



**Statement of Mike Sicilia, Executive Vice President Industries
Oracle Corporation**

Before the

**U.S. House of Representatives
Committee on Veterans' Affairs
Subcommittee on Technology Modernization**

Hearing on

**"Protecting our Veterans: Patient Safety and the Electronic Health
Record Modernization Program"**

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Introduction:

Chairman Mrvan, Ranking Member Rosendale and members of the Committee, thank you for the opportunity to speak with you today about the Dept. of Veterans Affairs' (VA) Electronic Health Record Modernization (EHRM) program and Oracle Cerner's Electronic Health Records (EHR) system.

I am Mike Sicilia, Executive Vice President for Industries at Oracle. I am responsible for Oracle's Global Health Business Unit, and I am now responsible for Oracle's acquisition of Cerner. I am joined today by Pat Sargent, Senior Vice President of Oracle Cerner Government Services.

I realize this testimony is my last opportunity to make a first impression, so I intend to be completely candid and transparent about where we are, and where we are going, and what changes Oracle can bring to the federal EHR.

Let me start by saying the VA EHRM rollout is clearly behind schedule, below expectations, and on the same course as so many other programs that go over budget. But let me also say that with Oracle's acquisition of Cerner we believe we can get back on track, exceed expectations, and keep our costs in line. We hope to have the Committee's support over the next nine months to demonstrate that we can deliver, and then earn your trust and long-term support so this program can benefit all our nation's veterans.

Oracle is a leading enterprise software company and a hyperscale cloud service provider with more than forty years of experience building and developing some of the most advanced, mission-critical, secure and performant technology around the world for governments, critical infrastructure, and commercial enterprises.

Oracle employs over 160,000 employees with more than 50,000 developers and engineers, and in the last ten years we have spent more than \$56 billion on research and development. Oracle holds more than 18,500 patents worldwide. Oracle is in both the infrastructure business with the world's leading autonomous database as well as the applications business with a full suite of high-performance enterprise applications across all industries. Oracle is also a leading hyperscale cloud service provider with global reach across industries and governments. Of importance here, Oracle operates fully certified government cloud regions under the Intelligence Community's Commercial Cloud Enterprise ("C2E") program and is fully qualified under the DoD's upcoming Joint Warfighter Cloud Capability Program ("JWCC").

Oracle is also a leading cloud applications company with Software as a Service (“SaaS”) products across Enterprise Resource Planning, Human Capital Management, Supply Chain, and Customer Experience as well as industry specific cloud applications in industries ranging from pharmaceuticals to banking and retail to utilities. Our systems are performant, scalable and secure, and there is nothing in the federal EHR system outside of our core capabilities. Importantly, we have a demonstrated track record rewriting extremely complex applications from client-server technology to new, modern, stateless web applications.

As you know, approximately seven weeks ago Oracle completed its acquisition of Cerner. With this acquisition we are bringing together one of the world’s most formidable and capable infrastructure and applications companies with one of the leading healthcare applications companies. Oracle’s engineering expertise brought together with Cerner’s clinical expertise is a very powerful combination.

Our rationale for acquiring Cerner is straightforward. Healthcare IT in this country and around the world is broken and there is a massive opportunity to modernize and innovate. Compared to banking, telecommunications, transportation, utilities, or any other mission critical sector, healthcare IT is furthest behind the modernization curve. Across the industry, EHR systems are dated, often bespoke, and running on-premises. VistA is certainly one example. Our intention is to lead the way with a new generation of modern, cloud, highly performant and secure EHR applications.

In modernizing healthcare IT there is a major opportunity to improve patient outcomes with analytics, machine learning, and virtual care such as telemedicine. There is also a major opportunity to reduce healthcare costs. Finally, there is a major opportunity to decrease the system burden on caregivers. Unlike Cerner alone, Oracle brings an order of magnitude more engineering resources and scale to this formidable challenge.

