cases. The large percentage of injury that cannot be categorized needs further review.

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[49] PSI 17 excluded preterm infants with a birth weight less than 2,000 grams, infants with any diagnosis code of injury to brachial plexus, and infants with any diagnosis code of osteogenesis imperfecta.

Figure 4.4 Annual Rate of PSI 17 Injury to Neonate, CY10 – CY13
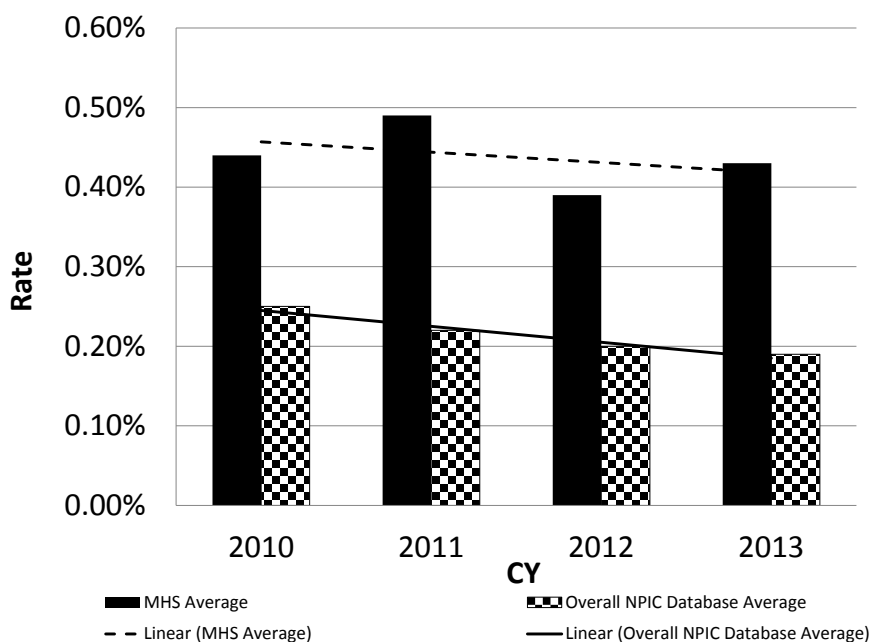
2014 MHS Review Group
Source: National Perinatal Information Center/Quality Analytic Services (NPIC/QAS), July 2014.

Figure 4.5 2013 Direct Care Breakout of Inborn Birth Trauma Occurrences by Diagnostic Code
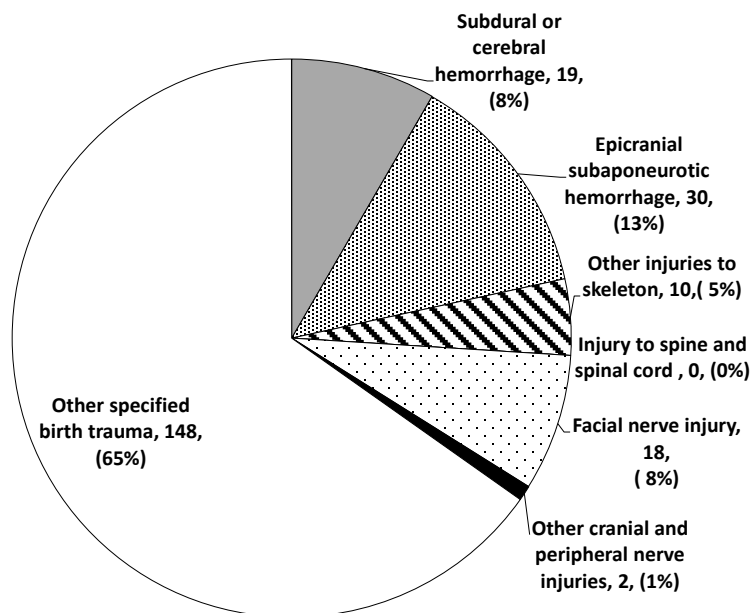
Note: Number of inborns was 49,217 in 2013: 227 is the total number of affected inborns coded within PSI-17.

2014 MHS Review Group
Source: National Perinatal Information Center/Quality Analytic Services (NPIC/QAS), July 2014

Infant Mortality: The infant mortality measure includes inborn, in-hospital deaths per 1,000 neonates, weighing at least 500 grams at birth and excluding newborns with specific congenital conditions. The direct care average for infant mortality has been lower than NPIC from 2010 to 2013. The NPIC average has been decreasing over the past four years (from 3.5 to 2.5 percent), while the direct care average has been relatively flat (at 1.5 percent all four years) (Figure 4.6). The lower direct care rate may reflect appropriate decision making on the part of the providers to transfer preterm and high-risk patients to more appropriate settings for delivery as indicated.

Figure 4.6 Infant Mortality Rate (per 1,000 live births) for Infants Weighing 500 Grams or Greater, CY10 – CY13
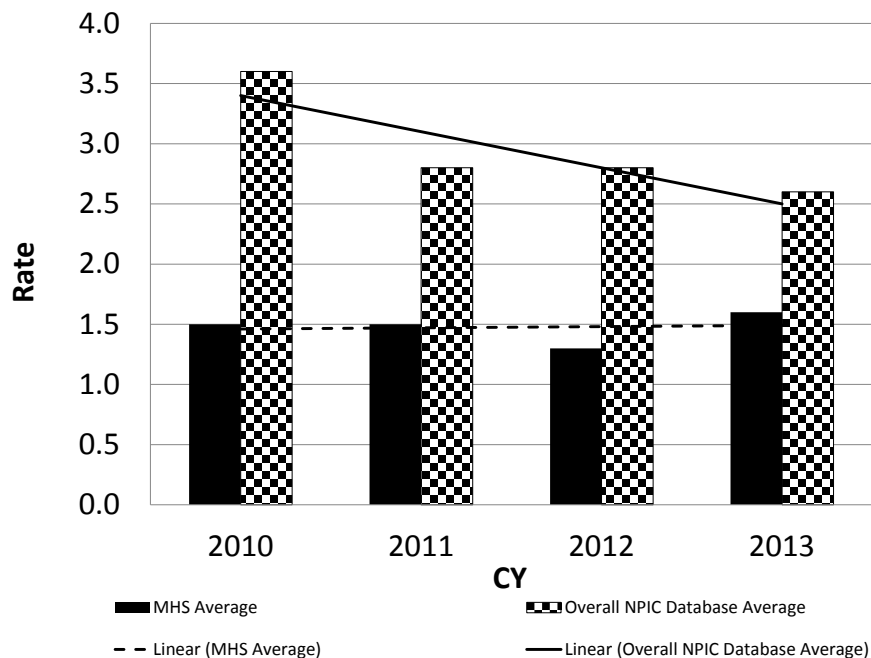
2014 MHS Review Group
Source: National Perinatal Information Center/Quality Analytic Services (NPIC/QAS), July 2014.

Service-Level Discussion: For metrics in which the direct care component has been at or better than the NPIC average (prevention of delivery of preterm infants without medical indications, PSI 18 and 19, infant mortality), Service-level data has been consistent with overall direct care data (Table 4.12).

Table 4.12 Perinatal Performance Measures Summary – 2013 Annual Rates

No.	Measure	NPIC Average	Direct Care Average	Army	Air Force	Navy	NCRMD
1	Percent of inductions prior to 37 weeks gestation with a medical indication	97.1%	99.2%	98.3%	100.0%	99.7%	100.0%
2	Percent of C-sections prior to 37 weeks gestation with a medical indication	94.8%	96.0%	92.7%	98.9%	98.4%	100.0%
3	PSI 18 - Obstetric Trauma-Vaginal delivery with instruments	0.1481	0.1449	0.1285	0.1145	0.1604	0.2703
4	PSI 19 Obstetric Trauma-Vaginal delivery without instruments	0.0207	0.0177	0.0178	0.0167	0.0165	0.0262
5	Shoulder dystocia	0.0226	0.0258	0.0277	0.0369	0.0279	0.0202
6	Postpartum hemorrhage (PPH)	0.0340	0.0507	0.0464	0.0570	0.0562	0.0461
7	Postpartum Readmission to Delivery Site	0.0098	0.0136	0.0149	0.0110	0.0125	0.0139
8	Inborn Readmission to Delivery Site	0.0113	0.0342	0.0343	0.0301	0.0387	0.0152
9	PSI 17 Birth Trauma-Injury to Neonate	0.0020	0.0043	0.0041	0.0047	0.0042	0.0072
10	Inborn Mortality Rate >= 500 Grams	0.0026	0.0016	0.0014	0.0003	0.0024	0.0012

Rates are statistically significantly better than the NPIC average

Rates are statistically significantly worse than the NPIC average.

Rates are observationally better than the NPIC average; but there was not enough data for calculation of confidence intervals thus statistical significance could not be determined.

Lower is better for all measures except Measures 1 and 2.
2014 MHS Review Group
Source: National Perinatal Information Center Database, July 2014

For PSI 18 and 19, the average rate for all Services has been within the confidence interval or below the NPIC average. The Air Force demonstrated the greatest decrease in rates of PSI 18 or 19 during the period of the PfP initiative when the program SAFER PASSAGES was implemented.

Service-level data for shoulder dystocia reveal that Air Force and Navy have been two standard deviations above the NPIC average from 2011 to 2013, while the Army has been within confidence intervals for the past four years (Appendix Figure 4.4-9). Consistent with direct care data, Service and NCR MD averages for PPH and for PSI 17 are significantly higher than the NPIC average from 2010 to 2013 (Appendix Figures 4.4-10 and 4.4-11). From 2011 to 2013, postpartum and neonatal readmission rates for all three Services have been above the NPIC average. In 2010, there was between-Service variability for postpartum readmission, but direct

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care remained above the NPIC average. Direct care and Service neonatal readmission rates were elevated for all four years.

NCR MD data demonstrate statistically significantly higher averages than the NPIC averages in PSI 18, PPH, and PSI 17 (Table 4.12). Administrative issues with coding identified during NPIC data collection at the two NCR MD institutions raise concerns with the validity of NCR MD data.

Facility Type, Location, and Other Discussions: MTFs that were two standard deviations (clinically significant interval) above the NPIC average for rate of shoulder dystocia, PPH, and PSI 17 for two or more out of four consecutive years ("consistent outlier") were identified (Appendix Table 4.4-15). A total of 11 MTFs (4 Army, 3 Navy, 4 Air Force) were identified to be consistent negative outliers for shoulder dystocia. A total of 25 MTFs (8 Army, 8 Navy, 8 Air Force, and 1 NCR MD) were identified to be consistent negative outliers for PPH. A total of 7 MTFs (3 Army, 2 Navy, 1 Air Force, and 1 NCR MD) were found to be consistent negative outliers for PSI 17.

Comparison to Two External Health Systems: Data were available to compare the performance of the direct care component with two external health systems (HS2 and HS3) for PSI 17, 18, and 19. The direct care component is underperforming compared to the two health systems in PSI 17. As discussed above, "other specified birth injuries" makes up the majority of codes for PSI 17 cases and comparative data about the breakdown of code categories are not available from the NPIC database or the external health systems. Direct care review is needed to determine if these findings are attributable to quality-of-care issues, over-coding, or a combination of both.

While PSI 18 has decreased (improved) in the last three years, and MTFs are performing at the NPIC average, the direct care component is underperforming in comparison with HS2 and HS3 in this metric. For PSI 19, the direct care component is performing well, with rates better than the NPIC average and HS3. However, HS2 is outperforming both direct care and the NPIC average in PSI 18 and PSI 19. An important caveat is that HS2 serves a demographically different population and it is unknown to what extent that may affect these rates.

Summary of Findings:

1. The direct care component met or outperformed the NPIC average in 5 of 10 comparative measures (percent of inductions less than 37 weeks with medical indication, percent of C-section less than 37 weeks with medical indication, PSI 18, PSI 19, and infant mortality).
2. The direct care component underperformed compared to NPIC average in 5 of 10 comparative measures (shoulder dystocia, PPH, PSI 17, maternal readmission to delivery site, and inborn readmission to birth facility). There is evidence that data integrity and coding issues were potentially responsible for a component of the identified trends. A

2005 Patient Safety Study found that less than 22 percent of charts were coded accurately for infant injury.[50]

3. The Tri-Service Perinatal Advisory Group (PAG) has made significant strides in internal and external collaborations to address important quality issues in obstetric care, including PfP, MOES, and use of AWHONN and AAFP training and education programs to improve the quality of perinatal care. In some cases, these initiatives have been associated with improvement in outcomes, but improvement has not been demonstrated in all measures (shoulder dystocia, PPH, and, and PSI 17). There appears to be inconsistent implementation of available programs and tools.

▶ **Recommendations Regarding MHS Perinatal Services**

    a. MHS governance should require a review of perinatal provider documentation and coding practices at MTFs to validate data integrity.

    b. MHS governance should ensure that standardization of accurate perinatal coding practices is implemented across direct care.

    c. MHS governance should investigate readmissions of mothers and infants. This clinical review of diagnostic codes at readmission will identify the medical conditions that drive these rates and determine if lagging performance is a quality issue or related to military-unique issues and flexibility.

    d. Health Affairs policy is needed to standardize annual and interval training requirements related to perinatal care.

    e. The Perinatal Advisory Group should conduct a comprehensive review of clinical practices related to metrics where MHS is underperforming. Through a dashboard and standardized metric reporting requirements, intervention plans should be developed and actions prioritized.

National Surgical Quality Improvement Program (NSQIP®)

Analysts reviewed NSQIP® semi-annual reports from each of the 17 participating MTFs from July 2010 through June 2013 (last full year of data). NSQIP® reports provided risk-adjusted 30-day morbidity and mortality outcomes computed for each participating hospital. The NSQIP® reported metric is an odds ratio that represents the estimated odds of a complication or event occurring in a specific hospital compared to the estimated odds of that event occurring in all participating NSQIP® hospitals. A ratio of 1.0 means the hospital was performing as expected. A ratio greater than 1.0 means the hospital was doing worse than expected and a ratio less than 1.0 means the hospital was doing better than expected. All findings noted by NSQIP® and in this report were statistically significant with a p-value of 0.05. Three full years of data were not available for all 17 hospitals as participation increased over the period and some inpatient facilities were closed. Analysts summarized the reports graphically below and identified

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[50] Department of Defense. DoD Medical Treatment Facilities Patient Safety Indicator 17, Birth Trauma. August 2005.

statistically significant outliers. Analysts described facilities performing statistically much better than expected in any category as "exemplary," an outcome similar to other facilities included in the model as "as expected," and those performing statistically much worse than expected as "needs improvement."

Limitations are as follows:

1) Only 17 of 56 MTFs participate in NSQIP[®]; consequently, these findings may not be representative of all MTFs.

2) Until recently, NSQIP[®] has excluded low-volume facilities from participation; therefore, the NSQIP[®] sample is overrepresented by larger, high-volume facilities. For this reason, the NSQIP[®] civilian sample is unlikely to be representative of all U.S. hospitals. It is unclear if the standards presented by NSQIP[®] are generalizable to all U.S. hospital surgical programs or to the direct care component as a whole.

3) While civilian institutions participate in NSQIP[®], there are no specific TRICARE purchased care data available in the NSQIP[®] data set. Thus, the NSQIP[®] sample represents direct care only.

MHS-Level Discussion: ALL CASE mortality, displayed in Figure 4.7, and in all subsequent tables, which summarizes all surgical care at a facility, was as expected for all 17 participating MTFs over the entire study period. A single exception occurred in the June 30, 2012 report for one facility where mortality returned to "as expected" in the next reporting period. The majority of facilities demonstrated "as expected" or "exemplary" morbidity rates during the reporting period. In the most recent reporting year (July 2012 to June 2013), eight facilities demonstrated higher-than-expected levels of morbidity and were identified as "needing improvement."

Figure 4.7 ALL-CASE Mortality and Morbidity, MTFs, 2010 – 2013

			July '10-June '11		July '11-June '12		July '12-June '13	
			Mortality	Morbidity	Mortality	Morbidity	Mortality	Morbidity
Medical Center	AIR FORCE	David Grant Med Ctr #109	-	★	-	★	-	★
		Michael O'Callaghan Federal Hospital #2057	(gray)	(gray)	-	-	-	△
	ARMY	Blanchfield Army Med Ctr #283	-	△	-	-	-	-
		Carl R Darnall Army Med Ctr #504	-	-	-	★	-	-
		Eisenhower Army Medical Center # 284	-	★	-	★	★	★
		Madigan Army Med Ctr #282	-	△	-	△	-	△
		San Antonio Military Med Ctr #294	-	△	-	△	-	△
		Tripler Army Med Ctr #287	-	△	-	★	★	★
		William Beaumount Army Med. Ctr #125	-	-	-	-	-	★
		Womack Army Med Ctr #281	-	-	△	△	-	△
	NAVY	Naval Med Ctr San Diego #503	-	△	-	-	-	△
		Naval Med Ctr Portsmouth #501	-	△	-	△	-	△
	NCR	Walter Reed Nat'l Mil Med Ctr #500	-	-	-	△	-	★
Community Hospitals	ARMY	Evans Army Comm Hosp #505	-	-	-	-	-	△
	NAVY	Naval Hospital Jacksonville #502	-	★	-	-	-	-
		Naval Hospital Pensacola	(gray)	(gray)			-	-
	NCR	Fort Belvoir Community Hospital #2062	(gray)	(gray)	-	-	-	△

★ Exceeds Standards   - Meets Standards
△ Needs Improvement   (gray) Data Unavailable

2014 MHS Review Group
Source: American College of Surgeons National Surgical Quality Improvement Program, Semiannual Reports, July 2014

As depicted in Figure 4.8, the major contributors to this morbidity were Urinary Tract Infection, Surgical Site Infection, and Return to the Operating Room.

Figure 4.8 Morbidity Trends across MTFs, 2010 – 2013
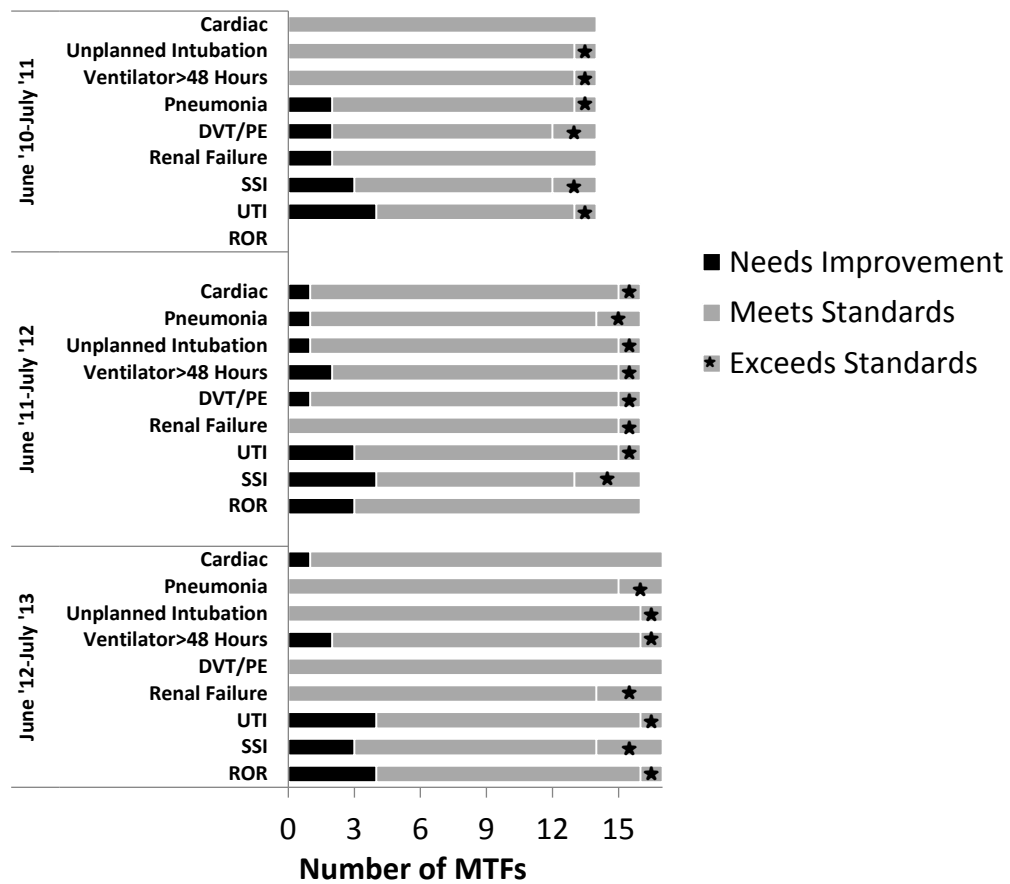
2014 MHS Review Group
Source: American College of Surgeons National Surgical Quality Improvement Program, Semiannual Reports, July 2014

The summary of morbidity outcomes for all facilities through the entire study period is presented in Figure 4.9.

Figure 4.9 MTF Comparison by Type of Morbidity Outcome, 2010 – 2013

		July '10 - June '11									July '11 - June '12									July '12 - June '13								
		Cardiac	Pneumonia	Unplanned Intubation	Ventilator>48 Hours	DVT/PE	Renal Failure	UTI	SSI	ROR	Cardiac	Pneumonia	Unplanned Intubation	Ventilator>48 Hours	DVT/PE	Renal Failure	UTI	SSI	ROR	Cardiac	Pneumonia	Unplanned Intubation	Ventilator>48 Hours	DVT/PE	Renal Failure	UTI	SSI	ROR
AIR FORCE	David Grant Med Ctr #109	-	-	★	★	-	-	-	-	-	-	★	★	★	-	-	★	-	-	-	-	-	-	-	-	-	-	-
	Michael O'Callaghan Federal Hospital #2057										-	-	-	-	-	-	-	-	△	-	-	-	-	-	-	-	-	-
ARMY	Blanchfield Army Med Ctr #283	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Carl R Darnall Army Med Ctr #504	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Eisenhower Army Medical Center # 284	-	-	-	-	★	-	-	★	-	-	★	-	★	★	-	★	-	-	-	★	★	-	-	★	-	★	-
	Madigan Army Med Ctr #282	-	△	-	-	-	-	△	△	-	△	-	-	-	-	-	△	△	-	△	-	-	-	-	-	△	△	△
	San Antonio Military Med Ctr #294	-	-	-	-	-	-	△	△	-	-	△	-	-	-	-	△	△	-	-	-	-	-	-	-	△	-	△
	Tripler Army Med Ctr #287	-	-	-	-	-	-	△	△	-	-	-	-	-	-	-	-	★	-	-	★	-	★	-	★	-	-	★
	William Beaumount Army Med. Ctr #125	-	-	-	-	-	-	-	-	-	-	-	-	△	-	-	-	-	-	-	-	-	△	-	-	★	★	-
	Womack Army Med Ctr #281	-	-	-	-	★	-	-	-	-	-	-	-	△	-	-	-	-	△	-	-	-	-	-	-	-	-	-
NAVY	Naval Med Ctr Portsmouth #501	-	-	-	-	-	-	△	-	-	-	-	-	-	-	-	-	△	-	-	-	-	-	-	-	-	△	-
	Naval Med Ctr San Diego #503	-	△	-	-	△	-	-	△	-	★	-	-	-	-	-	-	-	-	-	-	-	△	-	-	△	-	-
NCR	Walter Reed Nat'l Mil Med Ctr #500	-	★	-	-	△	△	-	-	-	-	-	△	-	△	-	△	△	-	-	-	-	-	-	★	-	★	△
ARMY	Evans Army Comm Hosp #505	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	△	-	-
NAVY	Naval Hospital Jacksonville #502	-	-	-	-	-	-	★	★		-	-	-	-	-	-	-	★	△	-	-	-	-	-	-	-	-	△
	Naval Hospital Pensacola																			-	-	-	-	-	-	-	-	-
NCR	Fort Belvoir Community Hospital #2062										-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	△	-

★ Exceeds Standards   - Meets Standards   △ Needs Improvement   Data Unavailable

2014 MHS Review Group
Source: American College of Surgeons National Surgical Quality Improvement Program, Semiannual Reports, July 2014

Authors of this report discussed MTF performance with NSQIP® officials in an attempt to assess direct care systemwide performance against other systems. The officials reported that many large hospital systems have varying levels of performance among their facilities. It was also noted that as facilities within hospital systems begin to collaborate those variances in performance often improve.

Service-Level Discussion: The Army has nine facilities participating, the Navy four facilities, the Air Force two facilities, and the NCR two facilities (Figure 4.10).

Figure 4.10 Service-Level Comparison, 2010 – 2013
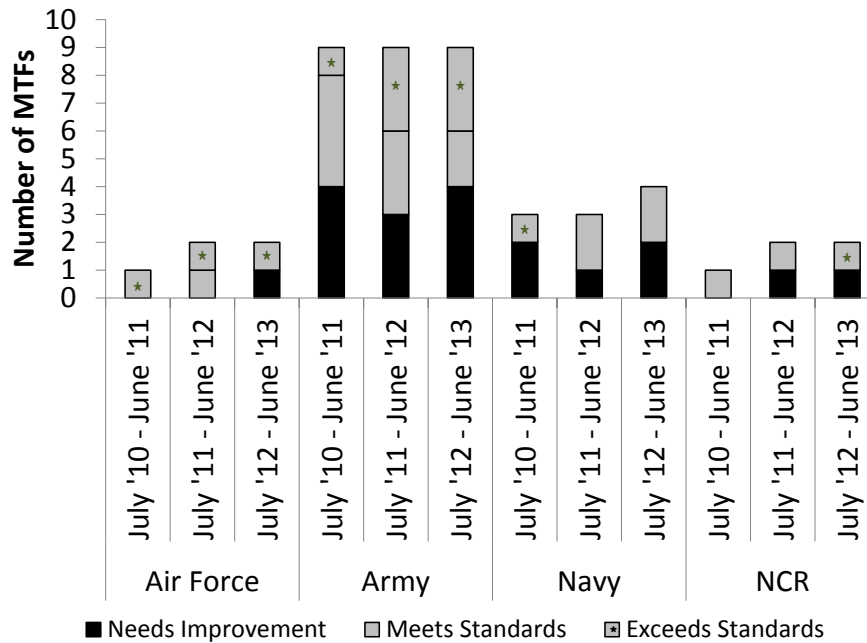
2014 MHS Review Group
Source: American College of Surgeons National Surgical Quality Improvement Program, Semiannual Reports, July 2014

Figure 4.11 Number of MTFs that Need Improvement, Meet Standards, or Exceed Standards in Post-surgical Morbidity by Facility Type (2010 – 2013)
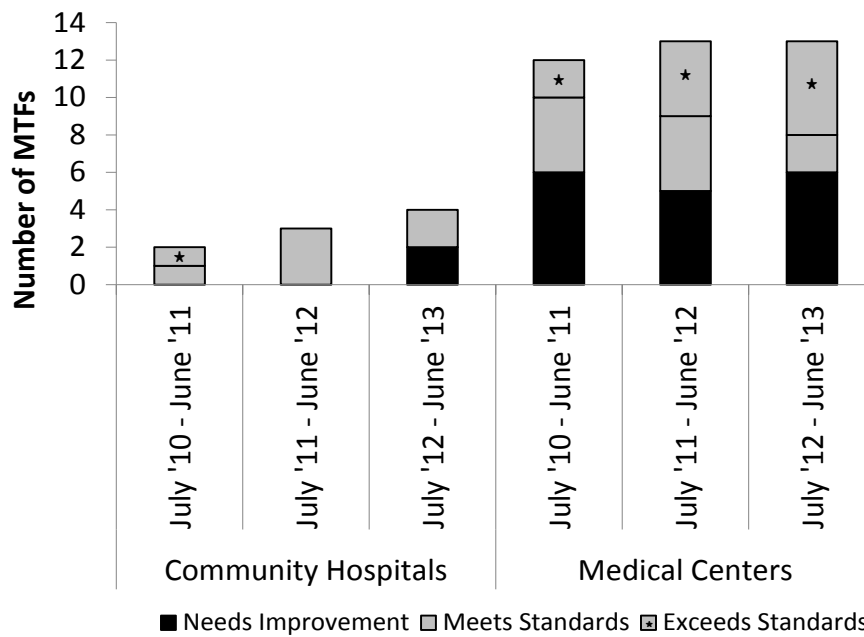
2014 MHS Review Group
Source: American College of Surgeons National Surgical Quality Improvement Program, Semiannual Reports, July 2014

Facility Type: As shown in Figure 4.11, medical centers make up 11 of the 17 participating MTFs (65 percent); thus, they have the highest number of facilities requiring improvement, but also contain the largest number of exemplary performers.

