The Healthcare Gaps for Military Beneficiaries and the Need to Improve Continuity of Care

William Bennett

University of Wisconsin Platteville
Organizational Change Leadership 7920

Approved by: Caryn M. Stanley
Abstract

In the military health system, continuity of care is one of the largest challenges. According to the American Academy of Family Practice continuity of care can decrease cost and increase patient compliance, which in turn helps with patient outcomes. Due to the military lifestyle and frequent deployments, much of military health care can be fragmented, which has an overall impact on patient outcomes, cost, and military readiness.

The Department of Defense (DoD) uses several different electronic medical records/electronic health records (EMR/EHR) which are different from the Veterans Affairs (VA) EMRs, none of which communicate or share information across organizations. Tricare, which is the health insurance that the DoD uses for beneficiaries has a system in place, called Tricare Online, which is an online repository for patients medical records. The uploading of medical records to a central repository would address the informational component of continuity of care. By using this system, a patient’s complete medical records would be readily available if the patient had a permanent change of station (PCS), or if the patient’s primary care manager (PCM) relocated or deployed or was otherwise unable to provide care. A complete medical record, available electronically, would foster an increased continuity of care across the continuum of military health, increasing accuracy while decreasing cost and wait times.

Keywords: Continuity of Care, Electronic Health Record, Interoperability, Military, and Veterans
The Healthcare Gaps for Military Beneficiaries and the Need to Improve Continuity of Care

In healthcare marketplace providers and patients face many challenges associated with the delivery and receipt of healthcare-related services. As the healthcare environment has evolved, coupled with technological advancements, organizations have begun to look at how they can improve the delivery of healthcare-related services in order to achieve better patient outcomes, increase patient satisfaction and reduce costs. Central to an organization’s ability to improve healthcare delivery is how it addresses the challenges associated with increasing continuity of care for patients. The American Academy of Family Physicians (2019) defines continuity of care as “the process by which the patient and his/her physician-led care team are cooperatively involved in ongoing health care management toward the shared goal of high quality, cost-effective medical care over time” (p.1).

The MHS is one of the largest health systems in the United States, it has 700 military hospitals and clinics around the world. The Tricare Health Plan (military health insurance) delivers care to about 9.4 million eligible patients (Smith, Bono & Slinger, 2017). In 2012, the DoD spent $52 billion on health care for service members, their families and retirees. This encompassed about 10% of the DoDs budget (Congressional Budget Office, 2014). In addition to the MHS, there are some beneficiaries who are also eligible for care at the Department of Veterans Affairs (VA), which is an additional entity that serves approximately 9.7 million veterans (National Center for Veterans Analysis and Statistics, 2017). In fiscal year (FY) 2018 the VA’s budget was approximately $180 billion, almost 40% ($71 billion) was connected to health care (U.S. Department of
Veterans Affairs, 2019a). In the 2008 National Defense Authorization Act (NDAA) congress directed the DoD and the VA to develop and implement EHR systems/capabilities that provide for full interoperability of personnel healthcare information between both organizations (Cummings, 2019). Despite this congressional directive the MHS and the VA currently lack the capability and capacity to provide continuity of care for all eligible beneficiaries. Currently, dependents of service members just do not have the same level of continuity of care, and that is a problem. While many studies have address discontinuity of mental healthcare for service members, veterans and retirees little to no research has been done to address the lack of continuity of care for non-service member MHS beneficiaries across the care continuum as compared to their civilian counterparts (Gleason & Beck, 2017). Given the size and variance of the patient populations, the readiness requirements set forth by congress, the cost of running these programs and the lifestyle that includes active duty families and active duty providers, continuity of care is a significant issue facing the MHS and VA.

In order to examine the issue of continuity of care in the military, it is important to first discus what continuity of care actually is and how it works in both the civilian sector and in the military community. Effectively defining continuity of care and what actually constitutes continuity of care is dependent upon what lens the individual (patient, provider and caregiver) or groups of individuals exploring the issue use. Continuity of care should be thought of and viewed as a multi-dimensional continuum, in that there are many differing perspectives/elements to view and assess the overall effectiveness of continuity of care.
In a study conducted by Reid, Haggerty and McKendry (2002) on behalf of the Canadian Health Services Research Foundation (CHSRF) researchers explored how the term continuity had been used and measured in the Canadian Health System previously in order to develop a common understanding of the concept of continuity and recommend standard measures for assessment of continuity within the Canadian Health System. The purpose of the research was to ensure uniformity with use and measurement of the term continuity of care across the Canadian Health System. Continuity of care for patients cannot improve until all stakeholders can agree on a common definition and standard assessment measures. According to the authors continuity of care is made up of two core elements (experience of care and care over time) and three types of continuity (relational, informational and managerial). Additionally, according to the authors both core elements must be present for continuity to exist, however, presence alone does not constitute continuity. Informational continuity of care is defined as the use of information about prior events and circumstances in order to make appropriate medical decisions and care for the patient at the current time (Reid et al., 2002).

Furthermore, Information continuity speaks to the accessibility of documentation, completeness of information transfers and the extent to which the information is used by all parties involved in the decision-making process associated with patients care. Relational continuity of care focuses on the ongoing relationship between the patient, the patient’s family and provider(s) in which loyalty by the patient to provider is reciprocated by the responsibility of the provider to the patient and serves as the bridge for care over time. While managerial continuity is defined as the timely and complementary application of services within the shared management plan (Reid et al., 2002). Each of
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these continuity of care types has measures that evaluate their effectiveness as it relates to continuity of care on the continuum, however in this paper we will only discuss the informational aspects of continuity of care.

The challenges associated with providing and maintaining a higher level of continuity of care are no more evident than in the MHS, for example frequent permanent changes of station (PCS), space availability constraints and the lack of interoperability of electronic medical records/electronic health record (EMR/EHR), (these terms will be used interchangeably) serve as barriers to improving continuity of care. These challenges are further compounded because the MHS is responsible for multiple groups of patients both in the deployed and non-deployed environment. According to the Bipartisan Policy Centers Task Force on Defense Personnel (2017) the goals of the MHS include: meeting healthcare needs of its active duty service members, build and maintain the skills of military healthcare providers so they are ready to deliver needed services, meet the healthcare needs of the reserve component who may not have otherwise have health insurance, provide healthcare services to the dependents of the active duty service members and provide healthcare to veterans and military retiree’s. It is important to note that these goals are listed in prioritized order further illustrating the point that non-service member beneficiaries are often times secondary when it comes to healthcare improvements as the primary mission is focused on the service member (bipartisanpolicy.org, 2017). These factors differentiate the MHS from civilian sector of healthcare. While populations may be similar, the fact that the MHS must be able to operate in traditional healthcare settings and it must also be able to operate successfully in austere combat environments. Additionally, the types of healthcare services needed
vary dramatically compared to civilian counterparts, because of the nature of military service. For example, while civilian healthcare providers treat gunshot wounds, Traumatic Brain Injuries and amputations they do not see the volume often seen by healthcare providers in the MHS or VA. Because these types of significant injuries occur at a volume not seen in the private sector often times care for other populations goes unaddressed or outsourced. During the Afghanistan and Iraq campaigns care to injured soldiers not only occurred in the field and in a forward operating hospitals but also in hospitals such as Walter Reed, additive to these requirements providers are expected to care for beneficiaries. The significance is it speaks to complexity of care required, the need to ensure communication for care is meticulous, the prioritization of one population over others and the disruption in care that occurs for non-service member populations.

