

MEASURING THE SUCCESS OF WARRIOR TRANSITION UNITS

BY

LIEUTENANT COLONEL SUZANNE K. SHAW
United States Army

DISTRIBUTION STATEMENT A:

Approved for Public Release.
Distribution is Unlimited.

USAWC CLASS OF 2009

This PRP is submitted in partial fulfillment of the requirements of the Master of Strategic Studies Degree. The views expressed in this student academic research paper are those of the author and do not reflect the official policy or position of the Department of the Army, Department of Defense, or the U.S. Government.



U.S. Army War College, Carlisle Barracks, PA 17013-5050

The U.S. Army War College is accredited by the Commission on Higher Education of the Middle State Association of Colleges and Schools, 3624 Market Street, Philadelphia, PA 19104, (215) 662-5606. The Commission on Higher Education is an institutional accrediting agency recognized by the U.S. Secretary of Education and the Council for Higher Education Accreditation.

REPORT DOCUMENTATION PAGE				Form Approved OMB No. 0704-0188	
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing this collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0704-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.					
1. REPORT DATE (DD-MM-YYYY) 30-04-2009		2. REPORT TYPE Program Research Paper		3. DATES COVERED (From - To)	
4. TITLE AND SUBTITLE Measuring the Success of Warrior Transition Units				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S) LTC Suzanne K. Shaw				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) U.S. Army War College 122 Forbes Avenue Carlisle, PA 17013				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES) COL (Ret) Kenneth W. Womack Department of Distance Education				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION / AVAILABILITY STATEMENT DISTRIBUTION A: Unlimited					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT In April 2007, the U.S. Army Medical Command (MEDCOM) established the first Warrior Transition Unit (WTU) to facilitate improvements in care for the Army's wounded, ill and injured Soldiers. Since then, 35 WTUs and nine Community Based Warrior Transition Units (CBWTU) have been established around the country. The continued success of any unit requires a constant assessment and analysis of effectiveness. The purpose of this essay is to demonstrate that the MEDCOM should use evidence based outcomes measures of effectiveness to measure the success of Warrior Transition Units (WTU). Civilian case management benchmarks for measuring outcomes can be effectively employed to measure WTU success rates. Military specific outcomes metrics must also be employed to measure organizational effectiveness. Military specific measures include return to duty rates, medical evaluation board processing times, and post-deployment social functioning. This essay will also provide support for the argument that by using evidence based outcomes metrics to measure the overall success of WTUs, the MEDCOM will have clear, standardized evidence that its resources are improving the lives of Soldiers.					
15. SUBJECT TERMS Outcomes Metrics, Army Medical Command, Evidenced Based Practice, Case Management, Triad of Care					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT	b. ABSTRACT	c. THIS PAGE			19b. TELEPHONE NUMBER (include area code)
UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED	UNLIMITED	2	

USAWC PROGRAM RESEARCH PROJECT

MEASURING THE SUCCESS OF WARRIOR TRANSITION UNITS

by

Lieutenant Colonel Suzanne K. Shaw
United States Army

Topic Approved By
Colonel (Retired) Kenneth W. Womack

This PRP is submitted in partial fulfillment of the requirements of the Master of Strategic Studies Degree. The U.S. Army War College is accredited by the Commission on Higher Education of the Middle States Association of Colleges and Schools, 3624 Market Street, Philadelphia, PA 19104, (215) 662-5606. The Commission on Higher Education is an institutional accrediting agency recognized by the U.S. Secretary of Education and the Council for Higher Education Accreditation.

The views expressed in this student academic research paper are those of the author and do not reflect the official policy or position of the Department of the Army, Department of Defense, or the U.S. Government.

U.S. Army War College
CARLISLE BARRACKS, PENNSYLVANIA 17013

ABSTRACT

AUTHOR: Lieutenant Colonel Suzanne K. Shaw
TITLE: Measuring the Success of Warrior Transition Units
FORMAT: Program Research Project
DATE: 30 April 2009 WORD COUNT: 4,523 PAGES: 26
KEY TERMS: Outcomes Metrics, Army Medical Command, Evidenced Based Practice, Case Management, Triad of Care
CLASSIFICATION: Unclassified

In April 2007, the U.S. Army Medical Command (MEDCOM) established the first Warrior Transition Unit (WTU) to facilitate improvements in care for the Army's wounded, ill and injured Soldiers. Since then, 35 WTUs and nine Community Based Warrior Transition Units (CBWTU) have been established around the country. The continued success of any unit requires a constant assessment and analysis of effectiveness. The purpose of this essay is to demonstrate that the MEDCOM should use evidence based outcomes measures of effectiveness to measure the success of Warrior Transition Units (WTU). Civilian case management benchmarks for measuring outcomes can be effectively employed to measure WTU success rates. Military specific outcomes metrics must also be employed to measure organizational effectiveness. Military specific measures include return to duty rates, medical evaluation board processing times, and post-deployment social functioning. This essay will also provide support for the argument that by using evidence based outcomes metrics to measure the overall success of WTUs, the MEDCOM will have clear, standardized evidence that its resources are improving the lives of Soldiers.