Location and Purchased Care: There are no OCONUS hospitals currently participating in NSQIP®. Furthermore, a limitation of this inquiry is that there are no specific purchased care data from NSQIP® by which to compare MTF surgical outcome data.

Comparison to External Health Systems: Comparative NSQIP® data were received from Health System 3 (HS3). The data provided were number of morbidity events per 1,000 admissions in each NSQIP® category. The data provided in the NSQIP® semi-annual report include the observed surgical event rates as well as the risk-adjusted expected rates, which are based on the patient comorbidities and the complexity of the procedure. For comparison, MTF data, both morbidity and mortality, were converted to the number of events per 1,000 admission and are displayed in Figure 4.12.

Although not risk adjusted, there is a general downward trend in this rate in all categories over the period of the study.

Figure 4.12 MHS Surgical Mortality and Morbidity Rates July 2010 – June 2013

2014 MHS Review Group
Source: American College of Surgeons National Surgical Quality Improvement Program, Semiannual Reports, July 2014

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Figure 4.13 MHS and HS3 Surgical Morbidity Rates, July 2012 – June 2013
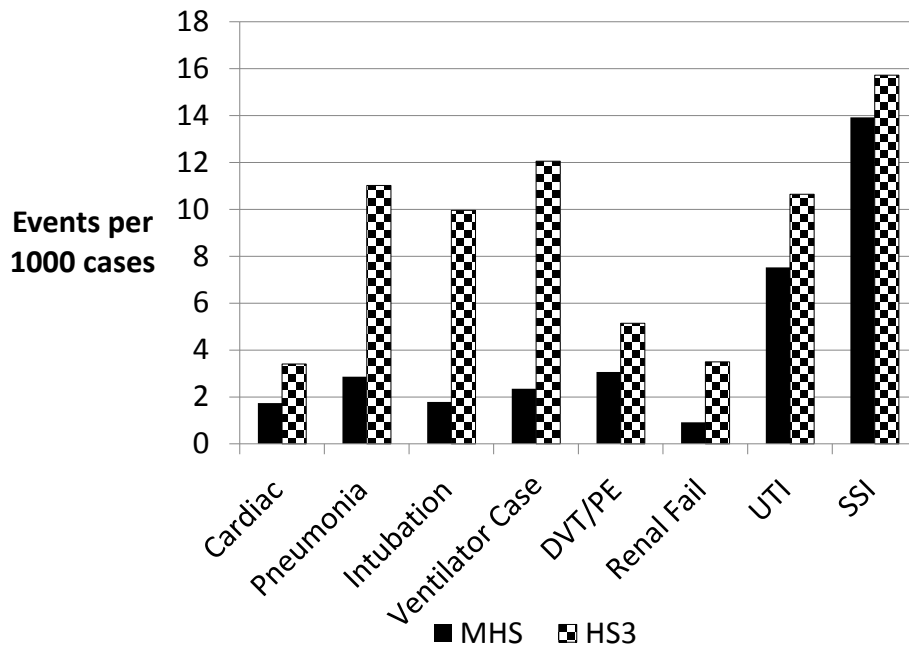
2014 MHS Review Group
Source: American College of Surgeons National Surgical Quality Improvement Program, Semiannual Reports, July 2014

When comparing surgical outcomes, using risk-adjusted rates is the preferred method. The MTF data are compared to HS3 in Figure 4.13. The comparability for this data is limited as it is not risk adjusted; thus, it does not take into account pre-existing patient conditions that could affect the surgical outcome. Results indicate that HS3 has higher numbers of surgical morbidity events across the spectrum as compared with direct care MTFs.

Direct care data obtained from participation in PfP showed a 36.5 percent reduction (Figure 4.14) which is similar to the 42 percent reduction seen in NSQIP[®] direct care rate seen in Figure 4.12.

Figure 4.14 Direct Care Partnership for Patients (PfP) Surgical Site Infection Rates, 2010 – 2013
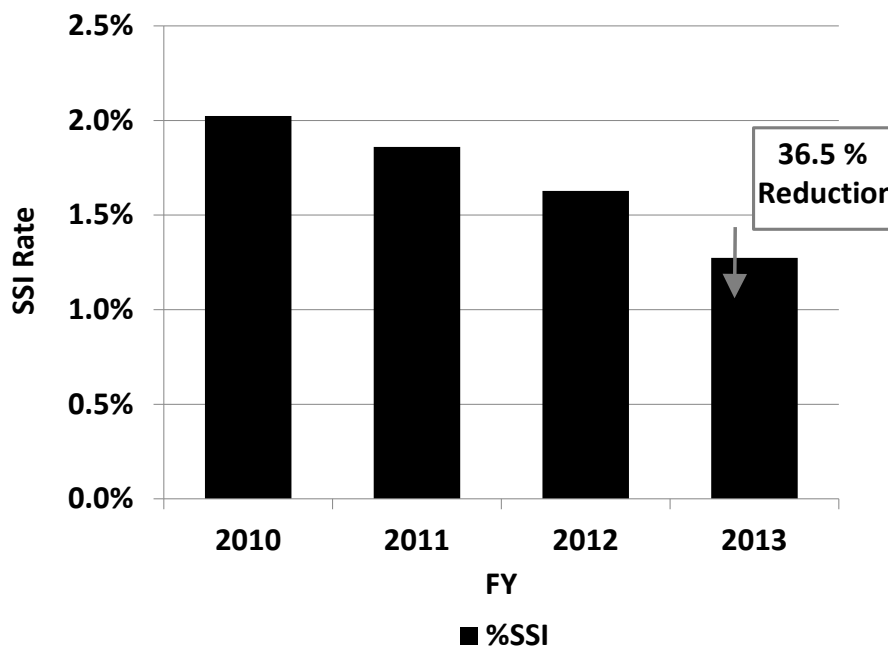
2014 MHS Review Group
Source: Direct care Partnership for Patients, July 2014

Summary of Findings:

1. There is evidence in direct care of a long-term commitment to collect surgical outcome data and improve performance of facilities: 30 percent of eligible direct care MTFs participate in NSQIP® compared to 10 percent of U.S. civilian hospitals.
2. Three MTFs in the most recent data period are performing at the top tier nationally.
3. Surgical morbidity is statistically significantly higher than expected in eight MTFs and was sustained over the reporting period in several of these facilities.
4. Morbidity involving Urinary Tract Infection, Surgical Site Infection, Return to the Operating Room, and Pneumonia has been most problematic for facilities.
5. Surgical mortality in the most recent data period is as expected in all 17 facilities.

▶ **Recommendations Regarding Surgical Quality Improvement**

a. **MHS governance should explore expanding NSQIP® participation to all remaining direct care inpatient facilities performing surgery. In addition, it should ensure all ambulatory surgery platforms participate in a similar surgical quality improvement program.**
b. **The DHA Healthcare Operations Directorate should partner with the American College of Surgeons NSQIP staff to improve MTF collaboration and sharing of best practices of top performing facilities, thereby decreasing overall direct care surgical morbidity and improving clinical outcomes.**

    c. MHS governance should task the NSQIP® working group to assess surgical morbidity shortfalls to the Medical Operations Group for Tri-Service/DHA engagement, collaborative support, and facility action.

Inpatient Mortality Measures

While inpatient mortality has traditionally not been viewed as an accurate reflection of care quality, a consensus among leading civilian organizations is that the judicious use of risk-adjusted mortality measures can serve a valuable role in identifying trends warranting further investigation. Risk-adjusted, disease-specific and condition/procedure-specific mortality rates are more accurate and useful in quality management.

AHRQ developed condition-specific mortality measures using administrative records as part of its Inpatient Quality Indicator (IQI) measure set. The IQI measure set contains a number of condition-specific mortality measures including deaths from Pneumonia, Acute Myocardial Infarction (AMI), Stroke, and Congestive Heart Failure. Data are risk-adjusted to account for the different risk of death among patient populations and can be used to identify higher-than-expected condition-specific mortality rates at a given facility compared to other facilities. AHRQ provides benchmark values for its IQI measures and DHA uses these benchmark values for comparison. Similar to other risk-adjusted mortality models, the information is used as a trigger for additional facility-level investigation.

IQI mortality measures (Pneumonia, Congestive Heart Failure, AMI, and Stroke) have been reviewed by the Clinical Measures Steering Panel but have received limited Service-level action. Crude and risk-adjusted mortality measures have only recently been developed at the DHA level and have not been used for quality management at the Service or MTF level at this time. No measures of mortality for facilities in the purchased care system are reviewed, though facility-level data are available online from TJC and Hospital Compare websites. Specific mortality measures discussed in this review are displayed in Table 4.13**.**

<div align="center">

Table 4.13 Mortality Measures

Mortality Measures
Acute Myocardial Infarction (AMI) Mortality Rate (IQI #14)
Congestive Heart Failure Mortality Rate (IQI #15)
Acute Stroke Mortality Rate (IQI #16)
Pneumonia Mortality Rate (IQI #20)
Risk Adjusted Mortality Measure by MTF

Source: 2014 MHS Review Group, July 2014
</div>

MHS-Level Discussion

IQI Condition Specific Mortality Measures*:* Numerators for IQI data are small, such that single deaths can lead to substantial changes in MTF-level performance from quarter to quarter. For this reason, MTFs with less than 20 cases of Stroke, Pneumonia, AMI, or Congestive Heart

Failure per year were excluded from this analysis. Thus, this analysis is largely weighted to medical centers for the IQI AMI, Stroke, and Congestive Heart Failure mortality measures but includes hospitals (in addition to medical centers) for the IQI Pneumonia mortality measure.

Table 4.14 illustrates the direct care-level mortality rates from 2010 to 2013 for the IQI AMI, Congestive Heart Failure, Stroke, and Pneumonia measures. Numerical values are listed as percentages in the table below, along with the IQI average mortality rate in the second column. Over the last four years the direct care component has met or exceeded the IQI average for these measures 72 percent of the time. IQI 16 – Congestive Heart Failure mortality showed the worst performance of all measures with only 62 percent of quarters being within the expected range, although all quarters were within 1 to 2 percent of the benchmark value. Values for the other measures were 75 percent (Stroke and AMI) and 82 percent (Pneumonia) of quarters within the expected range.

Table 4.14 Direct Care Component IQI Condition-specific Mortality Rates for 2010 – 2013

IQI Measure	Bench-mark	2010 Q1	2010 Q2	2010 Q3	2010 Q4	2011 Q1	2011 Q2	2011 Q3	2011 Q4	2012 Q1	2012 Q2	2012 Q3	2012 Q4	2013 Q1	2013 Q2	2013 Q3	2013 Q4
CHF	3.2	3.13	2.55	1.87	2.47	3.49	3.28	3.01	4.37	2.08	3.40	3.20	4.01	2.81	1.93	3.32	3.51
Stroke	9.0	10.22	8.53	8.93	7.45	7.75	5.83	7.19	6.72	8.17	5.97	10.52	7.87	10.09	5.06	11.33	6.69
Pneum	3.9	3.36	2.92	1.93	4.15	2.47	3.05	1.72	3.83	2.97	3.00	1.45	4.67	4.16	3.57	2.38	2.75
AMI	6.0	5.62	4.39	4.43	5.63	6.46	6.11	4.36	6.53	4.18	3.19	0.63	4.63	8.34	4.73	2.65	3.46

🟩 Below expected mortality
🟥 Above expected mortality, warrants investigation.
*facility with < 10 deaths
2014 MHS Review Group
Source: MHS Population Health Portal, June 2014

Service-Level Discussion

Service-specific quarterly performance has been within the expected range for 69 percent (Army) and 72 percent (Navy/Air Force) of this timeframe. Analysis of CONUS and OCONUS sites was not completed due to insufficient OCONUS data for comparison.

Assessment of Direct Care Risk Adjusted Mortality: The direct care component has not routinely used mortality rates for quality monitoring purposes. For the purposes of this review, a study was undertaken to develop risk-adjusted mortality ratios based on a commonly accepted (Elixhauser) methodology. Using regression analysis, a statistical model was developed that calculated expected deaths based on the case-mix of an MTF's population for a cohort of large hospitals. This initial study only looked at the year 2013, comparing the predicted number of deaths for an MTF against the observed number of deaths to define a Standardized Mortality Ratio (SMR). A SMR above 1.0 indicated a higher number of deaths than predicted. An SMR below 1.0 indicated fewer deaths at the facility than predicted. To ensure these results were statistically significant, confidence intervals were calculated such that areas of concern would demonstrate an SMR lower confidence limit above 1.0. This model is new and has not been

presented at the Service or MTF levels; thus there has been no opportunity for MTFs to validate these results using accepted methods.

The results of this initial look at risk adjusted mortality in the direct care component for 2013 showed 16 MTFs with better-than-expected risk adjusted mortality rates, 7 with rates that are within the expected range and 4 MTFs with worse-than-expected mortality rates (Table 4.15). These results for worse-than-expected mortality rates include facilities that were also identified with worse-than-expected IQI mortality rates. All other facilities looked at with this initial model are within the expected range for mortality.

Table 4.15 Facility-specific Risk-adjusted Standardized Mortality Ratios for 2013

Standardized Mortality Ratio (SMR) Assessment	MTF	Discharges
Better than Expected SMR	EVANS ACH-FT. CARSON	1910
	NH JACKSONVILLE	1623
	DARNALL AMC-FT. HOOD	2730
	633rd MDG LANGLEY-EUSTIS	913
	88th MDG-WRIGHT-PATTERSON	2738
	96th MDG-EGLIN	2137
	MARTIN ACH-FT. BENNING	2045
	99th MDG-O'CALLAGHAN HOSP	2631
	FT BELVOIR COMMUNITY HOSP	3221
	BLANCHFIELD ACH-FT. CAMPBELL	1273
	NH PENSACOLA	1490
	WOMACK AMC-FT. BRAGG	4529
	WALTER REED NATL MIL MED CTR	8045
	SAN ANTONIO MMC	18132
	NMC SAN DIEGO	9646
SMR Within Expected Range	673rd MED GRP-ELMENDORF	1802
	EISENHOWER AMC-FT. GORDON	3937
	NH OKINAWA	846
	FT. LEONARD WOOD HOSP	1437
	MADIGAN AMC-FT. LEWIS	8201
	NMC PORTSMOUTH	8651
	WILLIAM BEAUMONT AMC	5859
Worse than Expected SMR	TRIPLER AMC-FT SHAFTER	6992
	NH GUAM-AGANA	1081
	60th MED GRP-TRAVIS	4125
	81st MED GRP-KEESLER	2342

2014 MHS Review Group
Source: Military Health System Mart (M2), July 2014

Risk Adjusted Mortality: Two external systems provided risk-adjusted mortality data calculated using proprietary risk-adjustment formulas. Due to differences in the models used by

direct care component and these external systems, valid comparisons were not possible. These differences made it impossible to render a valid conclusion regarding differences in the risk adjusted mortality rates between systems.

Summary of Findings:

1. The direct care component lags behind civilian benchmark organizations in the use of mortality measures as indicators of potential quality of care problems.
2. Over the last four years the direct care component has met or exceeded the IQI average for these measures 72 percent of the time.
3. The results of this risk adjusted mortality model for calendar year 2013 demonstrated 16 MTFs with better-than-expected risk adjusted mortality rates, 7 with rates that are within the expected range, and 4 with worse-than-expected mortality rates.

▶ **Recommendations Regarding Mortality Measurements**

a. **MHS governance should integrate measures of mortality into its quality monitoring and performance improvement programs.**
b. **MHS governance should require Service facilities with higher-than-expected mortality on an IQI measure for more than one quarter to perform an investigation and implement improvement activities as indicated.**
c. **MHS governance should evaluate the use of the risk-adjusted standardized mortality ratio (SMR) model in direct care. Facilities with higher-than-expected mortality should validate the risk-adjusted SMR model data and perform a root cause analysis as indicated.**

Experience of Care Summary

Results of customer surveys have become increasingly important in measuring MHS performance and in directing action to improve beneficiary experience and quality of services provided. Surveys are modeled to identify key drivers of satisfaction in the MHS. This summary is based on analysis of data from several DoD and Service-specific surveys regarding beneficiary experience with MHS health care. The questions chosen for comparison from DoD surveys were selected to be comparable to the HCAHPS and CAHPS civilian benchmarks.

HCSDB is sent quarterly to an annual sample of approximately 200,000 eligible beneficiaries. It is emailed to active duty personnel and mailed to other MHS beneficiaries with responses by mail or Internet. HSCDB survey data describe the ratings of the patient's perception of their health plan, their health care, their personal physician, and their specialty care. All benchmarks for HCSDB are based on the CAHPS 50th percentile. Sampled beneficiaries may or may not have used or tried to use healthcare at the time of the survey. Response rates among the surveys, and among subpopulations within surveys, vary significantly.

The TRICARE Outpatient Satisfaction Survey (TROSS) measures outpatient ratings of satisfaction with the provider and with health care. TROSS is sent to MHS beneficiaries

following outpatient encounters. Approximately 575,000 beneficiaries are surveyed annually.
All benchmarks for TROSS are based on the CAHPS 75th percentile.

TRICARE Inpatient Satisfaction Survey (TRISS) measures inpatient discharge patient ratings of
the hospital overall and whether the patient would recommend the hospital.

MHS-Level Discussion

According to results from the HCSDB survey, MHS beneficiaries:

- Are more satisfied with their health plan as compared to the civilian benchmark.
- Rate their overall satisfaction with their health plan at 66 percent in FY 2013, exceeding
  the civilian benchmark of 57 percent.
- Prime enrollees rate their overall health plan at or above the CAHPS level at 90 percent
  of the MTFs. More than half of the MTFs rate at or above the 75th percentile.
- Are less satisfied with their health care overall as compared to the civilian benchmark
- Rate their health care at 8, 9, or 10 on a 0–10 scale (64 percent), below the civilian
  benchmark of 72 percent.
- Showed increased ratings for health care from FY 2011 to FY 2013, according to
  HCSDB direct care ratings.
- Rate their personal doctor and specialty care below the CAHPS benchmarks.
- Rate their purchased health care at scores that meet or exceed the CAHPS benchmarks.

According to TROSS results:

- TROSS scores regarding "satisfaction with the provider" ranked in the middle (50th
  percentile) for most facilities when compared to CAHPS.
- TROSS scores regarding "overall satisfaction with care" during this time period
  increased from 81 percent in FY 2012 to 84 percent in FY 2013.
- TROSS scores for "overall satisfaction" with purchased care remained stable between 88
  percent and 89 percent.

According to TRISS results:

- TRISS ratings for the direct care hospital experience show an increase from 63 percent in
  FY 2011 to 67 percent FY 2013; remaining below the civilian benchmark of 70 percent.
- TRISS hospital ratings for the Air Force (73 percent) and NCR MD (74 percent) facilities
  were above the benchmark.
- TRISS scores indicating whether a patient would recommend direct care hospitals
  improved from 68 percent in FY 2012 to 71 percent in FY 2013, reaching the benchmark
  in FY 2013 (71 percent).
- In FY 2013, the TRISS ratings for "recommend hospital" for the Air Force (76 percent),
  Navy (71 percent), and NCR (81 percent) were all at or above the civilian benchmark;
  while ratings for the Army (68 percent) were below. (The percentiles reported here for

TRISS are not patient mix adjusted; however, they are weighted to remove non-response bias and an algorithm is applied to adjust sample weights according to the MHS region population distribution).

- Beneficiaries who received care within the purchased care component for surgical and obstetric care rated their hospital higher than did those in the direct care component.
- MHS beneficiaries receiving surgical care in the direct care component rated their hospital inpatient experience higher than the civilian benchmark. This remained true in FY 2013 for beneficiaries discharged from either a MTF or a civilian hospital.
- Beneficiaries receiving in-patient obstetric care rated the DoD hospital lower than the purchased care hospitals.

Excluding obstetric data, the overall direct care in-patient scores exceeded the civilian benchmark.

Service-Level Discussion

Service-specific surveys should not be used to compare the different Services health care systems. The questions and areas of focus are not comparable.

The Army Provider Level Satisfaction Survey (APLSS), with email and postal mail with web response capability, obtains data from approximately 350,000 beneficiaries a year. The survey randomly selects patients who may respond to 24 questions by mail or email. The questions are designed to gather patient feedback on access to care, cleanliness of the facility, and courtesy of the staff. Ratings fluctuated but remained at 93 to 94 percent for overall ratings from FY 2011 to FY 2014 QTR 3. In APLSS, specialty care outperforms primary care by four percentage points. There is no direct civilian benchmark directly related to the APLSS questions.

The Navy postal and mail response based Patient Satisfaction Survey (PSS) obtains data from approximately 134,000 beneficiaries annually. Patient satisfaction results are compared to feedback given by the general civilian population regarding their health care providers within their private insurance plan. During this time frame, Navy MTFs consistently scored above 90 percent for overall satisfaction with care.

The Air Force telephone-based Service Delivery Assessment (SDA) obtains data from approximately 200,000 beneficiaries a year. The survey is designed to gather patient feedback in multiple areas of concern. SDA quarterly data from FY 2011 Q3 through FY 2014 Q2 indicate that ratings for primary care were higher than specialty care. During that timeframe, ratings fluctuated but remained over 94 percent. There is no civilian benchmark to compare to this measure.

Facility Type and Location Discussions

TROSS data indicate no large difference in experience of care based on facility type; MEDCENs, Community Hospital and Health Clinic) for TROSS. HCSDB ratings for personal doctor and health care measures demonstrated small differences. The HCSDB rating of personal doctor in the MEDCENs was 74 percent, compared to 69 percent for clinics. HCSDB rating of

heath care for medical centers was 59 percent; compared to 56 percent for clinics. APLSS, PSS, and SDA scores indicate that within each survey the types of facility score statistically similar within a range of two percentage points.

Location: Scores from HCSDB, TROSS, and TRISS indicate that there are minimal differences in the experience of care between CONUS and OCONUS facilities as seen in Table 4.16. It is assumed that the differences in the TRISS measure "recommend OCONUS hospital" reflect a comparison of the DoD facility with the local national facility. The TRISS CONUS Hospital "willingness to recommend" measure matches the civilian benchmark. Service-specific surveys, APLSS, PSS, and SDA show satisfaction ratings for OCONUS and CONUS to be statistically similar in all areas.

Table 4.16 Ratings of Overseas and U.S. Facilities by OCONUS and CONUS

Measure	OCONUS	CONUS
HCSDB Ratings of Health Care for Overseas and U.S. facilities	54 %	58 %
HCSDB Ratings of Personal Doctor at overseas and U.S. facilities	69 %	71 %
TROSS Satisfaction with Care ratings for Overseas and U.S. facilities	85 %	83 %
TRISS Hospital Ratings for Overseas and U.S. facilities	66 %	66 %
TRISS Ratings for recommend hospital for overseas and U.S. facilities	82 %	71 %

2014 MHS Review Group
Source: Health Care Survey of DoD Beneficiaries (HCSDB), TRICARE Outpatient Satisfaction Survey (TROSS), TRICARE Inpatient Satisfaction Survey (TRISS), July 2014

Comparison to External Health Systems

Rating of Health Care Plan: HCSDB TRICARE Prime Enrolled Beneficiaries (MTF and Civilian Combined) and the three comparison system are statistically equivalent. During Fiscal Years 2010, 2011, and 2012 all four systems, MHS and three external systems (66 to 67 percent), are significantly higher than CAHPS Benchmark of 57 percent. Statistical significance testing was not completed to assess difference in responses (Table 4.17).

Table 4.17 Rating of Health Care Plan, 2011 – 2013

System	2011	2012	2013
Health System 1	64%	64%	67%
Health System 2	70%	68%	67%
Health System 3	63%	63%	66%
HCSDB TRICARE Prime Enrolled Only (MTF and Civilian Combined)	65%	65%	66%
CAHPS Benchmark (adjusted to MHS population)	57%	56%	57%

2014 MHS Review Group
Source: Consumer Assessment of Healthcare Providers and Systems (CAHPS), Health Care Survey of DoD Beneficiaries (HCSDB), July 2014

Rating of Personal Doctor: HCSDB TRICARE Prime Enrolled Beneficiaries (MTF and Civilian Combined) rated their personal doctor lower than did patients in Health System 2, Health System 3, and the CAHPS benchmarks. Statistical significance testing was not completed to assess differences (Table 4.18).

Table 4.18 Rating of Personal Doctor, 2011 – 2013

System	2011	2012	2013
Health System 1	-	-	-
Health System 2	86%	85%	85%
Health System 3	86%	87%	81%
HCSDB TRICARE Prime Enrolled Only (MTF and Civilian Combined)	71%	72%	73%
CAHPS Benchmark (adjusted to MHS population)	80%	79%	80%

2014 MHS Review Group
Source: Consumer Assessment of Healthcare Providers and Systems (CAHPS), Health Care Survey of DoD Beneficiaries (HCSDB), July 2014

Health Care Rating: HCSDB TRICARE Prime Enrollees rated their health care similarly to enrollees in Health System 1. HCSDB TRICARE Prime Enrollees rated their health care lower than did patients in Health System 2, Health System 3, and CAHPS benchmarks. Statistical significance testing was not completed to assess differences (Table 4.19).

Table 4.19 Health Care Rating, 2011 – 2013

System	2011	2012	2013
Health System 1	58%	59%	62%
Health System 2	81%	79%	79%
Health System 3	77%	77%	79%
HCSDB TRICARE Prime Enrolled Only (MTF and Civilian Combined)	59%	61%	62%
CAHPS Benchmark (adjusted to MHS population)	72%	72%	72%

2014 MHS Review Group
Source: Consumer Assessment of Healthcare Providers and Systems (CAHPS), Health Care Survey of DoD Beneficiaries (HCSDB), July 2014

Rating Hospital In-patient Care: TRICARE Prime Enrolled Beneficiaries TRISS Ratings of Hospital were consistently lower than were ratings by patients in the three comparison Health Systems. MHS was below the benchmark. The three comparison systems were above the CAHPS benchmark. Testing of statistical significance of difference was not conducted (Figure 4.15).

Figure 4.15 Comparison of TRISS to Three Other Health Systems for Hospital Ratings, CY13, Monthly
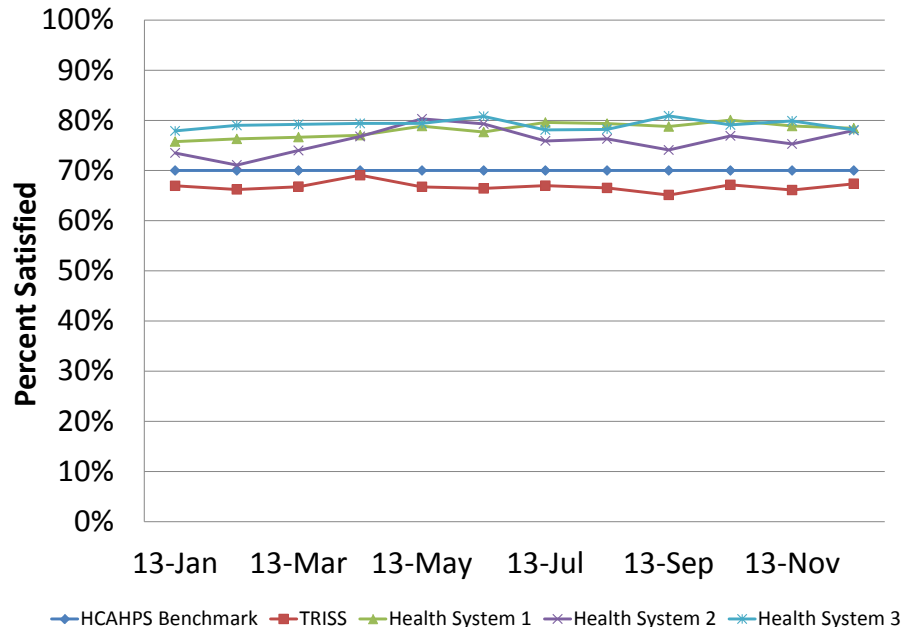
2014 MHS Review Group
Source: TRICARE Inpatient Satisfaction Survey, July 2014

Rating In-patient Hospital: TRICARE Prime Enrolled Beneficiaries 2013 TRISS Ratings of Recommend Hospital were consistently lower than were ratings by patients of Health System 1

and Health System 3 and slightly lower than Health System 2 (Figure 4.16). Testing of statistical significance of difference was not conducted.