In an era governed by fiscal uncertainty, defense-wide spending caps and the need to be good stewards of taxpayer dollars, congressional leaders and senior defense officials have recognized that the current MHS is broken, has become too costly and threatens other defense priorities such as military readiness, force modernization and overall health of our military (bipartisanpolicy.org, 2017). Likewise, as the geo-political landscape continuously evolves the need for a medically ready force is paramount to our national defense (Cummings, 2019). As a result, changes to how the MHS provides continuity of care presents both technical and political challenges, not to mention any change must consider each and every patient population so not to degrade services to one population for the betterment of another group. The MHS and VA should move to implementing an integrated EMR to diagnosis medical concerns, develop treatment plans,
review laboratory results and view patient related medical imagery as a means to address the gap in informational continuity of care, given the mobile lifestyle of beneficiaries.

In a 2016 study Gleason, sought to explore the impact of frequent Permanent Change of Stations (PCS) moves and increased provider turnover in primary care providers had on continuity of care and overall patient satisfaction of healthcare services provided for non-service member beneficiaries within the MHS. Results of the study provide evidence suggesting that there is a direct correlation between the number of PCS moves and provider turnover when measured against continuity of care and patient satisfaction. In short as the number of PCS moves increased, continuity of care and patient satisfaction associated with treatment in the MHS decreased. Furthermore, the same results occurred when researchers looked at provider turnover, as the number of changes in providers increased, continuity of care and patient satisfaction decrease.

The disparities associated with continuity of care for the MHS and VA are complex and multi-faceted, because, unlike in the civilian sector of healthcare, the MHS and VA healthcare systems are impacted by the transient nature of the differing patient populations, as well as the provider population. According to Gleason and Beck (2017) navigating the MHS is problematic for several reasons such as incomplete medical records, inability to share health records between military providers/facilities, and externally with civilian providers. The inconsistencies with types of services offered at treatment centers and policies governing treatment, all contribute to lack of continuity in the healthcare provided to MHS beneficiaries that is not seen in by civilian counterparts (Gleason & Beck, 2017). However, because of the nature of military service and the
need to ensure its medical force is capable to operate in multiple domains it is unlikely that the Department of Defense will revise how it allocates or assigns its personnel.

**Methodology**

This literature review was conducted utilizing research obtained from various academic databases to include PubMED, Medline as well as United States government policies, reports and publically available documents of record between 2000 and 2019. The purpose of the literature review was to identify gaps within current research associated with the problem being present and offer insights that could be used to improve overall the understanding of the problem and offer recommendations on how the problem could be solved. As part of this review academic research article abstracts were screened based upon predetermine key words to include: continuity of care, patient satisfaction, military families, veterans and electronic health records in order to determine how much research was currently available on the topic of continuity of care for non-service member Tricare beneficiaries and the role/level of importance EHRs have in improving continuity of care for this specific population. For the purposes of this review article searches were conducted in three phases. Phase one focused on private sector or civilian continuity of care, phase two focused on continuity of care in the military and phase three focused on electronic health records based on population type. The initial screening criteria for phase one were continuity of care first, followed by patient satisfaction. The initial screening criteria for phase two started with continuity of care, followed by patient satisfaction, and lastly, military. It is important to note that the military screening criteria were broken down to military families, retirees and veterans. The initial screening criteria for phase three started with electronic health records
followed by continuity of care and then lastly by military in order to differentiate articles that focused on EHR continuity of care in the military rather than those in the civilian or private sector healthcare. Over twenty two thousand articles were initially identified for possible review based on screening for continuity of care regardless of patient population (Military or Civilian), however, as additional key words were added to the screening criteria in phase two the potential articles for review decreased significantly. Additionally, another eleven thousand articles were identified for possible review based on screening for electronic health records regardless of patient population, however, just like the continuity of care search, as more keywords were added to the screening criteria in phase three the potential articles for review decreased significantly. In the end an abundance of articles were available for review as it related to continuity of care in the civilian or private sector, however, only thirty six articles were identified as meeting all of the screening criteria for phase two. Likewise, as with continuity of care an abundance of research was available on EHRs in the civilian or private sector, however, only fifty-two articles were identified as meeting all phase three screening criteria with the only variable being patient population (military families or veterans). In the end eleven articles were identified relating to EHRs and military families and only forty-one articles were identified relating to EHRs and veterans. Of the remaining articles less than half were less than half were selected for inclusion in the review based of availability and accessibility to the research article.

**Purpose of the Research**

The primary objective of this literature review is to identify the gaps in research involving the military’s disparate use of the EMR as a means to improve continuity of
care, and to highlight solutions that have emerged from the civilian systems, improving interoperability between current EMR’s and making Tricare Online the authoritative database for all non-service member beneficiaries healthcare records. This literature review will focus on review of current procedures and policies outlining EMR compatibility and inclusion for those eligible beneficiaries currently not incorporated or eligible to use Tricare Online.

**Literature Review**

Continuity of care is a significant problem for modern healthcare. This literature review has several aims. It is going to identify key features of the two groupings in both the civilian healthcare settings and the military’s healthcare service. Further, because the underlying result of the research has been the identification of a gap in the research between civilian and military, the paper will propose a solution to the military’s trouble utilizing the EMR (it has several within the overarching military medical service structure) to promote a broader implementation of continuity of care to all populations, not just active duty and veterans. Dependents of service members just do not have the same level of continuity of care, and that is a problem. Current scholarship can be categorized into research that focus on populations and/ or diseases and into research that focus on addressing some technical aspect of the EMR, process that can be studied and exported.

What is the definition of Continuity of Care?

Continuity of care is the process by which the patient and physician lead team are in a ongoing health care management team toward the shared goal of high quality, cost effective medical care (American Academy of Family Practice, 2019).
Population Research

According to Facchinetti et al. (2019) continuity of care help to prevent short term readmission (population health measures) in older people with chronic diseases, finding that at one month from discharge, the continuity inventions that were put in place were associated with a lower readmission rate. However, there was inconclusive evidence suggesting that continuity of care helped to prevent long-term readmission to the hospital for chronic disease patients.

In addition to decreasing short-term hospital readmission rates, discontinuity of care is also associated with approximately 20% increased risk of mortality when compared to those patients who maximized their continuity of care (Maarsingh, Henry, van de Ven, & Deeg, 2016). The study conducted by Maarsingh et al. (2016) found that at the seventeen-year mark 33% of the surviving enrolled patients in the study still had the same primary care provider and those patients were associated with the lowest mortality. This study does acknowledge that the framework of continuity of care is complicated and has many components involved, including the patient, doctor, and system level.

