VETERANS HEALTH INFORMATION SYSTEMS AND TECHNOLOGY ARCHITECTURE (VISTA)

HEARING

BEFORE THE

SUBCOMMITTEE ON TECHNOLOGY MODERNIZATION

OF THE

COMMITTEE ON VETERANS' AFFAIRS

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C O N T E N T S

TUESDAY, MARCH 7, 2023

VETERANS HEALTH INFORMATION SYSTEMS AND TECHNOLOGY ARCHITECTURE (VISTA)

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U.S. HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON TECHNOLOGY MODERNIZATION,
COMMITTEE ON VETERANS' AFFAIRS,
Washington, D.C.

The subcommittee met, pursuant to notice, at 2:58 p.m., in room 390, Cannon House Office Building, Hon. Matthew M. Rosendale, Sr. (chairman of the subcommittee), presiding.

Present: Representatives Rosendale, Self, Cherfilus-McCormick, and Landsman.

OPENING STATEMENT OF MATTHEW M. ROSENDALE, CHAIRMAN

Mr. ROSENDALE. This meeting will come to order.

I am glad to be here with Ranking Member Cherfilus-McCormick to continue our work.

I first want to thank Representative Frank Mrvan for his leadership during the last Congress. I really did enjoy working with him. As I have stated and he is stated, this is one of the most bipartisan committees that we found, that there was a lot of joint work together, and we are hoping to be able to do the same thing as we move forward.

We did, however, expose serious mismanagement in several of the largest VA information technology systems. Now my goal is to motivate the VA to get these efforts back on track or put better strategies in place when that is not possible.

These IT systems exist to make the delivery of care and benefits to our veterans easier to schedule, easier to access, and easier to track, thereby keeping our veterans healthier and happier. Their purpose is not to churn out cushy contracts for technology companies. Unfortunately, the Beltway and Silicon Valley need to be reminded of that constantly.

We are here today to discuss Veterans Health Information Systems and Technology Architecture (VistA), the platform that 97 percent of the Veterans Health Administration relies on to care for our veterans.

It is no secret that VistA was originally developed 40 years ago and Computerized Patient Record System (CPRS) was introduced 25 years ago. It is also no secret that VistA is a vast collection of

hundreds of systems that do everything from prescriptions to staffing, to accounting, to tracking car accidents.

It is less well understood where the replacement and modernization efforts of 10 and 20 years ago left VistA. When the Cerner project began, some in the VA thought they could stop paying attention to VistA. Some in Congress thought so too. There was a discussion of a pivot plan, which initially seemed to be a plan to mothball VistA. As the Cerner completion schedule slipped farther and farther into the future, the pivot plan faded.

The reality is, regardless of whether the Oracle Cerner implementation can be accomplished and regardless of how we feel about that, the VA will probably continue to rely on VistA for at least another decade, and some of the elements of VistA will probably never go away because no replacement even exists.

Medical centers all over the country and the veterans they serve cannot be left in limbo. Let me say this as plainly as I can: Running VistA into the ground would be a disastrous mistake. It must be maintained.

Within the technical constraints that exist, VA should be identifying the key areas of VistA that need to be modernized and are feasible to undertake. That is already happening in a few cases, and I want to explore them this afternoon.

Let me be clear: There will be no more blank checks and low expectations for Electronic Health Record (EHR) projects. VistA and Oracle Cerner and any other EHR will be judged by the same standards, and those standards are: patient safety, reliability, user satisfaction, and cost. It is not complicated.

We have two esteemed panels of experts here with us today to do just that, and I want to welcome our witnesses. I appreciate you being here.

With that, I would yield to Ranking Member Cherfilus-McCormick for her opening statement. Thank you.

OPENING STATEMENT OF SHEILA CHERFILUS-MCCORMICK, RANKING MEMBER

Mrs. CHERFILUS-MCCORMICK. Thank you, Mr. Chairman.

I am honored to serve as the ranking member on the Technology Modernization Subcommittee. Before coming to Congress, I was a healthcare executive for many years. I know firsthand the critical role that technology plays in the provision of healthcare and fully understand that just about everything the VA does relies on computers and other technologies.

I would like to welcome our witnesses today and thank you for coming to discuss VA's long-serving electronic records, VistA.

While we all know that the VA is in the midst of a major modernization effort to replace VistA, it is also important to note that the system will be around long as long as it needs to be—excuse me—least as long as it needs to be, as long as the modernization program takes.

It is imperative that the VA not only maintains VistA until the replacement system is fully deployed but also keeps up the healthcare innovation as best as the system allows. Veterans who rely on the VA for their healthcare deserve no less.

There are functions of VistA that are not related to the EHR and will likely exist long after the EHR is replaced. To be clear, we realize that VistA is more than EHR, but my goal today is to focus on the EHR capabilities.

VA has spent almost 20 years and, according to the Controller General, over $1.7 billion in failed attempts to modernize VistA.

Numerous experts told this committee that VistA is not a viable long-term solution and must be replaced. There are concerns about the cybersecurity risk, data management, and a code base considered to be obsolete by many. Also, the 130-plus different instances of VistA do not reliably communicate with each other, let alone the Department of Defense (DOD) or community care providers.

We must do better.

Before I conclude, I would like also to congratulate my colleagues Mr. Rosendale on being selected as the chairman for the subcommittee.

I look forward to working with you this Congress to ensure the VA has the resources and technology it needs to provide the world-class healthcare and benefits that our Nation's veterans have earned and so richly deserve.

I yield back the balance of my time.

Mr. ROSENDALE. Thank you very much.

I would like to now introduce the witnesses on both panels.

First, from the Department of Veterans Affairs, we have Mr. Daniel McCune, Mr. Michael Giurbino, and Ms. Emily Qiu from the Office of Information and Technology. We also have Mr. Charles Hume and Dr. Thomas O'Toole from the Veterans Health Administration.

Thank you all for being with us today.

On our second panel, we have a distinguished group who led VA information technology during the Obama and Trump administrations: Mr. Roger Baker served as the Assistant Secretary for Information Technology from 2009 to 2013; Mr. James Gfrerer served in the same position from 2018 to 2021; and Mr. Peter Levin, who was the VA Chief Technology Officer from 2009 to 2013.

I ask the VA's first witnesses on our first panel to please stand and raise your right hands.

[Witnesses sworn.]

Mr. ROSENDALE. Thank you.

Let the record reflect that all the witnesses answered in the affirmative.

Thank you.

Mr. McCune, you are now recognized for 5 minutes to deliver your opening statement.

STATEMENT OF DANIEL MCCUNE

Mr. MCCUNE. Good afternoon, Chairman Rosendale, Ranking Member Cherfilus-McCormick, and distinguished members of the panel. Thank you for the opportunity to testify today about the Department of Veterans Affairs' Veterans Health Information Systems and Technology Architecture, or VistA.

I am accompanied by Chuck Hume, Chief Informatics Officer in Veterans Health Administration (VHA); Dr. Thomas O'Toole, Deputy Assistant Under Secretary for Health; Mike Giurbino, Director

of Health Infrastructure and Systems Management in IT; and Emily Qiu, Director of Health Informatics in IT.

Veterans are at the center of everything we do, and VA is committed to providing exceptional care, services, and a seamless, unified experience to the veteran. To fulfill this mission, VA clinicians must have modern tools to ensure best outcomes for our veterans.

Office of Information and Technology (OIT) collaborates with VHA and other VA offices to achieve this mission through delivery of state-of-the-art technology, including a modernized electronic health record, or EHR.

VistA provides an EHR for veteran care and services, supporting over 150 applications in more than 1,500 VA facilities. There are 133 instances of VistA nationwide that share common functionality but have data and workflow tailored to the needs of each medical center and patient population.

VistA has served VA and veterans for over 40 years, and we are aware of its limitations. It does not have modern capabilities like artificial intelligence, machine learning, mobile and web access, and the capabilities providers and veterans expect and deserve from a modern, cloud-native EHR.

In 1997, VA implemented a new graphical user interface on top of VistA called Computerized Patient Record System, or CPRS. CPRS is a Windows desktop application that provides an improved, yet dated, user interface for accessing VistA data.

VistA itself is written in an old programming language called Massachusetts General Hospital Utility Multi Programming System (MUMPS). There are few MUMPS programmers today. MUMPS is not taught in computer science classes, and the pool of MUMPS programmers shrinks every year as they retire.

VA is fortunate to have dedicated MUMPS programmers supporting VistA. They understand millions of lines of code developed over 40 years, and they also understand VA clinical business processes. They are committed to enabling clinicians and supporting veteran outcomes, and we have been able to retain them and their knowledge much longer than a typical workforce. However, approximately 70 percent of our MUMPS developers today are retirement-eligible, and we have few options to hire or contract additional ones.

VistA is a member of VA's expansive and complex ecosystem of software and infrastructure. The size and complexity of that technology ecosystem has nearly doubled in the last 5 years, and most of that growth has been in modern, cloud-native applications.

MUMPS programmers are increasingly challenged keeping VistA integrated in a growing ecosystem that is architected very differently from the system designed 40 years ago. While technology is a challenge, so also are the dated skills of our VistA programmers. That challenge compounds every year.

In May 2018, after nearly a year of analysis, VA decided to replace VistA with a Commercial Off The Shelf (COTS) solution, Cerner Millennium. However, VA will continue to use VistA until Cerner Millennium is fully implemented. During this time, it is essential to maintain and enhance VistA to preserve the uninterrupted care and continually improve the veteran service.

Some of the key recent VistA enhancements include: standardizing VistA code, we call this our national gold version; move to cloud: 20 instances of VistA have been moved to the cloud, with an additional 54 planned this year; improving access to federated health data by implementing an Application Programming Interface (API) gateway.

Currently, there is no cost reduction tied to the new EHR solution. The cost to support VistA will increase as we develop new capabilities and interfaces, support congressional mandates, and migrate to cloud. In essence, we are supporting two EHR systems simultaneously until the Cerner implementation is complete.

In the interim, VistA remains our authoritative source of veteran data.

In summary, VistA is an old technology, ill-suited for the modern digital age. Modernization would require VistA to be rewritten almost from scratch at a great cost and great risk.

Chairman Rosendale, Ranking Member Cherfilus-McCormick, and members of the subcommittee, thank you for the opportunity to appear before you today to discuss OIT's improvement of VistA. This concludes my testimony, and I look forward to answering your questions.

[THE PREPARED STATEMENT OF DANIEL MCCUNE APPEARS IN THE APPENDIX]

Mr. ROSENDALE. Thank you, Mr. McCune. I appreciate that.

We are going to go straight to questioning.

I mentioned in my remarks that I judge any EHR or any system that supports healthcare according to patient safety, reliability, user satisfaction, and cost. Does the VA typically—or, currently use any other criteria for establishing what they would like to have?

Mr. MCCUNE. That is a good start, sir. I think we do look at reliability and availability of the system too. Access to our critical health information systems is very important to our veterans and to our clinicians.

Mr. ROSENDALE. Do you have any other criteria that you are using, because reliability and customer satisfaction, the cost, these are all things that we are already looking at.

Mr. MCCUNE. Yes, sir.

Mr. ROSENDALE. What would they be? Exactly why would you be using these other criteria?

Mr. MCCUNE. Sir, if—thank you for the question. If we are looking at how do we gauge success of a large-scale implementation—is that the question?

Mr. ROSENDALE. Sure.

Mr. MCCUNE. Okay. There is a number of factors that we use. The ones you mention—scope, schedule, and cost—certainly are high on the list. Customer satisfaction, also high on the list. Those are ones that we look at.

We look at the technical viability and how it fits in our ecosystem. I mentioned our large ecosystem.

Those are all elements that we take into account.

Mr. ROSENDALE. Do you take into account the ratings or the consideration from the employees themselves, the ability for them to work with the system and the problems that it may not cause or the efficiency that it delivers to them?

Mr. MCCUNE. Yes, sir. We consider both the veteran experience and the user experience.

Mr. ROSENDALE. How exactly are you measuring that?

Mr. MCCUNE. We have a number of different ways to measure that, sir. One of the key ways we look at that is both the accessibility and the performance of that system. We look at numbers—how many clicks does it take, how many screens do they need to see, how performant is that system. Those are all measures that we use to gauge user acceptance.

Mr. ROSENDALE. Are you going back and having a poll conducted with the actual users and the patients to see what their experience has been?

Mr. MCCUNE. Yes, sir. I think that is an excellent question for our VHA partners. I would ask Mr. Hume to answer that question.

Mr. HUME. Sir, last year, we did the initial survey of users in Veterans Integrated Services Network (VISN) 10 and 20. That is where the Cerner product is currently deployed. We used standard survey questions developed by KLAS. I do not recall what that acronym is for, but it is an industry leader who surveys the electronic health record systems across the country and user experience with that. We got some baseline data from that survey last year.

Mr. ROSENDALE. Okay.

Where is the survey? That is what I am looking for, right there.

Okay. I happen to have a copy of that survey, and I have got some serious concerns about this, okay? After being 4 years in service, the VA's version of Cerner ranked dead-last in the survey that I am looking at.

Okay. After 4 years, according to this survey, 78 percent of the users—so these are the docs, right—78 percent of the users do not feel that it helps them deliver high-quality care. Seventy-eight percent. We are talking about almost 8 out of 10.

On the other hand, 64 percent said that VistA enabled them to deliver high-quality care. It is almost a complete flip-flop of that.

Now, we are talking about after billions of dollars have been expended, we are talking about several years to try and work through this system, and we are talking about at some of the smallest facilities in the country, not the more complex centers that the VA is even responsible for.

My question would be: Mr. McCune, does anything in the KLAS report surprise you?

Mr. MCCUNE. Sir, I think—thank you for the question. I would say, no, sir. I think we are getting a lot of signal around that.

What I would say is, with VistA, we have a relatively stable system, one that is been in production for 40 years. Our clinicians, our users are very, very familiar with that system.

What we also have happening is a brand-new system, the Cerner system. I think there is some element of change management there, there is some element of newness that has to be considered there.

We are aware of those numbers, sir, and we are tracking those.

Mr. ROSENDALE. Even though VistA is this old, why do most of the employees like it so much, Mr. McCune?

Mr. MCCUNE. Sir, I would defer to our VHA partners on that one.

Mr. Hume.

Mr. HUME. I will invite Dr. O'Toole to answer as a user of CPRS.

Dr. O'TOOLE. Thank you, Congressman.

I think the issue with CPRS, and having been using it myself for the past 17 years, is that it accomplishes what we need. It does represent high reliability.

But I would be neglectful to not say it does not have its own problems, and it does not provide a lot of the functionality that we see in different EHRs and more modern EHRs.

There is a muscle memory associated with using it for quite some time that I believe providers are comfortable with. They know how to use it, they know how to navigate the system, and it has worked well for us.

Mr. ROSENDALE. Mrs. Cherfilus-McCormick, do you have questions?

Mrs. CHERFILUS-MCCORMICK. Yes. Thank you.

