

# GUEST EDITORIAL AND PERSPECTIVES

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## Military Health System Transformation Implications on Health Information Technology Modernization

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**ABSTRACT** With the recent passage of the National Defense Authorization Act for Fiscal Year 2017, Congress has triggered groundbreaking Military Health System organizational restructuring with the Defense Health Agency assuming responsibility for managing all hospitals and clinics owned by the Army, Navy, and Air Force. This is a major shift toward a modern value-based managed care system, which will require much greater military–civilian health care delivery integration to be in place by October 2018. Just before the National Defense Authorization Act for Fiscal Year 2017 passage, the Department of Defense had already begun a seismic shift and awarded a contract for the new Military Health System-wide electronic health record system. In this perspective, we discuss the implications of the intersection of two large-scope and large-scale initiatives, health system transformation, and information technology modernization, being rolled out in the largest and most complex federal agency and potential risk mitigating steps. The Military Health System will require an expanded unified clinical leadership to spearhead short-term transformation; furthermore, developing, organizing, and growing a cadre of informatics expertise to expand the use and diffusion of novel solutions such as health information exchanges, data analytics, and others to transcend organizational barriers are still needed to achieve the long-term aim of health system reform as envisioned by the National Defense Authorization Act for Fiscal Year 2017.

With the recent passage of the National Defense Authorization Act for Fiscal Year 2017 (NDAA), Congress has triggered groundbreaking Military Health System (MHS) organizational restructuring with the Defense Health Agency (DHA) assuming responsibility for managing all hospitals and clinics owned by the Army, Navy, and Air Force. This is a substantial shift toward a modern, value-based, managed care system requiring improved military–civilian health care delivery integration that must be in place by October 2018. Even before passage of the NDAA, the Department of Defense (DOD) had already begun a seismic shift and awarded a \$4.3 billion contract for the new MHS-wide electronic health record (EHR) system, called MHS GENESIS, to a consortium of Leidos, Cerner, Accenture, and others in July of 2015, to replace its aging legacy EHR. Although planning and organizational activities have been underway for well over a year, the first and second site deployments have more recently occurred in February and July 2017 with two more sites slated to launch in the fall of 2017, with full MHS deployment expected to be completed in 2022. Against the backdrop of this sweeping organization-altering

legislative mandate coupled with a health system-wide information technology deployment, the MHS finds itself charting a course where flux is the only certainty. Previous reviews of military health and related health information technology (HIT) efforts have provided broad recommendations for change. We focus here on the organizational implications of MHS GENESIS deployment with a full replacement of a legacy EHR and the NDAA's simultaneous requirement to institute far-reaching organizational management and administrative restructuring. We highlight opportunities and current challenges, suggesting strategies for navigating major simultaneous technology and organizational transformations.

### NATIONAL DEFENSE AUTHORIZATION ACT FOR FISCAL YEAR 2017

As is common with the annual Congressional Authorization for the DOD, it is expansive and reflects the broad nature of activities of the Department from procuring fighter aircraft to military pension benefits. Title VII of the law, which covers health care provisions, is a key component we briefly review here, contains over 50 sections. Although many of the sections in Title VII have potential implications for health IT modernization, there are several that stand out.

Section 702 is the most far-reaching and noteworthy component, with the Director of the DHA being given full

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administrative authority over all medical treatment facilities (MTFs) as of October 2018. This includes not only budgetary control but also information technology oversight, health care administration and management, along with general administration. Key to DHA control over MTF information technology, there will be a designated Deputy Assistant Director for Information Operations along with three other Deputy Assistant Directors for Finance, Health Care Operations, and Medical Affairs, all reporting to DHA Assistant Director, who reports to DHA Director. Essentially, there will no longer be three different silos of HIT operations between the Army, Navy, and Air Force and all HIT procurement, ownership, and operation will be managed centrally through a single organization.