According to Hussey et al. (2014) who reviewed 5% of Medicare claims for those beneficiaries receiving episodic care related to diabetes (DM), congestive heart failure (CHF) and chronic obstructive pulmonary disease (COPD) found that higher levels or continuity of care were associated with lower inpatient hospitalization rates for CHF, COPD and DM with lowered odds for complications. Through the decrease in hospitalization and lowered odds for complications is the associated decrease in cost.
The cost of care resulting from increased continuity of care for COPD patients was approximately 6.3% less, CHF 4.7% less and for DM 5.1% less (Hussey et al., 2014).

In an older study conducted by Nutting, Goodwin, Flocke, Zyzanski and Stange (2003) found that satisfaction with the physician and efficacy was higher among those who saw their regular physician and that health care practices and health care systems should devote additional effort to maintaining these relationships.

The above research demonstrates the importance of the patient provider relationship and how it can decrease short-term hospital readmission rates, decrease mortality, decrease cost, and increase patient satisfaction. Additionally, these studies indicate how specific populations or diseases have better outcomes as a direct result of assessing continuity of care breakdowns and implementing fixes.

**The Military Approach More Process than Population**

The military/VA addresses the importance of continuity of care by implementing a patient centered medical home (PCMH) or a patient aligned care team (PACT); however, there is one glaring difference between the civilian primary care and military. The military primary care model must be adapted to support the military’s mission, including working with highly mobile personnel (and therefore their families). Most importantly, the military must take into account care that happens outside treatment facilities (Marshall et al., 2011).

Establishing enduring relationships with a primary care provider is challenging for military dependents due to inconsistent protocols in military treatment facilities, high provider turnover, and frequent permanent change of station (PCS) (Gleason & Beck, 2017). Active duty dependents reported more problems getting in to see specialty care
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when needed, getting treatment and getting medical records as compared to civilian counterparts. It has been suggested that military families experience poorer outcomes as a result of a lack of continuity of care, however there is little research on this topic in terms of health outcomes. Additionally, the authors found that continuity of care for military spouses was significantly lower than the civilian counterparts as well as patient satisfaction and found that the majority of dissatisfied spouses were unhappy with their military provider (Gleason & Beck, 2017). Conversely, Barido, et al. (2008) found that most beneficiaries rated their care and patient satisfaction as “good” however they only studied if the patient saw their primary care manager.

The Department of Defense (DoD) has put into place PCMH model which is a team based approach that bring doctors, nurses, care coordinators, technicians, office staff and community services to improve quality of care, increase access, reduce service utilization and control costs (Marshall et al., 2011). This PCMH model has shown to improve patient and provider satisfaction, decrease cost, reduced use of specialty care, lower hospital admission rates and decrease utilization of the emergency room. The authors found that the (MHS) that the PCMH model has the potential to reduce cost and improve quality care, however, factors need to be considered such as the requirements set forth by the military, interoperability of information technology (IT) and the need to deal with both direct and purchased care (Marshall et al., 2011).

A study conducted by Everett et al. (2018) found that since the implementation of PACT at the VA, provider turnover has increased, and the data suggests that between the year 2012-2013 provider turnover at the VA was 46% in primary care. Such a large turnover makes continuity of care incredibly difficult. This study does not support the
PCMH studies that show a team based approached improves continuity of care. Forman, Robinson and Krein (2019) found that team based coverage arrangements can have little positive effects on care without informational continuity, and, to address this issue of intra-team communication through huddles and electronic means can improve communication between staff and patients.

Additionally, research focusing on the PCMH model found that, in order to be successful, there needs to be a culture change, i.e. providers sacrifice their autonomy to integrate with other health professionals and leverage both healthcare technology and up to date clinical information for better outcomes. Furthermore, performance measures and key metrics need to be monitored, the patient population needs to be taken into consideration for example some PCMH’s need to have more mental health providers and physical layout of the medical homes also need to be considered (Hudak et al., 2013).

The civilian and MHS/VA have both identified the need and importance for continuity of care to help improve patient outcomes, decrease costs, and increase patient and provider satisfaction. The American Academy of Family Practice (2019) states that continuity of care is the hallmark and primary objective of family medicine. Continuity of care is inherent in family medicine and helps to empower patients and providers to be more effective patient advocates (American Academy of Family Practice, 2019). In the civilian sector, continuity of care has shown to decrease mortality, increase patient outcomes, and show cost savings. The DoD/VA has put a system in place that has the potential to increase continuity of care, however there are additional factors that the DoD/VA must take into account that do not occur in the civilian sector such as the rate of
provider turnover, frequent PCSs and care that happens outside of a military treatment facility that place challenges on achieving continuity of care.

**Information Technology in the Healthcare Industry**

As information technology continues to evolve at unprecedented rates, organizations today are subject to the need to keep pace with these technological advances. This need is no more evident than in the healthcare industry. The healthcare industry and more specifically frontline providers are faced with the need to improve continuity of care through communication, documentation and information sharing, improve patient safety, while reducing healthcare costs, and improve overall patient satisfaction. The electronic medical record (EMR) has been considered to be the best path towards addressing these needs, but this solution is not without its problems, some of which significantly affect continuity of care. For ease of understanding an EMR is a longitudinal record of a patient’s medical information generated by multiple encounters anywhere healthcare related services are provided (HIMSS.org/Electronic Health Record).

**Usability, Communication, Patient Satisfaction, and Interoperability in Healthcare**

Recent studies have suggested that EMRs play an important role in patient satisfaction and overall continuity of care in primary care settings. However, several of these studies have suggested that adoption/implementation of an EMR system alone does not improve patient satisfaction and continuity of care in a primary care setting. Rather the only way to realize the benefits associated with EMR’s requires them to be incorporated into the daily workflow of the clinical setting. In a meta-analysis study Hamade, Terry and Malvankar Mehta (2019) found that while literature exists and
discusses the need for adoption and the importance associated with the use of EMRs in primary care settings, little to no research is available that discusses methods/interventions that can be employed to address the gap between adoption and implementation or use. For the purpose of this study, the authors focused efforts on identifying interventions that could be employed to address the gap between adoption and integration/use of an EMR in a primary care setting. The interventions were categorized as professional, organizational or financial depending upon how the identified intervention created change. Additionally, outcomes associated with the interventions were further classified into two target areas those that affected functional use and those that addressed data quality. Results of the study suggest that improvement in EMR usage can be garnered if interventions are implemented targeting functional usage or data quality improvement. According to the authors, while adoption of EMRs is on the rise, the shift to implementation and use has been slow to materialize (Hamade et al., 2019).

In a similar study by Terry et al. (2018), the authors suggested that realization of EMR benefits in a primary care setting is directly linked to understanding how to support EMR usage. The focus of the study was to examine the views of advanced primary care EMR users practicing in a team base environment in order to better understand how to support EMR usage. Terry et al. (2018) found that realization of the full benefit of an EMR is achieved when the end user has attained proficiency despite potential system limitations. Time plus continual use leads to improvements in patient outcomes.

