VETERANS HEALTH ADMINISTRATION

Medication Management Deficiencies after the New Electronic Health Record Go-Live at the Mann-Grandstaff VA Medical Center in Spokane, Washington

Medication Management Deficiencies after the New
Electronic Health Record Go-Live at the Mann-Grandstaff
VA Medical Center in Spokane, Washington

Executive Summary

This healthcare report is the first in a trilogy of reports that address allegations associated with implementation of the new electronic health record (new EHR) at the Mann-Grandstaff VA Medical Center (facility) in Spokane, Washington, received after its go-live date in October 2020.[1]

Due to the magnitude of allegations the VA Office of Inspector General (OIG) received regarding the impact of the new EHR implementation on patient care after go-live at the facility, the OIG initiated two separate, but simultaneous healthcare inspections. The OIG conducted this inspection to assess a range of allegations regarding medication management challenges and potential patient safety issues associated with implementation of the new EHR at the facility.[2] The other inspection focused on allegations related to care coordination deficiencies following implementation of the new EHR at the facility.[3] These two inspections were limited to a review of the allegations received and did not proactively determine whether other issues existed.

During the course of the two inspections, the OIG recognized challenges with identifying, tracking, and resolving problems with the new EHR after go-live at the facility. The OIG discussed those challenges and potential underlying factors related to deficiencies identified in the medication management and care coordination inspections in a third report.[4]

Following the October 24, 2020, go-live date of the new EHR at the facility, the OIG received a range of complaints related to deficiencies in medication management associated with implementation of the new EHR at the facility. The OIG organized the multiple allegations concerning medication management into three categories (see table 1).

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[1] The second report is *Care Coordination Deficiencies after the New Electronic Health Record Go-Live at the Mann-Grandstaff VA Medical Center in Spokane, Washington*. The third report is *Ticket Process Concerns and Underlying Factors Contributing to Deficiencies after the New Electronic Health Record Go-Live at the Mann-Grandstaff VA Medical Center in Spokane, Washington.*

[2] "Federal Electronic Health Record Modernization," Electronic Health Record Modernization Integration Office, accessed April 21, 2021, https://www.oit.va.gov/org/fehrm/index.cfm. "An EHR is software that's used to securely document, store, retrieve, share, and analyze information about individual patient care. It enables a digital version of a patient [health] record."

[3] VA OIG, *Care Coordination Deficiencies after the New Electronic Health Record Go-Live at the Mann-Grandstaff VA Medical Center in Spokane, Washington*, Report No. 21-00781-109, March 17, 2022, https://www.va.gov/oig/pubs/VAOIG-21-00781-109.pdf.

[4] VA OIG, *Ticket Process Concerns and Underlying Factors Contributing to Deficiencies after the New Electronic Health Record Go-Live at the Mann-Grandstaff VA Medical Center in Spokane, Washington*, Report No. 21-00781-108, March 17, 2022, https://www.va.gov/oig/pubs/VAOIG-21-00781-108.pdf.

Table 1. Allegations by Category

Category	Allegations
1. Data Migration	
Patient Contact Information	Patient contact information was not accurately imported into the new EHR.
Medication Lists	Medication lists were not accurately imported into the new EHR.
	Medication lists were imported into the new EHR as free text.
Medication Formulary	The formulary in the new EHR included medications not available at the facility and increased risks for errors when providers placed medication orders.
2. Medication Orders	
Discontinuance of Future Orders†	The new EHR discontinued future medication orders written by providers.
	The new EHR discontinued future medication orders, requiring providers to write *stat* or immediate orders and causing medication delays for patients.*
	Because the new EHR discontinued future medication orders, providers who were going to be absent, arranged for colleagues to write orders for recurring medications, which created inefficiencies, increased risks for orders being missed, and possible patient safety issues.
Placing Unauthorized Orders	In the new EHR, registered nurses were able to order medications without the medication orders being reviewed and approved by the medical provider.
Processing of Outpatient Orders	Pharmacy staff using the new EHR failed to process outpatient medication orders.
	Some outpatient medication orders failed to be processed and appeared missing to non-pharmacy staff.
Lack of Notification	The new EHR did not notify prescribing providers and pharmacists about future recurring injectable medication orders that were discontinued or outpatient medication orders that did not process.
Alerts	Medication alerts in the new EHR were confusing and providers did not receive training on them.
Prescription Status	In the new EHR, providers were unable to assess the status of a filled prescription order.
Tracking Mailed Controlled Substances‡	In the new EHR, pharmacy staff were unable to consistently track mailed controlled substance prescriptions.
	In the new EHR, non-pharmacy staff were unable to consistently track mailed controlled substance prescriptions.
Prescription Drug Monitoring Program (PDMP)**	After electronic completion of a PDMP query, providers progress notes were not automatically populated in alignment with Veterans Health Administration (VHA) policy, which required additional work for providers.

3. Medication Reconciliation	
Medication List Continuity	Staff had to update medication lists at every visit because updated medication information did not carry over to the next appointment.
	Medications disappeared from the reconciled medication list and medication lists were inaccurate following reconciliation.
	Staff manually entered medication lists following medication reconciliation, which introduced increased risk for error and possible safety concerns.
	Medication reconciliation required a significant amount of time to complete per patient.
Medication List Inaccuracies	Discontinued and expired medications were not viewable on medication lists during medication reconciliation, creating a patient safety issue.
	Medications administered in clinic, including recurring injectable medications administered once, did not appear on medication lists, creating a patient safety issue.
Medication Lists and Patient Use	Medication lists were not patient-friendly.

Source: OIG analysis of allegations.

* Merriam-Webster.com Dictionary, "stat," accessed November 26, 2021, https://www.merriam-webster.com/dictionary/stat. Stat is a Latin word meaning immediately.

† Future orders were used pre-go-live in some clinic settings to order medications that would be administered at subsequent clinic visits. A future order was reviewed for accuracy by the pharmacist and stayed active until additional action (such as administration of the medication) was taken.

‡21 U.S. Code § 802 – Definitions. A controlled substance is "a drug or other substance" defined by law and organized into five schedules or classes that determine the potential for abuse or harm.

**VHA Directive 1108.07, Pharmacy General Requirements, March 10, 2017. A PDMP is a "state-controlled substance monitoring program…these programs require pharmacies registered in their state to enroll and transmit (electronically) records of each dispensing of a controlled substance."

Data Migration Findings

The OIG substantiated deficiencies in the migration of patient information to the new EHR. Contact information such as names, addresses, telephone numbers, and email addresses for patients with continuing Department of Defense (DoD) affiliations were overwritten by outdated DoD data during migration to the new EHR. DoD data remained the primary linked data source and contact information updated by facility staff reverted to the outdated DoD data each night at midnight for patients with DoD affiliations. In addition, addresses that did not meet the new EHR's formatting standards, such as post office boxes, failed to import into the new EHR. The data migration failures disrupted processes for healthcare staff who rely on accurate contact information to communicate with patients and for the VA mail order pharmacy (Consolidated

Mail Outpatient Pharmacy) that relies on correct mailing addresses to fill and mail patients' prescription medications.[5]

Interim measures to manually correct information were unsuccessful as the DoD data remained the primary linked data source. Pharmacy staff contacted patients to check on medications and filled prescriptions at the facility pharmacy as needed. Patients alerted facility staff of prescriptions not arriving by contacting providers, the call center, or the patient advocate; or by presenting to primary care or the pharmacy. The additional calls and visits increased facility staff workload.

Data migration concerns related to discrepancies between DoD and VHA's legacy EHR were a known issue before the new EHR went live at the facility. VA Office of Electronic Health Record Modernization (VA OEHRM) staff identified the cause for the incorrect patient contact information as related to communication between the VHA and DoD systems. The OIG could not determine when the issue would be resolved because VA OEHRM staff did not provide an estimated time frame for resolution.[6]

Medication lists, that were migrated as free text per VHA's request, did not import accurately.[7] Staff pieced together accurate lists by searching the new EHR, Veterans Health Information Systems and Technology Architecture (VistA), the legacy VA EHR, and Joint Longitudinal Viewer.[8] VA OEHRM staff indicated that because VHA had requested free text migration, the importation of free text was not considered to be a problem. Causes, as reported by VA OEHRM staff, for the medication list inaccuracies included field mapping errors and date range filter optimizations. While some improvements had been made at the time of the OIG's inspection, meetings related to defining mappings and assessing the safety of those mappings were ongoing. The OIG could not determine when this issue would be completely resolved.