Researchers have noted current challenges with VistA and how it negatively impacts healthcare delivery and operations, to include quality healthcare delivery, security, care standardization, lack of system standardization, data standardization, access controls, and efficient business operations.

That is no small list of problems. Would you agree that those areas are of concern?

Mr. MCCUNE. Yes, ma'am, I would agree with you. There is a long list with our legacy technology and our legacy VistA platform.

Mrs. CHERFILUS-MCCORMICK. On the major issue of lack of standardization, I realize that this is partly the fault of the VHA and their lack of prioritization of creating a standard healthcare record.

How difficult would it be to standardize the health records across the separate instances of VistA across the country, and how long would it take?

Mr. MCCUNE. Thank you for that question, ma'am.

That is a long, complex question, and we have not done the analysis on that. We have tried over the last 40 years many times to tackle that problem. If you would like, we can take—can do the analysis and come back with a plan.

Mrs. CHERFILUS-MCCORMICK. Just for information, how many instances of VistA are there? Is it 130 instances?

Mr. MCCUNE. It is—technically, it is 133.

Mrs. CHERFILUS-MCCORMICK.—thirty-three.

In other situations, have we seen any organization try to actually standardize? What would be that average time? Have we seen it in 50? Sixty? What would that standard time be, if we do not know what 133 variations would be?

Mr. MCCUNE. Yes. Thank you for that question.

Ma'am, I do not think we have a good comparable. I think that is what you are asking: Do we have a good comparable? I do not think we have a comparable. Nothing is the size and scale of our EHR. That is one of our largest—it is our largest technology system.

Mrs. CHERFILUS-MCCORMICK. There has been some discussion in Congress and elsewhere to make another attempt to modernize VistA and abandon the current Oracle Cerner system.

I am not here to say the Oracle Cerner approach in Electronic Health Record Modernization (EHRM) is going well, but I am not sure returning to VistA is the correct either. We have heard from inside VA that VA does not have the expertise or the desire to go the pathway of modernizing VistA, which would itself take several billion dollars, other large IT contracts, and large management contracts such as the VA has today.

Is that accurate?

Mr. MCCUNE. Thank you for that question. Ma'am, I think, if I heard you correctly, that is a fair summarization.

Mrs. CHERFILUS-MCCORMICK. What is precluding VA from taking a more measured approach?

Mr. MCCUNE. Ma'am, as we look to our limited resources, right, our resource constraints and how we focus those, we have them currently 100 percent focused on the current EHR implementation. We do not have extra people working on a plan B.

We are fully committed to this. Until such a time as we need to change course, all of our resources, both our people and our funding, are allocated toward the successful Cerner implementation.

Mrs. CHERFILUS-MCCORMICK. My largest concern with the current EHRM program is that staff do not feel like their concerns are being taken into account, which is resulting in potential patient harm.

Is there not a better way to provide a more—a better roll-out of the Oracle Cerner system while also providing some clarity on what will and will not be available for their use in VistA?

Mr. MCCUNE. Thank you for that question.

Ma'am, I think what you have today are the people representing VistA. I do not think we are the right people to represent the EHRM solution or the challenges that they are facing. I would defer that question. We can take that for the record.

Mrs. CHERFILUS-MCCORMICK. Okay. Thank you. I yield back.

Mr. ROSENDALE. Thank you very much, Representative.

I would now go to my friend from Texas, Representative Self.

Mr. SELF. Thank you, Mr. Chairman.

I want to explore the cloud migration.

First of all, I am not an IT person. I have looked for it in your testimony. What is the Inquiry Routing and Information System (IRIS) for Health 2022.1? What does that mean?

Mr. MCCUNE. Sir, I think I—can you repeat your question?

Mr. SELF. What is your reference to IRIS, I-R-I-S, for Health 2022? It is part of your cloud migration testimony.

Mr. MCCUNE. Yes, sir.

Mr. Giurbino, can you answer that question?

Mr. GIURBINO. Yes, sir.

It is our data base platform that we are upgrading to, that brings us new capabilities.

Mr. SELF. You are upgrading VistA, the platform as well, plus migrating it to the cloud.

How much does it cost to move it to the cloud? When will you complete that? How important is that for the future?

Mr. MCCUNE. Yes, sir. Thank you for that question.

Cloud migration is an important component in maintaining and enhancing VistA.

I would say that the version of cloud migration that is taking place today is what we call a "lift and shift," meaning we are not changing VistA; we are simply taking it out of our data center and moving it into a virtual cloud environment. That is what we call a "lift and shift."

We are in midstream there. About 20 instances today have been migrated. An additional 54 are planned this year.

That is not modernization. Modernization, making it a cloud-native application, would involve rewriting that code.

I think you asked about cost, sir. I think it cost us around $70,000 per instance to move it to the cloud.

Mr. SELF. For 130, rough?

Mr. MCCUNE. Yes, sir. Roughly, it would be about $70,000 per instance.

Mr. SELF. Is Cerner going to be on the cloud?

Mr. MCCUNE. Yes, sir, Cerner is in the cloud.

Mr. SELF. Okay.

Let us move to the community care providers. How many providers do you refer veterans to?

Mr. MCCUNE. Sir, I will hand that off to Mr. Hume.

Mr. HUME. Sir, I think we are going to have to take that one for the record.

We do health information exchanges with 130—excuse me—with members of the eHealth Exchange, the national eHealth Exchange, as well as CommonWell and Carequality. We are moving toward Carequality.

We do information exchanges with partners who have joined the health information exchange, but that is not the universe of providers that we refer patients to.

Mr. SELF. Then tell me how VistA integrates with the 70,000. What is the integration there? Is there any?

Mr. MCCUNE. Sir, 70—I am sorry. I do not understand your question, sir. Can you repeat that?

Mr. SELF. For your community care providers that you coordinate with, how does VistA integrate with them? Then I would like to compare Cerner to that as well.

Mr. MCCUNE. Thank you, sir. I am going to ask my partner Ms. Qiu to answer that question.

What I can tell you in broad statements is: The integration that VA does—or VistA does with our community care providers is not nearly as comprehensive or as native as what we have with Cerner. We are doing some things to do that integration.

Ms. Qiu, can you answer that question?

Ms. QIU. Sure. Thank you, Mr. McCune.

To communicate with our community care providers, we are implementing a solution called VDIF. It stands for Veterans Data Integration and Federation Platform.

This platform is connecting to Cerner's Joint Health Information Exchange (JHIE). At request, VDIF would respond with the longitudinal patient record to Cerner JHIE, and then Cerner JHIE would relay that message back to the community care providers.

Mr. SELF. You just addressed Cerner, correct?

Ms. QIU. That is correct. We use Cerner JHIE to connect to two networks. One is CommonWell and the other is eHealth Exchange Network, which Cerner JHIE connects to.

Mr. SELF. You already have a complex system of both VistA and Cerner in your coordination with your community care providers. Is that correct? Am I hearing that right?

Ms. QIU. To make the community care communication work, we are using both the VDIF solution and Cerner JHIE solution to make it work.

Mr. SELF. Thank you, Mr. Chairman. Sounds complex to me.

Mr. ROSENDALE. Thank you very much.

I would now yield to the gentleman from Ohio, Mr. Landsman.

Mr. LANDSMAN. Thank you, Mr. Chair. I appreciate the time.

Thank you all for your service and for being here today.

A few questions, three. Some of this I suspect you can speak to today, and some of it you will have to, you know, circle back.

One has to do with what we have learned from the five sites where this has been implemented: you know, Columbus is close to where I serve, southwest Ohio, Cincinnati; but Walla Walla, Roseburg, Spokane, White City.

What are the high-level takeaways from these pilots? I mean, what would be most helpful for us to know in terms of what you have seen, both the good and the bad, in these five sites?

Mr. MCCUNE. Thank you, Congressman.

I do want to circle back, if I can, for——

Mr. LANDSMAN. Sure.

Mr. MCCUNE [continuing]. just a second on the cloud question. I think the question was, is Cerner in the cloud?

While the target is to move Cerner—or to have Cerner in the cloud, it is not currently in the cloud today. That is a work in progress. I just wanted to correct that.

To your question, sir, I think I am going to defer that to Dr. O'Toole.

Mr. SELF. Okay.

Dr. O'TOOLE. Thank you, sir.

We have learned a lot from the five deployments. I think it has exposed a lot of challenges in both product and product development, refinement; our staff training; and stresses to the system. It is a learning curve.

Some provider groups have fared better than others in terms of their adoption. I think that the decisions to date by the agency to put a hold on the Boise deployment, to put a hold on the Ann Arbor deployment, reflect the fact that we are actively working to make improvements both to what we do internally, to what is expected of the product, to what is expected of the deployments, before we go live with additional sites.

Mr. LANDSMAN. Yes. I mean, I think what we—that is helpful. Perhaps for the record—so this is a request—to just better understand what the high-level, you know, learnings, takeaways have been, both positive and negative. I mean, I know we are struggling on a whole host of levels, but what is promising? What do you feel good about, or what do you see as big opportunities?

I am assuming that is part of what we will see more of after the pause, right? I mean, once—and we do not have to get into—if

there is high-level stuff you want to share, please do, but I do think it would be helpful for us to better understand those big takeaways.

Dr. O'TOOLE. Thank you. I definitely appreciate the importance of the question.

There will be a report that is still in preparation related to the sprint efforts——

Mr. LANDSMAN. Okay.

Dr. O'TOOLE.—that should be released shortly as it goes through. I think that will help define many of the criteria that are expected to be in place for future go-lives that I think would answer some of those questions.

I would request that we take for the record, you know, pending that.

Mr. LANDSMAN. Then the second question has to do with leadership changes at the Integration Office. As these changes have taken place, what are the gains that—I mean, what are we not losing I think would be helpful to know.

How have you all managed or thought about that, the change in leadership, as it relates to ensuring that what needs to be learned is learned and what needs to be changed is changed and so on and so forth?

I mean, that is a huge question I have, which is, when you make a big leadership change, when you are dealing with this kind of complexity, how are you handling that?

Mr. HUME. Well, I would just acknowledge that Dr. Neil Evans is taking over the office as the Acting Director, Executive Director, and we have great confidence in him. He has been a VA clinician for many years, and he is talented in this space, and we are looking forward to his leadership.

Mr. LANDSMAN. I think similar to the previous question, the gains that were—and improvements, the opportunities that his predecessor, you know, experienced, you know, making sure those are not lost. I mean, how do we—and things that, obviously, were not going well. I think having a better understanding—and maybe that will be in the report or——

Mr. HUME. In that position, there are three primary deputies, and they are all staying in place. There is good continuity at the next level down from the Director.

Mr. LANDSMAN. Then, finally, this has to do with the contracting. I mean, so much of this gets outsourced to, you know, private companies. I think it would be helpful to this subcommittee to better understand what you are concerned about in terms of that contracting process.

What is being communicated effectively when you are securing support from outside vendors? You know—and this gets to some of the questions around the requirements, you know, that may or may not have been articulated when you went out, you know, to get help.

You know, it would help me to better understand how you all are approaching that moving forward, because, clearly, you know, you are going to—it requires a tremendous amount of support, and the Department's ability to get the right kind of help, having articu-

lated the right set of requirements, is going to be very, very important.

I am wondering if someone can speak to that and/or circle back.

Mr. MCCUNE. Thank you for that question, sir. I think part of that answer is to—and we will take back. I will address part of that question, which is us working with contractors. I think your question is probably around accountability.

Mr. LANDSMAN. Yes.

Mr. MCCUNE. Working with vendors is a normal part of what we do in VA, and particularly in my area, which is systems development. Almost 85 percent of our workforce today is contracted, and so that is really a partnership between the govvies and the contractors.

Mr. LANDSMAN. Thank you.

Mr. ROSENDALE. Thank you, Mr. Representative.

Dr. O'Toole, let us review the information that we have about VistA. The subcommittee submitted questions in advance of this hearing, and the VA has answered them.

First, patient safety, which is a priority for everybody in this room. The VA provides statistics on the number of patient safety reports related to the system. How many patient safety reports were there in each of the last 3 years across the 166 medical centers and their clinics using VistA?

Dr. O'TOOLE. Sir, I am looking through my notes here, in terms of what we submitted in response to that question.

Mr. ROSENDALE. Okay.

Dr. O'TOOLE. I believe the data, which reflected two different modes of presenting, shows a significant increase. It is not broken down by medical center.

In terms of what are referred to as Joint Patient Safety Reports, or JPSRs, which reflects a concern raised by the field, not necessarily a validated concern, not necessarily something that was reflected in a safety event or patient harm—and I think that is an important——

Mr. ROSENDALE. Let me tell you the numbers that I have, and you——

Dr. O'TOOLE. Yes.

Mr. ROSENDALE [continuing]. can tell me if this is accurate or not.

Through the 166 medical centers and their clinics using VistA, we have in 2020, 12,644; in 21, we did have an increase, it was 14,637; but then in Fiscal Year 22, it went all the way down to 9,211.

Dr. O'Toole, the information we have from Spokane for the 2 years after Cerner went live is 1,033 patient safety reports. This is something that this committee has complained about for quite some time, extensively, in a bipartisan manner. That is over 500 reports per year from 1 hospital using Cerner—1 hospital—compared to an average of 55 reports annually from the VistA hospitals.

How do you explain this huge difference? In short, why has the Mann-Grandstaff VA Hospital become the most dangerous VA hospital in the country?

Dr. O'TOOLE. Well, thank you for the question, sir.

Again, I am not going to try to minimize, by any stretch, the concerns that staff raised at Mann-Grandstaff and continue to raise at Mann-Grandstaff regarding safety concerns. I think it has been well-documented and well-noted, challenges that we have had with the deployment of the Cerner product, the Cerner Millennial product, at Mann-Grandstaff related to a lot of issues, not the least of which is deployment during the pandemic, deployment with significant concerns about product readiness, training, and so on.

We are striving to be a high-reliability organization. We continue to encourage these reports to be generated so they can be investigated and acted on. To the extent that we continue to act on them, as reflected by the pauses that have occurred in our deployment of future sites while actively deploying tiger teams and others to address those concerns, I think has, you know, been well-noted.

You know, not to make any excuses about the concerns at hand.

I will say that there have been improvements to the Cerner product over time, and we have made several improvements in the care delivery, in the workstream——

Mr. ROSENDALE. Can I just cut to the chase and say, would you attribute this increase to the Cerner system, Dr. O'Toole?

Dr. O'TOOLE. Yes.

Mr. ROSENDALE. Thank you.

Dr. O'Toole, I asked the Office of Inspector General to identify the reports related to VistA and patient safety in preparation of this hearing. They looked back 6 years and found five reports.

I am going to enter this letter from the Office of Inspector General (OIG) into the record.

Mr. ROSENDALE. These all involve automated view alerts, which let providers know test results are available, and the lack of ability to track who observes and acts on those alerts.

What component of VistA generates and tracks these alerts? How are you addressing this issue?