While Oracle is new to the EHR business, Oracle has years of experience advancing medical research, powering clinical trials, reducing healthcare costs and providing public health authorities and policymakers with essential data to improve public health. During the COVID-19 pandemic, Oracle was honored to collaborate with the Centers for Disease Control (CDC) and the National Institutes of Health (NIH) to support COVID-19 related systems of record. We assisted in electronically pre-screening over six hundred thousand individuals willing to participate in COVID-19 vaccine clinical trials and then supported the CDC with the creation of the v-Safe After Vaccination Health Checker and HPOP ordering portals to support the distribution of vaccine, diagnostic and therapeutic supplies. Finally, we worked with the CDC to build a national data repository for COVID-19 vaccination data in the U.S. All this work was performed and continues to be supported by Oracle at no cost to the government. We are accustomed to handling large, complex tasks when our nation needs it.

I give you all this introduction so that you understand our acquisition of Cerner and assumption of its EHRM contract with VA is well within our capabilities, given our size, expertise, and resources.

You should consider that in effect VA, the Department of Defense (DoD) and the Coast Guard obtained a new, vastly more resourced technology partner overnight to augment Cerner. We also strongly believe in this mission and consider it not only a contractual obligation but a moral one to improve healthcare for our nation's veterans and their caregivers. We intend to exceed expectations.

In my recent meetings with many of the Committee members and other Congressional stakeholders your frustration with the current situation with the VA's EHR system was clear. I have spent the last seven weeks reviewing the issues and working through engineering plans, and I have concluded that there is nothing here that can't be addressed in reasonably short order.

The EHRM program is the largest health IT modernization project in history. To date, the new EHR has been fully deployed for the Coast Guard and is deployed at more than half of DoD medical facilities. At VA, the EHR is deployed at five medical centers and their associated facilities.

When fully deployed across the VA healthcare system, 171 medical centers will go from using 130 different versions of the current VistA EHR to using one single enterprise-wide EHR that is interoperable between the VA, DoD and Coast Guard. That remains an extremely important goal worth protecting because it has meaningful benefit to our nation's veterans.

While I fully appreciate substantial challenges exist – all of which are legitimate – the fact is that more is working than is not. Rollouts to date have been largely successful, and much of the functionality is performing.

That said, it is also clear that rollouts are behind schedule and have had problems. Oracle's leadership has shifted our top talent to working on the DoD/VA EHR system as the company's number one priority. A war room has been established led by a team of very senior Oracle engineers. Our war room is conducting a top-to-bottom analysis of the entire EHR system. We are integrating with the Cerner team, but understand that Oracle brings an order of magnitude larger engineering team than Cerner so we can set urgency to projects and drive a number of deliverables at the same time that previously was not possible.

We aren't there yet, and there is a lot of work to do. If something isn't working, we plan to fix it first and work out the economics later. Patients and providers will always come first, and we won't let contract wrangling get in the way.

Let me be clear. Oracle's goals are two-fold and in this priority order:

- 1) To ensure patient safety above and beyond anything else; and
- 2) To deliver to the VA, DoD and Coast Guard the most modern, intuitive, performant and secure EHR in the world.

We believe this moment is a unique opportunity to leapfrog the VA into the future and make the VA EHRM the gold standard for EHRM globally.

As we focus on these goals, we know there are issues that need to be addressed. Let me address some of them, in turn:

Performance: As is not unusual with commercial EHR systems, the Cerner EHR system is currently running on a dated architecture with technology that is in some cases two decades old. Frankly it is being run on a disparate set of technology and systems that have grown in place over time, making it difficult to manage, support and scale. It isn't unusual in the EHR industry, but it does lead to more frequent outages and degradations of service.

I announced last week our intention to move the Cerner application – with, of course, the approval of the VA, DoD and Coast Guard – to a modern, hyperscale cloud data center within the next six to nine months, which will deliver better performance and stability for the end-user. This is the same Generation 2 Cloud infrastructure that underpins Oracle's customers' most critical workloads in sectors like Financial Services, Telecommunications and Utilities. Candidly we anticipate this change alone will be the single most important change we make in terms of system reliability. It will also provide a scalable, modern platform for us to deliver the kind of future releases users have come to expect like mobility and predictive analytics.