MEASURING THE SUCCESS OF WARRIOR TRANSITION UNITS

In February 2007, a series of news articles in the *Washington Post* sparked much controversy and led to an in depth analysis of how the Army was caring for its wounded, ill and injured Soldiers at Walter Reed Army Medical Center and across the Army. *Post* writers Dana Priest and Anne Hull wrote of “disengaged clerks, unqualified platoon sergeants and overworked case managers.”¹ They described patients and family members who were frustrated with the “messy bureaucratic battlefield”² of Walter Reed where Soldiers spent their time “waiting for appointments, evaluations, signatures and lost paperwork to be found.”³ Following the publication of the *Washington Post* articles, the Army Surgeon General, Lieutenant General Kevin Kiley, ordered a series of investigations to review the systemic breakdowns in the care of Wounded Warriors and improve the system of care at Walter Reed.⁴ Secretary of Defense, Robert M. Gates also commissioned an independent panel to review current rehabilitative care and administrative processes at Walter Reed and National Naval Medical Center (NNMC), Bethesda, MD.

The Independent Review Group (IRG) report revealed case management ratios as high as 1:50 at Walter Reed, far exceeding recommended case mix guidelines, and 1:32 at NNMC.⁵ The IRG also revealed that while there were minimum requisite case management qualifications and training standards, not all case managers caring for wounded Soldiers were qualified nor had all received the necessary training.⁶ The leadership needed to supervise outpatient Soldiers was found to be “woefully inadequate” with a lack of officers and non-commissioned officers to provide necessary oversight, supervision, discipline and assistance.⁷

In June 2003, the U.S. Army Medical Command (MEDCOM) recognized a need for a support structure to assist with the management of wounded, ill and injured Soldiers due to problems with timely access to care and effective coordination of services resulting from an increased number of Global War on Terrorism patients.⁸ MEDCOM established a standardized system for the care and case management of Reserve Component wounded ill and injured Soldiers that was implemented at every Army Military Treatment Facility (MTF). The standardized system included the establishment of performance standards that were reported weekly to the Office of the Surgeon General (OTSG).⁹ It also incorporated competency training and verification using a standardized assessment tool.¹⁰

The systems existed in February 2007 to manage the care of Wounded Warriors. Performance metrics were being monitored that indicated that staff members were functioning as directed. The IRG described the situation that led to an overwhelmed Walter Reed, and ultimately an overwhelmed Army healthcare system, as the “Perfect Storm.”¹¹ This perfect storm was caused by inconsistencies in the leadership and management of Soldiers, inadequate facilities, conflicting interpretations of laws and regulations, and a host of other factors that were not readily visible to Army leaders.

In response to the shortfalls in its healthcare delivery system, the MEDCOM initiated the development of an Army Medical Action Plan in March 2007. In April 2007, the MEDCOM established the first Warrior Transition Unit (WTU) to facilitate improvements in the care of the Army’s wounded ill and injured Soldiers. Since then, 35 WTUs and nine Community Based Warrior Transition Units (CBWTU) have been established around the country and in Europe.

The continued success of any unit requires a constant assessment and analysis of effectiveness. The purpose of this essay is to demonstrate that the MEDCOM should use evidence based outcomes measures of effectiveness to measure the success of WTUs. Civilian case management benchmarks for measuring outcomes can be effectively employed to measure WTU success rates. Military specific outcomes metrics must also be employed to measure organizational effectiveness. Military specific measures include return to duty rates, medical evaluation board processing times, and post-deployment social functioning. This essay will also support the argument that by using evidence based outcomes metrics to measure the overall success of WTUs, the MEDCOM will have clear, standardized evidence that its resources are improving the lives of Soldiers.

The Triad of Care Defined

In early 2007, the Office of the Surgeon General directed the development of the Army Medical Action Plan. The goal of this plan was “to establish an integrated and comprehensive continuum of care and services for Warriors and their Families being treated at Department of the Army Medical Treatment Facilities in conjunction with Department of Defense, Veterans Affairs, and Civilian facilities in order to provide world class care and services that match the quality of service the Warriors and their Families provide the Nation.”¹² Identified quick wins to the AMAP included establishing command and control (C2), institutionalizing structure, and facilitating the continuum of care.¹³ These three quick wins were accomplished through the creation of the Triad of Care which included the Primary Care Manager, the Nurse Case Manager and the Squad Leader. The Triad is organizationally aligned within each WTU to support the

same Company, Platoon and Squad of Warriors. The rationale behind the creation and alignment of the Triad of Care was to facilitate quality outcomes for each Warrior in Transition (Warrior) through enhanced risk assessment, communication, collaboration, and coordination.¹⁴

