

APPENDIX 6. RECOMMENDATIONS AND COMMENTS

Appendix 6.1

Compiled Recommendations and Proposed Action Items and Associated Timelines

Compiled Recommendations

Overarching Recommendations

- I. The MHS should identify the cause of variance for MTFs that are outliers for one or more measures and, when due to poor performance, develop corrective action plans to bring those MTFs within compliance.
- II. The Military Health System (MHS) should develop a performance management system adopting a core set of metrics regarding access, quality, and patient safety; further develop MHS dashboards with systemwide performance measures; and conduct regular, formal performance reviews of the entire MHS, with the Defense Health Agency (DHA) monitoring performance and supporting MHS governance bodies in those reviews.
- III. The MHS should develop an enterprise-wide quality and patient safety data analytics infrastructure, to include health information technology systems, data management tools, and appropriately trained personnel. There should be clear collaboration between the DHA's analytic capabilities, which monitor the MHS overall, and the Service-level analytic assets.
- IV. The MHS should emphasize transparency of information, including both the direct and purchased care components, with visibility internally, externally, and to Department of Defense (DoD) beneficiaries. Greater alignment of measures for the purchased care component with those of the direct care component should be incorporated in TRICARE regional contracts.
- V. Through MHS governance, policy guidance can be developed to provide the Services with common executable goals. While respecting the Services' individual cultures, this effort would advance an understanding of the culture of safety and patient-centered care across the MHS.
- VI. The MHS should continue to develop common standards and processes designed to improve outcomes across the enterprise in the areas of access, quality, and patient safety where this will improve quality, or deliver the same level of quality at decreased cost (i.e., better value).

Access to Care

1. MHS governance should increase the focus on the standardization of specialty care for the direct care component through the following: a) create the Tri-Service

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

Quality of Care

8. It is clear that the MHS is dedicated to quality health care and performance improvement. In several areas, the MHS outperforms or is equal to national benchmarks. Other areas were identified for focused improvement in performance and to reduce variation in performance. It will be necessary to refocus the organization's quality culture for more rapid and continued improvement in quality of care. The MHS Review Group recommends that MHS governance research and implement health care industry best practices of a high reliability organization to revitalize and sustain the needed cultural changes throughout the MHS.
9. While comparison to national benchmarks is helpful, because of the variances inherent among health care systems, direct comparison between the MHS and civilian health systems proved challenging, with limitations in the comparative portion of the analysis. The MHS Review Group recommends that the MHS continue building relationships with civilian health systems to participate in collaboration and data sharing in order to facilitate more complete comparisons.

10. Under-developed MHS-level enterprise processes currently limit data standardization, collection, and analysis to drive system-wide improvement (e.g., governance, standard business and clinical processes, shared services). Variation exists in the use of existing data to identify and prioritize objectives. The MHS Review Group recommends that the MHS develop and implement a performance management system that links to MHS and Service strategies with MHS dashboards and common system-wide performance measures to support visibility of those measures across the enterprise. The MHS should also create and use a MHS data analytics capability to provide analysis and actionable information to the Services and DHA.
11. DOD quality policy (DODI/DoDM 6025.13) lacks specificity with regard to quality measurement and performance improvement. The MHS should update or supplement DoDI and DoDM 6025.13 with specific guidance on quality measurement, performance improvement, and requirements necessary for assessing and improving quality education and training.
12. While there is a significant amount of quality training occurring in the Services, there is no clearly prescribed quality-specific training and education by MHS policy. The DHA Education and Training Directorate should conduct a more in-depth review and needs assessment of quality training to adequately assess the efficacy of training being accomplished.
13. There are gaps in the enterprise processes to validate Service compliance with policies and directives disseminated from ASD(HA). The MHS Review team recommends ASD (HA) develop and implement a process to manage and track compliance of Services and DHA with applicable DoD policies and directives.
14. The Assistant Secretary for Health Affairs ASD(HA) and DHA should develop policy guidance in support of DoDI and DoDM 6025.13 with specific direction on quality measurement, performance improvement, and requirements for education and training.
15. ASD (HA) should develop policy guidance to manage and track compliance of the Services and DHA with applicable DoD policies and directives.
16. The DHA Education and Training Directorate should conduct an in-depth review and needs assessment of quality training to adequately assess the efficacy of training.
17. DHA should integrate requirements for purchased care clinical quality data on TRICARE beneficiaries into the TRICARE Operations Manual and future TRICARE regional contracts.
18. MHS governance should determine the requirements to guide the development and implementation of a quality expert career path.

19. MHS governance should establish a mechanism to aggregate and communicate accreditation findings across the MHS.
20. MHS governance should evaluate the value of adding additional fellowship opportunities with The Joint Commission (TJC) or other nationally recognized programs, and the Services should explore optimizing and standardizing Service fellow utilization by aligning training with follow-on assignment after fellowship completion.
21. DHA Health Plans should give purchased care contractors the authority to use supplemental databases to improve the capture of clinical information for purchased care enrollees.
22. DHA Health Plans should evaluate alternative methods of incentivizing contractors and/or providers to improve the provision of clinical preventive services and Healthcare Effectiveness Data and Information Set (HEDIS[®]) performance. This may require statutory or regulatory changes, since new, innovative payment mechanisms may have to be developed to encourage compliance.
23. MHS governance should assess the value of expanding the number of HEDIS[®] measures monitored to evaluate care provided to enrolled beneficiaries.
24. MHS governance should establish policy to guide processes for verification of clinical data and capture in AHLTA (DoD Outpatient Electronic Health Record) regarding preventive services that are obtained outside of the direct care component.
25. DHA should develop plans to improve Other Health Insurance documentation in Defense Enrollment Eligibility Reporting System (DEERS) for all beneficiaries to ensure those with Other Health Insurance are not included in HEDIS[®] calculations.
26. MHS governance should develop a strategy for military treatment facilities (MTFs) to maximize the use of “action lists” generated by the MHS Population Health Portal to ensure beneficiaries receive clinical preventive services in a timely manner.
27. MHS governance should implement provider level Prevention Quality Indicators (PQI) education followed by an evaluation of MTF utilization of Agency for Healthcare Quality and Research PQI measures and implementation of a monitoring program requiring improvement plans as indicated.
28. MHS governance should establish an implementation plan for the MHS Population Health Portal readmissions site to ensure maximum utilization so as to reduce avoidable readmissions.

29. The DHA Healthcare Operations Directorate should complete transition to the HEDIS[®] All-Cause Readmission standardized measure, which is risk-adjusted and has national benchmarks.
30. DHA Health Information Technology should prioritize electronic health record upgrades by aligning needed data elements into Essentris[®] (the inpatient electronic health record). All inpatient MTFs should have the capability to remotely access health records to facilitate expeditious and timely data extraction for clinical measure calculation.
31. MHS governance should establish goals and processes for increasing the number of MTFs achieving The Joint Commission Top Performer status annually.
32. MHS governance should explore expanding National Surgical Quality Improvement Program (NSQIP[®]) participation to all remaining direct care inpatient facilities performing surgery. In addition, it should ensure ambulatory surgery platforms all participate in a similar surgical quality improvement program.
33. The DHA Healthcare Operations Directorate should partner with the American College of Surgeons NSQIP[®] staff to improve MTF collaboration and the sharing of best practices of top performing facilities, thereby decreasing overall direct care surgical morbidity and improving clinical outcomes.
34. MHS governance should task the NSQIP[®] working group to assess surgical morbidity shortfalls to the Medical Operations Group for Tri-Service/DHA engagement, collaborative support, and facility action.
35. The Perinatal Advisory Group should conduct a comprehensive review of clinical practices related to metrics where MHS is underperforming. Through a dashboard and standardized metric reporting requirements, intervention plans should be developed and actions prioritized.
36. Health Affairs policy is needed to standardize annual and interval training requirements related to perinatal team care.
37. MHS governance should require a review of perinatal provider documentation and coding practices at MTFs to validate data integrity.
38. MHS governance should ensure that standardization of accurate perinatal coding practices is implemented across direct care.
39. MHS governance should investigate readmissions of mothers and infants. This clinical review of diagnostic codes at readmission will identify the medical conditions that drive these rates and determine if lagging performance is a quality issue or related to military-unique issues and flexibility.

40. MHS governance should integrate measures of mortality into its quality monitoring and performance improvement programs.
41. MHS governance should require Service facilities with higher-than-expected mortality on an Inpatient Quality Indicators measure for more than one quarter to perform an investigation and implement improvement activities as indicated.
42. MHS governance should evaluate the use of the risk-adjusted standardized mortality ratio (SMR) model in direct care. Facilities with higher than expected mortality should validate the risk-adjusted SMR model data and perform a root cause analysis as indicated.
43. MHS governance should continue to study determinants of patient satisfaction and develop strategies to meet or exceed civilian benchmarks in satisfaction with primary care and obstetrics for every MTF.
44. MHS governance should continue to guide MTFs in implementation of strategies to optimize patient centered medical home (PCMH) operations and use of secure messaging, Nurse Advice Line, and other customer service tools.
45. Services and DHA should continue to evaluate determinants of satisfaction with primary care and ensure ongoing maturation of PCMH in all MTFs.
46. The PCMH Advisory Board should assess processes that affect Primary Care Manager (PCM) continuity at high-performing PCMH sites and promulgate best practices across the MHS to support improvement initiatives.
47. DHA should establish clear and consistent guidelines for the CONUS TRICARE Regions and the OCONUS Area Offices on reporting and processing quality and patient safety issues identified in the purchased care component.
48. MHS governance should work with the Services to increase the use of Clinical Practice Guidelines in the direct care component.
49. MHS governance should evaluate the feasibility of DoD and TRICARE regional contractor collaborations/MOUs with local purchased care organizations to support electronic health record accessibility.
50. MHS governance should develop processes to ensure standardized patient notification requirements for laboratory and radiology services.

Patient Safety

51. Implement principles of a high reliability organization with focus on leadership, culture of safety, and robust process improvement. This must be a strategic priority for executive leadership and will require revision of current policy and re-evaluation of Patient Safety Program.
52. Reevaluate the charter and membership of the Quality Patient Safety Risk Management Task Force and determine whether to use it to develop a framework for a high reliability organization for submission through existing governance structure.
53. DoD should develop a formal partnership plan with external health care organizations, TRICARE contractors, and national governing bodies to improve as a learning organization and be at the forefront of national benchmark development and initiatives for patient safety.
54. Refine DoDM 6025.13 policy to establish more than one mechanism for capturing harm events.
55. Health Affairs, through the DHA Clinical Support Division, with Service representation, should assess the revised TJC definition of “sentinel event” and determine if additional guidance in the DoDM 6025.13 policy is required.
56. Health Affairs, through the DHA Clinical Support Division and Office of General Counsel, with Service representation, should incorporate and define appropriate policy for patient/family engagement to proactively include patient/family perspectives in MTF decision-making.
57. Establish clear expectations in DoDM 6025.13 for the root cause analysis (RCA) process.
58. Establish a system-wide closed loop mechanism for documentation and disposition of a patient safety alert or advisory.
59. Ensure that the policy establishes attainable goals for “near miss” reporting.
60. Establish a system-wide structure to fully expand internal transparency of patient safety information in compliance with 10 U.S. Code 1102.
61. DHA should conduct a business case analysis that identifies the most effective method for staffing the Patient Safety Program.
62. The Services and DHA should evaluate their organizational structure to better align patient safety functions within their organizations to maximize leadership visibility.

63. Further define and standardize minimal patient safety training requirements as outlined in DoDM 6025.13 policy.
64. Develop an executive leadership toolkit; this best practice guide will address integral areas of patient safety.
65. MHS Governance must determine safety culture expectations and set targets based on opportunities.
66. Consider PSI #90 composite utilization as a component of a comprehensive safety measure set and develop an educational plan to support its implementation.
67. The Infection Prevention and Control Panel should review variance in performance in accordance with the Partnership for Patients Implementation Guides for Central Line-Associated Bloodstream Infection (CLABSI), and Ventilator Associated Pneumonia/Ventilator Associated Events (VAP/VAE).
68. The Infection Prevention and Control Panel should develop a comprehensive plan to standardize requirements for monitoring device-related infections.
69. Clarify policy and educate health care staff on the sentinel event definition and event types to reduce variation in interpretation.
70. MHS governance should pursue an enterprise-wide improvement process addressing the top five reported SEs, improve distinction between SEs occurring within ambulatory versus hospital settings, and monitor SE occurrence by rates using appropriate denominator estimates.
71. Establish clear expectations for the root cause analysis process and the follow up that will occur.
72. Standardize the performance improvement root cause analysis process with a focus on event type classification, a centralized repository, and dissemination of lessons learned.
73. Standardize the event type components of the event reporting process.
74. Standardize leadership activities to drive a culture of safety (i.e., Executive toolkit).
75. Adopt a chart audit based methodology such as the Institute for Healthcare Improvement Global Trigger Tool (GTT) to determine harm rate.
76. Incorporate best practices from all three contractors to develop a more standardized process that enhances transparency, minimizes variation, and incentivizes reporting for process improvement.

77. DoD direct care systems should pursue tracking infection rates at the unit level beyond intensive care units.

MHS Review Proposed Action Items and Associated Timelines

<p style="text-align: center;">Action Items for Immediate Action (within 90 days)</p>	<p style="text-align: center;">Mapping to Overarching Recommendations ----- Timeline ----- Governance</p>
<p>ACCESS: MHS should further evaluate specialty care access data by individual product lines.</p>	<p>Global Recommendation VI Immediate Action MHS Governance</p>
<p>ACCESS: MHS should further evaluate the challenges of measuring access to care in the purchased care component by commissioning an external study to evaluate purchased care access for TRICARE Prime enrollees as it relates to 32 C.F.R. § 199.17.</p>	<p>Global Recommendation IV Immediate Action MHS Governance</p>
<p>ACCESS: MHS governance should continue implementation of the Joint Service survey tool, refining access satisfaction questions to include the addition of satisfaction with office wait times.</p>	<p>Global Recommendation VI Immediate Action MHS Governance</p>
<p>QUALITY: MHS governance should task the National Surgical Quality Improvement Program (NSQIP®) working group to assess surgical morbidity shortfalls to the Medical Operations Group for Tri-Service/Defense Health Agency (DHA) engagement, collaborative support, and facility action.</p>	<p>Global Recommendation II Immediate Action MHS Governance</p>
<p>QUALITY: DHA Healthcare Operations Directorate should partner with the American College of Surgeons NSQIP® staff to improve military treatment facility (MTF) collaboration and the sharing of best practices from the top performing facilities, thereby decreasing overall direct care surgical morbidity and improving clinical outcomes.</p>	<p>Global Recommendation II Immediate Action DHA</p>
<p>QUALITY: MHS governance should require a review of perinatal provider documentation and coding practices at MTFs to validate data integrity.</p>	<p>Global Recommendations II & III Immediate Action MHS Governance</p>
<p>QUALITY: MHS governance should develop strategy for MTFs to maximize the use of “action lists” generated by the MHS Population Health Portal to ensure beneficiaries receive clinical preventive services in a timely manner.</p>	<p>Global Recommendation III Immediate Action MHS Governance</p>

<p style="text-align: center;">Action Items for Immediate Action (within 90 days)</p>	<p style="text-align: center;">Mapping to Overarching Recommendations ----- Timeline ----- Governance</p>
<p>SAFETY: Reevaluate charter and membership of Quality Patient Safety Risk Management Task Force and determine whether to use Task Force to develop framework for a high reliability organization (HRO) and submit through existing governance structure.</p>	<p>Global Recommendation V Immediate Action MHS Governance</p>
<p>SAFETY: Services and DHA evaluate their organizational structure to better align patient safety functions within their organizations to maximize leadership visibility.</p>	<p>Global Recommendation IV Immediate Action Services and DHA</p>

<p style="text-align: center;">Action Items for Campaign Plan Summit* POLICY</p>	<p style="text-align: center;">Mapping to Overarching Recommendations ----- Timeline ----- Governance</p>
<p>ACCESS: Health Affairs (HA) with support from MHS governance should standardize MHS direct care component access to care business practices by replacing the MHS Guide to Access Success with an MHS policy memorandum and subsequent DoD Instruction.</p>	<p>Global Recommendation VI Campaign Plan Summit HA (w/ MHS Governance support)</p>
<p>QUALITY: The Assistant Secretary of Defense for Health Affairs (ASD (HA)) and DHA should develop policy guidance in support of DoDI and DoDM 6025.13 with specific direction on quality measurement, performance improvement, and requirements for education and training.</p>	<p>Global Recommendation V Campaign Plan Summit HA (w/ MHS Governance support)</p>
<p>QUALITY: ASD (HA) should develop policy guidance to manage and track compliance of Services and DHA with applicable DoD policies and directives.</p>	<p>Global Recommendation V Campaign Plan Summit HA (w/ MHS Governance support)</p>
<p>QUALITY: HA policy is needed to standardize annual and interval training requirements related to perinatal team care.</p>	<p>Global Recommendations II & V Campaign Plan Summit HA (w/ MHS Governance support)</p>
<p>SAFETY: Refine DoDM 6025.13 policy to establish more than one mechanism for capturing harm events.</p>	<p>Global Recommendation V Campaign Plan Summit HA (w/ MHS Governance support)</p>
<p>SAFETY: Assess the revised The Joint Commission (TJC) definition of “sentinel event” and determine if additional guidance in the DoDM 6025.13 policy is required.</p>	<p>Global Recommendation V Campaign Plan Summit HA (w/ MHS Governance support)</p>

<p style="text-align: center;">Action Items for Campaign Plan Summit* POLICY</p>	<p style="text-align: center;">Mapping to Overarching Recommendations ----- Timeline ----- Governance</p>
<p>SAFETY: HA, through the DHA Clinical Support Division and Office of General Counsel, with Service representation, should incorporate and define appropriate policy for patient/family engagement to proactively embed patient/family perspectives in MTF decision-making.</p>	<p>Global Recommendations IV & V Campaign Plan Summit HA (w/ MHS Governance support)</p>
<p>SAFETY: Establish clear expectations in DoDM 6025.13 for the root cause analysis (RCA) process.</p>	<p>Global Recommendation V Campaign Plan Summit HA (w/ MHS Governance support)</p>
<p>SAFETY: Ensure that the policy establishes attainable goals for “near miss” reporting.</p>	<p>Global Recommendation V Campaign Plan Summit HA (w/ MHS Governance support)</p>

<p style="text-align: center;">Action Items for Campaign Plan Summit* INFRASTRUCTURE, PROGRAMS, AND PROCESSES</p>	<p style="text-align: center;">Mapping to Overarching Recommendations ----- Timeline ----- Governance</p>
<p>ACCESS: MHS governance should increase the focus on the standardization of specialty care for the direct care component through the following: creating the Tri-Service Specialty Care Advisory Board, funding requirements to standardize `specialty product lines, establishing business rules to support enhanced access, and defining performance review metrics for specialty care product lines.</p>	<p>Global Recommendation VI Campaign Plan Summit MHS Governance</p>
<p>ACCESS: MHS governance should standardize reporting from the TRICARE Regional Offices to the Services.</p>	<p>Global Recommendations IV & VI Campaign Plan Summit MHS Governance</p>

<p style="text-align: center;">Action Items for Campaign Plan Summit* INFRASTRUCTURE, PROGRAMS, AND PROCESSES</p>	<p style="text-align: center;">Mapping to Overarching Recommendations ----- Timeline ----- Governance</p>
<p>QUALITY: DHA Health Plans should evaluate alternative methods of incentivizing contractors and/or providers to improve the provision of clinical preventive services and Healthcare Effectiveness Data and Information Set (HEDIS®) performance. This may require statutory or regulatory changes, since new, innovative payment mechanisms may have to be developed to encourage compliance.</p>	<p>Global Recommendation II Campaign Plan Summit DHA</p>
<p>QUALITY: DHA should establish clear and consistent guidelines for the CONUS TRICARE Regions and the OCONUS Area Offices on reporting and processing quality and patient safety issues identified from the purchased care.</p>	<p>Global Recommendation VI Campaign Plan Summit DHA</p>
<p>QUALITY: MHS governance should establish goals and processes for increasing the number of MTFs achieving TJC Top Performer status annually.</p>	<p>Global Recommendations V & VI Campaign Plan Summit MHS Governance</p>
<p>QUALITY: MHS governance should explore expanding NSQIP® participation to all remaining direct care inpatient facilities performing surgery. In addition, ensure ambulatory surgery platforms all participate in a similar surgical quality improvement program.</p>	<p>Global Recommendation II Campaign Plan Summit MHS Governance</p>
<p>QUALITY: MHS governance should require Service facilities with higher-than-expected mortality on an Inpatient Quality Indicators (IQI) measure for more than one quarter to perform an investigation and implement improvement activities as indicated.</p>	<p>Global Recommendation II Campaign Plan Summit MHS Governance</p>
<p>ACCESS: MHS governance should promote Secure Messaging and TRICARE On-Line through direct care component standardized business processes and a strategic marketing approach.</p>	<p>Global Recommendation VI Campaign Plan Summit MHS Governance</p>
<p>QUALITY: MHS governance should continue to guide MTFs in implementation of strategies to optimize patient centered medical home (PCMH) operations and use of secure messaging, Nurse Advice Line, and other customer service tools.</p>	<p>Global Recommendations V & VI Campaign Plan Summit MHS Governance</p>

