

## 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.”<sup>53</sup>

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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<sup>53</sup> 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.<sup>54</sup> 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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<sup>54</sup> 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

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<sup>55</sup>. 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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<sup>55</sup> 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<sup>56</sup> 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<sup>®</sup>, 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<sup>®</sup>

<sup>56</sup>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	<b>D2: Supervisor/Manager Expectations and Actions Promoting Patient Safety</b>
<b>D3: Organizational Learning – Continuous Improvement</b>	<b>D4: Non-punitive Response to Error/Mistakes</b>
D5: Feedback and Communication about Error	D6: Frequency of Events Reported
D7: Communication Openness	<b>D8: Teamwork within Units</b>
D9: Teamwork across Units	D10: Handoffs and Transitions
<b>D11: Staffing</b>	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	<b>D2</b>	<b>D3</b>	<b>D4</b>	D5	D6	D7	<b>D8</b>	D9	D10	<b>D11</b>	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

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
<i>MHS Review Team Focus areas from the Hospital Survey on Patient Safety Culture</i>			
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%
<i>Other Domains of the Hospital Survey on Patient Safety Culture</i>			
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.<sup>57</sup> 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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<sup>57</sup> See [http://www.qualityindicators.ahrq.gov/modules/psi\\_overview.aspx](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.<sup>58</sup> Of note, PSI #90 was not publicly reported on Hospital Compare<sup>59</sup> 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.<sup>60</sup>

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<sup>61</sup> and the three CMS national achievement thresholds<sup>62</sup> 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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<sup>58</sup> See

[http://www.qualityindicators.ahrq.gov/Downloads/Modules/PSI/V43/Composite\\_User\\_Technical\\_Specification\\_PSI\\_4.3.pdf](http://www.qualityindicators.ahrq.gov/Downloads/Modules/PSI/V43/Composite_User_Technical_Specification_PSI_4.3.pdf).

<sup>59</sup> Hospital Compare is a CMS website used to find hospitals and compare quality of care. Available at: [www.medicare.gov/hospitalcompare](http://www.medicare.gov/hospitalcompare).

<sup>60</sup> See

<https://qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier3&cid=1228695321101>.

<sup>61</sup> 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.

<sup>62</sup> National Achievement Thresholds for Performance for PSI #90 Composite .68(2010, 2011), .61(2012) and .62(2013)

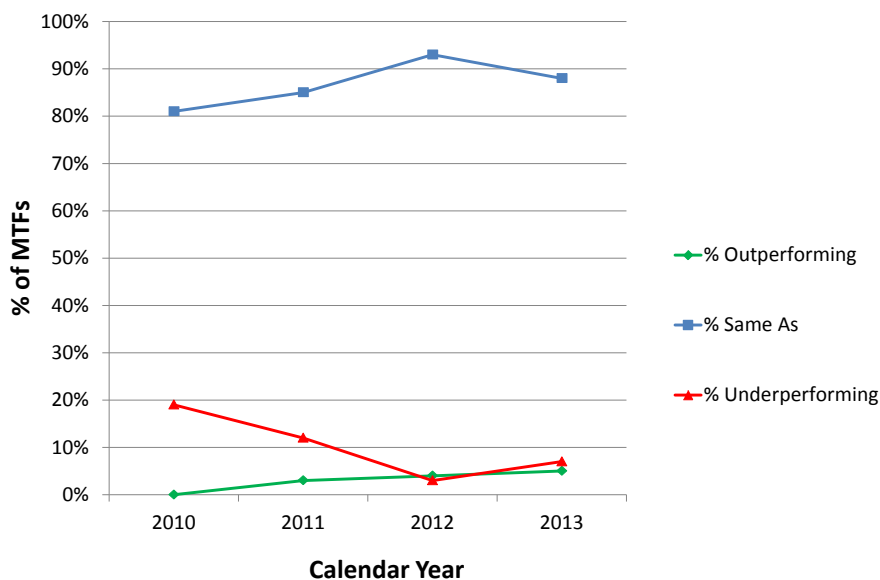
DHA and Service-Level Trend Analysis

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

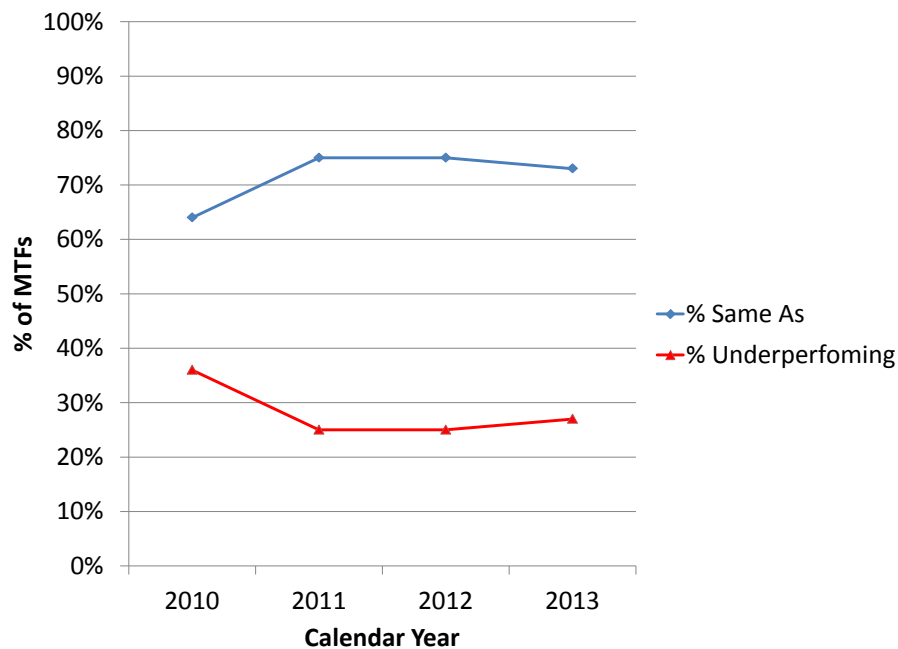


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 Source: Military Health System Population Health Portal (MHSPHP), July 2014

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



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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.