The Primary Care Manager (PCM) is usually a physician who provides the “primary oversight and continuity of healthcare.”¹⁵ The PCM also ensures the quality of the Soldier’s care. PCMs are assigned at a ratio of one per company or one per 200 Warriors.¹⁶ The PCM is also responsible for conducting a deliberate risk assessment on every Warrior that includes an analysis of suicide risk, violence towards others, medication use, falls, driving, alcohol, non-prescribed drug use, and the Warrior’s ability to live independently. The PCM must then communicate this assessment to the Platoon Sergeant and Squad leader along with recommended guidance on the management of the Warrior based on risk.¹⁷

The Squad Leader is a non-commissioned officer and serves as the Warriors primary link to the chain of command. Because of this, the relationship established between the Squad Leader and Warrior is critical. The Squad Leader works alongside the other members of the Triad of Care – the PCM and the Nurse Case Manager – “to ensure the [Warrior] attends medical and administrative appointments and the needs of the [Warrior] and his or her family are met.”¹⁸ With the exception of Walter Reed, the Squad Leader to Warrior ratio is 1:10.^{19, 20}

Case management as defined by the Case Management Society of America is “a collaborative process of assessment, planning, facilitation, and advocacy for options and services to meet an individual’s health needs through communication and available

resources to promote quality and cost effective outcomes.”²¹ Case management is a specialty practice within the health and human services profession.²² However, the role is not limited to a particular profession. Case managers may be nurses, Social Workers or other healthcare providers. All case managers assigned to WTUs are Registered Nurses. The role of the case manager within the WTU is consistent with the CMSA definition for case manager. The nurse case manager within the WTU “plans, implements, coordinates, monitors and evaluates options and services to meet the [Warrior’s] health care needs.”²³ With the exception of Walter Reed Army Medical Center, the Case Manager to Warrior ratio is 1:20.^{24, 25}



Figure 1. Conceptual Model of the Triad of Care

The Triad of Care is designed to support the Warrior in Transition. A Warrior in Transition is a Soldier who is either assigned or attached to the WTU and whose primary mission is to heal.²⁶ FRAGO 3 to EXORD 118-07 establishes a process for reviewing and assigning and attaching Warriors to a WTU. To meet entry criteria, the Active Component Soldier must have a temporary profile, or is anticipated to receive a

profile, for more than six months that limits his or her ability to train or contribute to mission accomplishment; and the acuity of the wound, illness or injury requires clinical case management in order to ensure appropriate, timely and effective utilization and access to care to support healing and rehabilitation.²⁷ A Reserve or National Guard component Soldier in need of definitive healthcare based on medical conditions identified, incurred or aggravated during mobilization, pre-deployment, post-deployment or separated from his or her unit while in support of the Global War on Terrorism (GWOT) is eligible for assignment to a WTU. Additionally, some Reserve and National Guard Soldiers with other healthcare conditions that were incurred while on active duty but not necessarily in support of the GWOT may also be eligible for assignment to a WTU.²⁸

Performance versus Outcomes Metrics in Organizational Management

Performance management is central to organizational decision making. Performance metrics inform leaders about the critical activities within the organization to enable them to monitor and analyze all aspects of clinical and operational performance. The goal in using performance metrics is to enable leaders to manage an organization effectively.

The purpose of outcomes management is to quantify and qualify the impact of services delivered. Suzanne Powell notes that the healthcare industry is demanding evidence of quality care, patient satisfaction and the efficiency of healthcare delivery.²⁹ Outcomes metrics measure processes and provide the evidence to prove or disprove the impact on quality, satisfaction and efficiency. This is reinforced by Johnson and

Maas who note that outcomes metrics are “an essential component of quality evaluation and effectiveness research.”³⁰

The key characteristic distinguishing performance metrics from outcomes metrics is that outcomes metrics measure the impact of change, both favorable and adverse, on “the actual or potential health status of persons, groups or communities that can be attributed to prior or concurrent care.”³¹ To measure effectiveness, metrics must capture the quality and outcomes of an interaction.³²

A recent study of examining the validity of pay-for-performance metrics in orthopedic surgery compared hospital performance data from a Medicare pay-for-performance initiative to publically available outcomes data. The study found that the ability to measure hospital quality based on performance metrics was poor primarily due to the lack of correlation with clinical outcomes.³³

In 2003, when the MEDCOM established the Medical Holdover (MHO) system, the team established the following standards to capture case manager compliance with essential services:

- Consultations are set up within 72 hours.
- Diagnostic testing is to be completed within 1 week.
- Surgery must take place within 2 weeks from scheduling to procedure time.
- There will be one [Case Manager] to 50 Soldiers.
- Case managers will meet in person weekly or more frequently, as needed, with Soldiers.
- Each Soldier is assigned a primary care manager (physician).
- [Medical Evaluation Boards] should be processed within 30 days.
- 70 percent of MHO Soldiers will be dispositioned within 100 days of entry to MHO.³⁴

