Examination of a Systemic Failure at the Department of Veterans Affairs

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The purpose of this White Paper is to describe how a well-intended effort to solve a serious problem in one part of the U.S federal government can cause a catastrophic problem in another part of the federal government. All the relevant information contained in this document is documented and is publicly available at https://github.com/VETDOCS/Vetdocs

This White Paper is the result of a decades long collaboration with hundreds of dedicated Department of Veterans Affairs employees, clinicians, informaticists, administrators, end-users, contractors, subject matter experts and most importantly veterans. Unfortunately, the current climate at the VA does not allow me to list them by name or title. I am solely responsible for the content of this document. My biography is included in the referenced documentation

Background:

The Veterans Health Administration (VHA) invented the modern-day electronic health record (EHR) in 1978 with the deployment of the Decentralized Hospital Computer Program (DHCP) to 20 Veterans Medical Centers. DHCP was built on the seminal work done a decade earlier at Mass General Hospital using the Mumps operating environment. The genius that VHA added to this environment was that DHCP was designed by clinicians for clinicians with programmers working with and for them.

In 1994 the now Department of Veterans Affairs (VA) renamed DHCP to Veterans Health Information System Technology Architecture (VistA). VistA has received the Smithsonian Award for best use of Information Technology in Medicine and continues to the present day to receive the highest physician satisfaction scores in national Electronic Health Record (EHR) surveys. In 2014 and again in 2016 national surveys of over 15,000 physician users of EHRs rated VistA with the highest overall satisfaction rating in the U.S. Over 65% of all physicians trained in the U.S. rotate through the VHA and use VistA, making VistA the most familiar EHR in the U.S.

VistA is taxpayer funded public domain software, and as such has been adopted and modified as the foundation system of many other public and commercial, federal, state, and national health systems throughout the world. In 1985 both the U.S. Department of Defense (DoD) and Indian Health Service (IHS) adopted VistA as the basis of their national health information systems and has served these agencies well. Several other countries, including Jordan use a modified version of VistA as their national health record system today.

"Genesis" of the systemic failure:

In 2000 DoD spent $6 Billion to replace the VistA-derived Composite Health Care System (CHCS) which was deployed at all military health facilities across DoD with one of their own design called the Armed Forces Health Longitudinal Technology Application (AHLTA). However, the replacement of the CHCS systems with the AHLTA system was plagued with problems throughout its development and deployment ending in a congressional hearing 9 years later entitled AHLTA IS "INTOLERABLE", WHERE DO WE GO FROM HERE?

To answer that question Assistant Secretary of Defense for Health Affairs, Dr. Ward Cassells conducted a broad survey of DoD clinicians and found widespread dissatisfaction with AHLTA. In response he created the "Way Ahead" office and appointed two DoD doctors to run it and come up with a solution to the AHLTA problem. They used the DoD Military Decision Making Process (MDMP) called FM 6-0 and spent over 18 months with 34 stakeholders from all branches of DoD to come up with their recommendations for the DoD's "Way Ahead".

In 2011 this group issued their final report and came to 4 conclusions.

1. No ability or interest in fixing AHLTA
2. No interest in building a new system.
3. No interest in using VA's VistA
4. Recommendation to buy a Commercial Off The Shelf (COTS) product.

It took 3 years for DoD Acquisition (2013) to put together a competitive Request for Proposal that resulted in four (4) proposal submissions from:

- IBM proposing EPIC as the COTS product
- CSC proposing All Scripts as the COTS product
- DSS proposing open-source VistA as the COTS product
- Leidos proposing Cerner as the COTS product.

DoD chose not to evaluate the VistA bid as non-compliant claiming it was not a "meaningful use" certified product.

In July of 2015 a 10-year contract (5+ 5 Option years) entitled Project Genesis was awarded to the lowest bidder, Leidos for $4.3 billion dollars.

Over the course of the next two years multiple problems and issues were raised concerning this contract. Several DoD Office of Inspector General (OIG) and Government Accounting Office (GAO) reports were issued detailing these issues and multiple congressional hearings have been held to examine this program.