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[5] "Pharmacy Benefits Management Services: VA Mail Order Pharmacy," U.S. Department of Veterans Affairs, accessed June 8, 2021, https://www.pbm.va.gov/PBM/CMOP/VA_Mail_Order_Pharmacy.asp. The Consolidated Mail Outpatient Pharmacy is an off-site facility with automated systems that provides approximately 80 percent of outpatient prescriptions to veterans by mail.

[6] When discussing information provided by VA OEHRM in documents or learned during interviews with a VA OEHRM leader(s), manager(s), or staff member(s), the OIG uses the term *VA OEHRM staff* (whether singular or plural) generically to indicate the source of the information.

[7] "Collecting Quality Data for Performance Management," *Essential Access Health*, accessed January 13, 2022, https://www.healthit.gov/sites/default/files/collecting_quality_data_lg_-_essential_access_health.pdf. Free text is a type of electronic data field and consists of data without structure or organization. A drawback of a free text field is that it cannot be used in a systematic way (for example, to sort, filter, or analyze the field).

[8] "Joint Longitudinal Viewer (JLV) 2.9.4 User Guide," U.S. Department of Veterans Affairs, April 2021, accessed January 14, 2022, https://www.va.gov/vdl/documents/Clinical/Joint_Longitudinal_Viewer_(JLV)/jlv_2_9_4_user_guide.pdf. The Joint Longitudinal Viewer (formerly Joint Legacy Viewer) is a web application with an interface that provides an integrated, read-only view of EHR data from VA, DoD, and community partners.

A VA medical facility maintains a medications formulary that must offer items listed on the VA National Formulary.[9] The post-go-live facility formulary did not identify items as formulary or nonformulary in the new EHR and included medications that were not available at the facility.[10] As a consequence, providers unknowingly selected nonformulary or unavailable items. The incorrect selections increased risks for errors, potentially raised costs, and created inefficiencies for providers and pharmacy staff. Quick orders created for the most common medications improved the selection process. In June 2021, Cerner implemented a standardized process for ordering prior authorization and nonformulary medications (virtual view filtering). The new process timing coincided with the completion of the OIG review, so there was no analysis of the effectiveness of the new process.

Table 2. Summary of Data Migration Allegations and Findings

Data Migration	Allegations	OIG Determination	Status*
Patient Contact Information	Patient contact information was not accurately imported into the new EHR.	Substantiated	Unresolved
Medication Lists	Medication lists were not accurately imported into the new EHR.	Substantiated	Unresolved
	Medication lists were imported into the new EHR as free text.	Substantiated	Unresolved
Medication Formulary	The formulary in the new EHR included medications not available at the facility and increased risks for error when providers placed medication orders.	Substantiated	Unresolved

Source: OIG analysis.

* Status of issues reflect the time frame from late January through early June 2021.

Medication Order Findings

The OIG substantiated the allegations concerning medication orders. One of the several medication order deficiencies that occurred after go-live affected future clinic orders. Some clinic providers entered recurring future orders for medications that would be administered on subsequent outpatient visits. The new EHR was not configured to support future clinic orders and automatically discontinued them. Providers were not notified of the discontinuance. Upon the patient's arrival to clinic, nurses attempted to accommodate administration of the recurring medication to the patient by entering orders for approval by the provider and removing medications from automated dispensing machines as a work-around. While facility staff

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[9] VHA Directive 1108.08(1), *VHA Formulary Management Process*, November 2, 2016, amended August 29, 2019. The VA National Formulary is a comprehensive list of approved medications and supplies that providers may order for patients at any VA medical facility.

[10] The facility formulary list was incorrectly populated with some non-VA facilities or DoD options.

expected the new EHR to eventually include the option for future clinic orders in non-oncology clinics, the OIG was not provided specific information from VA OEHRM staff as to when the future clinic medication order function issue would be resolved.[11]

The OIG found that, in the new EHR, if registered nurses entered multiple medication orders, only the initial order was held pending provider authorization while the remaining orders did not await a provider authorization as required. At the time of the OIG's inspection, VA OEHRM staff's proposed solution was being reviewed for approval through the change management process.

The OIG substantiated that some medication orders failed to process but not because pharmacy staff missed the orders as alleged. Unprocessed medication orders were redirected to queues that were visible to pharmacy staff. Non-pharmacy staff who did not have visibility of the queues misattributed unprocessed orders to pharmacy staff not taking action. Pharmacy staff checked the queues and took action to address errors and process prescriptions.

Further, the new EHR was not configured to notify staff when future orders were discontinued or orders did not process. Without notification, staff were unaware of the need to take other action and could not resolve the matter timely. VA OEHRM staff stated that the new EHR did not have the built-in capability to support future clinic orders but that development was in the pipeline.

The OIG found that, in the new EHR, medication alerts, which are messages sent to providers to aid in clinical decision-making, were confusing. Providers reported difficulties discerning their urgency. Providers reported not receiving training or receiving incomplete training related to alerts. The issue was unresolved at the time of the OIG's inspection.

The OIG learned that non-pharmacy staff were able to view the status of prescriptions but due to system functionality and pertinent information being stored on different queues, the information was not always accurate. The inaccuracies led staff to contact pharmacy staff for assistance, which was inefficient and time-consuming. VA OEHRM staff did not provide an expected date of resolution of the matter.

The OIG substantiated that some facility staff had difficulties tracking mailed controlled substances. Pharmacy staff were able to track such prescriptions but non-pharmacy staff did not have the same ability. The OIG found that the lack of system functionality and the inability for non-pharmacy staff to view complete prescription tracking information in the new EHR led to non-pharmacy staff reviewing inaccurate tracking information.

When prescribing certain medications, providers must conduct a Prescription Drug Monitoring Program (PDMP) query to ascertain whether the same or similar medications have been

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[11] The OIG was informed that future orders were an available option in the oncology clinic.

dispensed to the patient.[12] According to VHA policy, VA providers are responsible for "documenting relevant PDMP query results in the local pre-defined progress note titled *State Prescription Drug Monitoring Program* within the Computerized Patient Record System (CPRS), upon receipt of PDMP query results."[13] The pre-defined note within the patient's EHR affords providers an easily identifiable and reviewable method to ensure patient safety when prescribing controlled substances.

The OIG noted that the electronic completion of a PDMP query in the new EHR did not automatically populate the action in a progress note in the patient's EHR. Facility staff informed the OIG that evidence a query was completed could be determined by a review of the computer workflow but not by a review of the patient's EHR. The OIG received conflicting opinions from facility leaders and VA OEHRM staff whether the new EHR documentation process met VHA's documentation requirements.

Table 3. Summary of Medication Orders Allegations and Findings

Medication Orders	Allegations	OIG Determination	Status*
Discontinuance of Future Orders	The new EHR discontinued future medication orders written by providers.	Substantiated	Unresolved
	The new EHR discontinued future medication orders, requiring providers to write stat or immediate orders and causing medication delays for patients.	Substantiated	Unresolved
	Because the new EHR discontinued future medication orders, providers who were going to be absent arranged for colleagues to write orders for recurring medications, which created inefficiencies, increased risks for orders being missed, and possible patient safety issues.	Substantiated	Unresolved
Placing Unauthorized Orders	In the new EHR, registered nurses were able to order medications without the medication orders being reviewed and approved by the medical provider.	Substantiated	Unresolved
Processing of Outpatient Orders	Pharmacy staff using the new EHR failed to process outpatient medication orders.	Not Substantiated	Not Applicable
	Some outpatient medication orders failed to be processed and appeared missing to non-pharmacy staff.	Substantiated	Unresolved

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[12] The PDMP is a state-controlled substance monitoring program that requires pharmacies to transmit records each time a controlled substance is prescribed and given to a patient.

[13] VHA Directive 1306(1), *Querying State Prescription Drug Monitoring Programs (PDMP)*, October 19, 2016, amended October 21, 2019.