Mr. HUME. Well, I believe you are talking about reminder alerts and reminders that the system generates usually as a result of the configuration of—or mandates to perform certain tasks, clinical tasks—Dr. O'Toole would be better to answer that—perform certain tasks at certain times, and the providers are reminded through those alerts to perform those tasks.

Dr. O'TOOLE. For clarification, is that what you are referring to, Congressman?

Mr. ROSENDALE. Yes.

Dr. O'TOOLE. Okay.

Yes, so the clinical reminder and clinical alert system within VA is something that has been used for decades now as a means of reminding providers both for specific screening questions, view alerts for patients who may be at risk for certain events, as well as reminders for different clinical activities.

It is something that is currently tracked and actively tracked and fed back to the Department through our data and analytics group.

Mr. ROSENDALE. Again, the question was: What component of VistA generates and tracks these alerts? How are you addressing this issue that they are not being resolved?

Dr. O'TOOLE. Well, sir, I think that there are several concerns with that, not the least of which is that there are probably too

many alerts and not all of them are relevant, and there is an issue of alert fatigue, which we are actively looking at in terms of trying to streamline some of those alerts so that the most pertinent ones, the ones that are most timely to the clinical event and patient care issue and where the risk is highest are those that are prioritized and others that may be less important can be sunsetted. That is a current and active issue that is going on.

All of the clinical stations, though, do receive reports on compliance with that and are being tracked, both nationally and locally, in terms of their performance in that space.

Mr. ROSENDALE. Representative Cherfilus-McCormick, do you have more questions?

Mrs. CHERFILUS-MCCORMICK. Thank you, Mr. Chair.

If the VA is itself admitting that it does not want and does not have the capacity to manage a VistA modernization, why would we, Congress, force them to?

Mr. MCCUNE. Thank you for that question, ma'am.

I do not think we are asking you to force us to do that, right? I think what we have today and what is before Congress is a difficult choice. We have got a system implementation underway today, and we have an aging legacy system that we have struggled multiple times in the past to modernize. It is not an easy choice, sir—or ma'am. It is one that we are continually looking at.

Mrs. CHERFILUS-MCCORMICK. Previous testimony indicates the VA spends about $800 million a year to maintain, improve, and stabilize VistA. Is that accurate?

Mr. MCCUNE. Yes, ma'am.

Mrs. CHERFILUS-MCCORMICK. Is it accurate that VA continues to keep VistA healthy and plans to until the last proposed EHRM deployment is finished? In other words, the VA is not walking away from VistA today, correct?

Mr. MCCUNE. That is correct, ma'am.

Mrs. CHERFILUS-MCCORMICK. Mr. Chair, I yield back.

Mr. ROSENDALE. Representative Self?

Mr. SELF. Thank you, Mr. Chairman.

You have testified that you have delayed Boise and Ann Arbor. Given that you restart your Cerner roll-out, when do you—when would you anticipate the last use of VistA?

Mr. MCCUNE. Thank you for that question, sir.

I think that timeline is a little uncertain. As we started the Cerner roll-out, we were planning for 10 years. VistA is our interim solution. It is an interim solution for an indefinite amount of time. Five to 10 years is the time window we are looking at now, but that may extend.

Mr. SELF. From what I am seeing, let us take the 10 years out, with the delays. What is VistA going to look like in 10 years?

Let us go back to your MUMPS coders. This is not unique, by the way. Companies are pulling Common Business Oriented Language (COBOL) coders out of retirement. It is not unique across the industry. Old codes are—old programs are being resurrected because of their simplicity and so forth.

But—so what is VistA going to look like in 10 years?

Mr. MCCUNE. Thank you for that question, sir.

We do have COBOL programmers as well.

Mr. SELF. Okay.

Mr. MCCUNE. It is hard to tell what VistA is going to look like between now and then, for a number of reasons. It is a moving target.

Number one, we are going to need to make changes to VistA in order to support the Cerner roll-out, particularly integrations.

Number two, we are going to have emerging requirements from our clinicians, and so we are going to need to adapt VistA.

We are also going to need to adapt VistA to changing technologies. You are seeing some of that right now with our move to cloud.

So, predicting 10 years from now, sir, that is difficult to do for VistA. All the problems we have talked about—aging workforce, a programming language that is not taught today—all of those concerns are compounded particularly if you talk about a 10-year window.

Mr. SELF. That leads me to the $17 billion for Cerner. You said it would be very expensive to rewrite VistA. Do you have an estimate on that?

Mr. MCCUNE. No, sir, we do not. We have not done an analysis on a large-scale full modernization of VistA. We have—I think the committee is equally versed on the cost estimates for Cerner. We have not done that similar kind of cost estimate for VistA.

Mr. SELF. I would assume you did that, though, before you gave the—before you awarded the Cerner contract, because do not you examine all your options?

Mr. MCCUNE. Yes, sir. We considered all of our options back in 2017 and 2018. We had about a year's worth of analysis that went into making that decision.

Any data we had around VistA and its viability for modernization is old and dated, and we would have to revisit it.

Mr. SELF. I have been handed a piece of paper that looks like far more than my $17 billion.

I would—so you did or did not do that analysis before you awarded Cerner?

Mr. MCCUNE. Sir, thank you for that question.

We did do the analysis back in 2017 and 18 on all of our options, and that is when we chose the Cerner solution.

Mr. SELF. Do you remember what the VistA rewrite was?

Mr. MCCUNE. No, sir, I do not, but we can get that information.

Mr. SELF. I would like to see that.

Mr. SELF. Thank you, Mr. Chairman.

Mr. ROSENDALE. The gentleman from Ohio, Mr. Landsman.

Not there? Okay.

Representative Cherfilus-McCormick. Go ahead.

Mrs. CHERFILUS-MCCORMICK. Thank you, Mr. Chairman.

In 2017, Government Accountability Office (GAO) issued a report documenting the challenges with VistA's pharmacy system. The report was entitled "Pharmacy System Needs Additional Capabilities for Viewing, Exchanging, and Using Data to Better Serve Veterans."

Many of VA's plans to address the pharmacy system were to use the Oracle Cerner pharmacy solution as part of the EHR suite. If VA were to abandon the Oracle Cerner product, would VA need to

go back and fix each of the pharmacy issues outlined in that report and others?

Mr. HUME. Well, many of those findings were addressed—have been addressed over the last 5 years, particularly with respect to a graphical user interface for pharmacy.

We would have to take for the record a specific—the specific things that were done and were not done out of that report.

Mrs. CHERFILUS-MCCORMICK. Do you know how many were already fixed versus how many are left?

Mr. HUME. We would have to take that, ma'am.

Unless you are able to answer that? No.

Mrs. CHERFILUS-MCCORMICK. Okay. VistA may have less problems today, but is part of that because everyone knows how to use it and knows its quirks?

It is like a stable old family car. Everyone knows you need to jiggle the clutch when it gets stuck in third gear. Would you agree with that statement?

Dr. O'TOOLE. Yes. Yes, ma'am.

Mrs. CHERFILUS-MCCORMICK. What patient safety issues comes up with VistA? My concern is the lack of coordination for all veterans, with a focus on veterans often overlooked and left out.

Dr. O'TOOLE. There are a lot of safety concerns within VistA that, you know, I would be neglectful to say do not exist. A lot of them are instance-specific and not necessarily generalized to the entire system, I think some of which we referenced earlier with the clinical reminders as one element, view alerts being another one. Again, it is difficult to kind of speak to it in generalities.

You know, I think we do a better job than most systems in a lot of our population health work and a lot of our tracking of potentially vulnerable populations. Could it be done better, and could there be system improvements either within VistA or within other systems to enhance those capabilities, you know, I think, are clearly questions that would need to be explored.

Mrs. CHERFILUS-MCCORMICK. Thank you so much for your answers.

Mr. Chairman, I yield back.

Mr. ROSENDALE. Thank you very much, Representative.

Mr. McCune, let us turn to reliability on the system, uptime. According to the information provided, VistA's uptime in 2022 was 99.9967 percent—that is better than Ivory soap—and in 2021, it was 99.999964 percent. This is almost perfect. That is excellent.

How in the world is that possible even through upgrades and changes?

Mr. MCCUNE. Thank you for that question, sir.

We strive to get to four 9's, and with VistA we have been able to do that.

What I would say is that you have new systems. Generally, as we release new systems, we have more issues, particularly with uptime and reliability, than we do with systems that have a long life span.

With VistA, for instance, we have had decades to work out the bugs, fine-tune performance, and that is how we are able to get to those high reliability rates.

Mr. ROSENDALE. Mr. McCune, is it true that if one VistA instance goes offline for whatever reason, some reason or another, the other instances may not be affected?

Mr. MCCUNE. That is correct, sir.

Mr. ROSENDALE. Okay.

This brings me to one of the problems that I have been made aware of. How does that compare with the Cerner system? It is my understanding that when a system goes down, it is across all instances, in many cases, and during upgrade periods.

Mr. MCCUNE. Sir, I think I can speak to VistA. I do not feel comfortable speaking to the Cerner implementation and their configuration.

I will tell you that they are on-prem today and they are looking to move to cloud. I would expect different kinds of availability once that migration is complete.

Mr. ROSENDALE. Okay.

Mr. McCune, the VA also provides statistics on the workforce that maintains VistA. This committee has been hearing for years that the employees who are able to write the code are retiring—you said it just earlier, as a matter of fact—and can not be replaced, but the numbers do not bear that out.

In 2022, 1,129 full-time equivalents, FTEs, worked on VistA, and 10 years ago, it was almost the exact same number at 1,134. That is only five people different.

The VA seems to be maintaining a stable workforce even after all of the challenges that everybody seems to be facing. How are you able to keep those folks on?

Mr. MCCUNE. Yes. Thank you, sir, for that question.

We have been fortunate. I think our employees are committed to the mission, and they have stayed long beyond what a typical workforce would stay.

That number I mentioned earlier, 70 percent retirement-eligible, that number has been creeping up year over year. Eventually we are going to start to lose them.

Mr. ROSENDALE. Eventually. I mean, right now that is the definition of a stable workforce. I mean, a 10-year period and you have virtually the same number of people there.

Mr. McCune, the VA provided figures for spending on VistA over the last 5 years. In 2022, VA spent, excuse me, $890 million, including about $70 million in development.

What factors drive the steady-state cost, and how do you determine the amount to allocate development?

The reason I ask that is because I look at fiscal 18, 19, 20, 21, 22, and the development modernization enhancement, DME, has changed dramatically: $16 million, call it $17 million, in 18; $25 million in '19—I am sure you have these numbers in front of you—$51 million in 20; $104 million in 21; and then drops down again to almost $70 million in 22.

What factors drive this?

Mr. MCCUNE. Thank you for that question.

Sir, every year, we go through the budget drill and we set priorities for the administrations. What you will see in the variability with development and enhancement is a reflection of those prior-

ities. Sometimes there is an improvement needed to VistA and that rises to the level of funding; other times it does not.

Mr. ROSENDALE. Okay. I will tell you my concern, and that is, when we see that Cerner is now on year 5 of 10 and we were told about this roll-out taking place and we look at 18 and we see the development modernization enhancement being starved out of VistA, I have grave concern when I also hear that we are relying so heavily on VistA still, not only for separate facilities—166 of the 171 facilities—but for the existing facility, even some of the functions we are still relying upon VistA, and yet we are basically creating a self-fulfilling prophecy by starving that system of the investment that it needs so that it can perform the very duties that you are calling upon it for.

I mean, can you respond to that at all?

Mr. MCCUNE. Yes, sir. I appreciate the concern around funding levels, particularly for development of VistA.

What I will tell you, sir, is that our resources are limited. Right now, both our people and our budget are fully committed to that Cerner implementation.

Mr. ROSENDALE. Mr. McCune, I understand that your funds are limited, okay, and that you are budgeting. When I see a system that is providing the vast amount of healthcare delivery information for you and I see you starving it, and then you come in before us and tell us that it is not only being utilized for the vast majority of the facilities but the facilities that are utilizing Cerner are still depending upon this system as well, why would you still starve that system of the revenue it needs to provide the technology that is working?

Mr. MCCUNE. Yes, sir. Most of our funding today around VistA is with that integration with Cerner. Again, it is limited resources, sir. A lot of funding is being spent on migration of data, on building integrations between VistA and our legacy systems and the Cerner system.

Yes, sir, you are seeing a tapering off of development on the VistA platform.

Mr. ROSENDALE. At the same time, we have got a $1.1 billion investment that is being sent to Cerner, again, where we see five facilities that they are funding that are not working properly, that are still relying on the VistA system.

Do you think that is a wise allocation of funds, Mr. McCune?

Mr. MCCUNE. Sir, I can speak to the VistA system and our funding and allocations there. I would take it back for the record and our experts on the EHRM side of the house.

Mr. ROSENDALE. Okay.

Mr. ROSENDALE. Mrs. Cherfilus-McCormick, I am sorry, I went way over. Do you have any additional questions for this round?

Mrs. CHERFILUS-MCCORMICK. No.

Mr. ROSENDALE. Mr. Self, do you have any additional questions?

Mr. SELF. Thank you, Mr. Chairman. I just want to follow up on your point there.

Will there be an end to VistA? Will the integration, will it be required well beyond Cerner roll-out?

I think I am hearing there may not be an actual end to VistA. Am I hearing that correctly?

Mr. MCCUNE. Thank you for that question, sir.

I think there is a couple of facets to that question. One is what is going to be replaced by Cerner. Of the, I think, 150 modules, all but 5 of those are targeted to be replaced by Cerner, so very little would be left over from a VistA perspective.

On the VistA side of the house, we are cognizant that, as an interim solution, that end date is indeterminate at this point. We are making investments in VistA to make sure that it is resilient, that we maintain the level of performance that we have today. We are not stopping work on VistA. We realize it is going to be around for a long time.

Mr. SELF. The five that will remain, are they important? Are they minor?

Mr. MCCUNE. Those five, sir, will be replaced either in the short term or the long term. That list has been a little bit fluid, and so we are waiting for it to stabilize before we take action on that. If we do indeed stabilize on those five modules, we will start to work on modernization plans around those five.

Mr. SELF. Thank you, Mr. Chairman. I yield back.

Mr. ROSENDALE. I would like to thank this panel for joining us today. This panel is excused from the witness table.

We will bring the second round up.

Thank you very much.

Mr. ROSENDALE. I would now like to welcome the witnesses to our second panel to the witness table. I ask you to please stand and raise your right hands, Mr. Baker, Mr. Gfrerer, Mr. Levin.

[Witnesses sworn.]

Thank you so much.

Let the record reflect that all witnesses have answered in the affirmative.

Mr. Baker, you are now recognized for 5 minutes to offer your opening statement.

STATEMENT OF ROGER BAKER

Mr. BAKER. Thank you, Chairman Rosendale and Ranking Member Cherfilus-McCormick, for holding this hearing today.