As noted by Swanson et al., these standards became the outcomes for MHO care and became the metrics for case management. The MEDCOM developed a case

management information system that was housed within the larger Medical Occupational Data System (MODS) to capture performance metrics. These MODS data were reported weekly and proved to be sufficiently accurate.³⁵ These performance metrics adequately measured the ability of the case manager to collaborate, assess, plan, facilitate, communicate and advocate for Warriors. However, they did not measure whether or not case management affected healthcare outcomes. In most cases, the healthcare delivery system established to care for the Army's wounded ill and injured met the mark in terms of the performance standards set and the MEDCOM was aware of how well and how poorly each unit was doing. The MEDCOM fell into the trap of assuming quality outcomes based on performance metrics. Identifying and developing outcomes metrics requires deliberate consideration of program goals, data reliability and validity, existing data sources and the feasibility of data collection.³⁶ Given that WTUs are now entering their third year in existence and program goals are well established, the MEDCOM is hitting a new "Perfect Storm" in that conditions are right to identify outcomes metrics to effectively measure the impact and quality of care being delivered to Warriors.

Developing an Outcomes Metric Framework for WTUs

Development of health care outcomes measures is not a new concept and case management is not a new profession. However, there is a lack of empiric research available in the literature that validates any one framework for establishing and monitoring outcomes metrics. Most case management research on outcomes management is anecdotal and describes specific patient populations or clinical units.³⁷ Despite these limitations, there are a number of models available in the civilian sector

that can serve as the basis for developing a WTU outcomes framework. Johnson and Maas describe a model that incorporates patient, system and provider factors that influence outcomes achievement. Global, multidisciplinary patient outcomes such as patient satisfaction and health status serve as the core of the model. The authors note that these metrics “provide useful information for payers evaluating alternative healthcare plans, but are not specific enough to determine accountability for changes to improve outcomes.”³⁸ To augment these general multidisciplinary metrics, the Johnson-Maas model includes diagnosis-specific, system-specific and discipline-specific outcomes. Diagnosis-specific outcomes are frequently used in critical paths and standardized evaluation instruments to capture primary indicators of physician practice. System-specific outcomes incorporate measures of organizational effectiveness that are typically found in benchmarking or total-quality management systems. Discipline-specific outcomes evaluate the technical competence, interpersonal style and discipline standards.³⁹

The Outcome Facilitation Team (OFT) model is designed as an open system model focused on the exchange of information within the system. The model focuses on four systems initiatives: structure, purpose, process and multidisciplinary initiatives rather than individual behavior. It also examines trends over time rather than one time occurrences.⁴⁰ Structure initiatives described in the OFT model are similar to the system-specific outcomes in the Johnson-Maas model. Similarly, multidisciplinary outcomes initiatives are similar in both models in that they examine more global patient needs. Purpose initiatives incorporate the discipline-specific and disease-specific outcomes described earlier.

The CareSpan project model focuses outcomes metrics on primary, secondary and tertiary prevention indicators and health maintenance behaviors.⁴¹ Initial CareSpan pilot metrics included an increase in healthy behaviors and functional status, an increase in informed healthcare choices such as participation in health screenings and health education, improved utilization of services such as decreased medication use and cost and high customer satisfaction.⁴² The foundation of the model was to demonstrate cost-effective, consumer-satisfying outcomes that can be applied to either an aggregate population or an individual in a relevant, timely fashion.⁴³

Within the Triad of Care, the Warrior and his Family is the focal point. Surrounding him in support are the PCM, the Squad Leader and the Case Manager. Merging the three frameworks described above, purpose driven, functional status and systems specific outcomes can be designed to focus on any one aspect of the Triad of Care or the Triad as a whole. Multidisciplinary outcomes such as patient and staff satisfaction and improved health status would encompass the entire Triad of Care.

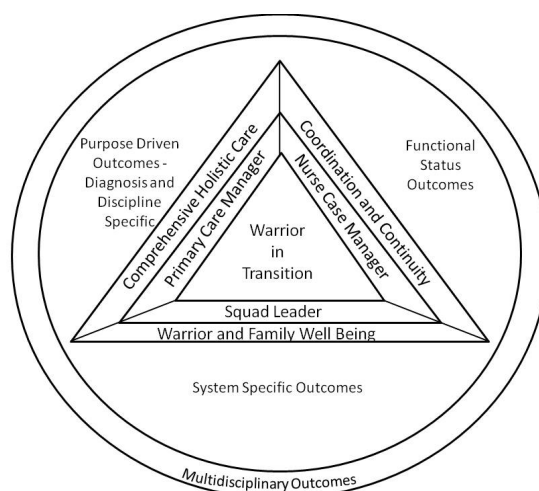


Figure 2. Conceptual model of an outcomes framework for the WTU.