Another advantage of moving the EHR system to Oracle Cloud Infrastructure is that our cloud is a second-generation cloud with security built-in from the start. Infrastructure security patches are applied automatically with no downtime, removing the possibility of human error that is a major cause for breaches. Oracle maintains all the highest government security classifications.

Moving to a new Oracle cloud datacenter will be provided *at no extra cost* to the Coast Guard, DoD or the VA.

We also currently have a team of our best engineers – now with access to all the source code – fixing bugs and upgrading technologies. By way of example, shortly after the closing our team fixed a database bug that caused 13 of the last 15 outages. I can't promise you there won't be another outage, but there is a new team in place with far greater capabilities to assess and resolve service issues quickly and permanently.

Design: The second category of issues relates to system design. In the end, applications are largely processes and workflows. Sometimes a process engineered to make sense on a white board makes no sense in actual practice. If the workflow is not intuitive, if it has too many steps – or clicks – or if it doesn't quite meet the needs of end-users let's change those processes.

Let's be clear, modern applications should not require training or the training should be minimal. Certainly an EHR system has a level of complexity and medical specificity that will require some training, but our goal is to make this system as easy to use as anything else you do online. The best way to succeed is to win over users with user interfaces that are intuitive and functionality that exceeds practitioner's needs. When we do that, we believe we will create greater user satisfaction and combat inertia for acceptance of the new system.

When it comes to design, a case in point is the so-called "unknown queue." I have read the most recent Inspector General's report and I agree entirely with its conclusions regarding the technology and training. Frankly, we welcome the oversight because it helped us focus on the problem. Despite its name, the unknown queue was not a bug, it was a process to account for patient scheduling tasks to facilities or providers that were not recognized by the system. These scheduling tasks were not lost, rather they were routed for manual review and processing.

Much of the problems identified by the IG could have been remedied by training, but we shouldn't require practitioners to sit through training as a remedy for counter-intuitive design. And good engineering and process is always a better answer than more training. The fact is the process initially resulted in far too many actions being routed to this queue and the manual review was not being completed in a timely manner. The "unknown queue" as it stands is a process designed to account for human error rather than designed to mitigate it. So, let's enhance it.

Our plan here is three-fold. First, we have made the drop downs more intuitive by filtering and providing only relevant choices. Second, let's automate on the front end so far fewer records get routed to the queue in the first place. And third, let's embed notification alerts for practitioners so that tasks sent to the queue are not forgotten. We intend to address these issues within weeks and of course at our expense.

Functionality: The third area I want to address is functionality that is not yet developed or not ready for prime time. Maybe the best example here is Pharmacy. My inclination with the pharmacy module is to start over and make pharmacy an example – a showpiece – of what is to come. We now have VA’s requirements, and we intend to use a new model of collaborative development where we will bring developers out to the users and jointly test processes and workflows. In fact, we plan to send a substantial number of military veterans who currently work as developers at Oracle to work with VA pharmacists, clinicians and other end-users to assist in this process.

We intend to develop Pharmacy as a modern, stateless web application, which simply means it is built for use in the cloud with the associated scalability and reliability you expect from popular web sites today. With this development, all the modern mobile, social, and analytical features will be built in. As I said to the Senate Veterans’ Affairs Committee last week, we believe we can have a beta version of the new pharmacy module built and delivered within six to nine months from my announcement last week.

Transparency: Another issue that has clearly been a problem is the dissemination of timely and accurate information, whether positive or negative. That has led to increased oversight by this Committee and by the VA OIG, both of which we welcome. I of course commit to continue to come before this Committee and to work with Committee staff as often as is necessary, but to get ahead of this a bit, we intend to provide an electronic dashboard which will catalogue the items on our “to do” list with full information of expected dates of completion and progress along the way. Hopefully that will supplement the VA’s monthly reporting, assist in the Committee’s tracking and oversight, and keep everyone focused on deliverables and dates. I anticipate this will be ready within weeks.

Cost: I have also recently reviewed the Institute for Defense Analyses (IDA) preliminary cost estimates for the full lifecycle of the EHRM system. While I am not able to critique the report one way or another, I will make four points.