In a similar study conducted by Penyor et al (2014) the authors examined EHR documentation within segments of the EHR as a means to understand what information clinicians/caregivers used, how it related to patient care and overall clinician/caregiver
perceptions about the amount of time allocated to documentation in an EHR. The study examined these issues across a broad range of clinical professionals and care providers ranging from physicians to discharge planners. According to the authors, results indicated that diagnostic information and physician relate documents were the items most heavily used across the healthcare provider spectrum as these items provided the most benefit in facilitating a better understanding of a patient’s current condition, supporting clinical decision-making and improving communication with other healthcare personnel. While, items such as ancillary caregiver notes, pharmacy data and nutritional information were viewed the least by all groups. When it came to perceptions about the amount of time used in documenting in an EHR the results varied significantly based upon the individual’s role in the care continuum. For example, physicians spent the least amount of time documenting or reviewing information contained in the EHR while, bedside nurses spent an average of four plus hours a day working within the EHR. The significance of this is that while physicians spent the least amount of time reviewing or documenting, their information was the most used and conversely bedside nurses spent the most time documenting and their information was the least used across all groups. Additionally, the authors found that the experience level associated with use of the EHR directly impacted what information was accessed, how often it was accessed and the overall ability of the professional to integrate the information in providing care to the patient (Penyor et al., 2014). This finding is significant because that lack of understanding or knowledge about various components in the EHR regardless of the role associated with providing care can limit or impact the user’s ability to maximize the information needed to provide quality care. The study suggested that in order to improve
EHR usage amongst all care providing groups, healthcare organization must look to reduce redundancies within the EHR, improve knowledge and understanding of all components within the EHR, and utilize clinician input to the great extent possible in order to streamline what information is need and how it is used in order to optimize patient care.

Alkureishi et al. (2016) noted that while many previous studies have identified the benefits of EMR use as a means of enhancing patient satisfaction and the patient provider relationship through communication, there were instances in which perceived negative communication behaviors from the providers had the potential to impede communication thus impacting patient satisfaction and continuity of care. However, the authors also noted that while perceptions about negative behavior patterns were identified, they had little impact on the patient’s perception of satisfaction or quality of care received. Additionally, the authors noted that similar studies identified instances in which patients believed that EMR use actually facilitate or improved communication, leading to an overall positive change in the patient-provider relationship (Alkureishi et al., 2016).

In a similar study examining the impact of EHRs on workload of primary care physicians, Bae and Encinosa (2016) noted “that the use of EHRs in the primary care setting improved efficiency and added an additional 1.3 minutes per visit and an additional 1.5 hours a week of face time with patients”(p.1). This finding is significant as the more time a physician is able to spend with patients; there is a notable increase in overall patient satisfaction and the quality of care. The premise of the study was to determine if the implementation of EHRs could be used to offset the national shortage of
primary care physicians. The study looked at physician experience levels in order to determine if experience level combined with EHR use contributed to an increase or decrease in patient volume. The authors noted that experience level of the physician played more of a role in determining patient volume rather than implementation and use of an EHR. The study determined that a more experienced physician, combined with EHR use significantly improved physician workload productivity and efficiencies. Furthermore, the authors noted that while EHR use improved face time communication between the patient and provider and improved patient satisfaction, and quality of care, the use of EHRs alone did not have an impact on easing the shortage of primary care physicians (Bae & Encinosa, 2016).

While the 2016 study by Bae and Ecincosa analyzed experience level of the physician combined with EHR usage as a means to determine its impact on the physician shortage and patient satisfaction, the study by Alkureishi, et al. (2016) examined the impact of provider behavior as a result of EMR use. Both studies suggested that EMR use alone was not the determining factor in improving patient satisfaction and continuity of care. However, both studies did suggest that EMR use was a critical component to improving overall continuity of care and patient satisfaction.

In a study conducted at the National Academy of Medical Science Bir Hospital, Katmandu, Nepal, (Mishra et al. (2009) analyzed non-electronic patient discharge summaries as a means to determine areas of improvement of communication and documentation of medical records. They wrote that discharge summaries serve as a vital link for transferring patient information between care centers and is critical to maintain continuity of care. Results of the study indicated missing data such as condition at
discharge, discharge instructions, patient personal data and the use of abbreviated diagnoses impeded continuity of care. Additionally, often times the discharge summaries lacked uniformity, were illegible or even difficult to retrieve, again impacting continuity of care. The authors noted that when comparing electronic and non-electronic medical records, the electronic records were on average “forty percent more complete and twenty percent easier to retrieve which leads to improved workload efficiencies and improved care coordination” (Mishra et al., 2009, p.105).

Adoption and implementation of EMRs alone does not improve continuity of care for patients. In order to truly address gaps in continuity of care EMRs need to be able to send and receive health related information freely. Interoperability of EMRs presents a significant challenge in the primary care setting. However, while interoperability is a critical component to Health Information Technology (HIT), less research has been done on the impact the lack of HIT interoperability has on patient care and continuity of care. Interoperability in the healthcare system is defined as ability of different information systems or devices and applications to access, exchange, integrate and cooperatively use data in a coordinated manner within and across organizational, regional and national boundaries to provide for the seamless portability of information optimizing the health of individuals and populations globally (HIMSS.org, 2019). According to Samal et al, (2019) significant care coordination gaps exist within the United States Healthcare as a result of a lack of interoperability. The purpose of the study was to determine how patient care was coordinated and to what role did HIT play when transitioning patients between emergency rooms and other medical facilities. Results of the study indicated that although EMR adoption was high, the variations of EMRs used by differing facilities
lacked the ability to exchange patient data freely. This is significant because the inability to exchange or share patient data has a direct impact on an organization's ability to improve continuity of care. The authors concluded that studies conducted in Europe seemed to support the rationale that employment HIT is beneficial for improving overall care coordination (Samal et al., 2019).

**Information Technology in the Military Health System**

While there is plenty of academic research that discusses EMR usability, communication, data integrity, and, to some extent, interoperability as it relates to improving patient satisfaction and overall continuity of care in the private sector health system similar academic research regarding EMR functionality and usability in the military health system (MHS) is extremely limited. By nature of adoption and implementation of EMRs in the MHS and VA health system (if appropriate) the DoD is subject to many of the same challenges and growing pains currently being experienced by their private sector counterparts. Additionally, any research that is available is concentrated on either active duty personnel or veterans, which means the research excludes large segments of beneficiaries eligible to receive healthcare related services in the Military Health System.

What this data demonstrates is that while there is significant research dedicated to the topic of continuity of care and the emergence/importance of EMRs as a means to facilitate improvement in patient provider communication, patient satisfaction and continuity of care in the private sector. There is little to no research done on the impact associated with improving the use and increasing the interoperability of EMRs/EHRs for beneficiaries of the MHS and VA. With such a large patient population, this lack of
interoperability will continue to have a significant adverse impact on the overall quality of care, patient satisfaction and any success associated with improving continuity of care for all beneficiaries.