With over $50 billion at stake, misinformation regarding VistA has been rampant. Numerous parties continue to repeat this misinformation in an effort to convinces Congress that VistA is a problem in need of their solution.

The primary success measurement for an electronic health record system at VA should be veteran health outcomes. That is, after all, the fundamental reason the VA and the EHR exist.

The EHR program has effectively run a controlled experiment over the last 6 years, complete with a hypothesis, a control group, and metrics. This experiment has provided concrete proof that veterans achieve better medical outcomes when VA facilities use VistA than when they use the alternative.

Because VistA excels in medical care, it sets a high comparative bar. VistA, and the work processes encoded in it, was designed, implemented, and honed by VA clinicians to do exactly what a clinician needs and exactly what a clinician wants. That is both its blessing and its curse.

Independent surveys have shown that VistA is the most liked her by clinicians nationally, and that is among all EHRs.

Lobbyists would have you believe that the IT difficulties of VistA are more important than the medical care advantages. VistA is a problem because of its age, its complexity, and the language it is written in. In fact, at least one lobbyist would have you believe VistA cannot be made better.

That is provably false. During just my 4-year tenure, many improvements were introduced to VistA, including bed management, blood bank, pharmacy reengineering, registries, and numerous others, notably Cerner Labs.

In fact, VistA can be difficult to modernization. The difficulties in modernizing VistA stem not from the software, but from three root causes that come directly from VA itself.

First, every time VA has attempted to replace VistA, starting in the year 2000 under the HealteVet program and from 2017 under EHRM, VA has prohibited further modernization of VistA. This has included eliminating promising technology such as VistA Exchange and Enterprise Health Management Platform (EHMP) even when they were already in beta test. The fact that you are told that VistA cannot be made better, when the primary barrier to modernizing VistA has been a lack of investment for 16 of the last 24 years, is rich indeed.

Second, years ago VHA made the decision that veterans receive better medical care if each VA is allowed to tailor its care to local needs, that veterans in Fort Harrison VA can have different medical needs from those in West Palm Beach. This local control of medical care is a fundamental part of the medical culture of VHA, and VistA is reflective of that culture. This is where the sound byte, "This is not a single system, it is 130 systems" comes from. Local customizations, including local development staff, were a celebrated part of VistA development for many years until the advent of the Gold Disk Program in 2011. These local customizations are what has made designing, programming, and testing changes to VistA more difficult because every change must be tested to work with each VistA instance.

Third, Federal pay grades and procurement practices have eroded the base of skilled software developers needed to maintain a complex her product. Capping salaries at GS 14 levels for the most skilled Federal IT staff has caused them to seek other employment. VA continuously awards contracts for complex VistA improvements to companies that cannot employ the necessary skills at the rates that were bid to win the work. They would rather tell VA: We can not find MUMPS programmers without adding at those rates to justify why they can not deliver.

VA has repeatedly failed at efforts to replace, not to modernization VistA. Unless a decision is made that software standardization is more important than local control of healthcare at VA, attempts to replace VistA with a product that does not support that fundamental part of the VHA culture are doomed to failure.

Mr. Chairman, misinformation regarding VistA is being promulgated to justify the now $50 billion need for the EHRM program. The EHRM program itself has provided the best proof that they are untrue. After 6 years veterans continue to achieve better

healthcare outcomes in VA facilities that use VistA. That remains the single most important fact that you will hear today.

I commend this committee for demanding the actual facts regarding VistA, its role in veteran healthcare, and its ability to be modernized. I look forward to working with you and answering your questions as you further search out these facts.

Thank you.

[THE PREPARED STATEMENT OF ROGER BAKER APPEARS IN THE APPENDIX]

Mr. ROSENDALE. Thank you, Mr. Baker.

The written statement of Mr. Baker will be entered into the hearing record.

Mr. Gfrerer, you are now recognized for 5 minutes to deliver your statement.

STATEMENT OF JAMES GFRERER

Mr. GFRERER. Thank you, Chairman Rosendale, Ranking Member Cherfilus-McCormick, and the subcommittee today, for the opportunity to appear.

As a veteran I am a patient in VHA's health system. I am a beneficiary in the benefit system, and now preregistered in VA's burial benefits. As more than 28-year career Marine infantry officer, with four combat deployments, I fully empathize with all of our veteran men and women who endure both the visible and invisible wounds of military service.

There is much misunderstanding around VA healthcare in general. VA healthcare is unlike commercial systems. VA is funded by government appropriation versus commercial health systems who operate on a business revenue model. In commercial healthcare, each patient is eligible for all services, where in VA, eligibility is based on complex service-connected conditions. VA healthcare is more specialized and expansive than commercial systems comprising unique capabilities, such as prosthetics, long-term care, and dental among others. These are substantial differences even as compared to Department of Defense healthcare and the first set of challenges for any commercial her to be successfully implemented into VHA.

The bottom line is that Federal law, regulation, and policy have created this unique health system, and the VistA her is representative of those complex and unique business rules. It may come as no surprise that when a commercial her programmed for different financial frameworks, with significantly different eligibility rules, and not addressing unique VA clinical services, that there are problems and problems that can not be overcome by change management. Without substantial customization, no commercial her could address the business rules that law, regulation, and policy mandate for veteran healthcare. If you did not have a business system configured like VistA, you would have to create or heavily customize a system to perform just like it.

In the remainder of this hearing, we will get into greater detail about VistA, its modernization efforts and some additional facts and misconceptions, but allow me to offer some highlights:

First, VistA is more than an her. It is what professionals term an Enterprise Resource Planning or ERP system, which has grown

over the years to encompass many administrative, financial, and other modules, a number of these which will live on.

Second, it is not—I repeat not—a, quote, IT system but rather a business and mission system. Why does this matter? First, because the business, in this case VHA, must take prime ownership to include the life cycle management, the capital investment, and change management, with OIT playing a supporting technical role.

Third, some would have you believe that VistA has not been modernized, but that assertion is predicated on the fallacy that modernization can only be achieved by replacement. Tech modernization as defined by Gartner, Forrester, and others can be—they say can be achieved in a myriad of other ways, rehosting, moving to the cloud; refactoring, optimizing the existing code; and encapsulating, exposing to APIS, all of which were done to VistA during my tenure.

Also, let me offer in many respects veteran health care business and technology discussions remain mired in the 2017 timeframe. It was in this timeframe that the pursuit of a fully longitudinal health record was revalidated with an assumption that it must be on the same platform in order for this to be achieved. I will tell you in 2023, with the maturity and adoption of health information exchanges and health standards, that is no longer the case.

In an era of increasing technical debt and mounting technology modernization costs, the Congress must determine where the greatest need is for precious taxpayer dollars. Presently there are roughly 300,000 Active Duty members who matriculate from military service to VA every year. Last year on the community care side, VA saw 6 million referrals for 36 million episodes of care. To compare 300,000 one-time transfer to those staggering numbers, there is no doubt that the latter is the substantially larger problem set and needs to be addressed.

Finally, in an era where technology plays an increasingly mainstream and critical role in healthcare delivery, VA must begin to operate more efficiently and effectively, as do its commercial and non-profit healthcare system partners, who are well on their way in this regard. These systems understand that technology and information technology is the success path and, reciprocally, health systems cannot hire their way out of the problem much as VHA attempts to do every year.

Mr. Chairman, thank you and the subcommittee for your time today, and I look forward to your questions.

[THE PREPARED STATEMENT OF JAMES GFRERER APPEARS IN THE APPENDIX]

Mr. ROSENDALE. Thank you, Mr. Gfrerer.

The written statement of Mr. Gfrerer will be entered into the hearing record.

Mr. Levin, you are now recognized for 5 minutes to deliver your opening statement.

STATEMENT OF PETER LEVIN

Mr. LEVIN. Thank you for the privilege of testifying before you today regarding the Electronic Health Record modernization at the Department of Veterans Affairs.

I am deeply grateful to you, Chairman Rosendale, Ranking Member Cherfilus-McCormick, and members of this subcommittee, for the opportunity to share with you my perspective on one of the largest civilian information technology projects in history.

Our commitment to our Nation's veterans transcends party lines and political idealogy. In an era of especially deep ideology divide and social tension, I applaud your leadership, Mr. Chairman, in soliciting the best ideas and constructive, objective, fact-based perspectives from across the spectrum.

During my time in public service and under the leadership of Assistant Secretary Baker, with whom I am deleted to appear today, this afternoon, I have the honor of working on several medical information technology systems that are still in use today. Especially relevant to this testimony are the Joint Longitudinal Viewer, JLV, originally known as Janus, and the Blue Button personal health record that was launched during a democratic administration and was warmly embraced by the most recent Republican one as a fundamental component of any effort to empower patients in their healthcare decisions. JLV enables hundreds of thousands of clinicians to see health records across platforms every day.

In this context, health aid interoperability, I respectfully offer my observations.

There are three issues before the government regarding VistA and Veterans Affairs: One, that billions of dollars already spent on the commercial implementation will not scale to enterprise wide clinical care services on the current path, budget, or timeline. Two, that VA can and should sustain the data interfaces and connection frameworks already built to send and receive data from Military Health System (MHS) GENESIS. Three, and most important of all, that VA consolidate its current instances of VistA onto a VA-centered clinical workflow, and augment the VistA model to receive data from third-party providers.

As you will hear from my colleagues and other witnesses, the differences in VA healthcare between points of care is simply not that large. It is not tens of billions of dollars large. Veterans receive terrific healthcare, but their care is delivered with different processes depending upon which hospital or clinic they go to. That is the primary problem.

In my opinion, the department should not announce its intention to change the contract unless and until it has a backup plan in place. That plan cannot be to, quote, revert back to VistA in its current form, or anything that concedes to VA's continued digital isolation and process insularity. Switching back to VistA and walking away does not fix the root problem. How do we address this issue?

First and foremost, cloud technologies are now stable and mature enough to enable consolidation onto an authentically single platform. Additionally, there have been substantial improvements to the code base that are now available to VA from the commercial sector. It would be straightforward to reinstantiate Open Source Health Record Alliance (OSEHRA) with a powerful charter and legislative mandate.

Moreover, commercially available data management infrastructure has made substantial progress in the last 5 years. There are no technology impediments here. I would like to repeat that. There

are no technology impediments here. This is simply a matter of political will, imaginative leadership, and execution accountability.

Indeed, these policy changes, consolidation onto an enterprise clinical workflow and adoption of proven platform and data management services would accelerate health record modernization at a fraction of the cost now earmarked for EHRM.

The transcendent goal of our work has to be the continuously better care of healthcare of veterans. Unless and until VA resolves its internal tension around consolidated care pathways and comprehensive data management, no amount of technology will automate its operations and no amount of money will solve its policy problems.

Thank you for my opportunity.

[THE PREPARED STATEMENT OF PETER LEVIN APPEARS IN THE APPENDIX]

Mr. ROSENDALE. Thank you very much, Mr. Levin.

The written statement of Mr. Levin will be entered into the hearing record.

We are now going to proceed to questioning and, I will start with the first 5 minutes' worth.

Mr. Baker, I have heard it said that VistA was developed as a healthcare delivery software and that the Cerner Oracle system was developed as a billing software. What is the basic differences of that? What problems does it present?

Mr. BAKER. I think it goes back to the environments they grew up in. On the commercial side, billing is where her is started, to be able to accurately bill and get paid. On the VA side, they did not have to worry about billing out for most of the tenure of VistA.

VistA focused on keeping a record that was completely oriented around how good is the medical care we are providing this veteran, whereas commercially EHRs tend to be excellent on the financial side and have added more recently the medical record side of things, at least to the extent that VistA has.

The difference there is clearly on the focus. You know, as I mentioned in mine, there is a culture difference between the VA system and the commercial systems related to the preeminence of medical care. Congress provides an appropriation that provides most of the money that VHA needs. They do not have to worry as much about am I billing things out, am I going to be able to pay people as a commercial her does. They both have very valid reasons for why they grew up. What we are trying to do now with EHRM is to take a financial system and lay it over top of a medical records system.

Mr. ROSENDALE. I think that very clearly describes exactly the frustrations that I have had since I was exposed to this, and that is that the benefit, the healthcare benefit is not being provided properly. I think that this has been expressed by the docs and physicians at the facility at Mann-Grandstaff.

Mr. Baker or Mr. Levin, there have been previous efforts to modernize VistA as well as replace it. First of all, in the 2000's, there was replacement effort. I understand it cost about $600 million.

What was this project's genesis, how did it perform, and what happened to it?

Mr. BAKER. Well, since I was the person who terminated the HealtheVet program, I will speak to that one.

In roughly the 2000 timeframe, VA decided that it could replace VistA by developing a new system called HealtheVet, and they launched down that path. A good friend of mine was the deputy Chief Information Officer (CIO) at that time, and his responsibility was to terminate all spending on VistA so that it could be focused on HealtheVet.

There were a few good pieces of software that came out of HealtheVet. The My HealtheVet website that you see now came out of that, as well as a few other things that we were able to add to VistA. By and large, that $600 million, by the time I got there, it was obvious that was a wasted program, and so we terminated it and focused on the VistA improvements that I mentioned in my testimony.

Mr. ROSENDALE. Very good.

Then, Mr. Baker, next came the Integrated Electronic Health Record (iEHR) between 2011 and 2014. VA and DOD attempted to build a new joint EHR. I understand that that one cost about $1 billion.

How was that different, and why was it abandoned?

Mr. BAKER. I was very key and core to iEHR, and I would describe iEHR this way. It was a battle between VA and DOD. VA had a requirement that the only her they could use was VistA. DOD had a requirement that they could use any her but VistA. And we spent a lot of time in that battle.

Now, let me—since Dr. Levin sees that time much more rationally than I do, given how deeply I was involved, let me just ask him if he has any further comments there.

Mr. LEVIN. Thank you, Mr. Baker.

I do have a couple of comments. I think that there is a gigantic difference that we ought to acknowledge that we have tried to replace VistA a couple of times, but our modernization efforts, looking at this holistically and trying to module by module, object by object replace it, upgrade it, modernize it, transfer it to the cloud, this has never actually received full attention and support from the institution.

I think one of the conversations that we are having today—and iEHR is a perfect example of that—is to distinguish and differentiate what is a replacement and what is a modernization.

The single biggest problem with VistA, at least in my opinion, has nothing to do with MUMPS or the availability of language competencies of any individual programmer. As Secretary Baker has pointed out many times, if you speak 11 computer languages, you can learn the 12th one without too much extra effort. I think that that is a little bit of a red herring to throw out the particular language and expression of the system.

The number one handicap of VistA today is its lack of modularity. That is a word that Secretary Baker led when he was in office and I participated in, and I think that VistA itself or any her would benefit tremendously from attention on its modularity, its extensibility, its scaleability, its testability. These are things that are fixable inside the incumbent program today.

Mr. ROSENDALE. Thank you very much.

Representative Cherfilus-McCormick.

Mrs. CHERFILUS-MCCORMICK. Thank you, Mr. Chair.