### 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.

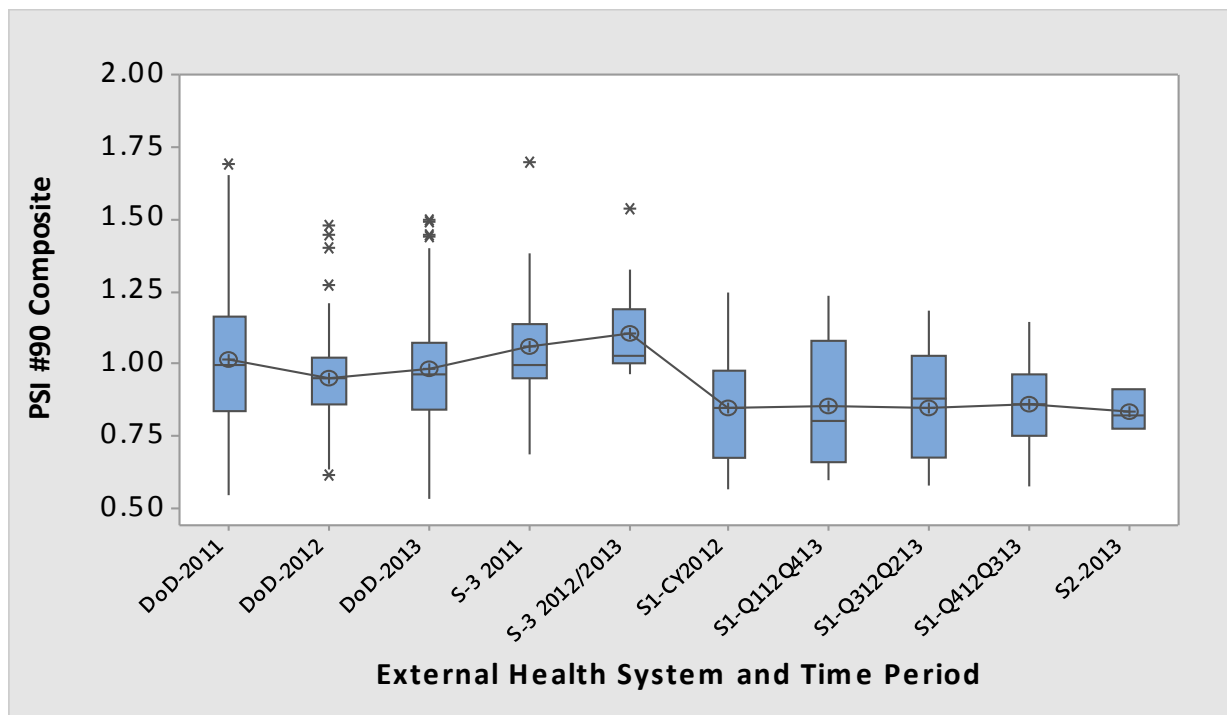
The PSI #90 composite for the direct care component and its associated measures of dispersion overlapped all three health systems for all periods observed (see Figures 5.3 and 5.4). Analysis of variance among all four systems demonstrated no differences between the direct care component and other health 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.

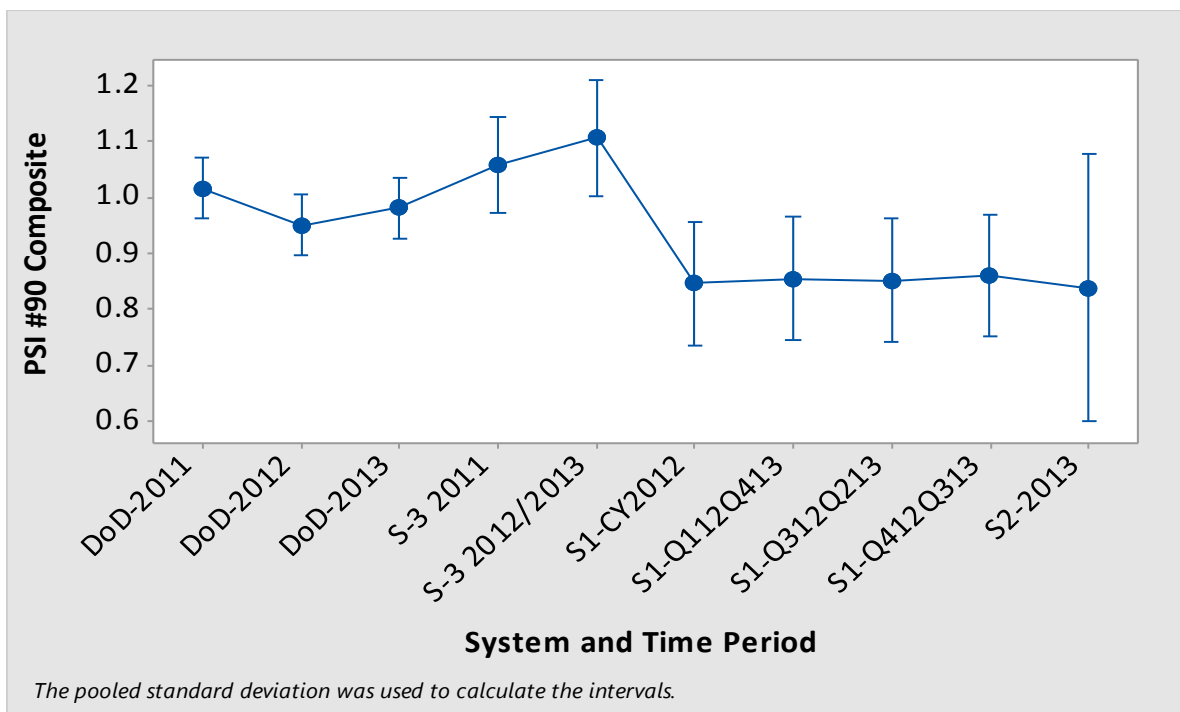
Figure 5.3 Boxplot of PSI #90 Composite: Direct Care Relative to Systems 1, 2, 3