<p style="text-align: center;">Action Items for Campaign Plan Summit* INFRASTRUCTURE, PROGRAMS, AND PROCESSES</p>	<p style="text-align: center;">Mapping to Overarching Recommendations ----- Timeline ----- Governance</p>
<p>QUALITY: PCMH Advisory Board should assess processes that affect Primary Care Manager continuity at high performing PCMH sites and promulgate across the MHS to support improvement initiatives.</p>	<p>Global Recommendation VI Campaign Plan Summit MHS Governance</p>
<p>QUALITY: MHS governance should work with the Services to increase utilization of Clinical Practice Guidelines in the direct care component.</p>	<p>Global Recommendation VI Campaign Plan Summit MHS Governance</p>
<p>QUALITY: MHS governance should develop processes to ensure standardized patient notification requirements for laboratory and radiology.</p>	<p>Global Recommendation VI Campaign Plan Summit MHS Governance</p>
<p>QUALITY: MHS governance should establish a mechanism to aggregate and communicate accreditation findings across the MHS.</p>	<p>Global Recommendation IV Campaign Plan Summit MHS Governance</p>
<p>SAFETY: Implement principles of HRO with focus on leadership, culture of safety, and robust process improvement. Must be strategic priority for executive leadership and will require revision of current policy and re-evaluation of Patient Safety Program</p>	<p>Global Recommendation V Campaign Plan Summit MHS Governance</p>
<p>SAFETY: Establish a system-wide closed loop mechanism for documentation and disposition of a patient safety alert or advisory.</p>	<p>Global Recommendation III Campaign Plan Summit MHS Governance</p>
<p>SAFETY: Establish a system-wide structure to fully expand internal transparency of patient safety information in compliance with 10 US Code 1102.</p>	<p>Global Recommendations II, IV, & V Campaign Plan Summit MHS Governance</p>

<p style="text-align: center;">Action Items for Campaign Plan Summit* INFRASTRUCTURE, PROGRAMS, AND PROCESSES</p>	<p style="text-align: center;">Mapping to Overarching Recommendations ----- Timeline ----- Governance</p>
<p>SAFETY: MHS Governance must determine safety culture expectations, set targets based on opportunities.</p>	<p>Global Recommendations II, V, & VI</p> <p>Campaign Plan Summit</p> <p>MHS Governance</p>
<p>SAFETY: MHS governance should pursue an enterprise-wide improvement process addressing top five reported sentinel events (SEs) and improve distinction between SEs occurring within ambulatory versus hospital settings, and monitor SE occurrence by rates using appropriate denominator estimates.</p>	<p>Global Recommendations II & III</p> <p>Campaign Plan Summit</p> <p>MHS Governance</p>
<p>SAFETY: Establish clear expectations for the RCA process and the follow up that will occur.</p>	<p>Global Recommendations II & V</p> <p>Campaign Plan Summit</p> <p>MHS Governance</p>
<p>SAFETY: Standardize performance improvement RCA process with focus on event type classification, centralized repository and dissemination of lessons learned.</p>	<p>Global Recommendations II, IV & V</p> <p>Campaign Plan Summit</p> <p>MHS Governance</p>
<p>SAFETY: Standardize event type components of the event reporting process.</p>	<p>Global Recommendations V & VI</p> <p>Campaign Plan Summit</p> <p>MHS Governance</p>
<p>SAFETY: Adopt a chart audit based methodology such as the Institute for Healthcare Improvement (IHI) Global Trigger Tool (GTT) to determine harm rate.</p>	<p>Global Recommendations II & III</p> <p>Campaign Plan Summit</p> <p>MHS Governance</p>

<p style="text-align: center;">Action Items for Campaign Plan Summit* INFRASTRUCTURE, PROGRAMS, AND PROCESSES</p>	<p style="text-align: center;">Mapping to Overarching Recommendations ----- Timeline ----- Governance</p>
<p>SAFETY: Incorporate best practices from all three contractors to develop a more standardized process that enhances transparency, minimizes variation, and incentivizes reporting for process improvement.</p>	<p>Global Recommendations IV & VI</p> <p>Campaign Plan Summit</p> <p>MHS Governance</p>

<p style="text-align: center;">Action Items for Campaign Plan Summit* DATA COLLECTION, MONITORING, AND ANALYSIS</p>	<p style="text-align: center;">Mapping to Overarching Recommendations ----- Timeline ----- Governance</p>
<p>ACCESS: MHS governance should commission an external study to evaluate purchased care access for TRICARE Prime enrollees as it relates to 32 C.F.R. § 199.17. This study should include a review of all data available and a recommendation for metrics to be incorporated into the current and future TRICARE contracts.</p>	<p>Global Recommendation IV</p> <p>Campaign Plan Summit</p> <p>MHS Governance</p>
<p>QUALITY: DHA should integrate requirements for Purchased Care clinical quality data on TRICARE beneficiaries into the TRICARE Operations Manual and future TRICARE regional contracts.</p>	<p>Global Recommendation IV</p> <p>Campaign Plan Summit</p> <p>DHA</p>
<p>QUALITY: DHA Health Plans should give purchased care contractors the authority to utilize supplemental databases to improve the capture of clinical information for purchased care enrollees.</p>	<p>Global Recommendation III</p> <p>Campaign Plan Summit</p> <p>DHA</p>
<p>ACCESS: MHS governance should continue implementation of the Joint Service survey tool, refining access satisfaction questions to include the addition of satisfaction with office wait times.</p>	<p>Global Recommendation VI</p> <p>Campaign Plan Summit</p> <p>MHS Governance</p>

<p style="text-align: center;">Action Items for Campaign Plan Summit*</p> <p style="text-align: center;">DATA COLLECTION, MONITORING, AND ANALYSIS</p>	<p style="text-align: center;">Mapping to Overarching Recommendations</p> <p style="text-align: center;">-----</p> <p style="text-align: center;">Timeline</p> <p style="text-align: center;">-----</p> <p style="text-align: center;">Governance</p>
<p>QUALITY: MHS governance should continue to study determinants and develop strategy to meet or exceed civilian benchmarks in satisfaction with primary care and OB for every MTF.</p>	<p>Global Recommendation V</p> <p>Campaign Plan Summit</p> <p>MHS Governance</p>
<p>QUALITY: Services and DHA should continue to evaluate determinants of satisfaction with primary care and ensure ongoing maturation of PCMH in all MTFs.</p>	<p>Global Recommendations II & VI</p> <p>Campaign Plan Summit</p> <p>MHS Governance</p>
<p>QUALITY: MHS governance should develop and implement an enterprise performance management system that links to MHS and Service strategy with dashboards and common performance measures to support visibility of those measures across the enterprise.</p>	<p>Global Recommendation II</p> <p>Campaign Plan Summit</p> <p>MHS Governance</p>
<p>QUALITY: MHS governance should create and task an MHS data analytics cell to provide actionable information to the Services and DHA at the enterprise level.</p>	<p>Global Recommendation III</p> <p>Campaign Plan Summit</p> <p>MHS Governance</p>
<p>QUALITY: MHS governance should establish policy to guide processes for verification of clinical data and capture in AHLTA (DoD Outpatient Electronic Health Record) regarding preventive services that are obtained outside of the direct care component.</p>	<p>Global Recommendation III</p> <p>Campaign Plan Summit</p> <p>MHS Governance</p>
<p>QUALITY: DHA should develop plans to improve Other Health Insurance documentation in Defense Enrollment Eligibility Reporting System (DEERS) for all beneficiaries to ensure those with Other Health Insurance are not included in HEDIS[®] calculations.</p>	<p>Global Recommendation III</p> <p>Campaign Plan Summit</p> <p>DHA</p>
<p>QUALITY: MHS governance should implement provider-level PQI education, followed by an evaluation of MTF utilization of Agency for Healthcare Quality and Research (AHRQ) Prevention Quality Indicators (PQI) measures and implementation of a monitoring program requiring improvement plans as indicated.</p>	<p>Global Recommendation II</p> <p>Campaign Plan Summit</p> <p>MHS Governance</p>

<p style="text-align: center;">Action Items for Campaign Plan Summit* DATA COLLECTION, MONITORING, AND ANALYSIS</p>	<p style="text-align: center;">Mapping to Overarching Recommendations ----- Timeline ----- Governance</p>
<p>QUALITY: MHS governance should establish an implementation plan for MHS Population Health Portal readmissions site to ensure maximum utilization to reduce avoidable readmissions.</p>	<p>Global Recommendation II Campaign Plan Summit MHS Governance</p>
<p>QUALITY: DHA Healthcare Operations Directorate should complete transition to the HEDIS[®] All-Cause Readmission standardized measure, which is risk-adjusted and has national benchmarks.</p>	<p>Global Recommendation II Campaign Plan Summit DHA</p>
<p>QUALITY: DHA Health Information Technology should prioritize electronic medical record upgrades by aligning needed data elements into Essentris[®]. All inpatient MTFs should have the capability to remotely access medical records to facilitate expeditious and timely data extraction for clinical measure calculation.</p>	<p>Global Recommendation III Campaign Plan Summit DHA</p>
<p>QUALITY: MHS governance should ensure that standardization of accurate perinatal coding practices is implemented across direct care.</p>	<p>Global Recommendation VI Campaign Plan Summit MHS Governance</p>
<p>QUALITY: MHS governance should integrate measures of mortality into their quality monitoring and performance improvement programs.</p>	<p>Global Recommendation II Campaign Plan Summit MHS Governance</p>
<p>SAFETY: The Infection Prevention and Control Panel will develop a comprehensive plan to standardize requirements for monitoring device-related infections as a component of a comprehensive safety measure set[^].</p>	<p>Global Recommendation II Campaign Plan Summit MHS Governance</p>
<p>SAFETY: DoD direct care systems should pursue tracking infection rates at the unit level beyond intensive care units as a component of a comprehensive safety measure set[^].</p>	<p>Global Recommendations II & III Campaign Plan Summit MHS Governance</p>

<p style="text-align: center;">Action Items for Campaign Plan Summit*</p> <p style="text-align: center;">DATA COLLECTION, MONITORING, AND ANALYSIS</p>	<p style="text-align: center;">Mapping to Overarching Recommendations</p> <p style="text-align: center;">-----</p> <p style="text-align: center;">Timeline</p> <p style="text-align: center;">-----</p> <p style="text-align: center;">Governance</p>
<p>SAFETY: Establish rate-based SE reporting for DoD or other recognized frequency tracking as a component of a comprehensive safety measure set[^].</p>	<p>Global Recommendation III</p> <p>Campaign Plan Summit</p> <p>MHS Governance</p>
<p>SAFETY: Consider PSI #90 composite utilization as a component of a comprehensive safety measure set[^] and develop an educational plan to support implementation.</p>	<p>Global Recommendations II & VI</p> <p>Campaign Plan Summit</p> <p>MHS Governance</p>

[^] Reference to “a comprehensive safety measure set” implies future development of such a set.

<p style="text-align: center;">Action Items for Campaign Plan Summit* EDUCATION AND TRAINING</p>	<p style="text-align: center;">Mapping to Overarching Recommendations ----- Timeline ----- Governance</p>
<p>ACCESS: MHS governance should standardize both access to care and customer service training across the direct care component.</p>	<p>Global Recommendation VI Campaign Plan Summit MHS Governance</p>
<p>QUALITY: DHA Education and Training Directorate should conduct an in-depth review and needs assessment of quality training to adequately assess the efficacy of training.</p>	<p>Global Recommendations V & VI Campaign Plan Summit DHA</p>
<p>QUALITY: MHS governance should determine the requirements to guide the development and implementation of a Quality expert career path.</p>	<p>Global Recommendation V Campaign Plan Summit MHS Governance</p>
<p>QUALITY: MHS governance should evaluate the utility of additional fellowship opportunities with TJC or other nationally recognized programs, and the Services should explore optimizing and standardizing Service fellow utilization with follow-on assignment after fellowship completion.</p>	<p>Global Recommendation V Campaign Plan Summit MHS Governance</p>
<p>SAFETY: Further define and standardize minimal patient safety training requirements as outlined in DoDM 6025.13 policy.</p>	<p>Global Recommendation V Campaign Plan Summit MHS Governance</p>
<p>SAFETY: Develop an executive leadership toolkit; this best practice guide will address integral areas of patient safety.</p>	<p>Global Recommendations II & IV Campaign Plan Summit MHS Governance</p>
<p>SAFETY: Clarify policy and educate healthcare staff on the Sentinel Event definition and event types to reduce the variation in interpretation.</p>	<p>Global Recommendation V Campaign Plan Summit MHS Governance</p>

<p style="text-align: center;">Action Items for Campaign Plan Summit* EDUCATION AND TRAINING</p>	<p style="text-align: center;">Mapping to Overarching Recommendations ----- Timeline ----- Governance</p>
<p>SAFETY: Standardize leadership activities to drive a culture of safety (Executive toolkit).</p>	<p>Global Recommendations II & IV</p> <p>Campaign Plan Summit</p> <p>MHS Governance</p>
<p style="text-align: center;">Action Items for Campaign Plan Summit* PARTNERSHIPS WITH EXTERNAL SYSTEMS</p>	<p style="text-align: center;">Mapping to Overarching Recommendations ----- Timeline ----- Governance</p>
<p>QUALITY: DHA should develop a strategy to establish relationships with civilian Health Systems to foster collaboration and data sharing that leads to performance improvements within the MHS.</p>	<p>Global Recommendations II & III</p> <p>Campaign Plan Summit</p> <p>DHA</p>
<p>QUALITY: MHS governance should evaluate the feasibility of DoD and TRICARE regional contractor collaborations/MOUs with local purchased care organizations to support EHR accessibility.</p>	<p>Global Recommendations III & IV</p> <p>Campaign Plan Summit</p> <p>MHS Governance</p>
<p>QUALITY: MHS Governance should identify and implement leading healthcare industry methods for instilling and maintaining cultural changes throughout a large system.</p>	<p>Global Recommendation V</p> <p>Campaign Plan Summit</p> <p>MHS Governance</p>
<p>SAFETY: DoD develops formal partnership plan with external health care organizations, TRICARE contractors, and national governing bodies to improve as learning organization and be at forefront of national benchmark development and initiatives for patient safety</p>	<p>Global Recommendation IV</p> <p>Campaign Plan Summit</p> <p>MHS Governance</p>

**The Campaign Plan Summit will take the form of a 2-3 week event that brings together leaders and subject matter experts to develop comprehensive, integrated plans for addressing MHS Review Proposed Action Items. The Summit will be scheduled after the 29 August 2014 release of the MHS Review Final Report to the Secretary of Defense.*

Action Items for Further Review
ACCESS/QUALITY/SAFETY: DoD should review hiring processes, policies, and pay scales within the Civilian Human Resources Agency and DoD to decrease the difficulty in hiring and retaining qualified staff, which directly impacts access, quality and patient safety.
ACCESS: MHS governance should assess the discrepancy between the access to care data, which demonstrates timely appointments and satisfaction with access to care as reported on DHA surveys.
ACCESS: MHS governance should assess, by enrollment category and product, the extent to which patients are asked to call back for an appointment.
QUALITY: MHS governance should evaluate the use of the risk-adjusted standardized mortality ratio (SMR) model in direct care; facilities with higher than expected mortality should validate the risk-adjusted SMR model data and perform a root cause analysis as indicated.
QUALITY: MHS governance should assess the value of expanding the number of HEDIS [®] measures monitored to evaluate care provided to enrolled beneficiaries.
QUALITY: The Perinatal Advisory Group (PAG) should conduct a comprehensive review of clinical practices related to metrics where MHS is underperforming. Through a dashboard and standardized metric reporting requirements, intervention plans should be developed and actions prioritized.
QUALITY: MHS governance should investigate readmissions of mothers and infants. This clinical review of diagnostic codes at readmission will identify the medical conditions that drive these rates and help determine if lagging performance is a quality issue or related to military-unique issues and flexibility.
SAFETY: Further review by the Infection Prevention and Control Panel (IPCP) to determine the cause for the variance in performance in accordance with the Partnership for Patients Implementation Guide for CLABSI and VAP/VAE.
SAFETY: DHA should conduct a business case analysis that identifies the most effective method for staffing the Patient Safety Program.

Appendix 6.2

Comments of External Reviewers¹²

External Methodology Review: Report from Dr. Brent James

23 July 2104

Background and Qualifications

I am a licensed physician who serves as Chief Quality Officer at Intermountain Healthcare, based in Salt Lake City, Utah.

Intermountain Healthcare is an integrated delivery system with 22 hospitals, more than 185 community-based clinics, an integrated health insurance plan that provides funding for about 25 percent of all care delivered by the Intermountain system, a major home health business, a durable equipment group, and other associated care delivery support sub-businesses. Intermountain works with more than 4,000 Utah- and Idaho-based physicians. More than 1,000 of those physicians are employed through the Intermountain Medical Group (IMG), a wholly-owned subsidiary. Together with IMG physicians, a core group of about 1,800 affiliated (non-employed), community-based physicians supply over 90 percent of all patient care services delivered within the Intermountain system. Intermountain-associated care (using Intermountain funding or coming through Intermountain facilities) typically comprises more than 60 percent of all services delivered through those tightly-aligned affiliated practices. Nine of Intermountain's 22 hospitals, all located in highly urban parts of Utah, account for more than 95 percent of more than 160,000 inpatient admissions per year within the Intermountain system. Two of those hospitals are major teaching and research hospitals that deliver quaternary-level services (e.g., multi-organ in-bloc transplant). Three function as tertiary-level (e.g., high-risk pregnancy, open heart surgery) minor teaching hospitals, supporting Family Medicine residency training and nurse training programs. Four are community hospitals that provide general services. The remaining 13 Intermountain hospitals serve rural communities, often as the sole provider of care within a local geography. Intermountain clinics service more than 5 million outpatient encounters each year.

Intermountain is non-profit with a strong charitable mission. It is governed by an unpaid Board of Trustees consisting of high-profile community leaders, supplemented by local leaders from the healing professions as well as several national policy experts. Intermountain provides more than 50 percent of all health care delivery services across Utah, southeastern Idaho, and (at a tertiary level) 7 surrounding States. Intermountain is the source of the majority of all unpaid care delivery services within its service areas, including home health services.

Intermountain has a very long history successfully applying the principles of quality improvement to clinical care delivery in an inpatient and outpatient setting. In 1996, Intermountain's then-CEO, Mr. William Nelson, assigned me to create a strategic plan that

¹² For this review, external reviewers participated as individual experts in their personal capacities, and not as the employees or representatives of their affiliated institutions.

would make clinical quality of care and patient safety Intermountain’s core business strategy. The resulting plan was based around Dr. W. Edwards Deming’s quality theory, which showed that in most circumstances process management that produced better quality outcomes also eliminated process-based waste resulting in much lower operating costs. Called Clinical Integration, by 2006 the effort had produced a series clinical patient registries that tracked longitudinal clinical, cost, and patient satisfaction outcomes data for 58 key clinical processes, representing about 80 percent of care delivered in the Intermountain system. Clinical Integration also built a management structure of physicians and nurses. That combination – solid process-level data supporting effective front-line clinical management – had produced very significant improvements in clinical outcomes on a broad scale, accompanied by more than \$400 million in structural operating cost reductions through process-based waste elimination.