Designing and Selecting Outcomes Metrics

The Case Management Society of America identifies seven characteristics of effective outcomes measures; they must be valid, reliable, not easy to manipulate, comprehensive, dynamic, flexible and cogent.⁴⁴ Valid metrics will ensure that the outcome effect is related to the intervention and not a random occurrence. Metrics that are reliable consistently measure what they were intended to measure. Clearly defined metrics are not easy to manipulate, are quantifiable, and ensure objectivity. Comprehensive goals cover most or all aspects of the program and dynamic goals can change to reflect changes in practice. Flexible metrics measure outcomes for more than one process or can be used to demonstrate multiple outcomes. Finally, cogent outcomes make sense to the user.⁴⁵

When developing and defining outcomes metrics, Mateo, Matzke and Newton recommend answering the following questions: "What is important to measure? How are measures identified and defined? How does one go about doing the measurements?"⁴⁶ To arrive at an answer to this first question, it is critical to identify the goals of the program then base the outcomes metrics on the goals. To answer the second question, organizations must examine the tools used to meet the goals. Methods for defining measurements include conducting a literature review, and benchmarking with other organizations to identify best practices.⁴⁷ Finally, to answer the how to question on measuring metrics, it is important to identify resources that are already monitoring the outcomes selected. Once existing sources are identified, organizations can decide what other data types are needed and develop methods for measuring the data points.⁴⁸

Outcomes metrics should be selected and collected based on organizational priorities and should align with the organization's strategic plan. Typical metrics focus on high cost, high volume and/or problem prone areas.⁴⁹ The Tricare Management Activity (TMA) advocates the use of multiple resources to retrieve and analyze data and recommends a focus on return on investment when selecting metrics.⁵⁰

An additional consideration in selecting outcomes metrics is ensuring the effective use of limited resources. Lagoe, Noetscher and Murphy note that balancing data availability and limited funding with effective outcomes metrics management "can become a creative undertaking."⁵¹ The authors note that the use of pre-existing computer databases can be used to develop meaningful, consistent outcomes. Use of metrics that can be applied to any population, to include individual departments, a single hospital or groups of hospitals is also beneficial.⁵²

There are a number of data systems and decision support tools available that enable benchmarking with established standards both within the military healthcare system and with the civilian community. The TMA advocates the use of InterQual clinical decision support products which are sets of measurable, objective clinical indicators that are based on severity of illness and intensity of services rather than clinical diagnoses. Milliman Ambulatory Care Guidelines define assessment and treatment modalities that should occur at the primary care level and serve as a benchmark standard for outcomes measurement.⁵³

The development and design of WTU outcomes metrics must also take into consideration the military unique aspects of patient care and the differences between the civilian sector and the military beneficiary population.

The *Washington Post* articles were not just about the healthcare concerns of Warriors. The authors cited bureaucratic delays in processing times for Medical Evaluation Boards, social isolation, and financial issues.⁵⁴ Systems specific outcomes metrics are needed to address specific processes and concerns of the Army Warrior.

Recommendations for Warrior Transition Unit Outcomes Metrics

Given the MEDCOM's goal of providing world class care and services that match the quality of service the Warriors and their Families provide the Nation, and a conceptual framework for designing and selecting outcomes metrics, the options are limitless. Balancing the demands of managing the care of the Army's wounded, ill and injured with the demands of measuring effectiveness requires careful selection of the right metrics to measure. Return on investment is critical. Over expenditure of time and resources in over-analysis of effectiveness is equally as dangerous to an organization as not measuring the right thing.

There are a number of "quick win" outcomes metrics that are either already being collected by the MEDCOM. Among these is patient satisfaction. Data is already being collected across all beneficiary populations in the MEDCOM and throughout the military healthcare system using reliable and valid surveys. Analysis of the effectiveness of WTUs based on patient satisfaction could easily be achieved through comparison of WTUs to one another, analysis of satisfaction in individual WTUs over time and comparison of Warrior satisfaction to other beneficiary populations.

The MEDCOM has also been collecting administrative data on a large cohort of its wounded, ill and injured since 2003 and all Warriors in Transition using the MODS database system. Data on length of stay could easily be extrapolated and analysis of

improvements over time conducted. Because all WTUs and CBWTUs use MODS for capturing administrative data, analysis of length of stay over time within individual WTUs and CBWTUs as well as a comparison between units could be conducted. The only limitation to this method of collecting data on length of stay is the fact that MODS is an Army-centric database so it would be difficult to compare length of stay data across the services or with the civilian sector.

MODS and other established personnel data systems are already being used to track return to duty rates across the MEDCOM. From here, comparative analyses can be conducted to look at the effectiveness of care in individual WTUs and across units. Data is also being collected on medical evaluation board processing times and analysis of new changes to the disability evaluation system are ongoing.

A literature review revealed that appropriate use of Emergency Departments (ED) and readmission rates are common outcomes metrics used by civilian healthcare agencies. Both low readmission rates and a low number of ED visits per month per Warrior indicate appropriate interventions by the Triad of care. Data for analyzing both metrics can be captured using the Composite Health Care System (CHCS) database used by all three services. Longitudinal analysis of changes in these metrics over time in a single WTU or across WTUs is possible as is an analysis across specific clinical groups.