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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



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Source: Military Health System Population Health Portal (MHSPHP) and External Health Systems, June - July 2014

### 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).<sup>63</sup> 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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<sup>63</sup> <http://www.cdc.gov/nhsn/>

- 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	<25 <sup>th</sup> percentile (Out performance)	25 <sup>th</sup> and 75 <sup>th</sup> Percentile	High Outliers >90 <sup>th</sup> percentile (May Need Improvement)
Major Teaching	1 (14%)	6 (86%)	0
Other Hospitals, <15 ICU beds	8 (44%)	8 (44%)	2 (11%)

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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
  - 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
  - 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	<25 <sup>th</sup> 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%)

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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<sup>d</sup> 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	<25 <sup>th</sup> 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%)

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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.

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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:
  - Major Teaching Facilities: Most ICUs fell within the normal percentile range with one underperformer.
  - 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:
  - Major Teaching Facilities: Most ICUs fell within the normal percentile range with one underperformer.
  - 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.<sup>64</sup> 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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<sup>64</sup> 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	
<b>1</b>	Unanticipated Death-Adult	19	Retained Foreign Object	21	Unanticipated Death-Adult	18	Retained Foreign Object	17
<b>2</b>	Retained Foreign Object	17	Wrong Site Surgery	13	Retained Foreign Object	16	Unanticipated Death-Adult	13
<b>3</b>	Wrong Site Surgery	10	Unanticipated Death - Infant	7	Unanticipated Death - Infant	11	Wrong Site Surgery	11
<b>4</b>	Unanticipated Death - Infant	9	Unanticipated Death-Adult	7	Loss of Function	10	Delayed Treatment	10
<b>5</b>	Loss of Function	8	Delayed Treatment	6	Delayed Treatment	9	Procedural Complication	10

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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		

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Source: Patient Safety Reporting System, DoD Patient Safety Analysis Center (PSAC), June 2014

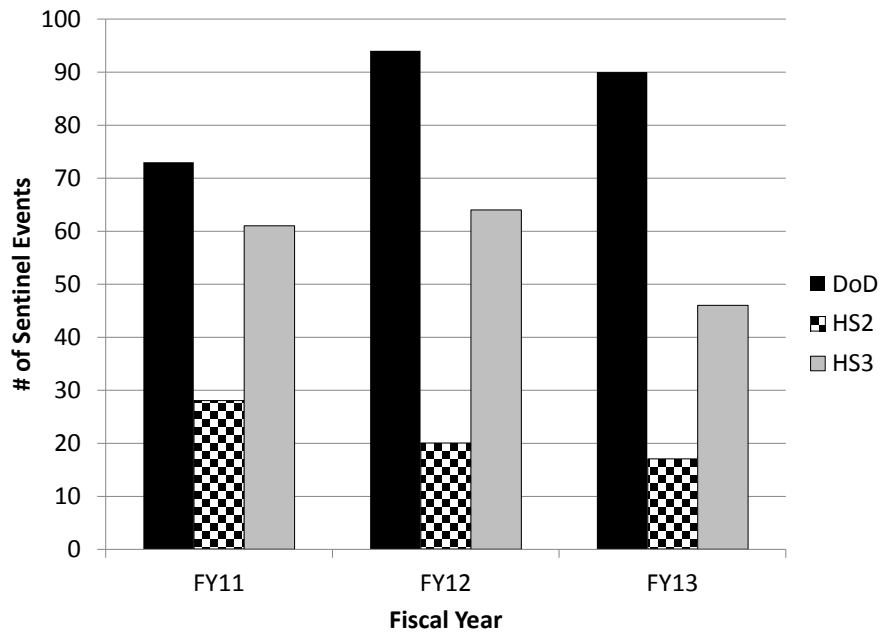
### External Health System Comparison

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.