Figure 4.16 Comparison of TRISS to Three Other Health Systems for Recommend Hospital, CY13, Monthly
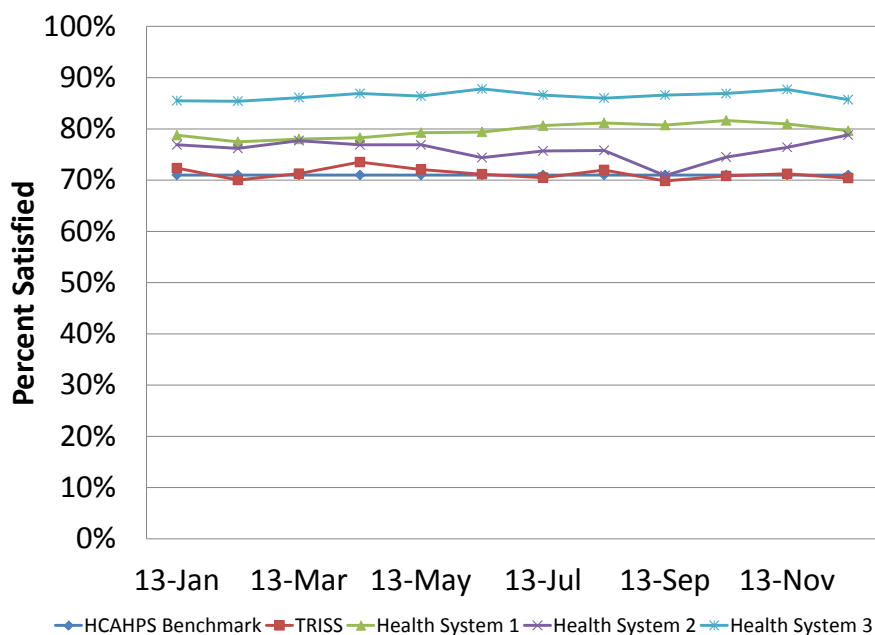
2014 MHS Review Group
Source: TRICARE Inpatient Satisfaction Survey, July 2014

Summary of Findings:

1. According to the HCSDB survey, MHS beneficiaries rate their health plans higher than the civilian benchmark, but lower for overall health care.
2. Overall satisfaction with inpatient surgical care exceeded the civilian benchmark.
3. Overall satisfaction with obstetrics falls below the civilian benchmark, singularly lowering the overall inpatient scores below the civilian benchmark.
4. There is room for DoD improvement regarding the experience of care with primary care. PCMH-accredited sites have higher levels of satisfaction than non-accredited PCMH.
5. Data indicate that MTF enrollees are less likely than comparable civilian populations to see the same provider and get an appointment when they feel one is needed.

▶ **Recommendations Regarding Patient Satisfaction**

a. **MHS governance should continue to study determinants of patient satisfaction and develop strategies to meet or exceed civilian benchmarks in satisfaction with primary care and obstetrics for every MTF.**
b. **MHS governance should continue to guide MTFs in implementation of strategies to optimize PCMH operations and use of secure messaging, Nurse Advice Line (NAL), and other customer service tools.**

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   c. **Services and DHA should continue to evaluate determinants of satisfaction with
       primary care and ensure ongoing maturation of PCMH in all MTFs.**

Primary Care Manager Continuity

The MHS implemented the Primary Care Medical Home (PCMH) model of care in order to
improve health care quality, medical readiness, access to care, and patient satisfaction, and to
lower per capita cost growth. PCMH is an established model for primary care, designed in part
to improve continuity of care and to enhance the effectiveness of patient-provider
communication. Patient centeredness refers to an ongoing, active partnership with a primary
care physician who leads a team of professionals dedicated to providing proactive, preventive,
and chronic care management through all stages of life. One of the core principles of the PCMH
model is that patients have a consistent relationship with a primary care manager (PCM), which
continues to be the driving force behind the MHS's transformation from a system for health care
to one supporting health. The continuous relationship between a patient and his/her provider has
improved patient engagement and resulted in a reduction in unnecessary treatment and
emergency room utilization.

The direct care component relies on NCQA to evaluate whether hospitals and clinics are
providing medical homes. NCQA evaluations focus on every aspect of PCMH delivery to
include: access and the delivery of enhanced access; quality of care to include the use of
evidence-based guidelines and comprehensive care; and safety to include medication
reconciliation and continuous improvements in all aspects of care. In these evaluations the direct
care component stands alone: 301 military clinics have achieved NCQA recognition, and the
direct care component boasts the highest average survey scores of all health care organizations
undergoing evaluation. By the end of 2014, all primary care practices will have sought
recognition by NCQA with PCM continuity serving as one of its primary standards.

The measurement of PCM continuity provides feedback to enhance the quality of care;
consistent appointments with a PCM facilitate patient wellness and disease prevention when
compared to discontinuous, acute, episodic care. The measure is the rate of all appointments in
primary care (e.g., acute, routine, wellness) that are with the MTF enrollee's assigned PCM.
Data for this measure are continuously available from the Service to individual PCM levels
through TRICARE Operations Center (TOC) reports drawing data from the Composite Health
Care System (CHCS).

Overall, PCM continuity in the direct care component increased 9.9 percent from a FY 2012
average of 55.4 percent to a FY 2014 (July) average of 60.9 percent: baseline PCM continuity
was 41 percent in June 2010. Increasing the level of PCM continuity was a major quality
initiative for the three Services and NCR MD in support of PCMH implementation. Moreover,
improved availability of a continuous relationship with a PCM was one of the top four items
requested by patients. The initial performance target for PCM continuity was 60 percent. In
light of the improved overall performance of the system, the target was increased to 65 percent
for FY 2014 (see Figure 4.17).

Figure 4.17 MHS Primary Care Manager (PCM) Continuity
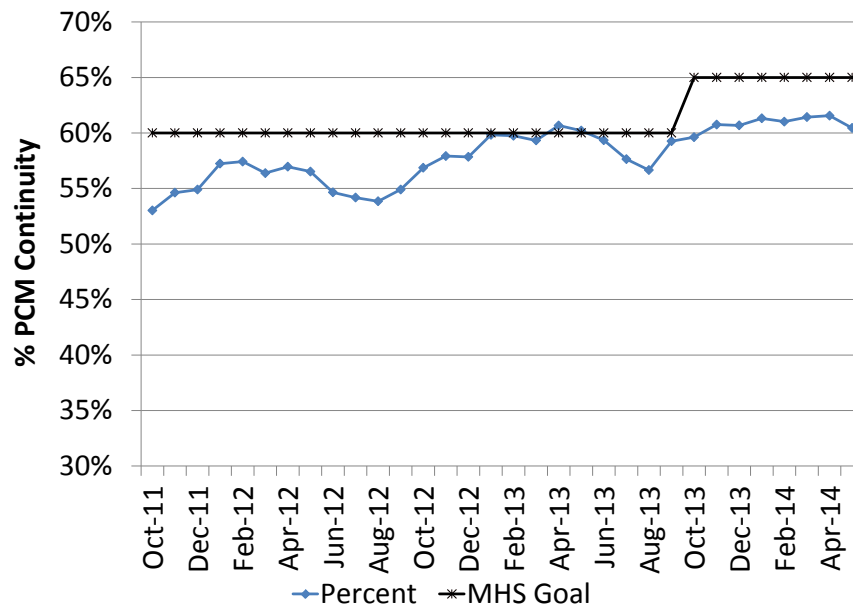
2014 MHS Review Group
Source: TRICARE Inpatient Satisfaction Survey, July 2014

Each Service and the NCR MD increased PCM continuity during this period with Navy achieving the highest average in FY 2014 and the greatest rate of change from FY 2012. Though improving, NCR MD lags behind the Services in PCM continuity (Figure 4.18).

Figure 4.18 Percent of Appointments where the Patient Saw their Assigned PCM – By Service
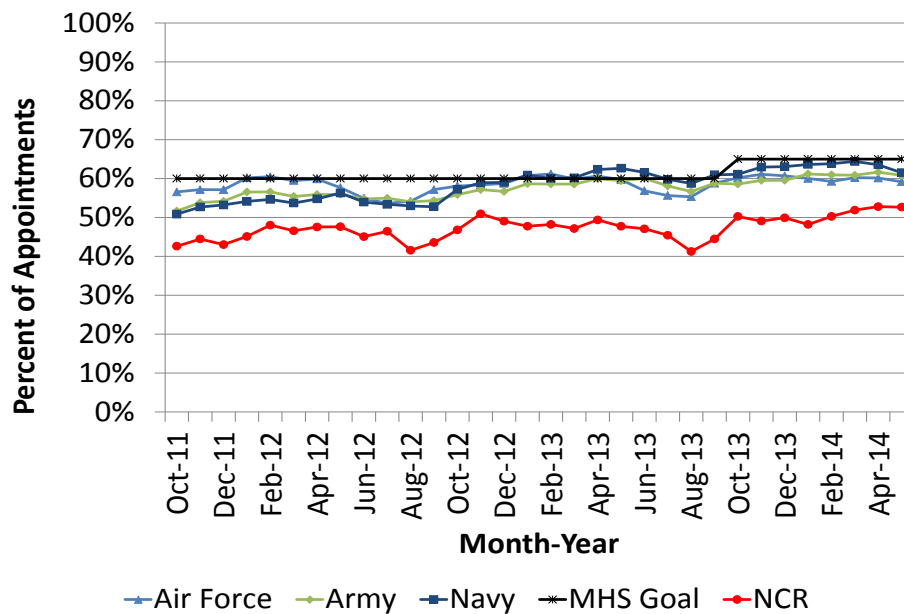
2014 MHS Review Group
Source: TRICARE Operations Center, July 2014

MTF PCM continuity has increased; however, clinic and hospital continuity is higher than medical center continuity (Figure 4.19). Continuity tends to be lower at medical centers with residency programs and other direct care options such as Emergency Departments and Urgent Care Centers. MTF range of performance varies from 90.1 percent to 21.6 percent with a mean of 60.9 percent indicating the need for improvement in PCM continuity at the facility level. Continuity reflects the percentage of time a patient is seen by their assigned PCM when accessing primary care within their MTF. Every effort is made to ensure each patient's PCM remains the same while the patient is enrolled to the MTF; however, PCM reassignment may be necessary due to the unique consequences of military service such as Permanent Change of Stations (PCSs), deployments, retirements, and separations. PCMH is a team-based approach to primary care and if PCM reassignments do occur, the MTF makes every effort to keep the patient with the same team that has been providing their care.

Figure 4.19 Percent of Appointments where the Patient Saw their Assigned PCM – by Facility Type
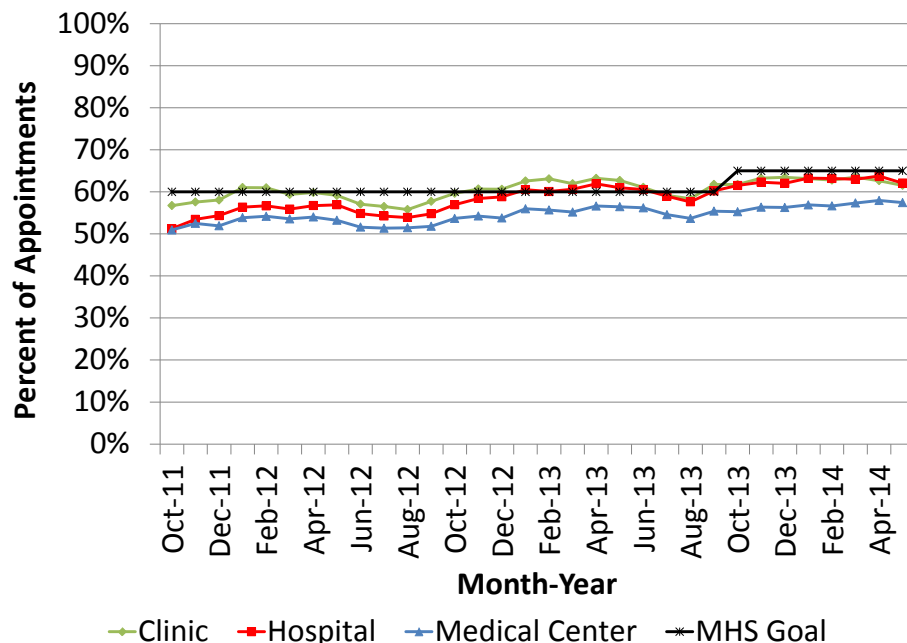
2014 MHS Review Group
Source: TRICARE Operations Center, July 2014

Overall performance on PCM continuity for CONUS and OCONUS facilities is consistent.

In summary, PCM continuity averages 61 percent; there is low variance across the direct care component with a median of 62 percent and an interquartile range of 56 percent to 69 percent. There are five positive outliers beyond two standard deviations from the mean and four negative outliers.

▶ **Recommendation Regarding Primary Care Manager Continuity**

    a. **The PCMH Advisory Board should assess processes that affect PCM continuity at high-performing PCMH sites and promulgate best practices across the MHS to support improvement initiatives.**

Site Visit Information

Seven MTF site visits were conducted to assess the onsite execution and implementation of DoD, Service, and NCR MD policies. Each site visit focused on key areas related to quality: policy and governance, leadership, quality improvement infrastructure, performance improvement efforts, and patient focus. Upon completion of each site visit, the team evaluated MTF performance against a 12-question checklist using a Likert scale that ranged from score 1 (Not correlated) to score 5 (Exceeds). Observations from the site visits are outlined below (Figure 4.20).

Figure 4.20 Perceptions Among Regional Headquarters, MTF Leaders, Subject Matter Experts (SMEs), Staff Members and Patients During Seven MHS Site Visits, 2014
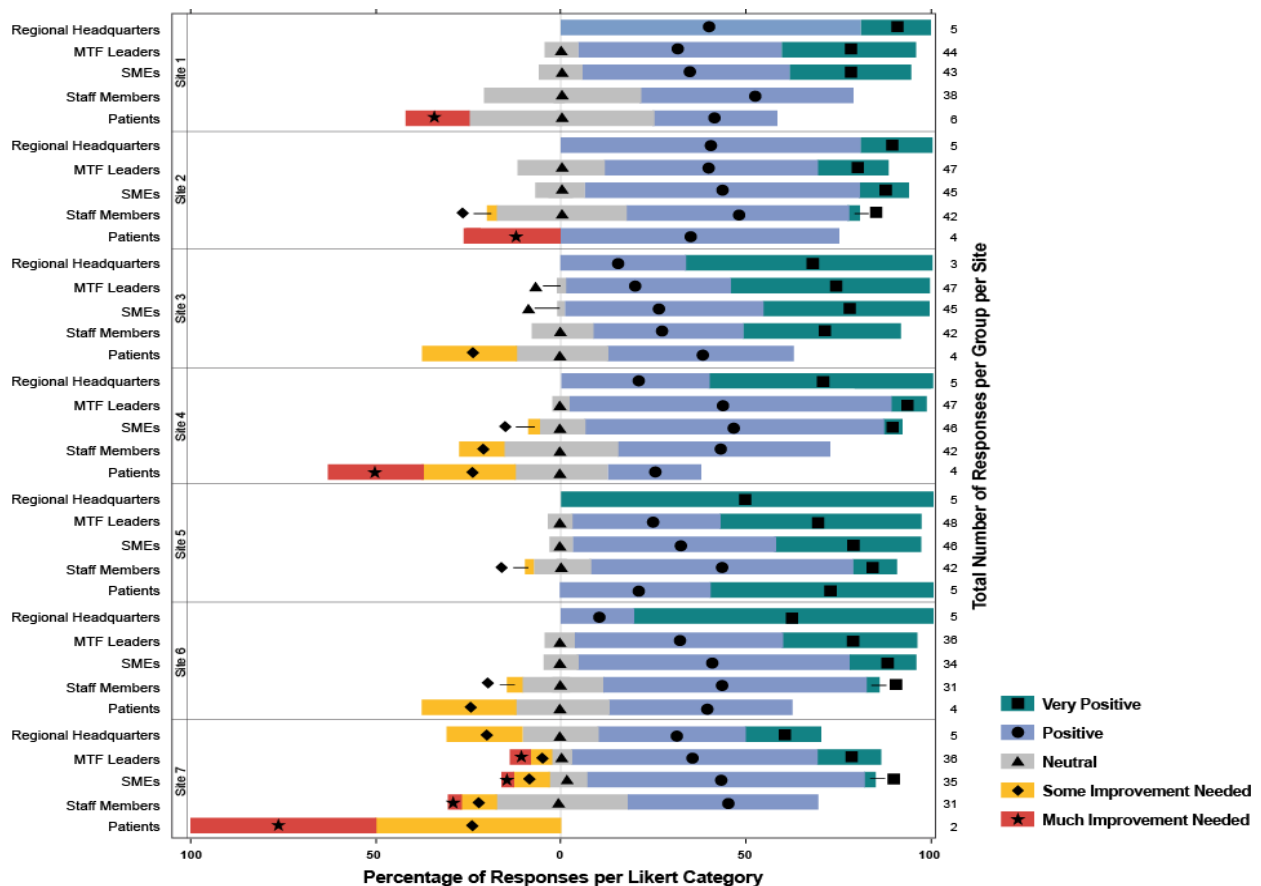
2014 MHS Review Group
Source: MHS Site Visit Survey, June - July 2014

Policy

Current DoD policy regarding quality of care emphasizes organizational commitment to performance improvement and communicates MHS goals and objectives related to quality, efficient, and safe patient care across the organization. However, during discussions with leadership, quality managers and staff it was apparent that quality practices vary among MTFs, with disparity in the execution and compliance of Service policies noted. Additionally, despite established policy, there was no consistent approach to the identification and management of quality issues in the purchased care component. In some MTFs the business office served as the point of contact for all purchased care issues, while at others the quality office served that role. Most MTFs forwarded all purchased care issues to the regional or overseas contractor representative, whereas one MTF forwarded all purchased care issues to the TRICARE Regional Office. The written guidance regarding the identification and management of quality and patient safety issues in the purchased care component was inconsistent.

Leadership

Awareness of quality initiatives and organizational performance was clearly evident at the executive and quality management levels, but not as evident at the staff and patient levels. MTFs strive to meet established national outcome benchmarks through process improvement initiatives. However, there is notable variability of MTF involvement in quality efforts. Performance initiatives were identified by leaders but staff was often unaware of its role in improvement efforts.

MTFs with a multidisciplinary approach that involved provider and nursing representatives performed exceptionally well in their quality and data sharing efforts. At 5 of 7 sites it was noted that quality and performance improvement efforts were not efficiently shared across the MTF, which affects overall quality efforts.

Executive leaders at all MTFs were very familiar with HEDIS®, ORYX®, Experience of Care and PCM continuity data, but did not have as much familiarity with NSQIP® and NPIC data. None of the MTFs were aware of PQI/IQI data. All MTFs were addressing National/DoD required benchmarks and performance measures where they were underperforming through measure champions, aggressive provider and clinic management staff involvement, and patient education/awareness initiatives.

Quality Improvement Infrastructure

The quality improvement infrastructure was measured in relation to the following three key components: Resources and Staffing, Training, and Information Technology

Resources and Staffing: Vacant positions and civilian hiring action delays were reported by leadership and staff at multiple MTFs. Staffing shortages include civilian and military personnel at all levels within the MTFs. Some MTFs reported decreasing services or shifting workload to purchased care. At one MTF, radiology staff shortages resulted in shifting workload to the network, despite the fact that MRI and ultrasound equipment were available. Staff at a number

of MTFs reported working on quality initiatives and filling quality positions as an additional duty without training. Multiple MTF leaders and staff interviewed expressed concerns with the length of time it takes to hire personnel and complete in-processing requirements in a timely manner. Staff turnover was also identified by staff and patients as an impediment to consistent quality care. It was reported that MTF-wide analytic proficiency and expertise was deficient. Additionally, case manager personnel and services were located under different directorates. Case manager caseloads did not comply with current policies. For example, one MTF case manager had a caseload of 45 Wounded, Ill and Injured (WII) Service members, which is greater than the current MHS Medical Management policy of no more than 17 WII Service members per case manager.

Training: There is no DoD policy requirement for quality training for leaders, quality management personnel, or general staff. Quality staff is not required by position description to be certified in quality management. Most quality staff interviewed received no formal quality training. Recent budget constraints and changes to the DoD conference attendance policy have limited training opportunities. Quality staff reported not having the training or expertise to analyze and synthesize data to improve performance. Staff is attempting to adhere to local MTF policies; however there is a noticeable discrepancy in the full understanding and utilization of quality outcome measures and data, and staff role in implementing quality initiatives.

Information Technology: The current information technology (IT) infrastructure and rigid network requirements resonate across all MTFs as problematic. MTFs expressed concerns with their inability to implement applications.[51] Also, it was noted that there are delays for new staff members to gain access to the network and IT applications. Two MTFs commented on technical support challenges with AHLTA, Essentris, or CHCS, and concerns that this could affect patient care and safety (e.g., access to medical record). The process to obtain a Department of Defense Information Assurance Certification and Accreditation Process (DIACAP) approval for installation of new software is time consuming and cumbersome. One MTF experienced interface connectivity issues between laboratory analyzers and CHCS, lasting seven months and resulting in manual data entry, increasing risk for error. Three of seven MTFs were able to access civilian electronic health records (EHR) for enrolled beneficiaries, which enhances continuity and quality of care. Three MTF Emergency Departments are still using paper records.

Performance Improvement Efforts

Quality and Process Improvement (PI) initiatives are occurring throughout the MTFs. Each Service used specific PI methodologies (AF-AFSO21, Army-PDSA and Navy-PDCA). However, staff empowerment and commitment varied.

- In several facilities it was not clear to what extent quality information and guidance was shared throughout the chain of command;

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[51] For example, peer reviews, morbidity and mortality review, radiology programs, and updating IV pump libraries.

- Sustainment plans were not always built into PI projects;
- At a number of MTFs, leadership approved all PI projects, compared to other MTFs where it is more departmental-driven.
- At most MTFs it did not appear that PI decisions involved staff at the lower level.

Performance initiatives are top-down driven; however, frontline staff is not always aware of its role in process improvement efforts or in the new processes resulting from the efforts. The most widely used improvement process was the Rapid Cycle Improvement through the use of successive Plan-Do-Check-Act (PDCA) type cycles. Other models used for continuous process improvement included Lean, Six Sigma, and Business Process Re-engineering. Management of quality measures varies among MTFs based on staffing, resources, data lag, and level of understanding and expertise. There is a lack of consistency in implementation and utilization of Clinical Practice Guidelines (CPG). Some of the DoD/VA CPGs are imbedded in AHLTA workflow forms at MTFs, but staff is not fully aware of this capability. Leadership rounds were being conducted at all of the MTFs visited; however, there is confusion as to the function of such rounds, particularly when it pertains to quality and accreditation issues. MTFs did not have processes or policies in place for ensuring that patients receive notification of abnormal results in a timely and standardized manner, unless they were critical.

Patient Focus

Patients overall were pleased with the care they received. Patient awareness and involvement in processes related to quality was generally limited to their participation in surveys.[52] Transparency of quality measures is limited. There was little to no patient involvement in the MTFs' quality-related committees. During patient interviews, a number of patients reported not receiving laboratory and radiology results. None of the seven sites visited provided an instruction or guidance for patient notification of normal or abnormal results. All MTFs had policies in place that addressed critical value reporting.

Findings from Site Visits

1. Significant variability of MTF quality efforts was noted. MTF leaders strive to meet established national outcome benchmarks through process improvement initiatives.
2. Despite requirements to improve transparency in current policy, efforts to improve transparency of quality measures at the patient level was limited and varied by MTF.
3. Current DoD policy does not require quality training for leaders, quality management personnel, or general staff. Most quality staff interviewed reported receiving no formal quality training.
4. Despite established policy, there was no consistent approach to the identification and management of quality issues in the purchased care component. Inconsistencies were

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[52] For example, ICE, APLSS, TRISS/TROSS, Service Delivery Assessment (SDA).

noted in written guidance regarding the identification and management of quality and patient safety issues in purchased care.

5. IT infrastructure, rigid network requirements, and technical support with clinical data systems were reported as problematic. Additionally, the process to obtain a Department of Defense Information Assurance Certification and Accreditation Process approval for installation of new software is time consuming and cumbersome.

6. Leadership and staff at multiple MTFs reported vacant positions and civilian hiring action delays. Staff and patients identified staff turnover as an impediment to consistent quality care.

7. There are inconsistencies in implementation and utilization of CPGs. Some DoD/VA CPGs are imbedded in AHLTA workflow forms at MTFs, but staff is not fully aware of this capability.

8. Three of seven MTFs have access to civilian/network EHRs for enrolled beneficiaries.

9. Processes for notification of normal and abnormal laboratory and radiology results varied by MTF.

▶ **Recommendations to Improve Quality from Site Visits**

    a. DHA should establish clear and consistent guidelines for the CONUS TRICARE Regions and the OCONUS Area Offices on reporting and processing quality and patient safety issues identified in the purchased care component.

    b. MHS governance should work with the Services to increase the use of Clinical Practice Guidelines in the direct care component.

    c. MHS governance should evaluate the feasibility of DoD and TRICARE regional contractor collaborations/MOUs with local purchased care organizations to support electronic health record accessibility.

    d. MHS governance should develop processes to ensure standardized notification requirements for laboratory and radiology services.

Staff Town Halls

Staff town halls were conducted to assess staff knowledge and experience with quality of care policies and procedures. Each town hall afforded flexibility to explore issues based on the feedback and direction the participants desired to express, making each one unique based on local conditions. The theme across all sites was the varying level of successes and challenges in meeting quality standards.

The staff demonstrated good understanding of quality issues within their areas and is doing everything within their control to take care of the beneficiary. One challenge to meeting demand was staffing shortages and variations in schedule management between clinics, which led to increased workload, and lower patient care quality and overall continuity of care. As a means to alleviate this, staff was willing to stay late to treat patients. They would take additional appointments when necessary to ensure patients were seen and not automatically sent to the Emergency Department. While this contributed to provider fatigue, it showed that they valued quality care within the MTFs.

The lack of continuity among providers due to workforce rotation detracts from the ability to deliver quality care. Frequent leadership turnover resulted in constant changes to policies and procedures, and affected the patient's perception of the quality of care they were receiving. Workforce rotation also resulted in an ineffective transition between incoming and outgoing providers, causing the continuity of patient care to suffer. Staff also voiced concerns about the requirement to see a certain number of patients, which took precedence over delivering quality care to patients. There was an expectation to meet a specific patient quota, which caused staff to regularly work overtime to see patients and get paperwork done. Staff also commented on communication issues. For instance, staff indicated that there are silos that prevent good, timely communication across MTF departments. Staff suggested that meetings could serve as a forum to exchange innovative ideas and to inform all staff about key MTF initiatives, such as efforts to recapture. There are also concerns that patient information is not documented in such a way that their information could be communicated from provider-to-provider when health records are not readily available. Staff also expressed anxieties regarding inconsistent processes across the MTFs. For example, one staff member stated that the lack of standardization and hardwired processes has been a recurring concern that has not been adequately addressed.