Mr. Levin, in your written testimony you stated that the department should not announce its intention to change the contract unless and until it has a backup plan in place.

Furthermore, you stated that that plan cannot be reverted back to VistA in its current form or anything that concedes to VA's continued digital isolation and process insularity. I just want to State I cannot agree with you more.

The EHRM program is one particular case study that is part of a larger issue surrounding the VA's inability to manage and contract for large IT systems. Whether it is EHRM, supply change, or HR modernization, the lack of progress and success is not contained through a single program. Without real program and acquisition management at VA, this program will continue to not be successful.

Mr. Levin, would you be supportive of holistic changes with how VA manages and is held accountable for these large IT modernization efforts?

Mr. LEVIN. Thank you very much for your question, Congresswoman.

The short answer is yes, I could not agree with you more. I would like to introduce you to some members of my family to find somebody to agree with.

The things that we could do structurally operationally inside the VA I think are very accessible to us. I can not explain why we do not do them on a regular basis, but written down plans, accountability metrics, performance metrics—and I do not just mean by individuals; I mean by the systems that we are putting in place. I think that we have confused—and we can have probably a larger societal discussion about this. We have confused the difference between best efforts and outcomes. I think that, at least in my world, the commercial world that I live in today, my customers do not very much care how hard I work. They very much care about whether I deliver to my promises on time.

There is a huge difference, a vast difference between how the processes and the accountability metrics, the hiring that we have to go through at any government institution. Of course, VA is not unique in that way at all. We can do better. There are lots of things in the private sector, obviously, that I think we would agree are sometimes inequitable or sometimes ineffective. The pendulum has swung too far, in my opinion. In my personal opinion, the pendulum has swung too far, and we should be able to structure programs inside of government, inside of VA that hold the leadership accountable, that have sensible budgets associated with them, and that have performance-measured outcomes. I do not think that we are doing that sufficiently well right now.

Mrs. CHERFILUS-MCCORMICK. Thank you.

Given that EHRM was allowed to be awarded as a sole source contract, do you think that the VA's requirement requires more checks and balances internally before awarding future contracts for IT modernization given the results that we have seen thus far?

Mr. LEVIN. Again, thank you for your question.

I believe that my copanelists will have divergent views on this.

I was relatively close to the process. As a private sector observer, I was relatively close to the process. I do not think that it was un-

fair. There was political exigencies. There were operational exigencies at the time. I think that if we could wind back history, it was not so much that we made a decision. I was a very loud advocate of not going the direction that we went, but I had the privilege of speaking to a senior most leader at the time who was part of the decisionmaking and who reported to me: okay. The decision is made. Now what?

I said to that individual: Well, now it is just an engineering problem. Anybody can do that. Right? I still believe that. I really do.

I think that—if I can recommend attention of this committee, the focus of this committee would not be so much on how do we get to the DNF and why did we follow the DOD. Those are important questions. Those are policy questions. It is what all happened afterwards, where many of us who were loudly advocating the misdirection, the misapplication, the lack of framework, the lack of accountability, the personalities that were involved, and there was almost no accountability whatsoever, I think that that is where I would direct this committee's attention, and I think that that is what we could be doing much better at VA.

Mrs. CHERFILUS-MCCORMICK. Thank you so much for your testimony.

Mr. Chair, I yield back.

Mr. ROSENDALE. Representative Self.

Mr. SELF. Thank you, Mr. Chairman.

I want to go back to the languages, though. That seems to be a major point for the VA.

As we have said, other old languages are used. Is there any other language that could be used to modernize VistA?

Mr. BAKER. As modules are changed in VistA, frequently they are written in other languages. In my written testimony, I talk about VA's attempt to implement Cerner Labs, which is written in a completely different language.

The points at which MUMPS is critical is as you understand the complexities and the architecture of VistA and making changes to that as you add the new modules that are going to interface to it. That MUMPS expertise is necessary. Even in saying MUMPS, what you are really saying is expertise about VistA as a large-scale application. It is, by definition, by what it tries to do, a very complex piece of software because it is also a very accurate and very extensive piece of medical software. We want it to be as good as it is because we get our medical care from that.

The short answer is yes. Frequently the new pieces are written in different languages, but you have to have some level of MUMPS expertise to be able to interface to what remains there from the VistA system.

Mr. SELF. If I understood you correctly, surely there are people, other than your more mature MUMPS coders, that understand the VistA architecture?

Mr. BAKER. It is a—it is not something that you want to give a neophyte access to. It is like having them drive, you know, your Maserati, having your 16-year-old son drive your Maserati, not a good idea.

You would like them to get some training on other things. Again, a lot of times the problems that VA runs into from a procurement

standpoint is that they do not—they award contracts when even those senior level people are necessary to guide the more junior people, they are just too expensive for that contract. You end up with a solution that does not work.

Mr. SELF. I understand that clinicians like VistA; IT does not. What are the IT reasons to cancel VistA? Then we will get to the clinicians.

Mr. GFRERER. Congressman, I would probably reject that characterization. I mean, IT is—certainly what is not to like is that when you are working with riddled systems, you know, that are not, you know, refactored and hosted and, you know, the most—the best environments, right. It is a work in progress on VistA. Ultimately, when you are back in 2017—and I was admittedly not with the agency—it was an agency decision to go to VistA. It was not a vote of no confidence within OIT.

I think the other thing too is, to get back to your language point, at some point, you know, the increasing trend you see in all verticals, in healthcare, and others, is managed services where companies that do this work well can take on bits and pieces, those modules that we are talking about. You are going to see more of that, right, companies that do pharmacy real well, companies that do scheduling real well. You know, the VA should not be in that business. Right? They should look to who are the vendors that are best of sweet with regard to these capabilities and incorporate them. At that point you have shifted the risk to the vendor, to the commercial provider, and you do not care if it is written in MUMPS or C Plus or COBOL, or whatever language it is in.

Mr. BAKER. If I could add, sir, the interesting point the chair was making earlier about same number of staff, the IT people that work on VistA love the product. They love the product. The affinity—the people that I have heard from inside VA since they found out I was going to testify telling me, you know, please do this, has been extensive.

There is this large group of people, several thousand, that know this product well and want to see it succeed. They are part of what we looked to engage with the open source community at the time we were doing that, and they would like to continue to participate in moving this product forward. They have a lot of expertise.

Mr. SELF. Interesting.

That brings me to a simple question. What advantages to the veteran does Cerner bring?

Mr. BAKER. I do not think I am going to be somebody who is going to give you any of those. I am not aware of things that, for the veteran today, are better because of the Cerner implementation in the five facilities than they were before VistA was there.

I will ask if my partners want to say anything.

Mr. GFRERER. Yes. Maybe as the lone veteran, I will hazard a guess here and say that, ultimately, it should be about the clinician deciding that the care outcome is going to be better for the veteran. Largely, as the veteran—and I saw this in some of the earliest communication about how great the new Electronic Medial Record (EMR) was. Again, as a veteran patient, it does not matter to me. I should not know whether it is VistA or, you know, whatever the EMR is that the care is being provided for.

At the point that I care about what the system is that is being provided, I am probably being negatively impacting.

Mr. SELF. I am speaking to former secretaries. In your view or in the view of the current VA, I just—I am not—I am starting to not understand any advantages of Cerner.

Mr. BAKER. I am not aware of any——

Mr. SELF. I am not talking—I understand you are a veteran, I am a veteran, and it should be transparent to us. But at your level, at the decisionmaking, the policymaking level, what are the advantages that Cerner will bring?

Mr. BAKER. The theoretical advantages—I do not believe they have been realized yet—is that Cerner would be easier to maintain and easier to move forward than VistA in the out years of the program. That would be the theoretical advantage, but there is no hard evidence that that theoretical advantage will actually be true. The cost, in my opinion, is going to be substantially more than it would be, from a VistA perspective, for the near and the midterm.

Mr. SELF. Okay. You have just gone back to my first question: What is the IT advantage of Cerner? There does not seem to be one.

Mr. Chairman, I yield back.

Thank you.

Mr. ROSENDALE. We will come back around for another round so you can have some more.

Now we are starting to get to the crux of where I wanted to go for this next round of questioning, and that is the investment as opposed to the theoretical promise of benefit in the future; okay.

Mr. Baker and Mr. Levin, let us turn now to the modernization efforts. What was the purpose of the Gold Disk project? How much did it cost? What did it accomplish?

Mr. LEVIN. Secretary Baker, I do not remember how much it cost, but I do remember it not being very expensive. Is that true?

Mr. BAKER. My best understanding is it was single digit millions, probably in the 5—I would want to ask VA for the specific numbers, but it was not an expensive program.

Mr. LEVIN. I would have hazard—I am glad that Secretary Baker went first. I would have guessed it was much smaller than that.

The outcome of the Gold Disk Program, which I want to immediately confess, was not perfectly successful. It was a great first start. There was a tremendous amount of resistance to consolidating that because, of course, that was the premonition of consolidating workflows and understanding the differences and highlighting the variations in the clinical care pathways at the various installations.

I do not want to make it sound like the Gold Disk was, in fact, what its name implies, the nomenclature amplifies a little bit the success. That not withstanding, probably the most important outcome—I am looking at Secretary Baker when I say this—was that we consolidated FileMan.

The most challenging, the most difficult, arguably the—not—if we use an anatomical analogy, it was not the heart and brains, but it was one of the vital organs. We went after it first because it was difficult, because we wanted to demonstrate that, in fact, you could start modularizing the code, you could start creating test harnesses

around the code, that you can do what we are discussing here today. This goes back 12 years ago, sir.

Mr. ROSENDALE. Then for several million dollars, you were able to accomplish this?

Mr. LEVIN. Yes.

Mr. ROSENDALE. Okay. Mr. Baker, Mr. Levin, why were you not able to eliminate all of the differences between the VistA instances?

Mr. BAKER. Well, the most important thing was it was a joint program between VHA and OIT and we got to the point where there were differences that VHA was unwilling to, if you will, exert their internal political capital to get their organization to agree to. When we achieved—we had gotten to about 95 percent commonality across the platform when I left. We felt that was a good start, and we felt it would continue on.

I want to commend Mr. McCune. My understanding is that it has continued on and that they are now achieving, if not a single Gold Disk, but very close to that with VistA at this point. His efforts on that part have been great from our perspective.

Mr. ROSENDALE. Very good.

Mr. Baker, Mr. Levin, VistA Evolution began in 2014, and it was canceled in 2017 when Cerner started. It was estimated to cost about $5.3 billion over a decade.

What were its goals and what was accomplished with that program?

Mr. BAKER. I do not know that I can speak to the goals. I think VA's goals were bigger. It was developed after I left, and so I think the goals were bigger.

I actually was at one of the contractors at that point that was developing that. What was developed was something called VistA Exchange, the ability for a clinician—the data provided to a clinician to come from a wide variety of data sources, multiple EHRs, multiple data sources, and present a single computable view to the clinician and a web-based version of the CPRS interface, so a modernization of that into what is called a widgets-based interface.

Both of those were in beta tests, and other things were in beta tests at the Hampton Roads facility when that project was canceled.

Mr. ROSENDALE. Okay. This question is going to be for all three witnesses.

Regardless of the EHR system chosen, is the VA ever going to be able to accomplish a monumental rip-and-replace project? Should they even be trying to do that?

We can start over to my right, Mr. Levin.

Mr. LEVIN. Congressman, with respect, I believe that the answer to your question is no. It is not so much even a question of the competency and skills. It is certainly not a question, not a question of the commitment of the people who work at VA. It is absolutely a question of the structure, the accountability metrics, the frameworks in which they have to operate today.

Under its current framework and structure, the answer is no.

Mr. GFRERER. Over the past decade, commercial entities have gone away from big ERP, Enterprise Resource Planning, rip-and-replace. It is just fraught with too much peril and failure. The in-

cremental modernization path is generally the one that you see followed.

I would like to layer in too at some point that, you know, any organization, whether it be the VA or a major healthcare system, really only undergoes these sorts of, you know, changes, you know, once every 30 to 40 years. I mean, it is almost like big iron in the sense of they are there—you know, look at VistA, it was there for 40 years. It is still there.

The knowledge base around putting in a new system in whatever manner, it is fairly limited, fairly exclusive. It is not astronaut exclusive, but there is only—when you look across the executive base in the U.S., there is only, you know, dozens of people that have really done this. I can tell you that at VA during my time and others' times there are none of those people. Right.

The requirement to leverage external advisors and to visit and—you know, I can talk more about this later—I do not think that has been anywhere near sufficiently leveraged. I know when I compare during my time the level of governance that was exerted on the program compared to what I have talked to some of my commercial counterparts, it is not even a shadow of what they did in term of these programmatic deployments.

Mr. ROSENDALE. Thank you.

Mr. Baker.

Mr. BAKER. No is the simple answer. The government in general is not good at large IT programs. There was a point in time in about 2010 when the National Defense Authorization Act included the language that 16, 1–6, percent of large Federal IT programs succeed.

The EHRM is the largest Federal IT program. It is not being done by DOD. VA does not have the same program management capabilities that DOD has. Especially looking at the evidence of the growth in the budget of the program, it is a very good indicator that, at this point in time, VA has no chance of actually succeeding on this program.

Mr. ROSENDALE. Thank you. Thank you very much.

Ms. Cherfilus-McCormick.

Mrs. CHERFILUS-MCCORMICK. Thank you, Mr. Chair.

Mr. Gfrerer, what role did you play in Cerner's EHR modernization at the VA?

Mr. GFRERER. I feel like I am back in my confirmation hearing.

Certainly the Office of Primary Responsibility for EHRM and VA very deliberately was segmented into a specific office, during my time the Office of Electronic Health Record Modernization. Then it was supported by two business units that were the existing EMR owners; VHA as the business owner and OIT as the technical owner and operator of the system.

Both VHA and OIT supported the Office of Electronic Health Record Modernization and their programmatic oversight and scheduling of those waived deployments.

Mrs. CHERFILUS-MCCORMICK. Do you think in retrospect that was a bad decision to have OIT on the outside of the program with CIO having such a limited role?

Mr. GFRERER. When you look at innovation and putting in new applications and new systems, often you have to get past the cur-

rent, you know—the existing system owners, both the business and the IT. I do not think that that was necessarily a bad decision. You know, each organization does it a little differently.

I had a conversation with a commercial CIO, as just kind of a refresher for this panel, the other day. He elected in, like, his own cylinder of excellence to have a separate organization. There is pluses and minuses to both approaches, and that is the one the VA selected.

Mrs. CHERFILUS-MCCORMICK. I recognize you entered VA service a few months after the Oracle Cerner contract was signed. From your perspective now, do you think the strategy to do a sole source contract with Oracle Cerner was a good decision?

Mr. GFRERER. Well, as I said in my opening remarks, in that timeframe, the premise when you looked at where technology was or, more importantly, where it was not in terms of Health Information Exchange, again, you could make a case that if you are going to derive the benefit of having that longitudinal record, you know, all the way from the time someone enters military service until the time they are buried in a VA cemetery, that it needed to be on a single platform.