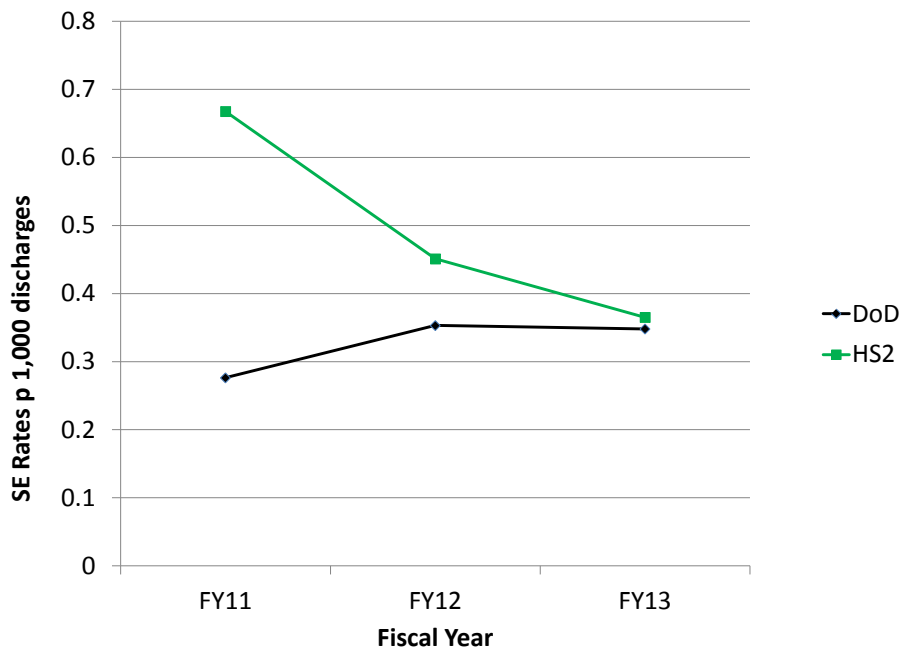
Figure 5.5 Number of SEs across Direct Care, Health System 2, and System 3, FY11 – FY13



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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



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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 Health 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)<sup>65</sup>.

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 <sup>66</sup>	N/A	N/A	6	6

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Source: Patient Safety Reporting System Database, June 2014

<sup>65</sup> The Centralized Credentials Quality Assurance System is a Web-based, worldwide credentialing, privileging, risk management and adverse actions database for the Defense Health Agency.

<sup>66</sup> 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)**

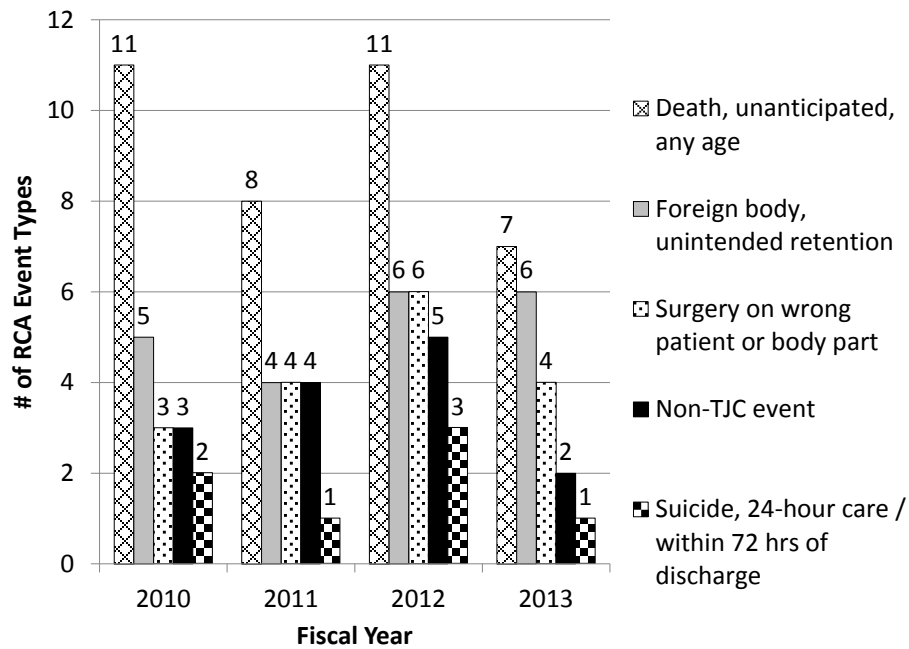
Type	Number Reported
Unanticipated Death (all ages)	110
Surgery on Wrong Patient or Body Part	74
Foreign Body, Unintended Retention	71
Loss of Function, Major Permanent	47
Non- TJC Reviewable	38
Suicide, 24 Hour Care/within 72 hours of Discharge	18
No Type Provided/Blank	16
Radiation Overdose	4
Medical	3
Surgical	3
Neonatal Hyperbilirubinemia, Severe	2
Rape	1
Infant Discharged to Wrong Family	1

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Source: Patient Safety Reporting System Database, June 2014