**Discussion**

**The Importance of Continuity of Care**

According to the American Journal of Managed Care (AJMC) “fragmentation of care occurs when there is a systemic misalignment or lack of coordination that results in inefficient allocation of resources or harm to patients” (Enthoven, 2009). Furthermore the AJMC states fragmentation of care has a direct impact on the quality, cost and outcomes associated with patient care. Continuity of care is the response to fragmentation, and is the means to address or mitigate lack of coordination and systemic misalignment that occurs in patient care. Continuity of care is the hallmark and fundamental objective of primary care, reducing fragmentation of care and improves patient safety, quality of care and decreasing cost. Furthermore, continuity of care helps to facilitate a relationship between provider and patient’s thus increasing confidence enabling family practice providers to serve as patient advocates and make better decisions from a whole-person perspective efficiently without an extensive record review (American Academy of Family Practice, 2019). Continuity of care works by being physician lead team-based approach to health care. For example a patient will have a primary care provider (PCP) whom he or she see regularly, however if the patient is unable to see the PCP he or she maybe able to get an appointment with a PCP partner who is also familiar with the patient. This enables the patients care to stay within the “medical home” and allows for team based care as the physician partner may already be
familiar with the patient or the PCP is nearby for consultation if needed (American Academy of Family Practice, 2019 p. 284). The above example is done frequently for visits where it is difficult to plan long-term appointments such as hospital discharge follow-ups and acute visits.

In many civilian practices providers are at the same practice for many years, thus they have the ability to establish strong bonds and working relationships with patients. Sudhakar-Krishnan and Rudolph (2007) found that patients value the relationship they have with their long term provider, feel more control over their healthcare and on the provider side, long term knowledge of the patient allowed the provider to accumulate knowledge of the patient which saved time in chart review, influenced the amount of lab testing performed and allowed for expectant management. This accumulation of knowledge decreases the in need for lab testing and expectant management helps to decrease cost to the patient and the patient’s health insurance (Sudhakar-Krishnan & Rudolph, 2007).

While a team based approach to healthcare has been well integrated into civilian healthcare that cannot be said for the MHS. In 2009, the U.S. Army and other medical forces began the transition to the PCMH model. Army medicine (2016) and Arvantes (2012) report that PCMH is a team-based model that is built around the premise that the best health care begins with a strong primary care foundation. The PCMH model health care team includes: a primary care manager that is either a physician, physician assistant (PA) or nurse practitioner (NP) as well as a nurse, medical, nursing assistant (NA), medical assistant (MA), medical support assistant (clerk), pharmacist, social worker, nutritionist and a case manager (Army Medicine, 2016). What makes the PCMH model
successful is that it is designed with the whole patient in mind, recognizing the need for coordinated care and the special needs that are associated with military families (U.S. Department of Health and Human Services, n.d.). The VA’s PACT model is a very similar model, which is set up almost identical to the Army’s PCMH model. These models are successful because most primary care services are individualized to what the patient population needs are, for example if there is an area that has an increased need for mental health, the particular PCMH/PACT may have more than one social worker on staff plus a psychiatrist. In essence, the models are flexible, adaptable and scalable to meet the needs of the patient population.

The DoD and VA offer additional services that are not included in civilian primary care to include case workers/social workers, mental health and nutrition services. While the DoD and VA offer additional services, the nature of the military lifestyle make it increasingly difficult to establish long-term relationships that are often seen in the civilian sector. The primary reason for this is either the provider or service member (family included) rotate on average every 2-3 years.

In the MHS eligibility is dependent upon one’s status or relationship to the service member. Tricare defines a beneficiary as anyone who is active duty, National Guard and reserve member, retirees, their families, survivors, certain former spouses and others registered in the Defense Enrollment Eligibility Reporting System (DEERS) (Health.mil, n.d.b). In the MHS, family members are classified as dependents and beneficiary status is determined based upon the service member’s affiliation to a branch of the military. The MHS definition for dependents are those individuals considered to be a spouse by marriage who is not on active duty (no common law spouses), natural or adopted child,
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stepchildren, any parent or person who can be claimed on the service members tax return (Goering, 2018).

However, the VA has its own requirements when it comes to determining eligibility and enrollment is not automatic except for specified exempted groups and require the veteran to apply for benefits and healthcare related services. Once the veteran completes enrollment they will be assigned a priority group. The VA utilizes priority group classification as a means to balance demands for healthcare enrollment against available resources (U.S. Department of Veterans Affairs, 2019b). Prioritization is done based on the following factors: military service history, disability rating, income level, if able to qualify for Medicaid and if the patient is receiving other benefits such as VA pension benefits. Veterans with a service connected disability receive highest priority and those with a higher income or who do not have any service connected disability get assigned a lower priority, essentially the more disabled the patient is the more benefit they receive (U.S. Department of Veterans Affairs, 2019a). Conversely, the less sick the veteran is, the less benefit they receive.

**Issues That Make Continuity of Care Problematic**

Continuity of care is problematic for the MHS and the VA for several reasons, first and foremost is the military lifestyle, which is extremely turbulent and transient in nature not only for patients but for providers as well. Second, when the transient nature of the patient populations and providers are combined with other reasons such as the need to operate in both a stateside form as well as in a combat theater, medical readiness requirements, health plan options, varying beneficiary status, access to care standards, facility type and capability, discontinuity of EHRs within the MHS/VA and the lack of
EHR interoperability between those internal to the MHS and with those external entities providing care. It becomes apparent that continuity of care in the MHS/VA is problematic and poses increased risk to the DoD, MHS and VA’s ability to execute their missions.

The military lifestyle has a direct impact on patient populations served, providers servicing the patient populations and the overall ability to deliver a greater level of continuity of care in accordance with DoD policy mandates. The Office of the Assistant Secretary of Defense for Manpower & Reserve Affairs (2017) estimates that 450,000 personnel, or one third of the total force executes a PCS move annually. This figure does not include family members that are impacted by the requirement to change duty stations once every three years. In a three year window the entire force has completed at least one PCS move. As of 31 July 2019, the end strength (or total force size) for the United States military forces was 1,374,699 including active, reserve and national-guard (Office of the Assistant Secretary of Defense for Manpower and Reserve Affairs, 2017). Included in these numbers are active component medical personnel responsible for providing care to the service members and other Tricare beneficiaries. According to a recent Government Accounting Office (GAO) report the DoD’s medical manpower was in excess of 240,000 personnel of which 115,000 or forty eight percent were active duty (GAO, 2018). When one looks at a population base in which a third relocate to include family members combined with forty eight percent of the total medical force that is subject to annual rotation it becomes evident that the transient nature of the military lifestyle has a significant impact on establishing, maintaining and improving continuity of care in the MHS and VA.
While the transient nature associated with the military lifestyle is not the only factor responsible for the significant disruption of continuity of care within the MHS and the VA, it is however the most impactful. The frequency of rotation either by the provider or patient or both means that patients and providers are not able to effectively establish the patient-provider relationship which is critical to promoting an improved level of continuity of care among beneficiaries. While the DoD does not currently have plans to adjust or reduce the rate at which service members and their families rotate it is worth reviewing as a means to improving continuity of care and the overall readiness of the force.

If the DoD is unable to improve continuity of care through the patient provider relationship then it must look to address improving continuity of care either through informational or managerial means. As a result, the need for a complete and comprehensive EMR becomes even more important.

