



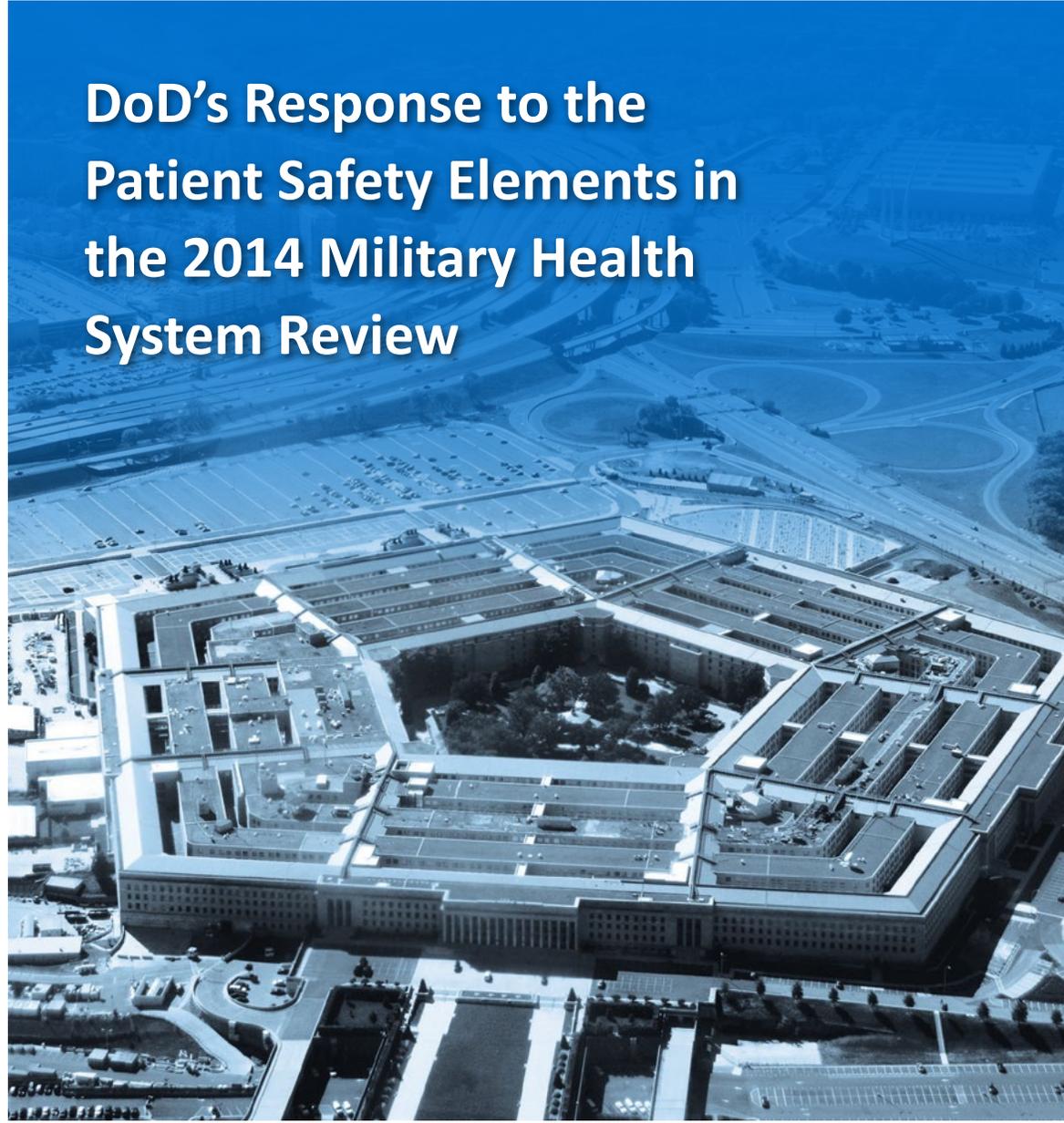
# INSPECTOR GENERAL

*U.S. Department of Defense*

DECEMBER 14, 2017



## DoD's Response to the Patient Safety Elements in the 2014 Military Health System Review



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# Results in Brief

## *DoD's Response to the Patient Safety Elements in the 2014 Military Health System Review*

December 14, 2017

### Objectives

We evaluated the DoD's response to the August 2014 "Final Report to the Secretary of Defense, Military Health System [MHS] Review." Our evaluation examined issues specific to patient safety to determine whether:

- the DoD responded to all of the MHS Review's patient safety findings;
- the DoD improved performance at the two military treatment facilities (MTFs) that the MHS Review identified as underperforming according to Patient Safety Indicator (PSI) #90;<sup>1, 2</sup>
- the DoD improved performance at the eight MTFs identified in the MHS Review as underperforming (high outlier) for healthcare-associated infection measures;<sup>3</sup>

<sup>1</sup> The 2014 MHS Review evaluated relative performance by comparing MTF data to the Agency for Healthcare Research and Quality (AHRQ) benchmark data. The three possible outcomes were "outperformed," performed the "same as," or "underperformed" relative to other healthcare facilities.

<sup>2</sup> At the time of the MHS Review, healthcare organizations used PSIs to screen for adverse events. According to the Department of Health and Human Services, the term "adverse event" describes harm to a patient because of medical care. The AHRQ defined PSI #90 as a combination of eight patient safety indicators for eight inpatient safety problems. See Appendix G for a list of the eight patient safety indicators and problems.

<sup>3</sup> The 2014 MHS Review used external measures generated by the National Health Safety Network program to evaluate relative healthcare-associated infection performance. Underperforming healthcare facilities have infection rates greater than 90 percent of ranked facilities, hence the term "high outlier."

### Objectives (cont'd)

- the DoD improved survey scores in the seven areas of the "Hospital Survey on Patient Safety Culture" that the MHS Review identified as lower than the national average;
- the MHS developed policy to give the Military Services common patient safety goals, in accordance with the MHS Review's recommendation; and
- the MHS used a performance management system to improve patient safety as the Secretary of Defense directed.

### Background

In May 2014, the Secretary of Defense directed a 90-day comprehensive review of the MHS to evaluate DoD beneficiaries' access to care, patient safety, and quality of care. The MHS is a global, comprehensive, and integrated system of health care for the DoD, which includes combat medical services, peacetime care delivery, public health activities, medical education and training, and medical research and development.

### Findings

We found that:

- The MHS Action Plans contained courses of actions to resolve all 28 relevant findings in the patient safety section of the MHS Review.<sup>4</sup>
- The two MTFs identified in the review as underperforming in PSI #90 did not have a current benchmark to compare their performance to other healthcare facilities. However, the two underperforming MTFs each took actions to address individual Patient Safety Indicators that caused their underperformance in PSI #90. We found that both MTFs improved in individual Patient Safety Indicators.

<sup>4</sup> According to the Defense Health Agency, the MHS developed 41 action plans with milestones that accounted for 82 action items in the MHS Review. The MHS based its action plans on review findings, supported by data, and validated by external review.



# Results in Brief

## *DoD's Response to the Patient Safety Elements in the 2014 Military Health System Review*

### **Findings (cont'd)**

- All eight MTFs identified in the MHS Review as underperforming in healthcare-associated infection measures were no longer underperforming.
- The MHS improved in six of the seven areas of the "Hospital Survey on Patient Safety Culture" identified in the MHS Review as lower than the national average; however, the area of staffing worsened and was significantly below the national average.<sup>5</sup>
- The DoD was developing governance for common policy, procedure, and direction but had not yet issued specific patient safety guidance.
- The MHS developed a performance management system, referred to as the Partnership for Improvement. The MHS used the Partnership for Improvement to monitor patient safety for areas requiring improvements.

### **Recommendations**

We recommend that the Under Secretary of Defense for Personnel and Readiness establish and implement specific DoD policy on fatigue risk management for MHS staff.

We recommend that the Commander, United States Army Medical Command evaluate the Madigan Army Medical Center's Patient Safety Indicator #90 performance after the new Patient Safety Indicator #90 measures and benchmarks are available, to determine if the facility is outperforming, performing the same as, or underperforming compared to other healthcare facilities, and take appropriate action to correct all identified deficiencies.

<sup>5</sup> Qualitative survey comments indicated concerns that overall MTF staffing, MTF staffing with specific types of staff, and MTF staff fatigue compromised patient safety.

We recommend that the Commander, Air Force Medical Operations Agency evaluate the 88th Medical Group's Patient Safety Indicator #90 performance after the new Patient Safety Indicator #90 measures and benchmarks become available to determine if the facility is outperforming, performing the same as, or underperforming compared to other healthcare facilities, and take appropriate action to address any identified deficiencies.

Finally, we recommend that the Director, Defense Health Agency:

- notify the DoD Office of Inspector General when all the MHS Review Action Plans regarding Patient Safety are implemented; and
- determine the actionable root causes in the area of Staffing in the "Hospital Survey on Patient Safety Culture," and take appropriate actions to improve those factors that pose a risk to patient safety.

### **Management Comments and Our Response**

The Official Performing the Duties of the Under Secretary for Personnel and Readiness (USD[P&R]) agreed with our recommendation to establish and implement specific DoD policy on fatigue risk management for MHS staff. He said that the Defense Health Agency's (DHA) Patient Safety Program will assess enterprise-wide and MHS-specific factors that influence workforce fatigue risk and resiliency. In addition, DHA's Patient Safety Program will inform policy planning regarding strategies required to mitigate healthcare workforce fatigue and improve healthcare workforce resiliency. This recommendation is resolved but remains open. We request that the DHA Director send us a copy of the final policy upon issuance.



# Results in Brief

## *DoD's Response to the Patient Safety Elements in the 2014 Military Health System Review*

### **Comments (cont'd)**

The Commander, U.S. Army Medical Command and Office of the Surgeon General, and the Air Force Surgeon General, responding for the Commander, Air Force Medical Operations Agency, agreed with our recommendations to evaluate the Madigan Army Medical Center and the 88th Medical Group's Patient Safety Indicator #90 performance after the new Patient Safety Indicator #90 measures and benchmarks become available. They said that both the Army and Air Force plan to determine if their facilities are outperforming, performing the same as, or underperforming compared to other non-DoD healthcare facilities, and take appropriate action to address any identified deficiencies.

These two recommendations are resolved but remain open. We request that both the Army and Air Force provide us a copy of the final evaluation which determines that their facilities no longer underperform in Patient Safety Indicator #90.

The Official Performing the Duties of the USD(P&R) agreed with our recommendation to have the DHA Director notify the DoD Office of Inspector General after the MHS has implemented all MHS Review Action Plans regarding Patient Safety. The Official Performing the Duties of the USD(P&R) explained that DHA's Patient Safety Program continues to make progress toward implementing and fully closing the MHS Review Action Plans. This recommendation is resolved but remains open. We request that the DHA Director send us written notification after the MHS has implemented all MHS Review Action Plans regarding Patient Safety.

The Official Performing the Duties of the USD(P&R) also agreed with our recommendation to determine actionable root causes of low Staffing dimension scores in the "Hospital Survey on Patient Safety Culture" and to take action. He said that DHA's Patient Safety Program will identify MHS-wide actionable causal factors underlying low Staffing dimension scores and design, implement, and evaluate improvement strategies. This recommendation is resolved but remains open. We request that the DHA Director send us a copy of the final plan upon completion.

## Recommendations Table

| Management   | Recommendations Unresolved | Recommendations Resolved | Recommendations Closed |
|--|----------------------------|--------------------------|------------------------|
| Under Secretary of Defense for Personnel and Readiness | None                       | D.2                      | None                   |
| Director, Defense Health Agency                        | None                       | A, D.1                   | None                   |
| Commander, U.S. Army Medical Command                   | None                       | B.1                      | None                   |
| Commander, Air Force Medical Operations                | None                       | B.2                      | None                   |

Note: The following categories are used to describe agency management’s comments to individual recommendations.

- **Unresolved** – Management has not agreed to implement the recommendation or has not proposed actions that will address the recommendation.
- **Resolved** – Management agreed to implement the recommendation or has proposed actions that will address the underlying finding that generated the recommendation.
- **Closed** – OIG verified that the agreed upon corrective actions were implemented.



**INSPECTOR GENERAL  
DEPARTMENT OF DEFENSE  
4800 MARK CENTER DRIVE  
ALEXANDRIA, VIRGINIA 22350-1500**

December 14, 2017

MEMORANDUM FOR UNDER SECRETARY OF DEFENSE FOR PERSONNEL AND READINESS  
DIRECTOR, DEFENSE HEALTH AGENCY  
COMMANDER, U.S. ARMY MEDICAL COMMAND  
COMMANDER, AIR FORCE MEDICAL OPERATIONS AGENCY

SUBJECT: DoD's Response to the Patient Safety Elements in the 2014 Military Health System Review (Report No. DODIG-2018-036)

We are providing this final report for action as appropriate. We conducted this evaluation from January 2017 through October 2017 in accordance with the "Quality Standards for Inspection and Evaluation" published by the Council of Inspectors General on Integrity and Efficiency in January 2012.

We considered management comments to a draft of the report while preparing the final report. Comments from the Official Performing the Duties of the Under Secretary of Defense for Personnel and Readiness; Director, Defense Health Agency; Commander, U.S. Army Medical Command and Office of the Surgeon General; and the Air Force Surgeon General on behalf of the Air Force Medical Operations Agency were responsive and conformed to the requirements of DoD Instruction 7650.03. Therefore, we do not require additional comments.

We appreciate the courtesies extended to the staff. Please direct questions to [REDACTED].

A handwritten signature in black ink, appearing to read "K. Moorefield", is positioned above the typed name.

Kenneth P. Moorefield  
Deputy Inspector General  
Special Plans and Operations



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## Introduction

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The Military Health System (MHS) is a global, comprehensive, and integrated system that includes combat medical services, peacetime care delivery, public health activities, medical education and training, and medical research and development. In May 2014, the Secretary of Defense (SecDef) directed a 90-day comprehensive review of the MHS to evaluate Department of Defense beneficiaries' access to care, patient safety, and quality of care.<sup>6</sup>

The MHS Review Group published a final report titled "Final Report to the Secretary of Defense, Military Health System Review," in August 2014.<sup>7</sup> After the MHS Review Group published the final report, the Secretary issued a memorandum entitled "Military Health System Action Plan for Access, Quality of Care, and Patient Safety," on October 1, 2014, that directed the DoD to follow up on the MHS Review, improve transparency, and transform the MHS into a High Reliability Organization.<sup>8,9</sup>

In this evaluation, the Department of Defense Office of Inspector General (DoD OIG) reviewed the DoD's response to the "Final Report to the Secretary of Defense, Military Health System Review," specifically for patient safety. DoD OIG will cover access to care and quality of care in separate evaluation reports.

## Objectives

To evaluate the DoD's response to the patient safety sections of the MHS Review. Specifically, we wanted to determine whether:

- the DoD responded to all of the MHS Review's patient safety findings;
- the DoD improved performance at the two military treatment facilities (MTFs) that the MHS Review identified as underperforming in the patient safety indicator called Patient Safety Indicator #90 (PSI #90);<sup>10</sup>

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<sup>6</sup> The Secretary of Defense addressed his May 28, 2014, memorandum to the Deputy Secretary Of Defense, Secretaries of the Military Departments, and Acting Under Secretary of Defense for Personnel and Readiness.

<sup>7</sup> See Appendix B for an explanation of the MHS Review Group.

<sup>8</sup> The Secretary addressed the October 1, 2014, memorandum specifically to Secretaries of the Military Departments; Chairman of the Joint Chiefs of Staff; Under Secretaries of Defense; Deputy Chief Management Officer; Chiefs of the Military Services; Chief of the National Guard Bureau; Director, Cost Assessment and Program Evaluation; Director, Operational Test and Evaluation; General Counsel of the Department of Defense; Inspector General of the Department of Defense; Assistant Secretaries of Defense; Department of Defense Chief Information Officer; Assistants to the Secretary of Defense; Directors of the Defense Agencies; and Directors of the DoD Field Activities.

<sup>9</sup> According to the MHS Review, a High Reliability Organization is an organization where harm prevention and quality improvement are second nature to all in the organization.

<sup>10</sup> See Appendix G for an explanation of the PSI #90 used in the MHS Review.

- the DoD improved performance at the eight MTFs identified in the MHS Review as underperformers (high outliers) for healthcare-associated infection measures;<sup>11</sup>
- the DoD improved survey scores in the seven areas of the “Hospital Survey on Patient Safety Culture” that the MHS Review identified as lower than the national average;
- the MHS developed policy that provided the Military Services with common patient safety goals, in accordance with the MHS Review’s recommendation; and
- the MHS used a performance management system to improve patient safety as the Secretary of Defense directed.

See Appendix A for scope, methodology, and prior coverage related to the objectives.

## Background

According to the MHS Review, the MHS is a global, comprehensive, and integrated system that includes combat medical services, health readiness, a healthcare delivery system, public health activities, medical education and training, and medical research and development. The MHS’s fundamental mission, providing medical support to military operations, differs from the mission of any other health system in the United States. The three Military Departments (the Army; the Navy, including the Marine Corps; and the Air Force) and the Defense Health Agency (DHA) share operational aspects of the Military Health System, with each controlling and operating its own medical centers, hospitals, and clinics worldwide.<sup>12</sup>

Prior to the National Defense Authorization Act (NDAA) for FY 17, Service headquarters were responsible for their own healthcare policy. The components that executed healthcare policy for the Services were as follows:

- National Capital Region Medical Directorate (NCR MD): DHA;
- U.S. Army: U.S. Army Medical Command (MEDCOM);
- U.S. Navy and Marine Corps: U.S. Navy Bureau of Medicine and Surgery (BUMED); and
- U.S. Air Force: Air Force Medical Operations Agency (AFMOA).

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<sup>11</sup> See Appendix C for an explanation of healthcare-associated infection criteria for outperforming and underperforming.