Staff satisfaction has a significant impact on organizational effectiveness in any organization. The impact of WTU cadre satisfaction on overall Warrior care can be extrapolated from research done on the impact of nursing satisfaction on patient care. Studies have shown that nursing satisfaction plays a critical role in how a patient

perceives his hospital stay. There is a direct correlation between happy nurses and happy patients.⁵⁵ The Triservice Nursing Research Program initiated a project in 2002 known as the Military Nursing Outcomes Database (MilNOD) to assess military inpatient nursing care quality indicators, among which was nurse satisfaction. The MilNOD has a 31-item Nursing Job Satisfaction Survey that is known to have high parallel-test reliability and measures inpatient nursing satisfaction.⁵⁶ Further research needs to be done to determine if this survey could provide valid, reliable data in the outpatient setting and across disciplines. A second option would be to develop a survey that incorporates similar information for WTU cadre to measure satisfaction.

The term Warrior in Transition describes both the Soldier assigned to the WTU and his mission while assigned or attached to a WTU which is to heal and progress either back to duty or on to a productive civilian life. Every Warrior is required to develop a comprehensive transition plan (CTP) to outline both clinical and non-clinical goals designed to facilitate transition. The CTP serves as the Warrior's core document to manage personal goals and transition progress.⁵⁷ The onus of responsibility for developing and maintaining the CTP is on the Warrior. WTU cadre play a critical role in the Warrior's success in both developing an effective CTP and in meeting goals in a timely manner; therefore, analysis of effectiveness of the CTP is critical. While Warriors have been developing CTPs for more than a year, the final CTP policy was just published in March 2009 and the MEDCOM does not have a mature database for capturing and measuring reliable and valid outcomes. One recommended measure of effectiveness is the number of Warriors who achieved their stated goals. The CTP policy requires Warriors to select one of four transition tracks:

- Return to Duty (Active Duty only).
- Release from Active Duty (Army National Guard and Reserves only).
- Return to Duty/Release from Active Duty: New Military Occupation Specialty.
- Separation from the Army.

Warriors may shift between tracks if conditions change or goals prove unattainable.⁵⁸

An alternative measure is to examine the number of Warriors who remain on track and achieve their stated goals.

Assessment and mitigation of risk is a core process for all Army units and is currently a central, critical focus area for WTUs. The OTSG/MEDCOM Risk Assessment and Mitigation policy is less than two years old and continues to undergo change based on ongoing analysis of Warrior risk factors. The dynamic nature of risk assessment and mitigation within WTUs makes it difficult to develop reliable and valid outcomes metrics related to risk.

Assessment of pain management is a mechanism to assess both quality of care and effectiveness of risk mitigation factors. Assessment of pain and comfort is an indicator of functional, cognitive and quality of life and addresses purpose driven, functional and system outcomes. One proposed method for analyzing appropriate pain control using existing data points within CHCS would be to analyze the number of visits to Emergency Departments solely for pain management. Again, the reliability and validity of this data point as an outcomes metric will need to be further analyzed.

The National Committee for Quality Assurance and the Health Plan Employer Data and Information Set advocate for the use of quality-of-care data to assess effectiveness and to allow for comparisons across organizations reporting data.⁵⁹ The MEDCOM already participates in data collection and analysis of NCQA and HEDIS

metrics. Further analysis of data already being collected for comparison across WTUs, with other beneficiary outcomes and with the civilian sector outcomes will provide clear clinical indicators of the effectiveness of the Triad of Care.

Post deployment health assessment and social functioning data is being collected by MEDCOM on all redeploying Soldiers. Data can be extrapolated and studied to compare social functioning of Warriors across WTUs and to Soldiers who do not require care in a WTU.

Conclusion

Over the past two years, the MEDCOM has undergone a fundamental shift in the practice of caring for its wounded, ill and injured Soldiers. The creation of WTUs resulted in significant improvements in healthcare delivery and Soldier and Family satisfaction with the healthcare system. Sustainment of these positive changes requires constant monitoring and evaluation using standardized metrics. Measures of effectiveness must be based on outcomes and cannot rely solely on performance metrics. Outcomes metrics must be reliable, valid, feasible, comprehensive and cogent. The ideal metrics should focus on high volume, high cost, and/or problem prone areas and should take into consideration civilian outcomes metrics benchmarks and military unique aspects of healthcare. In order to maximize resources while developing a comprehensive set of standardized outcomes metrics, the following data points are recommended for analysis across and within WTUs:

- Length of stay both across and within WTUs and within diagnosis cohorts
- Readmission rates
- Emergency Department visits
- Patient satisfaction
- Staff satisfaction

- Comprehensive Transition Plan goals
- Risk mitigation
- Pain control
- HEDIS metrics

The events that led to the February 2007 *Washington Post* articles surrounding Soldier care at Walter Reed did not occur overnight. Constant vigilance is required to ensure that the MEDCOM retains visibility on how its WTUs are doing and continues to focus on improving the healthcare delivery system. In an article titled “Seven Steps to Shift from Tasks to Outcomes,” Ruth Hansten and Marilynn Washburn note that the ability to focus on outcomes is essential to developing the best quality healthcare. The authors state that nurses can “reinvent our practices to reinforce professional nursing practice and connect with those we serve.”⁶⁰ The same applies to WTU cadre in general.