Lack of Notification	The new EHR did not notify prescribing providers and pharmacists about future recurring injectable medication orders that were discontinued or outpatient medication orders that did not process.	Substantiated	Unresolved
Alerts	Medication alerts in the new EHR were confusing and providers did not receive training on them.	Substantiated	Unresolved
Prescription Status	In the new EHR, providers were unable to assess the status of a filled prescription order.	Substantiated	Unresolved
Tracking Mailed Controlled Substances	In the new EHR, pharmacy staff were unable to consistently track mailed controlled substance prescriptions.	Not Substantiated	Not Applicable
	In the new EHR, non-pharmacy staff were unable to consistently track mailed controlled substance prescriptions.	Substantiated	Unresolved
PDMP	After electronic completion of a PDMP query, providers' progress notes were not automatically populated in alignment with VHA policy, which required additional work for providers.	Substantiated	Unresolved

Source: OIG analysis.

* Status of issues reflect the time frame from late January through early June 2021.

Medication Reconciliation Findings

The OIG substantiated the allegations concerning medication reconciliation. VA providers are expected to conduct medication reconciliation, a process that involves a review of patients' EHRs and information supplied by patients to identify discrepancies.[14] When discrepancies are found, the medication list is corrected to display current medications. Inaccurate or incomplete medications lists in patients' EHRs contribute to the risk of misidentifying current medications and failure of the medication reconciliation process.

Due to the importation problems discussed above (migration of free text with inaccuracies due to mapping failures), staff manually corrected many medication lists during post-go-live medication reconciliations. Interviewees reported a lack of training related to the proper way to enter medication reconciliation modifications in the new EHR, which led to the failure of corrected patient medication lists to stay corrected.

Additionally, the new EHR medication lists did not include discontinued, expired, and clinic medications. Staff had to review other systems to gain a complete medication picture, which was both time-consuming and subject to human error. Providers rely on information entered into the EHR to make treatment decisions. The lack of accurate medication documentation may negatively affect providers' treatment decisions.

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[14] VHA Directive 2011-012, *Medication Reconciliation*, March 9, 2011.

As part of the medication reconciliation process, providers must communicate the corrected list to the patient. When necessary, clinicians printed out medication lists and provided the print-outs to patients. The new EHR printable medication lists did not include patient-friendly instructions. For example, a list reviewed by the OIG included Latin abbreviations (*TID* rather than three times a day and *QID* rather than four times a day) to indicate frequency. Additionally, some patient instructions were missing from medications imported from the legacy EHR into the new EHR medication lists. Instead of a complete set of instructions, the term "legacy" appeared.

Staff developed time-consuming work-arounds (researched records and entered information manually) that resolved immediate patient needs but bypassed system checks and risked human errors. VA OEHRM staff were unable to provide the OIG information about resolution of the identified issues.

Table 4. Summary of Medication Reconciliation Findings

Medication Reconciliation	Allegations	OIG Determination	Status*
Medication List Continuity	Staff had to update medication lists at every visit because updated medication information did not carry over to the next appointment.	Substantiated	Unresolved
	Medications disappeared from the reconciled medication list and medication lists were inaccurate following reconciliation.	Substantiated	Unresolved
	Staff manually entered medication lists following medication reconciliation, which introduced increased risk for error and possible safety concerns.	Substantiated	Unresolved
	Medication reconciliation required a significant amount of time to complete per patient.	Substantiated	Unresolved
Medication List Inaccuracies	Discontinued and expired medications were not viewable on medication lists during medication reconciliation, creating a patient safety issue.	Substantiated	Unresolved
	Medications administered in clinic, including recurring injectable medications administered once, did not appear on medication lists, creating a patient safety issue.	Substantiated	Unresolved
Medication Lists and Patient Use	Medication lists were not patient-friendly.	Substantiated	Unresolved

Source: OIG analysis.
* *Status of issues reflect the time frame from late January through early June 2021.*

Conclusion

The OIG assessed a range of allegations regarding medication management challenges associated with implementation of the new EHR. At the time of the inspection, many of the identified problems remained unresolved. The OIG is concerned that deployment of the new EHR without resolution of the deficiencies presents risks to patient safety.

Further discussion of allegations related to care coordination issues after go-live, ticket process concerns identified by the OIG during its evaluation of the allegations, and underlying factors related to all substantiated allegations can be found in the second and third reports of the OIG's trilogy of reports on this matter.

Throughout the inspection, the OIG found facility leaders and staff encountered challenges with the new EHR but remained undeterred and dedicated to servicing patients, despite the added burden of COVID-19 pandemic stressors. The OIG recognized the hard work of all involved and the challenges associated with implementing the new EHR for the largest integrated healthcare system in the United States.

The OIG made two recommendations to the Deputy Secretary, one related to ensuring that substantiated and unresolved allegations noted in this report are reviewed and addressed and the other to notify the OIG of any other medication management issues identified subsequent to this healthcare inspection.[15]

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[15] Recommendations related to OIG-identified underlying factors contributing to deficiencies described in the first and second of the trilogy reports are issued in the third report— *Ticket Process Concerns and Underlying Factors Contributing to Deficiencies after the New Electronic Health Record Go-Live at the Mann-Grandstaff VA Medical Center in Spokane, Washington,* Report No. 21-00781-108, March 17, 2022, https://www.va.gov/oig/pubs/VAOIG-21-00781-108.pdf.

Comments

The Deputy Secretary concurred with the recommendation to ensure that substantiated and unresolved allegations discussed in this report are reviewed and addressed. The Deputy Secretary did not concur with the recommendation to ensure that medication management issues related to the new electronic health record identified subsequent to this inspection be reported to the Office of Inspector General for further analysis. (See Appendix C for the Deputy Secretary's response.) Given the number of significant patient safety issues identified in this report, the OIG remains concerned about the ability of the new EHR to support the delivery of high quality healthcare. VA also has an obligation under the IG Act as amended to provide promptly all information requested by the OIG. Thus, VA already has the obligation to provide this information regardless of whether VA concurs with the recommendation. The OIG further addresses the nonconcurrence of the second recommendation in Appendix C.

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Contents

Abbreviations

COVID-19	coronavirus disease 2019
DoD	Department of Defense
EHR	electronic health record
EHRM	electronic health record modernization
OEHRM	Office of Electronic Health Record Modernization
OIG	Office of Inspector General
VHA	Veterans Health Administration
VISN	Veterans Integrated Service Network
VistA	Veterans Health Information Systems and Technology Architecture

Foreword

This healthcare report is the first in a trilogy of reports that address allegations associated with implementation of the new electronic health record (new EHR) at the Mann-Grandstaff VA Medical Center in Spokane, Washington, after its go-live date in October 2020:

- *Medication Management Deficiencies after the New Electronic Health Record Go-Live at the Mann-Grandstaff VA Medical Center in Spokane, Washington*

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

- *Ticket Process Concerns and Underlying Factors Contributing to Deficiencies after the New Electronic Health Record Go-Live at the Mann-Grandstaff VA Medical Center in Spokane, Washington*.

Throughout the inspection, the OIG found facility leaders and staff encountered challenges with the new EHR but remained undeterred and dedicated to servicing patients, despite the added burden of COVID-19 pandemic stressors. The OIG recognized the hard work of all involved and the challenges associated with implementing the new EHR for the largest integrated healthcare system in the United States.

Medication Management Deficiencies after the New
Electronic Health Record Go-Live at the Mann-Grandstaff
VA Medical Center in Spokane, Washington

Introduction

The VA Office of Inspector General (OIG) conducted an inspection to assess a range of allegations received regarding medication management deficiencies and potential patient safety issues associated with implementation of the new electronic health record (new EHR) system at the Mann-Grandstaff VA Medical Center (facility) in Spokane, Washington.[1] Due to the magnitude of allegations the OIG received regarding the impact of the new EHR implementation on patient care after go-live at the facility, the OIG initiated two separate, but simultaneous healthcare inspections. This inspection focused on allegations related to medication management deficiencies while the other inspection focused on allegations related to clinical care coordination challenges.[2] These two inspections were limited to a review of the allegations received and did not proactively determine whether other issues existed.

During the inspections, the OIG recognized challenges with identifying, tracking, and resolving problems with the new EHR after go-live at the facility. The OIG discussed those challenges and potential underlying factors related to deficiencies identified in the medication management and care coordination inspections in a third report.[3]

Given the overlapping focus of the three reports on the impact of the new EHR implementation at the facility after go-live, some sections of this report are replicated within the companion reports to provide pertinent information independently for the readers of each respective report.