<sup>12</sup> The DHA describes themselves as a joint, integrated Combat Support Agency that enables the Army, Navy, and Air Force medical services to provide a medically ready force and ready medical force to Combatant Commands in both peacetime and wartime. The DHA supports the delivery of integrated, affordable, and high quality health services to MHS beneficiaries, and is responsible for driving greater integration of clinical and business processes across the MHS.

As one of the largest healthcare providers in the United States, the MHS combines resources from both direct and purchased care components.<sup>13</sup> The MHS provides healthcare to 9.6 million beneficiaries. These beneficiaries include service members, retirees, and eligible family members. As of December 2016, the worldwide direct care component consisted of 55 DoD MTFs, 373 ambulatory-care clinics, and 245 dental clinics.<sup>14</sup>

### ***The MHS Review***

On May 28, 2014, the SecDef directed a comprehensive review of the MHS. Subject matter experts from the Military Departments and DHA reviewed the MHS with input from outside experts. The MHS Review evaluated whether:

- patient access to medical care in the MHS met defined access standards,
- the quality of healthcare in the MHS met or exceeded defined benchmarks, and
- the MHS created a culture of safety with effective processes for ensuring safe and reliable patient care.

The MHS Review was the first time the MHS had taken an enterprise view of such scope in these three areas.<sup>15</sup>

### ***The MHS Review Results***

The MHS Review Group published the MHS Review on August 29, 2014. The MHS Review reported that MHS provided “good quality care that was safe and timely, and is comparable to that found in the civilian sector.”<sup>16</sup> However, the MHS Review also reported that the MHS demonstrated wide performance variability, showing better performance than its civilian counterparts in some areas and performance below the national benchmarks in other areas. The MHS Review stated the MHS must continue to improve in order to become a national leader in healthcare. The MHS Review also included a list of recommended actions.

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<sup>13</sup> According to the MHS Review, the DoD uses the purchased care component when it cannot provide care within the military system. The purchased care component includes civilian network hospitals and providers operating through TRICARE regional contracts. Direct care is care within the military system.

<sup>14</sup> In accordance with DoDM 6010-103M, “Medical Expense and Performance Reporting System for Fixed Military Medical and Dental Treatment Facilities Manual,” April 7, 2008, ambulatory care provides comprehensive primary medical care; diagnostic services, care, and treatment; ambulatory surgical procedures; medical examinations; mental health consultation; and proper medical disposition of inpatients and outpatients.

<sup>15</sup> The scope of the MHS Review did not include healthcare provided to Combatant Commands and deployed operational forces.

<sup>16</sup> “Final Report to the Secretary of Defense, Military Health System Review,” August 2014.

The MHS Review reported several findings.

- The MHS scored below average in 7 of the 12 areas in the national “Hospital Survey on Patient Safety Culture.”<sup>17</sup> The MHS Review reported the areas of greatest concern included:
  - Staffing,
  - Teamwork within Units, and
  - Organizational Learning and Continuous Improvement.
- The Services varied widely in the execution and content of their root cause analysis (RCA) to understand the possible causes of sentinel events.<sup>18</sup> In addition, the Services did not routinely follow up on reported RCAs to ensure they had corrected the identified systemic issues.
- The MHS improved performance on measures for many hospital-acquired conditions through the national Partnership for Patients initiative.<sup>19</sup> However, select safety measures performed worse than average among MTFs compared to other healthcare systems. In addition, no comprehensive plan existed to standardize requirements for monitoring device-related infections.<sup>20</sup>
- Fewer than 30 percent of staff actively reported patient safety events as indicated from the 2011 “Hospital Survey on Patient Safety Culture.” The Patient Safety Reporting System used to report patient safety events did not have the ability to record harm rates.<sup>21</sup> Overall, the MHS Review could not validate that the processes used to measure harm in 2014 accurately indicated the MHS’s harm rates.

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<sup>17</sup> The “Hospital Survey on Patient Safety Culture” grouped survey questions into different safety culture areas to measure. The 12 areas are 1) Management Support for Patient Safety, 2) Supervisor and Manager Expectations and Actions Promoting Patient Safety, 3) Organizational Learning and Continuous Improvement, 4) Non-punitive Response to Error and Mistakes, 5) Feedback and Communication about Error, 6) Frequency of Events Reported, 7) Communication Openness, 8) Teamwork within Units, 9) Teamwork across Units, 10) Handoffs and Transitions, 11) Staffing, and 12) Overall Perception of Patient Safety.

<sup>18</sup> The Joint Commission defines a sentinel event as a patient safety event that reaches a patient and results in any of the following: death, permanent harm, or severe temporary harm that requires intervention to sustain life.

<sup>19</sup> According to the MHS Review, the Partnership for Patients is a nationwide approach to improving the safety and quality of care, which includes healthcare-associated infections as a measure of performance.

<sup>20</sup> According to the Centers for Disease Control and Prevention, device-related infections are healthcare-associated infections caused by devices used in medical procedures.

<sup>21</sup> The Medical Dictionary (Farlex and Partners) defines “harm” as anything that impairs or adversely affects the safety of patients in clinical care, drug therapy, research investigations, or public health. Harms include adverse drug reactions, side effects of treatments, and other undesirable consequences of health care products and services.

The MHS Review recommended that the MHS take several corrective actions:<sup>22</sup>

- “The MHS should identify the cause of variance for military treatment facilities that are outliers for one or more measures and, when due to poor performance, develop corrective action plans to bring those military treatment facilities within compliance.”
- “The MHS should develop a performance management system adapting a core set of metrics regarding access, quality, and patient safety; further develop MHS dashboards with system wide performance measures; and conduct regular, formal performance reviews of the entire MHS, with the Defense Health Agency monitoring performance and supporting MHS governance bodies in those reviews.”
- “The MHS should develop an enterprise-wide quality and patient safety data analytics infrastructure, to include health information technology systems, data management tools, and appropriately trained personnel. There should be clear collaboration between the Defense Health Agency’s analytic capabilities which monitor the MHS overall, and the Service-level analytic assets.”
- “The MHS should emphasize transparency of information, including both the direct and purchased care components, with visibility internally, externally, and to DoD beneficiaries. Greater alignment of measures for purchased care with those of the direct care component should be incorporated in TRICARE regional contracts.”<sup>23</sup>
- “[The 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.”
- “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).”

<sup>22</sup> “Final Report to the Secretary of Defense, Military Health System Review,” August 2014.

<sup>23</sup> The TRICARE website defines TRICARE as the health care program for uniformed service members and their families around the world. Each TRICARE region has its own managed care support contractor who is responsible for administering the TRICARE program in that region.

### ***The Secretary of Defense Directive***

On October 1, 2014, the SecDef responded to the MHS Review in a memorandum titled “Military Health System Action Plan for Access, Quality of Care, and Patient Safety.” The memorandum directed the Under Secretary of Defense for Personnel and Readiness to follow up on all MTFs that the MHS Review identified as outliers in measures of patient safety.<sup>24</sup> The memorandum also directed the Under Secretary to address the MHS Review’s findings and recommendations and provide regular progress updates to the Deputy Secretary of Defense as requested until Personnel and Readiness completed all actions. In this report, we refer to the October 1, 2014, memorandum as the “SecDef memorandum.”

### ***The MHS Review Action Plans***

The Under Secretary of Defense for Personnel and Readiness reported the Integrated Deliverable Document to the SecDef on February 3, 2015, in response to the SecDef memorandum. The Integrated Deliverable Document included the MHS Review Action Plans, which the Services and the DHA created to address the action items in the MHS Review.

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<sup>24</sup> In coordination with the Secretaries of the Military Departments and with the assistance of the Assistant Secretary of Defense for Health Affairs, Director of the Defense Health Agency, and the Surgeons General.

## Finding A

### Response to the Patient Safety Findings in the MHS Review

The MHS Review included 28 patient safety findings that were actionable and relevant to this evaluation.

The MHS Review Action Plans contained 10 action plans with action items and milestones that addressed all 28 relevant findings in the patient safety section of the MHS Review.<sup>25</sup>

As of October 2017, the MHS is making progress in implementing action items and milestones regarding patient safety in the 10 action plans.

## Discussion

### *The MHS Review Findings*

The MHS Review reported 38 findings related to patient safety. We determined that 10 of these 38 findings relating to patient safety were either not actionable or not relevant to this evaluation for the following reasons:<sup>26</sup>

- Four findings did not identify specific deficiencies or require corrective actions.
- Four findings addressed purchased care, which was outside the scope of this evaluation.
- One finding was positive and did not require corrective action.
- One finding duplicated another finding and required an identical corrective action. MHS addressed both findings in the same action plan.

The remaining 28 findings in the patient safety section of the MHS Review were actionable and relevant to this evaluation.

<sup>25</sup> The MHS developed 41 MHS Review Action Plans to address the findings in the 2014 MHS Review. Each action plan contained action items and milestones to address the findings. MHS Review Action Plans 1, 10, 11, 12, 23, 28, 32, 33, 36, and 38 contained action items and milestones to address the findings related to patient safety.

<sup>26</sup> The MHS Review made six overarching recommendations, focusing on standardization, process improvement, and transparency. The MHS Review nested 77 specific recommendations under these 6 overarching recommendations. See Appendix D for the 38 findings related to patient safety. See Appendix E for a list of each finding that is not actionable or not relevant to this evaluation.

## ***DHA's Actions and MHS Review Action Plans***

### *The MHS Review Action Plans*

The MHS developed action plans to address the MHS Review's recommendations. The action plans were included in the Integrated Deliverable Document reported to the Deputy Secretary of Defense by the Under Secretary of Defense for Personnel and Readiness.

### *DHA Associated Actions*

The DHA staff explained that the DHA also addressed the MHS Review's patient safety findings and recommendations in the following:

- the DHA's Root Cause Analysis and Sentinel Event Toolkit,<sup>27</sup>
- the MHS Leadership Engagement Toolkit,<sup>28</sup>
- the DHA's regularly published MHS Patient Safety Alerts,
- the MHS Patient Safety Annual Summary,
- the MHS Patient Safety Focused Reviews, and
- the DoD Patient Safety Improvement Collaborative meetings.

We compared MHS Review Action Plans and DHA actions taken with the 28 findings to determine if the MHS Review Action Plans and associated actions addressed each finding. For example, we compared the MHS Review finding regarding variance in organizational structure for the governance of patient safety to the MHS Review Action Plans. The MHS Review finding stated, "There is variance in organizational structure for the governance of patient safety." We found that MHS Review Action Plan #1, "Plan for Achieving a High Reliability Organization," contained two action items to resolve the finding and both actions were completed. Although MHS Action Plan #1 was completed, we observed that the status of other plans such as MHS Action Plan #11, "Plan for Sentinel Events," were still "in progress" as of January 21, 2017. The DHA Patient Safety Program also reported in October 2017 that 19 milestones contained in the MHS Review Action Plans related to Patient Safety remained "in progress."

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<sup>27</sup> According to the DoD Patient Safety Program, Root Cause and Sentinel Event Toolkit, March 3, 2006, the toolkit provides all levels of staff in MTFs with the information they need to effectively conduct a Root Cause Analysis and report findings.

<sup>28</sup> The Military Health System, Leadership Engagement Toolkit helps healthcare leaders 1) assess gaps in their safety culture, 2) engage key influencers for change, 3) set goals for targeted improvement, 4) implement proven safe practices, and 5) reinforce key behaviors to ensure high reliability performance for improvement.

## Conclusion

We determined that the MHS Action Plans contained courses of actions to resolve all 28 relevant findings in the patient safety section of the MHS Review. However, as of October 2017, the MHS had not yet implemented all actions in the MHS Review Action Plans regarding Patient Safety.

## Recommendation

### **Recommendation A**

**We recommend that the Director of the Defense Health Agency notify the Department of Defense Office of Inspector General when the Military Health System has implemented all actions in the Military Health System Review Action Plans regarding Patient Safety.**

### *The Defense Health Agency Comments*

The Official Performing the Duties of the Under Secretary of Defense for Personnel and Readiness, responding for the DHA Director agreed with the recommendation.

The DHA Patient Safety Program, responding for the DHA Director explained that, as of September 2017, the DHA's Patient Safety Program successfully closed and implemented 35 milestones across 8 MHS Review Action Plans related to Patient Safety. Although complete, many of these action items require sustaining their advancements and continuous progress. In support of this sustainment, DHA's High Reliability Organization Program Integration Office team is creating Capstone Narratives for each MHS Review Action Plan, beginning with those already fully implemented, to transition tracking and ongoing management activities from the DHA's Medical Operations Group to the appropriate functional area.

For the remaining 19 "in progress" milestones, the DHA Patient Safety Program continues to make progress towards full closure and implementation, meeting at regular DHA governance meetings and coordinating with the appropriate functional bodies. The DHA's Patient Safety Program will inform the DoD OIG as these functional bodies fully close their respective Action Plans.

### *Our Response*

Management Comments were responsive to the recommendation. The recommendation is resolved but remains open. We acknowledge the DHA's progress towards implementing and closing action items and plans regarding patient safety. We request that that the DHA send us written notification when it has implemented all MHS Review Action Plans regarding patient safety so that we can close this recommendation.



## Finding B

### Status of Military Treatment Facility Patient Safety Indicator #90 Underperformers since the MHS Review

The MHS Review identified one Army and one Air Force MTF as underperforming in the PSI #90 composite compared to other healthcare facilities.<sup>29</sup> Both MTFs took actions to improve individual PSIs from the PSI #90 composite that caused the MHS Review to identify those MTFs as outliers.<sup>30</sup> However, neither MTF had a PSI #90 benchmark to compare their current PSI #90 status to other non-DoD healthcare facilities.<sup>31</sup>

This occurred because the criteria developed by the Department of Health and Human Services, Agency for Healthcare Research and Quality (AHRQ), that the MHS Review Group used to evaluate MTF performance in PSI #90 have changed since the MHS Review.<sup>32</sup> AHRQ's criteria are required to establish a benchmark reference population. The benchmark determines if a healthcare facility "outperformed," performed the "same as," or "underperformed" the reference population in the PSI #90 composite. The new criteria will not be available until mid-2017.

As a result of this changing criteria, the DoD could not determine if the two MTFs identified as underperforming in PSI #90 during the MHS Review improved in PSI #90 relative to the AHRQ reference population benchmark. However, both MTFs improved in individual PSI elements.

## Discussion

The MHS Review identified the 88th Medical Group, Wright Patterson Air Force Base, and Madigan Army Medical Center (MAMC), Joint Base Lewis-McChord, as underperforming for PSI #90 as defined in the "AHRQ Quality Indicator User Guide: Patient Safety Indicators (PSI) Composite Measures," version 4.3, August 2011. The

<sup>29</sup> According to the MHS Review, healthcare organizations used PSIs to screen for adverse events. According to the Department of Health and Human Services, the term "adverse event" describes harm to a patient as a result of medical care. The AHRQ defined PSI #90 as a combination of eight patient safety indicators for eight inpatient safety problems.

<sup>30</sup> The MHS Review defined PSI #90 as an aggregation of patient safety indicators for eight safety problems in the inpatient setting. These indicators included 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); postoperative wound dehiscence (PSI #14); and accidental puncture or laceration (PSI #15).

<sup>31</sup> PSI #90 is a comparison against reference populations or the national external benchmark to provide an assessment of relative performance. For PSI #90, relative performance was assessed by comparing data to the AHRQ reference population and three national achievement thresholds with three possible outcomes against the benchmark; "outperformed," performed the "same as," or "underperformed" the benchmark.

<sup>32</sup> See Appendix G for an explanation of the changes in PSI #90 since the MHS Review.

criteria for determining the benchmark to measure MTF performance in PSI #90 during the MHS Review consisted of both the individual PSIs comprising PSI #90 and the Agency for Healthcare Research and Quality (AHRQ) reference population benchmark data.<sup>33</sup>

### ***Changes to Patient Safety Indicators***

Since the MHS Review, the Department of Health and Human Services, Agency for Healthcare Research and Quality changed the individual PSIs that comprised PSI #90 at the time of the MHS Review. These changes to PSI #90 since the MHS Review included:

- renaming original PSIs,
- re-defining original PSIs,
- deleting original PSIs,
- adding new PSIs, and
- changing PSIs' weighted contribution to the overall PSI #90 score.

Appendix G explains the individual changes in detail.

### ***Changes to Reference Population Benchmark***

The AHRQ derives its reference population benchmark data from International Classification of Diseases (ICD) codes.<sup>34</sup> The Department of Health and Human Services required all entities covered by the Health Insurance Portability and Accountability Act (including the MHS and TRICARE) to transition to a new version of ICD coding by October 1, 2015. The MHS enterprise transitioned to the new ICD coding in October 2015.

The AHRQ Quality Indicator Support office informed our team that, once transitioned to the new ICD, AHRQ required at least one full year of data coded in the new version of ICD to develop reference population benchmark data for the DoD to be able to determine how well MTFs performed in PSI #90. The AHRQ Quality Indicator Support office also explained that this benchmark data would not be available until mid-2017. Appendix G explains the transition to the new ICD that AHRQ used for benchmark data.

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<sup>33</sup> The AHRQ reference population database comes from the AHRQ-sponsored Healthcare Utilization Project State Inpatient Database, which houses the most extensive inpatient discharge abstracts from participating States. The database translates the abstracts into a single format to facilitate multi-State comparisons and analyses.

<sup>34</sup> According to the International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), physicians and other healthcare providers use ICD codes as a coding system to classify all diagnoses, symptoms, and procedures recorded in conjunction with hospital care in the United States.