Overall, a majority of MTF staff felt that the overall culture of quality within the MHS is satisfactory but there is still room for improvement. TeamSTEPPS has been implemented across the MTFs as a means to bridge the gap in communication and eliminate any barriers to quality patient care. Generally, staff appeared to be passionate in their roles and strive daily to deliver quality care throughout the MHS.

Beneficiary Town Halls

Beneficiary town hall meetings were conducted to get a sense of the patient viewpoint in accessing MHS quality of care at the MTF and purchased care systems. Each meeting afforded participants the opportunity to voice concerns or successes, making each one unique based on the local conditions.

Throughout each site visit town hall meeting, the responses ranged from 'very satisfied' to 'very dissatisfied', with a higher proportion of 'dissatisfied' responses. In some instances, beneficiaries spoke highly of the care they received but found it challenging to consistently schedule appointments with the same provider. Several patients expressed frustration that their PCM constantly changed, sometimes with no notification, and there were challenges seeing their PCM consistently within TRICARE standards. Beneficiaries were, however, very satisfied with RelayHealth when their doctor was an active user.

At one location, there was a perception that the quality of care at the MTF was superior to the care received in the network. However, some felt the care to be lacking at the MTF and deferred to the network claiming shorter wait times and better provider attentiveness to patient concerns. Some beneficiaries found that EHRs were not accessible from direct care providers to purchase care providers, which negatively affected their ability to receive quality care. Several beneficiaries felt that thorough screenings were lacking due to the providers' tight time deadlines and the strict patient quota. Patients also felt their screenings were rushed and the overall quality

was deficient. Further, when participants were asked how they voiced quality concerns, several stated that they use customer feedback tools that were in place, such as the Interactive Customer Evaluation System, or communicate their concerns directly to MTF patient advocates. In many cases, beneficiaries indicated they were aware of and used the different mechanisms available, but found that once their concerns and issues were reported, they were not addressed. Participants also cited that patient advocates are outranked by the person whom she or he might receive a complaint about, and this intimidation factor often leads to an ineffective system, since they are reluctant to share the information up the chain. Overall, however, the participating beneficiaries expressed satisfaction with their care once in the system.

During interviews and town hall forums, beneficiaries expressed overall satisfaction with the quality of care they received, but voiced concerns that gaining access to care could be difficult. Town hall participants conveyed that they were unable to schedule appointments with their PCM or the same provider. They also stated that when they did obtain an appointment with members of their PCMH team, often the providers were unfamiliar with their medical history so they felt that they had to keep repeating their stories. Many of the concerns raised during the interviews and town halls were validated during the site visit walking rounds.

Quality of Care: Overall Findings and Recommendations

Based on the analysis of available MHS quality data, there are several high-level findings and recommendations regarding the quality of care, as summarized here.

1. It is clear that the MHS is dedicated to quality health care and performance improvement. In several areas, the MHS outperforms or is equal to national benchmarks. Other areas were identified for focused improvement in performance and to reduce variation in performance. It will be necessary to refocus the organization's quality culture for more rapid and continued improvement in quality of care. The MHS Review Group recommends that MHS governance research and implement health care industry best practices of a high reliability organization to revitalize and sustain necessary cultural changes throughout the MHS.

2. While comparison to national benchmarks is helpful, because of the variances inherent among health care systems, direct comparison between the MHS and civilian health systems proved challenging, with limitations in the comparative portion of the analysis. The MHS Review Group recommends that the MHS continue building relationships with civilian health systems to participate in collaboration and data sharing in order to facilitate more complete comparisons.

3. Under-developed MHS-level enterprise processes currently limit data standardization, collection, and analysis to drive system wide improvement (e.g., governance, standard business and clinical processes, shared services). Variation exists in the use of existing data to identify and prioritize objectives. The MHS Review Group recommends that the MHS develop and implement a performance management system that links to MHS and Service strategies with MHS dashboards and common systemwide performance measures

to support visibility of those measures across the enterprise. The MHS should also create and use a MHS data analytics capability to provide analysis and actionable information to the Services and DHA.

4. DOD quality policy (DODI/DODM 6025.13) lacks specificity with regard to quality measurement and performance improvement. The MHS should update or supplement DoDI and DoDM 6025.13 with specific guidance on quality measurement, performance improvement, and requirements necessary for assessing and improving quality education and training.

5. While there is a significant amount of quality training occurring in the Services, there is no clearly prescribed quality-specific training and education by MHS policy. The DHA Education and Training Directorate should conduct an in-depth review and needs assessment of quality training to assess the efficacy of training being accomplished.

6. There are gaps in the enterprise processes to validate Service compliance with policies and directives disseminated from ASD(HA). The MHS Review team recommends ASD (HA) develop and implement a process to manage and track compliance of Services and DHA with applicable DoD policies and directives.

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5.   PATIENT SAFETY IN THE MILITARY HEALTH SYSTEM

Introduction

The Military Health System (MHS) Review Group analyzed current policies, governance structures, education and training programs, findings from relevant internal and external reports, and metrics used to determine if the MHS has created a culture of safety with effective processes for safe and reliable care. The Agency for Healthcare Research and Quality's (AHRQ's) definition of a safety culture was used to guide this analysis:

> "The safety culture of an organization is the product of individual and group values, attitudes, perceptions, competencies, and patterns of behavior that determine the commitment to, and the style and proficiency of, an organization's health and safety management. Organizations with a positive safety culture are characterized by communications founded on mutual trust, by shared perceptions of the importance of safety, and by confidence in the efficacy of preventive measures."[53]

Each of the Military Departments has adopted patient safety goals, as described in Appendix 5.1.

Patient Safety Governance

In 2001, the Department of Defense (DoD) Patient Safety Program (PSP) was established through a congressional directive to identify and report actual and potential problems in medical systems and processes and to implement effective actions to improve patient safety and health care quality throughout the MHS. The DoD PSP is a comprehensive, centralized program with the goal of establishing a culture of patient safety in the MHS.

The PSP promotes a culture of safety and is designed to produce greater cross-Service sharing and accelerate the elimination of preventable harm. The PSP focuses on design and delivery of innovations and solutions to promote safe practices and advance the culture of safety, including education and enterprise-wide transformative approaches to drive organizational change through the implementation of evidence-based practices to ensure safe care for all patients.

The Patient Safety Analysis Center (PSAC) collects, maintains, analyzes, and submits reports on patient safety performance metrics submitted from the MTFs. With the establishment of the Defense Health Agency (DHA), the PSP was integrated with Clinical Quality and Risk Management in the Clinical Support Division to manage, track, and analyze measures to establish evidence-based practices that are then disseminated for field utilization. The PSAC

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[53] Available at http://www.ahrq.gov/professionals/quality-patient safety/patientsafetyculture/hospital/userguide/hospcult1.html. *The original source is Organizing for Safety: Third Report of the ACSNI (Advisory Committee on the Safety of Nuclear Installations) Study Group on Human Factors.* Health and Safety Commission (of Great Britain). Sudbury, England: HSE Books, 1993.

resides within a newly established structure, the Clinical Evaluation and Analysis Branch, which integrates epidemiology and surveillance for patient safety and quality analysis. Together, the DoD PSP and the PSAC use adverse event report-based clinical and administrative data and lessons learned to produce products, tools, and services designed to mitigate harm and reduce errors and to assist with education and training.

The DoD PSP manages operations through the Patient Safety Improvement Collaborative (PSIC), which includes representatives from the Services, NCR MD, TRICARE Regional Offices (TROs), and the Uniformed Services University's DoD Patient Safety and Quality Academic Collaborative (PSQAC). The PSQAC aims at improving clinical practice and health policy focused on MHS quality and safety research and education. The PSIC reports directly to the MHS Clinical Quality Forum in DHA. It prioritizes outcome-based patient safety targets, facilitates tri-Service efforts to translate evidence into practice, and coordinates standardized patient safety activities across the direct care component. (For Service-specific governance on patient safety program processes, see Appendix 5.2.)

In 2013, MHS senior leadership accelerated the focus to reduce preventable harm and improve quality of services. The MHS would benefit from emphasizing the following: highly effective process improvement, a fully functional safety culture, engaged leadership, and the ability to proactively and prospectively discover and fix unsafe conditions.

In health care, often the culture is to react after patients are harmed rather than to be proactive and find ways to prevent the harm. To facilitate and cultivate a more proactive organizational approach, the Deputy Assistant Secretary of Defense for Health Affairs chartered the Quality Patient Safety Risk Management Task Force (QPSRMTF) in spring 2014 with the following vision:

- The MHS should strive to reduce preventable medical adverse events to zero, expect excellence in quality and safety across the system, and practice risk mitigation system wide.
- The MHS must possess a "collective mindfulness," that is, an ability to consistently focus awareness and not lose sight of factors that have the potential to cause harm, which will successfully transform the MHS into a high reliability organization.

Measures: Using Data to Drive Change

The PSP aggregates and analyzes event data reported to DHA and Services from MTFs, using various reporting systems/methods and severity ranking/harm scales to identify and report patient safety events. These include several iterations of Patient Safety Reporting tools, SE notifications, and root cause analysis (RCA).

The PSP uses data from a variety of sources to analyze and characterize patient safety information in order to identify systematic patterns, practices and processes that place patients at risk. These sources include:

- The Services use a SE Notification process to report to DHA and Health Affairs.
- RCAs are required for each SE, as defined by the DoD Manual and TJC. RCAs are in-depth analyses of process and system issues, contributing factors, and identified causes of the reported events.
- The PSRS, fully deployed throughout the MHS as of June 2011, allows for staff to directly report patient safety events. This self-reporting system also provides information regarding adverse drug events and patient falls, both part of the national Partnership for Patients effort.
- AHRQ PSIs of potential in-hospital patient safety events support initiatives aligned with the Partnerships for Patients (PfP).
- The Centers for Disease Control and Prevention's (CDC's) National Healthcare Safety Network (NHSN) aggregates data on reported health care-associated infections.
- The MHS administers the AHRQ Survey on Patient Safety every three years (most recent 2011; planned for 2015). This survey is used by organizations to survey staff on perceptions of leadership, staffing, teamwork, and event reporting to evaluate the culture of safety.
- The Clinical Quality Forum Scientific Advisory Panel has performed a pilot Global Trigger Tool (GTT) Study in inpatient MTFs to evaluate this tool in relation to other patient safety monitoring tools currently used within the MHS.

The recommendations for evidence-based practices derived from the data are disseminated to the field through PSP initiatives, education, training, and resources.

Performance Improvement Initiatives

There are many ongoing efforts within DHA and across the Services to improve patient safety through performance improvement initiatives. Examples include the Partnership for Patients (PfP) at DHA; Patient CaringTouch System (PCTS) in the Army; Culture of Safety in the Navy; and reducing Surgical Site Infections in the Air Force. Details of each of these initiatives are found in Appendix 5.12.

Findings Related to Governance

There is variance in organizational structure for the governance of patient safety.

▶ **Recommendation Regarding Governance of Patient Safety**

   a. **The Services and DHA should evaluate their organizational structure to better align patient safety functions within their organizations to maximize leadership visibility.**

Policy Review

DoDI 6025.13 and DoDM 6025.13

DoD Instruction (DoDI) 6025.13 (February 17, 2011) and the DoD Manual (DoDM) (October 29, 2013)–both titled "Medical Quality Assurance (MQA) and Clinical Quality Management

(CQM) in the MHS"–set requirements for patient safety programs within the MHS. Together, they establish policy, assign responsibilities, and provide procedures for managing the DoD PSP. The intent of these documents is to promote a culture of safety by eliminating patient harm through engaging, educating, and equipping patient care teams to institutionalize evidence-based safe practices.

The TRICARE Operations Manual (TOM), Chapter 7, Section 4, requires the establishment of written policies to identify potential quality issues. It requires a Clinical Quality Management Program (CQMP) Annual Report and an analysis of the AHRQ Patient Safety Indicators (PSIs) to evaluate the safety of the care delivered in the network and to assess outcomes of patient safety programs.[54] The TRICARE Regional Office (TRO)/TRICARE Area Office (TAO) or Designated Provider Program Office (DPPO) provides oversight for respective contractor processes and compliance of the requirements in accreditation, clinical credentialing, and clinical quality/patient safety.

Comparing DoDI 6025.13 for direct care providers to the requirements of the TRICARE contractors, it is clear that the activities required for the direct care and purchased care components are parallel and comparable, and meet the intent for the key functions of patient safety as appropriate for their role in the TRICARE program.

Service policies are summarized below. See Appendix 5.3 for more detail.

Army Policy

The oversight of quality and patient safety has been aligned into a directorate that reports directly to the Deputy Commanding General for Operations, USAMEDCOM, which provides direct access for Army Medicine leadership to address issues in quality and patient safety. Army Regulation 40-68, Clinical Quality Management (CQM), establishes policies, procedures, and responsibilities for the administration of the Army Medical Department (AMEDD) CQM Program. This regulation is aligned with DoDM 6025.13 and provides the framework for Quality, Patient Safety and Risk Management in the AMEDD. The oversight for policy and standardization is delegated to the Clinical Performance Assurance Directorate (CPAD).

Navy Policy

Navy Medicine's patient safety policies conform to DoD policies and align with civilian accreditation requirements. These policies require the Navy to identify, review, and classify adverse events, report near misses or unsafe conditions, implement a Healthcare Resolutions Program, and complete proactive risk assessments. In addition, policies require every MTF to implement a dedicated PSP, which encourages a standardized approach to create a safer patient

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[54] Such as effect on reduction of medical errors, effect on increasing patient safety, effect on health promotion and disease and/or injury prevention, and provider and beneficiary educational activities initiated as a result of quality findings.

environment, promote innovation and creativity while engaging leadership, and foster a culture of trust and transparency through communication, coordination and teamwork. Policies require the Navy to inform the patient/family of an adverse event or unanticipated outcome as soon as possible after the event was identified and ensure that the patient/family understand that discussion. To ensure compliance with these standards, both external and internal inspection agencies validate the MTFs' adherence to these policies.

Air Force Policy

The Air Force Medical Service's (AFMS's) policy (AFI 44-119) for patient safety complies with DoD policy requirements, civilian accreditation standards, and aligns with current national patient safety standards. The policy defines patient safety program roles and responsibilities for executive leadership and for each health care team member rendering care. The AFMS complements this policy with a patient safety guidebook, which delineates process details to ensure uniform implementation of policy requirements. AFMS patient safety policy focuses on personal responsibility to identify and report near miss and actual adverse events in a timely fashion. Each patient safety report is analyzed to ensure that lessons are learned for performance improvement. Air Force policy articulates that building a culture of safety is leadership-driven and requires that every team member commit to the principles and practices of safe care.

National Capital Region Medical Directorate Policy

The National Capital Region Medical Directorate (NCR MD) CQM program implements policy guidance, procedures, and responsibilities. Management of the NCR MD program is overseen by the NCR MD Quality Management Department. Revisions to the manual are managed collaboratively by the NCR MD Quality Management Department and the NCR MD Market Quality Working Group at the facility level. This management approach of the CQM program results in greater participation and compliance in the Quality and Patient Safety Programs by MTFs.

Gaps in Policy: Findings

Although DoDM 6025.13 was published less than a year ago, staffing revisions from the original submission diluted the effectiveness of the Manual. The DoDM 6025.13 needs to be revised or supplemented with more specific guidance including input from the Service and DHA subject matter experts (SMEs) to improve communication, and develop a common understanding of definitions, taxonomies, and processes. The review identified four gaps related to policies, which are addressed below.

1. The self-reporting of events related to patient safety is a key concern for all health systems. Direct care has one central mechanism utilized to capture patient safety event information. Additional mechanisms are needed to ensure the capturing of all harm events. The reporting of events and the opportunity to learn from them in a more effective manner is critical. (For additional information see Patient Safety Reporting System, below.)
2. The DoDM 6025.13 sentinel event (SE) definition does not currently provide sufficient clarity for consistent identification of sentinel events. While the definition mirrors that of

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The Joint Commission (TJC), there is substantial variation in interpretation at the MTF level. TJC has experienced similar variations in interpretation by civilian hospitals and is in the process of revising and expanding its definition for SE. The revised definition may reduce current variation across the enterprise.

3. Opportunities to partner with patients and families can help the system achieve safe, reliable care and exceptional experience. Engagement opportunities include formal and informal long-term patient/family input on specific projects and committees, as well as embedding the patient/family perspectives in decision making.

4. A review of DoDM 6025.13, relative to root cause analysis (RCA), provides limited guidance on the parameters of a quality RCA. Current RCAs vary in the analysis of investigations and the scope of corrective action, which makes it difficult to understand and learn from the event.

▶ **Recommendations Regarding Patient Safety Policies**

a. **Refine DoDM 6025.13 policy to establish more than one mechanism for capturing harm events.**

b. **Health Affairs, through the DHA Clinical Support Division, with Service representation, should assess the revised TJC definition of "sentinel event" and determine if additional guidance in the DoDM 6025.13 policy is required.**

c. **Health Affairs, through the DHA Clinical Support Division and Office of General Counsel, with Service representation, should incorporate and define appropriate policy for patient/family engagement to proactively include patient/family perspectives in MTF decision making.**

d. **Establish clear expectations in DoDM 6025.13 for the root cause analysis (RCA) process.**

Review of External Reports Regarding Patient Safety

Seventeen reports were reviewed, the most important of which is an external review performed by Lumetra in 2007-2008[55]. Lumetra is an independent, nonprofit, health care consulting organization. The other 16 reports either had similar recommendations as or referenced the Lumetra Study.

The 2008 Lumetra Study identified multiple findings, five of which remain of concern. These include areas lacking sufficient policies, programs, or systems within the reporting hierarchy of the MHS, and limitations in dissemination of potentially beneficial knowledge across the Services. The fifth finding, regarding leadership engagement, is addressed as a finding under Education and Training in this chapter.

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[55] Lumetra, 2008. External Review of the DoD Medical Quality Improvement Program. Available at: http://tricare.mil/tma/congressionalinformation/downloads/Review%20of%20DoD%20Medical%20Quality%20Improvement%20Program.pdf.

Findings Regarding Response to External Reviews

1. While alerts and advisories are disseminated from the Patient Safety Analysis Center (PSAC) and the Services, there is no single closed loop system to ensure documentation and disposition of an alert or advisory.
2. The MHS adopted the AHRQ harm classification scale in 2010, which identifies "near miss" as that "which did not reach the patient." Current policy requires 100 percent reporting of "near misses" in the Patient Safety Reporting System (PSRS), which is unattainable in any system.
3. Current processes limit the ability to exchange ideas, share lessons learned, and increase opportunities for systemic process improvement. There is no secure, electronic, central resource library to support daily operations for patient safety. There is a need for greater visibility of patient safety data across the organization.
4. Constraints within the resource management systems have been a barrier to authorizing additional federal positions. The Services maximize resources and continue to evaluate the appropriate mix of staff depending on resources and program needs.

▶ **Recommendations Regarding MHS Response to External Reports**

To address the findings of external reviews, MHS governance should:

a. **Establish a system wide closed loop mechanism for documentation and disposition of a patient safety alert or advisory.**
b. **Ensure that policy establishes attainable goals for "near miss" reporting.**
c. **Establish a system wide structure to fully expand internal transparency of patient safety information in compliance with 10 U.S.C. § 1102.**
d. **DHA should conduct a business case analysis that identifies the most effective method for staffing the Patient Safety Program.**

Education and Training: Patient Safety Program

The PSP offers an array of education and training initiatives, programs, and products. Through centralized continuing education (CE) accreditation services provided by the PSP, nearly 23,000 CE credits have been processed since 2010 for PSP training courses and on-demand learning events. In addition, the PSP provides the field with the latest innovations in patient safety and quality by offering all patient safety professionals the ability to order PSP resources for their facilities, receive monthly Learning Updates and eBulletins, receive PSAC publications based on adverse event analyses, and have virtual access to PSP resources through the Patient Safety Learning Center and PSP website.

The PSP provides centralized support, products and services to build patient safety skill and competency, including: 1) Key PSP Initiatives (Basic Safety Manager Course; TeamSTEPPS®; Partnership for Patients Initiative), 2) PS Resources (Portfolio of Resources including publications), and 3) Recognition (Awards).

(Appendix 5.5 includes an in-depth discussion of direct care and Service-specific education and training programs.)

Gaps in Education and Training: Findings

1. There is no enterprise-wide integrated patient safety and quality training program to strengthen the development of a culture of safety and increase the ability of DoD to successfully engage in performance improvement efforts.
2. Currently there is no succinct DoD patient safety resource available for executive leadership to effectively advance the science and practice of quality and safety within their organizations (recommendation from the Lumetra study). A standardized patient safety executive toolkit would provide medical leaders guidance for engagement and activation in systematic process improvement to foster a culture of patient safety.

▶ **Recommendations Regarding Education and Training in Patient Safety**

a. **Further define and standardize minimal patient safety training requirements as outlined in DoDM 6025.13 policy.**
b. **Develop an executive leadership toolkit; this best practice guide will address integral areas of patient safety.**

Measures of Safety

A literature review was performed to identify PSRS used in civilian health care systems. PubMed was searched using the keywords: 'Sentinel Events'; 'Patient Safety Reporting'; 'Patient Safety Culture'; and 'Root Cause Analyses.'

Existence of benchmarks for the following safety measures was assessed: 1) SEs[56] stratified by event type, 2) patient safety reporting (distribution by degree of harm), 3) PS culture survey (AHRQ Hospital and Ambulatory), 4) RCAs, and 5) PSI #90 composite score. Also assessed was whether a national consensus or scientific evidence exists to support PSRS or other strategies and tools to identify and mitigate risks to patients. The TJC publishes National Patient Safety Goals and elements of performance, but metrics are not quantified. TJC requires that a RCA be performed for every SE, and outlines a "Framework for Conducting a Root Cause Analysis and Action Plan." While exact adverse event reporting rates remain unknown, the literature generally reports that fewer than 10 percent of adverse events are reported nationally.

Myriad challenges confront PS benchmarking, with efforts relying on raising awareness to reduce hazards. DoD uses TeamSTEPPS®, an evidence-based teamwork collaboration and communication strategy developed by DoD in collaboration with AHRQ, aimed at optimizing performance among teams of health care professionals. Tools, such as the TapRooT®

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[56]TJC defines an SE is an unexpected occurrence involving death or serious physical or psychological injury, or the risk thereof. See discussion of Measure 4 in this section.

methodology for conducting RCAs within the MHS direct care component, provide a structured method to analyze serious adverse events. Similar national collaboration and communication strategies and mechanisms are lacking.

PSRS lack the ability to account for the influence of bias in reporting. Lack of standardized tools to manage PSRS information further hampers prioritization of PS efforts, nationally. Assessing the impact of PS initiatives and strategies requires assessment of generally accepted, rigorous, standardized, and practical measures of adverse events and near misses. Current systems lack quantitative methods to assess whether PS improves as the result of a targeted initiative. Additionally, scarce resources exist to evaluate what works and, if so, at what cost. The role of leadership in promoting the culture of patient safety in health care is extremely valuable; however, quantifying that value in improvements in PS is difficult.

Additionally, the MHS Review Group reviewed and analyzed data for the direct care component with the three comparative health systems. The three measures compared were: PSI #90, NHSN, and the AHRQ Survey on Patient Safety Culture.

Measures within Direct Care settings

Patient Safety Culture Survey

The AHRQ Survey on Patient Safety Culture is a validated measurement tool offered by the MHS direct care component on three occasions over the past 10 years: 2005, 2008, and 2011 (See Appendix 5.6). This voluntary survey is administered at the MTF levels and is designed to help hospitals assess the culture of safety at the local level by collecting staff opinions and perceptions of leadership, communication, reporting and staffing/teamwork. Due to the local nature of culture, information is displayed in aggregate.

AHRQ has established the Hospital Survey on Patient Safety Culture Comparative Database as a central repository for survey data from hospitals that have administered the AHRQ Patient Safety Culture Survey Instrument, allowing comparison with other hospitals.

The Hospital Survey on Patient Safety Culture (HSOPS) was administered in 2005 and 2008 across MHS direct care facilities. The Medical Office Survey on Patient Safety was conducted in Air Force ambulatory (only) facilities in 2011; thus, Air Force ambulatory sites do not have three comparative data points. In 2011, all other inpatient and outpatient facilities used the HSOPS survey. This survey assesses 12 dimensions of the culture of safety, presented in Table 5.1. The dimensions emphasized in bold are the areas of special consideration for this review to gauge the adoption of a culture of safety. Table 5.2 shows direct care data for the HSOPS survey conducted in 2005, 2008, and 2011.

In order to compare the direct care component and Health System 3 results from the Hospital Survey on Patient Safety Culture, items were recoded according to the AHRQ methodology. These recoded items were then grouped into 12 dimensions and matched to the AHRQ survey used by both Systems.

Table 5.1 HSOPS Dimensions

Dimensions	
D1: Management Support for Patient Safety	**D2: Supervisor/Manager Expectations and Actions Promoting Patient Safety**
D3: Organizational Learning – Continuous Improvement	**D4: Non-punitive Response to Error/Mistakes**
D5: Feedback and Communication about Error	D6: Frequency of Events Reported
D7: Communication Openness	**D8: Teamwork within Units**
D9: Teamwork across Units	D10: Handoffs and Transitions
D11: Staffing	D12: Overall Perception of Patient Safety

Dimensions in bold are the specific areas of focus of this report in order to gauge the adoption of a culture of safety.

2014 MHS Review Group
Source: Final MHS Overall Culture Survey Final Report, January 2013

Table 5.2 Direct Care Component HSOPS Results: Average Percent Positive Responses across Dimensions

DoD Year	Response Rate	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12
2005	54%	71%	72%	68%	44%	64%	60%	61%	75%	59%	47%	45%	66%
2008	58%	72%	73%	69%	44%	63%	62%	61%	75%	59%	49%	46%	66%
2011	43%	72%	73%	67%	42%	62%	64%	61%	75%	59%	49%	48%	66%
2011 AHRQ	52%	72%	75%	72%	44%	64%	63%	62%	80%	58%	45%	57%	66%

Dimensions in dark gray columns are the specific areas of focus of this report in order to gauge the adoption of a culture of safety

2014 MHS Review Group
Source: Final MHS Overall Culture Survey Final Report, January 2013

The direct care component as a whole showed limited improvement between 2008 and 2011. Two dimensions showed improvement between 2008 and 2011; D6 "Frequency of Events Reported" and D11 "Staffing." No dimensions met AHRQ's "practical significance" definition of a +/- 5 percent change (See Appendix Table 5.6-1). Although the perception of respondents is that events are reported frequently, the number of respondents who actually reported an event is just more than 25 percent (one of the six questions behind the D6 aggregate). This lags behind the AHRQ reference population, where 46 percent of respondents had reported an event. Table 5.3 contains direct care percent positive responses across the five areas of special consideration for 2008 and 2011 survey years, as well as the 2011 AHRQ Reference response proportions (using 2011 data). All five domains were lower than the AHRQ comparison positive response rate; of note, Organizational Learning, Teamwork within Units, and Staffing were below the AHRQ practical significance change of 5 percent.

Table 5.3 Average Percent Positive Responses Across Dimensions

DoD Year	Response Rate	Supervisor/ Manager Expectations and Actions Promoting Patient Safety	Organizational Learning – Continuous Improvement	Non-punitive Response to Error/ Mistakes	Teamwork in Units	Staffing
2005	54%	72%	68%	44%	75%	45%
2008	58%	73%	69%	44%	75%	46%
2011	43%	73%	67%	42%	75%	48%
Decrease/ Flat/ Increase	↓	→	↓	↓	→	↑
AHRQ 2011	52%	75%	72%	44%	80%	57%
Compare to AHRQ	↓	↓	↓	↓	↓	↓

2014 MHS Review Group
Source: Final MHS Overall Culture Survey Final Report, January 2013

Based on the comparison of 2008 and 2011 survey results, only one of the five focused dimensions showed improvement: D11 Staffing, which contains questions regarding crisis mode, use of temporary workers, hours, and workload. The perception of staffing lags significantly behind civilian health care systems. Response rate is also an indicator of the importance placed on the culture of safety. The response rate dropped by 15 percent in 2011 compared to 2008. All other dimensions remained flat from 2008 to 2011.