Facility Background

The facility, part of Veterans Integrated Service Network (VISN) 20, includes four community clinics located in three states.[4] The facility operates 24 hospital and 34 community living center beds.[5] Patient referrals for tertiary care are coordinated with the VA Puget Sound Health Care

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[1] "Federal Electronic Health Record Modernization," Electronic Health Record Modernization Integration Office, accessed April 21, 2021, https://www.oit.va.gov/org/fehrm/index.cfm. "An EHR is software that's used to securely document, store, retrieve, share, and analyze information about individual patient care. It enables a digital version of a patient [health] record."

[2] VA OIG, *Care Coordination Deficiencies after the New Electronic Health Record Go-Live at the Mann-Grandstaff VA Medical Center in Spokane, Washington*, Report No. 21-00781-109, March 17, 2022, https://www.va.gov/oig/pubs/VAOIG-21-00781-109.pdf.

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[4] The community clinics are in Wenatchee, Washington; Libby, Montana; and Ponderay and Coeur d'Alene, Idaho.

[5] VHA Handbook 1142.01, *Criteria and Standards for VA Community Living Centers (CLC)*, August 13, 2008. A VA community living center was formerly known as a nursing home care unit. A community living center provides a skilled nursing environment for patients needing short and long stay services.

System and the VA Portland Health Care System.[6] From October 1, 2019, through September 30, 2020, the facility served over 35,000 patients. The Veterans Health Administration (VHA) classifies the facility as the least complex type of facility.[7]

VA Electronic Health Record Modernization Project

In June 2017, VA began the process of acquiring a new electronic health record. The course of that acquisition and deployment of the new EHR is detailed in appendix A. Prior OIG reports published on VA's implementation of the new EHR are listed in appendix B.

Allegations

Following the October 24, 2020, go-live date of the new EHR at the facility, the OIG received a range of complaints related to deficiencies in medication management associated with implementation of the new EHR at the facility.[8]

The OIG organized the allegations into three categories (see table 1) and initiated an inspection to evaluate the alleged deficiencies.

Table 1. Allegations by Category

Category	Allegations
1. Data Migration	
Patient Contact Information	Patient contact information was not accurately imported into the new EHR.
Medication Lists	Medication lists were not accurately imported into the new EHR.
	Medication lists were imported into the new EHR as free text.
Medication Formulary	The formulary in the new EHR included medications not available at the facility and increased risks for errors when providers placed medication orders.
2. Medication Orders	
	The new EHR discontinued future medication orders written by providers.

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[6] VHA Handbook 1142.01, *Criteria and Standards for VA Community Living Centers (CLC)*, August 13, 2008. A VA community living center, formerly known as a nursing home care unit, provides a skilled nursing environment for patients needing short and long stay services.

[7] VHA Office of Productivity, Efficiency and Staffing, *Facility Complexity Model,* accessed July 27, 2021. The VHA Facility Complexity Model categorizes medical facilities by complexity level based on patient population, clinical services offered, educational and research missions. Complexity Levels include 1a, 1b, 1c, 2, or 3. Level 1a facilities are considered the most complex. Level 3 facilities are the least complex.

[8] VA EHR Modernization, *VA Launches New Electronic Health Record System in Pacific Northwest in Mission to Modernize Care for Veterans*, accessed May 11, 2021, https://www.ehrm.va.gov/news/article/read/va-launches-new-electronic-health-record-system-in-pacific-northwest.

Discontinuance of Future Orders†	The new EHR discontinued future medication orders, requiring providers to write *stat* or immediate orders and causing medication delays for patients.*
	Because the new EHR discontinued future medication orders, providers who were going to be absent, arranged for colleagues to write orders for recurring medications, which created inefficiencies, increased risks for orders being missed, and possible patient safety issues.
Placing Unauthorized Orders	In the new EHR, registered nurses were able to order medications without the medication orders being reviewed and approved by the medical provider.
Processing of Outpatient Orders	Pharmacy staff using the new EHR failed to process outpatient medication orders.
	Some outpatient medication orders failed to be processed and appeared missing to non-pharmacy staff.
Lack of Notification	The new EHR did not notify prescribing providers and pharmacists about future recurring injectable medication orders that were discontinued or outpatient medication orders that did not process.
Alerts	Medication alerts in the new EHR were confusing and providers did not receive training on them.
Prescription Status	In the new EHR, providers were unable to assess the status of a filled prescription order.
Tracking Mailed Controlled Substances‡	In the new EHR, pharmacy staff were unable to consistently track mailed controlled substance prescriptions.
	In the new EHR, non-pharmacy staff were unable to consistently track mailed controlled substance prescriptions.
Prescription Drug Monitoring Program (PDMP)**	After electronic completion of a PDMP query, providers' progress notes were not automatically populated in alignment with VHA policy, which required additional work for providers.
3. Medication Reconciliation	
Medication List Continuity	Staff had to update medication lists at every visit because updated medication information did not carry over to the next appointment.
	Medications disappeared from the reconciled medication list and medication lists were inaccurate following reconciliation.
	Staff manually entered medication lists following medication reconciliation, which introduced increased risk for error and possible safety concerns.
	Medication reconciliation required a significant amount of time to complete per patient.
Medication List Inaccuracies	Discontinued and expired medications were not viewable on medication lists during medication reconciliation, creating a patient safety issue.
	Medications administered in clinic, including recurring injectable medications administered once, did not appear on medication lists, creating a patient safety issue.

Medication Lists and Patient Use	Medication lists were not patient-friendly.

Source: OIG analysis of allegations.
* Merriam-Webster.com Dictionary, "stat," accessed November 26, 2021, https://www.merriam-webster.com/dictionary/stat. Stat is a Latin word meaning immediately.
† Future orders were used pre-go-live in some clinic settings to order medications that would be administered at subsequent clinic visits. A future order was reviewed for accuracy by the pharmacist and stayed active until additional action (such as administration of the medication) was taken.
‡ A controlled substance is "a drug or other substance" defined by law and organized into five schedules or classes that determine the potential for abuse or harm[9].
** VHA Directive 1108.07, Pharmacy General Requirements, March 10, 2017. A PDMP is a "state-controlled substance monitoring program [...] these programs require pharmacies registered in their state to enroll and transmit (electronically) records of each dispensing of a controlled substance."

Scope and Methodology

As noted above, due to the magnitude and range of allegations the OIG received regarding impact of the new EHR implementation on patient care at the facility, the OIG initiated two healthcare inspections on January 4, 2021. The inspections were coordinated to minimize impact on the facility.

From January 26 through August 9, 2021, the OIG interviewed facility leaders and staff, VA Office of Electronic Health Record Modernization (VA OEHRM) staff, and VHA leaders.[10] The OIG conducted a virtual site visit given ongoing concerns with travel and the potential spread of COVID-19.

The OIG reviewed relevant VA OEHRM, VHA, and facility policies. Other documents reviewed related to the planning, preparation, and implementation of the new EHR as well as the review of SharePoint sites, decision memorandums, contract documents, presentations, briefings, and evaluations. The OIG also reviewed electronic health records and facility Joint Patient Safety Reports.[11]

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[9] 21 U.S. Code § 802 – Definitions.

[10] When discussing information provided by VA OEHRM in documents or learned during interviews with a VA OEHRM leader(s), manager(s), or staff member(s), the OIG uses the term *VA OEHRM staff* (whether singular or plural) generically to indicate the source of the information.

[11] VA National Center for Patient Safety, *Topics in Patient Safety* 17, no. 2 (2017): 3. The Joint Patient Safety Report System allows VHA staff to submit an electronic incident report. Electronic incident reports are reviewed by the Patient Safety Manager or designee to determine potential severity and probability of injury. Results are analyzed to determine trends and prioritize investigative efforts.

The OIG analyzed tickets placed to record and process user problems with the new EHR.[12] The OIG's analysis included tickets from VA and Cerner systems.[13] From October 24, 2020, through March 31, 2021, new EHR users placed over 38,700 tickets for EHR concerns. The OIG qualitatively peer-reviewed 4,094 tickets that mentioned key terms related to each allegation within this review. This inspection addresses only the allegations identified and does not attempt to address all concerns with the new EHR identified by facility staff through tickets.