The U.S. Government Accountability Office aptly notes that without representative information, the Army cannot reliably know if there are serious deficiencies in the WTU program. Their imperative states that “continued monitoring of the Army’s WTUs, including servicemembers’ recovery process, will be important for ensuring that these units are meeting servicemembers’ needs.”⁶¹

Endnotes

¹ Dana Priest and Anne Hull, “Soldiers Face Neglect, Frustration at Army’s Top Medical Facility,” *Washington Post*, February 18, 2007.

² Ibid.

³ Anne Hull and Dana Priest, “The Hotel Aftermath,” *Washington Post*, February 19, 2007.

⁴ Kevin C. Kiley, “Walter Reed Army Medical Center Outpatient Care,” U.S. Congress, House of Representatives, Committee on Oversight and Government Reform, National Security and Foreign Affairs Subcommittee, 110th Cong., 1st sess., March 5, 2007, 5.

⁵ Independent Review Group on Rehabilitative Care and Administrative Processes at Walter Reed Army Medical Center and National Naval Medical Center, *Rebuilding the Trust*, (Arlington, VA: Independent Review Group, April 2007), 13.

⁶ Ibid., 15.

⁷ Ibid., 49.

⁸ Carol A. Swanson et al., "The Design and Development of a Case Management System for RC Personnel," *Army Medical Department Journal*, PB 8-05-7/8/9 (Jul/Aug/Sep 2005): 59.

⁹ Ibid., 61

¹⁰ Marietta P. Stanton, Carol Swanson & Rebecca D. Baker, "Development of a Military Competency Checklist for Case Management," *Lippincott's Case Management* 10, no. 3 (May/June 2005).

¹¹ Independent Review Group on Rehabilitative Care and Administrative Processes at Walter Reed Army Medical Center and National Naval Medical Center, 10.

¹² U.S. Army Medical Command, *Operation Order 07-55, MEDCOM Implementation of the Army Medical Action Plan* (Washington, DC: MEDCOM, June 5, 2007), 3.

¹³ Ibid.

¹⁴ U.S. Army Medical Command, *FRAGO 18 to Operation Order 07-55, MEDCOM Implementation of the Army Medical Action Plan* (Washington, DC: MEDCOM, October 17, 2007), 2.

¹⁵ U.S. Government Accountability Office, *Army Health Care, Progress Made in Staffing and Monitoring Units that Provide Outpatient Case Management, but Additional Steps Needed: Report to Congressional Requestors* (Washington, DC: U.S. Government Accountability Office, April 2009), 7.

¹⁶ U.S. Department of the Army, *Operation Order 07-55*, 1-B-1.

¹⁷ U.S. Department of the Army, *FRAGO 18*, 2.

¹⁸ U.S. Government Accountability Office, *Army Health Care*, 7.

¹⁹ U.S. Department of the Army, *Operation Order 07-55*, 1-B-1.

²⁰ The Squad Leader to Warrior ratio at Walter Reed Army Medical Center is 1:12.

²¹ Sandra Lowery, "History and Evolution of Case Management," in *CMSA Core Curriculum for Case Management*, 2nd ed., ed. Suzanne K. Powell and Hussein A. Tahan (Philadelphia, PA: Lippincott Williams & Wilkins, 2008), 9.

²² Ibid., 12

²³ U.S. Government Accountability Office, *Army Health Care*, 7.

²⁴ U.S. Department of the Army, *Operation Order 07-55*, 1-B-1.

²⁵ The Case Manager to Warrior ratio at Walter Reed Army Medical Center is 1:18.

²⁶ U.S. Department of the Army, *Annex S (Glossary of Terms) to FRAGO 3 to EXORD 118-07, Healing Warriors*, (Washington, DC: U.S. Department of the Army, July 1, 2008), S-1.

²⁷ U.S. Department of the Army, *Annex A (Warrior in Transition Program Standards) to FRAGO 3 to EXORD 118-07, Healing Warriors*, (Washington, DC: U.S. Department of the Army, July 1, 2008), A-1.

²⁸ *Ibid.*, A-2.

²⁹ Suzanne Powell, "Overview of Outcomes Management," in *Advanced Case Management: Outcomes and Beyond* (Baltimore, MD: Lippincott Williams & Wilkins, 2000), 56.