In addition to leading Clinical Integration, I also conduct the Advanced Training Program in Clinical Process Improvement (the ATP). Since 1992 that course has trained more than 5,000 health care leaders in clinical quality improvement (42 percent physician executives, 25 percent nursing leaders, 17 percent support staff, 8 percent C-suite administrators). About 80 percent of ATP graduates come from outside Intermountain Healthcare and Utah. ATP graduates have started more than 50 “sister” clinical quality improvement training programs in their home institutions. Ten of those “sister” ATP programs exist outside the borders of the United States, with particularly strong instances operating in Canada, Sweden, France, Great Britain, Argentina, Australia, and Singapore. I regularly visit other health systems both inside and outside the United States, both to participate in “sister” ATP training programs and to consult with health system leaders on clinical quality and cost management. Further, I am familiar with and regularly contribute to an extensive research literature associated with clinical quality improvement and patient safety.

Finally, I am an elected member of the National Academy of Science’s Institute of Medicine; and hold adjunct professorships at the University of Utah School of Medicine, the Harvard School of Public Health, and the University of Sydney, Australia, School of Public Health.

In order to provide this review, the DoD appointed me a temporary government worker (GS-15) for the 2 days I was in Falls Church, Virginia, working directly on the project. While I accepted reimbursement from the DoD for travel expenses associated with providing this review, I have declined any other compensation.

Scope of Review

Several months ago I was contacted to conduct an independent review of the methodology – data systems and organizational structure and function – that supports access to care, quality of care, and patient safety systems within the (DoD) health care delivery system. That care delivery system includes both care delivered in DoD Medical Treatment Facilities (MTFs) – various levels of hospitals and outpatient clinics operated directly by the DoD MHS – and services contracted from local non-military care delivery systems (contracted community services). In accordance with Dr. Guice’s instructions I focused on the underlying content, structure and operations of the data systems and organizational structures that support high-quality care,

reflected in timely access to care (access), excellent clinical patient outcomes (quality), and minimization of harms associated with care delivery (patient safety). I did not examine or assess final performance results in any area.

I evaluated the methodologies underlying DoD MHS access, quality, and patient safety systems on the basis on standard methods currently employed in competent care delivery systems across the United States. I have also included structure and process standards that I have observed in first-world nations outside the United States.

While my evaluation is based on current standards within the healing professions, those standards are in rapid evolution. I have labelled these evaluations “findings.”

I have also included specific changes that the DoD MHS leadership might consider to move care delivery within the U.S. military to levels well beyond that currently seen in other civilian U.S. and non-U.S. care delivery systems. These often go well beyond the current generally-accepted standard of care. I have labelled these “recommendations.”

Sources of Information

In support of my evaluation, MHS officers supplied a series of written documents. I reviewed these before traveling to Falls Church, Virginia to meet in person with DoD MHS representatives. These included

Terms of Reference

Memoranda defining the scope, timelines, and study questions of the overarching review process

Documents describing the MHS’s methods for metric selection, data collection, data analysis, and reporting methods

An article published in the New York Times newspaper, dated 28 June 2014, authored by Sharon LaFraniere and Andrew W. Lehren, entitled “In Military Care, a Pattern of Errors but Not Scrutiny” – criticizing the DoD MHS for patient safety and clinical quality events.

I also was given full access to the internal web-based shared document store that all members of the MHS review group were using to conduct the review, including their summaries and source documents.

On Monday, 21 July 2014, I travelled to Falls Church, Virginia. There I was able to meet the internal MHS teams conducting the full review. These teams included:

Dr. Michael Malanoski (Captain, US Navy, retired) – overview of project and deliverables

Dr. Paul Rockswold (Captain, US Navy) – analytic methodologies used in producing access, quality, and patient safety reports

- John Savage (Colonel, US Air Force) – overview of MHS management structures across the Defense Health Agency (DHA), the National Capitol Region (NCR), and all 3 military services
- Julie Freeman, (LTC, US Army) – full review of methods employed in conducting in-depth site reviews at 7 MHS facilities
- Dr. Kenneth Iverson (Rear Admiral, US Navy) and support team – review of MHS access measures, with underlying data systems and reports examples
- Barbara Holcomb, BSN, MSN (Brigadier General, US Army) and support team – review of MHS patient safety measures and support system, with report examples
- Dr. Lee Payne (Colonel, US Air Force) and support team – review of MHS quality of care measures, including underlying data systems and report examples

In addition to reviewing the presentations and documentation that each team supplied, I was able to question each team in detail and at length. I addressed questions arising from the presentations, but also extended well beyond the presentations to other foundational elements of measuring and reporting access, quality, and patient safety data. All teams were completely open to my queries and, to the best of my judgment, responded honestly. Their responses, while not always complimentary to the MHS, were consistent and complete within each team and across the separate teams.

Finally, I was generally familiar with recently-reported problems associated with access to care in the Veterans Administration Hospital (VAH) system, through the general news media, professional journals, and from conversations with past and present clinical officers within the VAH system with whom I have personal acquaintance.

Findings and Recommendations

General underlying data systems

While some cause and effect relationships are readily apparent to the human eye, most are not. In those circumstances data systems provide a means for humans to accurately observe, establish causal relationships, and take effective action. Such data systems are essential when managing and improving the care delivery infrastructure associated with quality, patient safety, and access to care. Solid data systems provide an ability to see, which in turn is the foundation upon which all effective action rests.

To achieve maximum accuracy, efficiency, timeliness, and efficacy the best data systems form an integral part of front-line care delivery processes. They avoid data abstraction wherever possible. Data abstraction involves third parties making judgments of primary data and can be associated with very significant errors in interpretation and transcription. Even when founded on integrated data systems rooted in front-line care delivery, errors and misinterpretations can arise as the data move upward along a chain of command. Each level of upward movement usually involves consolidation of reported data, with purposeful loss of detail. This is essential. Otherwise, high-order management reports will contain so much detail as to be incomprehensible. A well-connected reporting system provides well-organized high-order summaries that can easily “drill down” through layers of increasing detail back to the front-line

care that documented each individual case. Such reporting systems are nested layers of focused dashboard reports, where each lower layer adds detail to summary elements included within the next higher dashboard.

The site visits performed by the MHS review team are one way to link summary reporting systems, upon which senior leadership must routinely rely, to front line reality. The MHS review team created a sampling frame based on MTF type; military service group; performance levels (poor vs excellent, as reported in routine summary data); and geographic location. They used that frame to identify 7 site visit locations. They then created a structured set of questions that they applied at the level of local leadership and front-line operations. They reviewed relevant documentation systems within each unit visited, again based on a standardized approach. They very carefully insured that people at all levels – patients, front line caregivers, local leaders, and others – could speak freely without fear of criticism or reprisal at the time of the site visit or afterward. Attendance at Town Hall meetings was voluntary. Such voluntary reporting should automatically be regarded as biased. Usually, those who have had bad experiences or want to voice criticisms will have the energy to attend and speak out. Voluntary town hall meetings thus function mainly as a complaint tracking system – an important element of quality measurement – rather than providing any sort of objective measure of overall performance.

While the site visit team used reasonable and appropriate criteria, the units assessed in the site visits were not randomly selected; nor were the questions used in local assessments validated. These methodologic constraints limit full generalization of site visit findings to the entire MHS system. However,

Finding 1: Within the time constraints of the evaluation, the site visits conducted by the MHS review team were (a) appropriately selected; and (b) very competently structured and performed. Findings from the site visits generally aligned well with data reported in the MHS quality, safety, and access measurement systems. This produces a high, if not perfect, level of confidence that the current MHS measurement systems accurately represent actual front-line performance.

While quality and patient safety measurement and analysis have shown dramatic improvement over the past 20 years, it still suffers from significant limitations. More specifically, there are problems with (references provided on request):

- The underlying medical science regarding sources of variation for specific conditions, that greatly attenuate appropriate risk-adjustment of outcome data even in ideal circumstances (Eddy).
- Data extraction and consolidation for inclusion, exclusion, stratification, and clinical assessment factors, including (i) whether critical factors identified in a related science review were measured during the process of clinical care delivery; (ii) whether clinical assessments were recorded in a medical record; (iii) whether the measurement process identified and extracted all such critical factors, across all institutionally and geographically dispersed medical records; (iv) variation in the formats in which critical

factors were recorded, across medical records sources; and (v) whether all such data elements were accurately and consistently abstracted.

- Analytic techniques, particularly regarding (i) production of summary measures across multiple contributing subscales; and (ii) attribution within a complex care delivery system.
- Inherent mathematical problems with the precision of ranking systems (Swedish AMI; Royal Academy; others).

As a result of these limitations, with very rare exceptions, it is not possible to produce clinical quality or patient safety measures that can accurately rank care providers. While large sample sizes can produce results that appear to show statistical significance, they hide underlying problems with the data system. As a classic illustration of the fruits that such limitations, DeLoitte Consulting's Paul Keckly (formerly head of the Vanderbilt Health system, and since retired from DeLoitte) asked his DeLoitte summer interns to identify U.S. hospitals that had been ranked in a "Top 100" list among more than 130 governmental and independent commercial bodies that publish hospital rankings. Among about 5,500 U.S. acute care hospitals, 1,457 ranked in the "Top 100 Hospitals" on at least one list. That translates into about 26 percent of all U.S. hospitals falling into the top 2 percent of hospital performance – a statistic that far outperforms "all of the children being above average" in Keillor's Lake Wobegone.

Ranking systems suffer from other major malfunctions that often arise from unexamined assumptions among those who advocate their use. In specific contrast, strong evidence supports the following conclusions:

- Most patients do not use medical outcome performance rankings (statistical league tables) to choose hospitals or physicians. They rely on personal relationships and recommendations by trusted referring physicians instead. (Details: when asked, patients will consistently say that they value ranking data. They will report that they used such ranking data, when it was available to them, when making choices. However, that positive response disappears when one carefully measures actual choices. About 2 – 3 percent of patients will use statistical ranking data to select physicians or hospitals. This percentage may be much higher for a few selected conditions, such as bone marrow transplant) (IOM Performance Measures Committee report).
- Even if patients could "vote with their feet for quality," it is often transpires that there is no higher quality care delivery opportunity within reasonable geographic reach. Limitations in the capacity of the care delivery system constrain patients to local care providers, even when various rankings systems suggest that those systems perform poorly. People truly do prefer to be treated close to home. This response often overrides otherwise compelling quality data.
- In the face of public data showing poor performance, most healthcare delivery leadership teams will launch improvement efforts. However, most of these efforts do not change

actual performance. Very common alternative management strategies are to (1) Concentrate resources in the area under the public spotlight until attention shifts away (“work harder”). Even though performance in the focus area may temporarily improve, that improvement typically doesn’t sustain. Worse, it pulls resources from other areas where they were better deployed in terms of overall quality performance. (2) Many groups will “improve their documentation” (goal displacement: Improve the ranking, rather than addressing real patient outcomes). They closely manage quality tracking systems to report better results, while true underlying performance remains unchanged. Examples of this “gaming the data system” or “looking good, as opposed to being good,” are almost endless across a wide range of human activities, to the level of criminal violations on a broad scale. It is a source of endless difficulties for senior management teams who make the mistake of being insensitive to its presence while provoking exactly this response through goal setting, incentives, and thoughtless accountability.

- Ranking data are only rarely useful for choosing targets for improvement. To illustrate, over the past 20 years Intermountain Healthcare has hosted more than 100 successful clinical improvement projects. Almost all of those projects came in areas where Intermountain already outperformed national standards and was top rank when compared to other care delivery groups.

A far better method for choosing improvement targets uses estimates of the gap between current performance and theoretic “best possible” performance. Williamson called this ABNA – “achievable benefit not achieved” (Williamson 1979). It often leads to quite different conclusions than reliance on comparative performance rankings. Project prioritization should also consider the availability of strong clinical leadership and established measurement systems. Although these 2 factors can be created as part of a project, that additional effort will necessarily extend the amount of time and effort that the project requires. Finally, to legitimately improve outcomes a team must discover process-level changes that produce measurably better performance. Occasionally comparative performance data will identify a few “best in class” performers around a particular process. More rarely still, some of those top performers will have built an identifiable process (a defined road to performance success) that they are able and willing to share. Very often the overall care delivery field used to generate comparative outcomes will fall far short of theoretic best possible performance. Differences in comparative outcomes will be found to arise from differences in underlying science, data systems, and analytic methods rather than legitimate performance. As important, improvement teams have strong alternatives in the face of these limitations in comparative outcomes data as an improvement tool. Teams can and routinely do use process improvement methods (e.g., Rapid Cycle PDSA) to discover new processes that produce significantly better outcome performance. They simultaneously set new performance standards for the entire care delivery field.

Perhaps the most pernicious damage done when senior leaders focus on external comparative data has to do with resource allocation. Data systems designed to rank providers or otherwise produce comparative outcomes (selection systems) differ dramatically from data systems

designed for process management and improvement (improvement systems). With good design, an improvement data system “contains” accurate, timely, and complete selection data. The quality of such process-based improvement data typically exceeds that of data systems specifically built to produce selection data. The opposite is not true. Data systems designed for comparative outcomes usually lack critical data elements, and use non-ideal data element definitions, necessary to improve performance. Investing in data systems designed primarily to track comparative outcomes, usually in response to regulators or other external overseers, consumes organizational resources. That leaves internal teams without the resources they need to measure at a process level, damaging the organization’s ability to improve performance (Berwick, James, & Coye; 2003). Efforts launched by external overseers and senior management in the name of quality can thus actively damage front line quality, patient safety, and access performance (Casalino, 1999; and others).

Recommendation 1: MHS leadership should avoid internal or external attempts to rank MTF facilities; it should proceed with great caution when comparing overall MHS performance or individual MTF facility performance to external standards, systems, or groups.

Quality improvement provides very strong and demonstrably effective strategies to use in place of traditional ranking or external comparison methods. These center around building data systems that focus on care delivery processes as opposed to individual clinicians or facilities.

A subset of quality theory directly addresses the measurement systems upon which quality management rests. The engineers who first generated that body of knowledge called it “gauge theory.” Within engineering, a “gauge” is a measurement tool. For example, it might be micrometer used to measure the diameter of a steel bar. Engineers quickly noted that their measurement tools were themselves “systems of causes,” and so always contained some element of random variation in the measurement outputs they produced. A gauge functioned well when the amount of variation inherent in the measurement system itself was small compared to the amount of variation contained within the process that the gauge (measurement system) assessed. Any quality organization should pay as much attention to its gauges – its measurement and reporting systems – as it does to performance generated by its care delivery processes.

Recommendation 2: Where possible report MHS quality, safety, and access measures using statistical process control (SPC) charts.

SPC charts visually display current point levels as well as trend over time in process or outcome measures. They include associated p-values, displayed graphically as “control limits” bounding the data. These graphical displays make it possible to identify statistical outliers, either from single points that fall outside the control limits or from patterns of points in the trended data, using simple, well-established rules.

Technically a statistical outlier point or pattern on an SPC chart means, exactly, that if one tracks that point to its root causes, it is possible to accurately identify the source of variation.

By itself, outliers found SPC-charted outcomes data DO NOT identify source causes. This is critically important within gauge theory. With any unrefined data system, many of the initial outlier points will track back to the measurement system, not to the underlying clinical process. This provides a reliable mechanism for building robust measurement systems over time. It involves (a) tracking important process and outcome parameters using SPC; (b) identifying outlier points; (c) tracking those outlier points down to root causes; then (d) when the causes so discovered point back to the measurement system, refining the measurement system itself. Through this mechanism, over time it is possible to build very robust, reliable measurement systems with minimal internal variability, which are much more effective for monitoring and improving the underlying care delivery processes.

Recommendation 3: MHS leadership should employ SPC “data loopback” methods to routinely improve and validate underlying quality, safety, and access reporting systems.

Such an approach will give senior leaders the ability to verify that the underlying data upon which they rely when making decisions is reasonably accurate and complete. MHS data will become routinely trustworthy.

As a corollary, it is relatively easy to show that, in most circumstances, it is not possible to accurately rank care providers (physicians, treatment facilities, or even health systems) on the basis of carefully selected and risk-adjusted clinical process or outcomes data. However, it is possible to use SPC techniques to compare any unit to its appropriate peers. The method involves generating the frequency distribution used to calculate an SPC chart using peer data, then plotting the unit under analysis against the resulting SPC center line and control limits. The method lends itself nicely to stratification and risk adjustment. As before, many of those outlier points will track back to problems with underlying data systems. Over time, appropriate response to data system problems so discovered with greatly improve the data systems, allow a clearer view of the associated processes, and lead to significant improvements in documented best care.

Hospital Patient Safety

The MHS system tracks patient safety through an array of targeted measurement systems. Three of these measurement systems derive from widely-used national standard tracking systems. They collect consistent data across all MHS inpatient care delivery sites, and across all 3 services. They include:

1. Patient Safety Indicators (PSI-90) – a system that examines electronic discharge abstract data, used under Congressional mandate by the DHHS Agency for Healthcare Research and Quality (AHRQ) as the core of the annual National Patient Safety Report. The DHHS Centers for Medicare and Medicaid Services (CMS) uses PSI subscales for its Medicare Value-Based Purchasing initiative, and as contributory measures within its newly launched Hospital-Acquired Condition Medicare payment modification program.

A great many non-governmental hospital ranking agencies also use the PSI for assessing patient safety at a hospital level.

2. National Healthcare Safety Network (NHSN) – a system that tracks healthcare-associated infections, recently mandated for use in all U.S. hospitals by the CDC. NHSN uses robust standard definitions for infection identification and classification.
3. Sentinel event reporting, based on standards promulgated by the TJC.

Following standard practices for most high-quality U.S. hospitals, the MHS also supports a voluntary patient safety reporting system that extends across all MHS care delivery sites:

4. Patient Safety System – a web-based reporting tool through which care delivery professionals can report specific events or circumstances that they believe produce patient harm or hold the potential for patient harm. Those making reports have the option to choose complete anonymity. The reporting system asks a series of questions that, beyond reporting an event, begins to typify and classify it.

This system was originally developed in Great Britain. It has served that country for more than 12 years, reporting more than 12,000 potential patient safety events each month. It is widely regarded as the “state of the art” sentinel event tracking system based on voluntary reporting.

MHS leadership also reported that they routinely perform Root Cause Analyses (RCA) on serious safety events detected by the Sentinel Event Reporting system or by the Patient Safety System. More important, they report that they seek patterns of similar failures using those systems, then do concentrated RCA to identify system-level issues, as recommended by Dr. James Bagian (founder of the VAH’s original patient safety system some years ago, where he championed RCA methods).

Finally, Air Force leadership reports that they have conducted the AHRQ Patient Safety Culture Survey on a single occasion in both hospital and ambulatory settings.

For military system patients treated in community hospitals and clinics the MHS functions as a third party payor – that is, as an insurance plan. That greatly limits their ability to track detailed patient safety data. All event tracking and reporting happens within the contracted civilian facilities. By current contract, civilian facilities must report Serious Reportable Events (SREs) and Potential Quality Issues (PQIs). These are closely linked to TJC Sentinel events, but many hospitals extend their content in ways that are inconsistent across different settings. Upon questioning, the MHS leadership currently do not have effective ways to assess the quality of patient safety data reported by these external institutions. They instead are forced to rely on quality oversight functions (e.g., TJC, CMS) routinely used in civilian care delivery systems. They propose to tighten their oversight through as yet unidentified improvements in future contract requirements for civilian facilities.

Finding 2: The patient safety tracking systems employed across all military inpatient facilities by MHS leadership – PSIs, NHSN, and JCAHO Sentinel event reporting – represent typical “best practice” in high-performing hospitals across the United States. MHS leadership reports reasonable and appropriate use of the resulting data to oversee patient safety across all services and facilities in the MHS.

Finding 3: The data systems that the MHS uses to track performance in contracted civilian facilities meet current industry “best practices” for health care payers. Even with “better contracting,” many of the contracted civilian care delivery facilities probably will lack the necessary leadership will and resources to create “state of the art” patient safety-based delivery systems. Such systems are very difficult for payers to impose, acting from outside a particular care delivery system.

While current MHS patient safety oversight methods legitimately represent current standard practice for U.S. health care delivery, the field of patient safety is evolving rapidly. This clearly does not represent the next generation of best practice, and provides real opportunities for patient safety leadership within the MHS. Some key points include:

- A recent “gold standard” evaluation found that the AHRQ PSI system found only 10 of 173 confirmed inpatient care-associated injuries. It did not find any patient injury event that was not detected by some other, more effective event detection system. Of 13 total events found by the AHRQ PSI system, 3 were judged false positives by 2 independent physician reviewers. In other words, the AHRQ PSI system had a 5.8 percent true positive rate and a 23.1 percent false positive rate for detecting true care-associated patient injuries (Classen et al., Health Affairs 2011 – unpublished subanalysis at Intermountain’s LDS Hospital where independent case-level reviews were available).