## **MTF Performance in PSI #90**

We determined that DoD could not evaluate whether the 88th Medical Group or MAMC were currently underperforming in PSI #90 relative to the AHRQ reference population benchmark used in the MHS Review because AHRQ changed individual PSIs that comprised PSI #90. We further determined that DoD could not evaluate whether the 88th Medical Group or MAMC were currently underperforming in PSI #90 compared to the AHRQ reference population benchmark because AHRQ reported that the required benchmark data would not be available until mid-2017. Nevertheless, both the 88th Medical Group and MAMC reported taking actions since the MHS Review to address individual PSIs comprising the current PSI #90 instead of PSI #90 as defined in the MHS Review.

## **88th Medical Group Actions**

The Air Force Medical Operations Agency (AFMOA) staff explained that the 88th Medical Group developed an action plan that required an in-depth review of PSI #90 processes by functional subject matter experts and other persons at the MTFs.<sup>35</sup>

AFMOA identified PSI element #15 – accidental puncture and laceration – as the cause for the 88th Medical Group’s PSI #90 outlier status. AFMOA, working with the 88th Medical Group, identified that inaccurate coding of inadvertent cuts, punctures, perforations, and lacerations during surgical procedures was the reason PSI element #15 caused the PSI #90 outlier status.<sup>36</sup> Therefore, the action plan included training to correct PSI #15 coding discrepancies.

In addition, the AFMOA staff explained actions they and the 88th Medical Group took, even though the revised PSI #90 benchmark data was not available to use as a comparison standard. Their actions included:

- monitoring PSI #90 indicators to achieve the goal of zero harm in the Trusted Care Concept of Operations;<sup>37, 38</sup>
- sharing PSI #90 information with Air Force MTFs in weekly and monthly meetings, and at quarterly Performance Management Group forums led by the AFMOA Commander;<sup>39</sup> and

<sup>35</sup> AFMOA originally cared for operational matters under the direction of the AF/SG (Surgeon General) as a field-operating unit. AFMOA expanded to optimizing medical resources, radiation protection, aerospace medicine, and clinical excellence, among other interests.

<sup>36</sup> According to AHRQ Quality Indicators, PSI #15 is a quality measure that gauges and reports a physician's rate of inadvertent cuts, punctures, perforations, and lacerations during a surgical procedure. PSI #15's title changed to "Unrecognized Abdominopelvic Accidental Puncture or Laceration" in 2016.

<sup>37</sup> The AFMOA staff defined "Zero Harm" as AFMOA's goal of zero medical errors related to medical care provided.

<sup>38</sup> The AFMOA staff defined the Trusted Care Concept of Operations as the Air Force Surgeon General's document to guide Air Force medicine on its Trusted Care Journey (synonymous with High Reliability Organization at footnote 8).

<sup>39</sup> The AFMOA staff defined Performance Management Group forums as teleconferences between the AFMOA Commander and the commanders of the Air Force MTFs and are supported by the AFMOA Performance Management Cell.

- using the weekly and monthly meetings to instruct Air Force MTFs to access PSI #90 data on the CarePoint Application Portal, which allows the MTFs to monitor their own PSI #90 data for action and safety focus.<sup>40</sup>

The AFMOA staff further explained that their way-ahead included reviewing each reported PSI #15 event and the current PSI #90 composite for accuracy. This approach also included querying healthcare providers for clarification when surgical documentation included references to patient tears, lacerations and punctures not clearly described as accidental, unintended, or as complications.

The AFMOA staff reported that the 88th Medical Group experienced zero PSI #15 events during 2016. The AFMOA staff also reported that it formally closed out the 88th Medical Group from PSI #90 underperformer status on March 1, 2016.<sup>41</sup> The AFMOA staff further reported that it continued to monitor PSI data for new PSI events and work with MTFs to analyze and learn from the events. The AFMOA staff explained to us that all applicable Air Force MTFs will be evaluated by the new PSI #90 composite when the criteria become available.

### ***Madigan Army Medical Center (MAMC) Actions***

According to the MAMC, the PSI elements of PSI #12 and PSI #15 accounted for 78 percent of the PSI #90 composite score at the time Army Medical Command (MEDCOM) and MAMC developed the action plan to address MTF Outlier Status. MEDCOM and MAMC reported their action plan implemented the following actions:

- identified the DoD CarePoint Application Portal as a location to access PSI #90 data;
- assessed the status of the individual PSI #90 components PSI #12 and PSI #15 each month;<sup>42</sup>
- identified the underlying causes for four specific individual components of PSI #90 as well as Unintended Retained Foreign Objects (URFO);<sup>43, 44</sup>

<sup>40</sup> According to the DHA CarePoint Information Portal, CarePoint is a DHA information delivery portal designed to promote self-service business intelligence, user collaboration, content delivery, and information transparency for the purpose of improving healthcare quality, access, and delivery across the MHS.

<sup>41</sup> See Appendix F for an explanation of how the AFMOA formally closed out the 88th Medical Group from PSI #90 underperformer status on March 1, 2016.

<sup>42</sup> PSI #12 – Post-operative pulmonary embolism (a pulmonary embolism is a medical term for a blood clot that forms in another part of the body and then travels to the lung and blocks a blood vessel) or Deep Vein Thrombosis (a condition in which one or more blood clots form in a deep vein, especially in the leg or pelvis. If left untreated, it can cause a blood clot in the lung).

<sup>43</sup> Pressure ulcers (PSI #03), post-operative pulmonary embolism or deep vein thrombosis (PSI #12), post-operative wound dehiscence (PSI #14), and accidental puncture or laceration rate (PSI #15).

<sup>44</sup> Unintended Retained Foreign Objects (URFOs) after invasive procedures can cause death. Surviving patients may sustain both physical and emotional harm depending on the type of object retained and the length of time it is retained. URFOs are most commonly detected immediately after a procedure, by x-ray, during routine follow-up visits, or from the patient's report of pain or discomfort.

- reviewed patient safety records and gave feedback to medical providers so they could validate, review, and assess their documentation;
- identified process and performance improvement efforts;
- trained medical provider staff, coders, and abstractors to ensure they accurately enter appropriate documentation and terminologies into patient records;<sup>45, 46</sup>
- the Clinical Service Chief and medical providers reviewed electronic patient record documentation and provided feedback to identify underlying causes and corrections that contributed to variability in medical outcomes;<sup>47</sup> and
- reported performance metrics during weekly Command Review and Analysis sessions, departmental quality meetings, Clinical Management Team meetings, and organizational performance-improvement meetings.

MEDCOM reported that, according to the MHS Population Health Portal, MAMC improved from three PSI #12 events in the fourth quarter of 2015 to zero events in the third quarter of 2016.<sup>48</sup> MEDCOM also reported that MAMC did not have a PSI #15 event between the fourth quarter of 2015 and the third quarter of 2016.<sup>49</sup>

In addition, MEDCOM reported in August 2017 that MEDCOM would execute the PSI #90 measurement and monitoring plan in conjunction with the DHA and other Services.

## Conclusion

The MHS Review identified two MTFs as underperforming in PSI #90 according to AHRQ-determined criteria.

Since the MHS Review, the AHRQ changed the individual PSIs that comprised PSI #90 and the MHS has transitioned to a new ICD coding system. However, as of March 2017, the AHRQ had not acquired sufficient benchmark data coded in the new version of ICD to develop a reference population benchmark. Thus,

<sup>45</sup> A medical coder is a person who assigns numeric codes to represent diagnoses and procedures, describes patient treatment, and delineates fees for health services based on an official classification system.

<sup>46</sup> Abstractors manually search medical records to identify data required for secondary uses. Secondary uses of medical record data is patient information stored using several different abbreviations and representations for the same piece of data. For example, one may refer to “diabetes mellitus” (more commonly referred to as “diabetes”) in a patient’s medical record alternately as “diabetic,” “249.00,” or “DM.”

<sup>47</sup> The Clinical Service Chief is the head of a department or section of a clinically oriented service in a hospital or healthcare facility.

<sup>48</sup> The Military Health System Population Health Portal transforms DoD and Network healthcare data into actionable information. The data available provides both patient-level and general population statistics concentrating on demographics, disease management, and preventive services information.

<sup>49</sup> From the beginning of the fourth quarter CY 2015 through the end of the third quarter CY 2016, MAMC had three PSI #03 events and one PSI #14 event.

neither MEDCOM nor AFMOA could determine whether their MTFs identified as underperforming in the MHS Review were still underperforming in PSI #90 relative to non-DoD healthcare facilities.

However, despite the changes in PSI #90, both MTFs identified as underperforming in the MHS Review reportedly took actions to improve their performance and address individual PSIs, and provided data that indicated improvement occurred in these individual PSIs.

In addition, MEDCOM and AFMOA planned to evaluate applicable MTFs by the new PSI #90 composite when the criteria become available.

## Recommendation

### **Recommendation B.1**

**We recommend that the Commander, United States Army Medical Command:**

- **evaluate the Madigan Army Medical Center's Patient Safety Indicator #90 performance after the new Patient Safety Indicator #90 measures and benchmarks are available to determine if the facility is outperforming, performing the same as, or underperforming compared to other healthcare facilities; and**
- **take appropriate action to correct all identified deficiencies.**

#### *The U.S. Army Medical Command and Office of the Surgeon General Comments*

The Commander, U.S. Army Medical Command and Office of the Surgeon General, agreed with the recommendation, stating that once the Agency for Healthcare Research and Quality releases new PSI #90 measures, MEDCOM will evaluate the Madigan Army Medical Center against the new measures and correct any identified deficiencies.

#### *Our Response*

Management Comments were responsive to the recommendation. The recommendation is resolved but remains open. We acknowledge MEDCOM's plan to evaluate the Madigan Army Medical Center against the new measures when the measures become available. We ask that the Army send us a copy of the final evaluation that determines that the Madigan Army Medical Center is no longer underperforming in Patient Safety Indicator #90 so we can close this recommendation.

## **Recommendation B.2**

**We recommend that the Commander, Air Force Medical Operations Agency:**

- **evaluate the 88th Medical Group's Patient Safety Indicator #90 performance after the new Patient Safety Indicator #90 measures and benchmarks are available to determine if the facility is outperforming, performing the same as, or underperforming compared to other healthcare facilities; and**
- **take appropriate action to correct all identified deficiencies.**

### *The Air Force Medical Operations Agency Comments*

The Air Force Surgeon General, responding for the Commander, Air Force Medical Operations Agency, agreed with the recommendation, stating that AFMOA will monitor the 88th Medical Group's performance against the Agency for Healthcare Research and Quality's benchmarked, risk-adjusted data sets when those data sets become available. AFMOA will continue to monitor PSI metric data for the 88th Medical Group and provide continuous feedback to the 88th Medical Group.

### *Our Response*

Management Comments were responsive to the recommendation. The recommendation is resolved but remains open. We acknowledge AFMOA's plan to evaluate the 88th Medical Group against the new measures when the measures become available. We request that the Air Force send us a copy of the final evaluation that determines the 88th Medical Group is no longer underperforming in PSI #90 so we can close this recommendation.



## Finding C

### Status of Military Treatment Facility Performance in Healthcare-Associated Infections since the MHS Review

All eight MTFs identified in the MHS Review as underperforming in healthcare-associated infections measures were no longer underperforming.<sup>50, 51</sup>

### Discussion

The MHS Review selected three healthcare-associated infection measures to gauge patient safety at 24 MTFs.<sup>52</sup> The MHS Review evaluated healthcare-associated infection data collected on the 24 MTFs from 2010 through 2013 and identified 8 of the 24 MTFs as underperformers.<sup>53</sup>

We determined that all eight MTFs identified as underperforming in the MHS Review had action plans to address their performance in the healthcare-associated infection measures.<sup>54</sup> In addition, on October 8, 2015, the Acting Under Secretary of Defense for Personnel and Readiness reported to the Deputy Secretary of Defense that the NCR MD, MEDCOM, BUMED, and AFMOA monitored the performance of their respective underperformers “through the routine maintenance of accreditation status and Service-driven quality improvement.”<sup>55</sup> Furthermore, MHS Review Action Plan #23 established a functional process to identify new MTF underperformers and track each until they comply with established standards.<sup>56</sup>

<sup>50</sup> See Appendix H for healthcare-associated infection definitions.

<sup>51</sup> See appendix C for an explanation of healthcare-associated infection criteria for outperforming or underperforming.

<sup>52</sup> The three healthcare-associated infections referred to in the MHS Review were (1) Catheter-Associated Urinary Tract Infections, (2) Ventilator-Associated Pneumonia/Ventilator-Associated Event, and (3) Central Line-Associated Bloodstream Infections (CLABSI). See Appendix H for more details.

<sup>53</sup> MTFs with insufficient data were excluded in the MHS Review.

<sup>54</sup> According to the MHS Review, underperforming MTFs are HIGH outliers (> 90th percentile).

<sup>55</sup> According to the Encyclopedia and Dictionary of Medicine, Nursing, and Allied Health, accreditation is the process that a healthcare institution, provider, or program undergoes to demonstrate compliance with standards developed by an official agency.

<sup>56</sup> According to the DHA Action Plan, the milestone description for milestone 23.7 is “Processes in place and functional for identifying outliers, tracking outliers to compliance, and developing new measures.”

## ***Military Treatment Facility Healthcare-Associated Infection Performance***

Information we retrieved from the DHA website, as well as the NCR MD, MEDCOM, BUMED, and AFMOA, indicated that all eight MTFs identified in the MHS Review as underperforming in healthcare-associated infections were no longer underperforming through the end of 2016.

### ***Catheter-Associated Urinary Tract Infections Improvement***

The MHS Review identified two military treatment facilities as underperforming in Catheter-Associated Urinary Tract Infection (CAUTI) healthcare-associated infections:

- Dwight David Eisenhower Army Medical Center, Fort Gordon; and
- William Beaumont Army Medical Center, Fort Bliss.

According to the Centers for Disease Control and Prevention, National Healthcare Safety Network (CDC, NHSN) data we retrieved from Health.mil, the Dwight David Eisenhower Army Medical Center performed the same as the CAUTI national benchmark during 2015 and through the second quarter of 2016.<sup>57</sup> It had a CAUTI infection rate classified by the CDC, NHSN as “too small to calculate” during the final two quarters of 2016.<sup>58</sup> The CDC, NHSN data also showed that the William Beaumont Army Medical Center performed the same as the CAUTI national benchmark through 2015 and 2016.

### ***Ventilator-Associated Pneumonia/Ventilator-Associated Event Improvement***

The MHS Review identified the following military treatment facilities as underperforming in Ventilator-Associated Pneumonia/Ventilator-Associated Event (VAP/VAE) healthcare-associated infections:

- Fort Belvoir Community Hospital;
- Dwight David Eisenhower Army Medical Center, Fort Gordon;
- 88th Medical Group, Wright-Patterson Air Force Base; and
- Naval Medical Center Portsmouth.

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<sup>57</sup> Health.mil is the official website of the Military Health System.

<sup>58</sup> According to the CDC, NHSN, facilities with device days but no Standardized Infection Ratio are classified as “Too Small to Calculate.” The CDC defines the Standardized Infection Ratio as a summary statistic used to measure the relative difference in healthcare-associated infection occurrences during a reporting period compared to a common referent period (e.g. standard population). In healthcare-associated infection data analysis, the Standardized Infection Ratio compares the actual number of healthcare-associated infections with the predicted number based on the baseline U.S. experience (e.g. standard population).

The NCR MD staff provided the number of ventilator infections reported on the MHS Dashboard and DHA CarePoint Portal. The numbers indicated that Fort Belvoir Community Hospital's last VAP/VAE healthcare-associated infection occurred in January 2013. The numbers also indicated that the Fort Belvoir Community Hospital had not experienced a VAP/VAE healthcare-associated infection during 2015 and 2016.

The MEDCOM staff reported that, as of February 2, 2017, the Dwight David Eisenhower Army Medical Center, Fort Gordon, had not experienced a VAP/VAE healthcare-associated infection since January 2015.

The AFMOA staff provided information that indicated as of January 31, 2017, the 88th Medical Group, Wright-Patterson Air Force Base had zero VAP/VAE healthcare-associated infections documented in the National Healthcare Safety Network since 2012.

The BUMED staff provided the number of VAP/VAE healthcare-associated infections at the Naval Medical Center Portsmouth as of June 21, 2017. The Naval Medical Center Portsmouth experienced two VAP/VAE healthcare-associated infections in 2015 and zero in 2016.

The NCR MD and Services' data indicated that all four MTFs experienced zero VAP/VAE healthcare-associated infections during 2016 and were no longer underperforming.

### *Central Line-Associated Bloodstream Infections Improvement*

The MHS Review identified the following military treatment facilities as underperforming in Central Line-Associated Bloodstream Infection (CLABSI) healthcare-associated infections:

- Blanchfield Army Community Hospital, Fort Campbell;
- Naval Hospital Jacksonville;
- 88th Medical Group, Wright Patterson Air Force Base; and
- 60th Medical Group (David Grant Medical Center) Travis Air Force Base.

The CDC, NHSN's data indicated that the Blanchfield Army Community Hospital, Fort Campbell; Naval Hospital Jacksonville; and the 88th Medical Group, Wright Patterson Air Force Base experienced no CLABSI healthcare-associated infections from 2015 through 2016. The CDC, NHSN also reported that the 60th Medical Group (David Grant Medical Center) Travis Air Force Base performed the same as the CLABSI national benchmark during 2015 and 2016.

## Conclusion

Based on information we retrieved from the CDC, NHSN; the NCR MD; MEDCOM; BUMED; and AFMOA, we concluded that all eight MTFs identified in the MHS Review as underperforming in healthcare-associated infections were no longer underperforming through the end of 2016.

## Finding D

### Status of Patient Safety Culture Results since the MHS Review

The MHS reported improvements in six of the seven areas of the “Hospital Survey on Patient Safety Culture” identified in the MHS Review as lower than the national average. Specifically, the area of staffing worsened and was significantly below the national average.<sup>59, 60</sup>

The lower survey score for staffing was reflected in survey scores for three of the four survey questions:

- We have enough staff to handle the workload.
- Staff in this work area work longer hours than is best for patient care.
- We work in “crisis mode” trying to do too much, too quickly.