The second largest factor that contributes to the disruption of continuity of care in the MHS and VA is the overall absence of EMR uniformity and the lack of EMR interoperability between organizations internal to the MHS and the VA and externally with non-DoD healthcare facilities. Research suggests that EMRs serve an important role in the overall improvement of continuity of care, one could argue they are second only to the patient-provider relationship on level of importance and impact. Frequently when beneficiaries transition within the MHS or from the MHS to the VA they are required to hand carry their health records with them when they are attempting to re-establish healthcare services. This requirement increases the likelihood that medical records could be lost or destroyed resulting in the need to re-establish baseline care, repeat testing,
delay treatment or perform un-necessary procedures that in-turn increase cost, decrease patient satisfaction, decrease readiness and ultimately disrupt continuity of care.

Lastly, the third largest factor that contributes to the disruption of continuity of care is space availability at MHS and VA healthcare facilities. The single most important factor in space availability is provider availability and the competencies of the providers. Often times when provider availability decreases patients are outsourced to non-DoD/VA healthcare facilities in order to receive care. Additionally, outsourcing of patient care is often caused by decreased in facility capabilities, policy changes and or the need to reprioritize the various patient populations’ categories in order to provide care for active duty personnel. When patient care it outsourced continuity of care is disrupted and degraded. Further complicating matters when patients are out-sourced from the MHS and VA as a result of the space availability issue, is the lack of EMR uniformity and interoperability which only adds to the complexity of patient care and has a direct impact on continuity of care.

**Electronic Medical Records the Current State of Play**

The MHS and VA medical centers have numerous types of clinics and they serve many different groups of beneficiaries and both organizations use multiple EMRs, currently the DoD uses approximately 70 different EMRs (Thompson, Scanlon & Jones, 2016). For example, if a patient is seen in the emergency room, his or her chart will be started in an EMR system called Essentris. Then if the patient gets admitted to the ICU, the patient’s information is documented in a completely separate EMR system called the Armed Forces Longitudinal Health Technology Application (ALTHA), of note because these systems are independent of each other and are unable to share information
providers are at a disadvantage when it comes to seeing the full picture associated with a patient's current medical status (Armed Forces Health Longitudinal Technology Application, 2019). Additionally, the lack of information sharing between systems also creates inefficiencies in provider workflow. Furthermore, if the patient then gets a prescription the provider sends a medication request in ALTHA, however the pharmacy receives it in Composite Healthcare System (CHCS) (U.S. Department of Veterans Affairs, 2019c). In this example, a patient seen at the emergency room has had their data processed into three separate EMRs all of which are at the same location, but do not communicate or interface to share information. In addition Essentris is a standalone system and does not communicate with any other EMR. Frequently the interface between ALTHA and CHCS is broken therefore there is a disruption in communication between the EMR’s. Additionally, if the patient in this example required further services it would be expected that additional EMRs would be used to facilitate the additional services required. This further complicates the maintaining/tracking of information again affecting continuity of care. At this time the VA uses Vista, Vista Imaging (for outside records), Joint Legacy Viewer (JLV), which was designed to link the DoD and VA, Computerized Patient Record System (CPRS) (U.S. Department of Veterans Affairs, 2019c). In most cases JLV works well inside the VA, however, access to JLV inside the DoD is limited and frequently the information is either missing or fragmented. These gaps/issues in EMRs are similar when civilian providers in the private sector seek to access records. The lack of communication inside EMRs results in disconnects in patient care. As stated earlier, with such little research focused on interoperability within
hospital systems and the disruption that it has on continuity of care, data must be
coordinated within and across organizational systems (Samal, et al., 2019)

**The Importance of Interoperability**

The MHS and the VA lack uniformity and interoperability of their EMRs and
EHR’s despite servicing a similar patient population. However, EMR/EHR uniformity is
not just a MHS and VA problem. The lack of uniformity and interoperability exists in
the private sector as well. Thus while the impact and importance of EMR/EHR
uniformity and interoperability within the DoD and VA is important to address gaps
within continuity of care for all beneficiaries, the issue is much greater and requires
further review and discussion at the national level. In order to assess if HIE efforts are
improving or remaining stagnant within the DoD and VA this paper will highlight those
areas that present significant challenges for the Veteran Health Information Exchange
(VHIE) initiative. According to a 2018 report by the American Medical Informatics
Association (AMIA) Health Information Exchanges (HIE) between organizations is
critical component to improving overall continuity of care. In many instances
interoperability between hospital systems and primary care facilities is often fragmented,
labor intensive, expensive and usually requires numerous agreements or certifications to
exchange health information. As a result, often time’s interoperability is seen as too
cumbersome (expensive/complicated) and is often overlook or left unaddressed. The
ability to exchange information between organizations helps to improve patient
satisfaction, reduce workflow inefficiencies, lower costs, and reduce delays in treatment.
In the current healthcare environment veterans receive care both within the VA system
and outside in the local community. This fact alone warrants the need to improve the
sharing of patient health information between the VA and the local communities. The inability of providers to effectively exchange patient health information is a significant barrier to the goal of improving continuity of care. By improving the overall sharing of electronic health information between the VA and local community providers, it may serve as a mechanism to facilitate further health information exchanges between other healthcare related organizations (Donahue et al., 2018).

The VHIE model is broken down into four core functions: Patient Engagement, Partner Engagement, Provider Adoption and Technological Capabilities designed to improve overall healthcare decision-making, improve continuity of care and improve the overall quality of care for patients (Donahue et al., 2018). In the VHIE model, patient engagement is about obtaining informed patient consent and facilitating patient initiated HIE. The most significant challenge associated with patient engagement as a means of improving continuity of care is the lack of understanding/awareness about the change in policy from an opt-in to an opt-out model of electronic health information sharing. Prior to 2019 the VA require patients to opt-in or approve the release of their medical information to the various medical professionals providing healthcare related services. However, as recently as September of 2019, the VA has changed its policy from an opt-in to an opt-out model of electronic health information sharing, meaning patients will now need to request that health information not be shared, if the patient does not make such a request then all non-exempt health information will be shared with the agencies providing healthcare related services to the patient (Health.mil, n.d.b). In the VHIE model, partner engagement focuses efforts on bridging the gap as it relates to HIE between private sector healthcare services providing care to veterans and the VA with the goal of closing the gap
for all organizations. The most significant challenge associated with VHIE partner
engagement is how it’s done one partner at a time, as a result this becomes very time
consuming and serves as a barrier for improvement to HIE between organizations
ultimately impacting the ability to improve informational continuity of care for the
patient population. While, the VA has successfully established partnerships with over
one hundred and thirty five healthcare servicing organizations providing care to veterans,
however, establishing these partnerships is often a slow process. Thus while these
partnerships are of benefit to the patient, the process associated with partner engagement
can serve as a barrier to improving continuity of care.