That is why I said a lot has changed in the past 6 years, certainly the development of the Health Information Exchanges, and then when you layer in this whole notion that you have this smoldering ember of a problem over here with 300,000 people changing hands every year and over here you have 6 million community care, you know, referrals,.

Thirty-six million episodes of care, that is only going to grow larger. We need to kind of make a rational decision about, you know, where those precious investment—those tax dollars are paid.

By the way, where you are having that progress on the Joint Health Information Exchange, that can also accrue benefits back into the DOD VA system and that data exchange.

Mrs. CHERFILUS-MCCORMICK. Do you think the VA did appropriate planning, research, and standard program management related to this contract and program?

Mr. GFRERER. As I mentioned just a few minutes ago, when you compare and contrast what the VA has done and likely continues to do and compare it to any one of the number of large commercial systems that have been on a similar electronic health record journey, you would be concerned about the disparity between the governance and the efforts that these commercial systems have exhibited compared to VA.

It is what Secretary Baker said too is, by and large, not to give an excuse, government agencies do an exceptionally poor job at managing. I would call them—I said it before—business transformations. They are not IT programs. It is not an enterprise IT. It is not a security program. We are not putting in a new service management tool. This is a business admission healthcare system program.

Mrs. CHERFILUS-MCCORMICK. My final question for you is do you think it was a wise decision to deploy Cerner EHR in the middle of the pandemic, a facility that was not yet ready, with technology that was not ready, just a few weeks before a Presidential election?

Mr. GFRERER. Well, I know that the original date, having been in those meetings, was October 2019. The decision at that point on go, no go was really predicated around—what the chairman and others have talked about was those 73 different applications or interfaces that Millennium was going to have to draw services from. Those were just not ready. That was the initial decision to push off.

Then at the point that it went into the following year, it really was more in VHA and to the facility, to Spokane's decision as to when they would be ready to go live. I think that decision was really pushed down to the lowest level possible, certainly to the medical center director at Spokane.

Mrs. CHERFILUS-MCCORMICK. Thank you for your testimony.

Mr. Chairman, I yield back.

Mr. ROSENDALE. Representative Self.

Mr. SELF. Thank you, Mr. Chairman.

Given you all's history with VistA, order of magnitude, what would it take to rewrite VistA in dollars? Order of magnitude.

Mr. BAKER. I would hope I am on the high side with $10 billion.

Mr. SELF. Thank you.

Mr. Chairman, I yield back.

Mr. ROSENDALE. Thank you, Representative Self.

I am going to go into these instances. I have got a batch of questions about that. This question is for anyone who wants to answer.

Why do the different VistA instances exist? How are they different? How much of—what I am trying to figure out is how much of each instance is identical, okay, that they all match up, and what are the examples of the differences of the instances?

Mr. GFRERER. I will start off, Mr. Chairman. I am sure Secretary Baker and Mr. Levin will jump in.

As you heard earlier, the rough average is about 95 percent commonality between the 133 instances. I would say, again, it is a business admission decision as to that variability; right.

The first thing you have to realize is, you know, not every VA facility is the same. There are a range of clinical capabilities all the way from—let me just use the Northwest where it is currently being deployed, all the way from Puget Sound, which is a level 1a facility with all the top levels of care, Intensive Care Unit (ICU), Operating Rooms (ORs), things like that. Then you compare it to Spokane which is down at level 3. You can imagine that based on those different levels of facility care and those clinical capabilities, there would have to be some variability or differences in the instances.

I will pass it off from there.

Mr. ROSENDALE. Basically it is talking about the, so I am understanding, types of procedures that are offered in each of these facilities, some being much more complex and some being just a standard primary care?

Mr. GFRERER. I mean, literally different clinical capabilities. Again, you know, Puget Sound has an OR and an Emergency Room (ER) and I do not believe——

Mr. ROSENDALE. Outside of that, let us just say outside of that, if we have similar—we will call it similar facilities offering similar

procedures, okay, what are the differences? Are we still dealing with 95 percent commonality, or is it greater?

Mr. BAKER. I think today you are dealing with more. At the time that I left off, there were a few packages where there were alternative versions of the package that one facility might choose to implement and another facility would choose the alternative. Again, this comes from the day and time when the way packages got developed is one facility would build them, and another facility would build an alternative to that, and various hospitals would choose which of those they liked.

By the time we started the Gold Disk Program, there was a plethora of what is called class 3 software.

Mr. ROSENDALE. Were they all still communicating?

Mr. BAKER. Communicating to the sense that you can see the record from any VistA system in any other VistA system. I do not know whether that data is computable in all circumstances when it goes from one VistA system to another VistA system. It depends on your definition of, quote, communicating.

There was a plethora of this class 3 software, and what we did was basically asked VHA to settle on one version of each of those packages and then make that the standard. They got down to about 5 percent where they said, We need to offer both of these or all three of these because we can not tell the facilities to just go with one.

The variation was not, if you will, things all over the map. It was, oh, you have chosen the 1a option instead of the 1b option for your facility, but we support both the 1a and the 1b option across the enterprise.

Mr. ROSENDALE. Okay. They were supporting them.

To make sure that I am clear, so when I say communicating, so you could view it—regardless of which facility you were in, you could view it?

Mr. BAKER. Yes.

Mr. ROSENDALE. Could you enter data—if a veteran came from one facility to the other, could you still enter data in if you were at a different facility?

Mr. BAKER. My understanding is that the veteran would have a new record, a new record at the new VA.

For example, like I live in Florida. Lots of people will come down to live in Florida for 6 months and a day for tax reasons and, you know—but they will have a record in their Florida hospital, as well as their Ann Arbor hospital, for example, and you can view. They will have separate records between the two hospitals. That is my understanding, subject to correction by VA.

Mr. GFRERER. No, that is correct.

I can use myself as example. While on Active Duty, I had a—had to be seen for a minor accident in Minneapolis. I had a record there, and I have a record in Department of Veterans Affairs Medical Center (VAMC) D.C., right, and the two are just related.

Mr. ROSENDALE. Again, can either facility make amendments on either record?

Mr. BAKER. I do not——

Mr. ROSENDALE. Or can you only make amendments in your facility for that record?

Mr. BAKER. I believe that you would have to specifically go to the other record and sign in as a user on the other VistA system to make actual changes in the other record is, I believe, the answer.

Mr. ROSENDALE. Okay. Let me ask you this. At least does it come up as, like, a file, as an additional file so that you can see it as part of the patient chart?

Mr. BAKER. Yes. My understanding is that you get an alert as a doctor that says there are other records, other VistA records available on this patient. Would you like to view them?

Again, I want to leave this subject to correction by VA. They know the system in depth much better than I do.

Mr. ROSENDALE. Okay. Thank you. Thank you very much.

I am out of time myself. I am going to turn this over to Representative Cherfilus-McCormick.

Mrs. CHERFILUS-MCCORMICK. Thank you, Mr. Chair.

This question is for Mr. Baker.

You participated in VA's iEHR program, which eventually collapsed and the transition to VistA evolution, the program which has stopped, before the current Oracle Cerner EHRM, a very conservative estimate from the GAO using VA data show that efforts costing at least $1.1 billion.

What makes you think going back to VistA is a good idea right now?

Mr. BAKER. I base my assessment on—of why you go back to VistA on two things that I talked about.

One is just based on the track record at this point of the program. For someone like me, who has seen a lot of these programs, it is obvious this program has failed. The question is how much money we will spend before we fully recognize that.

The second thing is one of the main metrics I use is are veterans getting better healthcare. If today veterans were getting better healthcare in facilities where the commercial product was being used, my view would be entirely different. You know, compared to the amount of money we spend on medical care at VHA, $50 billion is a relatively small amount. If you are not going to produce better healthcare, then why spend that money, because it is all about better healthcare for veterans.

That is my reason why I believe we have got to go back to VistA and then a path forward. I do not think VistA is the end solution. I want to make that very clear. We are at this point now because we have failed on the EHRM, and we need a solution for the midterm while we figure out how to get to the long term.

Mrs. CHERFILUS-MCCORMICK. Thank you.

Do you have ideas for how VA could descope the current contract with Oracle Cerner and use it for the bear minimum services and then use other IT service providers and companies to fill in the gaps so as to diversify risk?

Mr. BAKER. I do. It would take us much longer than we have in testimony. I think about—sadly, I think about this a lot. Something about VA gets into your blood. I can speak to all three people here. We remain dedicated public servants even though we are not getting paid by the government at this point.

Yes, we have talked about this. We have lots of thoughts on it. We would be happy to share those with you.

Mrs. CHERFILUS-MCCORMICK. That would be wonderful.

Given what you know about the IT industry, would you have done a sole source, no-bid contract like VA under the Trump administration did? Would you have mandated the use of an integrator?

Mr. BAKER. I am not a fan of integrators on large programs like this, just from all of the—from everything I have seen from that standpoint. My track record speaks to that.

No, I did not like the sole source. I am loathed to criticize people that were in the arena at the time, but it was an odd way to go at things.

Mrs. CHERFILUS-MCCORMICK. I read your written testimony and agree with you that the VA culture of allowing customization in its medical centers has contributed greatly to failed attempts at modernization.

Is there any management structure in place at the VA where Under Secretary for Health and the CIO would be required to sit down and make decisions based upon priorities for deploying a modern EHR?

Mr. BAKER. I will just start by saying it depends on what administration you are talking about. Under Secretary Shinseki, absolutely, absolutely. I know it varied in other organizations.

Mr. GFRERER. I would add to that that I know, toward the end of my tenure, we attempted to re-implement the Office of Military and Veterans Affairs (OMVA) 130 Required Investment Review Board Process managing information as a strategic resource, and I can tell you that was met with not a lot of enthusiasm. That is—there is a reason that OMVA circular exists, because you have—and we saw it within our unfunded requirements process every year. You had 10X of requirements chasing 3X of IT spent dollars. If you did not deliberately, through an investment review board process, prioritize and be very clear eyed about where you were going to spend it, it was going to sort itself out and probably not in a very clean way.

Mrs. CHERFILUS-MCCORMICK. I am looking for an opportunity to produce legislation this Congress to provide the VA with tools to make consensus decisions that put the care of veterans and the well-being of frontline staff at the forefront of requirements development and not cater to fractions within the VA. I prefer one software product over another. I do not care what system the VA uses. I want veterans and employees to be delivered what they are promised and what taxpayers are paying for.

Thank you, Mr. Chair. I yield back.

Mr. ROSENDALE. Thank you very much, Representative.

Okay. Mr. Levin, I am going to ask a couple more questions before we let you all get out of here.

VA leaders have said many times that they want an EHR with one instance, to eliminate the variations from facility to facility. Yet I hear regularly, almost every hearing that we hold, that if you have been to one VA, you have been to one VA because they are so different.

My question is, is that realistic? How can it be accomplished?

Mr. LEVIN. Thank you, Chairman.

It is realistic. It can be accomplished.

Let us spend a couple of seconds on how we got to now. There are endogenous reasons, internal reasons for the differences between the different facilities, and these are good reasons. These are things that we need to protect and nourish.

The VA has a culture of innovation. We spend a lot of money every year with new medicines, new therapies, new processes, new instruments.

Secretary Gfrerer mentioned during his remarks that it was a business decision. I strongly agree with him, and I strongly agree that that was the right thing to do.

The VA is a greenhouse of training and new ideas, and you actually want that. We do not want to force or force feed some kind of rigid, unchangeable structure, because they are also teaching hospitals. Something like a third of all practicing physicians in the United States did at least some part of their residency at the VA. You need the VA to be vibrant that way, to be intellectually challenging, to show the hardest cases, to get the best care in order to attract the talent that, as Secretary Baker said—and I will say it slightly differently—for many of us, those who are veterans and those who are not, those who are in public service today and those who are not, VA is a transcendent moral cause. It is a moral cause of our country, and I think that we made a promise that we need to keep. One of the ways that we keep that promise is by making sure that we are at the vanguard, at the forefront of that kind of care.

The differences between the institutions, we have talked a lot about, well, how many of the clinical care pathways are the same or how much of the code base is the same. I respectfully submit that that may not be the right metrics. It is an easy metric. We know how to measure lines of code. We know how to articulate the differences.

The difference that I would propose is that we see how much does it costs. How much does it cost to sustain these various pathways and do they actually deliver superior care? The trade space, the decision that we have to make together as a country is how do we sustain and maintain and nourish the vibrancy of those environments but not charge the taxpayer tens of billions of dollars because we are trying to let every VA hospital do it by themselves? At the end of the day, this is an implementation framework question. This is a question of authority. This is a question of accountability, and it is not a technology problem. I think that we can achieve it quite easily.

Mr. ROSENDALE. It seems like the VA is counting on the Oracle Cerner EHR to force some kind of a standardization on the Veterans Health Administration without doing any of the hard work to change how the medical centers operate. And the result is breaking the EHR as well as the medical centers where they actually are functioning.

What do you think is going to happen if they continue down that road?

Mr. LEVIN. Mr. Chair, I think that this is a shared responsibility. If you look at the implementation frameworks at other large clinics—the one that I have in mind specifically is Mayo, but there are many of them that we could talk about—there is a halfway point.

It does not have to be all one way, my way or the highway—there are some vendors that do it that way—or the way that we have done it at the VA, where it is sort of let a thousand flowers bloom, right, until the moment that we are trying to modernize the program and exchange data. Even between VistA systems, as Secretary Baker described, we can not do that.

The VA, I believe, is actually primarily responsible. I do not want to exonerate any vendor here, right, but the VA is responsible, should have been responsible, for making sure that they had consolidated those clinical care pathways. I think the canonical number is 6, is what we are looking for now, but not 131.

Mr. GFRERER. I think, Mr. Chairman, when you look at the capability sets that the EMR vendor or her vendor is going to provide, I think there is actually fairly good agreement between VHA and the vendor in terms of what compromises those capability sets.

Mr. ROSENDALE. Thank you so much.

Representative, do you have any more questions?

Mrs. CHERFILUS-MCCORMICK. No.

Mr. ROSENDALE. Then we are all clear. Okay.

I want to thank our witnesses on both panels for joining us today. I do appreciate it. It was incredible information.

This is not a conversation about IT systems. When we get caught up in that, we lose sight of our purpose. It has to be a conversation about whether the VA healthcare is meeting our veterans' needs and what policies and systems support that.

It also cannot be a conversation about hypotheticals. It has to be grounded in hard data. I appreciate our witnesses helping us better understand that data.

By every measure—by every measure that has been presented here today, VistA is still performing well. The VA is still very dependent upon it, even after being put on a starvation diet in the early years of Cerner. By choice or by default, the VA will probably continue to rely on VistA for years into the future.

I realize that not everyone likes that reality, but we all need to recognize it. It certainly would not have been my choice to operate two different EHRs in a healthcare system, but I think it would do a tremendous disservice to the veterans who rely on the VA for their care to neglect or even dismantle the only platform that supports that care effectively and safely.