Another potential contributing factor is that DoD does not have specific policy on fatigue risk management for MHS staff.

As a result, the DoD risked compromising patient safety because the MHS had not developed an appropriate culture of safety with respect to “staffing.”

## Discussion

### *Patient Safety Culture*

According to the MHS High Reliability Organization Task Force, one of the guiding principles of a High Reliability Organization is fostering a culture of safety.<sup>61</sup> The MHS used the AHRQ “Hospital Survey on Patient Safety Culture” to measure the culture of MHS patient safety among the MHS staff. The High Reliability Organization Task Force report described the “Hospital Survey on Patient Safety Culture” as the “gold standard” for evaluating safety culture within healthcare organizations that use a national database for benchmarking.

<sup>59</sup> According to the MHS Review, sets of questions in the “Hospital Survey on Patient Safety Culture” are grouped into areas of patient safety that they are intended to measure.

<sup>60</sup> According to the MHS Review, practical significance is a change of plus or minus five percent in any area score.

<sup>61</sup> According to the High Reliability Organization Task Force report, the MHS chartered the High Reliability Organization Task Force in February 2015 to provide a centralized leadership and advisory body responsible for transitioning the MHS toward high reliability.

According to AHRQ, the “Hospital Survey on Patient Safety Culture” evaluates hospital staff opinions about patient safety issues, medical errors, and event reporting. It is important to note that the survey is not an objective measure. However, the MHS Review explained that organizations use the survey to ask staff about their perceptions of leadership, staffing, teamwork, and event reporting to evaluate the culture of safety.

The 2011 survey results reported in the MHS Review showed that the MHS scored below the national average in the following seven areas of patient safety culture:

- Supervisor/Manager Expectations and Actions Promoting Patient Safety,
- Organizational Learning-Continuous Improvement,
- Non-Punitive Responses to Error/Mistakes,
- Feedback and Communication About Error,
- Communication Openness,
- Teamwork Within Units, and
- Staffing.<sup>62</sup>

The MHS conducted another survey from February 15 to April 16, 2016.<sup>63</sup> The 2016 Culture of Patient Safety Survey report stated “[t]he 2016 survey results demonstrate reliable consistency with 2011 results.” The results from the 2016 “Hospital Survey on Patient Safety Culture,” shown in Table 1, indicate that the MHS marginally improved survey scores in six of the seven areas compared to the 2011 survey.

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<sup>62</sup> The “Hospital Survey on Patient Safety Culture” defines the area of staffing as “the extent to which staffing levels and hours worked are appropriate for the workload, and avoids operating in a ‘crisis mode’ due to excessive workloads.”

<sup>63</sup> The DoD Patient Safety Program funded the Defense Health Agency Decision Support Division to conduct the survey, analyze the results, and provide feedback reports. Deloitte Consulting, LLP and Zogby Analytics fielded the surveys with an overall MHS response rate of 42 percent (58,315 respondents of 137,382 total eligible).

Table 1. DoD Hospital Survey on Patient Safety Culture Scores

| DoD Improvement in the "Hospital Survey on Patient Safety Culture"   |      |      |        |           |
|--|------|------|--------|-----------|
|  | 2011 | 2016 | Change | 2016 AHRQ |
| Supervisor/Manager Expectations and Actions Promoting Patient Safety | 73%  | 74%  | +      | 78%       |
| Organizational Learning-Continuous Improvement                       | 67%  | 69%  | +      | 73%       |
| Non-Punitive Responses to Error/Mistakes                             | 42%  | 46%  | +      | 45%       |
| Feedback and Communication About Error                               | 62%  | 65%  | +      | 68%       |
| Communication Openness   | 61%  | 64%  | +      | 64%       |
| Teamwork Within Units  | 75%  | 76%  | +      | 82%       |
| Staffing*  | 48%  | 46%  | -      | 54%       |

Source: DoD OIG-generated table based on data from the 2011 and 2016 "Hospital Surveys on Patient Safety Culture."

\* According to the 2016 Culture of Patient Safety Survey report, the results for the area of Staffing by Service were NCR MD, 44%; Army, 47%; Navy, 46%; and Air Force, 43%.

However, in the 2016 survey, Staffing scored worse compared to the 2011 survey results. Although the Staffing score only decreased by two percent for the MHS, the MHS Staffing score was eight percent below the national average, which the AHRQ deems "significant."<sup>64</sup> The AHRQ considers a minimum of five-percentage-points difference in Culture Survey scores as "practically significant." Smaller differences can be "statistically significant," but of little practical meaning.<sup>65</sup>

### ***MHS Survey Results for the Area of Staffing***

The survey derived the composite score for the area of staffing issues from the following statements:

1. We have enough staff to handle the workload.
2. Staff in this work area work longer hours than is best for patient care.
3. We use more agency and temporary staff than is best for patient care.
4. We work in "crisis mode" trying to do too much, too quickly.

<sup>64</sup> According to the 2016 Culture of Patient Safety Survey, the AHRQ score for Staffing was 54 percent while the MHS score was 46 percent; this was a significant difference of negative eight percent.

<sup>65</sup> In accordance with "Hospital Survey on Patient Safety Culture, 2016 User Comparative Database Report" (AHRQ Publication 16-0021-EF, March 2016).

Compared to the MHS Review survey results, the scores for statements 1, 2, and 4 worsened in 2016, which in turn caused the composite score for the area of staffing to worsen. The score remained the same for statement 3.

According to the MHS Review, the area of staffing consistently ranked as one of the lowest scoring areas across the three “Hospital Surveys on Patient Safety Culture” conducted in 2005, 2008, and 2011. The MHS 2016 survey revealed that this trend continued in 2016, with Staffing ranked as the lowest-scored area, and it was significantly below the 2016 national average.

The “Hospital Survey on Patient Safety Culture” also allowed survey participants to enter open-ended comments. Survey respondents most frequently commented on staffing issues and we found that the percentage of negative comments increased from 2011 to 2016:

- Ninety percent of the Staffing comments in the 2011 survey results were negative.
- Ninety-five percent of the Staffing comments in the 2016 survey results were negative.

### ***Analysis of Survey Results for the Area of Staffing***

The DHA analyzed the 2016 survey results’ quantitative data and qualitative comments. The Chief of Advanced Analytics at DHA explained that statistical analysis of the 2016 survey quantitative data indicated that the area of staffing did not correlate to other areas in the “Hospital Survey on Patient Safety Culture.” As a result, the DHA could not determine, based on quantitative data, what influenced the area of staffing to worsen.

However, the DHA’s 2016 Patient Safety Culture Survey Results, reported on August 9, 2016, provided qualitative findings regarding the area of staffing, which indicated to the DHA the following:

- MTFs’ personnel do not believe the MTFs have enough staff to provide safe care to patients.
- MTFs’ personnel do not believe that the MTFs have enough specific types of staff to provide safe care to patients.
- MTFs’ personnel believe that Staff “burn out” (fatigue) is compromising patient safety.

## **MTF Staffing and MHS Staff Fatigue**

### *MTF Staffing*

During our meetings with NCR MD, MEDCOM, BUMED, and AFMOA staffs, all four explained that staffing levels at MTFs had not significantly influenced patient safety events or blocked improvement in the overall culture of patient safety. Furthermore, the “Hospital Survey on Patient Safety Culture” only measured the MHS’s perception of the area of staffing queried in the survey; the survey did not objectively measure staffing. However, AFMOA indicated that the lack of experienced MTF staff “has been identified as a contributory factor in some patient safety events.”

The DHA’s Patient Safety Program staff explained that their office does not have the authority to change MTF staffing levels. The NCR MD explained that MTF commanders must meet mission requirements with the staffing provided. The NCR MD, MEDCOM, BUMED, and AFMOA staffs also explained that each Service used different systems and processes to monitor and adjust staffing levels based on individual MTF needs. Moreover, the Services and the NCR MD transferred staff from one MTF to another to adjust staffing levels. In addition, MHS created a tool to give enhanced Multi-Service Market Managers the ability to balance overall staffing among MTFs across Services.<sup>66, 67</sup> The NCR MD staff further explained that local leadership postpone medical procedures when there is insufficient staffing for safe patient care.

Congress addressed the issue of MTF staffing in NDAA FY 17. Specifically, Public Law 114-328, “National Defense Authorization Act for Fiscal Year 2017,” section 727, “Acquisition Strategy for Health Care Professional Staffing Services,” requires the SecDef to estimate the workload gaps at military medical treatment facilities for healthcare services, including primary care and expanded-hours urgent care services.<sup>68</sup> Section 727 also requires the SecDef to submit a status report to the United States Senate and House of Representatives’ Committees on Armed Services no later than July 1, 2017.

<sup>66</sup> Multi-Service Market Areas are implemented in six markets, including the National Capital Region (NCR); Tidewater, Virginia (Navy); Puget Sound, Washington (Army); Colorado Springs, Colorado (rotate Air Force and Army); San Antonio, Texas (rotate Air Force and Army); and Oahu, Hawaii (Army). Enhanced management authorities include authority to manage the allocation of the budget for the market, direct the adoption of common clinical and business functions for the market, optimize readiness to deploy medically ready forces, and direct the movement of workload and workforce between or among the medical treatment facilities.

<sup>67</sup> According to the U.S. Army Medical Department website, as of October 1, 2013, some Multi-Service Market Managers have “enhanced” authorities that include the authority to manage budget allocation, direct the adoption of common clinical and business functions, optimize readiness to deploy medically ready forces and ready-medical forces, and direct the movement of workload and workforce among the medical treatment facilities.

<sup>68</sup> We determined that workload gaps occur when staffing requirements do not match workload requirements.

### *MHS Staff Fatigue*

DHA's 2016 Patient Safety Culture Survey Results, reported on August 9, 2016, "qualitative findings suggest patient safety is compromised because staff are burnt out." Also, both The Joint Commission and American College of Occupational and Environmental Medicine describe the effect fatigue has on patient safety.<sup>69, 70</sup>

The Joint Commission issued Sentinel Event Alert #48 on December 14, 2011, regarding healthcare worker fatigue and patient safety.<sup>71</sup> Alert #48 stated that fatigue increases the risk of adverse events, compromises patient safety, and increases risk to personal safety and well-being.

However, healthcare providers may defend themselves against errors from fatigue. The American College of Occupational and Environmental Medicine's Task Force on Fatigue Risk Management reported that a comprehensive Fatigue Risk Management System includes five levels of defense against errors from fatigue:

- balance between workload and staffing,
- shift scheduling,
- employee fatigue training and sleep disorder management,
- workplace environment design, and
- fatigue monitoring and alertness.

Both the Joint Commission and the American College of Occupational and Environmental Medicine indicated fatigue affects patient safety. The DoD has various instructions, regulations, and guidance on fatigue risk management. However, the DoD does not have specific policy on fatigue risk management for MHS staff while providing patient care in the MTFs.

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<sup>69</sup> According to the Joint Commission website, the Joint Commission is an independent, not-for-profit organization that accredits and certifies nearly 21,000 healthcare organizations and programs in the United States. The Joint Commission accreditation and certification is a nationally recognized symbol of quality that reflects an organization's commitment to meeting certain performance standards.

<sup>70</sup> According to the American College of Occupational and Environmental Medicine website, the American College of Occupational and Environmental Medicine is the nation's largest medical society dedicated to promoting the health of workers through preventive medicine, clinical care, research, and education.

<sup>71</sup> See Appendix I for a copy of The Joint Commission Sentinel Event Alert #48.

For example, the DoD has an instruction on fatigue risk management for motor vehicle operators:

- DoD Instruction 6055.04, “DoD Traffic Safety Program,” April 20, 2009, (Incorporating Change 2, January 23, 2013).<sup>72</sup>

Likewise, the Army, Navy, and Air Force have regulations and instructions on fatigue risk management for pilots and flight crew.

- Army Regulation 95-1, “Flight Regulations,” March 11, 2014.<sup>73</sup>
- Commander Naval Air Force Manual 3710.7, “Naval Air Training and Operating Procedures Standardization (NATOPS) General Flight and Operating Instructions,” January 15, 2017.<sup>74</sup>
- Air Force Instruction 11-202, volume 3, “General Flight Rules,” August 10, 2016.<sup>75</sup>

The Air Force has instructions on fatigue risk management for critical care teams that provide medical care during patient transport by air.

- Air Force Instruction 11-202AE, volume 3, “Aeromedical Evacuation (AE) Operations Procedures,” August 15, 2014, and Air Force Instruction 48-307, volume 2, “En Route Critical Care,” January 10, 2017.<sup>76</sup>

The Army also has at least three guides on fatigue risk management.

- “The Performance Triad Guide,” February 18, 2015.<sup>77</sup>
- The Army Techniques Publication 6-22.5, “A Leader’s Guide to Soldier Health and Fitness,” February 2016.<sup>78</sup>
- The “Army Leader’s Guide to Soldier and Crew Endurance,” January 12, 2015.<sup>79</sup>

<sup>72</sup> DoD Instruction 6055.04 establishes guidelines to reduce the risk of traffic mishaps caused by motor-vehicle-operator fatigue.

<sup>73</sup> Army Regulation 95-1 establishes a risk management program to control risks due to sleep deprivation or fatigue for pilots and flight crew.

<sup>74</sup> Commander Naval Air Force Manual 3710.7 addresses fatigue, sleep, and flight time for all flight personnel to improve combat readiness and reduce aircraft mishap rate.

<sup>75</sup> Air Force Instruction 11-202 addresses aircrew alertness and fatigue management.

<sup>76</sup> Air Force Instruction 11-202AE and Air Force Instruction 48-307 both consider fatigue risk management for medical providers and staff who provide medical care during patient transport by air.

<sup>77</sup> “The Performance Triad Guide” discusses the importance of sleep, provides information on achieving effective sleep, and shows the consequences of sleep deficiency.

<sup>78</sup> The Army Techniques Publication 6-22.5 applies to all Army personnel to ensure the health and fitness of the force. It addresses sleep and guides commanders, leaders, and soldiers how to develop, manage, and execute comprehensive and effective sleep plans. It also includes information about sleep scheduling and fatigue management.

<sup>79</sup> The “Army Leader’s Guide to Soldier and Crew Endurance” gives leaders information and tools to effectively manage endurance hazards. It focuses on the need to minimize fatigue, sleep deprivation, environmental extremes, and stress and discusses the problems that result from disrupting circadian rhythms.

The Accreditation Council for Graduate Medical Education is an independent organization that sets and monitors compliance with those professional educational standards essential in preparing physicians to deliver safe, high-quality medical care. The “Accreditation Council for Graduate Medical Education Common Program Requirements” guides DoD medical residents how to mitigate excessive fatigue and manage the potential negative effects of fatigue on patient care during their medical residency.

Also, as of April 2017, the MEDCOM Office of the Surgeon General was developing a Sleep, Fatigue Management, and Employee Performance Optimization Policy, which would limit the duty hours and number of consecutive 12-hour shifts without 24 hours of rest for medical personnel assigned to MEDCOM.

## Conclusion

Six of the areas in the “Hospital Survey on Patient Safety Culture” marginally improved from 2011 to 2016, but the area of staffing worsened and was significantly below the national average. According to DHA’s 2016 Patient Safety Culture Survey Results, qualitative findings regarding staffing indicated MTF personnel believed MTFs did not have enough staff with sufficient expertise to provide safe care to patients and that staff fatigue compromised patient safety.

Also, we concluded that the DoD did not have specific policy guidance on fatigue risk management for MHS staff who performed patient care in MTFs, which could result in compromised patient safety.

In addition, Congress is addressing MTF staffing. NDAA FY 17 addresses MHS staffing issues by including a requirement for the DoD to estimate the MTF workload gaps for healthcare professional staffing services. The law also requires the DoD to report the status to the United States Senate and House of Representatives’ Committees on Armed Services no later than July 1, 2017.

## Recommendations

### ***Recommendation D.1***

**We recommend that the Director, Defense Health Agency:**

- **determine the actionable root causes for the Staffing survey results being below national average in the “Hospital Survey on Patient Safety Culture,” and**
- **take appropriate actions to improve those factors that pose a risk to patient safety.**

### *The Defense Health Agency Comments*

The Official Performing the Duties of the Under Secretary of Defense for Personnel and Readiness, responding for the DHA Director, agreed with the recommendation. The DHA Patient Safety Program, responding for the DHA Director, acknowledged that evolving an MHS-wide safety culture is a long-term journey that necessitates a continuous improvement approach including ongoing culture assessments and improvement actions based on data, lessons-learned, and emerging safety science knowledge. The DHA Patient Safety Program also concurred that MHS leadership could potentially further improve patient safety by methodically investigating the causes of the persistent gaps in the Staffing dimension of safety culture.

The DHA Patient Safety Program will develop a plan with input and support of the Component Commands to identify MHS-wide (direct care system) actionable causal factors underlying the low Staffing dimension scores and to design, implement, and evaluate improvement strategies. The plan will include:

- a review of evidence and data about staffing-related patient safety risks and measurement tools and techniques;
- a baseline assessment aimed at identifying the causal factors;
- a design of evidence-based improvement strategies;
- plans for implementation, impact evaluation, sustainment, and ongoing improvement;
- change management principles and techniques; and
- an identification of additional resource requirements.

Since safety culture is a local phenomenon, MTFs apply measures at the local level. The DHA Patient Safety Program expects to have a draft plan for review and comment within 12 months of formal issuance of this report.

### *Our Response*

Management Comments were responsive to the recommendation. The recommendation is resolved but remains open. We acknowledge the DHA Patient Safety Program's plan to identify MHS-wide (direct care system) actionable causal factors underlying the low Staffing dimension scores and to design, implement, and evaluate improvement strategies. We request that the DHA send us a copy of the final plan so that we can close this recommendation.