The Contagion: In June of 2017 the newly created White House Office of Government Innovation (OGI) under the recent leadership of presidential appointee Jared Kushner approached the VA with a proposal for VA to abandon its award winning, best of breed VistA electronic health record in favor of adopting the trouble plagued DoD Genesis system.

The stated rationale for this proposal was that the newly created Office of Government Innovation had determined that VistA was an old, legacy system that was at the end of its life cycle and needed to be replaced and that there was an "interoperability problem" between VA and DoD, and that the only way to solve this interoperability problem was for both agencies to buy and implement a single instance of the same COTS product referencing a single database.

These assertions are demonstrably false. VistA is a peer of all its commercial counterparts in terms of age, technology, and evolution. All the major EHR systems deployed in the United States today were originally developed in late 1970s or early 1980's and were initially derivative, in technology and design, of VistA. They are the same "age" as VistA.

Today, VistA's MUMPS technology is the same technology used by over 50% of all commercially deployed EHRs in the U.S. While the underlying technology of VistA has evolved over time, its fundamental, fast, non-relational, hierarchical

access to data is still considered optimal for complex, large scale environments such as healthcare, banking, finance, and logistical systems.

Likewise, the assertion that VA must use the same EHR as DoD to achieve interoperability is wrong. In the private sector there are over 10,000 unique EHRs deployed, from multiple, different vendors. Mandating that all doctors in the U.S. use a single vendor's system **is <u>not</u>** how to achieve interoperability. The U.S. Office of the National Coordinator (ONC) for Health Information Technology mandated approach to achieve interoperability nationwide is by using ONC-approved Health Information Exchange (HIE) standards to exchange data across these 10,000 unique EHR systems.

VistA is already the most connected and interoperable EHR in the U.S., with trusted connectivity with over 450 national and regional Health Information Exchanges (HIE) across the United States; these HIEs in turn exchange Veteran health data with thousands of third party and commercial EHRs across the U.S. Through these ONC-certified HIEs, VistA is already interoperable with any Cerner EHR commercial customers. More specifically, if DoD successfully implements Genesis, VistA will be interoperable with DoD by definition, as VistA is already interoperable with Cerner EHRs through its HIEs.

In short, it is a tragic waste of $50 Billions of taxpayer funds to rip-and-replace VistA to achieve "interoperability" with the DoD when ***<u>VistA is already interoperable with Cerner.</u>***

Even though neither of these false assertions are supported by any research or analysis, in May of 2018 the VA awarded a non-competitive, sole-source contract

to Cerner for $10 billion dollars and later increased it to $16 billion dollars to acquire and install the same Genesis system as DoD.

This contract was awarded despite the fact the VA had already implemented a long-term aggressive program to upgrade, enhance and modernize VistA and had already implemented the most modern and comprehensive interoperability platform approach in the health care industry. In fact, VistA is one of only 13 healthcare systems in the U.S. to have achieved HIMSS Health Level 7, the highest level of record integration.

This contract was awarded even though no VA-based requirements existed, no Key Performance Indicators (KPI) existed, no metrics to measure success existed, no lifecycle budget existed, no vetted schedule existed, and no detailed implementation schedule existed.

This contract was awarded without any consideration of the criticality and centrality of the VistA system to the entire Department of Veterans Affairs. This contract was awarded to be a rip and replacement for only the clinical support and records management aspects of VistA. In fact, VistA serves as the central nervous system of the VA. More than 50% of VistA functionality is used for non-clinical care purposes. VistA provides critical data to at least 74 Veterans Benefits Administration (VBA) programs that are responsible for providing life sustaining benefits of over $91 billion dollars to over 5.2 million veterans annually. At some point new interfaces will have to be designed and built to provide access to this new system. These interfaces will be costly, time consuming and potentially disruptive and are outside the scope and budget of this contract. In addition, VistA serves as the authoritative system of record for VA's budgeting, finance, auditing, fiscal controls, and reporting systems. Each of these interfaces will have to be

designed and built to provide access to this new system and again this work will be costly, time consuming and potentially disruptive and are outside the scope and budget of this contract. The same is true for VA's logistics, human resource, and planning systems and hundreds of Veteran and VA-specific mandates established by Congress.