The OIG gathered information regarding actions taken to remedy alleged deficiencies with the new EHR through interviews, review of EHR-related documents, and through observations of facility staff navigating the new EHR. The OIG did not independently validate all statements made by interviewees. References within this report to the status of issues reflect the time frame from late January through early June 2021. The OIG recognizes that VA OEHRM, VHA, Cerner, and other involved stakeholders are engaged in continuing work related to implementation of the new EHR.

In the absence of current VA or VHA policy, the OIG considered previous guidance to be in effect until superseded by an updated or recertified directive, handbook, or other policy document on the same or similar issue(s).

The OIG substantiates an allegation when the available evidence indicates that the alleged event or action more likely than not took place. The OIG does not substantiate an allegation when the available evidence indicates that the alleged event or action more likely than not did not take place. The OIG is unable to determine whether an alleged event or action took place when there is insufficient evidence.

Oversight authority to review the programs and operations of VA medical facilities is authorized by the Inspector General Act of 1978, Pub. L. No. 95-452, §7, 92 Stat. 1101, as amended (codified at 5 U.S.C. App. 3). The OIG reviews available evidence to determine whether reported concerns or allegations are valid within a specified scope and methodology of a healthcare inspection and, if so, to make recommendations to VA leaders on patient care issues. Findings and recommendations do not define a standard of care or establish legal liability.

The OIG conducted the inspection in accordance with *Quality Standards for Inspection and Evaluation* published by the Council of the Inspectors General on Integrity and Efficiency.

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[12] Following go-live, facility staff utilized a ticketing system to report issues with use of the new EHR.

[13] Cerner and VA OEHRM staff used the ticketing system to record and address issues related to the new EHR implementation. Two classifications of tickets were available—incidents and change requests. Each required different actions to process. VA OEHRM staff guidance described an incident as something that had functioned properly in the past or a disruption in the system that negatively affected workflow. A change request was described as an application for an enhancement or configuration of the new EHR to improve the user experience.

Inspection Results

The capacity to capture and effectively utilize longitudinal healthcare information and rapidly share data for provider coordination is an important factor in the provision of safe, high-quality care, and a significant benefit of an EHR.[14] Potential benefits of an EHR may expand with integration of other health information technology functions and software that supports clinical decision-making, increases efficiency, and automates processes to reduce opportunities for human error.[15]

However, an Institute of Medicine report stated, "evidence in the literature about the impact of health IT [information technology] on patient safety is mixed."[16] The report acknowledged "growing concern that health IT designs that maximize the potential for administrative and economic benefit may be creating new paths to failure."[17] The report described the importance of recognizing that health information technology, such as EHRs, exist as part of "a larger sociotechnical system—a collection of hardware and software working in concert within an organization that includes people, processes, and workflow."[18] The report observed that "many problems with health IT relate to usability, implementation, and how software fits with clinical workflow" and indicated that "[p]oorly designed, implemented, or applied, health IT can create new hazards in the already complex delivery of health care, requiring health care professionals to work around brittle software, adding steps needed to accomplish tasks, or presenting data in a nonintuitive format that can introduce risks that may lead to harm."[19] The report further cautioned "[g]iven the large investments being made in health IT, there is a great need to ensure that the new technology is actually improving safety of care."[20]

VHA requires that a licensed pharmacist review providers' medication orders to ensure the appropriateness and accuracy of the medication for the patient. The review includes the

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[14] Orna Fennelly et al., "Successfully implementing a national electronic health record: a rapid umbrella review," *International Journal of Medical Informatics*, 144, (September 2020).

[15] Linda T. Kohn, Janet M. Corrigan, Molla S. Donaldson, eds., *To Err is Human: Building a Safer Health System* (Committee on Quality of Health Care in America, Institute of Medicine, National Academies Press, 2000), Recommendation 8.2: "Health care organizations should implement proven medication safety practices." https://www.nap.edu/catalog/9728/to-err-is-human-building-a-safer-health-system.

[16] Institute of Medicine of the National Academies, Committee on Patient Safety and Health Information Technology, *Health IT and Patient Safety: Building Safer Systems for Better Care*, (Washington, D.C., The National Academies Press, 2012).

[17] Institute of Medicine of the National Academies, Committee on Patient Safety and Health Information Technology, *Health IT and Patient Safety: Building Safer Systems for Better Care*.

[18] Institute of Medicine of the National Academies, Committee on Patient Safety and Health Information Technology, *Health IT and Patient Safety: Building Safer Systems for Better Care*.

[19] Institute of Medicine of the National Academies, Committee on Patient Safety and Health Information Technology, *Health IT and Patient Safety: Building Safer Systems for Better Care*.

[20] Institute of Medicine of the National Academies, Committee on Patient Safety and Health Information Technology, *Health IT and Patient Safety: Building Safer Systems for Better Care*.

assessment of the dose frequency, route of administration, and instructions for use. Pharmacy staff are also responsible for dispensing medications directly to patients under specific circumstances and to clinicians for administration to patients.[21]

The following sections of the report detail the OIG's inspection findings for allegations that the new EHR implementation created medication management deficiencies in three areas: (1) data migration, (2) medication orders, and (3) medication reconciliation.

1. Data Migration

The OIG substantiated each allegation regarding deficiencies in the data migration from the legacy EHR to the new EHR. The migration deficiencies included errors in

- patient contact information,

- patient medication lists, and

- formulary lists that included facility-unavailable medications and supplies.

Within the context of this report, data migration is the process of transferring patient information from one EHR to another EHR.[22] Prior to go-live, the VA migrated contact information and clinical data for approximately 88,000 veterans from the legacy EHR to the new EHR. The *Journal of the American Medical Informatics Association* reports that data migration errors and failures "create significant risks to patient safety and provider efficiency".[23] The authors advise that data migration of clinical data "must be checked for completeness and to ensure that no errors were introduced during the migration process."[24]

Patient Contact Information

The OIG substantiated that patient contact information was not accurately imported into the new EHR.

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[21] VHA Handbook 1108.05(2), *Outpatient Pharmacy Services*, June 16, 2016, amended February 6, 2020; Facility Memorandum 119-14-20, *Medication Management*, January 7, 2020. Specific circumstances included the first fill of a prescription and emergency medications for patients who receive care at the facility.

[22] *Office of Electronic Health Record Modernization*, "Data Migration," accessed January 4, 2022, https://www.ehrm.va.gov/resources/factsheet.

[23] G'Sell Pageler, Mailes Chandler, Yang & Longhurst, "A rational approach to legacy data validation when transitioning between electronic health record systems," *Journal of the American Medical Informatics Association*, no. 23 (2016): 991-994.

[24] G'Sell Pageler, Mailes Chandler, Yang & Longhurst, "A rational approach to legacy data validation when transitioning between electronic health record systems," *Journal of the American Medical Informatics Association*, no. 23 (2016): 991-994.

With over 528,000 prescriptions mailed to facility patients in fiscal year 2021, accurate patient contact information including a patient's correct address is critical.[25] Healthcare staff also rely on accurate telephone numbers and email addresses to communicate with patients about relevant healthcare information.

The OIG found that outdated Department of Defense (DoD) data overwrote the VHA's legacy EHR for patient contact information such as name, address, telephone number, and email address when data were migrated to the new EHR. The OIG also found the new EHR failed to import patient addresses that did not meet the new EHR's formatting standards, such as those including post office boxes.[26]

Many VA patients routinely receive prescribed medications via the VA's mail order pharmacy (Consolidated Mail Outpatient Pharmacy). A staff member told the OIG that facility pharmacists discovered that prescriptions for patients whose addresses did not meet the new EHR standards, were not getting transmitted to Consolidated Mail Outpatient Pharmacy. These prescriptions began accumulating in a facility electronic pharmacy queue rather than getting transmitted to the Consolidated Mail Outpatient Pharmacy, filled, and mailed to patients.[27]

Initially, Cerner recommended that facility staff overwrite and update the incorrect DoD information with the correct patient information. Cerner's recommendation and proposed solution did not work and did not last. The DoD data remained the primary linked data source and information updated by facility staff reverted to the outdated DoD data each night at midnight for patients with DoD information. As a result, during interviews the OIG learned staff from the facility's eligibility department reviewed and corrected addresses in the pharmacy queue daily. Medication prescriptions with the corrected addresses were then transmitted to the Consolidated Mail Outpatient Pharmacy to be filled and sent to patients.[28]

To mitigate patient safety issues due to possible prescription delays from the Consolidated Mail Outpatient Pharmacy, pharmacy staff contacted patients to learn if they had enough medication and, if not, filled prescriptions at the facility pharmacy. This process increased workload and placed an additional burden on pharmacy staff. Providers reported calling patients to ensure receipt of ordered medications. Patients alerted facility staff of prescriptions not arriving by

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[25] "Pharmacy Benefits Management Services: VA Mail Order Pharmacy," VA, accessed June 8, 2021, https://www.pbm.va.gov/PBM/CMOP/VA_Mail_Order_Pharmacy.asp. The VA mail order pharmacy is an off-site facility with automated systems that provides approximately 80% of outpatient prescriptions to veterans by mail.