## ***Recommendation D.2***

**We recommend that the Under Secretary of Defense for Personnel and Readiness establish and implement specific Department of Defense policy on fatigue risk management for Military Health System staff.**

### *The Under Secretary of Defense for Personnel and Readiness Comments*

The Official Performing the Duties of the Under Secretary of Defense for Personnel and Readiness agreed with the recommendation. He explained that the DHA Patient Safety Program, acting on behalf of the DHA and in coordination with the Assistant Secretary of Defense for Health Affairs, would assess enterprise-wide and MHS-specific factors that influence both healthcare-workforce fatigue risk and resiliency. This assessment will inform a plan for developing and implementing policy on healthcare-workforce fatigue risk and resiliency. This assessment will also inform policy planning including targeted, evidence-based resources for training and education on strategies to mitigate healthcare-workforce fatigue and improve healthcare-workforce resiliency. Specific steps in the development of this plan will include:

- a review of available evidence on healthcare workforce fatigue;
- a baseline assessment of MHS risks for fatigue including strengths and weaknesses;
- a design of materials for training and education to raise awareness of and outline MHS-specific mitigation strategies for healthcare-workforce fatigue;
- policy development and implementation in coordination with the Assistant Secretary of Defense for Health Affairs;
- plans for evaluation, sustainment, and ongoing improvement; and
- identification of additional required resources.

DHA's Patient Safety Program expects to have a draft policy for review and comment within 12 months of formal issuance of this report.

### *Our Response*

Management Comments were responsive to the recommendation. The recommendation is resolved but remains open. We acknowledge the DHA Patient Safety Program's plan to develop and implement policy to mitigate healthcare-workforce fatigue and improve healthcare-workforce resiliency. We request that the DHA send us a copy of the final policy upon issuance so that we can close this recommendation.

## Finding E

### Military Health System Patient Safety Governance

The MHS Review recommended that the MHS develop policy guidance through MHS governance to provide the Services with common executable goals to advance patient safety.

We determined that the DoD is developing governance for common policy, procedure, and direction in accordance with the NDAA FY 17, but had not yet issued specific patient safety guidance.

### Discussion

#### ***Governance Responsibility***

Prior to the NDAA FY 17, Service headquarters were responsible for their own healthcare policy. The components that executed healthcare policy for the Services were as follows:

- National Capital Region Medical Directorate (NCR MD): DHA;
- U.S. Army: U.S. Army Medical Command (MEDCOM);
- U.S. Navy and Marine Corps: U.S. Navy Bureau of Medicine and Surgery (BUMED); and
- U.S. Air Force: Air Force Medical Operations Agency (AFMOA).

The NDAA FY 17 directs that, beginning October 1, 2018, the DHA will oversee administrative policy and procedure for each military treatment facility. Likewise, beginning October 1, 2018, the Defense Health Agency Deputy Assistant Director for Medical Affairs will assume responsibility for policy, procedures, and direction of patient safety and for areas within the MHS such as infection control, risk management, and patient experience.<sup>80</sup>

<sup>80</sup> NDAA FY 17 Section 702 also makes the Defense Health Agency Assistant Director for Medical Affairs responsible for policy, procedures, and direction of clinical quality and process improvement, graduate medical education, clinical integration, utilization review, and civilian physician recruiting.

## ***NDA 2017 Implementation Plan***

The DoD's senior military medical leadership published operating principles to guide the implementation of all NDA 2017 medical requirements.<sup>81</sup> One of the operating principles was for DHA to create the healthcare policies for the direct care system.<sup>82</sup>

In March 2017, the Principal Deputy Assistant Secretary of Defense for Health Affairs explained to our team that prior to NDA 2017 each of the Services' clinical and business functions dictated how each Service operated regarding policy, policy analysis, compliance, and management activities, including patient safety. The 2017 NDA directs a new organizational structure within the DHA to support patient safety.

The Principal Deputy Assistant Secretary of Defense for Health Affairs explained DoD's intent is to eliminate duplicate governance in each of the clinical and business functions by consolidating their separate systems (Army, Navy, and Air Force) into a single DHA-governed system for key MTF operational functions. The Principal Deputy Assistant Secretary of Defense for Health Affairs further explained that, while much of DHA's preliminary planning was not specific to patient safety, the planning provided the necessary foundation to comply with NDA FY 17, section 702. This section includes the responsibility for policy, procedures, and direction of patient safety.

The DoD submitted the first interim report to the Armed Services Committees of the Senate and House of Representatives on March 31, 2017. The report contained the plan to implement NDA FY 17, section 702. The report explained that the DoD established a Program Management Office, under the direction of the Assistant Secretary of Defense for Health Affairs, to ensure DoD implemented the requirements in section 702 of NDA FY 17.

The first interim report included a description of the decision and process to pursue a component model of administration in which the Director, DHA, is responsible for administering the MTFs through Service-led intermediary commands.<sup>83</sup>

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<sup>81</sup> According to the High Reliability Organization Task Force Report, "A Resource Guide for Achieving High Reliability in the Military Health System," September 15, 2015, DoD's senior military medical leadership included the Assistant Secretary of Defense for Health Affairs; the Surgeons General of the Army, Navy, and Air Force; the Director of the DHA; and the Joint Staff Surgeon.

<sup>82</sup> According to the MHS Review, direct care is care within the military system.

<sup>83</sup> An example of an intermediary command is the Army corps, which is the intermediate headquarters between divisions and the theater army.

The DoD submitted the second interim report to the Armed Services Committee of the Senate and the House of Representatives on June 30, 2017. The report included the following information as prescribed by statute:

- How the Secretary will carry out NDAA FY 17, subsection 702.<sup>84</sup>
- Efforts to eliminate duplicative activities carried out by the elements of the Defense Health Agency and the military departments.
- Efforts to maximize efficiencies in the activities carried out by the Defense Health Agency.
- How the Secretary will implement NDAA FY 2017, section 1073c, in a manner that reduces the number of members of the Armed Forces, civilians who are full-time equivalent employees, and contractors who do work relating to the headquarters activities of the military health system.

Furthermore, the Principal Deputy Assistant Secretary of Defense for Health Affairs informed us that the DoD plans to submit a final report March 1, 2018, with full details on how the DoD intends to implement the component model of administration beginning October 1, 2018.

## Conclusion

Beginning October 1, 2018, the DHA Deputy Assistant Director for Medical Affairs will be responsible for policy, procedures, and direction of patient safety in accordance with NDAA FY 17, section 702.

The DoD prepared a plan to develop governance for policy, procedure, and direction for the reform of the administration of the DHA and MTFs with respect to patient safety, in accordance with NDAA FY 17, section 702. While much of the DoD's planning did not specifically address patient safety, the Principal Deputy Assistant Secretary of Defense for Health Affairs stated that the planning provided the necessary foundation to address section 702, which directed a new organizational structure within DHA to support patient safety.

Also, to meet the NDAA requirements, the acting Under Secretary of Defense for Personnel and Readiness submitted an interim report in March 2017 to the Committees on Armed Services of the House of Representatives and the Senate describing the plan to implement title 10 of the United States Code, section 1073c (2017). The DoD also submitted a second interim report to Congress on June 30, 2017, and will submit a final report by March 1, 2018.

<sup>84</sup> NDAA 17, subsection 702, inserted into Chapter 55 of 10 United States Code section 1073c(a), states that beginning October 1, 2018, the Director of the Defense Health Agency shall be responsible for the administration of each military medical treatment facility, including with respect to, budgetary matters; information technology; health care administration and management; administrative policy and procedure; military medical construction; and any other matters the Secretary of Defense determines appropriate.



## Finding F

### Military Health System Performance Management System

We determined that the MHS developed a SecDef-directed performance management system, referred to as the Partnership for Improvement (P4I).

We also determined that MHS used the P4I to monitor patient safety for areas requiring improvement.

### Discussion

#### ***Performance Management System or Partnership for Improvement (P4I)***

In the 2014 SecDef memorandum, the Secretary directed DHA to establish and use an MHS performance management system. As directed, the MHS developed a performance management system called P4I.

The P4I surveys MHS-wide core performance measures and related dashboards to detect areas requiring improvement. The P4I's capabilities include:

- an enterprise plan to guide measurement and improvement efforts;
- an enterprise performance dashboard with measures and thresholds aligned to the MHS Quadruple Aim;<sup>85</sup>
- organizational clarity and established focus areas for improvement;
- performance improvement capability for the Services and NCR MD; and
- a mechanism to review performance, allocate resources, and make adjustments.

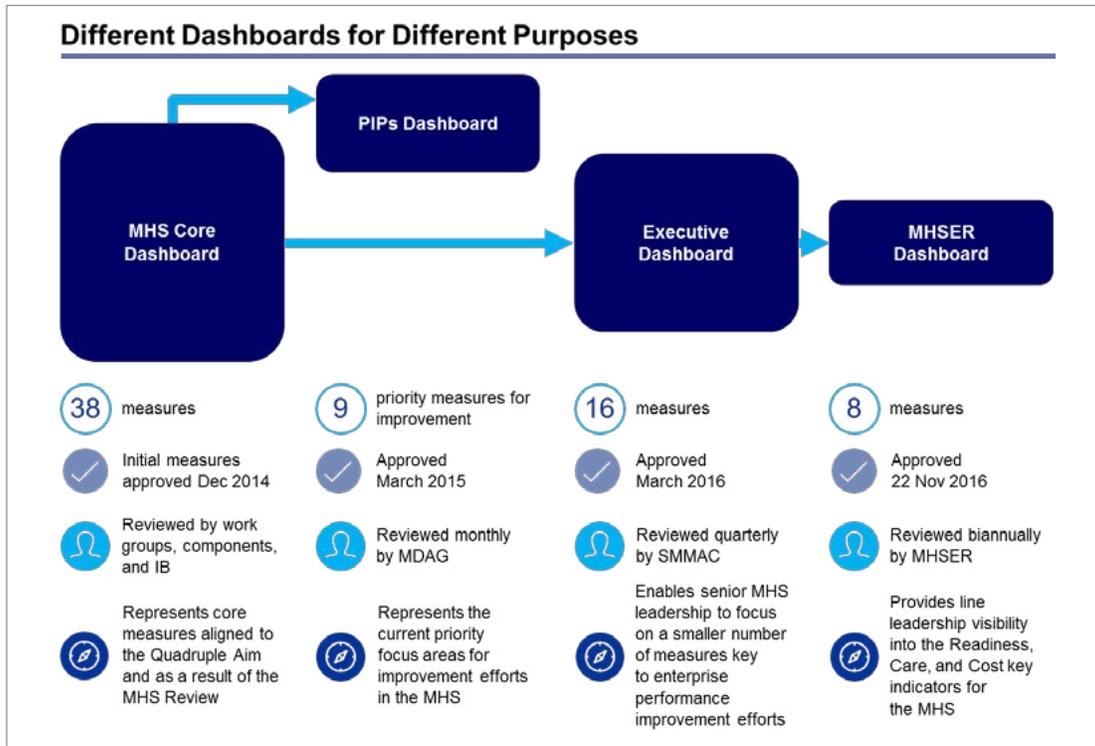
The MHS performance management system consists of different dashboards for different purposes. (See Figure 1.)

- The MHS Core Dashboard represents the core measures aligned to the MHS.
- The PIP (Process Improvement Priorities) Dashboard represents current focus areas for improvement efforts in the MHS.

<sup>85</sup> The MHS Quadruple Aim of Increased Readiness, Better Care, Better Health, and Lower Cost rests on the pillars of three key domains of change for high reliability identified by High Reliability Organization experts: leadership commitment to achieving zero preventable harm, a culture of safety, and continuous process improvement.

- The Executive Dashboard enables MHS senior leadership to focus on a smaller number of measures considered key to enterprise performance efforts.
- The MHSER (Military Health Service Executive Review) Dashboard gives leadership visibility into the readiness, care, and cost key indicators for the MHS.

Figure 1. MHS Performance Management System Dashboards



Source: Partnership for Improvement- MHS Performance Management System.

## Improved Patient Safety

We determined the MHS used P4I to prioritize enterprise patient-safety improvements by analyzing MHS’s focus area of “Reduce Patient Harm.”

On March 18, 2015, the attendees at the MHS quarterly Review and Analysis meeting identified “Reduce Patient Harm” as a focus area for patient-safety improvement.<sup>86,87</sup> Figure 2 illustrates the MHS P4I system’s capability for monitoring patient safety to:

- choose areas for improvement of strategic importance,
- understand the process that needs to be improved,
- assess current performance against standard measures,
- set enterprise targets, and
- monitor progress at regular performance review meetings.

Figure 2. Reduce Patient Harm Table

| Reduce Patient Harm         |  |            |             |             |                  |               |              |
|-----------------------------|--|------------|-------------|-------------|------------------|---------------|--------------|
| <b>Strategic Importance</b> | By placing emphasis on processes and standard work that have been proven to reduce patient and staff injury, the MHS will ensure that the safest care is provided in MTFs at all times. This will allow the MHS to harvest best practices, reinforce a culture of safety, and continuously drive to the goal of zero harm to patients and staff. |            |             |             |                  |               |              |
| <b>Process to Improve</b>   |  |            |             |             |                  |               |              |
| <b>Current Performance</b>  | <b>Measure</b>   | <b>MHS</b> | <b>Army</b> | <b>Navy</b> | <b>Air Force</b> | <b>NCR MD</b> | <b>As of</b> |
|                             | Healthcare Associated Infections (HAI) Central Line-Associated Bloodstream Infection (CLABSI) *  | 27         | 13          | 7           | 4                | 3             | Mar 2015     |
|                             | Patient Safety Indicator (PSI) 5: Foreign Body Retention   | 9          | 7           | 1           | 1                | 0             | Jun 2014     |
| <b>Target Performance</b>   | <ul style="list-style-type: none"> <li>• HAI CLASBI: 0</li> <li>• PSI 5: Foreign Body Retention: 0 * <b>Note: MHS tracking rates Army greatest number due to greatest number of facilities</b></li> </ul>  |            |             |             |                  |               |              |

Source: The High Reliability Organization Task Force Report, September 15, 2015.

<sup>86</sup> The Review and Analysis meeting is an extended Senior Military Medical Action Council with the primary attendees being the Assistant Secretary of Defense for Health Affairs, Principle Deputy Assistant Secretary of Defense for Health Affairs, the Service Surgeons General, the Director of DHA, the Joint Staff Surgeon, and the President of Uniformed Services University of Health Sciences. Other attendees may include the Deputy Assistant Secretaries of Defense, Flag and SES leaders of the Services and DHA, and Subject Matter Experts. Part of the meeting includes a review of the MHS Performance Measures focused on the Process Improvement Priorities and Executive Dashboard. The attendees discuss changes in performance, variations, success, and impediments to improvement, and sharing of best practices.

<sup>87</sup> The four focus areas for improvement are Improve Access, Increase Direct Care Primary Care Capacity, Improve Quality Outcomes for Condition-Based Care, and Reduce Patient Harm.

The Medical Deputies Action Group uses P4I monthly to monitor patient safety issues contained in P4I's "Reduce Patient Harm" focus area.<sup>88</sup> We attended the January 24, 2017, Medical Deputies Action Group MHS monthly performance review. The meeting participants used Reduce Patient Harm information from P4I to review the patient safety gap-to-threshold, trends, and variability for Unintended Retained Foreign Object (URFO) and Central Line-Associated Bloodstream Infections (CLABSI).<sup>89</sup> The P4I data showed that a gap in performance existed for URFO and that a "very small" performance gap existed for CLASBI.

The Medical Deputies Action Group meeting participants used the information from P4I to identify areas of patient safety requiring improvement regarding URFOs and CLASBIs, which included:

- analysis of gaps in performance, and
- strategies to narrow gaps in performance.

## Conclusion

The MHS developed a SecDef-directed performance management system referred to as the Partnership for Improvement or P4I. The MHS identified "Reduce Patient Harm" in P4I as one focus area for improvement. The P4I's "Reduce Patient Harm" focus area included patient safety issues such as URFOs and CLASBIs. Therefore, we concluded that the MHS used a performance management system to monitor patient safety for areas requiring improvement.

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<sup>88</sup> The Medical Deputies Action Group includes the Principal Deputy Assistant Secretary of Defense for Health Affairs, Service Deputy Surgeons General, and the DHA Deputy Director.

<sup>89</sup> The gap-to-threshold information includes whether the most recent URFO performance meets the performance threshold of zero URFOs. The information also included the most recent CLABSI performance in relation to the performance threshold of 3.5.

## Appendix A

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### Scope and Methodology

We determined the general state of patient safety in the MHS and identified necessary improvements to ensure the health and readiness of the force.

We conducted this evaluation from December 2016 through October 2017 in accordance with the Council of the Inspectors General on Integrity and Efficiency “Quality Standards for Inspection and Evaluation,” January 2012. These standards require that we plan and perform this evaluation to obtain sufficient, competent, and relevant evidence to provide a reasonable basis for our findings, conclusions, and recommendations based on our evaluation objectives. We believe that the evidence obtained provides a reasonable basis for our findings, conclusions, and recommendations.

#### **Scope**

We limited the scope of this evaluation to the DoD’s response to the MHS Review’s sections on Patient Safety. Our intent was to determine if the DoD took actions to address the MHS Review’s findings and recommendations in accordance with the SecDef’s direction.

For Finding A, we limited our scope to evaluating if either the MHS Action Plans or DHA addressed every patient safety finding in the MHS Review. Our scope included determining whether MHS had implemented all of their Review Action Plans for patient safety.

For Findings B and C, we limited our scope to the MTFs identified in the MHS Review as PSI #90 or healthcare-associated infections with an underperformer or outlier status. We did not evaluate the current PSI #90 or healthcare-associated infection status of all DoD MTFs during the time of this evaluation.