In September of 2020, the first instance of this new system went live at the Mann-Grandstaff VA Medical Center in Spokane, Washington. Almost immediately serious problems emerged with the type, timing and level of training that had been provided to VA Spokane staff and the level of technical support that was available. This was compounded by serious latency and reliability issues with the system. Many ad hoc work arounds and changes to long established workflows added to the stress placed on clinicians and staff. Work loads on staff increased while productivity plummeted by as much as 50%. The new system often crashed or froze sometimes several times a day bringing modern healthcare to a halt. This environment has continued for over two years.

In April of 2021 new leadership at the VA called for a strategic pause of the program to evaluate lessons learned "to ensure success for all future implementations". After a 12-week pause the VA chose to resume installations at 4 additional VA hospitals.

In November of 2021, the VA released the results of a survey of 833 clinicians and staff at the Mann-Grandstaff Spokane VAMC conducted in August and September of 2021. This survey was conducted after a year of effort at the Spokane VAMC including 45,000 man-hours of additional training and the addition of over 400 support personnel. Some of the most disturbing findings include:

As a result of the Cerner EHR implementation, my morale has:

- Improved—0.7%
- Not changed—16.0%
- **Worsened—83.3%**

As a result of Cerner EHR implementation, my job satisfaction has:

- Improved—0.7%
- Not changed—20.8%
- **Worsened—78.5%**

The implementation of Cerner EHR has made me question whether I would like to continue working here:

- No—37.5%
- **Yes—62.5%**

As a result of the Cerner EHR implementation, my level of burnout has:

- Improved—0.5%
- Not changed—18.6%
- **Worsened—80.9%**

As a result of the Cerner EHR implementation, my level of engagement has:

- Improved—2.9%
- Not changed—46.5%
- **Worsened—50.6%**

I would imagine that most people (in my specialty) would learn to use the Cerner EHR quickly as it relates to their job tasks:

- **Strongly Disagree/Disagree—70.2%**
- Neutral—17.9%
- Agree/Strongly agree—11.9%

I feel very confident using the Cerner EHR as it relates to my job tasks:

- **Strongly Disagree/Disagree—61.7%**
- Neutral—22.4%
- Agree/Strongly agree—15.8%

Despite thousands of unresolved Patient Safety Reports, continuing system outages, system performance issues, reduced staff productivity and ongoing physical and emotional demands on staff the VA decided to move forward, and 4 more VA medical centers were converted to this system resulting in similar problems and issues.

In July of 2022 the VA's Inspector General Office issued Report #22-01137-204 entitled, "The New Electronic Health Record's Unknown Queue Caused Multiple Events of Patient harm". In this report the VA OIG described 60 ongoing patient safety concerns across 9 health care delivery domains at these 5 locations. They described thousands of medical orders for laboratory services, pharmacy medications, specialty care referrals, outside referrals, consultations, follow up care, rehabilitation services and appointment scheduling that were routed by this system not to their intended recipients but to an unknown number of undetectable

locations dubbed as “unknown queues”. The system did not alert the sender or the intended recipient that these orders had not been delivered. At least 11,000 such orders have been discovered so far. While the system vendor was aware that these unknown queues existed in the system the VA was never notified.

The OIG discovered and the VA acknowledged at least 149 cases of harm to veteran patients because of unknown queue issues.

In September and October of 2022, over seventy-one thousand (71,795) veterans received a letter from the VA telling them that they may have been harmed by this system and that they should make an appointment with their VA healthcare provider to review their electronic health record for errors, accuracy, and completeness.

The VA is aware of potentially five (5) cases where this system may have caused or contributed to the cause of death of five (5) veterans. They cite confidentiality and ongoing investigations as the reason for not providing more information on these cases. But one case is well known.

Charlie Bourg is a 68-year-old army flight qualified crew chief who served in Vietnam. He has been diagnosed with stage 4 terminal prostate cancer that has metastasized. Over 2 years ago his primary care clinician put a referral into this system for a follow up visit with a urologist after an elevated PSA test. His PCC told him that a urologist would review this test and his health record and contact him if any follow up was required. For over a year he heard nothing. During a routine office visit 13 months later his PCC questioned why there had been no follow up to her referral. When she questioned the situation, it was discovered that

her referral had disappeared into something in the system called an “unknown queue”. It never reached the urology department, and no one was notified. Charlie’s elevated PSA number was now terminal cancer. He was told he might not survive until Christmas 2022. He is now living on borrowed time.