In the VHIE model, provider adaptation is focused on how the data is exchanged,
accessed and used as a means to improve healthcare decision-making and patient
outcomes. The most significant challenge to provider adaptation in the VHIE model is
the lack of interoperability between various EHR’s/EMR’s used internally to the VA and
those used by private sector healthcare organizations. As a result, patients have
implemented workarounds to ensure they have access to their medical records in order to
facilitate treatment whether within the VA system or when treatment occurs in the local
community. Furthermore, because patients are accessing their medical records at
increasing rates supports either improved understanding by patients as it relates to their
individual healthcare needs or the HIE exchange between the VA and the private sector
healthcare providers is broken and unreliable thus impacting the overall continuity of care
or a combination of both.

The last core function of the VHIE model is focused on the technological
capabilities needed to support data exchanges between the VA and private sector
healthcare providers. The most significant challenge to the technologies and capabilities function is also the lack of interoperability of EMRs between the VA and the local healthcare communities. Furthermore, because this function is dependent upon the others it becomes increasing difficult to monitor and track progress and identify capabilities needed to support the data exchanges (Donahue et al., 2018).

The AMIA case study on the VHA VHIE clearly demonstrates that while progress is being made the issue of EHR/EMR interoperability remains a significant challenge / barrier to improving overall continuity of care not just for veterans but all DoD beneficiaries and to some extent their civilian counterparts.

**Interoperability and the Way Forward**

Over the last ten years several joint ventures have been developed and implemented to address the need of interoperability to include the Joint Legacy Viewer (JLV) and the Integrated Electronic Health Record (IEHR). However, a lack of uniformity in policies within the DoD and VA prevented attainment of the congressional directive. In 2015, the Interagency Program Office chose to pursue a Commercial Off the Shelf (COTS) solution focused on leveraging private sector technologies to improve data sharing with civilian partners, reduce costs and ultimately improve end user experiences. The new COTS solution has become known as Cerner/Genesis (VA calls Cerner, DoD calls Genesis, in this paper we will use the term Genesis, this clearly shows how both the VA and DoD are using the same system but cannot agree on a name, which further demonstrates a disconnect between the two entities). Genesis is a modern, secure and connected singular COTS EHR designed to incorporate both medical and dental EHR capabilities. As of now Genesis has not been implemented completely and is still
undergoing testing at several west coast facilities including: Fairchild Air Force Base, Madigan Army Medical Center, Naval Hospital Oak Harbor, Naval Hospital Bremerton, Naval Branch Health Clinic Puget Sound, Naval Branch Health Clinic Bangor and Naval Branch Health Clinic Everett (Tricare Online, 2019). With full implementation of this integrated solution is projected to occur in the next 4-6 years (Cummings, 2019).

However, many critics argue that Genesis has failed to meet the basic requirements needed to provide a singular EHR solution for the DoD and VA.

In the initial assessment by Robert Behler Director, Operational Test and Evaluation for the Department of Defense, Genesis was determined to be neither operationally suitable nor operationally effective. “Genesis was determined to be operationally ineffective because the system lacked functionality and users were only able to successfully perform 28% of the associated tasks identified as key Measures of Performance” (Belher, 2018 p.1). Additionally, due to the lack of functionality end users had to rely on undocumented workarounds in order to complete required tasks. In some instances the use of Genesis created additional workload or required users to work longer to accomplish similar tasks when compared to use with other systems. Genesis was also determined to be non-operationally suitable because of issues surrounding system usability, lack of or insufficient training and inadequate help desk support.

Findings also indicated that Genesis was unable to adequately protect Personal Identifiable Information (PII) or PHI in accordance with DoD standards. Thus making the implementation and use of Genesis a significant security risk to both organizations. In the end, Genesis does not provide any additional value to improving informational continuity of care for MHS and VA beneficiaries (Belher, 2018).
Tricare Online as a Repository System

While the DoD and VA are moving toward a single streamlined EMR, which will take many years, having Tricare Online as a repository system for all beneficiaries to use until such time when Genesis is fully operational would help alleviate duplicate testing, decrease wait time for a diagnosis, make records accessible and ultimately save money and resources. If providers were able to use Tricare Online as the authoritative repository system to upload medical records, it would improve electronic/informational continuity of care for the beneficiary by having a longitudinal record in one place at the time of healthcare delivery.

Providers for Tricare beneficiaries and VA beneficiaries are required to send the records to the referring provider, which is usually not done. Instead of doing this the provider should be able to upload them into the Tricare Online portal so the referring provider could see office notes, diagnosis, testing, lab results or imagery. While the DoD and the VA systems in general do not “talk,” this would be a way to ensure that each facility and providers see what healthcare actions were performed. There are approximately 56 hospital systems across the United States that participate in the DMIX to include Medical University of South Carolina, Sentara Healthcare, Bon Secours Health Systems, WellStar Health System (Health.mil, n.d.a). These hospital systems already have the security networks in place, and therefore, have already meet the necessary requirements to have access to patient records and to be able to share information. However as stated earlier, the process for partnerships works by bringing on one provider at a time thus increasing delays in establishing the so needed interface.
The issues for providers who cannot access records, are delays patient treatment, increases cost and overall is not beneficial to the patient as it causes delays in treatment and negatively affects patient care. As the beneficiary, it can be incredibly frustrating to have difficulty with accessing records and testing, it can decrease satisfaction with care and decrease patient confidence in the provider, thus affecting the patient provider relationship. This working relationship is very important to patient care because if the patient does not feel the provider is doing his or her job the patient is less likely to adhere to the provider’s recommendations. Increasing patient’s frustrations, when the beneficiary PCS’s many times they have to hand carry their records to the new facility. Often times the gaining facility loses the records meaning the beneficiary will no longer have their records if they did not make copies. In addition to the frustrations while on active duty, when the soldier retires and is evaluated by the VA, every single medical test must be redone as the medical records from the DoD do not transfer over to the VA. Many times the soldiers have to hand-carry copies of their records to appointments in order to ensure information sharing between the DoD and VA. As a result, the risk to records getting lost or misplaced increases and often times lost records adds additional wait times or delays in treatment.

If providers were required to upload patient medical records into Tricare Online, patients could access their records utilizing the blue button (an area in Tricare online where patient medical records are stored). As it stands now, outside providers are requested to send the records of patients, however there is no enforcement if it does not happen and it is not required. If it became a requirement, it would benefit the patient and provider. If payment of services rendered were tied to properly uploading medical
records, most facilities would be much more compliant in uploading records, improving continuity of care for the beneficiary.

**How Tricare Online Works**

Currently Tricare online is set up for the patient to be able to log in using their MyPay log in and password, Common Access Card (CAC), or DS log in and password. Once the beneficiary is logged in, they are able to make appointments, access the pharmacy, nurse advice line, and most importantly access their medical records in the blue button (Tricare Online, 2019). Tricare Online tool is very functional and stores an abundance of patient information, conversely it is only functional inside MTFs, meaning any care received outside of a MTF is not documented or stored in the repository.

Within Tricare Online the Blue Button is link where medical records are stored ranging from imaging to lab testing. The service separation link is used for ADSM and covers medical diagnosis and additional items that are used for determining disability ratings by the VA. The secure messaging link is used to communicate messages between patients and providers. Nurse Advice line is used to ask medical questions. Rx refill is used to request prescription refills. Appointments can be scheduled here and patients can look at their PCMs availability.