[26] Migration is the movement of data from one EHR to another. Importing is the download of data that has been migrated for use in specific programs.

[27] "Pharmacy Benefits Management Services: VA Mail Order Pharmacy," U.S. Department of Veterans Affairs, accessed June 8, 2021, https://www.pbm.va.gov/PBM/CMOP/VA_Mail_Order_Pharmacy.asp. Consolidated Mail Outpatient Pharmacy is an offsite facility with automated systems that provides approximately 80 percent of outpatient prescriptions to veterans by mail.

[28] Other prescriptions failed to transmit to Consolidated Mail Outpatient Pharmacy for reasons not related to address errors.

contacting providers, the call center, or the patient advocate; or by presenting to primary care or the pharmacy.

Data migration concerns related to discrepancies between DoD and VHA's legacy EHR were a known issue before the new EHR went live at the facility. The problems observed with migration of inaccurate patient contact information demonstrated that an effective resolution was not reached prior to the new EHR go-live at the facility. VA OEHRM staff explained the cause for the incorrect patient contact information was related to communication between the VHA and DoD systems.

Status

As of May 2021, the OIG determined that data migration errors with patient demographic information remained an issue, with facility staff continuing to use work-arounds to address the problem. VA OEHRM staff indicated ongoing efforts to improve the interoperability and ensure accurate data migration between the VHA and DoD systems. VA OEHRM staff stated that VA OEHRM was conducting meetings to work out the rules that need to be updated for both enterprises and noted, "they haven't [*sic*] worked through all of those business rules yet which is revealed when systems interact between the two agencies." VA OEHRM staff did not provide an anticipated date for the resolution. Accordingly, the OIG could not determine when the issue would be resolved.

Medication Lists

The OIG substantiated that medication lists, that were migrated as free text per VHA's request, contained inaccuracies. Because medication lists did not import accurately, providers used work-arounds including manual reentry to generate accurate medication lists.

A medication list is a summary of a patient's current medications, including the medication name strength, dose, and directions.[29] Accurate patient medication lists are essential for providers to make informed decisions about patient care and safety.[30]

Importation Inaccuracies

The OIG review of ticket data showed that nearly 600,000 expired medication orders in the legacy EHR were migrated into the new EHR as active historical orders requiring clinical review. Ticket data showed that the new EHR program rules recognized expired legacy

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[29] Belden et al., *Inspired EHRs Designing for Clinicians and VA Medication Reconciliation, Pharmacy Benefits Management Services*, (Missouri: The Curators of the University of Missouri, 2014), 4.

[30] Maria Staroselsky et al., "Improving electronic health record (EHR) accuracy and increasing compliance with health maintenance clinical guidelines through patient access and input," *International Journal of Medical Informatics,* vol 75, issue 10-11, (October-November 2006): 693-700.

medications with a stop date marked as *completed*, and those without a stop date as active
medications. Expired medications typically did not include a stop date and were interpreted as
active during migration and imported into the new EHR as such. For example, a time-limited
course of antibiotics would expire without a stop date in the legacy EHR but because the new
EHR recognized it as active medication, it was imported after go-live. The OIG was told that the
consequence of the importation inaccuracy was a time-consuming review by clinical staff of
expired medications that were erroneously imported as active.

Staff reported other types of inaccuracies with medication lists imported from the legacy EHR:

- A medication that a patient stopped taking years ago was imported as an active
  medication.

- A medication strength was imported incorrectly as a 5 milligram tablet instead of a
  10 milligram tablet.

- Directions for a medication frequency appeared as twice a day instead of once a day.

- The word *legacy* appeared as medication instructions instead of complete prescribing
  directions for patients.[31]

A super user offered the OIG the following explanation for medication list importation problems:

> The functionality is that the software was not written to accept and understand the
> information that was incoming. You can't take Microsoft and put it into an Apple
> without some sort of translator. There was nothing there to translate CPRS
> [Computerized Patient Record System] language to Cerner language so that it
> would work.[32]

Through correspondence, staff noted inaccuracies with imported medication lists required the
manual reentry of legacy prescriptions that included canceling the imported listed legacy
prescription and reordering the prescription within the new EHR. The OIG found that staff used
multiple systems (the new EHR, the legacy EHR, and Joint Longitudinal Viewer) to review and
piece together accurate patient medication lists and manually reentered medications into the new
EHR.[33] According to staff members, the process was described as "overwhelming" and placed

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[31] The OIG learned that "legacy" appearing in the medication instructions has been resolved for providers but not for nursing staff printing medication lists.

[32] Super users are facility staff who received additional training to provide peer-to-peer support during new EHR implementation. Super users attended weekly calls in preparation for go-live.

[33] "Joint Longitudinal Viewer (JLV) 2.9.4 User Guide," U.S. Department of Veterans Affairs, April 2021, accessed January 14, 2022,
https://www.va.gov/vdl/documents/Clinical/Joint_Longitudinal_Viewer_(JLV)/jlv_2_9_4_user_guide.pdf. Joint Longitudinal Viewer is a web application with an interface that provides an integrated, read-only view of EHR data from VA, DoD, and community partners.

time-consuming burdens on staff who one facility leader described as "overworked" and "super stressed."

The inaccurate medication lists also affected providers' ability to reconcile medication lists and patients' ability to access their medication lists and request medication refills.[34] Staff reported multiple calls from patients requesting assistance with ordering medication refills; phone lines became congested. According to staff, on average, one hundred patients per day began physically presenting to a clinic for assistance despite the ongoing pandemic, five times more than the average 20 patients per day that presented before the go-live date.

Importation of Free Text Medication Lists

According to VA OEHRM staff, migration of free text medication lists was a "functional clinical decision" that "worked as requested, designed, and decided" by VHA, and was therefore "not an issue"[not considered to be an issue by OEHRM staff]. The free text medication lists did not function as conceived for the end user—they contained errors and required providers to correct prescriptions needing refills through manual entry; VA OEHRM staff explained that "a new functional clinical decision has since been made to improve this for future sites."

Status

VA OEHRM staff explained that causes for the inaccurate migration of medication lists were "multiple, including field mapping error, date range filter optimizations, etc." and indicated the issue had been resolved.[35] However, at the time of the OIG's review, staff reported inaccurate medication lists containing free text fields were still being imported. Additionally, staff reported the term *legacy* was continuing to appear rather than a complete set of patient instructions. The legacy prescription problems required review and manual corrections, which could lead to prescription transcription errors. The further that time lapsed from go-live, the fewer legacy prescriptions remained active.

According to VA OEHRM staff, data migration improvements have been made for medication list accuracy, including defining "mappings and assess[ing] safety of those mappings." VA OEHRM staff did not provide an anticipated date for further resolution of data migration deficiencies.

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[34] The provider and patient impact related to medication lists and medication reconciliation is discussed in Section 3.

[35] AIHMA HIM Body of Knowledge, "Data Mapping" accessed November 1, 2021, https://library.ahima.org/doc?oid=65895. Mapping "involves 'matching' between a source and a target, such as between two databases that contain the same data elements but call them by different names. This matching enables software and systems to meaningfully exchange patient information, reimbursement claims, outcomes reporting, and other data."

Medication Formulary

The OIG substantiated that the formulary in the new EHR included many medications not available at the facility or included on the VA National Formulary (VA formulary).[36] As a consequence, providers unknowingly selected nonformulary or unavailable supplies. The incorrect selections increased risks for errors, potentially raised costs, and created inefficiencies for providers and pharmacy staff.