For Finding D, we limited our scope to the seven areas of patient safety identified as lower than the national average in the 2011 “Hospital Survey on Patient Safety Culture.”

For Findings E and F, we limited our scope to compliance with the MHS Review’s recommendations and the SecDef’s directions.

In addition, we did not address purchased care or healthcare provided in support of the Combatant Commands and deployed operational forces because the MHS Review did not address these elements.

## **Methodology**

To evaluate our objectives, we first reviewed:

- August 2014 Final Report to the Secretary of Defense, Military Health System Review;
- the National Defense Authorization Act, section 702, FY 2017;
- the “MHS High Reliability Organization Task Force Report”;
- DoD Instruction 6025.13, “Military Quality Assurance (MQA) and Clinical Management in the Military Health System,” October 29, 2013;
- official memorandums from the Office of the Secretary of Defense; and
- Patient Safety survey reports results regarding MHS’s online “Hospital Survey on Patient Safety Culture.”

Information gleaned from this review provided background for this evaluation and the basis for developing discussion points and strategies to answer our objectives.

We then developed discussion points to facilitate interviews with MHS officials. These discussion points guided our site visit interviews and ensured that we asked objective-based questions that were relevant and specific to the organization interviewed. These discussion points targeted evaluation objectives to each organization we considered most likely to possess data to answer our objectives and ensured that we maintained consistency in each interview.

Next, we visited sites within the National Capital Region from January 2017 to March 2017. We visited MEDCOM at Joint Base San Antonio-Fort Sam Houston, Texas, and AFMOA at Joint Base San Antonio-Lackland, Texas, in February 2017. During our site visits, we used our discussion points to interview MHS officials from the DHA, NCR MD, MEDCOM, BUMED, and AFMOA.

The DHA staff with whom our team worked during this evaluation included the Government Lead MHS Reliability Organization Program Integration; Partnership for Improvement; Healthcare Operations Directorate; DoD Patient Safety, Clinical Support Division; Director, Office of Strategy Management; Chief, Advanced Analytics; Chief, Patient Safety Program, Clinical Support Division; Chief, Integrated Systems Support Branch, Healthcare Operations/Clinical Support Division; Chief, Patient Safety Analysis Center, Clinical Support Division; Section Chief, Patient Safety Program, Clinical Support Division; HRO Program Integration Office, Patient Safety and Quality Workstream Lead; HRO Program Integration Office, Task Integration Lead; Patient Safety Programmatic Support Partnership for Improvement; Analyst, DoD Patient Safety, Clinical Support Division; and Star Cypress Partners (a contractor supporting DHA MHS Review Program Management Office).

The NCR MD staff with whom our team worked during this evaluation included the Director, NCR MD; Interim Chief of Staff/Deputy Director, NCR MD; Director for Clinical Operations, NCR MD; Director, Walter Reed National Military Center; Director; Fort Belvoir Community Hospital; Deputy Director of Quality, Walter Reed National Military Medical Center; Clinical Quality Officer, NCR MD; Management Consultant, Quality Management and Patient Safety, NCR MD; Chief Medical Officer, NCR MD; Chief of Staff, Fort Belvoir Community Hospital; Chief, Department of Quality, Fort Belvoir Community Hospital; Chief of Quality Walter Reed National Military Medical Center; Chief Financial Officer/Comptroller, Fort Belvoir Community Hospital; Assistant Chief of Staff, Walter Reed National Military Medical Center; Director of Administration, Walter Reed National Military Medical Center; Director of Health Care Operations, Fort Belvoir Community Hospital; Quality Analyst, NCR MD; Program Analyst (Civilian Personnel), NCR MD; Human Capital Specialist, NCR MD; Human Resources Program Specialist, NCD MD; and Executive Support Service, NCR MD.

The MEDCOM staff with whom our team worked during this evaluation included the Deputy Chief of Staff, Quality and Safety; Assistant Chief of Staff for Quality and Safety, Regional Health Command- Europe; Deputy Chief, High Reliability Organization Task Force; Director, Clinical Performance Assurance Directorate; Director, Dental Care Delivery; Director, Quality Management Regional Health Command-Central; Chief, Patient Safety Program; Regional Patient Safety Consultant, Regional Health Command- Pacific; Patient Safety, Regional Health Command- Atlantic; Patient Safety, Regional Health Command- Central; MEDCOM Chief Nurse; MEDCOM Program Manager for Infection Prevention and Control; Senior Decision Science Analyst, Clinical Performance Assurance Directorate; Nurse Consultant/TeamSTEPPS Program Manager; Nurse Methods Analyst; and Internal Review and Audit Compliance.

The BUMED staff with whom our team worked during this evaluation included the Deputy Chief Medical Officer; Director of Quality, Safety, Joint Commission, and Risk Management; Director of Manning (M-1); and Chief of Process Improvement.

The AFMOA staff with whom our team worked during this evaluation included the Vice Commander; AFMOA Chief of Staff; AFMOA Director, Medical Services; Chief, Clinical Quality Division; Chief, Patient Safety; Chief, Trusted Care Execution; Chief of Inpatient Clinical Quality; Chief, Infection Prevention and Control; Chief, Budget & Manpower; Chief, Education and Training; Chief, Credentialing and Privileging; Director, Transformation; Director, Medical Services; Deputy Director, Medical Services; Deputy Chief, Patient Safety; Patient Safety Program Manager; Aeromedical Evacuation Patient Safety Program Manager; Inpatient Clinical Quality

Services Manager; Air Force Medical Home Clinical Operations Program Manager; Family Health Provider Consultant; Physician Assistant Consultant; Patient Safety Program Consultant; Patient Safety Data Analyst; and NCOIC, Provision of Outpatient Nursing Care.

We also obtained and analyzed testimonial and documentary evidence from the DHA, NCR MD, MEDCOM, BUMED, and AFMOA to determine our objectives during and after our site visits.

For Finding A, we copied each finding from the patient safety sections of the MHS Review into a spreadsheet and separated the paragraphs into more easily managed components for analysis. (Some findings have multiple components.) We considered a finding not addressed if the documentary evidence did not answer all the issues within the finding.

We analyzed the testimonial and documentary evidence to ensure whether they were sufficient, competent, and relevant to answer our objectives. Then, we coordinated with MHS officials at DHA, NCR MD, MEDCOM, BUMED, and AFMOA for additional detailed information and clarification as we formulated our findings and conclusions.

## Limitations

The MHS Review evaluated access to care, patient safety, and quality of care. However, we limited the scope of this report to the patient safety sections of the MHS Review. In addition, our evaluation did not independently evaluate the reliability and validity of the measures of patient safety or the data associated with them. We also did not evaluate healthcare provisions for the Combatant Commands and deployed operational forces.

## Use of Computer-Processed Data

We used computer-processed data extracted from the MHS Dashboards located on DHA's CarePoint Application Portal and data summarized in presentations that MEDCOM, BUMED, and AFMOA provided to us. Analysis of this computer-processed data served as supporting evidence for performance improvement for Findings B and C in this report.

The quality of the data presented to us directly connected to the quality of the data that MHS staff entered into their internal and external computer systems. We did not independently evaluate the reliability of each file provided (such as formula verification and report output formats) because we lacked access to the source data. Therefore, errors and omissions in the data may affect the results

of Finding C. However, we asked the DHA's Patient Safety Analysis Center (PSAC) officials how they ensured data accuracy. The PSAC officials stated that they validate the data monthly with Service and NCR MD representatives to ensure completeness and accuracy of data in their system. Moreover, we did not base our observations and recommendations solely on information obtained from computer processes or documents; we also used interviews and manual reviews of data records. Thus, we determined that the computer-processed data reasonably met our objective.

In addition, we based Finding D on the data generated from the Deloitte team's patient safety survey reports. The Deloitte team, funded by the DoD Patient Safety Program, used computer-processed data from the MHS's online "Hospital Survey on Patient Safety Culture" to generate their published patient safety survey reports. We did not test their results for accuracy, completeness, or consistency due to lack of access to source data and time constraints. However, since the AHRQ generated the patient safety survey data and the AHRQ is a credible source, we determined that the results reasonably met our objective.

We used other computer-processed data for contextual purposes or as corroborating evidence; therefore, we determined the data was sufficiently reliable for our purposes.

## Prior Coverage

August 2014 Final Report to the Secretary of Defense, Military Health System Review.

On May 28, 2014, the Secretary of Defense directed a comprehensive review of the MHS. Subject matter experts from the Military Departments and DHA conducted the MHS Review with input from outside experts in the areas of access to care, quality of care, and patient safety. The 2014 MHS Review was the first enterprise-view of the MHS that specifically sought to determine whether the MHS had created a culture of safety with effective processes for ensuring safe and reliable care. The MHS Review included 38 findings relevant to patient safety.

## Appendix B

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### MHS Review Group

The Deputy Secretary of Defense led the MHS Review, assisted by the Acting Under Secretary of Defense for Personnel and Readiness and the Assistant Secretary of Defense for Health Affairs, with the direct participation of the Secretaries of the Military Departments, the Service Chiefs, and the Joint Staff. The MHS Review included the individual perspectives of outside experts in the areas of patient safety and quality of care.

The Deputy Secretary of Defense established the Senior Executive Review Committee (SERC). Chaired by the Deputy Secretary of Defense, membership on the SERC included the Acting Under Secretary of Defense for Personnel and Readiness, the Under Secretaries of the Military Departments, the Assistant Secretary of Defense for Health Affairs, the Director of the Joint Staff, the Military Departments' Surgeons General, and the Director of the Defense Health Agency.

In addition to the SERC, the Deputy Secretary of Defense could call upon the Deputy's Executive Committee (DEXCOM), the "TANK", or the Deputy's Management Action Group (DMAG) during the MHS Review. The DEXCOM membership includes the Secretaries of the Military Departments, the Under Secretaries of Defense, and General Counsel. The "TANK" consisted of the Chairman and Vice Chairman of the Joint Chiefs of Staff, along with the Service Chiefs and Chief of the National Guard Bureau. The DMAG included the Secretaries of the Military Departments, Under Secretaries of Defense, Deputy Chief Management Officer, Chiefs of the Military Services, Chief of the National Guard Bureau, Commander of United States Special Operations Command, and Director of Cost Assessment and Program Evaluation.

An Action Group supported the MHS Review. An Office of the Secretary of Defense, Health Affairs action officer chaired this Action Group, which was composed of action officers from each of the Military Departments' medical programs, the Defense Health Agency, the Joint Staff, Service Senior Enlisted personnel, and a representative from the National Guard Bureau.

Similarly, a Senior Action Council supported the Action Group. The Principal Deputy Assistant Secretary of Defense for Health Affairs chaired this Council, which was composed of the Deputy Assistant Secretaries of Defense in the Office of the Assistant Secretary of Defense for Health Affairs, the Deputy Director of the Defense Health Agency, the Deputy Surgeons General, and the Joint Staff Surgeon.

## Appendix C

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### Healthcare-Associated Infection Criteria for Outperforming or Underperforming

The National Health Safety Network program generated two external measures to evaluate relative healthcare-associated infection performance. The first measure is based on the Centers for Disease Control and Prevention (CDC) practice of using the 90th percentile to determine whether a hospital is a high outlier (higher infection rate). The 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' healthcare-associated infection performance is a pooled mean of all respective intensive care unit types to compare relative performance. The analysis attempted to answer three questions:

- How well are intensive care units in participating military treatment facilities performing compared to the civilian sector?
- Are any MTFs outperforming (below the 25th percentile)?
- Are any MTFs underperforming (high outliers > 90th percentile)?

## Appendix D

### MHS Review Findings

Table 2 shows the 38 findings related to patient safety reported in the MHS Review.

Table 2. MHS Review Findings

| Findings as Written in the MHS Review                   |  | Review Page No. |
|---|--|-----------------|
| <b>Findings Related to Governance of Patient Safety</b> |  |                 |
| 1   | There is variance in organizational structure for the governance of patient safety.  | 143             |
| <b>Gaps in Policy: Findings</b>                         |  |                 |
| 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 Findings Regarding the Patient Safety Reporting System later in this table.)                        | 145             |
| 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. | 145             |
| 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.  | 146             |
| 4   | A review of DoDM 6025.13, relative 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.   | 146             |
| <b>Findings Regarding Response to External Reviews</b>  |  |                 |
| 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.   | 147             |
| 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, which is unattainable in any system.  | 147             |

Notes are found on the last page of the table.

Table 2. MHS Review Findings (cont'd)

| Findings as Written in the MHS Review           |   | Review Page No. |
|---|---|-----------------|
| 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.  | 147             |
| 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.   | 147             |
| <b>Gaps in Education and Training: Findings</b> |   |                 |
| 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.  | 148             |
| 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.   | 148             |
| <b>Findings Regarding a Culture of Safety</b>   |   |                 |
| 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. | 153             |
| 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.   | 153             |

Notes are found on the last page of the table.

Table 2. MHS Review Findings (cont'd)

| Findings as Written in the MHS Review               |   | Review Page No. |
|---|---|-----------------|
| <b>Findings Regarding Use of PSI #90 in the MHS</b> |   |                 |
| 1   | Overall, the majority of MTFs perform the same as both the AHRQ reference population and the Centers for Medicare and Medicaid CMS national achievement threshold, with hospitals performing more favorably than medical centers, 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 Centers for Medicare and Medicaid 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, which includes a wider range of ages for patients as opposed to only Medicare eligible fee-for-service patients. | 159             |
| 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.  | 159             |
| 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.  | 159             |
| 4   | Although the DoD is familiar with PSIs, the aggregated PSI #90 composite has not been used by the Services.   | 159             |
| <b>Findings Regarding Use of the NHSN Metrics</b>   |   |                 |
| 1   | For CAUTI: <ul style="list-style-type: none"> <li>• Major Teaching Facilities: The majority of ICUs fell between the 25th and 75th percentiles with one high performer but no underperformers.</li> <li>• ICUs with less &lt;15 beds: The majority were either met or outperformed with two underperformers.</li> </ul>   | 163             |
| 2   | For CLABSI: <ul style="list-style-type: none"> <li>• Major Teaching Facilities: Most ICUs fell within the normal percentile range with one underperformer.</li> <li>• ICUs with less &lt;15 beds: The majority of ICUs fell between the normal percentile range with three each underperformers and outperformers.</li> </ul>   | 164             |
| 3   | For VAP/VAE: <ul style="list-style-type: none"> <li>• Major Teaching Facilities: Most ICUs fell within the normal percentile range with one underperformer.</li> <li>• ICUs with less &lt;15 beds: The majority fell within the normal percentile range with five outperformers and three underperformers.</li> </ul>   | 164             |
| 4   | There is no comprehensive plan to standardize requirements for monitoring device-related infections.  | 164             |

Notes are found on the last page of the table.

Table 2. MHS Review Findings (cont'd)

| Findings as Written in the MHS Review                                     |   | Review Page No. |
|---|---|-----------------|
| <b>Findings Regarding Sentinel Events</b>                                 |   |                 |
| 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.   | 168             |
| 2   | Systematic progress to decrease the overall trend regarding number and type of occurrences within any SE category is not evident.   | 168             |
| <b>Findings Regarding Root Cause Analysis</b>                             |   |                 |
| 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. | 175             |
| <b>Findings Regarding Root Cause Analysis for Performance Improvement</b> |   |                 |
| 1   | In addition to RCA associated with reviewable sentinel events, MTFs exceeded policy DoDM 6025.13 by conducting RCAs for performance improvement purposes in an effort to identify and correct systemic process issues.  | 177             |
| 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.  | 177             |
| <b>Findings Regarding the Patient Safety Reporting System</b>             |   |                 |
| 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.  | 180             |
| 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 Hospital Survey on Patient Safety Culture data, there have been no improvements in the number of staff who have reported at least one event over a 12-month time period.  | 180             |
| 3   | The Patient Safety Reporting System does not provide an accurate indication of the system's harm level or harm rate.  | 180             |

Notes are found on the last page of the table.

Table 2. MHS Review Findings (cont'd)

| Findings as Written in the MHS Review                               |   | Review Page No. |
|---|---|-----------------|
| <b>Gaps and Findings Regarding Patient Safety in Purchased Care</b> |   |                 |
| 1   | 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.  | 185             |
| 2   | 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.  | 186             |
| 3   | In evaluating the individual regions, the West has generally reported higher levels of AHRQ PSIs, HACs, and SREs compared to the other two regions.   | 186             |
| 4   | 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.   | 186             |
| <b>Patient Safety: Overall Findings and Recommendations</b>         |   |                 |
| 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. | 190             |
| 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.   | 190             |
| 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.  | 190             |

Notes are found on the last page of the table.

Table 2. MHS Review Findings (cont'd)

| Findings as Written in the MHS Review |  | Review Page No. |
|---------------------------------------|--|-----------------|
| 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.   | 190             |
| 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. | 190             |

Source: DoD OIG-generated based on information from the MHS Review.

\* Direct Care has more than one central mechanism to capture MHS patient safety events. These include submission of sentinel events to the Office of the Assistant Secretary of Defense for Health Affairs and the Patient Safety Analysis Center, infection patient safety data captured from the National Healthcare Safety Network, and Product Quality Deficiency Reports which capture product failures and patient safety related issues in the MHS to alert others. The Global Trigger Tool will be another way to capture patient safety information in the future.

## Appendix E

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### Not Actionable or Not Relevant Findings

The MHS Review reported 38 findings related to patient safety. We determined that 10 of these findings were either not actionable or not relevant to this evaluation.