Civilian hospitals that treat Medicare patients are required to use PSI for the CMS Value-Based Purchasing system and, to a lesser degree, the CMS Hospital-Acquired Condition system. Both of those CMS approaches use specific PSI subindices that purport to track specific types of injury, rather than the summary score. The just-cited gold standard evaluation did not test the PSI system at a subindex level. The MHS does not use the PSI-90 index at a summary level, but does use it at a subindex level.

Recommendation 4: MHS leadership should seriously consider abandoning the PSI-90 as a measure of hospital-based patient safety. It adds little value to patient safety efforts, as it typically fails to detect any events found by more reliable methods. If political considerations – i.e., the fact that PSIs are broadly mandated in all other hospital care delivery settings – demand continued use of the PSI, study your own use of the PSI system in detail then train all MHS hospital chart abstractors with an aim to reduce the PSI-90’s high false positive rate.

The same study that assessed the AHRQ PSI-90 system against “gold standard” detection demonstrated a common finding observed across many empiric evaluations of patient safety event systems: Voluntary reporting built around TJC Sentinel events and NQF Never Events

(one commonly-used method to somewhat extend the TJC Sentinel event list) at best detect only about 1 in 10 actual patient injury events. More typically, they find only about 1 in 100 hospital care-associated patient injuries. This is true even when using a “state of the art” voluntary reporting system, like the British Patient Safety Reporting system currently used within the MHS. For example, in 3 leading patient-safety hospitals evaluated in the Classen et al. Health Affairs study cited above, voluntary reporting found only 4 of 352 confirmed patient injuries. Confirmed TJC Sentinel events detected by the IHI Global Trigger tool showed that LDS Hospital should have reported and estimated 132 such sentinel events during 2004. The hospital reported 9 such events to State of Utah regulators in a mandatory reporting system. All hospitals across the entire State reported a total of only 36 events for the entire year. Nebeker showed that for independently confirmed (using a prospective clinical review trigger system) adverse drug events (ADEs – the most common form of hospital care-associated injury, usually accounting for more than half of all such injuries) that care delivery teams failed to connect an injured patient’s symptoms to the offending drug almost 80 percent of the time. If care delivery teams fail to make the mental connection, they obviously can’t record an injury event in a voluntary reporting system. Evans showed that the vast majority of ADEs (about 96.5 percent) arise from physician failures in drug ordering – a heuristic task – not from pharmacist or nurse errors in preparing or delivering the medication.

At present, the “state of the art” system for finding hospital care-associated injuries is the IHI Global Trigger Tool. That tool is freely available from the Institute for Healthcare Improvement (IHI), along with training methods and management structures to correctly deploy the method. It is relatively inexpensive to operate at the levels recommended by IHI, and represents a very reasonable use of existing patient safety resources. It will dramatically increase the MHS’s detected injury rates; provide far better information to plan and deploy safer systems of care; and, properly used, document significant improvements in patient safety over time. A related set of prospective clinical review trigger systems operate real time. Very often, they detect injury events early in their course while it is still possible to intervene and reduce patient harm associated with the event. AHRQ’s website freely offers full implementation manuals for prospective clinical review trigger systems that address the 3 most common forms of patient injuries: adverse drug events (ADEs), hospital-acquired infections (HAIs), and hospital-acquired pressure injuries (bed sores).

A “culture of safety” is a key feature of high-reliability patient safety systems. Such a culture is based around widespread knowledge and commitment among all personnel working in a care delivery system to avoid care-associated patient injuries. While voluntary reporting is not effective for tracking true patient injury rates, it does form a critical part of a culture of safety. Its continued use, in the context of strong and regular leadership emphasis, helps reinforce an ethic of safety. It gives front-line care givers opportunities to identify unsafe conditions and actual events. It facilitates focused feedback, where system leaders report back on changes made in response to front-line caregivers’ suggestions that make care safer – a primary tool in promoting local ownership and involvement. While prospective and retrospective (chart review) clinical trigger systems very ably detect known patterns of failure, voluntary reporting taps creative human minds that can recognize legitimate patient safety circumstances or events not yet built into trigger systems.

Voluntary reporting systems play another critical role. Most regulatory patient safety programs are built around Sentinel and other reportable events. Several health care systems have expanded their Sentinel event reporting systems to include other care-associated injuries, beyond those included in the TJC Sentinel event set and the NQF Never Event list. These extended lists are usually labelled Serious Safety Events (SSEs). They typically include any patient event that can place a hospital at risk for malpractice actions or negative news media exposure, including any significant patient complaint. SSE systems consistently rely on voluntary reporting. Three very competent implementations of SSE systems include Ascension Health System, where the effort is led by CQO Dr. David Pryor; University of Michigan Health System, whose Chief Safety Officer is Dr. James Bagian; and the Baylor Health System in Dallas, Texas, where the effort is led by Dr. Donald Kennerly. Each of those systems implemented organization-wide training that led to dramatic increases in the number of reported events. For example, across Ascension Health's 110+ hospitals SSE rates increased from 0.8 SSEs per 10,000 equivalent patient days to 1.6 SSEs per 10,000 equivalent patient days. On the foundation of better measurement all 3 programs then implemented the single method proven to significantly reduce SSE rates. Called Team Leadership training, it represents a large step up from the AHRQ TeamSTEPPS program currently used within MHS. Following deployment, while using a stable tracking system, SSE rates at Ascension fell to 0.56 SSEs per 10,000 equivalent patient days. Pryor further reports several million dollars in annual malpractice savings.

These two types of systems – SSE voluntary tracking and trigger-based event detection tools; team leadership training and system changes derived from far richer data associated with more sensitive detection methods – work hand in glove. One addresses serious safety events that draw public attention. The other addresses more profound but less publicly obvious sources of injury, that drive far more actual patient harm at great expense.

Recommendation 5: Study “state of the art” SSE voluntary event tracking systems, associated management structures, and team leadership training approaches at Ascension Health, the University of Michigan Medical Center, and/or Baylor Dallas. Based on those learnings, upgrade the MHS’s SSE voluntary reporting system and deploy better team leadership training methods, with an aim to significantly reduce patient injury events that reach the attention of external regulators and the public.

Recommendation 6: In parallel with Recommendation 5, adopt and deploy the IHI Global Trigger Tool across all inpatient units in the MHS. Use the resulting data to design and deploy system fixes that make safe care much easier to achieve within the MHS, while producing significant reductions in total cost of care.

If MHS leadership fails to adopt methods beyond the current MHS voluntary reporting systems and PSI-90 to track patient safety events, MHS will likely continue to have frequent, significant events that surprise the system and its leadership as they find their way to external regulatory bodies and the press. Most hospitals in the U.S. have not yet deployed such systems. Leading hospitals are presently doing so. Over coming years they will probably become much more common.

Clinical Outcome Quality

As with Patient Safety, the MHS assesses clinical outcome quality across its entire internal and contracted care delivery networks. Internal clinical quality tracking measurement systems for patients treated in internal MHS hospitals include: TJC Oryx data; CMS Hospital Compare data; and a modified version of the AHRQ HCAPS patient satisfaction survey. Measures for contracted civilian hospitals center around CMS Hospital Compare data. The MHS assesses outpatient clinical quality performance primarily through standard NCQA HEDIS measures.

The data systems used by the MHS to assess inpatient and outpatient clinical quality and patient satisfaction use well-established measurement tools built, promulgated and overseen by national quality oversight groups (CMS, TJC, and NCQA). These tools form the routine core of clinical quality measurement across the entire U.S. care delivery industry. I know of no other “national standard” quality assessment tools that the MHS does not currently employ. Both HCAPS and NCQA HEDIS measures typically include built in data system validation; review and validation of JCAHO Oryx measures typically occurs in association with JCAHO review and accreditation visits.

Finding 4: Current MHS measurement systems for inpatient and outpatient clinical quality reflect standard good practice across the U.S. health care delivery industry, both in terms of measurement systems used and their operations.

Access to care

The MHS operates under a legal mandate to provide timely medical services the populations that it serves. It has established access goals that reflect those legal requirements, broken into categories of emergent, acute, and elective care in both inpatient and outpatient settings. The MHS provides the bulk of those services through its own care delivery operations (MTFs). It offloads patients to contracted civilian facilities for special care needs, or when MTF locations cannot deliver all needed care in a timely way. The MHS is also developing tools for electronic interactions, to further improve accessibility.

The MHS has established a broad set of measures that track closely to similar access measures used in civilian systems. The MHS measures are comprehensive. Compared to those used in high-quality care settings outside of the MHS, I could not identify any category or specific measure that was missing within the MHS data system.

MHS data systems that track timely delivery take 2 basic forms. The first is integrated into the MTF’s appointment scheduling software. It automatically records critical times whenever an appointment for services is scheduled. The fully integrated nature of this monitoring system makes it very unlikely that those using the system could manipulate reported data to hide substandard access, as has occurred in some other government-associated institutions. During site visits and through other reports, MHS leadership has been able to identify a single circumstance where front-line personnel were maintaining any sort of manual scheduling tool (appointment waiting lists): That involved patients who wanted to schedule specialty follow up

visits at long intervals, typically beyond 6 months in the future. The MHS scheduling software allows specification of a “maximum delay” when scheduling appointments. It is typically set at 6 weeks by many MTF sites. Therefore, some front-line care delivery teams maintain patient lists so that they can load distant appointments when the software will finally accept them.

The second major data system used to track access to care within military care delivery systems is a patient survey conducted independently from care delivery teams. This provides an important cross check of data received from the scheduling system itself. That system suffers from one significant limitation: As described to me by MHS leadership, it is a voluntary survey with a typical low response rate. By definition, its results are therefore systematically biased. Typically, though, such bias will attract those with complaints more heavily than it will attract those who have had a positive experience. It will over-report dissatisfaction within timely access to care, rather than under-report it.

Finding 5: The MHS systems for tracking timely access to care are well-constructed and effectively operated, compared to similar systems used by high-quality civilian systems. They are innately difficult to manipulate (game), and any inherent bias contained in resulting reports should err on the side of underestimating timely, high satisfaction access to care, rather than overestimating it.

A final structural comment

Health care delivery leadership can view clinical quality measurement and management from 2 perspectives. The first takes the viewpoint of regulatory compliance. Care delivery administration focuses on those measures mandated by external reviewers, such as the TJC, the NCQA, and CMS. Leadership aims to meet external requirements and thus receive legal and societal license to deliver care. Most care system administrators therefore regard regulatory compliance as an uncompensated cost of doing business. They try to minimize resources consumed in their quality measurement and management activities, while still meeting all external regulatory requirements. They regard the external validation they receive through these approaches as confirmation that they are delivering adequately good patient care.

The second approach looks at quality as the natural product of process management. It derives from Dr. W. Edwards Deming’s quality improvement theory. It rests on 2 of Deming’s 3 axiomatic principles:

1. All productive work (including all clinical care delivery and ancillary support services) is accomplished through processes.

The purpose of any organization is to serve the needs and wants of customers – patients, in the case of care delivery. Deming regarded the money that a company receives for its products or services primarily as a measure of customer satisfaction. If customers have a free and informed choice, and those customers persistently come to a particular company to get products or services that fill their needs, it means that that company is best satisfying those customers compared to alternatives.

The way that a company creates products or services that satisfy customers is through front-line work processes. Therefore, Deming argued, any successful company will necessarily organize literally everything – especially data systems and management structures – around value-added front-line work processes, where “value-added” is defined by the company’s customers.

2. Every process produces 3 classes of parallel outcomes: a Physical outcome; a Cost outcome; and a Satisfaction outcome.

The term “quality” refers to the features and attributes of a process’s physical outcomes. For health care delivery processes, physical outcomes correspond to clinical outcomes.

This means that quality outcomes and cost outcomes are inextricably linked. Processes changes made to produce better clinical quality results will necessarily modify the resource costs associated with the same process. Conversely, changes made to reduce operating costs will unavoidably change clinical quality outcomes. Those changes may be large or small, positive or negative, but they are always present.

Deming’ went on to explore specific mechanisms by which Physical (quality) outcomes interacted with Cost outcomes within a process management framework. He identified 3 high-order classes that contained all possible forms of interaction. He demonstrated that, for 2 of the 3 classes, improvements in Physical outcomes – better quality – caused operating costs to fall. He labelled these 2 classes “quality waste” and “inefficiency waste.”

These ideas transformed manufacturing. They fueled the Japanese quality revolution during the 1950s, 60s, and 70s before returning to their home shores in the United States during the 1980s and 1990s (Deming and his colleagues got their start with these methods supporting U.S. war materiel manufacturing during World War II; Deming introduced them to Japanese manufacturing while working as a census statistician for General Douglas MacArthur in Japan after the war ended). They produced higher quality products while simultaneously reducing production costs. Any company that couldn’t “do Deming” simply died – it could not begin to compete with those companies that could.

Best current estimates suggest that at least 35 percent, and probably over 50 percent, of all resources spent on health care delivery in the U.S. and other First World nations fall into Deming’s 2 waste categories.

Under this second model, administrators don’t see quality measurement and management as an unavoidable expense necessary for regulatory compliance, but as the core set of measurement systems, management methods, and tools that form the heart of care delivery operation.

In reviewing the materials that you sent and drawing upon the day of interviews that you presented, I perceive that MHS leadership may see clinical quality and patient safety primarily as compliance efforts.

Recommendation 7: MHS leadership should adopt clinical quality improvement as a core business strategy.

This involves 3 main elements (Baldrige model):

1. Set and maintain a strong shared vision to drive the necessary change. To help build and sustain that vision, start to teach clinical quality improvement principles broadly across the MHS.
2. Perform key process analysis to identify high-priority processes within MHS operations.

To illustrate, when we implement this step within Intermountain we first conceptually divided our care delivery system into 4 complementary categories: (1) Clinical conditions – disease treatment processes that define care delivery, the way that patients experience care – this is the central definition of “patient centered care” that we identified on the IOM committee that first introduced the term, and that we published in *Crossing the Quality Chasm*. (2) Clinical Support Services – clinical processes that are not condition specific, such as pharmacy, imaging, lab, blood bank, a procedure room, or a nursing service. (3) Patient Perceptions of Care – patient satisfaction with their care experience. While patient satisfaction follows the same theory and uses the same tools as the other categories, it operates in manner that is largely independent of them. It primarily relies on positive personal relationships. (4) Administrative Support Processes.

We identified more than 1440 clinical conditions, corresponding to disease treatment processes, that fell into category number 1. We prioritized them on the basis of (a) number of patients involved; (b) health risk to the patient, which correlated very highly to resource intensity and cost of care; and (c) internal variability within a case type, assessed through the risk / resource consumption metric developed in (b). On that basis, 104 clinical condition processes – 7 percent of the total – accounted for 95 percent of all Intermountain care delivery services. Rather than the traditional 80/20 rule, care delivery exhibited a 95/7 rule. It concentrated massively.

We then pursued the following steps in size order, as quickly as we could address specific processes. Fifteen years later, we have almost 60 major clinical processes under active management, that account for roughly 80 percent of all Intermountain care delivery operations.

3. Evaluate data needs for each clinical process (in size order, process by process, as just described). Build process-aligned data systems that embed clinical (physical, technically), cost, and satisfaction intermediate (process step) and final (end outcome) data into front-line care delivery processes.

This is the heart of the Intermountain clinical analytics system, which has been independently evaluated and judged world class by 2 major IT groups (KLAS and Himformatics). We have a longitudinal clinical registry to each clinical process that we manage. They reside on the Intermountain enterprise data warehouse (EDW), and provide raw data for 17 statisticians (at the moment – this capability continues to grow) who support care delivery management and improvement efforts.

We adopted an evidence-based method for identifying data elements and reports for quality management, that was first published by the National Quality Forum's (NQF's) Strategic Framework Board. Despite having one of the richest automated clinical data environments in the world, when we applied this approach we discovered that we were missing between 20 and 50 percent of critical data elements, across different processes; and that large amounts of data that we were spending large sums to collect were not useful for effective operations (what Dr. Gerald O'Connor at Dartmouth University calls "recreational data collection"). We ended up with far more parsimonious and efficient data sets designed for clinical care delivery process management and improvement (which links tightly to clinical research embedded into routine care delivery, often called a Learning Health Care System).

4. Once the necessary clinical data are available, build a clinical management structure – hire and assign physician and nurse leaders to use those data for accountability and improvement.

It is this structure that underlies Intermountain's success in producing "the best medical result at the lowest necessary cost" – the short version of the Intermountain mission statement. It doesn't correspond precisely to regulatory oversight systems, which were not built for improvement, but it does form a foundational ability to manage and improve care delivery, that can be mapped into regulatory reporting systems.

Thank you for the opportunity to review your quality efforts. They reflect well on the noble mission, competence, and truly dedicated service of the people who make up America's military. I hope that this evaluation and my comments are useful as you strive to make what is already quite good even better.

Yours sincerely,



Brent C. James, M.D., M.Stat.
Chief Quality Officer and
Executive Director, Intermountain Institute for Health Care Delivery Research
Adjunct Professor, Departments of Family and Preventive Medicine and Biomedical Informatics,

University of Utah School of Medicine
Visiting Lecturer, Department of Health Policy & Management, Harvard School of Public Health
Member, Institute of Medicine, National Academy of Sciences

External Methodology Review: Report from Dr. Qi Zhou

Reviewed by Qi Zhou
July 10-11, 2014

Purpose: External expert is to evaluate and comment on the methodology used for the “Military Health System (MHS) 90-day review for meeting the goals and objectives outline in the approved Terms of Reference as below:

Goal: This MHS Quality Review assessed access to health care, quality of care and patient safety, across the Military Health System (MHS), as directed by the Secretary of Defense. Key questions answered by this review:

- Does the MHS performance meet established internal standards as defined by policy, with regard to access to care, quality of care and patient safety?
- Does the MHS meet or exceed relevant external civilian benchmarks, with regard to access to care, quality of care and patient safety?
- Are our patients satisfied with the care received, with regard to access to care, quality of care and patient safety?

Data Sources: My assessment and comments on the review methodology are based on reviewing documents provided by MHS 90-day Review team and meetings with the MHS Program Review Lead, Dr. Michael Malanoski; Action Officer Leads: BG Barbara Holcomb (Patient Safety), RDML Kenneth Iverson (Access), and Brig Gen (s) Lee Payne (Quality); CAPT Paul Rockswold (Analytics Lead); and CAPT Carter (Writing). Col. John Savage also provided a comprehensive overview binder containing the MHS 90-day Review’s Terms of Reference, Memorandums defining scope, timeline, study questions, policy, review methodology, metrics selection, site visit methodology, review process, and example data analysis. The access to the Max system provided more detailed documents from work groups on Access, Quality, Safety of care, and Data Analytics.

Comments on the Overall Review Methodology

The MHS 90-day Review was conducted by a multi-service team with representatives from the Army, Navy and Air Force medical commands, as well as Defense Health Agency personnel including Health Affair. The structure of the review team was designed as work groups of Quality, Safety, Access, Analytics, and Central Cell for the site visit and final report. Each work group consisted of subject matter experts (SMEs) from the Army, Navy, and Air Force. I had a very positive impression of the team structure; it functions well. The work groups are well coordinated and work with each other smoothly. With a very tight timeline and a broad comprehensive review of Access, Quality and Safety of care, the review team defined the review methodology as a three-prong analysis: 1) system-wide data collection, 2) conducting on site observational assessment of 7 sites, and 3) benchmarking with 3 best practice civilian health care systems which has staff model closed system similar to MHS. This approach enhanced the validity of the review and strengthens the credibility of the review findings as well as reporting to the Secretary and to the public. A few comments on each prong of the analysis are summarized below:

A. System-wide data collection and analysis:

The criteria used for measure selection are appropriate: They are consistent with national definitions on quality measures (such as NQF, IOM, IHI); are comparable to national benchmarks and leading civilian health care systems; and the data sources are available and currently used by MHS. The sample analyses and graphics reporting to compare MHS performance with AHRQ average and statistical confidence interval for selected measures on quality, safety and access to care are very impressive. The historical performance data (3 years) at MTF level showing patterns of performance across all measure sets is the right approach – much better than using individual level measures for information and the quality story. For example, a summary table showing that a few MTFs had higher performance in all measure sets across all domains (access, safety, and quality) while a couple of MTFs had lower performance for most measure sets. This pattern may show the true organizational performance. Performance at individual measure level may not be able to tell the story of the organizational performance. I reviewed a summary table with color coded for the quality metrics. It is very impressive and story telling. Similar summary tables might also be available for safety and access measures.