VHA requires each medical facility maintain a formulary to ensure medications and supplies listed on the VA formulary are available at the facility for prescribing. VHA and facility guidelines specify that VA formulary medications and supplies must be identified as formulary, nonformulary, or restricted for prescribing purposes.[37] Providers must select VA formulary products when ordering medications and supplies for patients, unless a patient has a medical need for a product not included on the VA formulary. For a nonformulary product, the provider initiates a request (consult) for a medically necessary, nonformulary product. A pharmacist reviews and approves the nonformulary consult based on established approval criteria, including the availability of formulary alternatives.[38]

Lack of Clear Identifiers and Multiple Formulary Options

The OIG found that the new EHR formulary created inefficiencies for pharmacy staff and providers who had to sort through multiple options when placing medication orders:

- Medications on the facility's formulary list included options from a private pharmacy, a local emergency department, and the DoD formulary.

- Nonformulary medications were not identified with the letters *NF* as they had been in the legacy EHR formulary.[39]

- Medications displayed as multiple entries with numerous drug formulations and strength options. See figure 1, which shows available options in the new EHR formulary for a medication commonly used to control blood pressure or heart rate.

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[36] VHA Directive 1108.08(1), *VHA Formulary Management Process*, November 2, 2016, amended August 29, 2019. The VA National Formulary is a comprehensive list of approved medications and supplies that providers may order for patients at all VA medical facilities.

[37] VHA Directive 1108.08(1). Facility policy 119-01-17, *Non-Formulary, Prior Authorization and Restricted Drugs*, April 17, 2017. The facility policy refers to the EHR in place before implementation of the new EHR.

[38] Facility policy 119-01-17. Providers may initiate a request for a medically necessary, nonformulary product for a patient to be reviewed by a pharmacist. The request is approved when there is a lack of formulary alternative; the patient has a contraindication, therapeutic failure, or adverse reaction to formulary agents; or for other compelling clinical reasons.

[39] Computerized Patient Record System (CPRS) User Manual: GUI Version, April 2021.
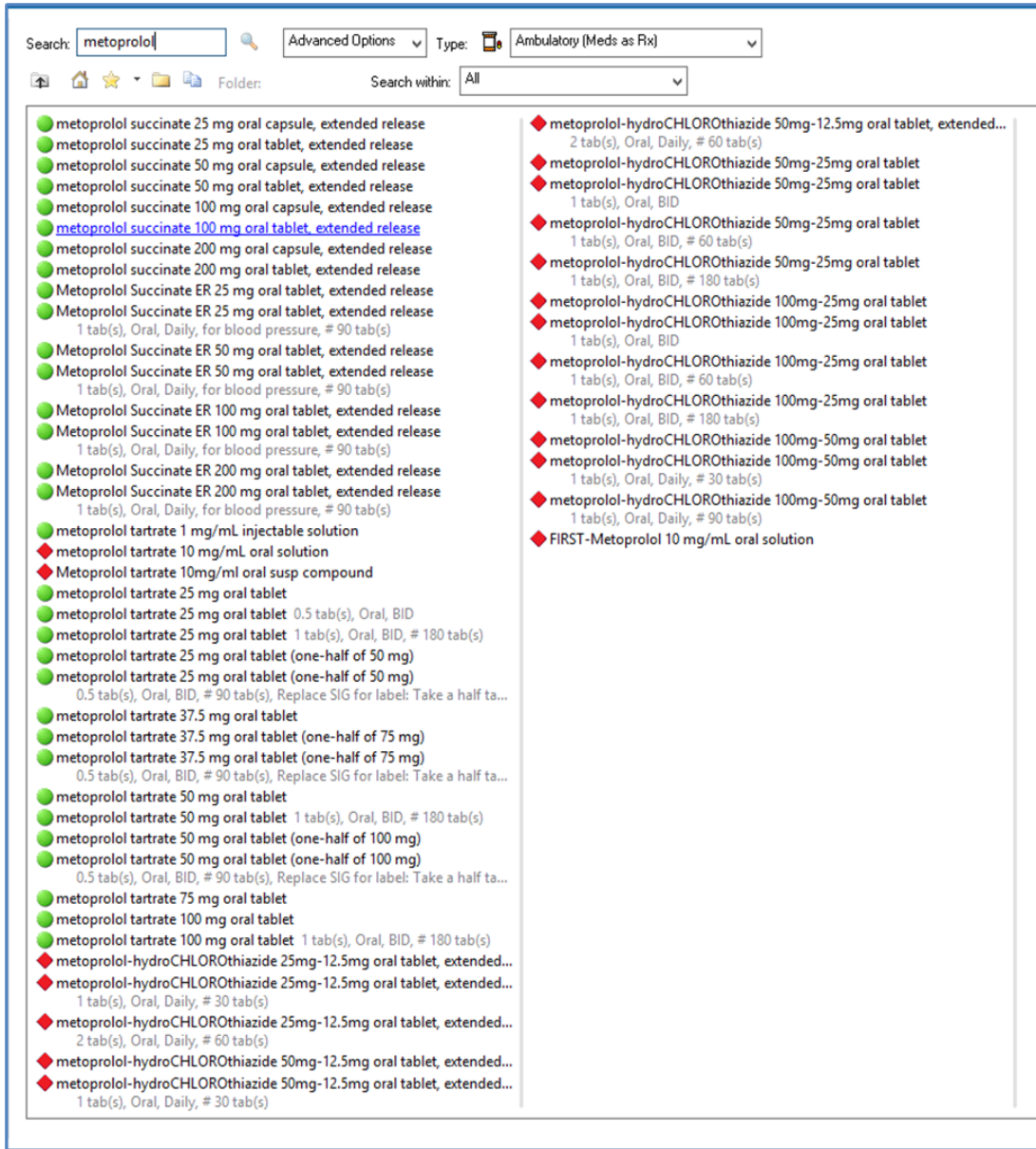
Figure 1. *Screenshot of metoprolol ordering options.*
Source: The new EHR.
*Medications displayed as multiple entries with numerous drug formulations and strength options, causing frustration for providers searching to find and select the desired medication and introducing greater possibility of human errors.

The OIG learned that due to the lack of identifiers for formulary and nonformulary medications in the new EHR, facility providers unintentionally selected nonformulary medications after go-live. A staff member stated staff pharmacists fixed errors as they occurred, which required a significant amount of time due to the numbers of errors identified. A staff member reported that unlike the legacy EHR, pharmacy staff were unable to turn medication options "on and off," which would have allowed them to identify formulary medications.

Lack of Provider Notification to Complete Formulary Consult

In the legacy EHR, providers were notified that a consult was needed when they selected a nonformulary medication. In the new EHR, the alert that a nonformulary pharmacy consult must be completed was not activated. A staff member noted the large number of nonformulary requests that pharmacy staff began to receive after go-live would likely have been reduced had providers recognized the incorrect selection of a nonformulary medication after receiving a notice to complete a consult for the nonformulary request. Similarly, pharmacists who did not receive a consult were unaware of all nonformulary medication requests, and allowed some nonformulary requests to go forward, which resulted in additional spending for unnecessary medications and supplies. Pharmacy staff reported that during a single month, $49,884.82 was spent on a brand-name (nonformulary) medication due to unintended nonformulary orders. A staff member noted this inefficiency also created potential safety issues due to a lack of review of prerequisite therapies and other parameters. Pharmacy staff did not have the ability to run reports to determine the extent of the delays resulting from correcting prescription errors.

Prior Authorization and Approvals Were Not Migrated

The OIG was told that further adding to the inefficiencies for pharmacy staff, the new EHR did not migrate patients' previous authorizations and approvals for nonformulary medications. A staff member shared that to ensure correct approval and dispensing of nonformulary medications, pharmacy staff placed the nonformulary orders that migrated with the new EHR go-live on hold, re-initiated the lengthy nonformulary process, and communicated with the provider to assess the appropriateness of the migrated order. Providers were then required to rewrite the medication order(s). Staff members stated that under these circumstances, the nonformulary approval process for a medication could take days to resolve. A staff member also shared that due to the failure of previous authorizations and approvals of nonformulary requests to migrate and the medications lists that did not clearly identify nonformulary medications, nonformulary requests increased from about 120 per month to 100 per week after go-live, requiring rework and extra work by pharmacy staff.