Facilities should be confident using the survey information as a data source for gauging patient safety culture. Because the survey unit of analysis is the organization and not the individual, survey results remain relevant over time. Use of the survey data allows facilities to view trends in order to determine targeted initiatives. Given the use of the survey across the organization, the data provide insight into the importance and adoption of a culture of safety within the direct care component as a whole and a comparison to civilian hospital counterparts.

External Health System Comparison Results

Differences in percent positive values were tested for significance using a t-test (assuming non-ordinal data), and Health System 3 scores were significantly higher on the following dimensions: Supervisor Expectations and Actions, Organizational Learning/Continuous Improvement, Feedback and Communication about Error, Teamwork within Units, Teamwork Across Units, Handoffs and Transition, Staffing, and Overall Perceptions of Patient Safety. There were four domains where direct care results are similar to Health System 3 and the AHRQ overall. Frequency of Events reported is an area that direct care had a higher percent positive response

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than both Health System 3 and the AHRQ overall. Non-punitive Response to Error/Mistakes appears to be a domain with which all systems struggle. The AHRQ 2011 overall percent positive result was 44 percent, direct care was 42 percent, and Health System 3 was slightly higher at 45.3 percent; again, not significantly higher (see Table 5.4 and Appendix Table 5.6-2).

Table 5.4 HSOPS Percent Positive Results for Comparing Direct Care 2011 Results to Health System 3 Survey

Survey domain	DoD culture results: "Same" "Performs better" "Needs improvement"	2011 DoD Patient Safety Culture Percent Positive results	2012 System 3 Hospital Survey on Safety Culture
MHS Review Team Focus areas from the Hospital Survey on Patient Safety Culture			
D2: Supervisor/Manager Expectations and Actions Promoting Patient Safety	Needs improvement*	73%	77.8%
D3: Organizational Learning – Continuous Improvement	Needs improvement**	67%	78.8%
D4: Non-punitive Response to Error/Mistakes	Same	42%	45.3%
D8: Teamwork within Units	Needs improvement**	75%	86.8%
D11: Staffing	Needs improvement**	48%	59.5%
Other Domains of the Hospital Survey on Patient Safety Culture			
D1:Management Support for Patient Safety	Same	72%	76.7%
D5: Feedback and Communication about Error	Needs improvement*	62%	68.2%
D6: Frequency of Events Reported	Same	64%	62.3%
D7: Communication Openness	Same	61%	63.0%
D9: Teamwork across Units	Needs improvement**	59%	69.0%
D10: Handoffs and Transitions	Needs improvement**	49%	56.4%
D12: Overall Perception of Patient Safety	Needs improvement**	66%	74.5%

Statistically significant, p<0.05
Statistically significant, p<0.01
2014 MHS Review Group
Source: Final MHS Overall Culture Survey Final Report, January 2013

External Health System Comparison: Limitations to Interpretation

These results should be interpreted with caution, as direct comparisons of survey results are inherently problematic. In both the direct care component and Health System 3 data, it is unclear what population was sampled in the hospital. Additionally, it is unclear which type of sampling was used (e.g., random sample, census, stratified random sample). Finally, response rates are unknown for Health System 3; although they are given for direct care, it is unclear if there were any non-response weights applied to the data, which may significantly affect the scores. In summary, further review of the culture survey data would be required to make any definitive comparisons between direct care and System 3.

Findings Regarding a Culture of Safety

1. Direct care results indicate a lower percentage of positive responses in the adoption of a culture of safety compared to AHRQ average national score with limited improvements observed over time and less favorable position when compared to the civilian averages (7 of 12 dimensions with lower scores; but only 3 dimensions meet AHRQ criteria for practical significance). A declining survey response rate over 3 iterations may indicate a lower level of engagement and emphasis in patient safety overall. Wide variation is found in scores across MTFs. Hospitals across the direct care component do not appear to be as similar as expected for an integrated delivery system (data not presented). In the external health system comparison, there are eight domains with results lower and four domains with results similar to Health System 3.
2. Staffing consistently ranked as one of the lowest scoring across three surveys. Qualitative comments indicate concerns about clinical experience, clinical oversight, guidance, and access to resources required to perform duties.

▶ **Recommendations to Improve a Culture of Patient Safety**

   a. **MHS senior leadership must determine safety culture expectations and set targets based on opportunities.**

PSI #90 Composite for the Military Health from CY 2010-2013

The PSIs are a set of measures developed by AHRQ that enable health care organizations to screen for adverse events that may have occurred during the process of health care delivery.[57] Since it is believed that these events are preventable at the system and provider levels, improvement can be assessed through ongoing monitoring. Patient Safety for Selected Procedures Composite – (PSI #90), the focus of this analysis, is a consensus-based aggregation of select PSIs for eight frequently observed patient safety problems in the inpatient setting (see Appendix 5.7). These indicators include pressure ulcer (PSI #03), iatrogenic pneumothorax (PSI #06), infection due to medical care (PSI #07), postoperative hip fracture (PSI #08), postoperative pulmonary embolism or deep vein thrombosis (PSI #12), postoperative sepsis (PSI #13),

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[57] See http://www.qualityindicators.ahrq.gov/modules/psi_overview.aspx.

postoperative wound dehiscence (PSI #14), and accidental puncture or laceration (PSI #15). The eight measures selected were endorsed by the National Quality Forum (NQF) in 2009 and are weighted to reflect NQF criteria for endorsement.[58] Of note, PSI #90 was not publicly reported on Hospital Compare[59] during the 2010 to 2013 period, and DoD did not aggregate and use the PSI #90 composite for provider or enterprise-level quality improvement. The Centers for Medicare & Medicaid Services (CMS) intend to publish PSI #90 composite to Hospital Compare in 2014.[60]

For comparisons, measures of central tendency (mean/median) and dispersion of the PSI #90 composite were estimated at 95 percent confidence intervals for both direct care data and each health system. Variance of the mean PSI #90 Score across systems was compared with follow-up testing for significant differences.

This comparison was further informed by assessing performance of the direct care component and three external health systems relative to the Healthcare Cost Utilization Project (HCUP) State Inpatient Database reference population for each year, assuming a similar case mix for a given year.

Relative Performance of Direct Care

Although the trend in the PSI #90 is informative, comparisons against reference populations or the national external benchmark provide an assessment of relative performance. For PSI #90, relative performance of the direct care component was assessed by comparing its data to the AHRQ reference population[61] and the three CMS national achievement thresholds[62] with three possible outcomes against the two benchmarks: direct care "outperformed," performed the "same as," or "underperformed" the benchmark AHRQ reference population or CMS national achievement threshold.

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[58] See
http://www.qualityindicators.ahrq.gov/Downloads/Modules/PSI/V43/Composite_User_Technical_Specification_PSI_4.3.pdf.

[59] Hospital Compare is a CMS website used to find hospitals and compare quality of care. Available at: www.medicare.gov/hospitalcompare.

[60] See
https://qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier3&cid=1228695321101.

[61] Reference population is created from the AHRQ-sponsored Healthcare Utilization Project State Inpatient Database, which is home to the most extensive inpatient discharge abstracts from participating States.

[62] National Achievement Thresholds for Performance for PSI #90 Composite .68(2010, 2011), .61(2012) and .62(2013)

DHA and Service-Level Trend Analysis

The PSI #90 composite was reviewed to assess for trends in the direct care component. At the DHA and Service levels, statistically significant decreases in the PSI #90 composite were observed from CY 2010 to CY 2013 using Ordinary Least Squares (OLS) Regression (p<.001). Decreasing composite scores equate to positive improvement. For direct care, the PSI #90 decreased by an estimated 2.8 percent per quarter, while the PSI #90 for the Army, Navy, and Air Force decreased by 1.4 percent, 3.4 percent, and 0.1 percent, respectively.

Military Treatment Facility Analysis

As shown in Figure 5.1, performance reflective of the direct care component overall, the observed decrease in PSI #90 corresponded to an annual increase in the percentage of MTFs that either performed the same as or outperformed the AHRQ reference population from 2010 to 2013. On an annual basis, an average of 87 percent of MTFs performed the same as or outperformed the AHRQ reference population (See Appendix Table 5.7-1). At the Service level similar trends were observed with no statistically significance differences observed among the Services in the average number of MTFs that performed the same or outperformed the AHRQ reference population.

Figure 5.1 MTF Performance versus Reference Population, CY10 – CY13
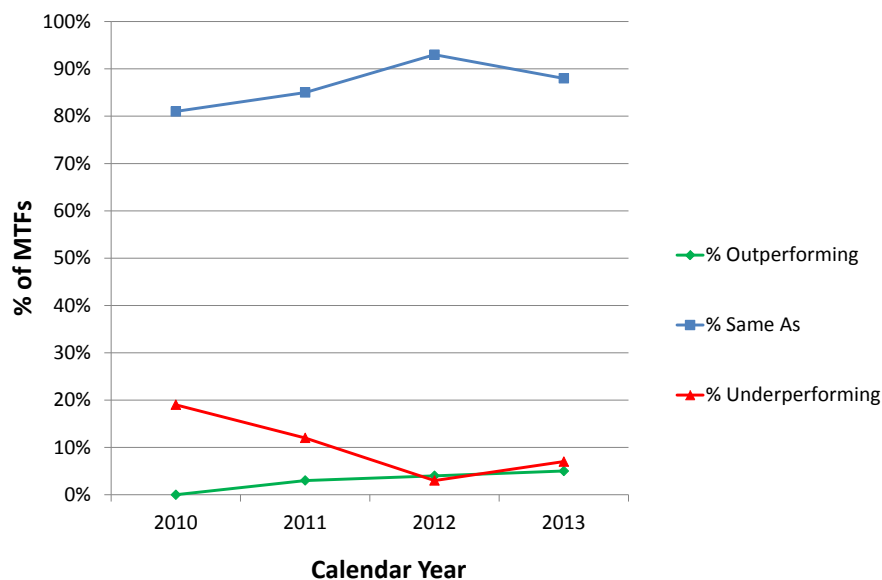
2014 MHS Review Group
Source: Military Health System Population Health Portal (MHSPHP), July 2014

In Figure 5.2, when compared to CMS national achievement threshold in the same period, 72 percent of MTFs performed the same as this CMS benchmark for the CYs 2010 to 2013. The PSI #90 rate increased from 64 percent in 2010 to 75 percent from 2011 to 2012 and dropped to 73 percent in 2013. A similar consistent overall increase was noted for all Services. A

significant difference between the Services was observed for the Navy compared to the Air Force related to a higher annual percentage of Navy MTFs performing the same as the national achievement threshold. No difference was observed in pairwise comparisons between the Army and the Air Force and the Army and the Navy (p<.05) (One way Analysis of Variance; p=.031).

Figure 5.2 MTF Performance versus National Benchmark Rate, CY10 – CY13
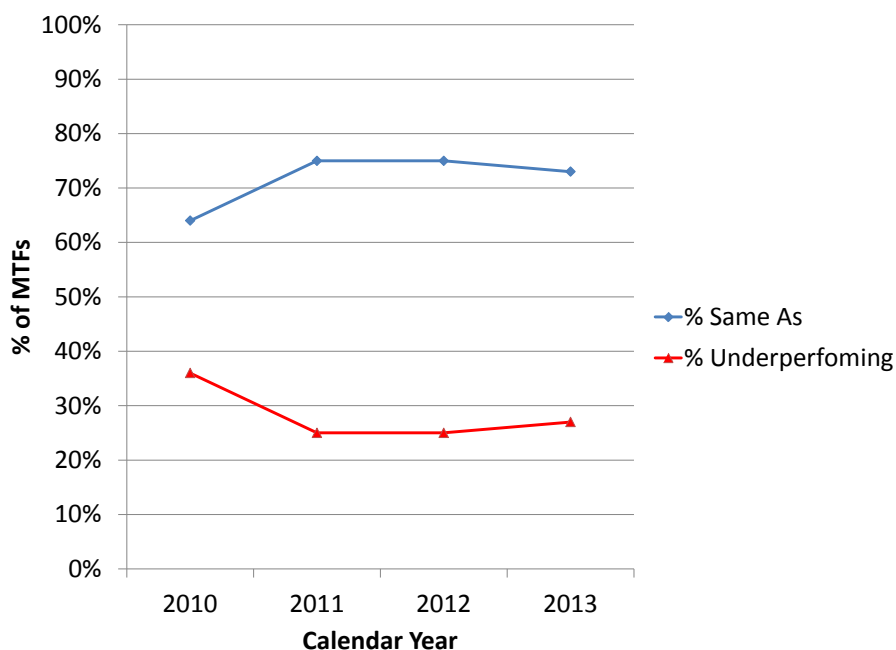
2014 MHS Review Group
Source: Military Health System Population Health Portal (MHSPHP), July 2014

Medical Center (MEDCEN) Analysis

From 2010 to 2013, 13 MEDCENs were evaluated for performance using PSI #90. Approximately two-thirds of MEDCENs performed the same as or outperformed the AHRQ reference population; one-third of MEDCENs performed the same as the national benchmark rate. There was an increase in the proportion of MEDCENs performing the same as the average national benchmark rate from 2010 to 2013. Of note, four MEDCENs (San Antonio Military Medical Center [SAMMC] – Ft. Sam Houston; William Beaumont Army Medical Center [WBAMC] – Ft. Bliss; 60th Medical Group [MED GRP] – Travis; Naval Medical Center [NMC] Portsmouth) outperformed the reference population at least once during the four-year observation, with nine performing the same as the reference population and two MEDCENs (88th MED GRP – Wright Patterson; Madigan Army Medical Center – Ft. Lewis) underperforming the reference population across the observation period. Even the two relatively underperforming MEDCENs demonstrated an improvement from 2010 to 2013. While there was variation in the performance of MEDCENs as compared to two different benchmarks, there was an overall trend of improvement.

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Hospital-Level Analysis

From 2010 to 2013 all direct care hospitals (44) across all Services performed the same as the reference population, with 86 percent performing the same as the national achievement threshold. No statistically significant differences were observed among the Services.

OCONUS MTF Analysis

From 2010 to 2013, 100 percent of outside the continental United States (OCONUS) MTFs performed the same as the AHRQ reference population while 93 percent performed the same as the national benchmark rate. No statistically significant differences were observed among the Services.

External Health System Comparison Findings

PSI #90 composite was compared across all three health systems on a calendar year-to-calendar year basis where possible. Each health system provided point estimates for the PSI #90 composite for a varying number of hospitals within their respective systems and for different time periods, which in some instances permitted the same time period to be compared.

The PSI #90 composite for the direct care component and its associated measures of dispersion overlapped all three health systems for all periods observed (see Figures 5.3 and 5.4). Analysis of variance among all four systems demonstrated no differences between the direct care component and other health systems (one-way analysis of variance [ANOVA]; $p<.05$; $p=0.000$; all confidence intervals for post hoc pairwise comparisons included 0.) Performance relative to the reference population, assuming a similar case mix, was also no different across systems. The direct care component and one of the other systems had at least one outlier.

External Health Systems Data: Limitations

Direct care facilities: PSI #90 data using inpatient direct care data (Standard Inpatient Data Record) from the DoD Data Repository. Data provided included PSI #90 composite scores using the NQF-endorsed, 8-indicator composite using present on admission (POA) weighted estimates.

- System 1: Provided calendar year (CY) 2012 PSI #90 calculated scores for 14 facilities. Information on weighting using POA was not provided.
- System 2: Provided CY 2013 PSI #90 calculated scores for three facilities. Information on weighting using POA was not provided.
- System 3: Provided CY 2011, CY 2012 and CY 2013 PSI #90 calculated scores for 23 facilities.
- However, potential quality issues with the CY 2012 and CY 2013 data precluded use for comparisons. Information on weighting using POA was not provided.

Figure 5.3 Boxplot of PSI #90 Composite: Direct Care Relative to Systems 1, 2, 3
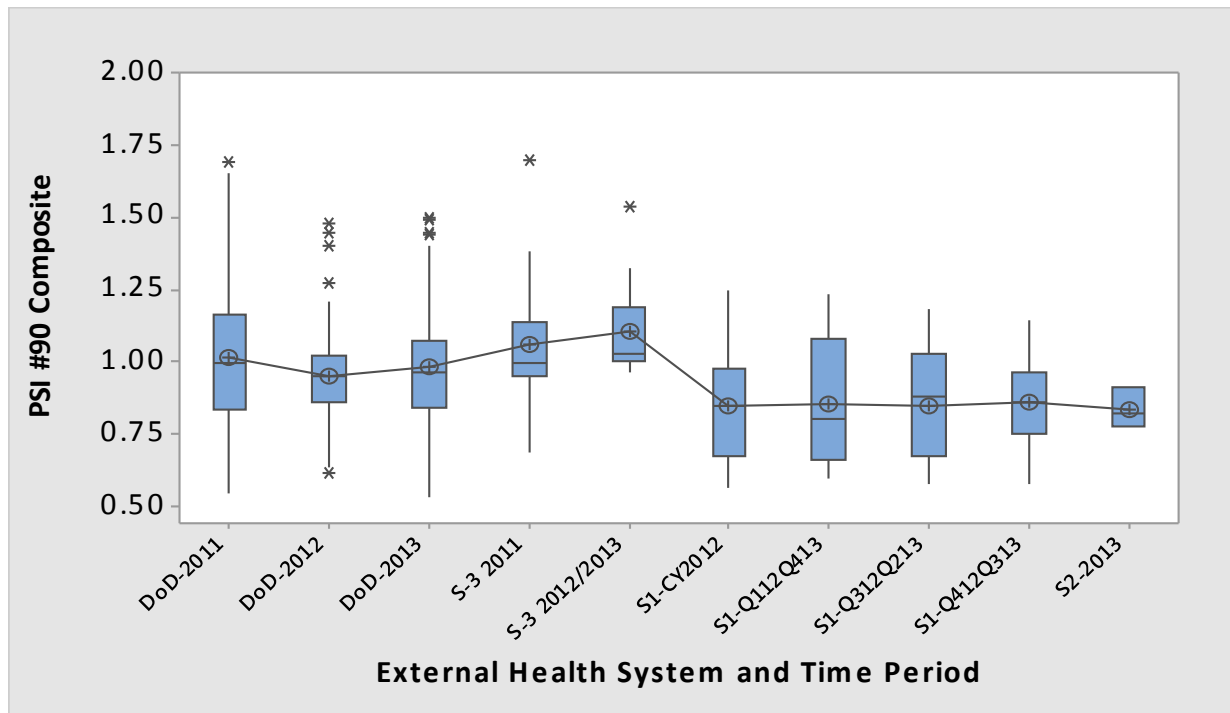
2014 MHS Review Group
Source: Military Health System Population Health Portal (MHSPHP) and External Health Systems, June - July 2014

Figure 5.4 Interval Plot of PSI #90 Composite by System and Time Period
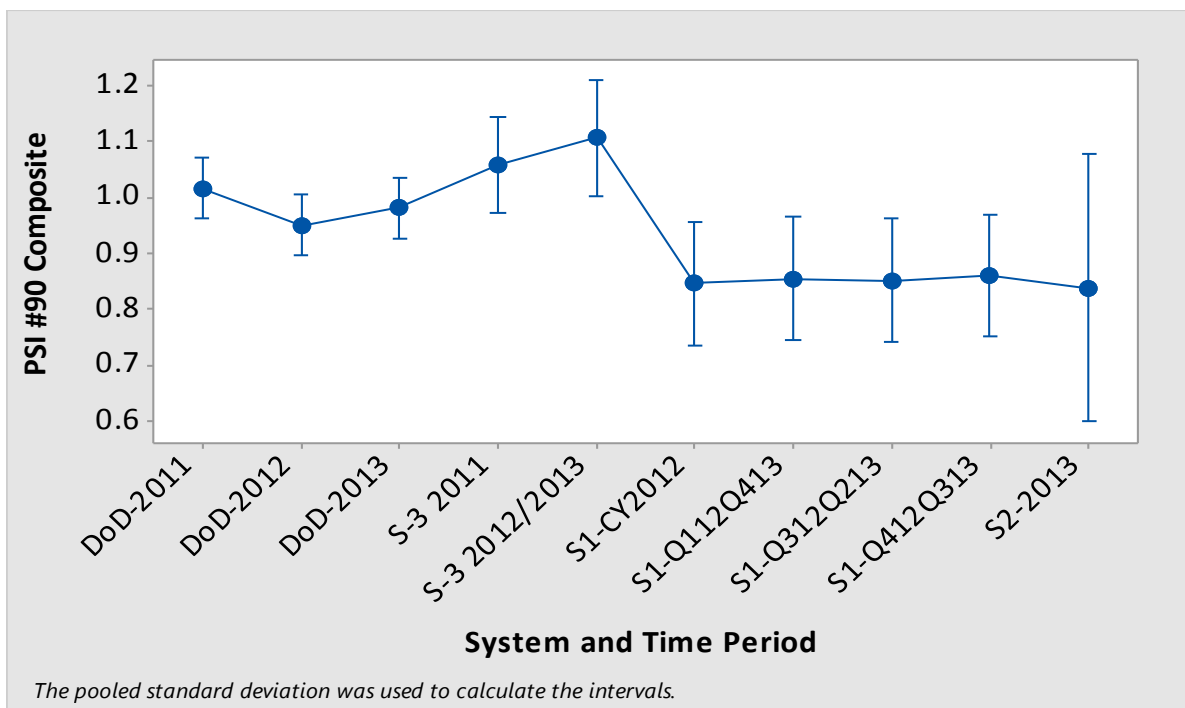
The pooled standard deviation was used to calculate the intervals.

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Source: Military Health System Population Health Portal (MHSPHP) and External Health Systems, June - July 2014

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External Health System Analysis Limitations

A difference in the number of facilities for which information was provided limits the precision of the calculated PSI #90 confidence interval for one of the health systems. The time periods provided by the external health systems varied, however comparison was enhanced by matching the direct care results to each of the time periods provided by the external health systems. Upper and lower confidence limits for the PSI #90 estimates were not available at the facility or system level. Although ANOVA is considered to be reasonably robust against assumptions of non-normality, one health system's data (Health System 3) were not normally distributed due to the small sample size provided. This limits the conclusions that can be drawn from this system.

Findings Regarding Use of PSI #90 in the MHS

1. Overall, the majority of MTFs perform the same as both the AHRQ reference population and the CMS national achievement threshold, with hospitals performing more favorably than MEDCENs and rare differences among Services observed. Significant differences were noted in relative performance of the MTFs when comparing direct care data to the AHRQ reference population and the CMS national achievement threshold. Although some of the direct care population is likely to be similar to the Medicare fee-for-service population, it is unclear how comparable DoD beneficiaries are to this population as it relates to the national achievement threshold rate. The AHRQ reference population is from the Healthcare Utilization Project State Inpatient Database (SID), which includes a wider range of ages for patients as opposed to only Medicare eligible fee-for-service patients.
2. At the system level, when matched to compare the same time periods, no statistically significant differences were observed between the mean PSI #90 point estimates of the direct care component (2011, 2012, and 2013) and all three external health systems.
3. Relative to the reference population, the direct care component performed the same as the reference population, which was also observed for two of the three health systems. Only one health system (Health System 1) outperformed the reference population (assuming a similar case mix) across their facilities.
4. Although the DoD is familiar with PSIs, the aggregated PSI #90 composite has not been used by the Services.

▶ **Recommendation Regarding Use of PSI #90 in the MHS**

   Consider PSI #90 composite utilization as a component of a comprehensive safety measure set within the MHS and develop an education plan to support its implementation.

Healthcare-Associated Infections, CY 2010 to 2013

The National Health Safety Network (NHSN) is a surveillance system operated by CDC that provides health care facilities with information and tools to manage and improve quality with

respect to healthcare-associated infections (HAI).[63] All inpatient MTFs participate in Partnership for Patients (PfP), a nationwide approach to improving the safety and quality of care, which includes HAIs as a measure of performance.

HAI occurring in medical/surgical intensive care units (ICU) have well accepted external benchmarks for comparison. MTFs with Med/Surg ICUs currently track the measure by participating in NHSN. The review and analysis compared direct care performance across three measures by each of the designated ICU types (CY 2010 to 2013): Central Line-Associated Bloodstream Infection (CLABSI), Catheter-Associated Urinary Tract Infections (CAUTI), and Ventilator Associated Pneumonia (VAP).

Two categories of Med/Surg ICUs were reviewed for this analysis using CDC criteria for ICU classification: Major Teaching, and Other, <15 ICU beds. The major teaching hospital group includes (7) = Madigan AMC, Brooke (BAMC), Tripler AMC, Travis AFB Hospital, Walter Reed, NMC Portsmouth, and NMC San Diego. There were 17 in the second group (Other, <15 ICU beds facilities). Some MTFs were excluded due to insufficient data.

Two external measures generated by the NHSN program were used to assess relative performance. The first measure is based on the CDC practice of using the 90th percentile to determine whether a hospital is a HIGH outlier (higher infection rate). CDC further interprets performance at this benchmark to mean that 90 percent of the hospitals had lower rates and 10 percent of the hospitals had higher rates (at the 90th percentile). The second measure to evaluate hospitals is a pooled mean of all respective ICU types to compare relative performance. The analysis attempted to answer three questions:

- How well are participating MTF ICUs performing compared to the civilian sector?
- Are any MTFs underperforming (HIGH outliers > 90th percentile)?
- Are any MTFs outperforming (below 25th percentile)?

Analysis and Observation by ICU and Infection Types

Catheter-Associated Urinary Tract Infections (CAUTI):
- Data collection reporting to NHSN became a requirement in 2012.
- Reflects the largest volume (in direct care component) of eligible device days of reported HAIs.
- Direct care Med/Surg ICUs demonstrate the following percentiles of performance relative to similar category ICUs nationwide (see Table 5.5):
    - Major Teaching Hospitals
        - 1 (14 percent) ICU (81st MED GRP – Keesler) outperformed the 25th percentile with 6 (86 percent) performing between the 25th and 75th percentiles. No High Outliers identified.

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[63] http://www.cdc.gov/nhsn/

- o Other Hospitals with less than 15 ICU Beds
  - 8 (44 percent) ICUs (633rd MED GRP – Langley-Eustis; 673rd MED GRP – Elmendorf; 96th MED GRP – Eglin; 99th MED GRP – O'Callaghan; Evans Army Community Hospital [ACH] – Ft. Carson; Naval Hospital [NH] Camp Pendleton; NH Jacksonville; NH Okinawa) outperformed the 25th percentile with 8 (44 percent) performing between the 25th and 75th percentiles. Two (11 percent) High Outliers (underperforming) identified (Dwight David Eisenhower Army Medical Center [DDEAMC] – Ft. Gordon; WBAMC – Ft. Bliss).

Table 5.5 Direct Care CAUTI by ICU Type, for Total Period, CY10 – CY13

MED SURG ICU	<25th percentile (Out performance)	25th and 75th Percentile	High Outliers >90th percentile (May Need Improvement)
Major Teaching	1 (14%)	6 (86%)	0
Other Hospitals, <15 ICU beds	8 (44%)	8 (44%)	2 (11%)

2014 MHS Review Group
Source: DoD – CDC's National Healthcare Safety Network (NHSN), FY12 Q1 – FY14 Q2, June 2014

Central Line-Associated Bloodstream Infection (CLABSI):
At the direct care level, CLABSI reflects the next largest category of eligible infection surveillance volume (measured in device days) (see Table 5.6).