The below picture depicts how patients can access information once logged in. Of note, this is only for patients; providers of any kind do not have access to the portal. Thus lack of access for providers creates a gap in continuity of care.
The provider view should be customizable and allow for access to information by either patient name, date of birth and, if needed, DoD identification number. Ideally the provider would be able to view allergy information, prescription history, surgical and medical history and any prior testing information including images. By having all the information in one location, it decreases time the provider has to spend looking for medical information, decreases the need to go between numerous EMR’s, decreases additional/repeating testing, decreases time to diagnosis and can decrease time to treatment, hence saving health care dollars. If the patient had their medical information in one place, it decreases time spent looking for information and trying to obtain from other facilities, prevents medical records getting lost and alleviates the need for records being hand delivered to various providers. In accordance with the Defense Health Agency Policy (2018) for the custody and control of DoD health records, “At a minimum, following any PCS, MTF reassignment, or change to Tricare enrollment location, MTF records MUST transfer all components of the beneficiary’s records from paper based DoD health report to the gaining MTF (Defense Health Agency Policy, 2018 p.7).” Meaning records are still paper based in all DoD facilities and the transfer from
paper to electronic record management only applies to the ADSM. Again, while this
does address electronic continuity of care, it only address’s electronic continuity of care
for the ADSM, not for dependents or any other beneficiary.

Cost Factors that influence the expenditure of healthcare dollars include: aging
population, increases associated with overall cost of healthcare, provider availability,
complexity of required care and inefficient practices. Some of these factors are not
controllable such as the aging population utilizing health care services and complexity of
care; however, other factors such as provider availability and the need for reducing
inefficient practices are controllable. According to a 2012 report published by the
Congressional Budget Office (CBO) costs associated with military healthcare are
projected to increase from fifty-two billion dollars in 2012 to seventy seven billion
dollars by 2022 or a total of twenty two billion dollars at a rate of between four to six
percent per year over the same ten year period (Congressional Budget Office, 2012). If
healthcare costs continue to rise as they are projected to over the next few years and
efforts are not put in place to mitigate areas where costs can be controlled one could
anticipate that the modernization and readiness accounts would continually be used to
offset these increases.

With the size of the patient population the DoD and VA are serving, full
utilization of Tricare Online for all eligible beneficiaries has the potential for cost savings
by avoiding repeat testing, decrease wait time for treatments, reduces wait time for
diagnosis and will improve patient satisfaction. Overall, providers will be able to provide
better care, as they will know what has been done previously and it will also provide full
disclosure of patients past medical history. In addition to the benefits for the patients and
providers, an overall cost reduction would happen by avoiding repeated testing, the cost
“of starting over,” when a patient and or provider has had a relocation services would not
need to be repeated. The use of Tricare Online would help to decrease the amount of
places patient records are located therefore reducing the risk of records being lost,
decrease the amount of time facilities have to spend tracking down records as they would
go into one system. By having the records stored in one accessible area for patients,
providers and facilities it will help increase electronic continuity of care.

The benefits associated with using Tricare Online as the authoritative database of
record are: Improvement of informational continuity of care for all Tricare beneficiaries,
a single repository that can facilitate HIT across organizations servicing identified
population groups, overall reduction in treatment delays as a result of accessibility to a
comprehensive EMR, overall reduction of costs associated with repetitive or un-
necessary treatments or tests, overall increase in patient satisfaction associated with
improved relationships with providers, and an overall improvement in patient safety.

Recommendations:

Proposals to Change Tricare Online Accessibility and Usage

Priority Recommendations:

1. Establish Tricare Online as the authoritative database of record/repository for all
Tricare and VA beneficiaries.

2. Expand access to Tricare Online to civilian providers and remove barriers to allow for
use.

3. Consolidate and phase out redundant or excess EMRs

4. Continue to explore and study continuity of care issues for Tricare beneficiaries
Additional Recommendations:

1. Continue to develop shared governance policies on the use EHR’s within the VA and MHS.
2. Continue to address the HIE interoperability at the national level in order to streamline the process for establishing with other healthcare agencies.
3. Review current DoD rotation policies as it impacts both the medical corps and Tricare beneficiaries.
4. Develop a holistic action plan to address gaps in EMR training across organizations

Conclusion:

In studies conducted on the MHS/VA the primary focus is mental healthcare, however continuity of care for the overall beneficiary is often overlooked. This is an important topic that needs to be addressed as it is affecting our nations fighting force, their beneficiaries and tax payer dollars. The three most significant challenges/issues facing the MHS and VA as it relates to improving continuity of care for Tricare/VA beneficiaries are: the transient nature of military personnel and the disruption it causes to continuity of care, the lack of uniformity and interoperability as it relates to the exchange of health information, and the lack of a single repository data system that is available to all beneficiaries for the storage of health information. The challenges associated with continuity of care are no more evident than in the MHS and the VA. These challenges are further compounded because the MHS and VA are responsible for providing healthcare service to multiple groups of patients both in the deployed and non-deployed environment. As of now the MHS/VA are not fulfilling their missions to meet the healthcare needs of its active duty service members, build and maintain the skills of
military healthcare providers, meet the healthcare needs of the reserve component, provide healthcare services to the dependents of the active duty service members, and provide healthcare to veterans and military retiree’s (Bipartisanpolicy.org, 2017).

However, the nature of the military lifestyle makes the pursuit of improving continuity of care somewhat problematic for the DOD and the VA. Continuity of care by definition is a hallmark and principal objective of primary care, focused on reducing fragmentation of care, improving patient safety, increasing quality of care and decreasing cost (American Academy of Family Practice, 2019). Continuity of care is inherent in family medicine as it helps to facilitate relationships between provider and patients thus increasing confidence and enables family practice providers to be patient advocates.

Continuity of care is also rooted in a long-term patient-provider relationship in which the provider is very familiar with the patient history from experience and can integrate new information to make better decisions from a whole-person perspective efficiently without extensive record review (American Academy of Family Practice, 2019). The transient nature of the military lifestyle makes improving the relational aspect of continuity of care extremely problematic and in its current state unrealistic for Tricare beneficiaries. The DoD and VA have the opportunity to address the informational component of continuity of care through improving, streamlining and implementing policies, process and systems that impact the collection, storage and sharing of Tricare beneficiary health information.

The most significant challenge currently facing the MHS and the VA is how to effectively address the lack of uniformity/standardization and interoperability of EHR/EMR’s both internally within each organization and externally with civilian healthcare servicing agencies providing care in order to improve the continuity of care for
Tricare and VA beneficiaries, thus reducing cost and improving overall medical readiness to the force. By having a repository system such as Tricare Online, it can help bridge the communication gap between internal EMR’s from the DoD and VA and allow for civilian providers to easily access patient records and allow for the patients themselves to access their records. By allowing health information exchange with a repository system it will address findings identified in the AMIA report of improving interoperability and standardization. To get the maximum effect, the use of Tricare Online as the repository system of record must be required, facilities must upload to this system and payment for services should be tied to compliance.
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