As a result of this OIG report the VA decided in October 2022 to suspend all further deployment of this system until at least June of 2023. However, the VA has refused to suspend use of this system in the five VA medical centers where it has already been deployed. This inexplicable decision to continue to experiment on veterans by continuing to use a system it deems not suitable for deployment to other VA hospitals has never been adequately addressed. VA’s only rationale for continuing to use this system is that adequate manual safeguards have been put in place in the form of a requirement being placed on individual clinicians to manually verify that each order they place has been received by the intended recipient. This additional workload has been placed on an already over-burdened staff which has experienced years long accelerated loss of staff through attrition, transfer and retirements and a hiring freeze due to local budgetary constraints.
In November of 2022, the Arch Collaborative, a healthcare industry group formed by KLAS Research, a company specializing in data gathering, research and analysis in the Electronic Health Record industry conducted a survey of the VA EHR Modernization effort. Among its many disturbing findings:

- The VA EHRM system was the lowest performing EHR compared to 280 health care organizations worldwide.
- Of the 779 VA nurses surveyed who use VistA, 64% of them believe that VistA enables them to deliver high-quality care.

- Of the 641 VA nurses surveyed who use the new EHRM system, only 6% of them believe that the new system enables them to deliver high-quality care.
- When all 1,420 VA EHR end users surveyed were asked the same question, 62.8% of VistA end users believe that VistA enables them to deliver high-quality care while only 4.8% of the new EHRM system end users believe that the new system enables them to deliver high-quality care.

In every case and every question posed these ratios held in the range of 5 to 6% satisfaction/approval results for the new EHRM system and 60% to 65% satisfaction/approval results for VistA.

In October of 2022 the Institute for Defense Analysis (IDA) a private, nonprofit corporation that manages three Federally Funded Research and Development Centers (FFRDCs) released a report that was commissioned by the VA at the request of Congress to establish and verify a realistic lifecycle budget for the successful completion of the VA's EHRM program. The VA had been working under an established lifecycle budget of $16 billion dollars ($10 billion for EHRM costs and $6 billion for VistA sustainment during the transition to the new system). VA's congressional oversight committees had expressed skepticism of the realism of that budget. The IDA reported that a realistic lifecycle budget for successful completion of the EHRM program at the VA was $49.8 billion dollars. They also pointed out that this figure does not include many administrative and management capabilities currently provided by VistA that are out of scope for the current EHRM program, rewrites, and upgrades for new EHR system capabilities that are required to meet VA needs but are not currently provided by the new system and future VA infrastructure requirements. While not provided in this report these

additional costs have been elsewhere estimated in the $7.5 to $9.0 billion dollar range.

VistA as fallback and future of the VA

There are many theories as to why the VA would continue to use a system that:

- Is known to cause harm and even contribute to the deaths of veterans
- Is not trusted by its end users
- Reduces productivity and increases workload and stress on its end users
- Is unreliable and costs orders of magnitude more to operate

than the VistA system which it owns and operates inexpensively and reliably at the other 166 VA hospitals and 1,113 outpatient clinics in the VA healthcare system.

These theories range from fear of severe contractual issues involving both DoD and the VA that would have huge costs and operational implications for both departments. The sunk cost dilemma where decisions are influenced by the huge amount of cost, time and reputations that have already been expended and the hope that by investing more that success will be achieved. The reliance on false narratives or political involvement to rationalize continuing with a program that all empirical evidence demands be halted. The inability of individuals in leadership positions to admit a mistake and several other possible reasons.

But perhaps the most pernicious is that there is no fallback position available to the VA. This is patently false.

VistA is one of the most reliable and safest systems for healthcare in the United States. In FY22, VHA provided over 108 million veteran care encounters, most of which was provided through VistA. VistA was available to clinicians over 99.999 % of the time, exclusive of scheduled down time for maintenance and upgrades.