- Med/Surg ICUs have at least 24 MTFs actively participating in data reporting visible to DHA (7 major teaching hospitals and 16 other hospitals).
- Major Teaching Hospitals
  - o 3 (43 percent) ICUs (81st MED GRP – Keesler; NMC San Diego; Tripler AMC) outperformed the 25th percentile with 3 (43 percent) performing between the 25th and 75th percentiles and 1 (14 percent) identified as a High Outlier (underperforming) (60th MED GRP – Travis).
- Other Hospitals with less than 15 ICU Beds
  - o 3 (19 percent) ICUs (673rd MED GRP – Elmendorf; Carl R. Darnall AMC [CRDAMC] – Ft. Hood; Ft. Belvoir Community Hospital [FBCH]) outperformed the 25th percentile with 10 (62 percent) performing between the 25th and 75th percentiles and 3 (19 percent) High Outliers (underperforming) identified (88th MED GRP – Wright Patterson; Blanchfield ACH – Ft. Campbell; NH Jacksonville)

Table 5.6 Direct Care CLABSI by ICU Type, for Total Period CY10 – CY13

MED SURG ICU	<25th percentile (Outperformance)	Between 25th and 75th Percentile	High Outliers >90th percentile (May Need Improvement)
Major Teaching	3 (43%)	3 (43%)	1 (14%)
Other Hospitals, <15 ICU beds	3 (19%)	10 (63%)	3 (19%)

2014 MHS Review Group
Source: DoD – CDC's National Healthcare Safety Network (NHSN), FY12 Q1 – FY14 Q2, June 2014

Ventilator Associated Pneumonia (VAP):
At the direct care level, VAP reflects the smallest category of eligible infection surveillance volume (measured in device days) (see Table 5.7).

- VAP is no longer being tracked as VAP but rather as Ventilator Associated Events (VAE). Direct care MTFs will follow the standard set by the CDC for VAE upon its release.
- Major Teaching Hospitals
  - No ICUs outperformed the 25th percentile with 6 (86 percent) performing between the 25th and 75th percentiles and 1 (14 percent) High Outlier (underperforming) identified (NMS Portsmouth).
- Other Hospitals with less than 15 ICU Beds
  - 5 (36 percent) ICUs outperformed (633rd[d] MED GRP – Langley-Eustis; 673rd MED GRP – Elmendorf; 99th MED GRP – O'Callaghan; Blanchfield ACH – Ft. Campbell; Evans ACH – Ft. Carson) the 25th percentile with 6 (43 percent) performing between the 25th and 75th percentiles. Three (21 percent) High Outliers (underperforming) identified (88th MED GRP – Wright Patterson; FBCH; DDEAMC – Ft. Gordon).

Table 5.7 Direct Care VAP by ICU Type, for Total Period CY10 – CY13

MED SURG ICU	<25th percentile (Outperformance)	Between 25th and 75th Percentile	High Outliers >90th percentile (May Need Improvement)
Major Teaching	0	6 (86%)	1 (14%)
Other Hospitals, <15 ICU beds	5 (36%)	6 (43%)	3 (21%)

2014 MHS Review Group
Source: DoD – CDC's National Healthcare Safety Network (NHSN), FY12 Q1 – FY14 Q2, June 2014

External Comparison: Health Care-Associated Infections

The MHS Review Group was able to compare these same measures with all three external health care systems, although there were limitations (see Table 5.8).

Limitations of Comparison System

Health System 1 summary of performance was based on 12-month rolling data and calculated as an evenly weighted pooled mean. CAUTI and CLABSI rates are associated with ICUs. Health System 1 VAP rate may not be associated with ICUs. Health System 2 supplied data on infections for up to four years. Of the inpatient unit data provided, only two appear to correspond to ICUs. Data show the majority of infections identified (and device days) are largely outside of ICU designated units. Health System 3 VAP data included quarterly figures and rates, with no data at the facility or unit level. It is unknown whether the VAP data represents ICUs, non-ICUs, or both.

In summary, despite data comparison limitations, the external system data suggest the following:

- **The direct care component should consider tracking infection rates at the unit level beyond ICUs.**
- **ICU CLABSI rates present an opportunity for improvement.**
- **ICU CAUTI rates may be comparable if ICU case-mix matches those of the external systems. (See Table 5.8.)**

Table 5.8 DoD Direct Care and Civilian Health Care Systems HAI Rates

	DoD	HS1**	HS2	HS3
CAUTI	3.28 ICU	1.49 ICU	2.44	3.82 ICU 0.69 non-ICU
CLABSI	2.07 ICU	0.58 ICU	1.25	0.59 ICU
VAP	4.57 ICU	0.90	0.86	1.68

Green font indicates that the System outperformed DoD
Red font indicates that the Health System underperformed DoD
HS2 - infection data for CY12Q1-CY13Q4, July 2014
HS3 - infection data for ICU infections CY10Q1-CY14Q1, July 2014
*Direct comparisons by ICU type could not be made consistently due to the provision of a range of ICU types by external health systems
**System 1 rates reflect 12-month rolling data.
2014 MHS Review Group
Source: DoD - CDC's National Healthcare Safety Network (NHSN), FY12Q1-FY14Q2, June 2014

Findings Regarding Use of the NHSN Metrics

1. For CAUTI:
   - Major Teaching Facilities: The majority of ICUs fell between the 25th and 75th percentiles with one high performer but no underperformers.
   - ICUs with less <15 beds: The majority were either met or outperformed with two underperformers.

2. For CLABSI:
    o   Major Teaching Facilities: Most ICUs fell within the normal percentile range with one underperformer.
    o   ICUs with less <15 beds: The majority of ICUs fell between the normal percentile range with three each underperformers and outperformers.

3. For VAP/VAE:
    o   Major Teaching Facilities: Most ICUs fell within the normal percentile range with one underperformer.
    o   ICUs with less <15 beds: The majority fell within the normal percentile range with five outperformers and three underperformers.

4. There is no comprehensive plan to standardize requirements for monitoring device-related infections.

See Appendix 5.8 for graphical representation of NHSN findings.

▶ **Recommendations Regarding Use of NHSN Metrics**
   a. **The Infection Prevention and Control Panel should review variance in performance in accordance with the PfP Implementation Guides for CLABSI and VAP/VAE.**
   b. **The Infection and Prevention Control Panel should develop a comprehensive plan to standardize requirements for monitoring device-related infections.**

Sentinel Event (SE) Reporting

According to TJC, a sentinel event (SE) is an unexpected occurrence involving death or serious physical or psychological injury, or the risk thereof. Serious injury specifically includes loss of limb or function. The phrase, "or the risk thereof" includes any process variation for which a recurrence would carry a significant chance of a serious adverse outcome.[64] If SEs meet the qualifying criteria, they must be reported within 24 hours of discovery by the Services using the SE Notification process. Designated DHA staff is notified through the SE Notification process.

TJC collects voluntary SE report information and provides summaries of SEs reviewed in periodically published reports. SE reporting represents one of the least comparable areas of patient safety because SE reporting is mandated within all MTFs and is primarily voluntary in civilian systems. Because the reporting is voluntary, the data are not considered epidemiologic data sets and no conclusions should be drawn about the actual frequency of events or trends over time.

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[64] See Appendix 5.9. See The Joint Commission. (Mar 2013). Comprehensive Accreditation Manual for Hospitals: Sentinel Event (SE) (Update 1). Oakbrook Terrace, IL: The Joint Commission.

As seen in Patient Safety Culture Survey results, the small improvements in reporting events (62 percent average positive score for 2005 to 2011 in D6 Frequency of Events Reported) may be curtailed by an underlying fear of retribution for reporting as supported by the consistently low percent of positive responses to questions on D4, non-punitive response to error.

Across CYs 2010 to 2013, SE reporting rates were calculated per 1,000 dispositions (hospital discharges) for each of the Services. The Army SE reported rate was 0.223, the Navy rate was 0.375, Air Force rate was 0.539, and the NCR MD (which began reporting in December 2012) had a rate of 0.291 for its reporting period. No distinctions were made between SEs in ambulatory settings and inpatient facilities.

Tables 5.9 and 5.10 demonstrate the top five SE categories across the direct care component by fiscal year and Service. The individual Services and yearly distributions varied slightly in the most common SE categories but the common top three categories across all Services were: retained foreign object, unanticipated death-adult, and wrong site surgery. Notably, delay in treatment was among the top five SE categories for the Air Force only.

Table 5.9 Top 5 Sentinel Events by Year

	2010		2011		2012		2013	
1	Unanticipated Death-Adult	19	Retained Foreign Object	21	Unanticipated Death-Adult	18	Retained Foreign Object	17
2	Retained Foreign Object	17	Wrong Site Surgery	13	Retained Foreign Object	16	Unanticipated Death-Adult	13
3	Wrong Site Surgery	10	Unanticipated Death - Infant	7	Unanticipated Death - Infant	11	Wrong Site Surgery	11
4	Unanticipated Death - Infant	9	Unanticipated Death-Adult	7	Loss of Function	10	Delayed Treatment	10
5	Loss of Function	8	Delayed Treatment	6	Delayed Treatment	9	Procedural Complication	10

2014 MHS Review Group
Source: Patient Safety Reporting System, DoD Patient Safety Analysis Center (PSAC), June 2014

Table 5.10 Top Five Sentinel Events by Service with Frequency Count, 2010 – 2013

	DoD Overall		Air Force		Army		Navy		NCR MD	
1	Retained Foreign Object	71	Delayed Treatment	15	Retained Foreign Object	34	Retained Foreign Object	23	Suicide	3
2	Unanticipated Death-Adult	57	Retained Foreign Object	13	Unanticipated Death-Adult	25	Unanticipated Death-Adult	18	Unanticipated Death-Adult	2
3	Wrong Site Surgery	40	Unanticipated Death-Adult	12	Wrong Site Surgery	19	Unanticipated Death-Infant	16	NCR MD Reported 1 each in all of the remaining 9 SE categories	
4	Unanticipated Death – Infant	34	Wrong Site Surgery	10	Unanticipated Death-Infant	11	Loss of Function	13		
5	Delayed Treatment	28	Medication Error	6	Loss of Function	10	Wrong Site Surgery	10		

2014 MHS Review Group
Source: Patient Safety Reporting System, DoD Patient Safety Analysis Center (PSAC), June 2014

External Health System Comparison

Frequency of SE reports were compared to the MTFs using data from two systems that provided SE information. Health System 2 provided denominator data in discharge days allowing SE rates to be calculated, assuming that 100 percent of SEs were accounted for (versus only reported SE).

Civilian Health Systems Data: Health System 2 provided counts of SEs and discharge days (denominator) for SEs by quarter from Q1 2010 to Q4 2013 (4 calendar years of data). With numerator and denominator data, SE rates were calculated. However, detail on the types of SEs that were reported was not provided. Health System 3 provided counts of SE reports by SE type and by level of harm (level of harm reported in RCA comparison section) by quarter from Q1 2010 to Q4 2013 (4 calendar years of data). Discharge Days information was not provided. Direct care SE data were available from FY 2010 to FY 2013. Due to differences in FY vs CY, Health Systems 2 and 3 data had to be aggregated at the FY level for comparisons (see Figures 5.5 and 5.6).

External Health System Comparison Limitations: The direct care rate of SEs was calculated using all reported SEs in FY 2011 to FY 2013 as numerator and hospital discharge days as the denominator; however, no distinction was made between SEs in ambulatory settings and inpatient facilities. The underlying assumption in calculating SE rates is that these occurred in hospitals. Additionally, to make valid comparisons, both systems should use the same definition of SE's. Health System 3 uses additional SE types beyond those used in the direct care component.

Figure 5.5 Number of SEs across Direct Care, Health System 2, and System 3, FY11 – FY13
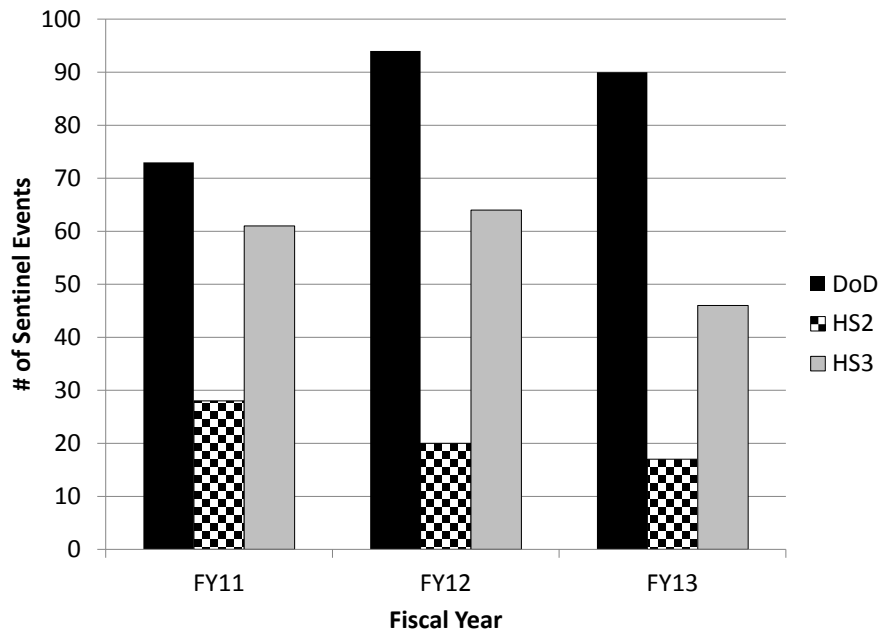
2014 MHS Review Group
Source: DoD Patient Safety Reporting System, TRICARE Management Activity (TMA)/Health Affairs (HA), July 2014

Figure 5.6 SE Rates per 1,000 Discharges, Direct Care and Health System 2, FY11 – FY13
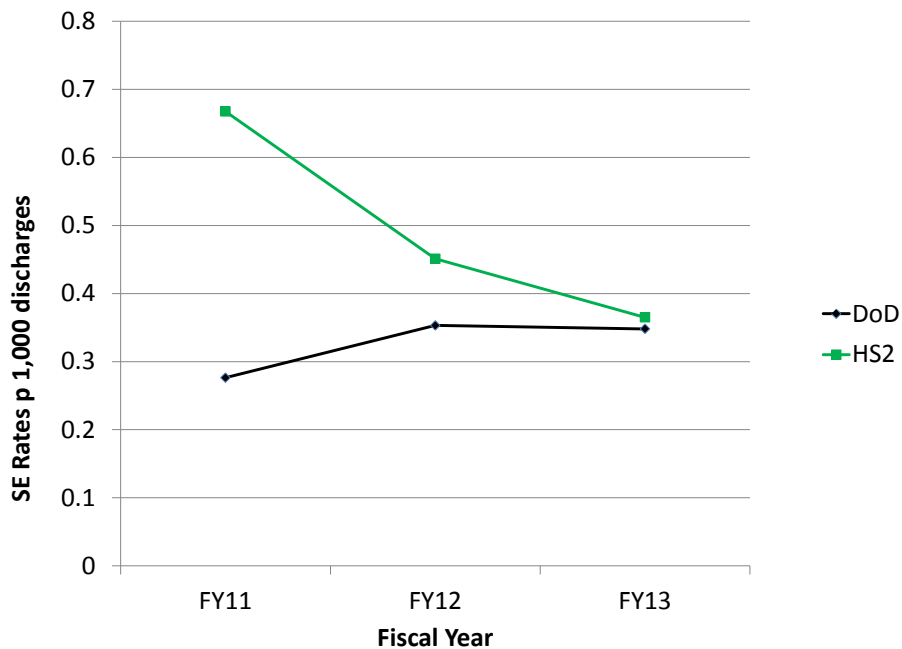
2014 MHS Review Group
Source: DoD Patient Safety Reporting System, TRICARE Management Activity (TMA)/Health Affairs (HA), July 2014

External Health System Comparison Results: Over three fiscal years, the direct care component reported a total of 257 SEs, Health System 2 had 65 SEs, and Health System 3 had 171 SEs. However, rates are more appropriate for comparison as they adjust for differences in population size (discharge days, bed days). When comparing rates of SE across FYs for Health System 2 and direct care, direct care reported half the rate of SEs in comparison with Health System 2 for FY 2011 (0.282 per 1,000 discharges vs 0.667 per 1,000 respectively).

Findings Regarding Sentinel Events

In comparison to another system, there is reason to believe the direct care component performs similarly to civilian health care systems, and may actually perform better. However, this was just one system with caveats that have to be considered with regard to the data analysis.

1. DoD's SE definition matches that of The Joint Commission, but does not provide sufficient clarity for consistent decision making because of local interpretation.
2. Systematic progress to decrease the overall trend regarding number and type of occurrences within any SE category is not evident.

▶ **Recommendations Regarding Sentinel Events (SE) Data**

a. **Clarify policy and educate health care staff on the SE definition and event types to reduce variation in interpretation.**
b. **MHS governance should pursue an enterprise-wide improvement process addressing the top five reported SEs, improve the distinction between ambulatory versus hospital settings, and monitor SE occurrence by rates using appropriate denominator estimates.**

Root Cause Analysis

RCA is a systematic approach to determining the true root cause of an event or accident and separating the root cause(s) from other contributing factors, with the goal of preventing events or accidents from recurring. An RCA is required by DoDM 6025.13 for all SEs (see definition in Measure 4 above). Per DoDI 6025.13, TJC reviewable SEs must also be reported to TJC if the facility is accredited by TJC. The Accreditation Association for Ambulatory Heath Care (AAAHC) requires review of adverse events at the time of accreditation. Per DoD policy, an RCA investigation must be completed by the MTFs on all SEs, including TJC-reviewable SEs within 45 calendar days of the MTF becoming aware of the SE (see Appendix 5.9 for list of TJC defined reviewable SEs).

All SEs/adverse events must be reported to DHA. Corresponding RCAs are forwarded to the DoD Patient Safety Analysis Center (PSAC). However, there is no DoD policy requiring that RCAs be completed for non-SEs nor be submitted to the PSAC. In addition, per individual Service policies, RCAs may be required on incidences not meeting the SE definition; however, these RCAs need not be forwarded to PSAC.

There is no established process for communicating RCA feedback to staff or the PSAC. RCA corrective actions and follow up of completed events need not be reported to DoD. There is no process to cross reference a single event within the current systems (Patient Safety Reports, Centralized Credentialing and Quality Assurance System)[65].

Analysis

The purpose of this analysis is to account for all RCA investigations completed by the Services and NCR MD at the MTFs. RCA investigations are characterized by event type, date, and harm/outcome to determine emerging trends over time.

Table 5.11 shows the number of RCAs by Service, by year.

Table 5.11 Number of RCAs reported to PSAC, DHA, and Health Affairs by FY of Event Date

	FY 2010	FY 2011	FY 2012	FY 2013	Total
DoD	105	84	114	85	388
Air Force	28	21	35	23	107
Army	45	36	49	31	161
Navy	32	27	30	25	114
NCR MD	N/A[66]	N/A	N/A	6	6

2014 MHS Review Group
Source: Patient Safety Reporting System Database, June 2014

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[65] The Centralized Credentials Quality Assurance System is a Web-based, worldwide credentialing, privileging, risk management and adverse actions database for the Defense Health Agency.

[66] N/A: The NCR MD was established in December 2012.

Table 5.12 shows the number of RCAs by event type for all Services for the period of review.

Table 5.12 RCAs by Event Type submitted to PSAC, FY10 – FY13 (rank ordered)

Type	Number Reported
Unanticipated Death (all ages)	110
Surgery on Wrong Patient or Body Part	74
Foreign Body, Unintended Retention	71
Loss of Function, Major Permanent	47
Non- TJC Reviewable	38
Suicide, 24 Hour Care/within 72 hours of Discharge	18
No Type Provided/Blank	16
Radiation Overdose	4
Medical	3
Surgical	3
Neonatal Hyperbilirubinemia, Severe	2
Rape	1
Infant Discharged to Wrong Family	1

2014 MHS Review Group
Source: Patient Safety Reporting System Database, June 2014

Of the 388 RCA reports submitted to PSAC, the top three categories were Unanticipated Death, Wrong Site Surgery, and Retained Foreign Object. Figures 5.7 through 5.9 display four event types by Service and non-JCAHO (JCAHO is the former name of TJC) categorized events submitted to PSAC during FYs 2010 to 2013.

Figure 5.7 Air Force Top 4 Event Types for RCA Reports Submitted, FY10 – FY13
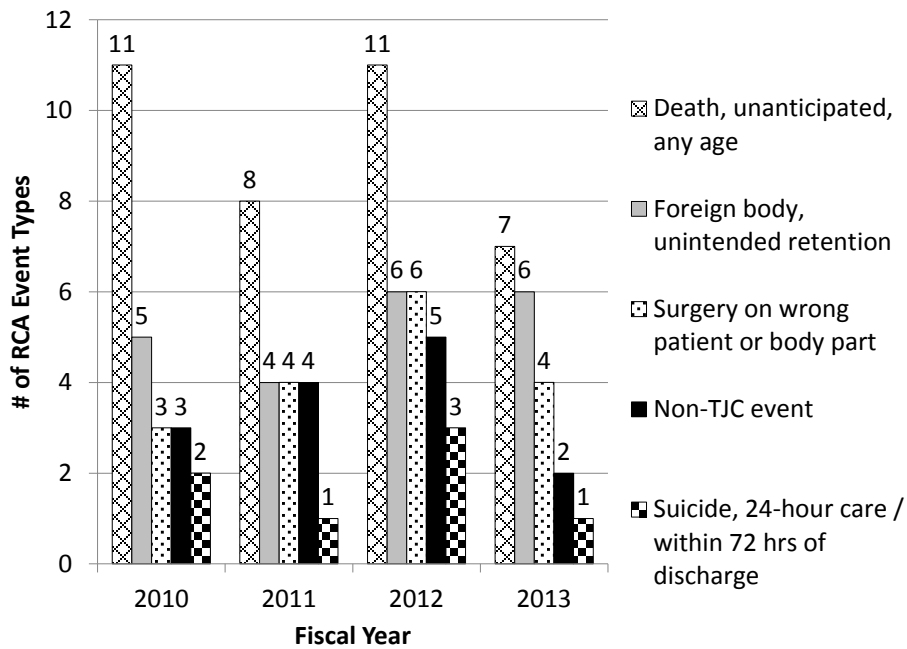
2014 MHS Review Group
Source: RCA: Patient Safety Reporting System Database, June 2014

Figure 5.8 Army Top 4 Event Types for RCA Reports Submitted, FY10 – FY13
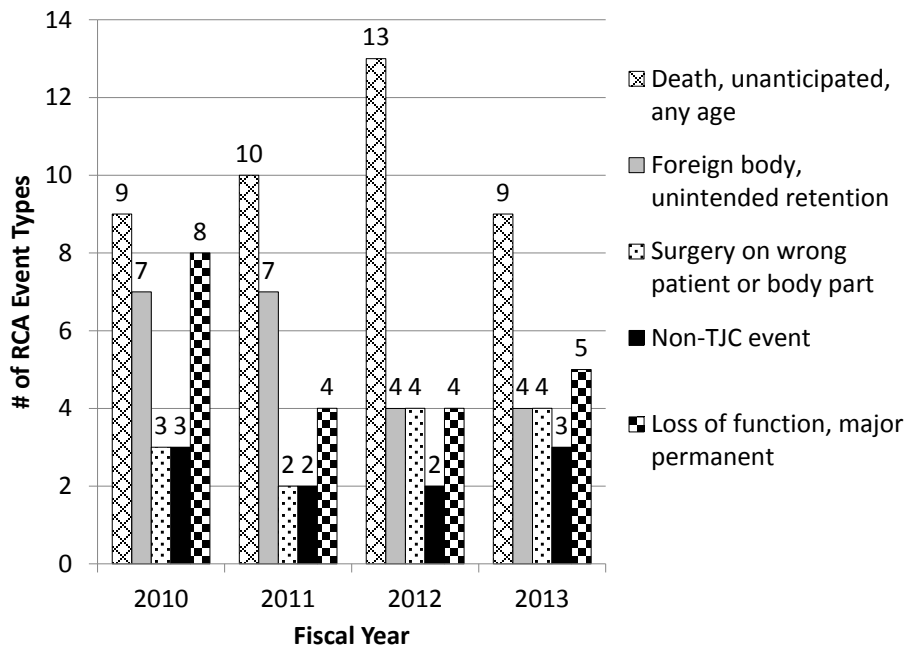
2014 MHS Review Group
Source: RCA: Patient Safety Reporting System Database, June 2014

Figure 5.9 Navy Top 4 Event Types for RCA Reports Submitted, FY10 – FY13
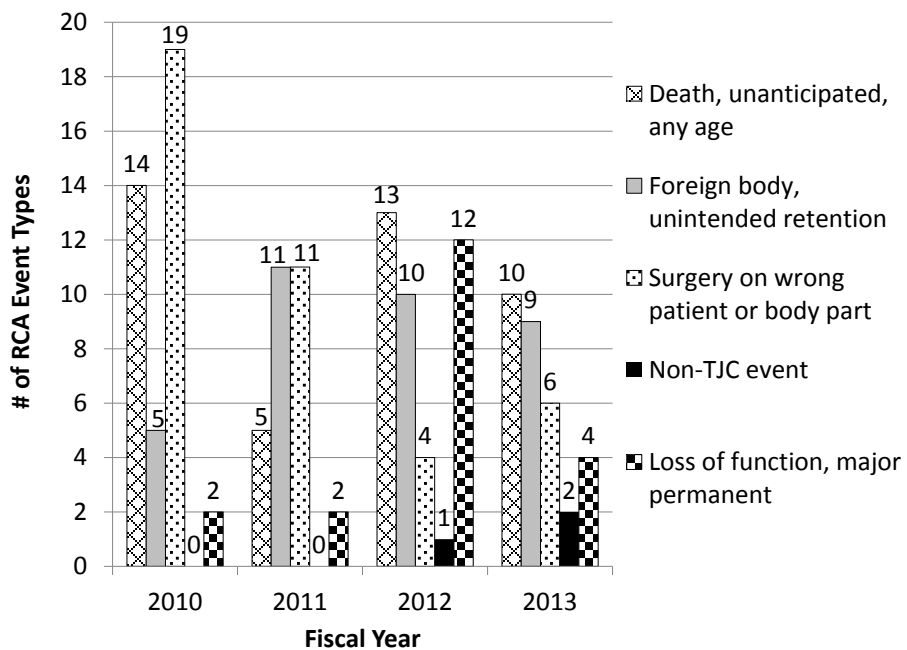
2014 MHS Review Group
Source: Self-reported by Service to the Patient Safety Program, June 2014 (Navy)

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Table 5.13 describes the level of harm results for RCA investigations by Service and year for
FYs 2010 to 2013.

Table 5.13 Level of Harm Results for RCA Investigations by FY and Service, FY10 – FY13

Fiscal Year	Death	Permanent loss of function	No loss of function	Undeterminable	(blank)	NR	Grand Total
Air Force							
2010	14	3	8	3			28
2011	6		12		3		21
2012	11	2	17	2	3		35
2013	7	4	8	2	2		23
Army							
2010	15	2	28				45
2011	7	2	25	2			36
2012	11	7	6	25			49
2013	10	5	11	2		3	31
Navy							
2010	13	9	8	2			32
2011	12	4	10	1			27
2012	16	3	8	3			30
2013	10	6	6	3			25
NCR MD							
2013	2		4				6
Total	134	47	151	45	8	3	388

2014 MHS Review Group
Source: Patient Safety Reporting System Database, June 2014

External Health System Comparison Methods

Health System 3 provided detailed RCA data for SEs containing level of harm results for FYs
2011 to 2013. These results were compared to direct care RCA level of harm results for the
same time period.

External Health System Comparison Limitations: There is no means of one-to-one
comparisons based on frequency of SE events alone. Health System 3's SE reporting categories
are incompletely defined and include additional SE types beyond TJC categories. Additionally,
Health System 3's requirement for conducting RCAs is unknown.

External Health System Comparison Analysis: Over three fiscal years, the direct care
component reported a total of 240 level of harm results for SE only RCAs where there was a

level of harm reported (see Table 5.14), while Health System 3 had 171 level of harm results for SE only RCAs (see Table 5.15).

The two most frequently occurring level of harm results for the direct care component were "death" and "no loss of function" across all three years. On average, death occurred 37 percent of the time for SE RCAs with reported outcomes.