### ***Four MHS Review Findings Without Deficiencies or Corrective Actions***

The four MHS Review findings that did not identify specific deficiencies or require corrective actions are:

1. Overall, the majority of MTFs perform the same as both the AHRQ reference population and the Centers for Medicare and Medicaid 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 Centers for Medicare and Medicaid 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. (Review Page Number 159)
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. (Review Page Number 159)
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. (Review Page Number 159)

4. 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. (Review Page Number 190)

### ***Four MHS Review Findings Outside of Scope***

The four MHS Review findings that address purchased care, which is outside the scope of this evaluation, are:

1. 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. (Review Page Number 185)
2. 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. (Review Page Number 186)
3. In evaluating the individual regions, the West has generally reported higher levels of AHRQ PSIs, HACs, and SREs compared to the other two regions. (Review Page Number 186)
4. 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. (Review Page Number 186)

### ***Positive MHS Review Finding***

The positive MHS Review finding that did not require corrective action is:

In addition to RCA associated with reviewable sentinel events, MTFs exceeded policy DoDM 6025.13 by conducting RCAs for performance improvement purposes in an effort to identify and correct systemic process issues.

### ***Duplicate MHS Review Finding***

The duplicate MHS Review finding that required an identical corrective action is:

DoD's SE definition matches that of The Joint Commission, but does not provide sufficient clarity for consistent decision making because of local interpretation.

## Appendix F

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### 88th Medical Group's Removal from PSI #90 Outlier Status

According to the Wright Patterson-88th Medical Group action plan for the PSI #90 Composite (referred to as “the action plan” in this appendix), the 88th Medical Group reviewed the element of PSI #15, which was the main contributor to the PSI #90 Composite. PSI #15 related to patients’ accidental puncture or lacerations and made up 50 percent of the PSI #90 Composite.

The action plan identified at least six types of punctures that the 88th Medical Group incorrectly coded as unintentional punctures (accidental punctures or lacerations). In March 2015, the action plan identified that correct coding of unintentional punctures would likely shift the 88th Medical Group from an outlier to within expected standards. The action plan explained that given delays in coding data, the shift to being within expected standards could take several months.

The action plan reported that AFMOA reviewed the 88th Medical Group’s PSI #15 data and noted a sharp decrease (improvement) from the first quarter of 2015 to the second quarter of 2015.<sup>90</sup> AFMOA decided to continue to monitor the 88th Medical Group’s PSI #15 through the third quarter of 2015. On March 1, 2016, the action plan noted that the 88th Medical Group’s third quarter 2015 PSI data showed improvements and that AFMOA removed the 88th Medical Group from PSI #90 outlier status.

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<sup>90</sup> Improvement is decreasing in score and moving closer to or lower than, the benchmark score.

## Appendix G

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### Patient Safety Indicator #90 (PSI #90)

According to the AHRQ “Quality Indicator User Guide: Patient Safety Indicators (PSI) Composite Measures,” version 4.3, August 2011, (referenced in the MHS Review), PSI #90 is titled “Patient Safety for Selected Indicators Composite.”

In the MHS Review, PSI #90 was defined as an aggregation of patient safety indicators for eight safety problems in the inpatient setting. These indicators included:

- Pressure Ulcer (PSI #03),
- Iatrogenic Pneumothorax (PSI #06),<sup>91</sup>
- Infection due to Medical Care (PSI #07),<sup>92</sup>
- Postoperative Hip Fracture (PSI #08),
- Postoperative Pulmonary Embolism or Deep Vein Thrombosis (PSI #12),
- Postoperative Sepsis (PSI #13),
- Postoperative Wound Dehiscence (PSI #14), and
- Accidental Puncture or Laceration (PSI #15).

The MHS Review explained that for PSI #90, relative performance of the direct care component was assessed by comparing its data to the AHRQ reference population and the three Centers for Medicare and Medicaid Services (CMS) national achievement thresholds 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.

### ***AHRQ Changes to PSI #90 since the MHS Review (Individual PSIs)***

Changes made to PSI #90 between 2014 and 2016 limited DoD’s ability to compare MTFs’ performance based on the version of PSI #90 (version 4.3) used during the MHS Review with MTFs’ performance based on the updated version of PSI #90 (version 6.0).

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<sup>91</sup> Iatrogenic pneumothorax is a condition in which air or gas is present in the pleural cavity as a result of mechanical ventilation, tracheostomy tube placement, or other therapeutic intervention.

<sup>92</sup> According to the AHRQ “Quality Indicator User Guide: Patient Safety Indicators (PSI) Composite Measures,” PSI #07 is titled “Central Venous Catheter-Related Bloodstream Infections.”

AHRQ made several changes to PSI #90.

- Renamed PSI #90 to “Patient Safety and Adverse Events Composite.”
- Deleted PSI #07 and added three additional PSI components:
  - PSI #09 – Perioperative Hemorrhage or Hematoma Rate,
  - PSI #10 – Postoperative Acute Kidney Failure Rate, and
  - PSI #11 – Postoperative Respiratory Failure Rate.
- Redefined the following PSIs:
  - PSI #08 Postoperative Hip Fracture,
  - PSI #12 Postoperative Pulmonary Embolism or Deep Vein Thrombosis, and
  - PSI #15 Accidental Puncture or Laceration.
- Updated the AHRQ reference population (reference population benchmark data not available until mid-2017).
- Incorporated “harm” into weighting the component measure.<sup>93</sup> The updated version of PSI #90 weighted each component based on two concepts: the volume of the adverse events and the harm associated with the adverse event.
- Adjusted the component weights.<sup>94</sup>

Refer to Table 3, Summary of Component Weights in PSI #90, for changes in the individual PSI #90 component weights.

<sup>93</sup> Previous versions of PSI #90 weighted the individual component indicators based on only volume weights (numerator weights), calculated on the number of safety-related events for the component indicators in the reference population. An expert panel then ranked the harms. These rankings, along with information from relevant studies in the literature, were then used to assign a measure of the severity of the adverse effects, associated with each of the harms.

<sup>94</sup> The new weighting scheme, along with addition of indicators and the removal of PSI #07, more equally distributes the component weights compared to earlier versions.

Table 3. Summary of Component Weights in PSI #90

| PSI #90 Component | Component Weight During 2014 MHS Review | Component Weight as of Octobers 2016 | Component Weight Change |
|-------------------|---|--------------------------------------|-------------------------|
| PSI #03           | 0.5295                                  | 0.059841                             | -89%                    |
| PSI #06           | 0.0318                                  | 0.053497                             | +68%                    |
| PSI #07           | 0.0748                                  | N/A                                  | N/A                     |
| PSI #08           | 0.0022                                  | 0.010097                             | +359%                   |
| PSI #09           | 0.0                                     | 0.085335                             | NEWLY ADDED WEIGHT      |
| PSI #10           | 0.0                                     | 0.041015                             | NEWLY ADDED WEIGHT      |
| PSI #11           | 0.0                                     | 0.304936                             | NEWLY ADDED WEIGHT      |
| PSI #12           | 0.1527                                  | 0.208953                             | +37%                    |
| PSI #13           | 0.0309                                  | 0.216046                             | +599%                   |
| PSI #14           | 0.0064                                  | 0.013269                             | +107%                   |
| PSI #15           | 0.1988                                  | 0.007011                             | -96%                    |

Note: According to the Agency for Healthcare Research and Quality, rankings of hospitals may change using the updated version of PSI #90.

Source: DoD IG generated table based on the Quality Indicator User Guide: Patient Safety Indicators (PSI) Composite Measures Version 4.3 and the PSI 90 Fact Sheet, Agency for Healthcare Research and Quality (AHRQ) Quality Indicators (QIs) Fact Sheet: Patient Safety and Adverse Events Composite (Modified Version PSI 90) For ICD-9 CM/PCS, V6.0 (FY2016), Updated 10-15-16.

### ***AHRQ Changes to PSI #90 since the MHS Review (Benchmark Data)***

The Department of Health and Human Services required the MHS to transition from ICD version 9 to ICD version 10 by October 1, 2015, using the following:

- ICD-10-CM for healthcare encounter diagnoses, conditions, factors and causes of injury and
- ICD-10-PCS for discharge inpatient institutional procedure data collection.

The AHRQ transitioned PSI #90 component measures from version 5.0 to version 6.0, but had not yet computed PSI #90, version 6.0, which factored in all of the ICD-10 changes.

Thus, AHRQ did not have benchmark data for PSI #90, version 6, ICD-10 and its component measures. In addition, AHRQ required one full year of data coded in ICD-10 to develop reference population benchmark data to provide DoD a means to measure performance. AHRQ reported that this data would be available mid-2017.

## Appendix H

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### Healthcare-Associated Infection Definitions

In 2014, the Centers for Disease Control and Prevention's (CDC) National Healthcare Safety Network defined healthcare-associated infection as "a localized or systemic condition resulting from an adverse reaction to the presence of an infectious agent(s) or its toxin(s) that was not present on admission to the acute care facility."

#### ***Central Line-Associated Bloodstream Infection***

A central line is a catheter (tube) that doctors often place in a large vein in the neck, chest, or groin to give medication or fluids or to collect blood for medical tests. Central lines can remain in place for weeks or months and be much more likely to cause serious infection. Intensive care units (ICUs) commonly use central lines.

A central line-associated bloodstream infection is a serious infection that occurs when germs (usually bacteria or viruses) enter the bloodstream through the central line. Healthcare providers must follow a strict protocol when inserting the line to make sure the line remains sterile and a central line-associated bloodstream infection does not occur. In addition to inserting the central line properly, healthcare providers must use stringent infection control practices each time they check the line or change the dressing.

In 2014, the CDC National Healthcare Safety Network defined central line-associated bloodstream infection as a laboratory-confirmed bloodstream infection that developed where a central line or umbilical catheter was in place for more than 2 days on the date of the event and the central line or umbilical catheter was in place on the date of the event or the day before the event.<sup>95</sup>

#### ***Catheter-Associated Urinary Tract Infection***

An indwelling urinary catheter is a drainage tube that is inserted into the urinary bladder through the urethra, is left in place, and is connected to a closed collection system. Intermittent ("in-and-out") catheterization involves brief insertion of a catheter into the bladder through the urethra to drain urine at intervals. An external catheter is a urine containment device that fits over or adheres to the genitalia and is attached to a urinary drainage bag.

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<sup>95</sup> "Day One" is considered the day the central line or umbilical catheter was first placed or inserted.

A catheter-associated urinary tract infection (CAUTI) occurs when germs (usually bacteria) enter the urinary tract through the urinary catheter and cause infection. CAUTIs have been associated with increased morbidity, mortality, healthcare costs, and length of stay.

In 2014, the CDC National Healthcare Safety Network defined CAUTI as a urinary tract infection that developed where an indwelling urinary catheter was in place for more than two days on the date of event and the indwelling urinary catheter was in place on the date of event or the day before the event.

### ***Ventilator-Associated Pneumonia***

A ventilator is a machine that helps a patient breathe by giving oxygen through a tube placed in a patient's mouth or nose, or through a hole in the front of the neck. Ventilator-associated pneumonia is a lung infection that occurs if germs enter through the tube and get into the patient's lungs.

Prior to 2014, the CDC National Healthcare Safety Network defined ventilator-associated pneumonia as a pneumonia where the patient is on mechanical ventilation for more than 2 days on the date of event and the ventilator was in place on the date of event or the day before the event.

### ***Ventilator-Associated Event***

Ventilator-associated events can occur in patients receiving mechanical ventilation, which can lead to longer duration of mechanical ventilation, longer stays in intensive care units, and increased risk of death and disability.

## Appendix I

### Sentinel Event Alert #48

We have reproduced the entire Joint Commission Sentinel Event Alert #48 below.

The Joint Commission  
**Sentinel Event  
Alert**

A complimentary publication of  
The Joint Commission

Issue 48, December 14, 2011

**Published for Joint Commission accredited organizations and interested health care professionals, *Sentinel Event Alert* identifies specific types of sentinel events, describes their common underlying causes, and suggests steps to prevent occurrences in the future.**

**Accredited organizations should consider information in an Alert when designing or redesigning relevant processes and consider implementing relevant suggestions contained in the Alert or reasonable alternatives.**

**Please route this issue to appropriate staff within your organization. *Sentinel Event Alert* may only be reproduced in its entirety and credited to The Joint Commission. To receive by e-mail, or to view past issues, visit [www.jointcommission.org](http://www.jointcommission.org).**

**Health care worker fatigue and patient safety**

The link between health care worker fatigue and adverse events is well documented, with a substantial number of studies indicating that the practice of extended work hours contributes to high levels of worker fatigue and reduced productivity. These studies and others show that fatigue increases the risk of adverse events, compromises patient safety, and increases risk to personal safety and well-being.<sup>1,2,3,4,5</sup> While it is acknowledged that many factors contribute to fatigue, including but not limited to insufficient staffing and excessive workloads, the purpose of this *Sentinel Event Alert* is to address the effects and risks of an extended work day and of cumulative days of extended work hours.

**The impact of fatigue**

Fatigue resulting from an inadequate amount of sleep or insufficient quality of sleep over an extended period can lead to a number of problems, including:

- lapses in attention and inability to stay focused
- reduced motivation
- compromised problem solving
- confusion
- irritability
- memory lapses
- impaired communication
- slowed or faulty information processing and judgment
- diminished reaction time
- indifference and loss of empathy<sup>6</sup>

**Contributing factors to fatigue and risks to patients**

Shift length and work schedules have a significant effect on health care providers' quantity and quality of sleep and, consequently, on their job performance, as well as on the safety of their patients and their individual safety. This fact has been borne out in numerous studies. Findings from a groundbreaking 2004 study of 393 nurses over more than 5,300 shifts – the first in a series of studies of nurse fatigue and patient safety – showed that nurses who work shifts of 12.5 hours or longer are three times more likely to make an error in patient care.<sup>7</sup> Additional studies show that longer shift length increased the risk of errors and close calls and were associated with decreased vigilance,<sup>7</sup> and that nurses suffer higher rates of occupational injury when working shifts in excess of 12 hours.<sup>8</sup> Still, while the dangers of extended work hours (more than 12 hours) are well known, the health care industry has been slow to adopt changes, particularly with regard to nursing.

**“An overwhelming number of studies keep saying the same thing – once you pass a certain point, the risk of mistakes increases significantly,”** says Ann Rogers, Ph.D., R.N., FAAN, a nationally renowned sleep medicine expert with Emory University's Nell Hodgson Woodruff School of Nursing. **“We have been slow to accept that we have physical limits and biologically we are not built to do the things we are trying to do.”**



[www.jointcommission.org](http://www.jointcommission.org)

## Sentinel Event Alert #48 (cont'd)

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Resident physician duty hours have also been the focus of many studies. While the Accreditation Council for Graduate Medical Education (ACGME) implemented duty hour restrictions in July 2003 limiting work shifts to a maximum of 30 hours and no more than 80 hours of work per week, numerous subsequent studies indicate that risks to patient safety and personal injury remain high for resident physicians working recurrent 24-hour shifts.<sup>9,10</sup> In September 2010, ACGME published the final version of new standards, which became effective in July 2011 ([www.acgme-2010standards.org](http://www.acgme-2010standards.org)).

An article in the November 2007 *Joint Commission Journal on Quality and Patient Safety* concludes that evidence strongly suggests that extended duration work shifts significantly increase fatigue and impair performance and safety.<sup>11</sup> The article reports that residents who work traditional schedules with recurrent 24-hour shifts:

- Make 36 percent more serious preventable adverse events than individuals who work no more than 16 consecutive hours.<sup>12</sup>
- Make five times as many serious diagnostic errors.<sup>12</sup>
- Have twice as many on-the-job attentional failures at night<sup>13</sup>
- Experience 61 percent more needlestick and other sharp injuries after their 20<sup>th</sup> consecutive hour of work<sup>14</sup>
- Experience a 1.5 to 2 standard deviation deterioration in performance relative to baseline rested performance on both clinical and non-clinical tasks<sup>15</sup>
- Report making 300 percent more fatigue-related preventable adverse events that led to a patient's death<sup>16</sup>

A subsequent 2009 study also reveals an increased rate of complications among post-nighttime surgical procedures performed by attending physicians who had slept less than six hours.<sup>17</sup>

"We have a culture of working long hours, and the impact of fatigue has not been a part of our consciousness," says Christopher P. Landrigan, M.D., M.P.H., director of the Sleep and Patient Safety Program, Brigham and Women's Hospital. The author of several research studies exploring the effects of provider sleep deprivation on patient and provider safety, Dr. Landrigan stresses the importance of reduced work hours for all health care workers, and the need for widespread education of health care providers to recognize their limits. "Most are unaware of sleep and

circadian biology and the degree that it affects performance. And, most do not realize how much research supports the need to make changes."<sup>18,19</sup>

### **Actions suggested by The Joint Commission**

There are some evidence-based actions that health care organizations can take to help mitigate the risks of fatigue that result from extended work hours – and, therefore, protect patients from preventable adverse outcomes.

#### **For all organizations:**

1. Assess your organization for fatigue-related risks. This includes an assessment of off-shift hours and consecutive shift work, and a review of staffing and other relevant policies to ensure they address extended work shifts and hours.
2. Since patient hand-offs are a time of high-risk – especially for fatigued staff – assess your organization's hand-off processes and procedures to ensure that they adequately protect patients.<sup>20</sup>
3. Invite staff input into designing work schedules to minimize the potential for fatigue.
4. Create and implement a fatigue management plan that includes scientific strategies for fighting fatigue. These strategies can include: engaging in conversations with others (not just listening and nodding); doing something that involves physical action (even if it is just stretching); strategic caffeine consumption (don't use caffeine when you're already alert and avoid caffeine near bedtime); taking short naps (less than 45 minutes).<sup>21,22</sup> These strategies are derived from studies conducted by the National Aeronautics and Space Administration (NASA), which state that people can maximize their success by trying different combinations of countermeasures to find what works for them. The NASA studies stress that the only way to counteract the severe consequences of sleepiness is to sleep.<sup>21</sup> Strategies for determining shift durations and using caffeine to combat fatigue can be found in chapter 40 of "Patient Safety and Quality: An Evidence-Based Handbook for Nurses."<sup>23</sup>
5. Educate staff about sleep hygiene and the effects of fatigue on patient safety. Sleep hygiene includes getting enough sleep and taking naps, practicing good sleep habits (for example, engaging in a relaxing pre-sleep routine, such as yoga or reading), and avoiding food, alcohol or stimulants (such as caffeine) that can impact sleep.<sup>21,22</sup>

#### **Safety culture (for all organizations):**

6. Provide opportunities for staff to express concerns about fatigue. Support staff when

## Sentinel Event Alert #48 (cont'd)

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- appropriate concerns about fatigue are raised and take action to address those concerns.
7. Encourage teamwork as a strategy to support staff who work extended work shifts or hours and to protect patients from potential harm.<sup>20</sup> For example, use a system of independent second checks for critical tasks or complex patients.
  8. Consider fatigue as a potentially contributing factor when reviewing all adverse events.