Recommendation 1: As discussed, it may be beneficial to add one more factor to the ‘selected measure set’. The criteria used to select measures for the review should also consider the importance of the diseases/conditions which may impact the specific population for access, safety, and quality of care as well as outcomes. For example, adding OB delivery care measures since OB care is high volume of services.

Some areas, such as care for beneficiaries with disability, mental health, end of life care, and health care disparity, were out of scope for this review due to either a past effort or are planned for future considerations. It might be a good approach to mention it in the final report to highlight these areas being taking care of and not a gap in the review.

The final measure set selection for MHS performance comparison with civilian systems may also depend on the data completeness, sample size, high volume services population, and ability to address the 6 domains of IOM quality definition.

Recommendation 2: In the analysis, some measures were found to be sensitive to data sources and coding variations. An example would be the hospital acquired condition (HAC) – for pressure ulcers basing this measure on claims data only could be an unreliable data source due to coding variation. Hospitals coding HAC aggressively will have higher HAC rates, but their actual quality and safety performance might be better compared to those hospitals not coding the HAC as aggressively. Consistent coding is very important for these measures (see more information in Recommendation 5.)

B. Site Visit (MTF) and validation:

The targeted on-site review was an efficient use of time given the short time frame. The goal of the site visit was to verify if the MTF’s and Clinic’s performance is consistent with the guidance and policy defined by higher headquarters and MTF leadership, especially as it related to culture

of safety, quality of care and patient satisfaction. The town hall meetings with staff and patients provided qualitative data for assessing access, safety, and quality of care.

Recommendation 3: This data source will provide rich information for future quality improvement program design and development. Caution should be exercised when analyzing this data due to potential bias from ‘participant self selection’. If time permits, to supplement this data source, a review of patient grievance data collected through normal business process, employee engagement survey data, and Human Resources employee complains data, may shed some lights on culture of safety and leadership performance.

C. Benchmarking with civilian health care system:

Kaiser Permanente, Geisinger, and Intermountain Healthcare are well recognized high performing health care delivery systems in US. Their robust quality management systems have years of trending data available on access, safety, and quality of care for benchmarking.

Recommendation 4: If needed, other benchmark data such as Cleveland Treatment Outcomes books, are good resources for specialty care performance

comparison: <http://my.clevelandclinic.org/about-cleveland-clinic/quality-patient-safety/treatment-outcomes.aspx>;

For access, physician supply data could be used to assess if any specialty care may have a physician shortage: <https://www.aamc.org/download/263512/data/statedata2011.pdf>

Comments on Patient Safety Methodology

Patient safety measurement and improvement in health care have had some challenges over past 100 years since Dr. Codman first published his surgical mortality rate. Ernest Amory Codman, M.D., was one of the most important figures in the history of outcomes research in medicine. While his contemporaries scorned his efforts to create systematic procedures to evaluate the end results of medical care, his work foreshadowed many of today's most pressing issues in patient safety. Since then, The Joint Commissions (TJC) and other accreditation bodies and government regulations are requiring hospitals and health care organizations to report sentinel events, patient safety culture survey, root cause analysis, and safety training.

The Safety Workgroup selected 9 core measures for this review. Of the 9 measures, I personally liked the safety culture survey, sentinel events data, and root case analysis (RCA). These three measures would encourage MTFs leadership and staff to focus on creating a culture of safety and reporting of sentinel events. The site visit questions for the leadership team and town hall meetings are good resources not only for data collection for this review, but also for future training and safety culture building.

Recommendation 5: Due to concerns of the reliability of claims data based patient safety indicators (PSI), the best effort to improve the safety of care at this point is to focus on structure and process measures such as leadership, staff training, the universal protocols, etc. Claims data based measures could be used for tracking, monitoring and improvement purpose. When the

data validity is improved through staff training and standard coding, these measures can be added for comparison and performance reporting.

To address this concern, AHRQ published a toolkit for provider system to improve coding consistency:

<http://www.ahrq.gov/professionals/systems/hospital/qitoolkit/b4-documentationcoding.pdf>

Comments on Quality Methodology

The quality of care measures were the most robust and available data for the review. The Work Group selected a 37 measure set, most of which are composite measures. Hospital measure sets covers most inpatient care quality including readmissions. Healthcare Effectiveness Data Information Set (HEDIS) and Patient Centered Medical Home (PCMH) measures cover most ambulatory care for prevention and chronic care for pediatric, women's health, disease management, and senior care. The most important domain of quality is patient centric care and services. The patient experience survey data is a key component to incorporate patient perspective in this review. All accreditations, certifications and program recognitions highlighted the strong quality program foundation and effective implementation of policies and procedures. On site review questions on Quality of care is good high level assessment from leadership, staff, and patient.

Recommendation 6: Since there are robust data sources for some key prevention and disease management measures, it might be valuable to add a health care disparity analysis section to identify potential disparity (or assurance of no disparity) by region, and demographics, such as race, income, education, language spoken, or other important factors.

Although mental health care is out of scope for this review, it might help to depict a picture of comprehensive care provided to beneficiaries if some measures are available such as antidepressant management.

If time does not allow for this additional analysis, I would recommend it as a future consideration.

Comments on Access Methodology

Access of care is the most important factor for assuring all military service men, women, and their family members get the highest level of quality of care. The Work Group identified a good set of measures for access to evaluate the access performance against the access standard (high bar comparing to civilian system), effectiveness of governance and leadership, and patient centered care. The Access Measure Set (23 measures) includes both actual time for appointment and relative to standards, as well as member satisfaction. I am delighted to see a couple of measures reflecting health care innovation and using technology to address access needs: encouraging members using "secure messaging" to facilitate communication and continuity of care and using 24/7 nursing line to answer questions of acute care issues. Research indicates that using high tech technology and "secure messaging" can improve access and quality of care, reduce medical cost, and improve patient satisfaction. This is very encouraging.

The only suggestion I have for future data collection is to include “no show” data. The reduction in “no shows” to appointment (mostly due to auto assigned) would further improve the appointment availability and system efficiency, as well as staff satisfaction (a few comments from town hall meetings mentioned the issue related to “no-show”).

Conclusion

My overall impression of the methodology used for the MHS Quality Review is that it is valid and sound. The majority measures selected for Access, Safety and Quality of care have passed the scientific rigor test by national entities in measure development and the NQF endorsement process. The analytical approach for data collection and comparison is robust and meaningful.

The team composition for the Review is adequate and many of the subject matter experts (SMEs) are significantly involved in the study design and implementation. The Work Group members are coordinating their roles and responsibilities with smooth communication and trusted relationships. The process for moving the project along is huge task. I am amazed how fast and efficient the operation from commanding officers to the analysts in the work groups which completed more than 50% document review, data collection, and site visits in a short of time (2-3 weeks). This truly demonstrates effective and high performing team work.

The MHS 90 day Review is a fresh healthy starting point in assessing our MHS effectiveness to provider high quality care to our service men, women and their family members. The strength of the review is very comprehensive despite the short turn-around time. Lessons learned from the system wide data collection and on site review will provide insights to continue quality improvement for a safe, high quality, equitable, accessible, and high value care delivery system. It was my pleasure and honor to serve in the role as an external expert to support the MHS 90 day Review. I’d like to thank the Review team leaders and members for spending their precious time with me and a sharing the great work group documents. A special thanks to Col. John Savage for his leadership and support for my completion of this review.

Very Respectfully,

Qi Zhou
Executive Director
Performance Measurement Program Strategy
& Quality Programs Oversight
Blue Cross Blue Shield of Massachusetts

External Methodology Review: Report from Dr. Katherine Kahn

Purpose: This external expert evaluated the Military Health System (MHS) 90-day review methodology for meeting the goals and objectives outline in the approved Terms of Reference.

Data Sources: This external expert had access and reviewed the following information for the analysis: Terms of Reference, Memorandums defining scope, timeline, study questions, policy/document review methodology, metric selection, site visit methodology, review outline, process and outcome review methods, example analysis, and early drafts of some sections of the report. The reviewer also had meetings with the MHS Program Review Lead, Dr. Michael Malanoski, Action Officer Leads: BG Barbara Holcomb (Patient Safety), RDML Kenneth Iverson (Access), and Brig Gen (s) Lee Payne (Quality), CAPT Paul Rockswold (Analytics Lead) and LTC Julie Freeman (Site Visit Lead); and Karen Guice, M.D., M.P.P, Principal Deputy Assistant Secretary of Defense for Health Affairs.

Overview of the Methodology

Timeline

The 90-day timeline for the Report is sufficient for allowing the collection, consolidation, and systematic presentation of information about the MHS and access, quality, and safety. This ambitious timeline and Report has benefitted from a well-coordinated effort including the direct and purchased care components of MHS, inputs from Army, Air Force, and Navy branches, analyses using beneficiary, staff, provider, and administrative informants involving qualitative and quantitative data collection and analyses. In addition to analyses of MHS data, serious efforts were made to compare MHS data to national benchmarks and to civilian health systems.

Scope

The scope of report was defined to be inclusive of most aspects of access, quality, and safety with a small number of well-specified exclusions that are readily justifiable on the basis of the limited timeline for this review and/or because of concurrent separate reviews and/or reports.

Processes of the Review

The thoroughness of the approach to the Report was apparent in its inclusion of multiple data sources, stakeholders, and analysis methods. The process for generating the Report appeared extremely well coordinated with the goal of providing a transparent look at access, quality, and safety records that characterizes the MHS through the summer of 2014.

Commentary on the Overall Methodology for Assessing Patient Access, Quality and Safety

The overall methodology for assessing patient access, quality, and safety is, by design, similar across the domains of access, quality, and safety. The strengths of the approach include an aggressive effort to consolidate a wide variety of qualitative and quantitative data across the three domains characterizing both direct and purchased MHS care, to organize the data according to review goals and study questions, to provide data about successes and failures, and to comment on the effectiveness of governance and leadership.

Stated review goals¹³ include determining if the MHS as defined by standards in the Office of the Secretary of Defense (OSD) for Health Affairs (HA), service specific Military Department policies and guidance, and TRICARE contract specifications

- Provides ready access to medical care;
- Meets or exceeds the benchmarks for health care quality; and
- Has created a culture of safety with effective processes for safe and reliable care for beneficiaries?

For each of the three domains of access, quality, and safety, the stated study questions¹⁴ are:

- Does the MHS performance meet established internal standards as defined by policy, with regard to access to care, quality of care and patient safety?
- Does the MHS meet or exceed relevant external civilian benchmarks, with regard to access to care, quality of care and patient safety?
- Are our patients satisfied with the care received, with regard to access to care, quality of care and patient safety?

There is substantial merit to this selection of these three study questions. The first study question addresses performance within MHS across three domains of access, quality and safety and prompts reporting of internal comparisons recognized as important to MHS. These include multiple well-conceived internal comparisons.

The second question motivates comparisons between MHS data and national benchmarks, as well as between MHS data and three comparable civilian benchmarks across three domains. The third question requires reporting of data of patient satisfaction across three domains.

For each of the three domains of access, quality, and safety, a revised and more explicit set of study questions address the following constructs:

- **Performance** which asks about the current state of indicators within MHS, whether the indicators meet or exceed internal standards, national benchmarks or civilian health systems.
- **Effectiveness of Governance & Leadership** which asks if policies systematically support access, quality, and safety throughout the MHS, and how well military health facilities (MTFs) comply with access, quality, and safety policies.
- **Patient-Centeredness** which asks about reported perceptions of MHS's patients regarding access, quality, and safety, as well asking how patient satisfaction regarding access, quality and safety compared with external benchmarks.

With this framework the Report is designed to systematically provide both performance data using standard definitions of access, quality, and safety and also patient centeredness data through reports of beneficiary satisfaction across the same three domains. Where possible, each

¹³ Original Guidance Goals from the Terms of Reference

¹⁴ Original Guidance Study Questions

of these reports is presented in terms of current MHS performance, variability in MHS performance across specified comparators internal to MHS, and in relation to national and civilian benchmarks. All of these features of the Report are well-presented. However, some areas could benefit from improvement.

The Report could be improved with a systematic discussion of data quality pertinent to performance and patient-centeredness. The reader of the report is provided an occasional glimpse into the completeness of data across strata examined. However, the presentation of data quality is not systematic which is necessary in order for the reader to gauge the completeness and the validity of the data presented. This Report is designed for a broad readership and these readers will want some basis for understanding potential biases associated with the data. This problem could be readily remedied with text or a table providing a basic characterization of all data sources presented. In a report such as this, it is not possible for all aspects of all of the data to be characterized. However, some simple characteristics of the analyzed data sets should be systematically included to help the reader understand potential biases associated with the data, and also to help the reader begin to understand the effectiveness of leadership and governance in designing a system for successful monitoring of access, quality, and safety. Example variables that could be included are: the year of data collection, the sample size, the number of sites included and the number not included, the response or participation rate, evidence for the generalizability of the data, and a listing of variables that have major problems with missing values.

Data quality is a critical component of any quality monitoring system. The absence of systematic reporting about data quality inhibits the readers' confidence in data validity and in transparency which is cited as a key feature of this report. Additionally, providing the reader with a framework for understanding data quality will allow the reader to contextualize results. When positive and negative performance data are reported, they are most likely to be interpreted correctly when associated with meaningful information about the quality of the data.

Adding a brief, but systematic data-set-specific section on data quality will substantially enhance the reporting of answers to the data presented pertinent to **performance** and **patient-centeredness**. The third category of study question pertains to **Effectiveness of Governance & Leadership**. The methods presented for answering this question are predominantly confined to a description of leadership, and documentation of the number of policies and reports that have been reviewed. Follow-up to prior recommendations for responding to deficits in quality noted in prior reports are occasionally presented. This information is helpful. However, in order to answer this very broad and important set of questions about the effectiveness of governance and leadership, additional documentation is required. First, the Report should help the reader understand the ways in which governance and leadership support the data systems and other infrastructure required to systematically examine access, quality, and safety. While some reports suggest excellent performance, many of the reports of performance and patient satisfaction suggest less than ideal access, quality, and safety. What role is governance and leadership playing in assuring that data systems for capturing problems with access, quality, and safety are identified in a timely manner? Is the combination of the electronic health record and the billing records adequate for supporting a robust monitoring system? The reader should be informed

about how data systems have recently improved, what problems have been identified, and what solutions governance and leadership are playing to assure that data quality is adequate to support a system for timely monitoring of access, quality, and safety across both the direct and purchased care components.

There are many challenges to all health care systems in developing and sustaining an adequate monitoring system. Additionally, the MHS faces unique challenges including high volumes of patients and providers, high turnover rates, challenges with training, challenges with settings of various size and rurality. The efforts that governance and leadership are making to build and sustain a rigorous data monitoring system in light of these challenges should be presented. Challenges that remain to achieving an adequate monitoring system should be noted including expectations for when challenges are likely to be addressed and/or overcome if they cannot be addressed now. Additionally, patient cohorts that could be vulnerable to problems with access, quality, or safety as a consequence of inadequate data systems should be mentioned. This section of the Report would allow MHS to highlight important advances that are emerging with the new Defense Health Agency (DHA) and its newly coordinated approach to spanning military services. This section of the Report would also allow MHS to showcase the many external measures of access, quality, and safety in which it participates. When MHS participation is less than that of others, reasons for this should be noted and strategies for developing comparable monitoring systems should be noted.

The results of the Performance and Patient-Centeredness sections of the Report will show findings that are better than hoped and also show finding that are less good than hoped. These findings should be presented in a very objective manner. One approach that should be considered is to divide each summary section into a segment that focuses on results to be emulated and another segment that focuses on results that should be improved. A health care delivery system with a serious approach to quality monitoring and improvement will highlight every opportunity to improve care as one an opportunity. This approach would than set the stage for showing how governance and leadership have helped or need to help address the construct that the data are showing.

For example, if satisfaction data are improving, it would be useful to show what structural changes have been implemented that are likely responsible for these improvements. Furthermore, any systematic efforts by governance and leadership to disseminate the structures and processes associated with good outcomes should be highlighted. If this is not known, then MHS should indicate what they are doing to learn how to evaluate the relationships between their governance and leadership decisions and performance and patient-centeredness metrics.

A similar approach should be taken to results that need improvement (even if the suboptimal results are improved compared with last year or in relation to a comparator). All suboptimal findings can be improved but limited resources typically mandate that they cannot all be improved now. Strategies taken by leadership to prioritize resources including personnel, data and monitoring systems, fiscal resources should be made clear in relation to the large number of domains of care that can be improved. Without addressing the approach leadership is taking to

recognize high and low performance, it is difficult to believe the report is meaningfully addressing the question of the effectiveness of governance and leadership.

There are major changes in health systems throughout the nation that involve the integration of electronic health records, a systematic commitment to quality monitoring, and the exploration of how population health should be monitored and explored. It is not expected that the MHS singularly will have mastered all of these issues. This Report should highlight the approach governance and leadership is taking to guide data monitoring so that analyses of access, quality, and safety can lead to ongoing improvements in care and outcomes.

Overall, the specific measures selected for reporting, the benchmarks, and comparisons are meaningful. The measures are valuable only when their analysis is used to identify problems and to improve them. The importance of these measures will be enhanced when basic features of data quality are shown, and when the approach of governance and leadership to data quality and the performance indicators is made more explicit.

Submitted by:

A handwritten signature in black ink, appearing to read "K.L. Kahn". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

Katherine L. Kahn MD
Senior Scientist RAND
Professor of Medicine, David Geffen School of Medicine at UCLA

External Review of Findings and Recommendations: Report from Dr. Janet Corrigan

Date: July 30, 2014

External Expert Review Conducted By:

Janet M. Corrigan, PhD.
Distinguished Fellow
The Dartmouth Institute for Health Policy and Clinical Practice

Purpose: The purpose of this external expert review is to evaluate the Military Health System (MHS) 90-day review findings and recommendations with reference to the goals and objectives outline in the approved Terms of Reference.

Data Sources: This review was informed by the following information: Terms of Reference; memoranda defining scope, timeline, and study questions; policy/document review methodology; metric analysis methodology; site visit methodology; process and outcome review methods; site visit histograms and analysis; and draft final report. I participated in a 1-day meeting on July 14, 2014, that included briefing sessions by MHS Program Review Lead, Dr. Michael Malanoski, and Action Officer Leads: BG Barbara Holcomb (Patient Safety), RDML Kenneth Iverson (Access), Brig Gen (s) Lee Payne (Quality), CAPT Paul Rockswold (Analytics Lead) and LTC Julie Freeman (Site Visit Lead).

Summary Comments

Considering the time constraints imposed on this MHS review, leadership should be commended for having conducted a thorough and balanced review of access to health care and the quality and safety of services provided in both the direct and purchased care components. Performance information was gathered from both the enterprise-wide data and measurement system and the conduct of site visits and town hall meetings; and, whenever possible, MHS results were compared with external benchmarks and those of leading systems.

Overall, the results are mixed. MHS meets or exceeds many internal and external standards and benchmarks in the areas of access, quality, and safety, but there is variability within MHS and some performance gaps.

Following are comments on the overarching goals and recommendations, followed by comments on the specific findings and recommendations pertaining to system-wide improvements, access to care, and quality and safety.

Overarching Goals and System-wide Improvements

I strongly support MHS's overarching goal of becoming a high reliability organization. In its pursuit of excellence, MHS should take full advantage of opportunities to enter into partnerships and to learn from others, for example, the Malcolm Baldrige National Quality Program and the Institute for Healthcare Improvement have substantial track records in helping health care organizations achieve high reliability.