The two most frequently occurring level of harm results for System 3 were "no harm" and "death", respectively. On average, death occurred 25 percent of the time for SE RCAS across three fiscal years within Health System 3.

"No harm" and "no loss of function" are not comparable categories across the direct care component and Health System 3. The only comparable level of harm outcome is death, which is more commonly reported for SE RCAs in direct care than for Health System 3. However, rates are preferable to frequency of events when comparing across systems because the underlying population differences are mitigated with rate comparisons.

Table 5.14 Direct Care SE RCA, Level of Harm Findings, FY11 – FY13

Level of Harm	FY 2011		FY 2012		FY 2013		Total
	n	%	n	%	n	%	
Death	24	33%	37	39%	28	38%	89
No loss of function	41	56%	20	21%	26	36%	87
Permanent loss of function	6	8%	12	13%	14	19%	32
Undeterminable	1	1%	24	26%	2	3%	27
Missing (blank)	1	1%	1	1%	1	1%	3
Not Reported		0%		0%	2	3%	2
Total	73	100%	94	100%	73	100%	240

2014 MHS Review Group
Source: Patient Safety Reporting System Database, June 2014

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Table 5.15 System 3 SE RCA, Level of Harm Findings, FY11 – FY13

Level of Harm	FY 2011		FY 2012		FY 2013		Total
	n	%	n	%	n	%	
No Harm	14	23%	18	28%	12	26%	44
Death	27	44%	8	13%	8	17%	43
Moderate	7	11%	26	41%	6	13%	39
Major-Temporary	6	10%	7	11%	10	22%	23
Minor	4	7%	3	5%	8	17%	15
Major-Permanent	2	3%	1	2%	1	2%	4
Emotional Injury Only	1	2%	1	2%	1	2%	3
Total	61	100%	64	100%	46	100%	171

2014 MHS Review Group
Source: Patient Safety Reporting System Database, and External Health System 3 Data, June 2014

Findings Regarding Root Cause Analysis (RCA)

1. Based on historical RCA analysis and current data, the content of RCAs remains highly variable across all Services and event types. RCAs associated with the most serious events often provide very limited insight into the factors that may be corrected to prevent recurrence. RCAs should be reviewed not as a requirement but for learning and system improvements. Based on historical RCA PSAC analyses, no consistent follow-up process exists to assess process improvement following an RCA. Across the Services and at the MTF level, information gleaned from completed RCAs is not widely shared for frontline staff to make improvements where possible. Lack of a common identifier for events does not allow for cross-referencing or follow up of events once an RCA is completed.

▶ **Recommendations Regarding Root Cause Analysis (RCA)**

   a. **Establish clear expectations for the RCA process and the follow up that will occur.**

Performance Improvement Root Cause Analysis

In June 2014, each Service (Army, Navy, Air Force, and NCR MD) provided a list of all RCAs that were conducted for performance improvement purposes. These RCAs were performed for events that did not meet SE criteria.

"Performance Improvement" (PI) RCA is a term agreed on by the MHS Review Group to describe RCA investigations conducted to identify variation in performance, systems, and processes; to train or remain current on RCA competency; and for use in Probability Risk Assessments. The RCA information is maintained at the Service and MTF levels. These data include all PI RCAs between FY 2010 and FY 2013 reported by the Services to the MHS Review Group for the purposes of this review (NCR MD data only include December 2012 to December 2013). The Services were asked to provide: Service, year of event, MTF name, event

type, level of harm, and to state whether the RCA was conducted for training purposes. A total of 425 PI RCAs were reported to the MHS Review Group. Eighty-one of the Navy (102 total) and 7 of the Army (174 total) PI RCAs were identified as RCAs conducted for training purposes or proactive risk reviews.

Table 5.16 shows the Services' different methods for classifying event type and reporting their RCA events and the total number of PI RCAs submitted.

Table 5.16 Service Identified Source for RCA Classification of Event Type and Total Number of PI RCAs

Service	RCA Classification	Number of PI RCAs Reported
Air Force	PSR Categories	131 events
Army	Not Specified	174 events (two events had no specified date)
Navy	DoD Short Form	102 events
NCR MD	DoDM 6025.13 guidance	18 events

2014 MHS Review Group
Source: Self-reported by Services to the Patient Safety Program, June 2014 (Navy), June 2014 (Air Force), July 2014 (Army), and July 2014 (NCR-MD)

Figure 5.10 shows the Services PI RCAs by calendar year. This figure demonstrates an increased number of PI RCAs across direct care each year, over the last four years.

Figure 5.10 PI Service RCAs by Year and Service
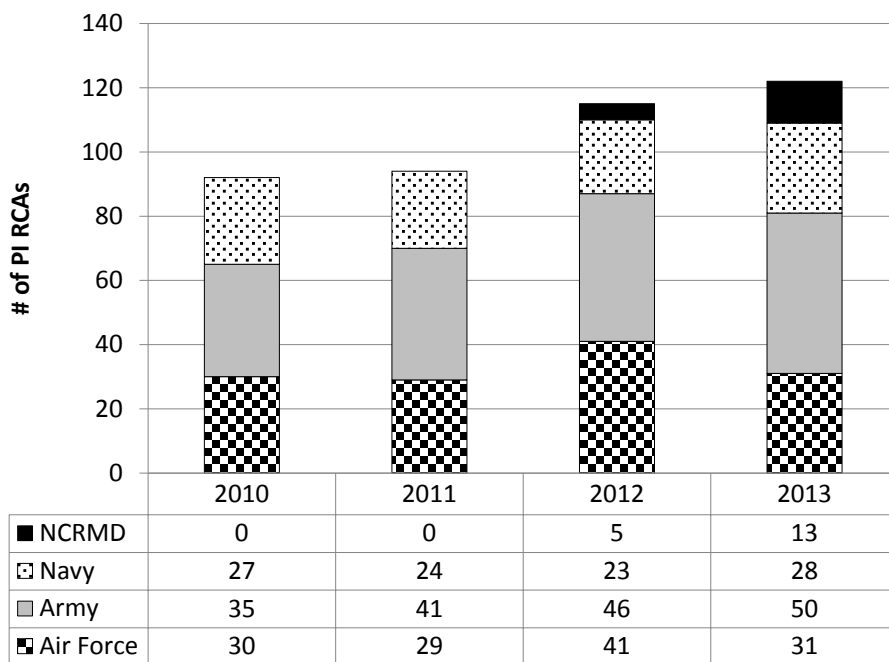
	2010	2011	2012	2013
■ NCRMD	0	0	5	13
⊡ Navy	27	24	23	28
▢ Army	35	41	46	50
▨ Air Force	30	29	41	31

2014 MHS Review Group
Source: Self-reported by Services to the Patient Safety Program, June 2014 (Navy), June 2014 (Air Force), July 2014 (Army), and July 2014 (NCR-MD)

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Table 5.17 demonstrates the top PI RCAs reported by each Service and the NCR MD for the last four consecutive years. The direct care data include the combined data sets of all the Services' PI RCAs. These were consolidated into TJC RCA event types. Overall, suicide was the largest event category with a total of 156 events.

Table 5.17 Top PI RCAs for DoD Overall, Air Force, Navy, Army, and NCR MD

Service	Top PI RCAs	Number of PI RCAs
DoD Overall (TJC Classification)	1. Suicide	156
	2. Other Unanticipated Events	82
	3. Delay in Treatment	60
	4. Medication Error	56
	5. Med-Equipment related	18
Air Force (TapRooT Software Classification)	1. Suicide	52
	2. Delay in Diagnosis/Treatment	23
	3. Medication/IV fluid/biological	14
	4. Clinical Process or Procedures	12
	5. Unanticipated Death	8
Navy (DoD Short Form Classification)	1. Delay in Diagnosis/Treatment	34
	2. Medication-related Event	15
	3. Other	14
	4. OB Related: Other	11
	5. Patient Suicide/Risk of	7
Army* (Classification not specified)	1. Suicide	67
	2. Other	5
	3. Blank	4
NCR MD (DoDM 6025.13)	1. Medication Error	4
	2. Suicide Gestures	2

Army had 67 unstandardized types
2014 MHS Review Group
Source: Self-reported by Services to the Patient Safety Program, June 2014 (Navy), June 2014 (Air Force), July 2014 (Army), and July 2014 (NCR-MD)

Findings Regarding Root Cause Analysis for Performance Improvement

1. In addition to RCA associated with reviewable sentinel events, MTFs exceeded policy DoDM 6025.13 by conducting 425 RCAs for performance improvement purposes in an effort to identify and correct systemic process issues.
2. Variations are found in RCA event type classifications, demonstrating an overall lack of consistent categorization. Not all Services forward PI RCAs to the PSAC, so there is no complete database to learn from and establish safe practices.

► **Recommendation Regarding Root Cause Analysis for Performance Improvement**

   a. **Standardize the PI RCA process with a focus on event type classifications, a centralized repository, and dissemination of the lessons learned.**

Patient Safety Reporting System (PSRS)

The PSRS was fully implemented enterprise-wide in June 2011. Therefore, complete patient safety reporting data are available only for FY 2012 and FY 2013. The PSRS is a web-based, self-reported, anonymous, commercial off-the-shelf reporting application that consolidates both medication and non-medication reporting using a standardized taxonomy to improve aggregation, trending, and analysis. Use of the PSRS was voluntary but highly encouraged as a reporting system between June 2011 and October 2013. In October 2013, patient safety reporting became mandatory with the publication of the current DoDM 6025.13.

PSRS events are categorized by harm categories, including the following:

   1. Near Miss: did not reach the patient and unsafe condition
   2. No-Harm: no harm to the patient and emotional distress
   3. Harm: additional treatment, temporary harm, permanent harm, severe permanent harm, and death

Figure 5.11 shows the increase in patient safety reporting by month between FY 2012 and FY 2013.

Figure 5.11 Total PSR Events by Month, FY12 – FY13
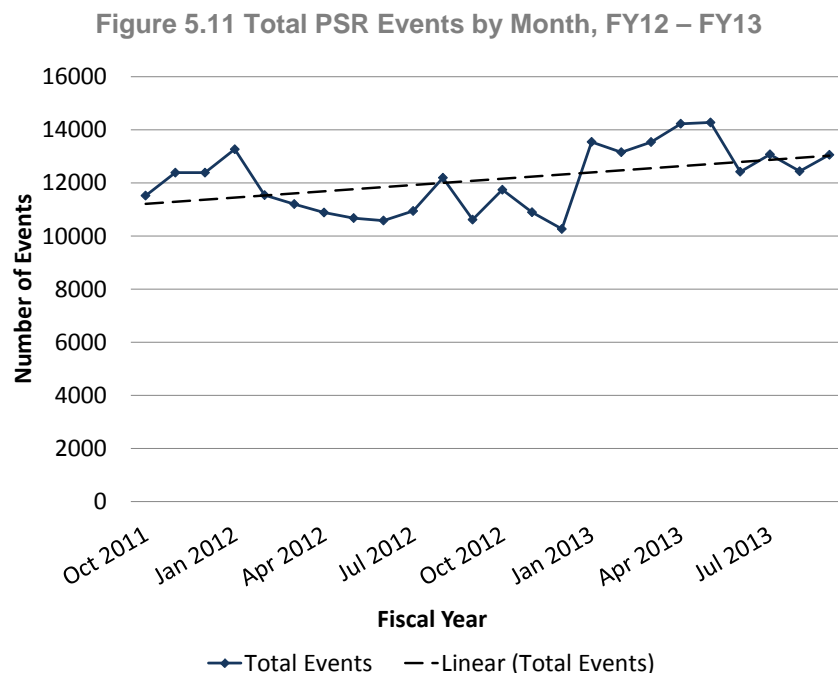
2014 MHS Review Group
Source: PSR: Patient Safety Reporting System Database, April 2014

Although this trend is desirable, when compared to 2011 HSOPS data,[67] there has been little progress in increasing the number of staff who report at least one event over a 12-month period. In 2011, only 27 percent of staff completing the HSOPS responded positively to this question. This puts DoD within the 10th percentile (underperforming) for patient safety reporting when compared to the AHRQ HSOPS national average. According to the Institute for Healthcare Improvement (IHI) Global Trigger Tool for Measuring Adverse Events (see Appendix 5.4), written in 2009, "voluntary reporting approaches can be subjective and unless events are particularly salient patient safety issues maybe underreported by as much as 80-90%." [68] For these reasons, the IHI does not recommend the use of self-reporting systems to determine harm rates.

Reported Near Miss and No Harm events show an increasing trend over time. Among the Services there is significant variance in Near Miss reporting with Army reporting an average 1,566 events per month, Air Force 1,109, and Navy 428. Army is averaging 1,290 No Harm event reports monthly with Air Force at 748 and Navy at 615. The overall trend in reported Harm events for the Services has remained relatively flat over the past two fiscal years with Army reporting an average of 270 per month, Navy 166 per month and Air Force 101 per month (Figure 5.12).

Figure 5.12 Events by Harm by Month, FY12 – FY13
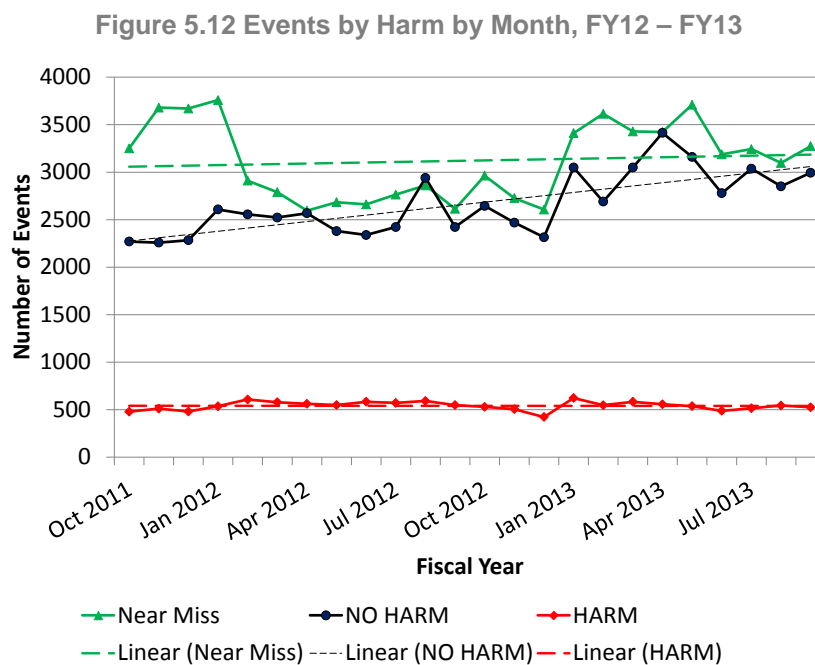
2014 MHS Review Group
Source: PSR: Patient Safety Reporting System Database, retrieved April 2014

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[67] AHRQ. Hospital Survey of Patient Safety Culture: 2011 User Comparative Database Report. Available at: http://www.ahrq.gov/legacy/qual/hospsurvey11/
[68] Classen, DC, et al. Global trigger tool' shows that adverse events in hospitals may be ten times greater than previously measured. *Health Affairs* 2011 Apr;30(4):581-9. doi: 10.1377/hlthaff.2011.0190.

Self-reporting tools like PSR are used internationally to capture, aggregate, and trend untoward medical event data. James Reason, PhD, risk analysis and accident causation expert, suggests, "A reporting culture means cultivating an atmosphere where people have confidence to report safety concerns without fear of blame. Employees must know that confidentiality will be maintained and that the information they submit will be acted upon, otherwise they will decide that there is no benefit in their reporting…Leadership is central to safety culture."[69] Results from HSOPS and site visit observations (discussed later in this report) such as fear of retribution or punitive environment may influence the likelihood of staff reporting events using the PSR tool.

Findings Regarding the Patient Safety Reporting System

1. There are inconsistent event reporting processes (identification of events, staff reporting of events, approval of events, and classification of events) across all Services and MTFs.
2. Less than 30 percent of staff actively participates in reporting patient safety events according to the most recent culture survey, with no changes observed over time. DoD results fall at the 10th percentile for reporting when compared to the civilian benchmark. Based on HSOPS data, there have been no improvements in the number of staff who have reported at least one event over a 12-month time period.
3. The PSRS does not provide an accurate indication of the system's harm level or harm rate.

▶ **Recommendations Regarding the Patient Safety Reporting System**

a. **Standardize the event type components of the event reporting process.**
b. **Standardize leadership activities to drive a culture of safety (i.e., Executive Toolkit).**
c. **Adopt a chart audit based methodology such as the IHI Global Trigger Tool (GTT) to determine harm rate.**

Measures within Purchased Care Settings

As set forth in the TRICARE Operations Manual (TOM), Chapter 7, Section 4, the contractors are required to use the most current NQF Serious Reportable Events (SREs) and AHRQ PSIs as a mechanism to identify, track, trend, and report interventions to resolve potential quality issues (QIs) and confirmed quality issues. [70] Additionally, the contractor must report potential SREs to the TRICARE Regional Office (TRO) or TRICARE Area Office (TAO) or Designated Provider Program Office (DPPO) within two business days from when the contractor becomes aware of

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[69] Reason, J. (1997). *Managing the risks of organizational accidents*. Aldershot: Ashgate.

[70] A potential quality issue (QI) is defined as a clinical or system variance warranting further review and investigation for determination of the presence of an actual QI. A confirmed QI is defined as a verified deviation, as determined by a qualified reviewer, from an acceptable standard of practice or standard of care as a result of some process, individual, or institutional component of the health care system.

the event and closure of the reported SRE is required within two business days to include summary of actions taken. Each contractor uses a mix of standardized reporting matrices as well as individual best practice matrices to monitor and report patient safety concerns. The TRO/TAO or DPPO office provides oversight for their respective contractor processes and compliance of the requirements in accreditation, clinical credentialing, and clinical quality/patient safety.

All of the regional contractors have processes in place to review patient safety and quality of care issues. The contractor must assess every medical record reviewed for any purpose and any care managed/observed/monitored on an ongoing basis for PQIs. The contractor is further directed to implement appropriate quality interventions using evidence-based medicine/guidelines and best medical practices to reduce the number of QIs and improve patient safety. When the contractor confirms a QI, the determination should include assignment of an appropriate severity level and/or sentinel event, and describe the actions taken to resolve the quality problem.

Reporting of patient safety, patient harms, or quality-of-care issues is voluntary for civilian providers. Contractors have developed various sources in attempting to identify issues in addition to claims data; for example, beneficiary complaints, MTF concerns for enrolled beneficiaries, governmental inquiries, concurrent review processes for inpatient admissions, and medical records from focus studies. In presenting the aggregate data from the contractors, every effort was made to translate the heterogeneous mixtures of mandatory reporting metrics and additional best practice metrics from multiple disparate sources into homogenous measures to facilitate comparison; however, direct comparisons remain challenging.

Agency for Healthcare Research and Quality Patient Safety Indicators (PSIs)

The AHRQ PSI set is a useful screening tool for highlighting areas in which quality should be further investigated by hospitals and for oversight in health plans. AHRQ PSIs also provide a useful benchmark for facilities in tracking progress in quality improvement. The AHRQ PSIs were designed for providers of care, not for health plans; however, these indicators are used as a proxy measure for TRICARE to identify potential quality of care issues. Contractors are directed through the TOM to use current PSI software to evaluate the safety of care delivered in the network. The contractor is required to analyze the results to identify PQIs and patient safety issues for individual providers, groups, and/or facilities. An official analysis must be provided in their required Clinical Quality Management Program Annual Report.

The AHRQ PSIs are homogenous and comparable among the contractors, as they all use the AHRQ standardized methodology from claims data. The data can be compared against the national average benchmarks published by AHRQ.

**Methodology/Benchmark or National Comparison Information*:* The TRICARE data presented in this document are shown with AHRQ-generated nationwide comparative rates for the AHRQ QI™ PSIs. The AHRQ comparison rates are based on analysis of 44 States from AHRQ's 2010 Healthcare Cost and Utilization Project (HCUP) State Inpatient Databases. The QI observed rate for provider-level indicators is scaled to a rate per 1,000 persons at risk.

TRICARE PSI rates indicate risks or harms that may have been encountered by MHS beneficiaries while hospitalized in purchased care facilities. It is important to note that TRICARE is only able to capture incidence of risk or harms across multiple facilities. Currently there is only one available AHRQ-specific stratification/benchmark for commercial, Medicare, Medicaid and "other" payers to characterize risks or harms—in other words, no such stratification/benchmark exists for TRICARE.

TRICARE data were obtained from each continental United States (CONUS) region for the most recent four fiscal years (October 2010 – September 2013) and 18 PSI measures were analyzed: PSI 2 through PSI 19. Overall, the majority of measures were below the national average and a few were above the national average (see Table 5.18). Data from outside continental United States (OCONUS) and Designated Providers showed overall small numbers of events with differences in reporting methodology, which made aggregation for analysis, challenging.

Table 5.18 PSI Rates for Purchased Care Regions Compared to AHRQ National Benchmarks, FY 10 – FY13

Agency for Healthcare Research and Quality (AHRQ) Patient Safety Indicators (PSIs)	FY 2013				FY 2012				FY 2011				FY 2010			
	North Region	South Region	West Region	*Nat Average	North Region	South Region	West Region	*Nat Average	North Region	South Region	West Region	*Nat Average	North Region	South Region	West Region	*Nat Average
Death in Low Mortality DRGs (PSI 2)	0.14	0.01		0.27	0.01	0.00	0.12	0.03	0.10	0.00	0.59	0.03	0.12	0.07	0.59	0.13
Decubitis Ulcer (PSI 3)	1.67	0.22	0.18	0.40	1.52	0.30	2.00	0.41	4.10	0.18	2.23	5.18	4.11	1.19	2.23	7.27
Failure to Rescure (PSI 4)	0.00	6.57		118.57		7.68	83.07	12.40	36.20	6.36	77.94	12.71		94.27	77.51	95.36
Foreign Body Left During Procedure (PS 5)											0.05				0.06	
Iatrogenic Pneumothorax (PSI 6)	0.20	0.11	0.13	0.38	0.21	0.16	0.07	0.43	0.50	0.19	0.91	0.43	0.45	0.20	0.91	0.14
Selected Infections Due to Medical Care (PSI 7)	0.38	0.16	0.45	0.43	0.25	0.17	0.44	0.39		0.18	1.13	0.75	0.59	0.32	1.13	0.67
Postoperative Hip Fracture (PSI 8)	0.00	0.00		0.03	0.00	0.00		0.03	0.00	0.00	0.00	0.03	0.00	0.06		
**Perioperative Hemorrhage or Hematoma (PSI 9)	3.72	4.35	1.39	5.86	1.70	1.98	1.42	2.42	1.30	1.95	3.87	2.37	2.34	1.80	3.87	2.21
Postoperative Physiologic and Metabolic Derangement (PSI 10)	0.43	0.16		0.50	0.59	0.44		0.52	0.10	0.15	0.00	0.48				0.55
Postoperative Respiratory Failure (PSI 11)	5.44	5.07	3.81	8.61	5.49	6.27	2.85	8.59	5.00	4.23	2.32	8.17	6.00	3.55	2.47	5.79
Postoperative PE or DVT (PSI 12)	6.56	2.43	2.11	4.51	6.47	2.29	2.12	6.25	3.90	2.51	2.54	7.28	7.37	2.26	2.45	7.10
Postoperative Sepsis (PSI 13)	6.88	3.51	6.38	12.00	10.80	8.72	5.42	10.72	6.60	6.37	3.05	10.74	6.86	4.05	3.05	10.51
Postoperative Wound Dehiscence (PSI 14)	0.68	0.80	1.38	1.85	0.87	0.24	0.42	2.02	1.90	0.65	1.45	2.17	1.91	0.60	1.45	1.53
Accidental Puncture or Laceration (PSI 15)	2.41	2.63	3.13	2.45	2.55	2.70	3.81	2.68	3.20	3.34	5.19	2.88	4.02	3.31	5.48	3.93
Transfusion Reaction (PSI 16)									0.00		0.00		0.00		0.00	
Birth Trauma Rate - Injury to Neonate (PSI 17)		2.06	1.82	2.10				2.39	2.50		2.15		2.73		2.15	
Obstetric Trauma - Vaginal Delivery with Instrument (PSI 18)	145.30	132.74	152.84	139.11	138.46	126.73	129.82	143.03	137.20	136.68	168.89	146.39	145.37	146.64	161.48	167.98
Obstetric Trauma - Vaginal Delivery without Instrument (PSI 19)	21.46	23.51	24.23	22.46	20.05	24.76	19.74	22.14	21.70	21.97	28.68	23.78	22.93	26.71	29.53	28.84

Lower than Benchmark
Higher than Benchmark
National Benchmark
2014 MHS Review Group
Source: Data from Annual Reports from United Healthcare Military and Veteran, July 2014

Potential Quality Issues (PQIs) and Quality Issues (QIs)

The overall number of PQIs identified varied among the contractors but a greater difference was observed in the confirmed quality findings. The contractors were compared according to the AHRQ PSIs, SREs, and Hospital Acquired Condition (as defined by CMS for claims coding methodology for DRG payment), as these were homogenous comparable indicators among contractors. The other indicators were specific to the various contractors and were not comparable. The data demonstrate that the contractors' processes were effective in identifying patient care quality and safety issues despite facility and provider voluntary reporting. There are no national or other benchmarks available for comparison (see Figures 5.13 and Figure 5.14)

Figure 5.13 Total Number of Quality Issues (QIs) for AHRQ PSIs, HACs, SREs Identified in FY10 – FY13 for Purchased Care

	FY2010	FY2011	FY2012	FY2013
Number of PQIs	2280	3591	3108	1343
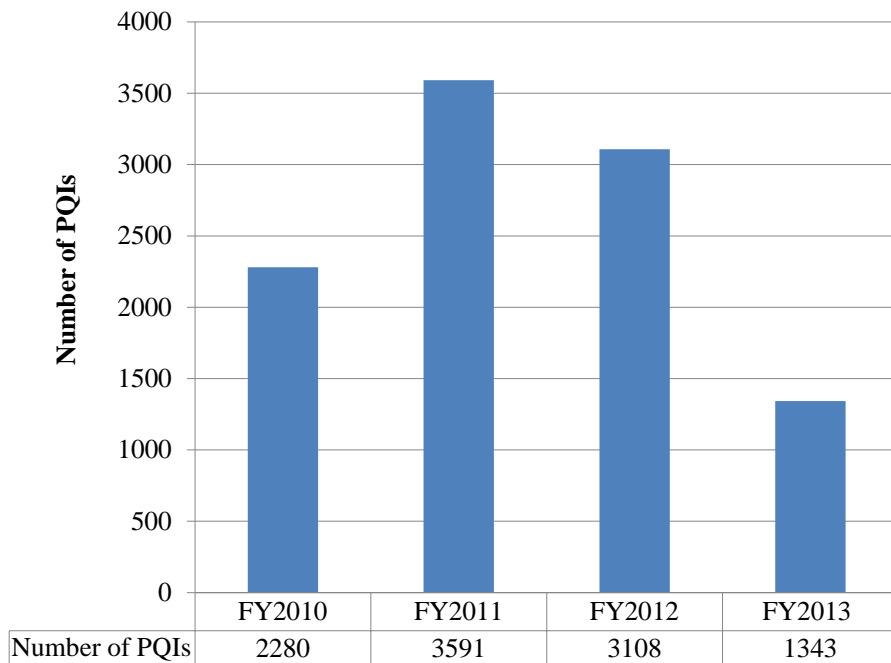
2014 MHS Review Group
Source: Managed Care Support Contractors Annual Report, June 2014

Reviewing all three CONUS TRICARE contractors in aggregate over the past four years shows an increase in total PQIs identified in FY 2011 and decreasing numbers in FY 2012 and FY 2013. In evaluating the individual regions, the West has generally reported higher levels of AHRQ PSIs, HACs, and SREs compared to the other two regions with initially what appeared to be a significant spike in FY 2012 that appeared to cluster in the area of obstetrical/newborn issues. Further research into this data revealed a combination of neonatal trauma and obstetrical trauma into the reporting category of "birth trauma." When this was corrected to "birth trauma injury to neonate" the data fell within the expected statistical range, and this latter point was used in the graphical representation.