Section 706 directs the Secretary of Defense to establish high-performance, military-civilian, integrated health delivery systems by partnering with health maintenance organizations, integrated health systems, accountable care organizations, and other systems. Each of these partnerships is expected to deliver benefits that include improved access for beneficiaries, enhanced readiness of MTF providers, and sharing of staff, equipment, and training resources. Furthermore, key outcomes from this effort include measurable health quality improvement based on national standards, greater efficiency with reduced care variation and medical error prevention, improved population health outcomes and early disease detection, and prevention and treatment activities among others.

Sections 709 and 718 call for the improvement of patient access to health care services. The law directs the Secretary of Defense to implement a singular standardized medial appointment system for MTFs with no variation from site to site, set productivity standards for all providers with optimal appointment levels, and improve utilization of telehealth across the health service continuum. Finally, Section 741 directs the DOD to provide a report on plans for implementing all information technology capabilities for interoperability with the Department of Veterans Affairs (VA), which is yet to be completed.

## MHS GENESIS AND TRANSFORMATION

Transitioning and modernizing the over two decades old legacy, EHR will not serve as a panacea for transforming the MHS into a modern health care system, but the initiative has triggered a detailed health system review unlike before. The NDAA is unparalleled in its mandate to transform the MHS, and although HIT such as MHS GENESIS is a cornerstone for the information infrastructure requisite to achieve the NDAA innovations, much more is required. In an analysis of HIT and health care transformation funded by U.S. Department of Health and Human Services Office of the National Coordinator, Gold notes, “such functionalities require much more than the presence of EHR; the data must also be liquid, integrated into the work flow, and used for analysis. Even in advanced systems, it takes years to create HIT infrastructure. Building this infrastructure and transforming delivery

simultaneously are difficult, although probably unavoidable, for most providers. Progress will likely be slow...”<sup>1</sup> Deploying GENESIS coupled with the NDAA reorganization provides an unprecedented opportunity for MHS introspection while developing and diversifying an aging infrastructure requisite for a modern integrated health care delivery system. Here, we summarize the organizational implications of the convergence of transitioning to MHS GENESIS under the NDAA.

Various studies have highlighted committed leadership, clear organizational lines of authority, and shared vision and ownership as key ingredients for successful HIT implementations, including EHRs.<sup>2,3</sup> As such, the major provision of the NDAA to transition and centralize all MTF administration and operations under the DHA, including information technology, is timely and reinforces the necessary unified leadership and command structure as the agency moves to a singular enterprise-wide EHR across Army, Navy, and Air Force. To lead this unified effort, the DHA will need a central cross-cutting authority that seamlessly integrates all components of people, process, and technology.

Although a final structure and strategy are still evolving, DHA has taken steps to put organizational supporting components in place. As several studies have noted, the need for engagement of a respected clinician to build end user buy-in and support and links to executive management have been essential strategies for EHR deployments.<sup>4,5</sup> Key to this is the Office of the Functional Champion, led by a physician who reports directly to the Director of DHA. The office serves as the key influencer, motivator, and lead for realizing, promoting, and diffusing the benefits and value of the new EHR. If DHA is to fulfill the role of administrator for all MTFs in the face of a profound and complex enterprise-wide mission HIT transition, then expanding, consolidating, and empowering the role of the Office of the Functional Champion to lead the transition must be a priority. Indeed, Adler goes as far to say, “Identify an EMR champion – or don’t implement.”<sup>6</sup>

Over 60% of the health care services provided by the MHS are through purchased care outside of MTFs. For fiscal year 2017, of the almost \$25 billion that DHA requested to support patient care, only \$9.2 billion supports direct care at MTFs, whereas nearly \$16 billion is spent on purchased care. Not surprisingly, the NDAA directs the DOD to establish a tightly linked integrated network with the private sector that provides expanded access outside of MTFs to beneficiaries while requiring comparable health quality and population health metrics tracking. However, as recently reported in a MHS review, there is no alignment between direct care and purchased care, especially around quality metrics. The report further identified a significant gap in the ability of the MHS to aggregate and analyze system-wide health care information and noted, “Although the MHS has a wealth of data, the ability to analyze those data and use the results to guide decision making in quality and patient safety is nascent.”<sup>7</sup> Although the current MHS legacy EHR has been able to support care coordination

and MHS GENESIS will further strengthen this coordination, it is limited to the MHS direct care network. The expanded access to beneficiaries, coupled with the requirement for comparable, transparent, and visible health care quality and service metrics across MTFs and purchased care through civilian providers, further increases the cross-user population. As such, more robust data are needed to link, aggregate, and analyze beneficiary health care services across military and civilian providers.