I also encourage MHS to consider whether more fundamental changes in the health care delivery and financing systems might be necessary to achieve the goal of high reliability, specifically:

- Planned and coordinated approach to direct and purchased care. DHS provides beneficiaries with ready access to network providers, which has certain benefits (e.g., serves as a safety valve when the direct care component lacks capacity; provides access to specialized services that may not be a priority for MHS to develop itself due to low demand). However, MHS makes *extensive* use of purchased services and this raises concerns about care coordination and continuity, which are key to beneficiary satisfaction and outcomes. MHS also has less influence over the quality and safety of purchased services than it does over direct services. MHS would benefit from being more explicit about the beneficiary needs it intends to satisfy directly and the circumstances under which it is best to purchase services (these will undoubtedly vary across services and service areas); and carefully designing and operating a delivery system with the proper capacity and resources to meet identified beneficiary needs.
- Flexible and timely human resource policies and practices. Human resources are critical to producing high quality health care. The 90-day review surfaced numerous concerns about staffing including: impact of furloughs on all levels of the system; restrictions on creating and filling positions that impede hiring key personnel (e.g., safety officers); frequent rotations of staff; and the glacial pace of the hiring process. These issues will need to be addressed to create a high-performing health system.
- Enhanced beneficiary-engagement. There are opportunities for DOD to benefit from greater engagement of beneficiaries. Beneficiaries have direct experience with the DOD system and can provide immediate feedback on performance. Beneficiary input is critical to the redesign of care processes to be more patient-centered. Beneficiary engagement in all aspects of patient safety (e.g., reporting errors, root cause analyses, design of safe systems) is an integral part of a culture of safety and transparency. DOD should identify ways to enhance beneficiary involvement in governance, planning and system redesign, operations, monitoring and reporting.
- Comprehensive approach to managing health care costs. It was noted that health care accounts for a sizable proportion of the DOD budget, and there will continue to be upward pressures on cost as the covered population grows and ages and with the introduction of new medical advances and technology. The Institute of Medicine has estimated that 30% or more of health care expenditures constitute waste. To contain health care costs without reducing access and quality, the DOD, like private sector health care systems, must redesign care processes to remove waste. This will require systems that can measure and manage the total cost of care for various types of patients, whether services are provided by MTFs or purchased (budgeting systems for direct and purchased care are currently separate). Enhancements may also be needed in DOD's information system and budgeting processes to support making wise health investment decisions. For example, it was noted that budgeting constraints may have slowed down hiring of patient safety experts at various MTFs,

yet investing in safety expertise yields a very positive return in terms of better outcomes *and lower total costs*.¹⁵

Recommendation 1: MHS should develop a performance management system adopting a core set of metrics regarding access, quality, and patient safety; further develop MHS dashboards with system-wide performance measures; conduct regular, formal performance reviews of the entire MHS, with the DHA monitoring performance and supporting MHS governance bodies in those reviews.

DOD will benefit greatly from alignment of measures between the purchased and direct care components. I also urge alignment with national standardized measurement and reporting systems, such as those sponsored by CMS, AHRQ, NCQA and others. Lastly, MHS might consider real-time monitoring systems for front-line teams that include run charts and other timely and actionable displays of data.

Recommendation 2: 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 linkage between the Defense Health Agency’s analytic capabilities, which monitors the MHS overall, and the Service level analytic assets.

This is an extremely important recommendation. A sophisticated and adequately funded analytics infrastructure is a necessary prerequisite to becoming a high reliability organization.

Adequate investment in patient safety analytics is also particularly important at this point in time when DOD is transitioning to a new electronic health record system. EHRs offer great promise for improving safety (by providing clinicians with access to more complete patient information along with clinical decision-supports), but the introduction of a new EHR system, like any new technology, can result in new types of errors and safety issues, especially during the early phases of adoption.

Recommendation 3: 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 the measures of the purchased care component with those of the direct care component should be incorporated in TRICARE regional contracts.

I encourage DOD to make extensive use of a public and beneficiary portals to display performance information along with descriptions of improvement efforts; and to provide opportunities for beneficiaries to comment and make suggestions and to participate in improvement efforts.

¹⁵ For example, estimated additional health care costs associated with health care -acquired infections include \$20,000 for a surgical site infection, \$40,000 for ventilator-associated pneumonia, and \$46,000 for a central line-associated blood stream infection. Zimlichman, JAMA Internal Medicine, 2013.

Recommendation 4: Through MHS governance, policy guidance can be developed to provide the Services with common executable goals. While respecting the Services individual cultures, this effort would advance an understanding of the culture of safety and patient-centered care across the MHS.

As a part of developing an enterprise-wide strategy, MHS leadership might consider paring back the total number of performance goals that services and MTFs are currently expected to meet. It was noted during interviews that there are currently service-specific goals, enterprise-wide goals, and externally set goals. Focusing on a limited number of very high priority goals will allow leadership and front-line staff to devote the necessary attention and resources to rapidly achieve measureable improvements, thus boosting morale.

Recommendation 5: The MHS should continue, where it makes sense either fiscally or from a quality perspective, to standardize processes and outcomes across the enterprise in the areas of patient safety, quality, and access.

It is also important to empower front-line care teams to fix quality and safety problems in a timely manner.

Access Findings and Recommendations:

Overall, the MHS direct care component performs well compared with both DOD and external standards and with other leading private sector health systems across a wide variety of indicators. A deeper dive into the results indicates that overall system performance may be masking some important performance gaps:

- Across service and MTF variability. There is a good deal of variability in performance across services (e.g., Air Force meets the MHS standard for Average Number of Days to Acute Appointment, but other services do not), and MTFs (e.g., Average Days to Third Next Acute Appointment).
- Signs of pent-up demand. MHS should be commended for establishing the Nurse Advice Line in March 2014; high use of this service (over 1000 calls per day) clearly points to need for access to health care professionals for a variety of situations (e.g., emergency care, appointment scheduling, referrals to the private sector, and advice). Some beneficiaries participating in Town Hall meetings also expressed a good deal of frustration gaining access with some choosing to bypass the central appointment system and go directly to the clinic, and others being advised to call back at a later time for an appointment.
- Weak beneficiary survey results. Results for key access questions on beneficiary surveys are either below or barely meeting external benchmarks.

Moving forward, MHS will want to obtain a more complete picture of access by measuring and monitoring at the level of individual facilities and care sites (hospitals, ambulatory surgery centers, medical homes); and procedures (an area that lacks established standards is time to procedure).

Unlike the MHS direct care component, far less is known about access in the purchased care component. As recommended in the report, this is an area for improvement.

I concur with the specific access-related recommendations in the report. Removing barriers to use of the Secure Messaging System (currently not used by many clinicians) and the online appointment scheduling system (experiencing technical problems and lack of beneficiary support) should be high priorities. I also encourage use of nationally standardized beneficiary survey instruments, such as CAHPS, accompanied by routine benchmarking with other systems in the public and private sector.

Lastly, continued development and enhancement of PCMHs would be wise. Utilization data indicate that beneficiaries are responding very positively to the medical home concept (the proportion of primary care delivered in the direct care component has increased steadily since the inception of PCMHs), and a core competency of PCMHs is establishment of an ongoing relationship between the primary care clinician and the patient. All beneficiaries should have a designated medical home (if they so choose to have one) and the medical home should be responsible for assuring that patients have appropriate access and know how to navigate the health care system.

Quality Findings and Recommendations:

MHS has conducted a thorough review of quality using national standardized measure sets developed and used by leading accrediting organizations, professional and specialty societies, government agencies, and others. The measures cover prevention, acute care and specialty care; and medical care processes, patient outcomes and patient satisfaction.

Overall, MHS performance mirrors what we see in the private sector, a good deal of mediocrity, pockets of excellence, and some serious gaps. For example,

- On the National Committee for Quality Assurance's HEDIS Measures (a tool used by 90% of health plans in the US), MHS direct services falls below the 50 percentile for most of the 18 selected measures and below the 25 percentile for three measures (cholesterol management for patients with cardiovascular conditions, and Hemoglobin A1c and LDL cholesterol screening for diabetics). For purchased care, 7 of the 12 measures monitored fell below the NCQA 25th percentile in 2012.
- When compared to the three selected health plans on HEDIS measures, MHS performs at or above the benchmark for about half of the measures and below the benchmark for the remaining half.
- On The Joint Commission's ORYX measures, MHS direct care performs below the benchmark on 9 of 13 composite measure sets. For the purchased care component, comparative data was available for only 5 measures, but performance compared well to national benchmarks. Compared to the three external health systems, MHS had the lowest rates on 17 of 20 measures.
- MHS performed better on AHRQ's Prevention Quality Indicators that measure the occurrence of conditions that are potentially preventable with good outpatient care. MHS direct care performance met or exceeded national benchmarks on 89% of these measures.

- Results for the most recent reporting period of the National Surgical Quality Improvement Program (sponsored by the American College of Surgeons) found that three MTFs are performing at the top tier nationally, but surgical morbidity is significantly higher than expected at eight MTFs. Urinary tract infections, surgical site infections, return to the OR, and pneumonia were major contributors to poor performance.
- MHS performed well on some measures of perinatal care, but poorly on others (e.g., shoulder dystocia, postpartum hemorrhage, postpartum and infant readmissions).

The 90-day Review has provided MHS with a wealth of information on clinical performance, and MHS leadership have formulated strong sets of recommendations pertaining to each of the areas reviewed. I applaud the emphasis on: development of a strong data platform; use of standardized measures; ongoing collaboration and benchmarking with civilian health services; development of MHS dashboards at the MTF and provider levels; education and training for staff in quality improvement, rapid cycle improvement, Six Sigma and other proven approaches to process improvement; strong analytic support for implementation of targeted interventions and tools (e.g., surgical checklists, hand washing protocols and practices); transparency and scaling of successful results.

Although the site visits and town hall meetings provided useful input and suggestions from staff, MHS may want to consider conducting regular surveys of staff to obtain input on quality and safety issues; and also to elicit suggestions for maximizing the impact of the many quality improvement efforts that will likely be implemented over the coming months and years. It will also be important to “free up” staff time to engage in improvement activities, especially in light of the concerns voiced at town hall meetings about current workload and volume of patient visits.

DHS is well on the road to having a robust and comprehensive measurement system. Additional enhancements might include:

- Nursing sensitive indicators (which are being used in some locations but not enterprise-wide). Nursing sensitive indicators provide important information on quality and safety and adequacy of nurse staffing.
- Patient-reported outcome measures (e.g., ability to return to work, pain, functioning (e.g., SF-12), depression (e.g., PSQ-9)). Sometimes collected through web portals or on tablets at the time of a visit, patient-reported outcome measures provide useful information in support of patient and clinician decision-making and important feedback on whether a patient’s goals for treatment are being achieved.
- Measures of care coordination, continuity and transitions (e.g., Care Transitions Measure). Given the rotation of staff and the use of direct and purchased care components, MHS has real challenges in providing seamless care to beneficiaries.

MHS may also want to explore whether there are additional opportunities for MTFs to participate in condition/procedure-specific registries. Registries, such as the one maintained by

the Society for Thoracic Surgeons, provide useful benchmarking information and targeted educational programs.

Safety Findings and Recommendations

There are only a limited number of national patient safety benchmarks available, but overall, MHS direct care compares favorably. Gaps that should be addressed include:

- **Surveys on Patient Safety Culture.** The hospital culture survey identified several areas for improvement: including response rates, supervisor/manager expectations, organizational learning, non-punitive response, teamwork, and staffing. As noted above, human resource issues (e.g., staffing, turnover) appear to be a systemic and pervasive problem that needs to be addressed. MHS should also consider fielding the AHRQ Medical Office Survey of Patient Safety Culture in the PCMHs or expanding use of the current ambulatory survey being used in some settings.
- **Healthcare Acquired Infections.** Attention should be focused on CLABSI and VAP, as well as, measuring and reducing infection rates that occur outside ICUs.

The MHS direct care has many of the building blocks of a comprehensive patient safety system already in place and a great deal has been accomplished over the last decade. Investments have been made in safety metrics and measurement systems; policies and processes for reporting near misses and adverse events; teamwork collaboration and communication strategies; and a central mechanism to capture patient safety information. The 90-day review has identified many very promising opportunities to strengthen and enhance this infrastructure including: clarity of definitions and policies pertaining to sentinel events and what constitutes a root cause analysis; greater reliance on global trigger tools for manual or automated extraction of data from medical records along with “attainable” goals for reporting of near misses; development of a system-wide closed loop mechanism to ensure documentation and disposition of alerts and advisories; education and supports to enhance executive leadership engagement and safety training at all levels; and expanded system-wide transparency of patient safety information. Successful implementation of these recommendations will require strong leadership at the highest levels, sustained commitment, adequate resources, and accountability mechanisms.

As noted above, patient and family engagement is key to building a safe health system.

Additional steps that might be taken to enhance safety through patient and family engagement include:

- Establish strong policies that demonstrate leadership commitment (e.g., open access to medical records).
- Invite patients and family members to participate in safety oversight committees, root cause analyses and subsequent improvement efforts.
- Provide training to staff on how best to foster patient engagement including: overcoming health literacy challenges, inviting patient input, being attentive to input received, and acknowledging and thanking patients for their input.
- Establish formal processes (surveys, error reporting) to obtain patient input.

- Provide adequate information and supports to patients to manage their health conditions and medications including 24/7 advice lines and written care plans and instructions (at appropriate literacy levels).

A culture of safety is also one that protects, respects, and attends to the needs of the members of the care team. MHS should measure and design care processes to minimize injuries to staff (e.g., falls, needle pricks, back strain, violence, and stress). Many health systems, especially those with hierarchical structures, have found that leadership, staff training and disciplinary systems are needed to make sure that all members of the care team are treated respectfully and are comfortable speaking up on behalf of the patient. Lastly, the vast majority of errors stem from “systems issues,” not incompetence or willful misconduct; staff that make errors should be treated with compassion and provided with emotional supports to overcome the guilt and shame that often accompanies such situations.

External Review of Findings and Recommendations: Report from Dr. Pamela Cipriano

Purpose: The external expert will evaluate the Military Health System (MHS) 90-day review findings and recommendations with reference to the goals and objectives outline in the approved Terms of Reference.

Data Sources: The external expert had access and reviewed the following information for her analysis: Terms of Reference, Memoranda defining scope, timeline, study questions, policy/document review methodology, metric analysis methodology, site visit methodology, process and outcome review methods, site visit histograms, analysis, and draft final report. The reviewer also had access to speak with the MHS Program Review Lead, Dr. Michael Malanoski, Action Officer Leads: BG Barbara Holcomb (Patient Safety), RDML Kenneth Iverson (Access), Brig Gen (s) Lee Payne (Quality), CAPT Paul Rockswold (Analytics Lead and LTC Julie Freeman (Site Visit Lead).

Results

Reviewers were asked to characterize current performance, identify any urgent areas for attention, and recommend actions to achieve top tier performance. As such, I offer the following observations:

Access: Current performance exceeds Department standards for primary care and is commendable. Areas for improvement relate primarily to consistency of provider and overall perception/satisfaction.

Quality: Quality measures at a composite level show average performance. MHS results are below the selected top performing civilian systems in most areas. Specific areas that are underperforming are noted throughout the findings and should be addressed with focused improvement plans. These include but are not limited to measures within HEDIS, NSQIP, NHSN, and Perinatal measures. Current performance is, for the most part, at average levels, but not in keeping with the MHS expectations of top tier outcomes. As noted, cross Service policies and methods will be needed to formulate and implement a coordinated improvement effort that uses best practices (within MHS and externally validated). The MHS is its own reference group and does not enjoy some of the external group/registry comparisons where civilian hospitals report data or are reviewed by rating or ‘watchdog’ type groups. For example, the University Hospital System Consortium provides comparison of quality performance of like institutions. Similarly, hospital systems produce internal comparisons of their institutions.

Safety: Most important and urgent is the need to be aggressive in establishing a culture of safety. Despite prior efforts, the culture does not seem to have permeated below leadership ranks. Until rank and file internalize their roles in promoting safety and preventing harm, performance will be mediocre. Leadership must declare and then demonstrate their commitment to a culture that encourages reporting, is not punitive, and is dedicated to improvement.

The foundation for achieving top performance is already in place and is being enhanced with new approaches that will provide for system wide goals, measures, and review of performance.

Further coordination and use of dashboards, consistent review, use of appropriate external comparisons may require additional training, IT infrastructure, and collaborations as noted in the findings and recommendations. It may not be clear who the “champions” are for quality improvement in each MTF. This is also an essential ingredient for staff to understand, beyond normal chain of command, who else is the leader for quality improvement.

In the sections that follow, I have addressed the recommendations for each area: Access to Care, Quality, and Safety. Comments follow each recommendation or are summarized in sections. General comments follow as well.

Access Findings and Recommendations

The Department’s clearly articulated guidance and standards for access to health care (based on urgency of patient need) has resulted in clear expectations and ability to measure performance in direct care with some challenges for measurement in purchased care. Contemporary technologies in use such as secure messaging, TRICARE On-Line, and the Nurse Advice Line, are enhancing beneficiary access which is consistent with civilian systems as well.

Performance for Direct Care acute and specialty care appointments are excellent and outperform MHS and CA standards. Given this high level of performance it may not be necessary to continue to measure “days to third available appointment in primary care” as it is no longer applicable; some civilian systems have abandoned this measure in favor of same day or ‘open’ access (whenever the patient wants to come) for primary as well as some specialty care. There should be reconsideration of the standard for specialty care visits of 28 days. This far exceeds patient expectations and civilian systems in most specialties. With the average number of days being 12.4 days (median 11.6) a revised standard of 14 calendar days (10 business days) would be an achievable goal.

Overall, data sources were adequate, as were benchmark and external system comparisons. The lack of data from purchased service facilities (as pointed out in the recommendations) is an area for improvement.

Recommendations to Improve Access to Care

Please note, recommendation numbering and language listed here were taken from a previous draft of the Final Report. A table that maps the recommendation numbers used here with the recommendations listed in Appendix 6.1 of this report is provided at the conclusion of Dr. Cipriano’s comments.

1. The DHA should, through governance, commission an external study to evaluate purchased care access for TRICARE Prime enrollees as it relates to 32 C.F.R. § 199.17. This study should include a review of all data available and a recommendation for data that should be incorporated into the current and future TRICARE contracts. (Mapped to Finding 2)

Reviewer comment: Agree—it is important to be able to assess these other services and hold them to the same standards as MTFs.

2. MHS governance should increase the focus on the standardization of specialty care, including creation of the Tri-Service Specialty Care Advisory Board, funding requirements to standardize specialty product lines, business rules for access, and performance review metrics for specialty care product lines. (Mapped to Finding 3)
Reviewer comment: Agree with continued implementation of the Specialty Care Advisory Board, etc. This will improve the ability to have a more comprehensive measurement of care that is either a complex episode or requires chronic management beyond primary care.
3. The Services should, through governance, standardize MHS access to care business practices by replacing the MHS Guide to Access Success with a MHS policy memorandum and subsequent DoD Instruction. (Mapped to Finding 4)
Reviewer comment: no comment
4. The Services and DHA should, through governance, continue implementation of the Joint Service survey tool. (Mapped to Finding 5)
Reviewer comment: Agree
5. DHA should, through governance, standardize reporting from the TROs to Services. (Mapped to Finding 6)
Reviewer comment: Agree
6. The Services should, through governance, establish a measure to assess patient satisfaction with office waiting times through the new Joint Service satisfaction survey tool. (Mapped to Finding 7)
Reviewer comment: In addition to measuring office waiting times, setting a goal to improve the rating of “getting care when needed” to closer approximate the CAHPS benchmark of 85%.
7. The Services and DHA should, through governance, promote SM and TOL through direct care component-wide standardized business processes and a strategic marketing approach. (Mapped to Finding 8)
Reviewer comment: Greater use of these technologies can enhance access perception/response, and satisfaction. As soon as the electronic record system is upgraded, TOL capabilities should be expanded to mirror patient portals with greater self-service capabilities (some of this may be available now but was not apparent in the review materials).
8. The Services and DHA should, through governance, standardize both ATC and customer service training across the direct care component. (Mapped to Finding 9)
Reviewer comment: This should be a priority and should include cross training for scheduling functions to address staffing shortages. A system should be developed that eliminates the need for the patient to call back, i.e. service their call until an appointment has been made or another appropriate disposition. The beneficiary town hall responses reinforced the dissatisfaction and barriers this has presented in the past.

Quality Findings and Recommendations

The Quality and Safety dimensions of any health system are inextricably linked, thus recommendations in the following Safety section will overlap with Quality. Some recommendations of this sections also address improved access and the dimension of patient

satisfaction. Similar to recommendations in Access, there is a need for data from the purchased services component of care particularly as it relates to coordination of services and specialty care outcomes. This has been raised in prior external surveys as well.

Policy guidance across the Services and the NCR is insufficient to establish a system wide view of quality even though the MTF Directors ensure that hospitals maintain comprehensive Clinical Quality Management and Patient Safety Programs. Efforts to standardize and provide central guidance from the Clinical Quality Forum (CQF) which is relatively new with the formation of the DHA should continue. The CQF can be a driving force to effect improvement in clinical quality across the MHS. Each service develops its own quality improvement efforts which is appropriate but could benefit from an overarching framework that combines joint quality goals and metrics.