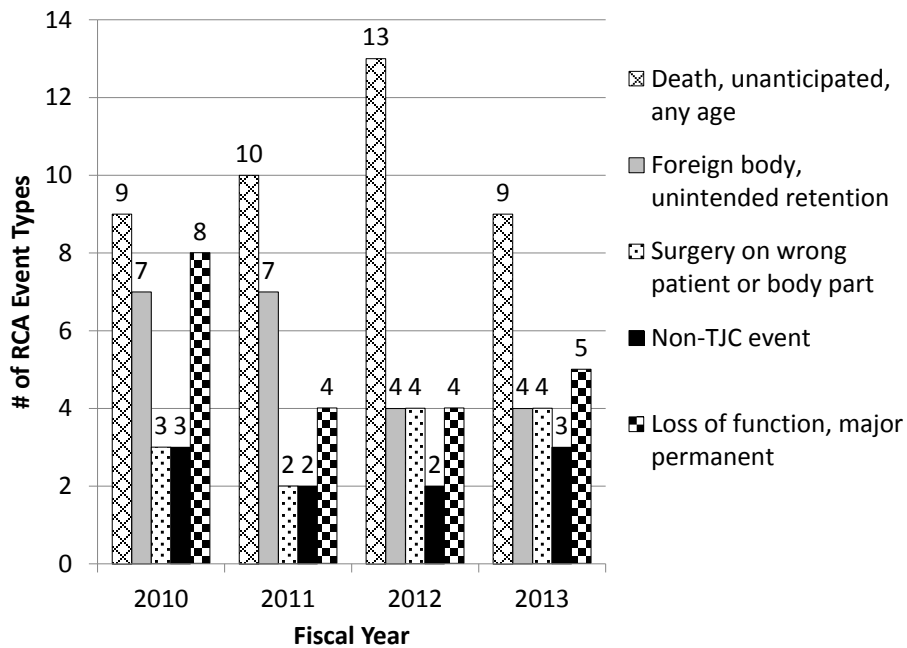
Of the 388 RCA reports submitted to PSAC, the top three categories were Unanticipated Death, Wrong Site Surgery, and Retained Foreign Object. Figures 5.7 through 5.9 display four event types by Service and non-JCAHO (JCAHO is the former name of TJC) categorized events submitted to PSAC during FYs 2010 to 2013.

Figure 5.7 Air Force Top 4 Event Types for RCA Reports Submitted, FY10 – FY13



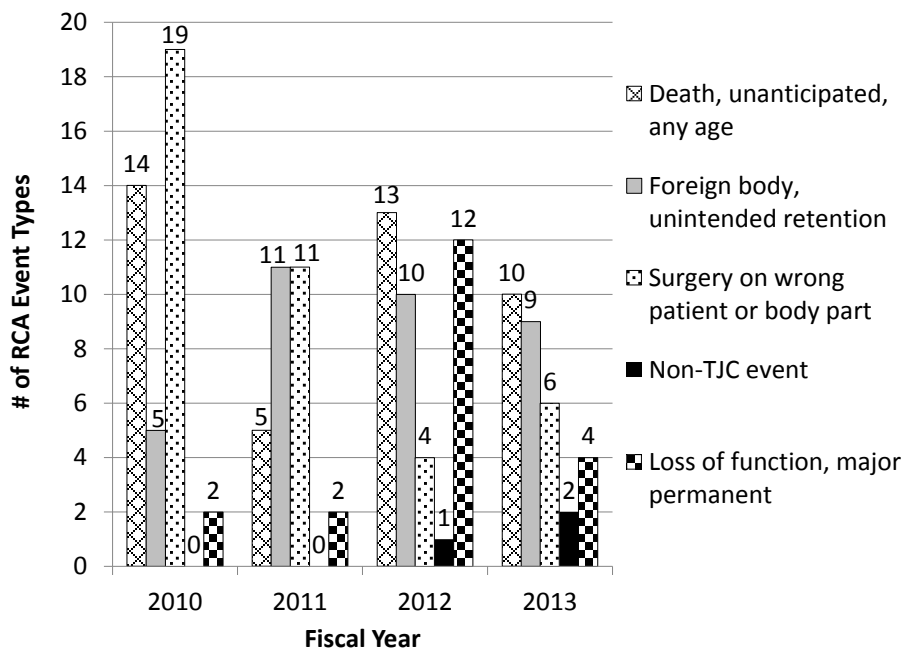
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 Source: RCA: Patient Safety Reporting System Database, June 2014

Figure 5.8 Army Top 4 Event Types for RCA Reports Submitted, FY10 – FY13



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 Source: RCA: Patient Safety Reporting System Database, June 2014

Figure 5.9 Navy Top 4 Event Types for RCA Reports Submitted, FY10 – FY13



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 Source: Self-reported by Service to the Patient Safety Program, June 2014 (Navy)



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
<b>Total</b>	<b>134</b>	<b>47</b>	<b>151</b>	<b>45</b>	<b>8</b>	<b>3</b>	<b>388</b>

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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
<b>Total</b>	<b>73</b>	<b>100%</b>	<b>94</b>	<b>100%</b>	<b>73</b>	<b>100%</b>	<b>240</b>

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Source: Patient Safety Reporting System Database, June 2014

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
<b>Total</b>	<b>61</b>	<b>100%</b>	<b>64</b>	<b>100%</b>	<b>46</b>	<b>100%</b>	<b>171</b>

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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**