First, as for Oracle Cerner’s part, we intend to deliver the EHR system across the entire VA for the amounts contemplated in the current contract under the current scope. That includes our intention to move to our Oracle Cloud Infrastructure data center, and that includes fixes or upgrades for things like the unknown queue or referrals. Of course, if there are big new pieces of functionality not included in the scope, that’s a different discussion. However, if there are significant cost overruns – as apparently the IDA believes there will be – we are prepared to bear those costs and remain within the existing budget envelope.

Second, having been in this industry for almost 30 years, I am unaware of any point in history where the cost of technology has gone up, not down, nor am I sure I can predict the state or the cost of technology 28 years from now. I would anecdotally point out that 15 years ago the mobile devices and cloud computing didn't even exist. Mobile computing and the cloud have turned the economics of technology upside down.

Third, as I will discuss in a moment, the appropriate technology baseline for this program is not the current Millennium system, but a new, next generation cloud product that will change almost all the underlying assumptions as it relates to the technology. One category where this will be most obvious is the significant cost compression related to infrastructure. IDA of course couldn't have known our plans here as it conducted its analysis.

And, fourth, it seems to me that the question not asked or answered by the IDA analysis is the cost of this program versus the alternative, which I suppose is VistA. It seems intuitive that VistA, by definition, would have a far greater lifecycle cost than a modern cloud EHR at scale. And that once a modern cloud EHR is fully deployed, cost benefits from improved healthcare delivery will exist. But, of course, all of this is for the Committee to assess over the coming year.

Next Gen Millennium: Lastly, I want to discuss a little about the future because we do not believe the opportunity ends with the full VA rollout of the current system. The fact is that EHR systems globally – and this is equally true for VA as it is for commercial, private healthcare facilities – provided by Cerner or anyone else – are dated and are frankly stuck in the late 1990s.

Oracle plans to invest substantial resources to rewrite the entire Cerner EHR as a modern stateless web application. The system will have a modern user interface – including voice recognition. It will be mobile friendly, meaning users can bring their own device. Analytics will be built-in from the ground up. Not only will you get the longitudinal record from enlistment through retirement and full-time end-of-life care, but you get the hierarchical view of the entire DoD/VA population against which you can deploy analytics, AI, and machine learning. We intend to keep VA, DoD and Coast Guard updated as we work on this engineering and of course to seek appropriate approvals for deployment as necessary.

This rewrite will not happen in the next year, but I'm confident we will have it done well before the contract term of 2028. I know it's hard to imagine now when we have trouble looking past present concerns about system stability, the unknown queue or bloated budgets, but I ask you to remember you have a new partner in Oracle that has a track record of delivering on just these kind of commitments. We will show you a bit of what's to come with the Pharmacy beta.

And I want to be clear, our plan – and our commitment to you – is to deliver all of this functionality as an upgrade to the current system *at no extra cost to the government*.

Conclusions:

We recognize the list of items of concern to the Committee could grow as quickly as it shrinks, and other issues will come up that need to be addressed. We are committed to providing the Committee with full transparency as we move forward addressing these and other issues. You can be assured we are triaging all the issues that we have been made aware of to-date and working through them with appropriate clinical and engineering expertise where needed. Our teams are analyzing whether there are ways to simplify and accelerate capabilities and improve end-user experience and adoption. This is an enterprise-wide system, but we understand end-users have different preferences and needs and it will be designed so they can configure it to work for them. To be clear, we are dedicated to providing whatever resources are necessary to deliver to the DoD and VA a system that exceeds expectations without exceeding the contracted cost.

Let me end by saying that Oracle is excited to be the VA's and DoD's new partner on the EHRM project. We are confident that our energy, commitment and resources will benefit this program greatly. With a little time, we can deliver for all the veterans who served our nation and deserve nothing but the best, as well as for our current service members who will one day be a part of our veteran community.

We hope you will support us in this endeavor and look forward to working with the Committee as we move forward. I look forward to your questions. Thank you.