Upon hearing presentations in advance of reviewing the draft report, the Quality Improvement efforts appeared nascent in comparison to the depth of work in progress to address access and in some cases safety. Thus the number of recommendations is voluminous although not unrealistic given the size and complexity of the MHS. The detailed results presented in the report suggest areas for clinical improvement (HEDIS, NSQIP, and IPI) and should be addressed at the MTF level. A contemporary look at using mortality as an indicator should be considered.

Oral presentation referenced construction of a data warehouse which will be useful for generating reports for both (Alat and Ecentris data) that will allow comparative data, custom analyses, and presentation of dashboards.

It is important to continue to focus on skill development through education, and establishing a culture that values quality improvement. There must be infusion of this value from executive leadership to front line staff. Ensuring data transparency and creating a “just culture” will create the right mindset for embracing the need to improve.

Recommendations to Improve Quality of Care

Please note, recommendation numbering and language listed here were taken from a previous draft of the Final Report. A table that maps the recommendation numbers used here with the recommendations listed in Appendix 6.1 of this report is provided at the conclusion of Dr. Cipriano’s comments.

1. MHS Governance should identify and implement leading healthcare industry methods for instilling and maintaining cultural changes throughout a large system.
Reviewer comment: As evidenced by site visit reports, executives and quality management staff have a more significant level of awareness of quality initiatives and organizational performance than do staff and patients. This is only addressed through education and establishment of a culture that embraces quality and safety (similar finding with AHRQ Culture of Safety Survey); early report findings speak to a “standardized and intentional approach” to improving quality and safety will be beneficial. It will be essential to involve front line staff in performance improvement

activities and to achieve staff empowerment and commitment that will not only improve but sustain quality improvements.

2. DHA should establish relationships with civilian Health Systems to participate in collaboration and data sharing to facilitate more complete comparisons.
Reviewer comment: agree but probably not top priority; publicly available data may be sufficient for established benchmarks for initial comparisons.
3. MHS governance should develop and implement an enterprise performance management system that links to MHS and Service strategy with dashboards and common performance measures to support visibility of those measures across the enterprise.
Reviewer comment: Absolutely essential. This will also allow sharing and spread of best practices. Evidence suggests posting (can be just internal to staff or to your public) of data enhances quality improvement efforts.
4. MHS governance should create and task an MHS data analytics cell to provide actionable information to the Services and DHA at the enterprise level.
Reviewer comment: While it is possible that there is actionable data at both Service and DHA levels, it may be more appropriate to define desired outcomes and metrics at the DHA level, then implement and measure at the Service and MTF level. (similar to what is currently done)
5. ASD (HA) and DHA should develop policy guidance in support of DoDI and DoDM 6025.13 with specific direction on quality measurement, performance improvement, and requirements for education and training.
Reviewer comment: Policy guidance will help standardize education and training which is not only disparate but difficult to ascertain/measure at this time. It would be wise to exercise caution in expanding training in Lean and Six Sigma, but rather focus on training the larger number of staff who must understand principles and approaches to performance improvement and not necessarily the leadership skills to analyze processes and provide statistical support. What appears to be lacking is the more general wide spread understanding of process improvement, simple data interpretation, and use of control charts to create a common understanding of performance.
6. ASD (HA) should develop and implement a process to manage and track compliance of Services and DHA with applicable DoD policies and directives.
Reviewer comment: Agree
7. DHA Education and Training Directorate should conduct an in-depth review and needs assessment of quality training to adequately assess the efficacy of training. (#11, #49)
Reviewer Comment: Agree, consistent with #5 above
8. DHA should integrate requirements for Purchased Care clinical quality data on TRICARE beneficiaries into the TRICARE Operations Manual and future TRICARE regional contracts.
Reviewer comment: Agree—this is a consistent recommendation of prior reviews and this review.
9. MHS governance should commission a study to assess development of a Quality expert career path.
Reviewer comment: There are a number of available courses that prepare individuals for leadership roles in quality management and leadership. I do not believe a study is necessary. The emphasis should be on cultivating a knowledge base in the broad range of

- leaders and front line staff with only a few experts needed to lead the execution of quality plans which include the measurement and reporting of quality outcomes.*
10. MHS governance should establish a mechanism to aggregate and communicate accreditation findings across the MHS.
Reviewer comment: Agreed. This should be relatively simple aggregation perhaps through the MOG.
 11. MHS governance should consider expanding fellowship opportunities to include other national quality and accreditation organizations (e.g. Institute for Healthcare Improvement, AAAHC, etc.). Optimize utilization of fellows after completion of training.
Reviewer comment: Agree, and consistent with responses to broader training; these individuals could easily rise to leadership roles.
 12. DHA Health Plans should give purchased care contractors the authority to utilize supplemental databases to improve the capture of clinical information for purchased care enrollees.
Reviewer comment: Agree
See comments under #18 for recommendations 13-18
 13. DHA Health plans should explore alternative methods of incentivizing contractors and/or providers to improve the provision of clinical preventive services and HEDIS[®] performance. This may require statutory or regulatory changes, since new, innovative payment mechanisms may have to be developed to encourage compliance.
Reviewer comment:
 14. MHS governance should commission a study to assess the value of expanding the number of HEDIS[®] measures monitored to evaluate care provided to enrolled beneficiaries.
Reviewer comment:
 15. MTFs should capture and verify clinical data regarding preventive services that are obtained outside of the direct care component and enter that information into AHLTA.
Reviewer comment:
 16. DHA should develop plans to improve Other Health Insurance documentation in DEERS for all beneficiaries to ensure those with Other Health Insurance are not included in HEDIS[®] calculations.
Reviewer comment:
 17. MHS governance should increase efforts to understand the determinants of PQI performance and evaluate whether age adjustment of PQI data would enhance its accuracy.
Reviewer comment:
 18. MHS governance should implement a monitoring program for PQI measures and require plans for improvement if a facility is a statistical outlier for performance for two consecutive quarters.
*Reviewer comment: **Items 13-18 Agree with the recommendations.** The performance on HEDIS[®] and PQI measures is disappointing. It would be beneficial to have dashboards by Service and NCR for comparisons and ultimately sharing of best practices to gain improvements. Better data collection methods are needed to be more inclusive. The*

- detailed analysis in the report can guide the locus of improvement efforts including the expansion of HEDIS[®] measures, action lists, and documentation in DEERS, etc.*
19. MHS governance should establish an implementation plan for MHS Population Health Portal readmissions site to ensure maximum utilization to reduce avoidable readmissions.
Reviewer comment: Performance in reducing readmissions is admirable and is much stronger than in the civilian world. The benefit is in improving patient experience and improving coordination of care which has positive benefits for the patient and care team/system.
 20. DHA Healthcare Ops Directorate should complete transition to the HEDIS[®] All-Cause Readmission standardized measure which is risk-adjusted and has national benchmarks.
Reviewer comment: Agree but should follow any further developments in changes approved by National Quality Forum regarding all cause readmission measure(s).
 21. DHA HIT should prioritize electronic medical record upgrades by aligning needed data elements into Essentris[®]. Move to remote access for all inpatient MTFs by utilizing the recently available Application Virtualization Hosting Environment (AVHE), allowing earlier collection of data.
Reviewer comment: Agree would be beneficial
 22. MHS governance should establish goals for increasing the number of Top Performers each year.
Reviewer comment: Agree and couple with appropriate recognition and rewards as powerful incentives.
See comments under #26 for Recommendations 23-26
 23. MHS governance should explore expanding NSQIP[®] participation to all remaining Direct Care inpatient facilities performing surgery. In addition, ensure our ambulatory surgery platforms all participate in a similar surgical quality improvement program.
Reviewer comment:
 24. DHA Healthcare Operations Directorate should partner with the American College of Surgeons to build a more effective collaboration between our facilities using their experience in building collaborative partnerships to capitalize on our top performing facilities best practices.
Reviewer comment:
 25. DHA Healthcare Operations Directorate should partner with the American College of Surgeons to evaluate MHS morbidity data in assisting the MHS and its facilities in developing plans for improvement.
Reviewer comment:
 26. MHS governance should task the NSQIP[®] working group to assess surgical morbidity shortfalls to the Medical Operations Group (MOG) for Tri-Service/DHA engagement, collaborative support, and facility action.
Reviewer comment: Agree further conversation with NSQIP[®] and ACS officials would be beneficial before changing approach dramatically. Of great concern is the higher morbidity. Exploration with civilian high performing institutions may be instructive. If not already developed, the MHS might offer to initiate the ambulatory program. CMS reports the following on their website regarding the ASCQR: “The Ambulatory Surgical Center Quality Reporting (ASCQR) Program is a pay-for-reporting, quality data program finalized by the Centers for Medicare & Medicaid Services (CMS). Under this

- program, ASCs report quality of care data for standardized measures to receive the full annual update to their ASC annual payment rate, beginning with Calendar Year (CY) 2014 payments.”*
27. The Perinatal Advisory Group (PAG) should lead efforts to increase the number of comparative measures in which MHS outperforms the NPIC average, utilizing a dashboard and reporting requirements for the Services.
Reviewer comment: Dashboards are an effective improvement tool. The perinatal review was very thorough and identified key areas for improvement such as shoulder dystocia, PPhemorrhage, readmissions of mothers and newborns.
28. HA policy is needed to support the collaborative standardized targets for perinatal metrics and to standardize annual and interval training requirements.
Reviewer comment: Agree
29. MHS governance should task the Perinatal Advisory Group to conduct a comprehensive review of clinical practices related to metrics where MHS is underperforming; develop intervention plans and prioritize actions.
Reviewer comment: Agree, consistent with #27 above
30. MHS governance should require a review of provider documentation and coding practices at MTFs to validate data integrity. Standardization of accurate coding practices should be implemented across Direct Care.
Reviewer comment: This recommendation should be edited to reflect its relationship to the perinatal measures. If there are other areas where documentation and coding lag then standard procedures could be applied there as well.
31. MHS governance should further investigate readmissions of mothers and infants. Require a clinical review of diagnostic codes at readmission to identify the medical conditions that drive these rates and help determine if lagging performance is a quality issue or related to military-unique issues and flexibility.
Reviewer comment: Agree; consistent with #27 and #30
32. MHS governance should integrate measures of mortality into their quality monitoring and performance improvement programs.
Reviewer comment: Agree. Health systems today are struggling between mortality indices, absolute numbers, and risk adjustment strategies. However, it is important to measure and look for areas where unexpected mortality can be reduced through implementation of sepsis protocols, assessment of rapid response teams, adherence to infection prevention bundles, etc.
33. MHS governance should commission a study to assess the validity of the results of the IQI measures.
Reviewer comment: Before commissioning a study, refer to the Value Based Purchasing section of the CMS website to see if there is updated information from Mathematica or others on the reliability of IQI measures.
34. MHS governance should require Service facilities with higher-than-expected mortality on an IQI measure for more than one quarter should perform an investigation using the tool referenced in recommendation above and implement improvement activities as indicated.
Reviewer comment: Agree
35. MHS governance should commission a study to assess the validity of the results of the risk-adjusted mortality measures. All risk-adjusted SMR model data should be validated

and a root cause sought in all those with validated, statistically significantly increased mortality.

Reviewer comment: Before undertaking a study, it might be appropriate to consult on existing risk adjustment methodologies that are reliable for age, gender, etc. There is also much work going on to establish a risk adjustment for sociodemographic factors by CMS that is under review and consideration by NQF.

36. MHS Governance should set MHS goals to meet or exceed civilian benchmarks in satisfaction with primary care for every MTF.

Reviewer comment: Agree; reasonable target.

37. Add to MTF leader and staff mandatory annual training requirements; PCMH concepts and operations, Relay Health, Nurse Advice Line (NAL) utilization, and customer service.

Reviewer comment: Agree. Strengthening PCMH operations should yield higher customer satisfaction. Rating of personal doctor fell below civilian systems and CAHPS.

38. Specialty Care Advisory Board should gather and distribute "best practices" from highest rated facilities.

Reviewer comment: Agree; approaches will likely build on customer serviced training and efficiency.

39. MHS governance should expand MHS Perinatal Advisory Group work on improving beneficiary perception of OB quality of care.

Reviewer comment: Agree

40. Services and DHA should continue PCMH concept development in all MTFs to increase probability of achieving primary care satisfaction to levels equivalent to the civilian benchmark. (#44-45)

Reviewer comment: Agree; concept has proven successful.

41. PCMH Advisory Board should assess processes that affect PCM continuity at high performing PCMH sites and promulgate across the MHS to support improvement initiatives.

Reviewer comment: Agree; may want to look at a model of care that accommodates provider reassignments. Is it possible to introduce patient to team that may cover one another? Even in teaching medical centers, 'continuity clinics' allow for handoffs to another provider.

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

Reviewer comment: Agree. The ability to secure performance from purchased service providers is a pervasive theme and calls for inclusion of contract language that will direct these activities.

43. MHS governance should identify a strategy to market and utilize Clinical Practice Guidelines.

Reviewer comment: When possible, include guidelines in the build of health record order sets; adherence is challenged in many medical centers. Auditing of adherence to order sets and/or guidelines included in decision support systems is gaining traction in civilian systems but can be difficult to accomplish.

44. Establish DoD and TRICARE regional contractor collaborations/MOUs with local purchased care organizations to support EHR accessibility.

Reviewer comment: Agree; may need to work with state entities involved in HIE.

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

Reviewer comment: Agree and this is consistent with Joint Commission expectations.

Patient Safety Findings and Recommendations

The Patient Safety Program of the DoD is twelve years old however various portions took years to implement, thus performance overall is at an average level. Underlying the MHS performance and similar to many civilian organizations is the slow journey to evolving a culture of safety and establishing a high reliability organization. Results of the AHRQ survey on a culture of safety showed little to no change in repeated administrations over the past decade. This was surprising given the emphasis on safety in civilian organizations as well as the emphasis by the IOM.

A prior study (Lumetra) shed light on some of the same recommendations being made in this review, namely the need to improve reporting of events both real and near misses, and improving the follow up to these reports. The prior report also brought into question the appropriate resources need to staff the patient safety program.

The review focused on both processes and outcomes. Training and education, root cause analyses conducted for sentinel events, and safety tools were identified as areas that could be improved. Overall findings using the PSI#90 (Patient Safety Indicators) showed comparable performance of MTFs to the reference population of AHRQ. Evaluation of its use for improvement should be considered at this time.

Performance on measures used in other pay for performance systems is consistent with other organizations although some are outliers. Major measures of preventable events and hospital acquired conditions varied when compared to civilian systems.

Recommendations to Improve Patient Safety

Please note, recommendation numbering and language listed here were taken from a previous draft of the Final Report. A table that maps the recommendation numbers used here with the recommendations listed in Appendix 6.1 of this report is provided at the conclusion of Dr. Cipriano's comments.

1. Refine DoDM 6025.13 policy to establish more than one mechanism for capturing harm events. (mapped to Finding #1)
Reviewer comment: Agree. Aggressive reporting is key to improving.
2. Clarify the definition of "sentinel event" in the DoDM 6025.13. (mapped to Finding #2)
Reviewer comment: Agree.
3. Incorporate and define appropriate policy for patient/family engagement. (mapped to Finding #3)
Reviewer comment: Agree

4. Establish clear expectations in DoDM 6025.13 for the RCA process. (mapped to Finding #4)
Reviewer comment: Agree
5. Establish a system-wide closed loop mechanism. (mapped to Finding #5)
Reviewer comment: Agree. This may be easier with new EHR as it relies on recording the reporting event and then documenting who takes action and result.
6. Ensure that the policy establishes attainable goals for “near miss” reporting. (mapped to Finding #6)
Reviewer comment: Low reporting of near misses was identified as a problem including perception of staff that they did not need to report; suggest this be heightened awareness in training and the importance of counting and understanding near misses as a prevention strategy.
7. Establish a system-wide structure to fully expand internal transparency of patient safety information in compliance with 10 US Code 1102. (mapped to Finding #7)
Reviewer comment: Agree; an important aspect of a culture of safety.
8. DHA conducts a business case analysis that identifies the most effective method for staffing the Patient Safety Program. (mapped to Finding #8)
Reviewer comment: Agree, this is consistent with prior external studies. Given slow progress over time, dedicated personnel might be a strategy that is needed in some areas.
9. Authorize the Service-level and DHA patient safety officers direct access to senior executives for pre-defined critical events and messages. (mapped to Finding #9)
Reviewer comment: Agree; necessary role for leadership to be available.
10. Define and standardize minimal patient safety training requirements in DoDM 6025.13 policy. (mapped to Finding #10)
Reviewer comment: Agree; essential for transparency, understanding, and commitment to safety culture.
11. Develop an executive leadership toolkit; this best practice guide will address integral areas of patient safety. (mapped to Finding #11)
Reviewer comment: Agree; also identified in prior reviews; executive leaders need to role model knowledge and use skills to help address safety issues.
12. MHS Governance must determine safety culture expectations, set targets based on opportunities. (mapped to Finding #12)
Reviewer comment: Agree; fundamental to improved safety.
13. Consider PSI #90 composite utilization as a component of a comprehensive safety measure set and develop an educational plan to support implementation. (mapped to Finding #15)
Reviewer comment: Agree
14. This finding requires further review by the Infection Prevention and Control Panel (IPCP) to determine the cause for the variance in performance in accordance with the Partnership for Patients Implementation Guide for CLABSI. (mapped to Finding #17)
Reviewer comment: Agree further investigation is indicated.
15. This finding requires further review by the IPCP to determine the cause for the variance in performance in accordance with the Partnership for Patients Implementation Guide for VAP/VAE. (mapped to Finding #18)

- Reviewer comment: Agree since these rates are higher than desired and many hospitals are making significant improvement to zero.*
16. The IPCP will develop a comprehensive plan to standardize requirements for monitoring device-related infections. (mapped to Finding #18)
Reviewer comment: Agree
 17. Clarify policy and educate healthcare staff on the Sentinel Event definition and event types to reduce the variation in interpretation. (mapped to Finding #20)
Reviewer comment: Agree
 18. MHS Governance should pursue an enterprise-wide improvement process addressing top five reported SEs and improve distinction between SEs occurring within ambulatory versus hospital settings, and monitor SE occurrence by rates using appropriate denominator estimates. (mapped to Finding #21)
Reviewer comment: Agree but must be part of comprehensive reporting process that encourages reporting and then stratifies all events and determines those for RCA.
 19. Establish clear expectations for the RCA process and the follow up that will occur. (mapped to Finding #22)
Reviewer comment: Agree; should be part of PSP.
 20. Standardize PI RCA process with focus on event type classification, centralized repository and dissemination of lessons learned. (mapped to Finding #24)
Reviewer comment: Agree; consistent with recommendations above.
 21. Standardize event type components of the event reporting process. (mapped to Finding #25)
Reviewer comment: Agree; consistent with recommendations above.
 22. Standardize leadership activities to drive a culture of safety (Executive toolkit). (mapped to Finding #26)
Reviewer comment: Agree; consistent with other recommendations.
 23. Adopt a chart audit based methodology such as the IHI Global Trigger Tool (GTT) to determine harm rate. (mapped to Finding #27)
Reviewer comment: A chart based methodology has its limitations and is not timely. Education and setting expectations for more robust real time reporting is the more contemporary approach to understanding safety events.
 24. Incorporate best practices from all three contractors to develop a more standardized process that enhances transparency, minimizes variation, and incentivizes reporting for process improvement. (mapped to Finding #29)
Reviewer comment: Agree; aggregate best practices for use across all Services.
 25. DoD direct care systems should pursue tracking infection rates at the unit level beyond ICUs. (mapped to Finding #31 and 32)
Reviewer comment: Agree; will need to have accurate tracking given patient movement and the transit of devices inserted in different locations.
 26. Establish rate-based SE reporting for DoD or other recognized frequency tracking. (mapped to Finding #34)
Reviewer comment: This can be accomplished and should be accompanied by an overall push to increase reporting that adjusts for an increase in events over at least a year until new rates plateau.

General Findings

The data sources analyzed for this review were numerous and thorough as was the identification of external benchmarks. Given the aggressive time frames for both the internal and external views, the data were more than adequate. The data were analyzed appropriately to produce meaningful information; presentation was clear and relevant. Appendices were provided to augment the highlights in the report. A few additional recommendations at the strategy level are offered in some of the recommendations.

The review addressed key relevant issues and challenges. Accurate reporting and interpretation of information allowed for identification of high and low performance areas.