**For organizations with a current policy that allows for sleep breaks for staff defined as essential by the organization:**

9. Assess the environment provided for sleep breaks to ensure that it fully protects sleep. Fully protecting sleep requires the provision of basic measures to ensure good quality sleep, including providing uninterrupted coverage of all responsibilities (including carrying pagers and phones, and coverage of both admissions and all continuing care by another provider), and providing a cool, dark, quiet, comfortable room, and, if necessary, use of eye mask and ear plugs.

**See relevant Joint Commission requirements:**

LD.01.03.01 element of performance 5,  
LD.03.06.01 EP 3, LD.04.01.01 EP 2, LD.04.04.05  
EP 13, PI.02.01.01 EPs 12-14, (hospital and long  
term care); NR.02.01.01 EP 1-6, NR.02.02.01  
EP 1-4, (hospital)

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**Patient Safety Advisory Group**

The Patient Safety Advisory Group informs The Joint Commission on patient safety issues and, with other

sources, advises on topics and content for *Sentinel Event Alert*. Members: James P. Bagian, M.D., P.E. (chair); Michael Cohen, R.Ph., M.S., Sc.D. (vice chair); Jane H. Barnsteiner, R.N., Ph.D., FAAN; Jim B. Battles, Ph.D.; William H. Beeson, M.D.; Patrick J. Brennan, M.D.; Martin H. Diamond, FACHE; Cindy Dougherty, R.N., CPHQ; Frank Federico, B.S., R.Ph.; Steven S. Fountain, M.D.; Suzanne Graham, R.N., Ph.D.; Jerril W. Green, M.D.; Peter Gross, M.D.; Carol Haraden, Ph.D.; Martin J. Hatlie, Esq.; Jennifer Jackson, B.S.N., J.D.; Paul Kelley, CBET; Henri R. Manasse, Jr., Ph.D., Sc.D.; Jane McCaffrey, MHSA, DFASHRM; Mark W. Milner, R.N., MBA, CPHQ, FACHE; Jeanine Arden Ornt, J.D.; Grena Porto, R.N., M.S., ARM, CPHRM; Matthew Scanlon, M.D.; Carl A. Sirio, M.D.; Ronni P. Solomon, J.D.; Dana Swenson, P.E., MBA; Susan M. West, R.N.

# Management Comments

## Under Secretary of Defense for Personnel and Readiness



PERSONNEL AND  
READINESS

OFFICE OF THE UNDER SECRETARY OF DEFENSE  
4000 DEFENSE PENTAGON  
WASHINGTON, D.C. 20301-4000

OCT 24 2017

MEMORANDUM FOR INSPECTOR GENERAL OF THE DEPARTMENT OF DEFENSE

SUBJECT: Management Comments in Response to the Draft Evaluation of Patient Safety Elements of the Department of Defense Response to the Military Health System Review

Thank you for the opportunity to provide management comments on the recommendations in the draft final report, "Evaluation of Patient Safety Elements of DoD's Response to the Military Health System Review," Project No. D2017-D00SPO-0009.000. We appreciate the in-depth review and findings related to the progress of the Department of Defense (DoD). Attached are the management comments on the three items assigned to the Performing the Duties of the Under Secretary of Defense for Personnel and Readiness and the Director, Defense Health Agency. We are in agreement with the recommendations presented in the report specific to recommendations A, D.1, D.2. With respect to recommendation D.1, we recommend clarification of results discussed as being "Practically" or "Statistically" significant. We concur that a plan to identify and improve upon Military Health System-wide, actionable causal factors related to low Staffing scores is necessary. The Patient Safety Program office is executing work or developing plans in the identified areas to address the concerns presented in the report. In addition, once all Patient Safety Action Plans are completed, we will provide you with the documentation to satisfy those items.

We sincerely thank the Inspector General of the DoD team members for an insightful report and steadfast commitment to protecting the health and wellness of our Service members, civilian workforce, and beneficiaries.

A handwritten signature in blue ink that reads "A. M. Kurta".

A. M. Kurta  
Performing the Duties of the Under Secretary of  
Defense for Personnel and Readiness

Attachment:  
As stated

## Under Secretary of Defense for Personnel and Readiness (cont'd)

### ATTACHMENT 1

DEPARTMENT OF DEFENSE OFFICE OF THE INSPECTOR GENERAL  
DRAFT REPORT – DATE XXXX 2017  
Project No. D2017-D00SPO-0009.000  
“Evaluation of Patient Safety Elements of DoD’s Response to the Military Health System Review”

#### Recommendations, Management Comments, and Our Response

##### **Recommendation A**

We recommend that the Under Secretary of Defense for Personnel and Readiness notify the Department of Defense Office of Inspector General when all actions in the MHS Review Action Plans regarding Patient Safety are implemented.

##### *Department of Defense (DoD) Management Comments*

The Defense Health Agency (DHA) Patient Safety Program (PSP), responding for the Director, DHA, agrees with the recommendation. As of September 2017, the DHA PSP successfully closed and implemented 35 milestones across eight Military Health System (MHS) Review Action Plans related to Patient Safety (PS). Although complete, many of these action items require sustainment of closure activities to ensure advancements are maintained and continuous progress made. In support of this sustainment, the High Reliability Organization Program Integration Office team is creating Capstone Narratives for each of the MHS Review Action Plans, beginning with those fully implemented, to transition tracking and ongoing management activities from the Medical Operations Group to the appropriate functional area.

For the remaining 19 “in progress” milestones, PSP continues to make progress towards full closure and implementation, meeting at regular interval Governance meetings and coordinating with the appropriate functional bodies. As full Action Plans are closed through their respective suspense, the PSP will inform the DoD Inspector General (IG) of this progress.

##### **Recommendation D.1**

We recommend that the Director, Defense Health Agency:

- Determine the actionable root causes of the area of Staffing in the “Hospital Survey on Patient Safety Culture”
- Take appropriate actions to improve those factors that pose a risk to patient safety.

##### *DoD Management Comments*

The DHA PSP, responding for the Director, DHA, agrees with the recommendation but recommends clarification in the presentation of Findings in Section D. The justification is as follows:

- Agency for Healthcare Research and Quality considers a minimum of five percentage points difference in Culture Survey scores as “practically significant.” Smaller differences can be shown to be “statistically significant” although of little practical meaning. The word “significant” when used alone typically refers to statistical significance. We suggest adding to the report that differences less than the 5-point criterion are of limited meaning, and

## Under Secretary of Defense for Personnel and Readiness (cont'd)

### ATTACHMENT 1

using the rationale explained above, clarifying if the results discussed are “practically” or “statistically” significant.

- The DoD PSP acknowledges that evolving a safety culture MHS-wide is a long-term journey that necessitates a continuous improvement approach including ongoing culture assessments and improvement actions based on data, lessons learned, and emerging safety science knowledge. We concur that MHS leadership could potentially further improve patient safety by methodically investigating the causes of the persistent gaps the Staffing dimension of safety culture. On behalf of the DHA, the PSP will develop a plan with input and support of the Component Commands to systematically identify MHS-wide (direct care system) actionable causal factors underlying the low Staffing dimension scores and to design, implement, and evaluate improvement strategies. The plan will include: 1) review of evidence and data related to staffing-related patient safety risks and to measurement tools and techniques; 2) baseline assessment aimed at identifying the causal factors; 3) design of evidence-based improvement strategies; 4) plans for implementation, impact evaluation, sustainment and ongoing improvement; 5) change management principles and techniques; and 6) identification of additional resource requirements. Since safety culture is a very local phenomenon, the methods and measures will be applied at the local level.
- We expect to have a draft plan for review and comment within 12 months.

#### ***Recommendation D.2***

**We recommend that the Under Secretary of Defense for Personnel and Readiness establish and implement specific Department of Defense policy on fatigue risk management for Military Health System staff.**

#### *DoD Management Comments*

The DHA PSP, responding for the Director, DHA, agrees with the overall intent of the recommendation. There is a wealth of information on the impact of fatigue on performance in the aviation community as well as healthcare. We agree that fatigue is a concern for performance and we will develop guidance to outline fatigue reduction strategies commanders can use in both garrison and operational medicine to reduce the impact of fatigue. We must also recognize that in military operations, policy that is too prescriptive, outlining maximum safe work hours, could have a significant negative effect on casualty care.

To inform a plan for developing and implementing a DoD policy on fatigue risk management for the MHS, in coordination with Health Affairs (HA), the PSP, acting on behalf of the DHA, will perform a systematic assessment of available enterprise-wide and MHS-specific factors that influence both healthcare workforce fatigue risk and resiliency. This assessment will inform policy planning to include targeted, evidence-based resources for training and education on strategies to mitigate healthcare workforce fatigue and improve healthcare workforce resiliency. Specific steps in the development of this plan will include:

- review of available evidence on healthcare workforce fatigue;
- baseline assessment of MHS risks for fatigue including strengths and weaknesses;

## Under Secretary of Defense for Personnel and Readiness (cont'd)

### ATTACHMENT 1

- design of materials for training and education to raise awareness and outline MHS-specific mitigation strategies for healthcare workforce fatigue;
- policy development and implementation in coordination with HA;
- plans for evaluation, sustainment and ongoing improvement, and;
- identification of additional required resources.

We expect to have a draft policy for review and comment within 12 months of DoD IG formal report issuance and will update the IG of progress made.

## The U.S. Army Medical Command and Office of the Surgeon General



DEPARTMENT OF THE ARMY  
OFFICE OF THE SURGEON GENERAL  
7700 ARLINGTON BOULEVARD  
FALLS CHURCH, VA 22042-5140

15 SEP 2017

MCIR

MEMORANDUM FOR Department of Defense Inspector General, Special Plans and Operations, ATTN: [REDACTED] 4800 Mark Center Drive, Alexandria, VA 22350-1500

SUBJECT: Reply to DODIG Draft Report, Evaluation of Patient Safety Elements of DOD's Response to the Military Health System Review (Project No. D2017-D00SPO-0009.000)

1. Thank for you the opportunity to review this report.
2. Based on discussion between DoDIG, DHA and Service representatives, we noted recommendation D.1 was withdrawn and no longer requires a response or comments. However, our comments on recommendation B.1 are enclosed for your consideration.
3. Our point of contact is [REDACTED] Internal Review and Audit Compliance Office, [REDACTED] or email: [REDACTED].

FOR THE SURGEON GENERAL:



ROBERT L. GOODMAN  
Chief of Staff

Encl

## The U.S. Army Medical Command and Office of the Surgeon General (cont'd)

**U.S. Army Medical Command (MEDCOM) and  
Office of The Surgeon General (OTSG)**

**Comments on DODIG Draft Report  
Evaluation of Patient Safety Elements of  
DOD's Response to the Military Health System Review  
(Project No. D2017-D00SPO-0009.000)**

**RECOMMENDATION B.1:** DODIG recommends Commander, U.S. Army Medical Command:

- Evaluate Madigan Army Medical Center's Patient Safety Indicator #90 performance after the new Patient Safety Indicator #90 measures and benchmarks are available to determine if the facility is outperforming, performing the same as, or underperforming compared to other healthcare facilities, and
- Take appropriate action to correct all identified deficiencies.

**RESPONSE:** Concur. Upon release of the new PSI 90 measures by the Agency for Healthcare Research and Quality, MEDCOM will use site assistance visits and other means to evaluate Madigan Army Medical Center performance against the new measures and correct deficiencies, if applicable.

Encl

## The Air Force Medical Operations Agency



DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS UNITED STATES AIR FORCE  
WASHINGTON DC



25 September 2017

MEMORANDUM FOR DOD OFFICE OF THE INSPECTOR GENERAL  
ATTENTION: MR. GREG READY

FROM: AF/SG

SUBJECT: DoD IG Draft, *Patient Safety Elements of DoD's Response to the Military Health System Review*

Thank you for allowing the Air Force Medical Service (AFMS) to review the DoD IG Draft, *Patient Safety elements of DoD's Response to the Military Health System Review*. Per your request, the AFMS response to Recommendation B2 is attached.

The AF/SG point of contact is [REDACTED]  
or via email at [REDACTED].

MARK A. EDIGER  
Lieutenant General, USAF, MC, CFS  
Surgeon General

Attachment:  
AFMS Response to DoD IG Draft Report, Recommendation B2

**BREAKING BARRIERS...SINCE 1947**

## The Air Force Medical Operations Agency (cont'd)

**DoD IG Recommendation: B2**

- We recommend that the Commander, Air Force Medical Operations Agency (AFMOA):
- evaluate the 88th Medical Group's Patient Safety Indicator #90 performance after the new Patient Safety Indicator #90 measures and benchmarks are available to determine if the facility is outperforming, performing the same as, or underperforming compared to other healthcare facilities, and
  - take appropriate action to correct all identified deficiencies.

**AFMS Response:**

**1. Agree**

AFMOA will monitor the 88th MDG's and all of our inpatient military treatment facilities (MTF) performance against Agency for Healthcare Research and Quality (AHRQ) benchmarked, risk adjusted data sets when they become available in 2018.

While we are currently only able to assess 'observed' data at this time, AFMOA quality and patient safety analytics continue to monitor individual AHRQ Patient Safety Indicator (PSI) components for data shifts and trends. Once the AHRQ publishes new risk adjusted data requirements and benchmarks, then we will incorporate these into our performance analysis of the 88th Medical Group (MDG) as well as all other inpatient MTFs.

AHRQ metric data is published on a quarterly basis via the MHS dashboard which is accessible to AFMOA and Medical Treatment Facility (MTF) subject matter experts (SME). Data accountability for the MTFs is tracked via two venues; the Performance Management Cell and the Performance Management Group. These venues enable AFMOA to conduct sustained tracking and analysis of performance across the Air Force Medical Service. The AHRQ PSI #90 metric set is routinely discussed at the AFMOA level during the weekly Performance Management Cell (PMC) and with the MTFs during the quarterly Performance Management Groups (PMG). Analysis and SME discussion for improvement/way forward are presented to the MTFs during these PMGs. If any negative change occurs (i.e. increased # of events reported), then the MTF is directed to conduct a deep dive with chart abstraction to identify and mitigate (and ensure that it is appropriately investigated through the MTF quality office) any preventable harm that may have occurred, and/or work to correct any coding/data discrepancies. We will require plans of action for negative outliers and we will continue to work diligently with the MTFs to actively correct any deficiencies as we drive the AFMS to Zero Harm in accordance with Trusted Care tenets.

**Corrective actions planned or taken:**

We continue to monitor the AHRQ PSI component metric data at all inpatient MTFs and provide continuous feedback on their performance.

**Planned Date of Completion:** Pending AHRQ release of benchmark data in 2018

## Acronyms and Abbreviations

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|                     |  |
|---------------------|--|
| <b>AFMOA</b>        | Air Force Medical Operations Agency                    |
| <b>AHRQ</b>         | Agency for Healthcare Research and Quality             |
| <b>BUMED</b>        | Navy Bureau of Medicine and Surgery                    |
| <b>CAUTI</b>        | catheter-associated urinary tract infection            |
| <b>CDC</b>          | Centers for Disease Control and Prevention             |
| <b>CLABSI</b>       | central line-associated bloodstream infection          |
| <b>DHA</b>          | Defense Health Agency                                  |
| <b>ICD</b>          | International Classification of Diseases               |
| <b>ICU</b>          | intensive care unit                                    |
| <b>MAMC</b>         | Madigan Army Medical Center                            |
| <b>MEDCOM</b>       | U.S. Army Medical Command                              |
| <b>MHS</b>          | Military Health System                                 |
| <b>MQA</b>          | Medical Quality Assurance                              |
| <b>MTF</b>          | Military Treatment Facility                            |
| <b>NCR MD</b>       | National Capital Region Medical Directorate            |
| <b>NDAA</b>         | National Defense Authorization Act                     |
| <b>NHSN</b>         | National Healthcare Safety Network                     |
| <b>P4I</b>          | Partnership for Improvement                            |
| <b>PSAC</b>         | Patient Safety Analysis Center                         |
| <b>PSI</b>          | Patient Safety Indicator                               |
| <b>RCA</b>          | Root Cause Analysis                                    |
| <b>SecDef</b>       | Secretary of Defense                                   |
| <b>URFO</b>         | unintended retained foreign object                     |
| <b>USD(P&amp;R)</b> | Under Secretary of Defense for Personnel and Readiness |
| <b>VAE</b>          | ventilator-associated event                            |
| <b>VAP</b>          | ventilator-associated pneumonia                        |



# **Whistleblower Protection**

## **U.S. DEPARTMENT OF DEFENSE**

*The Whistleblower Protection Ombudsman's role is to educate agency employees about prohibitions on retaliation and employees' rights and remedies available for reprisal. The DoD Hotline Director is the designated ombudsman. For more information, please visit the Whistleblower webpage at [www.dodig.mil/Components/Administrative-Investigations/DoD-Hotline/](http://www.dodig.mil/Components/Administrative-Investigations/DoD-Hotline/).*

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