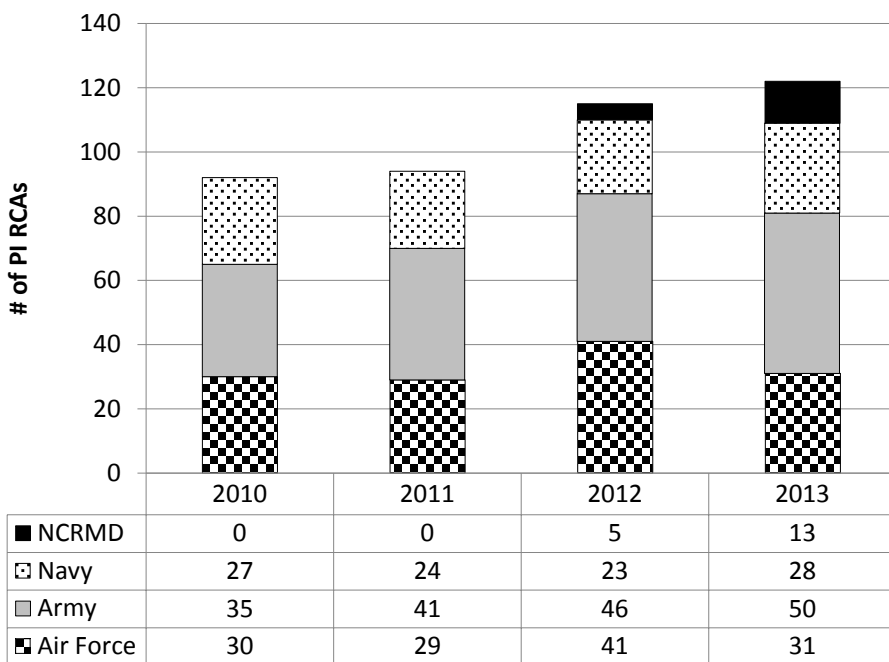
Service	RCA Classification	Number of PI RCAs Reported
Air Force	PSR Categories	131 events
Army	Not Specified	174 events (two events had no specified date)
Navy	DoD Short Form	102 events
NCR MD	DoDM 6025.13 guidance	18 events

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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**



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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)

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
<b>DoD Overall (TJC Classification)</b>	1. Suicide	156
	2. Other Unanticipated Events	82
	3. Delay in Treatment	60
	4. Medication Error	56
	5. Med-Equipment related	18
<b>Air Force (TapRoot Software Classification)</b>	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
<b>Navy (DoD Short Form Classification)</b>	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
<b>Army* (Classification not specified)</b>	1. Suicide	67
	2. Other	5
	3. Blank	4
<b>NCR MD (DoDM 6025.13)</b>	1. Medication Error	4
	2. Suicide Gestures	2

*\*Army had 67 unstandardized types*

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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.**

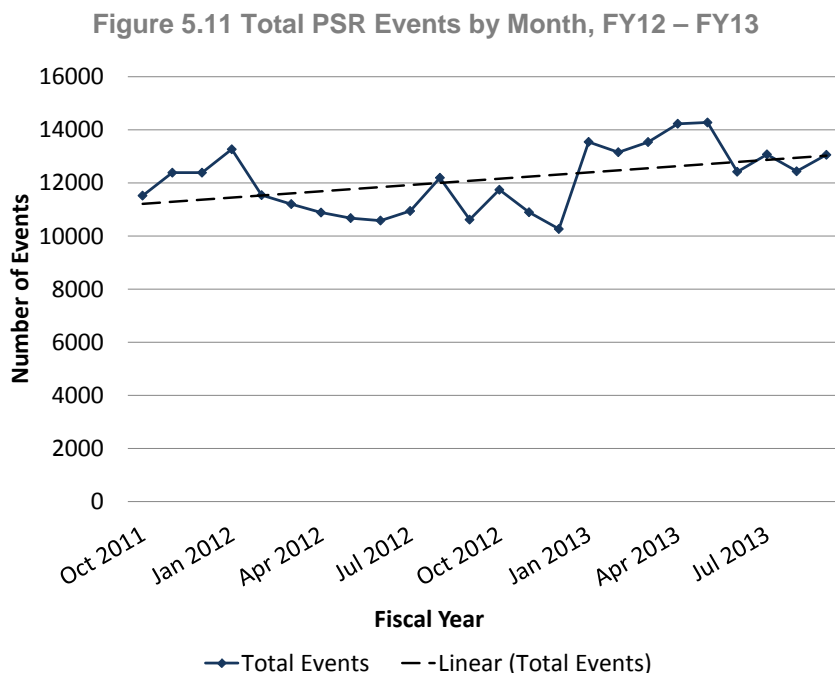
*Patient Safety Reporting System (PSRS)*

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

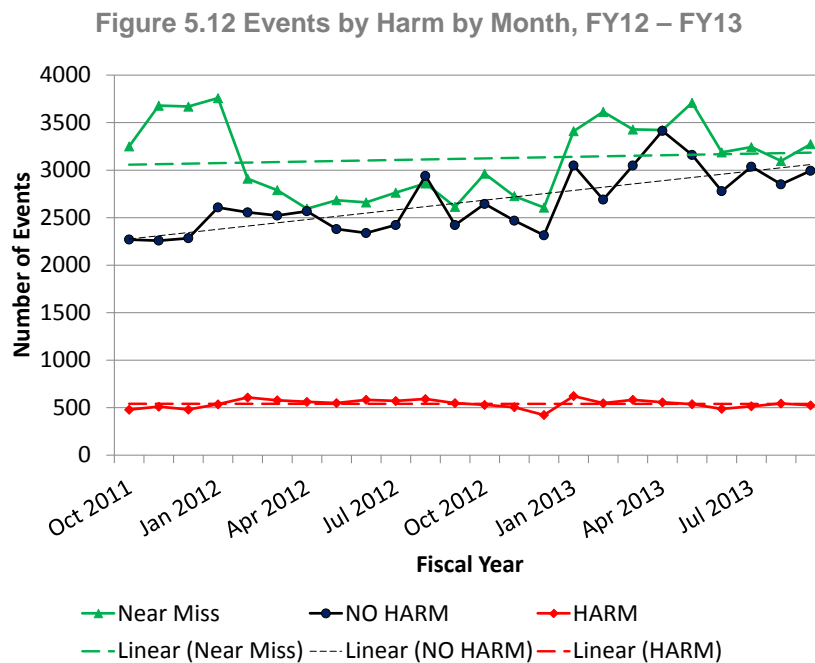
Figure 5.11 shows the increase in patient safety reporting by month between FY 2012 and FY 2013.