We need to be identifying the VistA improvements that are most badly needed and make the most sense and get them done in months or in years, not in decades. That is what I will be advocating.

Thank you all again for your participation in today's hearing.

I ask unanimous consent that all members have 5 legislative days to revise and extend their remarks and exclude extraneous material.

Without objection, so ordered.

Mr. ROSENDALE. This hearing is adjourned. Thank you.

[Whereupon, at 5 p.m., the subcommittee was adjourned.]

A P P E N D I X

PREPARED STATEMENT OF WITNESSES

Prepared Statement of Daniel McCune

INTRODUCTION

Good Afternoon, Chairman Rosendale, Ranking Member Cherfilus-McCormick, and distinguished Members of the Subcommittee. Thank you for the opportunity to testify today about the Department of Veterans Affairs' (VA) Veterans Health Information Systems and Technology Architecture (VistA). I am accompanied today by Charles C. Hume, Chief Informatics Officer, Veterans Health Administration, Dr. Thomas O'Toole, Deputy Assistant Under Secretary for Health for Clinical Service, Veterans Health Administration, Ms. Zhuchun "Emily" Qiu, Director of Health Informatics, Office of Information and Technology, and Mr. Michael Giurbino, Director, Health Infrastructure and Systems Management, Office of Information and Technology.

OVERVIEW

VA is committed to providing exceptional care, services, and a seamless, unified experience to Veterans. The Office of Information and Technology (OIT) collaborates with the Veterans Health Administration (VHA) and various VA offices to achieve this mission through the delivery of state-of-the-art technology, including a modernized Electronic Health Record (EHR).

Today, VistA and its integrated systems provide an integrated EHR for Veteran care and services, supporting over 150 applications, including the operations of more than 1,500 VA facilities. There are 133 instances of VistA nationwide that share standard functionality but have data and workflow tailored to the needs of each VA Medical Center and its patient population. Like any IT system, VistA requires updates and maintenance to keep it functioning at a high level. Critical upgrades to the system could be extremely costly over the years, and maintenance costs are even higher. Often, it becomes more expensive to maintain a legacy system than to replace it. VistA itself is written in an old programming language, Mumps. There are few Mumps programmers today, Mumps is not taught in computer science classes, and the pool of Mumps programmers shrinks every year as they retire. VA is fortunate to have dedicated Mumps programmers supporting VistA. They understand millions of lines of code developed over 45 years and VA's clinical business processes. They are committed to enabling clinicians and supporting Veteran outcomes. We've been able to retain them, and their knowledge, much longer than a typical workforce. However, approximately 70 percent of our Mump programmers today are retirement eligible, and we have few options to hire or contract additional ones.

VistA has served VA and Veterans for over 45 years and we aware of its limitations. It doesn't have modern capabilities like Artificial Intelligence/Machine Learning, mobile and web access, and capabilities providers and Veterans expect and deserve from a modern cloud-native EHR. VistA is a member of VA's expansive and complex ecosystem of software and infrastructure. The size and complexity of that technology ecosystem has nearly doubled in the last 5 years, and most of that growth was in modern cloud-native applications. Mumps programmers are increasingly challenged keeping VistA integrated in a growing ecosystem that is architected very different from the system designed 45 years ago. While technology is a challenge, so also are the dated skills of the VistA programmers. These challenges compound every year.

To modernize VA's legacy EHR systems and achieve interoperability with DoD and community care providers, VA is transitioning to a new EHR solution. In May 2018, VA awarded Cerner a contract to replace VistA with a Commercial Off the Shelf (COTS) solution, Cerner Millennium, which is also currently being deployed by DoD. During implementation of the new EHR solution, VA will need to maintain VistA systems for a period of time. This ensures that current patient records remain accessible and that there will be no interruption in the delivery of quality care.

FUTURE VISTA DEVELOPMENT

VA recognizes the planned Electronic Health Record Modernization (EHRM), Financial Management Business Transformation (FMBT), and Supply Chain Modernization (SCM) efforts will take years to scale across the enterprise. During this time, maintaining Vista is necessary to ensure VA preserves the standard of care in the interim and continues innovation to serve the Veteran. VA embraces the responsibility to consistently and constantly drive modernization and look for efficient ways to sustain VistA. Some of the key strategies include:

- **Development, Security, and Operations Approach** – OIT shifted to a DevSecOps approach focused on collaboration, innovation, agile principles, and automation—so that it can develop, enhance, maintain, and roll out better, more secure products at a faster pace than using the existing separate development and operations processes.
- **VistA Standardization** – VAMCs are required to run the nationally released "Gold" version of VistA. In addition to having a common set of software routines for each VistA instance, there are some additional normalization activities, including work on terminology extensions, to account for local differences that will need to be addressed to ensure standardization of the VistA data base and file system.
- **Merging Resources** – OIT continues merging VistA teams and resources for maximum efficiency throughout VA.
- **Maintain excellent customer support** – OIT will continue to respond to patient safety issues; hiring and retention of VistA support resources; maintaining security and compliance (scans, remediation, Section 508 compliance, Authority to Operate, etc.); refreshing hardware (life-cycle upgrades, hardware, cloud migration etc.); and maintaining software versions and upgrades.

VistA enhancements require enabling teams to work in a development paradigm using modern tools and practices such as automation of testing, integration, and deployment of code. VistA enhancements share VistA data and applications through Application Programming Interfaces (APIs) that use modern messaging standards. This approach accelerates integration and supports innovation in the short term. It also facilitates migration to target solutions like EHRM, FMBT and SCM in the long-term.

CLOUD MIGRATION

On June 22, 2019, one instance of VistA, at Valley Coastal Bend, was successfully migrated to VA's Enterprise Cloud (VAEC) which is the future direction for VistA instance maintenance until they are subsumed by Cerner Millennium. Since then, a total of 20 VistA sites were successfully migrated to the VAEC and an additional 54 VistA site migrations are planned for Fiscal Year 2023. VA is taking advantage of cloud-based infrastructure management practices and leveraging cloud native features including security, monitoring, backups, and scalability. As part of the current VistA Cloud Migration Project, the VistA software platform is also being upgraded to IRIS for Health 2022.1.

COSTS OF SUSTAINMENT

For the purposes of ensuring uninterrupted health care delivery, VA will continue to use VistA until all legacy systems are replaced by the new solution. Below are the current costs to operate, maintain, and upgrade VistA in each of the last five fiscal years. The below costs reflects a steady increase year-over-year:

- Total Fiscal Year 2018: VistA cost $417,730,309
- Total Fiscal Year 2019: VistA cost $634,138,491
- Total Fiscal Year 2020: VistA cost $720,312,589
- Total Fiscal Year 2021: VistA cost $841,426,084
- Total Fiscal Year 2022: VistA cost $890,098,856

Currently, there is no VistA sustainment cost reduction directly tied to the new EHR solution rollout. VistA must run without service degradation to support EHR migration and overall VA modernization. VistA clinical modules that are deemed redundant when the EHR migration is complete will be decommissioned. However, VistA modules that are not replaced by the EHR must be performant and maintained until replacement capabilities are developed. The cost to maintain VistA will increase as we must include development for new capabilities and interfaces, congressional mandates, cloud costs, hiring and retention of VistA support resources, and maintenance. To continue fulfilling our commitment to ensure uninterrupted care and benefit delivery to Veterans, VA must continue to use VistA.

CONCLUSION

As VistA functionality is replaced by a COTS solution and other systems, VA can decommission VistA products as appropriate. Until the new EHR solution is implemented across VA's enterprise, VistA remains VA's authoritative source of Veteran data. Sustaining VistA for the duration of our EHRM effort ensures that Veterans continue receiving uninterrupted care and services while VA looks to the future and improves the Veteran experience.

Chairman Rosendale, Ranking Member Cherfilus-McCormick, and Members of the Subcommittee, thank you for the opportunity to appear before you today to discuss OIT's progress toward VistA transition. I look forward to continuing working with this Subcommittee and address our greatest priorities. This concludes my testimony, and I look forward to answering your questions.

Prepared Statement of Roger Baker

Thank you Chairman Rosendale and Ranking Member Cherfilus-McCormick for holding this hearing today. With over $50 billion at stake, misinformation regarding VistA has been rampant. Numerous parties, largely those with no expertise in VistA, medical care, or software development, continue to repeat misinformation designed to convince Congress that VistA is a problem in need of their solution.

Not that I need to remind this committee, but I served 4 years as the Assistant Secretary and CIO for VA, from 2009 to 2013. In that role, I was responsible for all investments in VistA, including budgeting, daily operations, bug fixes, improvements, modernizations, and strategic direction. I was responsible for analyzing and then stopping the failed HealtheVet program. I was the VA lead for the iEHR program and dealt with all of its complexities. Perhaps most useful for our discussion today, I analyzed why VA continued to fail in its software development efforts, and introduced a program management approach that increased the rate of on-time software deliveries across the development portfolio from under 30 percent to over 84 percent.

Several years ago, I published three articles regarding the EHRM program and VistA, which I have linked below. I believe the information in these articles is still largely relevant.

Why VA's Electronic Health Record Mega Project is Failing https://fcw.com/it-modernization/2021/07/why-vas-electronic-health-record-mega-project-is-failing/259229/

How VA Can Succeed with its EHR Mega-Program https://fcw.com/acquisition/2021/08/how-va-can-succeed-with-its-ehr-mega-program/258949/

Why VA Must Keep VistA Healthy https://fcw.com/acquisition/2021/08/why-va-must-keep-vista-healthy/259006/

The primary success measurement for an electronic health record (EHR) system at VA should be Veteran health outcomes. The fundamental reason that VA, VHA, and the EHR exist is to provide Veterans with superior health care. An EHR should be an aid to clinicians and medical staff in doing their jobs, help speed their work, provide them with information to make better decisions, reliably communicate work orders such as lab tests, prescriptions, treatments, and specialty referrals, and coordinate and track the medical activities of the entire medical center needed to improve health outcomes.

The EHRM program has effectively run a controlled experiment over the last six years, complete with a hypothesis, control group, and metrics. This experiment has provided concrete proof that Veterans achieve better medical outcomes when VA facilities use VistA than when they use the commercial alternative. And while service impacts should be expected in the initial days of an EHR swap, I have seen no projections from VA as to when productivity and medical quality measurements using the new EHR will exceed those previously seen in the same facility using VistA.

Because Vista excels at medical care, and it sets a high comparative bar. Vista, and the work processes encoded in it, was designed, implemented, and honed by VA clinicians to do exactly what a clinician needs and what a clinician expects. That is both its blessing and its curse.

Independent surveys show that VistA is the most liked EHR by clinicians nationally.

Medscape EHR Report 2014

Medscape EHR Report 2016: Physicians Rate Top EHRs

However, as an IT product, VistA is complex and difficult to change. But which would we rather have for medical care, a system that clinicians love and IT people hate, or one that IT people love and the medical staff hates?

Some lobbyists would have you believe that the IT difficulties of VistA are more important than the medical care advantages. That VistA is a problem because of its age, complexity, and the language it is written in. In fact, at least one lobbyist would have you believe that "Vista cannot be made better."

This is provably false. During just my 4-year tenure, many improvements were introduced to VistA, including bed management, blood bank, Pharmacy re-engineering, registries, and numerous others including, fairly notably, Cerner Labs.

In fact, VistA can be difficult to modernize. But the difficulties in modernizing VistA stem not from the software itself, but from three root causes that come from VA itself.

First, every time VA has attempted to replace VistA, first from 2000 to 2009 under HealtheVet, and second from 2017 until now under EHRM, VA has prohibited investment in VistA. This has included eliminating promising technologies such as VistA Exchange by terminating the EHMP program when it was in beta test. The fact that you are told that "VistA cannot be made better" as an argument for why $50 billion needs to be spent to replace it, when the primary issue is that VA has cutoff investment in VistA improvements for 16 of the last 24 years, is rich indeed.

Second, years ago VHA made the decision that veterans receive better medical care if each VA is allowed to tailor its care to local needs. That Veterans in Fort Harrison can have different care needs from those in Palm Beach. This local control of medical care is a fundamental part of the medical culture of VHA. As you would therefore expect, VistA was specifically designed to easily support that local customization. I am certainly not qualified to tell you whether localization is a good medical decision. For that discussion, I would suggest a discussion with Dr. Ken Kizer as well as numerous other medical professionals who have given this topic much more thought than I ever could. I can tell you that it is where the sound bite "VistA is not a single system, it is 130 separate systems" comes. Local customizations were a celebrated part of VistA development for many years, until the advent of the "Gold Disk" program. But these local customizations are what make designing, programming and testing changes to Vista more difficult, because every change must be tested to work with each VistA system.

VA's experience with Cerner Labs is a good example of the effects of the VHA culture on VistA. In (approximately) 2007, VA decided to replace the VistA Laboratory module with one from Cerner. Integration of the cloud version of Cerner Labs into VistA proceeded, and by 2012 VA had completed a successful introduction of the package at the Huntington, WV VA, where it is (to the best of my knowledge) still in use today. The functionality was well received, and a plan was presented to roll-out across the rest of VA. Unfortunately, that plan was wildly expensive and would take many years. When asked why, the program team explained that all of the customization parameters in the lab package, which had been a significant portion of the development work, would need to be re-discovered, re-verified, re-entered, and re-tested for each VA hospital, since business process and even the names used for each drug vary at each VA. As a result, Huntington remains the only VA running Cerner Labs (again, to the best of my knowledge).

As noted above, VA began its "Gold Disk" program in 2011, as part of the decision to move VistA to an Open Source model. The goal of the Gold Disk was to eliminate the variations between VistA instances by identifying software differences and working with VHA to agree on which business process, and therefore which software modules, could be used at all VA's. By 2015, this had reduced variations in the VistA software to under 5 percent across all instances. It is my understanding that VA has continued this effort and has further reduced software variations, possibly to the point of achieving our goal, a single "Gold Disk" version of VistA to be distributed to all VA facilities.

Third, Federal pay grades and procurement practices have eroded the base of skilled software developers needed to maintain a complex EHR product. Capping salaries at GS 13/14 levels for the most skilled Federal IT staff has caused them to seek other employment. And VA continuously awards contracts for complex VistA improvements to companies that lower their prices to win the work, and then cannot employ the necessary skills at the rates that were bid. They would rather tell VA "we can't find MUMPS programmers" than "we underbid the work" to justify why they failed to deliver.

VA has repeatedly failed at efforts to replace VistA. HealtheVet, iEHR, and now EHRM were each attempts to replace VistA, not to make it better. Each failed, in part, because the difficulty in making the software better is not in the software, but in the fundamental VHA culture. VistA is tightly attuned to that culture, and well

liked by the medical staff for exactly that reason. Unless and until a decision is made that software standardization is more important than local control of healthcare, attempts to replace the VistA product with a commercial product that does not support that fundamental part of the VHA culture are doomed to certain failure.