³⁰ Marion Johnson and Meridean L. Maas, "Nursing Sensitive Patient Outcomes: Development and Importance for Use in Assessing Healthcare Effectiveness," in *The Outcomes Mandate: Case Management in Healthcare Today*, eds. Elaine L. Cohen and Vivien DeBack (St. Louis, MO: Mosby, Inc., 1999), 38.

³¹ Avedis Donabedian, *The Methods and Findings of Quality Assessment and Monitoring: An Illustrated Analysis, Vol. 3* (Ann Arbor, MI: Health Administration Press, 1985), quoted in Marion Johnson and Meridean L. Maas, "Nursing Sensitive Patient Outcomes: Development and Importance for Use in Assessing Healthcare Effectiveness," in *The Outcomes Mandate: Case Management in Healthcare Today*, eds. Elaine L. Cohen and Vivien DeBack (St. Louis, MO: Mosby, Inc., 1999), 38.

³² Jane Chin, "MSLs: Show the Value," *Pharmaceutical Executive* 24, Iss. 12 (December 2004): 104 in ProQuest (accessed May 1, 2009).

³³ Timothy Bhattacharyya et al., "Measuring the Report Card: The Validity of Pay-For-Performance Metrics in Orthopedic Surgery," *Health Affairs* 28, Iss. 2 (Mar/Apr 2009): 526 in ProQuest (accessed May 1, 2009).

³⁴ Swanson et al., "The Design and Development of a Case Management System," 61.

³⁵ *Ibid.*, 60.

³⁶ Magdalena A. Mateo, Karen Matzke and Cheryl Newton, "Designing Measurements to Assess Case Management Outcomes," *Lippincott's Case Management* 7, no. 6 (November/December 2002): 261.

³⁷ Patricia Thomas, "Case Management Delivery Models: The Impact of Indirect Care Givers on Organizational Outcomes," *Journal of Nursing Administration* 39, no. 1 (January 2009): 30.

³⁸ Johnson and Maas, "Nursing Sensitive Patient Outcomes," 38.

³⁹ *Ibid.*, 39.

⁴⁰ Marita MacKinnon Schifalacqua and Vicki M. George, "The Changing Environment for Outcomes Management: Which Way to Go," in *The Outcomes Mandate: Case Management in*

Healthcare Today, eds. Elaine L. Cohen and Vivien DeBack (St. Louis, MO: Mosby, Inc., 1999), 166.

⁴¹ Gwenneth A. Jensen and JoEllen Goertz Koerner, "Longitudinal Profiling: A Differentiated Community Nursing Model," in *The Outcomes Mandate: Case Management in Healthcare Today*, eds. Elaine L. Cohen and Vivien DeBack (St. Louis, MO: Mosby, Inc., 1999), 159.

⁴² *Ibid.*, 155-160.

⁴³ *Ibid.*

⁴⁴ Michael B. Garrett, "Quality and Outcomes Management," in *CMSA Core Curriculum for Case Management*, 2nd ed., ed. Suzanne K. Powell and Hussein A. Tahan (Philadelphia, PA: Lippincott Williams & Wilkins, 2008), 561.

⁴⁵ *Ibid.*

⁴⁶ Mateo, Matzke and Newton, "Designing Measurements," 261.

⁴⁷ *Ibid.*, 262.

⁴⁸ *Ibid.*, 263.

⁴⁹ U.S. Department of Defense Tricare Management Activity, *Medical Management Guide*, Version 2.0 (Washington, DC: U.S. Department of Defense, January 2006), I-3 – I-5.

⁵⁰ *Ibid.*, 92.

⁵¹ Ronald J. Lagoe, Cheryl M. Noetscher and Mark P. Murphy, "Hospital Readmission: Predicting the Risk," in *Journal of Nursing Care Quality* 15, no. 4 (July 2001): 70.

⁵² *Ibid.*, 70, 82.

⁵³ Tricare Management Activity, *Medical Management Guide*, I-9.

⁵⁴ Ann Hull and Dana Priest, "The Hotel Aftermath."

⁵⁵ Lori A. Loan et al., "Designing and Implementing a National Database Depicting Quality of Nursing Care and Staffing Effectiveness," *Army Medical Department Journal*, PB 8-05-7/8/9 (Jul/Aug/Sep 2005): 54.

⁵⁶ *Ibid.*, 50.

⁵⁷ U.S. Department of the Army, *OTSG/MEDCOM Policy Memo 09-011, Comprehensive Transition Plan (CTP) Policy* (Washington, DC: U.S. Department of the Army, March 10, 2009), 1.

⁵⁸ *Ibid.*

⁵⁹ Mateo, Matzke and Newton, "Designing Measurements," 266.

⁶⁰ Ruth Hansten and Marilyn Washburn, "Seven Steps to Shift from Tasks to Outcomes," *Nursing Management* 30, no. 7 (July 1999): 27 in ProQuest (accessed May 1, 2009).

⁶¹ U.S. Government Accountability Office, *Army Health Care*, 20.