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Statement for the Record of Mike Sicilia
Executive Vice President for Global Industries
Oracle Corporation

Before the

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

Hearing on
"Electronic Health Record Modernization Deep Dive: System Uptime"

November 15, 2023

Introduction:

Chairman Rosendale, Ranking Member Cherfilus-McCormick and members of the Subcommittee, thank you for the opportunity to provide a Statement for the Record for today's hearing. I regret having an unavoidable scheduling conflict that prevents me from being with you in-person.

In this Statement for the Record I will provide an update on Oracle's work on the Department of Veterans Affairs' (VA) Electronic Health Record Modernization (EHRM) program, specifically related to system performance as measured by Outage Free Time (OFT), Incident Free Time (IFT) and User Interruptions.

Outage Free Time:

At the time of Oracle's acquisition of Cerner in June 2022, one of the top issues impacting the federal EHR system was outages. We made stabilizing the system to prevent outages our top priority, and our efforts have paid off.

Our contractual obligation since June 2023 is for Oracle-owned OFT to be 99.95 percent or higher per month. (This more stringent obligation than the previous one of 99.9 percent was agreed to in the new contract signed in May 2023.)

For 12 of the last 13 months, Oracle-owned OFT has been at 100 percent. This means that in each of those 12 months the EHR system components operated or owned by Oracle, mainly the Cerner Millennium EHR, have been performing with 100 percent uptime, without an outage.

The one month in which the OFT obligation was missed was April 2023, due to two systems related incidents that caused OFT to drop to 99.319 percent. Both of these incidents went through our comprehensive Corrective Action / Preventative Action (CAPA) program for a full technical review. As a result, Oracle took immediate action to harden our layered technologies and have modified significant aspects of our domain restart sequencing to resolve the core issue.

These, as well as all major incidents, are thoroughly and transparently discussed with lessons learned along with short and long term irreversible corrective actions to prevent reoccurrence. Every week Oracle conducts detailed operational reviews with VA EHRM-IO and DoD PMO leaders. There has been significant improvement in system performance and OFT since the time of the acquisition, which reflects the strong engineering expertise Oracle has brought to this project.

Oracle is confident the EHR system is capable of taking on new users and continuing to perform well. The last weekend of October 2023, the EHR was deployed to DoD's Asia Pacific

region medical facilities. This wave of deployments completed DoD's OCONUS medical facilities. Other than the joint DoD-VA facility in Chicago, DoD is now fully deployed across its domestic and global healthcare system. In the most recent wave, DoD has added 8,000 new users to the federal EHR system, with a total of 184,000 across DoD. These increases in user-load have been accomplished while maintaining OFT as required under our contract.

Incident Free Time:
Instances of degradations in service for the EHR, but not a full outage, are tracked in IFT. We know that these degradations are very frustrating to users and have directed significant engineering resources to make improvements in IFT. After reducing outages, improving IFT has been our next highest priority, and it is trending in the right direction.

Acknowledging that improving IFT needed to be a high priority focus for both Oracle and VA, we agreed to add a new obligation in the renegotiated contract to measure our performance and increase accountability. We did this knowing that our work to increase IFT is in progress and that there could be months, in the short run, where meeting the obligation may be difficult, but with the belief that the work we are doing will succeed in the long-run.

Thus, under the new contract, we were obligated to attain 93 percent or higher IFT for the months of June, July and August 2023, and we are obligated to attain 95 percent or higher IFT each month starting in September 2023 and moving forward.

In the months of May, June and July 2023 Oracle-responsible IFT for VA was greater than 95 percent. In September 2023, Oracle-responsible IFT for VA was 96.41 percent. However, in August 2023, IFT was 91.93 percent, and we accordingly issued a credit under the terms of the new contract.

A significant contributor to the IFT result in August 2023 were incidents related to the Block 9 upgrade. IFT would have been 95.44 percent if the incidents related to Block 9 were excluded. Looking back over past years, approximately half of IFT incidents are a result of change introduced into the system, as in block or cube updates. This has been true for 2023 with approximately half of all Oracle-responsible IFT incidents being related to the Block 8 and 9 upgrades conducted in February and August, respectively.