Conclusions

Strengths of the findings and recommendations:

The report represents, without bias, both areas where the MHS excels and where improvement is needed. One of the interesting report findings was the presence of prior external reviews that had, in some cases, reached similar conclusions and posed consistent recommendations. In a few areas, improvements have been made but are still in need of attention.

Overall performance in providing timely access to care meets or exceeds standards. Quality measures are more often average when compared to benchmarks; there is a serious attempt to use most available measures, and be inclusive of all areas of care including behavioral health, care of children, and obstetrics along with standard acute and primary care of adults. The journey to achieve a culture of safety is ongoing. There are opportunities to accelerate these activities which address the Patient Safety Program and its measures, along with additional quality measurement.

Reviews were fairly comprehensive and demonstrate leading edge practices such as well-developed PCMH, use of technology for patient engagement, and an emerging desire for internal collaboration and sharing with the new DHA and its structures. Leadership should be commended for its vision in not only recognizing the synergy and common purpose of unifying guidance and policies around health delivery, but also the desire to provide the tools and support the local leadership efforts of the MTFs and NCR facilities.

Whenever possible, external benchmarks were used for comparison. In some cases, benchmarks are not well developed or it is difficult to access the data.

Weaknesses of the findings and recommendations:

The report recognizes the need for a more robust commitment to a Culture of Safety. Most important is that this culture penetrate to front line staff and not rest with leadership. Reframing expectations for access, quality, and safety within a culture of safety can be a powerful means to improving many different types of results it also reinforces a patient and family centric approach to care.

One of the consistent findings is the lack of data from the purchased service component of care. This has been noted in previous reviews and cannot be ignored going forward. It is not unreasonable to include an expectation for quality measurement and performance in this sector as it is now standard operating procedure and expectation within accrediting bodies and for CMS reimbursement.

Bidirectional flow of data is an area for improvement not only from a technical perspective but also from an interpretation and planning perspective. The growing interest and demand for cross service comparisons via dashboards can help with the spread of best practices and evoking a healthy competitive spirit to improve outcomes.

Given the sophistication of quality measurement systems and techniques, it was surprising that the MHS is not leading the way in terms of quality measurement and outcomes. Again the roadmap of areas ripe for improvement is embedded in the reported findings. There is a sincere interest in making these improvements. Participation in external measurement systems should continue in order to mark progress and have a consistent compare group. Training from established organizations (IHI, Intermountain, etc.) can produce resident experts and offer methodologies for increasing effectiveness in PI efforts.

Comparison to the Pay For Performance measures and methods employed by CMS can be a useful comparison. Similarly, continuing to use high performing organizations as an informal comparison can provide a high bar for those measures where MHS lags behind.

Timelines for Addressing Recommendations

There are several considerations for determining timelines for implementation of the recommendations. First, there is some urgency to address improvement strategies where performance is in the lowest quartile of quality outcomes at the facility level within a Service. Action plans may already be in place, but otherwise should be instituted within 90 days. Ongoing measurement and monitoring should occur monthly with quarterly review of progress.

Second, the imperative to merge cultures and systems requires a one to two year time frame. Laying the foundation by establishing expectations and providing training will likely take a year to complete. Establishing sufficient culture change to actualize a culture of safety that is embraced at all levels of the enterprise will require a second year to measure and see results, achieve expected performance, and reinforce positive gains. Some areas will respond more quickly than others. Because of the long trajectory, it is essential to begin this work as quickly as possible.

Third, the need to implement enterprise policies, practices, data collection methods, and reporting will require a more robust analytic infrastructure.

The following rough timeline is offered as an example for parsing activities for some of the major areas of recommendations. It is only a guide based on experience, and is intended to reflect a dynamic processes.

Time Frame	Activity to address recommendations
0 – 3 months	<ul style="list-style-type: none"> ● Address quality measures at <25th percentile (HEDIS, Core measures, NPIC, NSQIP) ● Outline steps for setting expectations of a Culture of Safety and communicate leadership’s commitment and expectations ● Establish training requirements for all levels of personnel for Culture of Safety ● Evaluate requirements for improving analytic infrastructure of MHS data systems
3-6 months	<ul style="list-style-type: none"> ● Harmonize governance policies for management of quality programs (establish system-wide measures, time frames for reporting, benchmarking, etc.) ● Communicate expectations to Purchased Care Network ● Begin Culture of Safety training and address associated programmatic improvements
6-12 months	<ul style="list-style-type: none"> ● Complete Culture of Safety training—this will address many of the Patient Safety Recommendations ● Add expectations to TRICARE contracts ● Determine mortality measurement methodology ● Continue to build out tools for increasing Access ● Develop recognition program to highlight improvement and better performers across the enterprise ● Implement actions to close horizontal quality gaps and create consistent approaches to care (e.g. Pain Management) ● Status check initial/urgent improvement goals
12-18 months	<ul style="list-style-type: none"> ● Provide enterprise information such as aggregate accreditation findings ● Integrate more PQI measures into quality plan ● Do complete review of status for addressing recommendations
18-24 months	<ul style="list-style-type: none"> ● Establish appropriate external review collaborations for comparisons and exchange data ● Repeat site visits and hold focus groups to assess changes ● Repeat Culture of Safety survey

Thank you for the opportunity to participate in this review.



Pamela F. Cipriano, PhD, RN, NEA-BC, FAAN
 President, American Nurses Association

The following table maps the recommendation numbers used in Dr. Cipriano’s comments with the recommendation numbers listed in Appendix 6.1 of this report.

Recommendation # in Dr. Cipriano's Review	Recommendation # in Appendix 6.1
ACCESS	
1	3
2	1
3	2
4	4
5	5
6	Wrapped into #4
7	6
8	7
QUALITY	
1	8
2	9
3	10
4	10
5	11, 14
6	13, 15
7	12, 16
8	17
9	18
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19	28
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21	30
22	31
23	32
24	33
25	33
26	34
27	35
28	36
29	35
30	37, 38
31	39
32	40
33	Does not appear in list of recommendations included in Appendix 6.1

Recommendation # in Dr. Cipriano's Review	Recommendation # in Appendix 6.1
34	41
35	42
36	43
37	44
38	43, 45
39	43
40	45
41	46
42	47
43	48
44	49
45	50
SAFETY	
1	54
2	55
3	56
4	57
5	58
6	59
7	60
8	61
9	62
10	63
11	64
12	65
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21	73
22	74
23	75
24	76
25	77
26	Does not appear in list of recommendations included in Appendix 6.1

External Review of Findings and Recommendations: Report from Dr. Peter Pronovost

Purpose: The external expert will evaluate the Military Health System (MHS) 90-day review findings and recommendations with reference to the goals and objectives outline in the approved Terms of Reference.

Data Sources: The external expert had access and reviewed the following information for their analysis: Terms of Reference, Memoranda defining scope, timeline, study questions, policy/document review methodology, metric analysis methodology, site visit methodology, process and outcome review methods, site visit histograms, analysis, and draft final report. The reviewer also had access to speak with the MHS Program Review Lead, Dr. Michael Malanoski, Action Officer Leads: BG Barbara Holcomb (Patient Safety), RDML Kenneth Iverson (Access), Brig Gen (s) Lee Payne (Quality), CAPT Paul Rockswold (Analytics Lead) and LTC Julie Freeman (Site Visit Lead).

Results

DOD leadership should be commended for embarking on this 90 day review, conducting a detailed self-study to evaluate the safety, quality and access in the MHS. The methods and discipline and transparency are impressive, even more impressive given the 90 day review period. The leadership of the MHS and the engagement of the MTFs speaks strongly to a culture committed to patients, devoted to decreasing preventable harm, committed to continuously improving patient outcomes, experience, and access.

The study provides answers to two key questions; one addressing accountability, the other addressing learning. The accountability question is whether the review identified signals to suggest that the safety, quality or access in the MHS has significant and substantive deficiencies such that patients receiving care in the MHS suffer lower safety, quality and access than patient receiving care in non-MHS facilities; does MHS have dark spots in its care delivery? The report provided no evidence of substantive deficiencies in the safety, quality, and access to care at MHS that would warrant broad and urgent changes. Though care in MHS and civilian facilities can improve, there was no evidence that care in MHS facilities is worse overall than civilian healthcare.

The learning question is whether the report identified opportunities to learn and to improve. Here the report provides many bright spots. The report provides opportunities for improvement in culture and leadership, in structures, in processes, and in the science of quality and safety. Though it is difficult to ascertain the culture of the MHS through this report, the culture around safety, quality and access seems to be one of mediocrity rather than one of national leadership. The tone of the report was largely seeking to confirm that the MHS provides average care and is not inferior to civilian care. This is understandable given the purpose of this report. Yet this type of leadership message is not inspirational and not likely to lead to excellent care. The MHS should declare and commit to be national leaders in safety, quality and access. Also, several signals suggested that the culture of one of fear, or judging rather than learning. This might warrant further investigation.

The structure also can be improved to provide an opportunity for peer learning and accountability. The MHS might consider implementing a fractal model of performance improvement in which they define roles, skills and accountability at each level of the organization and each level, is tasked with creating a structure to accommodate safety and quality leaders from the lower level. For example, a MTF quality and safety leader might ensure that each department has a quality and safety leader and meet regularly with them. This type of structure seems similar to the structure the MHS has for creating accountability for reducing mortality in trauma patients. In this system, there is a clear chain of command from front-line medic to care at a quaternary medical facility.

One significant opportunity to improve MHS, and have MHS lead the US healthcare systems is in the governance for access, quality and safety. The report comments how the business analytics in MHS (and civilian healthcare) are more developed than safety and quality analytics. As a goal, the DOD can work so that the oversight and accountability for access, quality and safety functions with the same discipline and rigor as the oversight of financial performance. This would include clearly defined goals and targets, enabling support systems to collect and report data, local engagement in meeting targets and transparency and accountability for meeting performance goals. Healthcare can learn much from finance and efforts to support this learning within MHS might prove beneficial.

The report identified a number of process improvements; from improving contracting, to reducing ICU infections and they are all appropriate. It might be helpful for DOD leaders to clearly define the accountable leaders to achieve these goals. The different services have a large number of structures responsible for safety, quality and access. It is not clear how all of them interact or overlap. On the one hand, this is important since they all look at different components of access, safety and quality. On the other hand, some of the work overlaps and could potentially be made synergistic. It might be helpful to explore ways to link them, perhaps under an umbrella quality and safety and access group, carefully balancing the independence and interdependence of each group.

Patient Safety Findings and Recommendations

Overall, the DOD did an amazing job looking at a large amount of data to evaluate their quality and safety. Quality and safety data are much less standardized and mature than financial data and the DOD did a remarkable and valid job of making the most of the data. Appropriately, the data was largely used to answer the accountability question. After this review is complete, there is opportunity to use these data to learn. This would include evaluating variation in performance at the MTF level and units within the MTF, identifying units or areas in which there is a cluster of concerns about safety, and using these data to create a regular safety dashboard, modeling the reporting of financial performance. There are also opportunities to follow up this study with more qualitative work to better understand the culture. Some of the signals suggested that there were pockets of staff who perceived a culture of retaliation and fear, who were not comfortable speaking up or speaking out. The lack of voice behaviors can pose risks to patients and the MHS. While civilian healthcare also has these concerns, it would serve patients and the MHS to better understand these cultural concerns and work to improve them.

The MHS work in patient safety is exemplar. In particular, its Patient Safety Reporting Systems and its focus on teamwork training are models for civilian hospitals. In addition, the MHS has been extremely responsive to the finding of prior reviews, especially the 2008 Lumetra study, demonstrating strong leadership commitment to safety.

The recommendations to improve safety and quality are wise, responsive to the study, and will improve care within the MHS. As such, I support all of the recommendations and did not comment on each individual recommendation. However, below I offer some reflections on the report and opportunities to further improve care in the MHS.

MHS leaders may want to further define what work is in safety and what is the appropriate level of the MHS for mitigating risks. Safety overlaps with quality and defining what functions are housed in quality and which in safety could allow synergy. Though there is a lot of data in safety, most of it is not rate based. Rather the data identifies risks. MHS might think of how it could aggregate the large amount of safety data to help prioritize risks (and improvement efforts) at the Unit, MTF, Service and MHS levels. For example, risks might be grouped into risky providers, risky units, and risky systems. MHS might look at these risks at the Service, MTF and unit levels and describe accountability for mitigating these risks. One novel method, used more in Europe than in the US, is the safety case, in which a care area takes the risk data, conducts their own risk assessment, prioritizes these risks and then reports how they will defend against the major risks. This type of approach engages local leaders, is sensitive to local context yet still allows accountability. In addition, the MHS might seek to learn more from efforts to identify and mitigate risks from submarines, aircraft carriers and other areas of the military. These programs are well regarded as models for risk reduction and the MHS likely can learn from them and in doing so, lead all of healthcare. This learning also applies to more disciplined contracting. The DOD has skilled contractors who helped to create intraoperability in aviation and other military areas; the MHS can learn from this DOD experience.

Given the immaturity of the science of safety, it seems there would be opportunities for the services to learn from each other, and from other parts of the DOD, balancing independence, yet supporting interdependence. For example, they may have an annual meeting about how they are organizing safety work and what they are learning.

The MHS might consider more clearly describing what they do with the safety culture data. It is great that they measure culture. The next step might be to standardize how they present culture data to each MTF and what they require of each MTF in presenting their culture data to each unit within the MTF. They might clarify who would be responsible for such a debriefing, consider if they have the proper skills and create an accountability system to monitor improvement plans at the unit and MTF levels. Ideally every unit and every MTF would have plans to improve culture. The MHS might also prioritize these efforts on units with the lowest culture scores.

Given the complex organizational structure of the MHS, they might consider organizing their quality and safety efforts using a “fractal” conceptual model. For example, the MHS could clearly define the knowledge, skills, resources and accountability for safety (and quality) at every

level of the MHS and create structures in which each higher level meets regularly with each lower level group (ie at MTF safety leaders meet with department safety leaders who in turn meet with unit level safety leaders). Such a fractal system creates a structure to link horizontal teams in peer learning communities, which have the largest impact on improving quality and safety. Such a fractal system also creates a structure for vertical accountability and organizational learning.

It seems the MHS includes patient experience under safety. Given the importance of this area and the skills required to improve it, the MHS might consider separating the patient experience work into its own domain. The patient experience work could be combined with patient relations work (ie complaint management) and access to ensure the MHS has a more complete picture of patient experience, and has goals, enabling systems, performance measures and accountability for patient experience.

In defining goals, the DOD should seek to ensure that goals are linked to measures that are collected in units as close to the patient as possible (ie individual provider or unit or clinic) and then aggregated to higher levels. Similar to the chain of command for the transport of a trauma patient, MHS leaders need to ensure a chain of accountability for safety and quality from unit, to department, to MHF to service to DOD.

DOD should ensure that it supports a culture in which goals, measures and enabling systems are centralized, yet local MTF and units have some flexibility to implement practices based on their local context and resources and are accountable for meeting goals. While healthcare is generally under-standardized, too much standardization may reduce safety and worsen productivity; leaders need the flexibility to find the balance. For example, in our work using checklists to reduce infections, there were 5 evidence-based practices to reduce infections. Each unit and each hospital made their own checklist, all included the 5 items. While the checklists were 90% similar, the flexibility to make the checklist their own lead to its use and to reduced infections. Each hospital thought their checklist was the best; and it was for their culture and resources. Had we required that all hospitals use the exact same checklist, the checklist would likely not have been used and infections would remain high. MHS should standardize goals, measures and principles of practice, and encourage local variation in how those principles are applied, ensuring the application aligns with the principles.

Quality Findings and Recommendations

The evaluation of the quality program was impressive. They collected a large number of measures, most of which are used in public reporting and pay for quality in the civilian sector. The analysis was robust and they made use of the large amount of data. Like safety, the report provides confidence that there is no significant accountability problem with quality within the MHS. The focus could be on learning and improving. The recommendations are all valid and sound and will help improve the MHS. Many of the general comments I made about safety and the need for a fractal infrastructure and peer learning apply to quality.

The report identified gaps in understanding of goals for quality between unit, MTF and service leaders. This suggests that a more robust structure, such as the fractal structure, may provide a mechanism to narrow those gaps and allow for peer learning.

The MHS appears to have robust analytics for quality and it would be helpful (if not already done) to produce standardized and integrated quality reports, modeled after financial reports for each MTF, Service and overall MHS. The reporting of financial performance could serve as a model. This type of approach should come with clearly defined roles and accountabilities.

Though the MHS was doing significant and laudable work in quality, it was hard to find clearly declared and communicated goals; such as zero ICU blood stream infections or 96% performance on all core measures. Without clear goals it is difficult for the MHS to lead in quality. The MHS can consider declaring some goals. It might be helpful for accountability to monitor achievement of goals as dichotomous: either the goal is met or not. The MHS should also ensure that it has sufficient enabling systems to help the MTF meet those goals. Accountability absent engaging systems leads to gaming and potentially false reports. Yet with goals, and enabling systems, MHS leaders should hold MTF leaders accountable for realizing the goals.

Given the size of the MHS and the importance of quality, safety and access, the MHS might consider creating more formal career paths for clinician and administrative leaders in quality and safety. This could include a defined set of skills and an explicit career ladder with elevated levels of responsibility. Importantly, leaders in quality and safety require skills in evaluation, in process and system redesign, and in leadership, especially in influencing. The MHS training programs can ensure quality and safety leaders obtain all of these skill sets.

The report talks about the use of overall MTF mortality as a measure of quality; this measure should be used cautiously. Though overall hospital mortality has face validity, there is substantial evidence that it might not be valid and may lead to inaccurate inferences. For example, a study in the New England Journal of Medicine by Dave Shehan demonstrated that among Massachusetts hospitals 42% of hospitals classified as having above average mortality were classified as having below average mortality when they changed the methods of risk adjustment. If overall hospital mortality is used, it should be used as a screen to obtain future data. On the other hand, disease or procedure specific mortality can be more accurate, (because they have more accurate risk adjustment) and more useful.

Areas that the report did not evaluate, understandable given the charge, are care coordination, population health, and value (ie eliminating waste in healthcare while maintaining quality). These are important areas for patients, policy makers and the MHS. Future work on quality should explore these areas and measures of these should be included in future quality reports.

Access Findings and Recommendations

The study did an exemplary job evaluating access. The amount of data and the rigor with which they analyzed it is impressive. A notable strength of the MHS is having explicit standards for

performance regarding access. All of the recommendations regarding access are wise and robust and will help make the MHS leaders in access. Below are some reflections regarding access.

The report recommended the MHS build specifications regarding access, quality and safety into its contracts. This seems to be a key and high impact intervention. The MHS should define goals, accountabilities and milestones for achieving this.

While the analysis of access is important, the MHS could stratify measures of access by product lines important to its members. For example, the MHS could identify areas of concerns and interest, such as mental health, and monitor access for specific product lines. Just as with all the other analyses, the average access, while informative, likely misses variation in performance among individual product lines. MHS should define these important services and stratify access by these product lines

The MHS should consider making performance on access part of routine quality and safety reports that go to management.

The MHS might consider linking access, patient experience, patient relations, and perhaps patient education into a common function. For example, the report notes that some patients reported difficulties with access. These comments report a rich opportunity to learn and improve. Yet it was unclear what would be done with these comments and who is responsible to understand them and improve. By looking at access by product line and by linking access to data regarding patient satisfaction, and patient complaints, the MHS might have a more comprehensive picture of access.

Conclusions

MHS should be commended for its dedication to improve access, quality and safety, for the rigor with which it conducted this review, and for the commitment to improve the MHS. MHS leaders, its employees and patients should take comfort that access, quality and safety in the MHS is comparable to civilian health systems. The MHS staff should be commended for its dedication to patients and to improving safety and quality. Though there are opportunities to improve care, the report did not identify significant accountability issues that would require urgent and immediate action on behalf of the MHS.

The report identified significant opportunities to learn and improve. The recommendations contained within the report are thorough and comprehensive and will likely improve access, quality and safety. I support the recommendations and made additional comments and recommendations.

Thank you for inviting me to serve on the review panel to help improve care in the MHS. All Americans who live in freedom are indebted to those who serve to maintain it. It is an honor to serve the men and women who protect our great country.

Name/Title

Peter Pronovost, MD, PhD, FCCM

Johns Hopkins Medicine Senior Vice President for Patient Safety and Quality

Director of the Armstrong Institute for Patient Safety and Quality

The C. Michael and S. Ann Armstrong Professor of Patient Safety, The Johns Hopkins University School of Medicine.