2014 MHS Review Group  
 Source: PSR: Patient Safety Reporting System Database, April 2014

Although this trend is desirable, when compared to 2011 HSOPS data,<sup>67</sup> 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%.”<sup>68</sup> 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).



2014 MHS Review Group  
 Source: PSR: Patient Safety Reporting System Database, retrieved April 2014

<sup>67</sup> AHRQ. Hospital Survey of Patient Safety Culture: 2011 User Comparative Database Report. Available at: <http://www.ahrq.gov/legacy/qual/hospurvey11/>

<sup>68</sup> 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.”<sup>69</sup> 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.<sup>70</sup> 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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<sup>69</sup> Reason, J. (1997). *Managing the risks of organizational accidents*. Aldershot: Ashgate.

<sup>70</sup> 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
Decubitus 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 Resuscitate (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 (PSI 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	0.19	0.00		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		
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

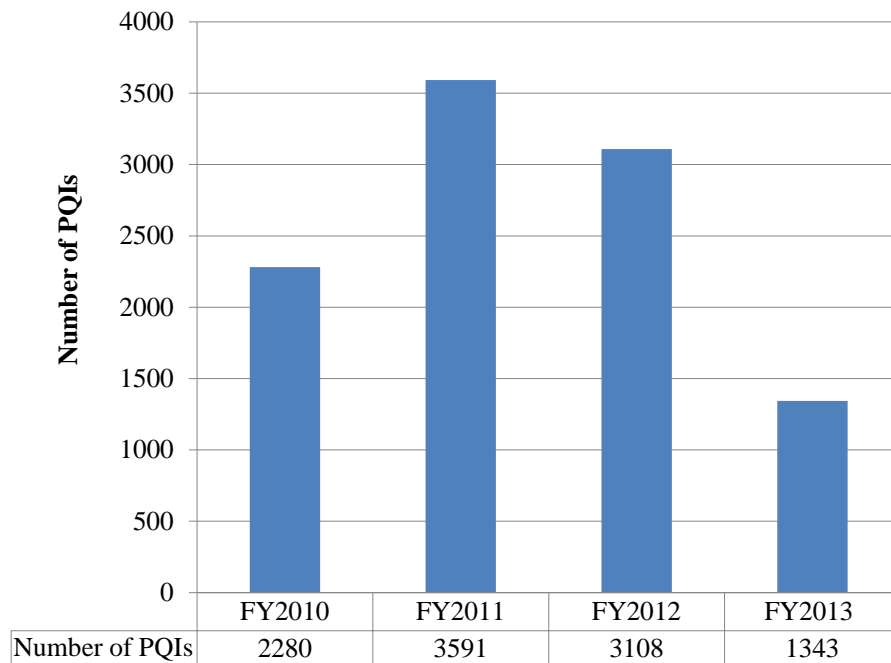
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Source: Data from Annual Reports from United Healthcare Military and Veteran, July 2014

### 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

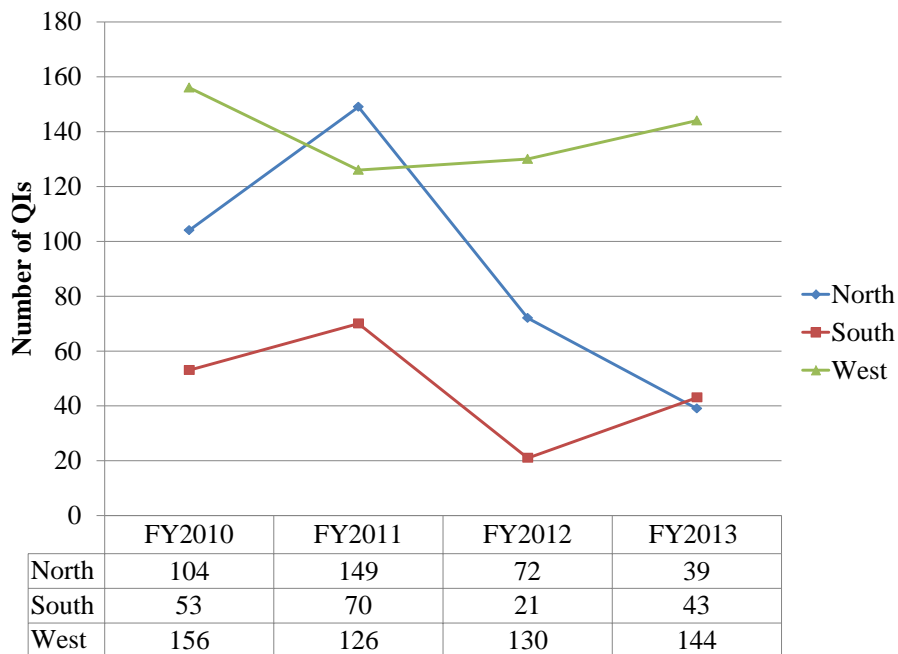


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Source: Managed Care Support Contractors Annual Report, June 2014

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



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Source: Managed Care Support Contractors Annual Report, June 2014