Figure 5.14 Total Number of Quality Issues (QIs) for AHRQ PSIs, HACs, SREs Identified in FY10 – FY13, by Region for Purchased Care
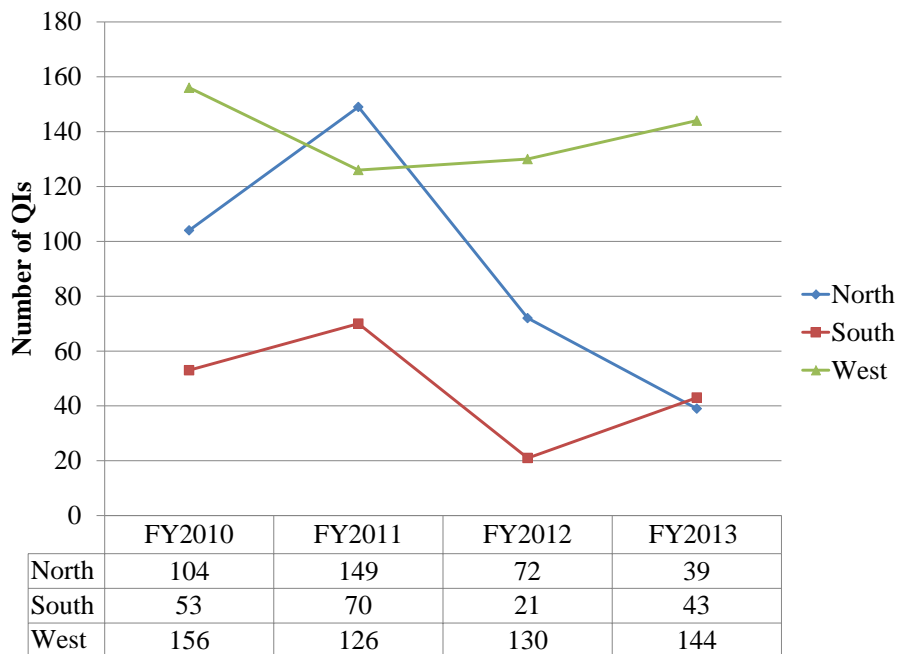

	FY2010	FY2011	FY2012	FY2013
North	104	149	72	39
South	53	70	21	43
West	156	126	130	144

2014 MHS Review Group
Source: Managed Care Support Contractors Annual Report, June 2014
HAC = CMS defined Hospital Acquired Conditions not present on admission

All contractors count cases by self-selected PQI/QI case attributes that may include: in each case investigated, multiple indicators or issues that may be identified in the case, and/or by number of involved providers which may be evaluated in the given segment of care. The methodology used to identify number of cases worked reflects contractor-unique practices that make comparison of potential quality issues and/or actual quality issues difficult.

Serious Reportable Events

The contractors are required to use the most current NQF SRE indicators as a source for potential serious quality of care issues. There is no mandatory reporting for civilian facilities and providers, although the contractors have developed processes for identification.

Figure 5.15 Total Number of National Quality Forum Serious Reportable Events in FY10 – FY13, by Region for Purchased Care

	FY2010	FY2011	FY2012	FY2013
North	10	13	6	5
South	9	5	9	7
West	20	11	35	19
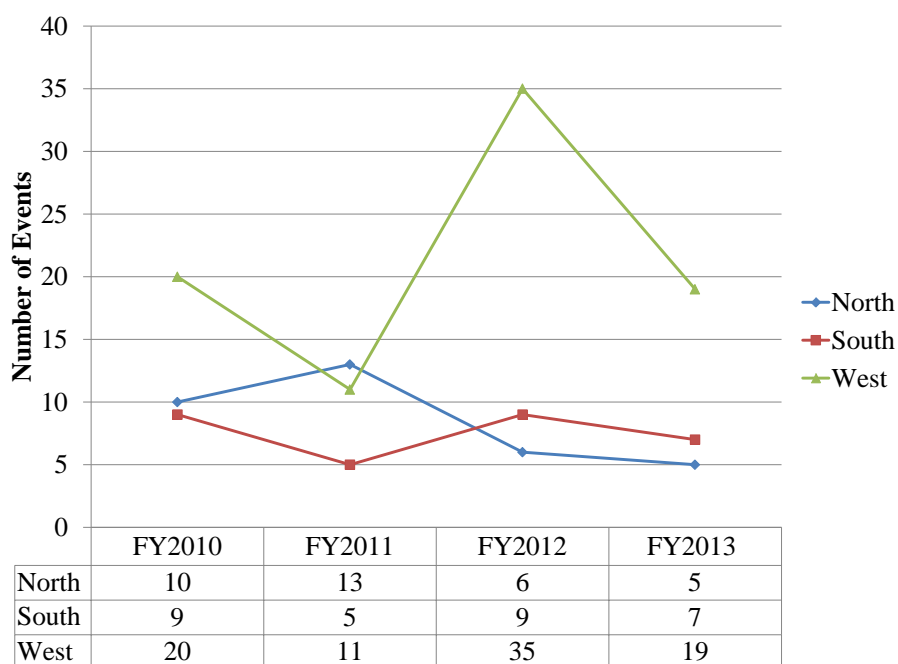
2014 MHS Review Group
Source: Managed Care Support Contractors Annual Report, June 2014

In examining the three individual region numbers, the only notable data outlier is in 2012 in the West region where there was a significantly higher number of SREs in comparison to the North and South regions. Further detail reveals the majority of this spike is accounted for by 23 patient falls that were reviewed and assigned a Severity Level 1, meaning that a QI was present with minimal potential for significant adverse effects on the patient. There are no benchmarks available (see Figure 5.15).

A high-level impression of the purchased care data in aggregate for the past four years is that overall rates for the majority of tracked metrics are at or below the national averages. It is important to understand that comparison of purchased care data with direct care data is problematic. Reporting of the indicators to the TRICARE contractors that administer benefits and pay claims in the purchased care component is voluntary, unlike in direct care where reporting is mandatory. The majority of possible safety and quality concerns arise through claims review, beneficiary complaints, record reviews and other active monitoring sources and processes. Thus, comparing voluntary civilian rates to a system with mandatory reporting may inappropriately give the appearance that the direct care component has higher rates of adverse safety issues.

Gaps and Findings Regarding Patient Safety in Purchased Care

The major gap in identifying patient harm and other potential safety issues for the TRICARE population treated by civilian providers and facilities is the voluntary reporting process. The only mechanism for mandatory reporting of patient harm/safety issues for TRICARE would be

through a congressional action tying reporting to claims payment. The current DHA/contracting reimbursement methodology does not provide the framework for flexibility in reimbursement rates negotiation by a contractor.

1. For the past four years, overall rates for the majority of tracked patient safety metrics are at or outperformed national benchmarks. Review of aggregate data for the three CONUS contractors over the past four years shows an increase in total PQIs identified in FY 2011 (unknown if due to increased events or increased reporting) and then steadily decreasing numbers in FY 2012 and FY 2013.
2. In evaluating the individual regions, the West has generally reported higher levels of AHRQ PSIs, HACs, and SREs compared to the other two regions.
3. In examining the regions, the only notable data outlier is in 2012 in the West region, where there was a significantly higher number of SREs in comparison to the North and South regions, predominantly accounted for by a number of low-severity patient falls.

▶ **Recommendations Regarding Measures in the Purchased Care Setting**

    a. **Incorporate best practices from all three contractors to develop a more standardized process that enhances transparency, minimizes variation, and incentivizes reporting for process improvement.**

Site Visit Information

See Appendix 5.10 for core questions used to develop site visit observations. See Appendix Table 5.11-1 and Figure 5.16 for the total number of respondents per interview session.

Executive Leadership Session

Executive Leadership throughout the MTFs engaged in conversation about the culture of patient safety within the direct care component. The Command teams provided examples of efforts to improve patient safety. The majority of leadership agreed that TeamSTEPPS® is recognized as the primary tool for reducing patient safety risk. Recognition programs such as The Good Catch Program have been a catalyst for increasing the volume and frequency of reporting. Other examples included the Patient CaringTouch System, Partnership for Patients (PfP), and leadership rounding, although not all commands conduct leadership rounds. Additionally, National Patient Safety Goals (NPSGs) and PfP guidelines to prevent injuries from falls were cited as safety measures in place to reduce harm.

Functional Staff Focus Group

Patient Safety Managers (PSMs) believed that an environment of safe reporting is created by communicating to staff that the goal of reporting is not to assign blame, but rather to improve the process for the future (see Appendix 5.11). The functional staff also confirmed that public recognition of staff members serves as an incentive for reporting by other staff members. Improvements in patient safety were most effectively accomplished at facilities where a patient safety representative was assigned for each clinic. PSMs strive to reduce harm using myriad

safety measures. Examples found include using RCA data and the Failure Modes and Effects Analysis tool, which is used to identify potential deficits in patient safety processes as well as to implement changes in systems and policies. A majority of PSMs indicated they conduct rounds weekly, while some stated using TJC's tracer team concept.

General Staff Interviews

In general, staff at sites visited indicated reporting is not a punitive matter and results are used for process improvement. For the most part, patient safety is accomplished by reporting the incident to the PSM instead of staff using the PSR tool (see Appendix Figures 5.11-1 to 5.11-8). When questioned regarding their role in the organization's patient safety program, staff members mostly articulated three patient identifiers: falls risks evaluations, bedside rounding, and equipment checks for cleanliness. As a general rule, staff nurses could identify the patient safety roles better than any other type of staff member. Across the MTFs, TeamSTEPPS was a recurring theme; it was evident that it was trained and implemented extensively through the use of care team huddles and was a focal point for interactions with patients on a daily basis (see Appendix Figures 5.11-1 to 5.11-8). In describing barriers to prevent harm and PfP initiatives, the majority of the staff does not have a full understanding of the nine hospital-acquired conditions and preventable admissions as outlined in the PfP Implementation guidebook.

Patient Interviews

The patients throughout the MTFs visited were confident that they are receiving safe care at their respective facilities. Patients felt very comfortable asking questions pertaining to their care from not only the support staff, but also the Primary Care Managers. Not all of the patients knew the procedure for reporting safety issues or concerns; however, all did assert that they would report to someone. Patients affirmed that they consistently receive easy to follow verbal and written instructions with regard to their continuity care plans.

Staff Town Hall Results

A qualitative analysis was used to evaluate the comments obtained from the staff and beneficiary town hall meetings. Across the MTFs, staff believes that a correlation exists between quality of care rendered and the culture of patient safety. Staff feels that, while it is important to provide high quality care and that they should strive to do so, barriers exist that prevent staff from providing high-quality and safe care. Appropriate staffing levels and staff mix were noted as a primary concern. Staff stated that increased workload due to staff shortages, as well as constant workforce turnover, create a sense of decreased patient care quality and safety and a lack of continuity of care. They also expressed that as staff rotate between departments to fill manning gaps, proficiency in clinical skills suffers as priority is placed on mandatory higher-directed training as opposed to unit-specific training.

All staff was aware of the PSR tool and its use for reporting potential; however, the majority expressed they did not receive feedback in a timely manner or feedback at all, rendering a perception of inefficiency. The cumbersome nature of using the tool made it more likely that a report was made verbally to a supervisor and/or safety manager rather than being submitted into

the PSR tool. Furthermore, while all seven facilities indicated the importance of reporting, at least one member of the staff at four out of seven facilities stated that they felt they would be retaliated against for speaking up regarding reporting errors and events. Last, a majority of MTF staff shared the sentiment that the overall culture of patient safety within the direct care component, while adequate, has room for improvement. For example, there is a consistent perception from staff that leadership makes decisions in a vacuum, thereby leaving the staff feeling discouraged and voiceless in matters affecting delivery of care. Staff recommended that there be MTF-wide stand-down days to complete mandatory trainings in order to overcome its impact on patient care. Staff was very proud of their work and felt that they are the key drivers to the success of the organization.

### Beneficiary Town Hall Results

Beneficiary perceptions of safe care were dominated by the availability of appointments within the direct care component, as well as the number of providers and support staff within the clinic. Patients indicated that once appointments are obtained, the care is safe. Exceptions exist in understaffed clinics where it is viewed that care is not thorough and staff has competing priorities to providing quality and safe patient care. Frequent deployment of military providers and subsequent changes of PCMs causes a lack of continuity of care amongst the beneficiary population. Moreover, while patients stated that they were comfortable asking questions of providers and their support staff, it was deemed futile, as the overwhelming consensus was that patients' voice were not valued or heard. As far as reporting safety issues or concerns, a majority of patients indicated that they would report to a member of the staff; respondents at only one facility shared knowledge of the hospital patient advocate. Of the patients who had been referred to the network, a majority expressed that they received the same level of safe care as within the direct care component; however, respondents at one MTF indicated that the only reason they sought care at their respective MTF was to receive referrals to the network. As a whole, respondents felt that the patient safety culture in the MHS was meeting their needs based on their experiences in the MTF and with the network.

Site Visit versus Central Data Comparative Summary

It is the overall assessment of the site visit team that safe and quality care is being rendered throughout the direct care component. While variations exist, a general consensus was found at all levels of the MTFs on the knowledge and practices of patient safety. Leaders encourage reporting of errors, near misses, and failures, and while it is apparent that staff feels comfortable reporting, they do so verbally to a supervisor rather than utilizing the PSR tool (see Appendix Figures 5.11-1 to 5.11-8). An analysis of the findings shows that while the volume of patient safety reporting using the PSR tool has slightly increased, this was not corroborated through interviews at the site visits. While the site visits indicated staff are not likely to report near misses if no harm comes to the patient, this was found to be inconsistent with the central data, which showed a slight increase in reporting. Instances were also found during staff rounds and town hall sessions in which employees expressed concerns regarding an environment where reporting was not encouraged and in fact, responses were punitive in nature. The current commands placed little to no emphasis on the 2011 Patient Safety Culture Survey (see Appendix Table 5.11-2). Some lacked knowledge of the survey, while others were not aware of the

improvements made as a result of the survey by the previous command. A majority of commands reported, and data analysis confirmed, that the significant delay in receiving survey findings from the 2011 Patient Safety Culture Survey was the rate-limiting factor of a high priority (core interview questions) being placed on implementing change and improvements. Staff and patients at all MTFs addressed concerns surrounding the impact of staffing and workload on the level and continuity of care. This correlates with the findings of the 2011 Patient Safety Culture Survey in which comments centered on concerns of experience and resources necessary for job performance.

Figure 5.16 Safety: Perceptions Among Regional Headquarters, MTF Leaders, Subject Matter Experts (SMEs), Staff Members, and Patients During Seven MHS Site Visits, 2014
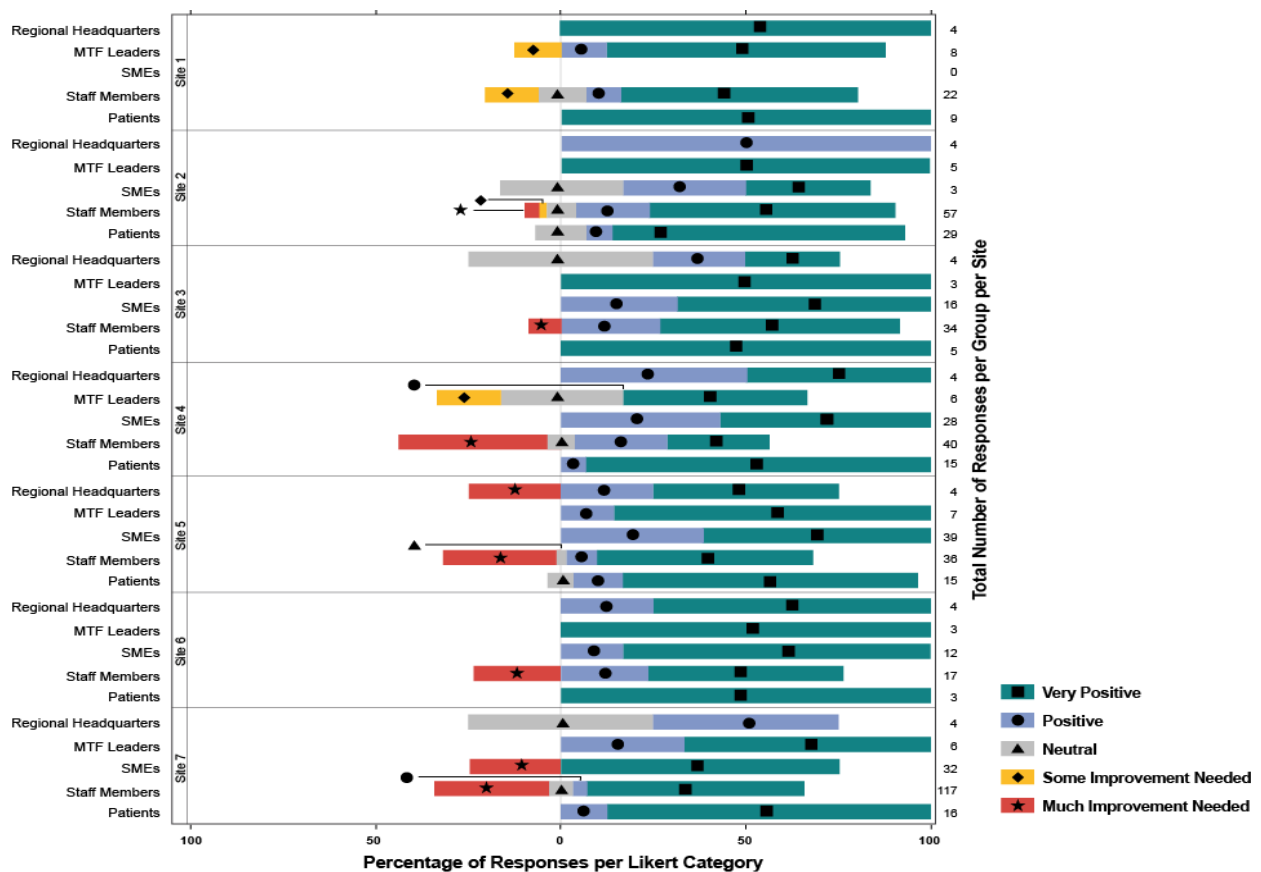
Note: The Focus Group SMEs at the Site 1 were present during the Executive Leadership session and therefore their responses were counted only during the Leadership session and not the SME session.

2014 MHS Review Group
Source: 2014 MHS Review Site Visit Survey, June - July 2014

Patient Safety: Overall Findings and Recommendations

1. *Culture of Safety*: Due to the limited number of national benchmarks in patient safety, it is not possible to assess whether the MHS has a culture of safety. This is evidenced by HSOPS, which consistently reports poor responses regarding appropriate staffing levels and staff mix, as well as in non-punitive response to errors and reporting. Site visits confirmed these findings, in that staffing and reporting of near-miss events are still areas of concern. Further, the Lumetra study identified reluctance in near miss reporting, and the review identified the lack of visibility on purchased care for patient safety. However, many efforts are ongoing in MTFs and DHA to identify areas for improvement and leadership recognizes the importance of patient safety.

2. *Policy*: Neither the DoDI 6025.13 or DoDM 6025.13 define a culture of safety. The DoDM 6025.13 definition of a sentinel event does not provide sufficient clarity for consistent decision making. Moreover, it provides limited guidance on the parameters of a quality root cause analysis and does not include guidance on methodologies for capturing harm rates. Current policy requires 100-percent reporting of near miss events, which is unrealistic to ensure compliance.

3. *Transparency*: Current processes limit the ability to exchange ideas, share lessons learned, and increase opportunities for systemic process improvement. Site visit findings identified staff concerns that they did not receive feedback from events entered in the Patient Safety Reporting Tool. Results of root cause analysis showed that findings are not widely shared with frontline staff for improvement purposes. Voluntary reporting in the purchased care component makes comparison to the direct care system very challenging. There are opportunities to enhance transparency to the public through partnerships with patients and families.

4. *Leadership*: Currently there is no succinct MHS resource available for executive leadership to effectively advance the science and practice of quality and safety within their organizations. A site visit finding showed instances in which employees expressed concerns regarding an environment where reporting was not encouraged and in fact, the response to reporting was punitive in nature. HSOPS showed consistently low findings in organizational learning, which is a leadership responsibility.

5. *Resources*: The Lumetra study recommended "the use of a single 'closed loop' system for all alerts and advisories." Current processes limit the ability to exchange ideas, share lessons learned, and increase opportunities for systemic process improvement. There is no secure, electronic, central resource library to support daily operations for patient safety. The Lumetra study also recommended that the MHS "Evaluate the benefits versus costs of establishing permanent Patient Safety Manager (PSM) positions for stability." Constraints currently exist within resource management systems, creating barriers to authorizing additional federal positions. There is no enterprise-wide integrated patient safety and quality training program.

Overarching Recommendations to Improve Patient Safety

a. **Implement the principles of a high reliability organization with a focus on leadership, culture of safety, and robust process improvement. This must be a strategic priority for executive leadership and will require revision of current policy and re-evaluation of the Patient Safety Program.**

b. **Re-evaluate the charter and membership of the Quality Patient Safety Risk Management Task Force and determine whether to use the Task Force to develop the framework for the HRO and submit through the existing governance structure.**

c. **DoD should develop a formal partnership plan with external health care organizations, TRICARE contractors, and national governing bodies to improve as a learning organization and to be at the forefront of national benchmark development and initiatives for patient safety.**

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6.　CONCLUSIONS

This review focused on health care access, quality of care, and patient safety in both DoD-operated and staffed health care facilities and the purchased care civilian network as operated through TRICARE regional contracts. A three-pronged approach was used to assess these aspects of care: review of enterprise-wide data and metrics; site visits of a cross-section of Military Treatment Facilities (MTFs) to provide local validation of centrally collected data; and comparison with three civilian commercial health care systems of comparable size and scope. Finally, nationally recognized experts conducted a review of the methodology, data, findings and recommendations that comprise this report (see Appendix 6.2).

The following objectives were defined in the Terms of Reference (see Appendix 1.2):

1. Assess relevant prior internal and external reports.
2. Review policy standards and implementation.
3. Evaluate data to assess compliance and determine variance.
4. Review education and training regarding execution of policies.
5. Compare MHS performance to civilian health systems.
6. Assess the experience and perceptions of MHS patients.
7. Determine effectiveness of governance.
8. To the extent possible, identify current resources.

Access to Care

Review of policy and prior reports illustrated close alignment of policy among the Services without negative findings noted in prior reports. Governance has proven effective in ensuring consistent implementation of policy and standardization of processes across the enterprise. Further, education and training for access to care are well coordinated across the MHS. Currently available access data from the MHS revealed that a majority of patients in the direct care component receive care within Department of Defense (DoD) access standards. In contrast, data on access to care in the MHS purchased care component are not defined, collected, and aggregated in the same way, limiting comparability. In addition to meeting its own internal standards, MHS access to direct care compares favorably with that of the three external civilian health systems.

Leadership at the seven facilities visited reported a strong commitment to the delivery of timely care. However, there were anecdotal patient reports of difficulty obtaining appointments and, at some facilities, staff reported limitations on same-day access due to staffing difficulties. This will require further review to determine specifics and significance. Several efforts are underway to facilitate and enhance access to care in the direct care component, to include Secure Messaging (with more than 1 million MTF enrollees) and the Nurse Advice Line (implemented across the MHS in March 2014), which handles more than 1,000 calls per day.

Quality of Care

DoD policies provide substantial guidance on the quality of care program execution, but the MHS would benefit from specific supplemental policy. Opportunities were identified for improving oversight, monitoring, and communication for the quality program. These findings are consistent with the 2008 Lumetra study of the MHS Medical Quality Improvement Program. While basic education and training for quality are provided by the Services, advanced training and development of experts in quality of care is not routinely available.

The MHS Review Group analyzed more than 100 measures of quality of care, and identified performance that met or exceeded national benchmarks in many areas of inpatient and outpatient care; however, there are specific results that suggest underperformance and require further review. MHS facilities meet or exceed civilian standards for accreditation and certification, which validates compliance with important quality and patient safety requirements. The quality of care available to beneficiaries in the purchased care network is at or above the Centers for Medicare & Medicaid Services national averages for a wide range of conditions. Comparison of MHS data with that of civilian health systems demonstrated overall performance that was similar across a range of outpatient and inpatient measures.

The site visit team identified a broad commitment to quality of care in all facilities visited. Leadership was engaged with quality initiatives and was familiar with commonly reported benchmarks. However, frontline staff at some facilities was not fully aware of ongoing quality initiatives, suggesting room for improvement. Overall, there was no clear evidence that quality of care was a major concern for patients; with the exception of obstetrical care, inpatient experience with care was highly rated.

Patient Safety

The 2008 Lumetra study made several recommendations which remain relevant, including: increase transparency by sharing lessons learned; establish a system to ensure feedback and accountability; and address variability in data reporting. Further, there is no centralized electronic resource to support day-to-day operations for patient safety, and no enterprise-wide integrated patient safety and quality training program. The new MHS governance structure provides the appropriate forum to address these findings. DoD has two key documents that provide general requirements for the patient safety program, and Service policies generally align with them; however, the MHS would benefit from more specific supplemental guidance.

Assessment of the culture of patient safety in the MHS is challenging due to the limited number of valid metrics and national benchmarks. Results of the Hospital Survey on Patient Safety Culture suggest concerns with staffing levels and staff mix, as well as potentially punitive response to those who reported errors. Comparison with other health systems showed similar rates for composite safety measures, with two specific measures demonstrating potentially higher infection rates in the DoD. Voluntary reporting in the purchased care component makes comparison to the direct care component challenging.

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The site visit team identified staff concerns that they did not receive feedback regarding events entered in the Patient Safety Reporting Tool and the results of root-cause analyses. Additionally, there are opportunities to enhance transparency to the public through partnerships with patients and families.

Summary

The MHS Review Group determined that the MHS provides safe, quality, and timely care that is comparable to the civilian sector. Across the enterprise, results vary by measure, both in specific clinical areas and at individual facilities, with a spectrum of performance ranging from high to low. The priority of the MHS should be identification of the causes of variance, with development and execution of action plans as needed.

To be considered a leader in health care nationally, the MHS must continue its journey of improvement. The findings and recommendations in this report provide opportunities for further evaluation, analysis, and action (see Appendix 6.1 for the full list of recommendations). While there are more than 70 specific recommendations in the report, the following global recommendations lay the foundation for the MHS to focus on achieving top-tier status.

I.   The MHS should identify the cause of variance for MTFs that are outliers for one or more measures and, when due to poor performance, develop corrective action plans to bring those MTFs within compliance.

II.   The MHS should develop a performance management system adopting a core set of metrics regarding access, quality, and patient safety; further develop MHS dashboards with systemwide performance measures; and conduct regular, formal performance reviews of the entire MHS, with the DHA monitoring performance and supporting MHS governance bodies in those reviews.

III. The MHS should develop an enterprise-wide quality and patient safety data analytics infrastructure, to include health information technology systems, data management tools, and appropriately trained personnel. There should be clear collaboration between the DHA's analytic capabilities, which monitor the MHS overall, and the Service-level analytic assets.

IV.   The MHS should emphasize transparency of information, including both the direct and purchased care components, with visibility internally, externally, and to DoD beneficiaries. Greater alignment of measures of the purchased care component with those of the direct care component should be incorporated in TRICARE regional contracts.

V.   Through MHS governance, policy guidance can be developed to provide the Services with common executable goals. While respecting the Services' individual cultures, this effort would advance an understanding of the culture of safety and patient-centered care across the MHS.

VI. The MHS should continue to develop common standards and processes designed to improve outcomes across the enterprise in the areas of access, quality, and patient safety where this will improve quality, or deliver the same level of quality at decreased cost (i.e., better value).