Oracle has taken steps to assess the root cause of the issues impacting IFT and to prevent recurrence in future block or cube updates. We are driving improvement by running our CAPA program across 70 percent of all VA incidents, overhauling our procedures for release management related to block, cube and other updates, and establishing clear accountability to product, platform and service performance.

As a result, the impact to IFT in the August Block 9 upgrade was 2,372 minutes compared with 3,533 minutes in the February Block 8 upgrade, a reduction of 1,161 minutes (33 percent less). Of note, this reduction for Block 9 was achieved with an upgrade package that was nearly twice as large as Block 8.

Overall IFT of course is impacted not only by Oracle but also by VA, DoD and other federal users and third parties. One positive step that we have taken with VA and DoD to improve overall IFT is increased joint testing prior to block or cube upgrades going live. Moving forward, we also will be validating third party products that are embedded in the EHR because that was a driver for degradations with Block 9.

We worked closely with DoD in preparing for OCONUS deployments of the EHR to reduce degradations and impacts to IFT. We found that improving VPN and network hardware as well as ensuring users have up-to-date devices made a difference in improving performance. We are conducting similar work with VA to improve performance and reduce impacts to IFT.

User Interruptions:
A user interruption is most frequently experienced when the EHR freezes, crashes or hangs for a period of more than five seconds.

In the Block 9 upgrade conducted in August 2023, updates were made to reduce user interruptions across the federal EHR, including:
- Eighteen freeze and hang improvements that reduce freezes by approximately 14,000 freezes per month (23 percent improvement);
- Twelve error and response time improvements across registration, pharmacy, labs, problem lists, orders and more for more than 20,000 users.

The new contract that was agreed to earlier this year requires that we meet three different obligations regarding user interruptions.

First, P50 user interruptions requires that 50 out of 100 users must average five or fewer daily interruptions. Since January 2023, P50 interruptions have been nearly eliminated and met the contractual obligation each month, with an average of 0.01 since May 2023, and with Block 9 improvements it was 0.00 in September 2023. This means that 50 out of 100 users of the EHR system experienced no interruptions.

Second, P90 user interruptions requires that 90 out of 100 users must average ten or fewer daily interruptions. Since January 2023, P90 interruptions have been reduced by 55 percent and met the contractual obligation each month, with an average below 3.5 since May 2023, and with Block 9 improvements it was 2.53 in September 2023.

Third, P99 user interruptions requires that 99 out of 100 users must average fifty or fewer daily interruptions. Since January 2023, P99 interruptions have been reduced by 31 percent and met the contractual obligation each month, with an average at 26 or below since May 2023, and with Block 9 improvements it was 19.89 in September 2023.

Reset/Future Work:
While significant progress toward system stability has been made over the last year and a half, the work of continuous improvements for the federal enclave, as with any system of its size and complexity, is and will be ongoing.

As we look ahead and leverage the foundational work from the last eighteen months, the focal points of the next phase of continuous improvement effort will be across six key areas: architectural changes; product improvements; release management; testing and testing automation, change management, and the ongoing effort to move to Oracle Cloud Infrastructure (OCI).

While such work is incremental in nature, the continuous progress will be reflective in both the upcoming Block 10 upgrade and the deployment of the system at Lovell Federal Health Care Center (FHCC) in North Chicago in March 2024.

Block 10
Building off the success and leveraging lessons learned from the Block 9 upgrades in August 2023, Block 10 – scheduled for February 2024 – includes over 30 tracking actions reflecting our key areas of focus. These enhancements will continue to improve change controls, layer in additional third party testing, expand testing environments to troubleshoot issues before they are problems, and continue to reduce manual steps in the process.

Lovell Federal Health Care Center
We continue to be highly focused on the success of the deployment of the system at Lovell FHCC. This includes continued checks on the capacity of the system across all components of the federal enclave, weekly internal readiness reviews across teams, interface validation and enhanced testing to account for the unique aspects of deploying at a joint facility.

Closing:
Oracle is committed to working with VA and DoD to continue to improve the performance of the EHR system and ensure that it is prepared for additional scaling when VA resumes deployments. Thank you for the opportunity to provide this update on system performance and uptime, and please let us know if there are any follow-up questions.