Mr. Chairman, there is much misinformation regarding VistA being promulgated in an effort to justify the $50 billion needed for the EHRM program. I have attempted to address only a few of them. But the EHRM program has provided the best proof that they are either wholly or partially untrue. After six years, Veterans continue to achieve better healthcare outcomes in VA facilities that use VistA versus the alternative. That remains the single most important fact you will hear. I commend this committee for demanding to deal with the actual facts regarding VistA, its role in veteran healthcare, and its ability to be modernized, and I look forward to working with you and answering your questions as you further search out those facts.

Prepared Statement of James Gfrerer

Chairman Rosendale, Ranking Member Cherfilus-McCormick, thank you for the opportunity today to appear before the Technology Modernization Subcommittee with my fellow former VA Technology Panelists to address the VA's current Electronic Health Record.

As a Veteran, I am a patient in the VA health system, and a beneficiary in the VA benefits system, and now pre-registered for VA burial benefits. And as a more-than 28-year career Marine Infantry Officer with 4 combat deployments, I fully empathize with all our Veteran men and women who endure both the visible and invisible wounds of military service.

There is much misunderstanding around VA health care in general. VA Health care is unlike commercial systems. VA is funded by government appropriation versus commercial health systems who operate on a business revenue model. In commercial health care, each patient is eligible for all services, where in VA eligibility is based-on complex service-connected conditions. VA health care is more specialized and expansive than commercial systems comprising unique clinical services such as prosthetics, long term care, and dental among others. These are substantial differences, even as compared to Department of Defense Health care, and are the first set of challenges for any commercial EHR to be successfully implemented in the Veterans Health Administration (VHA).

The bottom line is that Federal law, regulation, and policy have created this unique health system – and the Veteran Health Information and Technology System Architecture (VistA) Electronic Health Record is representative of those complex and unique business rules. So it may come as no surprise that when a commercial EHR programmed for different financial frameworks, with significantly different eligibility rules, and not addressing unique VA clinical services, that there are problems – and problems that can't be overcome by "change management." Without substantial customization, no commercial EHR could address the business rules that law, regulation, and policy mandate for Veteran Health care. So, if you didn't have a business system configured like VistA, you'd have to create or heavily customize a system to perform just like it.

In the remainder of this Hearing, we will get into greater detail about VistA, its modernization efforts, and some additional facts and misconceptions, but allow me to offer some highlights as a capstone to the larger conversation:

- First, VistA is more than an EHR. It is what professionals term an Enterprise Resource Planning or "ERP" system, which has grown over the years to encompass many administrative, financial, and other modules. A number of these will live-on, past any end of service date for VistA.
- Second, it is not – I repeat – not an "IT system" but rather a BUSINESS/MISSION system. Why does this matter? First, because the "Business" – in this case, VHA – must take prime ownership, to include the lifecycle management, capital investment, and change management, with OIT playing a continue supporting and technical role.
- Third, some would have you believe that VistA has not been modernized, but that assertion is predicated on the fallacy that modernization can only occur by replacement. Tech modernization as defined by Gartner, Forrester, and others, can be achieved in a myriad of other ways from rehosting (e.g., moving to the Cloud), refactoring (optimizing the existing code), and encapsulating (exposing to APIs) – all of which were done to VistA during my VA tenure.

Also, let me offer that in many respects Veteran Health Care business and technology discussions remain mired in 2017. It was in this timeframe that the pursuit of a fully longitudinal health record was revalidated with the assumption that it must be on the same platform in order for this to be achieved. In 2023, with the maturity and adoption of Health Information Exchanges and Heath data standards such as HL7 and FHIR, that is no longer the case, which raises another topline business issue. Which is the greater challenge for VA presently – is it DoD/VA interoperability – or is it VA/Community Care interoperability?

In an era of increasing technical debt and mounting technology modernization cost, the Congress must determine where the greatest need is for precious technology budget. Presently there are roughly 300,000 active-duty members annually who matriculate from DoD to VA. Last year on the Community Care side, VA saw 6 **million** referrals out of network for 36 **million** episodes of care. To recap – a one-time transfer of 300K servicemember records as compared to 6 million referrals with 36 million appointments – there is no doubt that the latter is the substantially larger problem, across **thousands** of Community Care providers, who are on every available EHR, not one single EHR on which DoD and/or VA are operating. Community Care is only anticipated to grow larger every year, so VA must address it soon.

Finally, in an era where technology plays and increasingly mainstream and critical role in healthcare delivery, VA must begin to operate more efficiently and effectively, as do its Commercial and Non-Profit Health System counterparts, who are well on their way in this regard. These systems understand that technology and information technology is the success path, and reciprocally, Health Systems can't hire there way out of the problem, much as VHA attempts to do every year.

Mr. Chairman, thank you and the Subcommittee for your interest in this vital topic, and I look forward to our discussion.

Prepared Statement of Peter Levin

Thank you for the privilege of testifying before you today regarding the Electronic Health Record Modernization effort at the Department of Veterans Affairs.

I am deeply grateful to Chairman Rosendale, Ranking Member Cherfilus-McCormick, and members of this subcommittee for the opportunity to share with you my perspective on one of the largest civilian information technology projects in history.

Our commitment to our Nation's veterans transcends party lines and political ideology. In an era of especially deep ideological divide and social tension, I applaud your leadership, Mr. Chairman, in soliciting the best ideas and constructive, fact-based perspectives from across the spectrum.

During my time in public service, and under the leadership of Assistant Secretary Baker with whom I am delighted to appear this afternoon, I had the honor of working on several medical information technology systems that are still in use today. Especially relevant to this testimony are the Joint Longitudinal Viewer (JLV) (originally known as "Janus") and the Blue Button personal health record. Launched during a Democratic administration, Blue button was warmly embraced by the most recent Republican one, too, "as a fundamental component of any effort to empower patients in their healthcare decisions." And JLV enables hundreds-of-thousands of clinicians to see records across platforms every day.

It is in that context – access to and interoperability of clinical data – that I respectfully offer my observations.

In my opinion, there are three issues before the government regarding VistA at Veterans Affairs:

1) That the billions of dollars already spent on the Cerner implementation will not scale to enterprise-wide clinical care services on the current path, budget, or timeline

2) That VA can-and-should sustain the data interfaces and connection frameworks already built to send and receive data from MHS GENESIS

3) And, most important of all, that VA consolidate its current instances of VistA onto a VA-centered clinical workflow, and augment the VistA model to receive data from third-party providers

Our ability to deploy VHA's nearly 1,300 facilities is hopelessly challenged by the incompatibility of those with each other. Leadership – then and now – presumed that VistA instances are fundamentally congruent, from clinical workflow as well as data interoperability perspectives. This is incorrect. VistA instances do not inter-operate, and the agency was unsuccessful in catalyzing alignment around a single clinical process and record, the sine qua non of a commercial deployment.

Thoughtful members of our community will sensibly ask how it was possible to install Cerner at the Military Health Service was ostensibly successful, while the VA's has been a failure. There are three reasons. First, DoD had already made the transition to a centrally administered system, as opposed to VA's decentralized approach that perpetuates workflow (and data model) autonomy across 130 hosts. Second, the DoD's "command and control" structure not only enforced protocol alignment, every deployment was preceded by careful preparation, training, and integration. Third, their system was in substantially worse condition than ours, and Cerner is perceived as an improvement over AHLTA, although according to KLAS this is not a widely held perception, even at MHS.

Although VA is one the Nation's largest integrated delivery platforms, there are several others in the private sector – including, for example, HCA (186 hospitals), Ascension (150 hospitals), and Kaiser Permanente (39 hospitals) – each with similarly sized patient populations. Before VA embarked on a multi-billion dollar health record modernization, we should have been clear on the price-and-performance benchmarks from near peer enterprises. We should well understand the capabilities they prioritize in their information systems *before* we try to install one ourselves. As you'll hear from other witnesses, the differences in VA healthcare between cities is simply not that large. It is not tens-of-billions-of-dollars large.

The inescapable solution to the real-world challenges of first-class healthcare services at VA is an institutional commitment to rebalance the "have it our way" approach. VA must truly, sincerely, authentically, put the Veteran first, and streamline its own processes before it attempts to automate them. As straightforward as this sounds to anyone who works for (or is a customer of) a manufacturer, a school, a hospital, a store, a publisher, or a transportation, energy, or services company, it is exactly not what happens at VA. Veterans receive terrific healthcare, but their care is delivered with different processes depending on which hospital or clinic they go to.

There is surprisingly little in the operational literature about how to drape an enterprise management framework over complex clinical environments, never mind one as large and diverse as VA's.

From a data perspective, this has profound implications. When we try to connect applications-to-pipelines-to-governance, the transactional perspective and the analytical one are, literally, geometrically orthogonal to each other. Transactions are row based (every new interaction, like delivering a vaccine, or serving a meal, requires a new entry) and analytics are column based (so as to avoid the need to ingest *every* attribute of *every* transaction for *every* report, like how many injections were made, and how many meals were served).

In practical terms, while VistA communicates between members of the care team one patient at a time, all of its data is exported to a separate system to measure outcomes and improve service. The current effort to replace both components of that at once is difficult to do. We're trying to fit round transactional pegs into square analytical holes. We should stop doing that.

In my opinion, the department should not announce its intention to change the contract unless and until it has a backup plan in place. That plan cannot be "revert back to VistA" in its current form, or anything that concedes to VA's continued digital isolation and process insularity. Yes, Cerner has performance deficits in response time, uptime, and data syndication latency; these will only get worse as more hospitals are brought online.

The problems are compounded, however, by VA's inability to prepare for Cerner's deployment. VA in general relies too much on industry to "tell it what it needs," never mind what it could have. Unless and until the institution is committed to aligning its internal processes, no amount of technology will automate its operations, and no amount of money will solve its policy problems.

The trade-space is simple: VA must go on the record and publicly State their commitment to a single enterprise—workflow and—data model. Congress could develop objective and quantitative measures to validate compliance, with real consequences for noncooperation or nonparticipation.

If we change the agreement with the commercial vendor, VA must also prepare itself for an onslaught of criticism because of previous attempts that also failed, including HealtheVet, iEHR, and Vista Evolution. Switching back to VistA and walking away does not fix the root problems. How do we address the issue?

First and foremost, cloud technologies are now stable and mature enough to enable consolidation onto an authentically single platform. Additionally, there have been substantial improvements to the codebase that are now available to VA from the commercial sector. I believe that the Open Source Electronic Health Record Alliance was the right idea, but it was poorly implemented because of VA's (and DoD's) lack of sustained commitment and the peculiarity of a "single customer" market.

Nonetheless, it would be straightforward to re-instantiate OSEHRA with a powerful charter and legislative mandate. It would certainly be objectively better, and cheaper, than what we have now.

Moreover, commercially available data management infrastructure has made substantial progress in the last 5 years. The VA has been dreadfully slow to adopt these standards and tools, including FHIR and bi-directional Blue Button, because of VistA's inability to ingest third-party clinical data into the enterprise model. There are no technology impediments here; this is simply a matter of political will, imaginative leadership, and execution accountability.

Indeed, both these policy changes – consolidation onto an enterprise clinical workflow, and adoption of proven platform and data management services – would accelerate health record modernization at a fraction of the costs now earmarked for EHRM. They can be systematically procured, thoroughly tested, and methodically deployed during this Congress and sustainably thereafter.

Software is designed to help automate repetitive tasks that we do every day. If what clinicians do every day is different at every hospital, and we allowed those points of care to grow their own for decades, it is no surprise that all the software is going to be different. How we got here is no mystery.

If VA shared best practices between hospitals, identified optimal workflows, disseminated them to their network, and updated the software unto a unified platform, then clinicians throughout the enterprise would provide care in a similar (and probably better) way. This would not only improve safety and outcomes, it would be more amenable to a wholesale replacement.

The transcendent goal is continuously better healthcare for Veterans. Until VA resolves its internal tension around a consolidated workflow and comprehensive data management, no new or renovated electronic record will be successful.

SUBMISSION FOR THE RECORD

Office of Inspector General Letter to The Subcommittee on Technology Modernization

DEPARTMENT OF VETERANS AFFAIRS
INSPECTOR GENERAL
WASHINGTON, DC 20420

March 6, 2023

The Honorable Matt Rosendale
Chairman
Subcommittee on Technology Modernization
Committee on Veterans' Affairs
U.S. House of Representatives
Washington, DC 20515

Dear Mr. Chairman:

This is in response to a request from Subcommittee staff on March 2, 2023 in anticipation of the Subcommittee's hearing on March 7, 2023 regarding the Veterans Health Information Systems and Technology Architecture (VistA). Subcommittee staff asked that the Office of Inspector General (OIG) provide a list of OIG reports discussing VistA.

While challenges with existing software programs, such as VistA, have been generally discussed in OIG reports, the OIG has, in line with requests from the House and Senate Committees on Appropriations, focused on VA's electronic health record modernization program (EHRM) because of the financial and programmatic issues expected in a modernization effort. Recognizing EHRM's centrality and complexity, the OIG began monitoring and assessing the EHRM program after VA signed the sole-source contract with Cerner in May 2018. To date, the OIG's Offices of Audits and Evaluations, Healthcare Inspections, and Special Reviews have published 14 reports on EHRM.

The OIG's reports have discussed gaps in VistA while reviewing other issues, such as the finding in 2014 that scheduling audit trails in VistA were not being utilized at that time, which potentially limited the OIG and VA's ability to determine if VistA's information was being improperly manipulated. The OIG's Office of Healthcare Inspections focuses on providing oversight and recommendations for improvement of health care quality and access, but addresses software or configuration issues when they are identified. For example, a particular challenge noted in VistA is that view alerts, a tool for communicating patient test results to providers including laboratory tests, diagnostic imaging procedures, and diagnostic procedures, are configured and managed in a way that can lead to breakdowns in the coordination of care for a patient.

The Honorable Matt Rosendale

Please find below a selection of reports discussing issues with VistA:

- Care Coordination Deficiencies after the New Electronic Health Record Go-Live at the Mann-Grandstaff VA Medical Center in Spokane, Washington, March 17, 2022.

- Failure of a Primary Care Provider to Complete Electronic Health Record Documentation and Inadequate Oversight at the Charlie Norwood VA Medical Center in Augusta, Georgia, July 1, 2021

- View Alert Process Failures and the Impact on Patient Care at the Central Alabama Veterans Health Care System in Montgomery, March 11, 2021

- Delays and Deficiencies in Management of Selected Radiology and Nuclear Medicine Outpatient Exams, October 19, 2019

- Delayed Radiology Test Reporting at the Dwight D. Eisenhower VAMC, Leavenworth, Kansas, March 7, 2019

- Interim Report: Review of Patient Wait Times, Scheduling Practices, and Alleged Patient Deaths at the Phoenix Health Care System, May 28, 2014

Thank you for your interest in the OIG.

Sincerely,

MICHAEL J. MISSAL

cc: Ranking Member Sheila Cherfilus-McCormick

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