Today the VA relies on VistA in 149 of its 171 medical centers around the country. VistA at these sites supports over 85% of the 9.6 million veterans enrolled in the VA health care system. VistA does not kill or harm its patients; is well thought of by virtually all its end users and virtually all complaints about VistA involve wishing it could do more and not about what it does do. Most importantly over 60% of its end users believe that VistA makes them better at their jobs.

The five VA sites currently using the new system could be returned to VistA safely and with modest additional costs in under 4 weeks. All five VA sites using the new EHRM system continue to operate a full production Vista/CPRS system in parallel. This is because such a small fraction of the Veterans historical health record was transferred into the Cerner system that the only way clinicians can get an accurate summary of veteran care is by looking into CPRS (which contains the veterans lifetime record going back 35 years). The new ERHM system contains less then 10% of the veteran's record and only for the most recent five years. Thus, staff at these five sites currently must use two systems, the new EHRM for order and note entry and CPRS/VistA for review of the veteran's entire health record.

In fact, VA has prepared carefully for the eventuality that this new EHRM system might need to be switched back to VistA. VA has created an "active/inactive" switch in VistA that switches VistA from "read-only / hot standby" to "read-write/

fully active" with a set of predetermined configuration changes, which can be tested and implemented in a matter of days.

Reverting to VistA would rapidly restore the integrity of the VA healthcare system, reduce the stress on clinicians and dramatically reduce wasteful spending.

While these actions would be goal enough there is a better future for VA healthcare already in operation. Over the past two years the VA has migrated 17 VistA systems to the VA Enterprise Cloud, which is a federally certified commercial cloud. During FY23 VA will migrate 70 more VistA systems. By the end of FY24 all VA VistA systems will be fully operational in the Cloud. CPRS, VistA's graphical user interface has been tested on the latest cloud streaming service, the same technology that platforms such as Netflix, Disney, and Apple use to stream data to hundreds of millions of users across the world. VistA-in-the-Cloud has inherited the AWS zero trust security paradigm as well as the AWS Edge backup and redundancy capabilities. These advances as well as the inherent workflow standardization and stability of VistA will allow near seamless access to not only DoD data but to over 450 Health Information Exchanges. Assuming DoD's Project Genesis eventually achieves this level of system reliability and data integration true system to system interoperability will then be possible.

At that point the VA would be running current VistA capabilities in a secure, redundant, scalable, cost-effective environment. At that point the VA would have the opportunity to review and evaluate its needs and the future direction of VA's Electronic Heath system while confident that the current needs of America's veterans and their clinical providers are being met. It would not be spending billions of dollars to rebuild a COTS product that it would then have no operational

control over and would not be forced to pay whatever licensing and support fees that the COTS vendor charged.

Summary:

The Department of Veterans Affairs has had a struggling, underfunded, generic EHR replacement program from another agency imposed on them that degrades their ability to provide safe, accessible, care to veterans and is an existential threat to the viability of the VA. This system is solely responsible for

- A 50% reduction in efficiency
- 65% of clinical staff considering leaving the VA
- 80% of clinical staff being demoralized
- A 50% reduction in access to care
- 400% increase in outsourcing to private sector care in the community
- 71,795 potential harm letters sent to veterans
- 149 documented instances of real harm to veterans
- Possibly 5 veteran deaths
- Physician and Nursing resignations
- Recruitment and retention challenges
- Billions of dollars in wasteful and unnecessary spending

VA has a safe, vetted contingency plan in place to revert to VistA at all five sites rapidly, reliably, and inexpensively. No training would be required, as all VA staff already know and use CPRS.

VA has also made a significant strategic decision to modernize VistA by migrating all VistA systems to the best of breed commercial cloud. This

places VistA in the most secure, scalable, commercially supported infrastructure available and gives it access to the most powerful and innovative technologies and services.

There is no moral, ethical or practical rationale for continuing to experiment with veteran's lives, continuing to subject the dedicated clinical staff at these facilities to the stress and burden of this failed system or to continuing to spend obscene and unbounded amounts of taxpayer dollars on a program that has failed every test of a modern, mission critical, and life-dependent system.

VA leadership must summon the courage to admit past mistakes and despite any contractual, political, or personal repercussions shut down this misbegotten EHRM program at the five existing sites and immediately revert these sites to VistA.