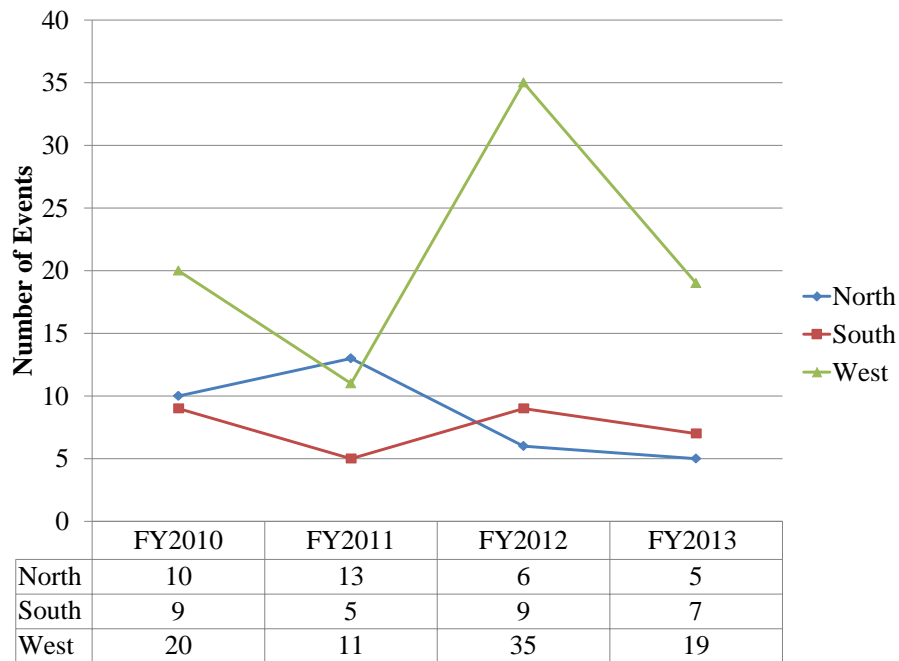
HAC = CMS defined Hospital Acquired Conditions not present on admission

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



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<sup>®</sup> 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.

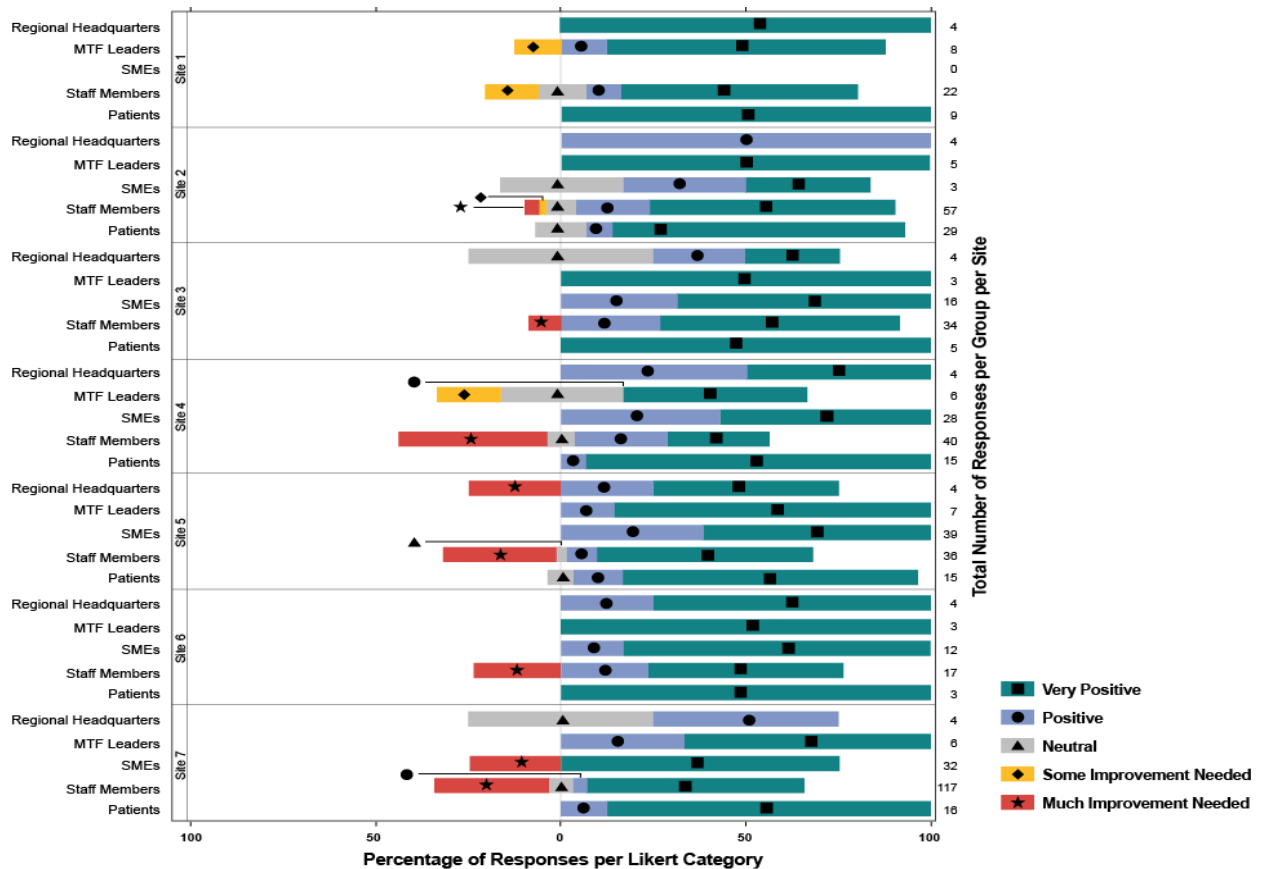
### *Site Visit versus Central Data Comparative Summary*

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.

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).