A first step in being able to link across both federal and civilian providers was launched in June 2016 with the Virtual Lifetime Electronic Record Health Information Exchange (VLER HIE) Initiative. Although it currently only links a small set of civilian providers to the DOD and VA, it does provide important information such as prescriptions, allergies, illnesses, lab and radiology results, immunizations, and past medical procedures. However, the necessary quality and population health monitoring and management metrics are still lacking along with other health service details. Therefore, given the demand for better provider coordination and richer standardized data and metrics, approaches for augmenting the current HIE will need to be explored as MHS GENESIS continues to be rolled out.

Implementing a unified scheduling system, improving clinician productivity and expanded telemedicine capacity called for in the NDAA are all opportunities ripe for health informatics engagement. Although deployment of MHS GENESIS presents a platform for better patient engagement and improving access, it may potentially further stress MHS providers. A recent American Medical Association-funded study further concluded that physicians spend almost 50% of the day on EHR and desk work and less than one-third on direct clinical face time with patients along with another 1–2 h of personal time at home each night to “keep up.”<sup>8</sup> In addition, even with a long history and advances in MHS telehealth systems, they are not integrated with legacy EHR systems. The limitations are in part due to a lack of standard policy for documentation, charges, and workload along with a lack of appropriate EHR data fields for relevant information that must be captured in telehealth encounters. As such, deployment of MHS GENESIS and other HIT initiatives while necessary, to serve to catalyze transformation; they will have to be tempered by necessary people and process limitations that have not evolved at the same pace as the technology. Broad-based organized change management activities and formalization of a health informatics organization and training of requisite informaticists are needed to prepare not only the user base but develop and grow a cadre of clinician informatics specialists. Critically, these informaticists can support the rapid MHS health information reforms and transformation that are planned over the next several years.

Although DOD along with the VA has been on the forefront of EHR deployment and usage, the patchwork of legacy systems including the largest (Composite Health Care System, Armed Forces Health Longitudinal Technology Application, and Essentris and VA’s Veterans Information Systems and

Technology Architecture) have become increasingly costly, complex, and disparate to operate and maintain. Furthermore, a number of reviews have repeatedly criticized both Departments’ inability to more readily interoperate with their existing EHRs and the lack of appropriate management controls, in nearly two decades of attempting to increase interoperability between their respective EHRs.<sup>9</sup> DOD’s transition to MHS GENESIS and the VA’s recent announcement on the selection of the same Cerner EHR provides a renewed opportunity to identify and chart a joint path built on modern technologies with interoperability built in from inception.<sup>10</sup> Importantly, given the major HIT roll out at DOD and the just initiated effort at the VA, it is an opportune time to develop a joint innovation strategy and develop once novel approaches. Digital health platforms, cloud-based health, big data analytics, and others that may not only make health data sharing seamless between agencies but provide new levels of analytic and visualization on longitudinal population health information that transcends both agencies and shows a complete picture of beneficiary health and services across the care continuum.

## CONCLUSIONS

Replacing and modernizing core operating clinical and administrative information systems including an EHR serving over 9.5 million beneficiaries can be daunting and fraught with risks for any organization. Compounding the modernization effort with a simultaneous organizational transformation and consolidation of three military branches’ health care operations into one as mandated by the NDAA serves to further exacerbate risks of project failure. Nonetheless, careful planning and strategy organized around a singular unified leadership structure could serve as the bedrock to stabilize and focus direction and outcomes of information systems modernization while leveraging organizational restructuring as a tool to better harness new information and data streams. Finally, developing people, harnessing new informatics resources, and exploring novel technologies will be essential but must be evaluated and tempered by impacts on health outcome, quality, and costs.

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