Status

More than a year before go-live, pharmacy leaders requested that Cerner develop a new system functionality for the outpatient pharmacy, similar to the *Virtual View Filter* system available to the inpatient setting that allows providers to see and order from a list of medications and supplies available at the facility including formulary medications and supplies.[40] The request was made in a ticket dated July 11, 2019; the ticket remained unresolved given the user dissatisfaction with

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[40] The Virtual View Filter system was available in the inpatient setting.

the change as of June 2021. VA OEHRM staff reported not being aware of an open ticket.[41] VA OEHRM staff further stated in a May 2021 response to the OIG, with no open tickets, "there was… NO [formulary] issue to be resolved."

Facility staff recognized some formulary improvements following go-live. In January 2021, Cerner added quick order folders to the new EHR for commonly prescribed medications.[42] According to a super user, facility staff's increased experience with the new EHR also led providers to perform more effective medication queries that yielded more accurate results. However, the super user cautioned that the search list for medications continued to contain too many options, stating "…the search lists are ridiculous. I think the number of options that show up with the search is inappropriate and can lead to issues."

At the time of its inspection, providers informed the OIG that formulary medication selection options decreased slightly, without the ability "to pick from…every possible dosage available in the market." However, medications were not always accurately indicated as formulary or nonformulary, and although providers had "gain[ed] familiarity with the appropriate name to select for commonly prescribed medications," providers continued to inadvertently order nonformulary medications.

Seven months after go-live, in contrast to its response on June 2, 2021, VA OEHRM staff acknowledged difficulties with the formulary in a memo dated June 4, 2021:

> Current preference setting does not filter the search capability. For the VA, medications of all formulary statuses (i.e., formulary, preferred, formulary, not preferred needing prior authorization, and nonformulary medications) display making it overwhelming and difficult for ordering providers to determine which product to select.

An email from a staff member noted on June 7, 2021, Cerner implemented Virtual View Filter for outpatient medications. Additionally, the nonformulary pharmacy consult alert was activated. After three days of working in the Virtual View Filter system, pharmacy staff identified concerns. Some incorrect formulary indicators were identified in the drug order catalog by pharmacy staff who noted "The [Virtual View] Filter is most valuable if the formulary status is correct." A staff member also shared that the Virtual View Filter was restricted to VA formulary items rather than containing facility formulary items. Pharmacy staff indicated that some VA formulary items were not stocked locally and not readily available at the facility pharmacy.[43] A staff member noted that the VA formulary does not specify brand names for supplies; facilities

[41] VHA Directive 1108.08(1). Pharmacy Benefits Management is a program office of senior pharmacy leaders that, among other duties, coordinates the VA national formulary process.
[42] A quick order contains preestablished values such as the name of medication, dosage, frequency, and quantity, and allows providers to order medications more easily.
[43] According to a staff member, this differed from the "virtualization" in the inpatient setting.

are able to select affordable and available brands. Pharmacy staff recognized the new Virtual View Filter system may be most helpful in identifying the formulary status of supplies if the filter relied on the locally defined supply status. The new Virtual View Filter process timing coincided with the completion of the OIG review and, therefore, the OIG could not determine the effectiveness of the process.

Data Migration Summary

The OIG substantiated allegations of data migration deficiencies in patient contact information. Staff from the facility's eligibility department corrected inaccurate contact information and facility pharmacy staff filled and mailed the prescriptions that failed to transmit to the Consolidated Mail Outpatient Pharmacy. Contact information errors continued to be identified and corrected when possible. VA OEHRM staff explained the cause for the incorrect patient contact information was related to communication between the VHA and DoD systems. The OIG could not determine when the issue would be resolved because VA OEHRM staff did not provide an estimated time frame for the resolution.

The OIG substantiated that medication lists, imported as free text into the new EHR at VHA's request, were not accurate. The OIG also found that staff addressed the issue by using multiple systems (the new EHR, the legacy EHR, and Joint Longitudinal Viewer) to piece together an accurate medication list. VA OEHRM staff explained the causes for the inaccurate migration of medication lists were "multiple, including field mapping error, date range filter optimizations, etc." VA OEHRM staff reported that VHA had requested that medication lists migrate as free text; therefore, VA OEHRM staff did not consider the free text medication lists migration a problem. Data migration improvements have been made for medication list accuracy, including "ongoing meetings to define mappings and assess safety of those mappings." The OIG could not determine when this issue would be completely resolved because VA OEHRM staff did not provide an estimate.

The OIG substantiated that the formulary in the new EHR included a large number of medications not available at the facility, created inefficiencies for providers and pharmacy staff, and increased risks for error when placing medication orders. Quick orders created for the most common medications improved the selection process. On June 7, 2021, Cerner implemented a standardized process for ordering prior authorization and nonformulary medications (virtual view filtering) and turned on the prior authorization and nonformulary alert. The new process timing coincided with the completion of the OIG review and, therefore, the OIG could not determine the effectiveness of the process.

Table 2. Summary of Data Migration Allegations and Findings

Data Migration	Allegations	OIG Determination	Status*
Patient Contact Information	Patient contact information was not accurately imported into the new EHR.	Substantiated	Unresolved
Medication Lists	Medication lists were not accurately imported into the new EHR.	Substantiated	Unresolved
	Medication lists were imported into the new EHR as free text.	Substantiated	Unresolved
Medication Formulary	The formulary in the new EHR included medications not available at the facility and increased risks for error when providers placed medication orders.	Substantiated	Unresolved

Source: OIG analysis.

* Status of issues reflect the time frame from late January through early June 2021.

2. Medication Orders

The OIG substantiated that the new EHR affected a range of medication order-related functions and created deficiencies. Specifically, in the new EHR, patients' recurring future medication orders were automatically discontinued and as a result providers and registered nurses developed work-arounds. Registered nurses were able to order medications without a provider's approval. In addition to future medication orders being automatically discontinued, some medication orders failed to process. Providers were not notified of discontinued and non-processed medications. Providers received confusing alerts. Staff were unable to track the status of outpatient prescription orders. Additionally, the OIG received conflicting accounts on the functionality of the Prescription Drug Monitoring Program (PDMP) process in the new EHR. The multistep work-arounds that staff developed to address the deficiencies introduced the possibility of human error.

Discontinuance of Future Orders

The OIG substantiated three allegations related to future medication orders:

- The new EHR discontinued future medication orders written by providers.

- Because of the discontinued future medication orders, providers wrote *stat* orders or arranged for colleagues to write orders in their absence.[44]

- Work-around processes resulted in workflow inefficiencies with possible patient safety issues and medication delays as well as increased risks for orders being missed.[45]

The OIG determined that the new EHR was not configured to support future clinic orders, which caused such orders to be discontinued.

During interviews the OIG was told that in the clinic setting, providers may place medication orders in advance (future orders). For example, a patient's future orders may include a year's worth of clinic injections.[46] The use of future orders ensures that when a patient checks in for a subsequent routine clinic appointment, the medication order remains in active status and has been reviewed by the provider and the pharmacist for accuracy. Future orders result in patients receiving scheduled medications at the appropriate time, without a disruption in therapy. Staff described the burden created by the new EHR's lack of functionality to support future clinic medication orders, and reported that the potential for delayed or missed medications and incorrect medication orders placed patients at risk for adverse effects.

Staff stated that providers were unaware that the new EHR was not designed to accept medication orders for future clinic visits. Affected patients arrived at clinic for routine appointments expecting to receive recurrent medications and nursing staff expected to find active clinic orders for the previously ordered recurring medications. However, the medications were not available because the new EHR automatically discontinued future medication orders.

The OIG was told that to accommodate the patient, nursing staff would enter a medication order for the provider to review and approve. This work-around facilitated the administration of the needed medication on the day of the clinic visit. In some instances, nursing staff retrieved the medication from an automated medication dispensing cabinet without an active order.[47] Staff told the OIG that since unordered medications did not appear on the medication administration records, nursing staff documented administration of the medication in a specially titled EHR note.

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[44] *Merriam-Webster.com Dictionary*, "stat," accessed November 26, 2021, https://www.merriam-webster.com/dictionary/stat. Stat is a Latin word meaning immediately.

[45] The OIG considered "orders being missed" to include providers missing future renewal orders and staff missing orders for patients' required medication administration.

[46] Clinic orders for this report were informed by Substance Abuse Treatment Program and Mental Health Clinic practices.

[47] VHA Directive 1108.01(1), *Controlled Substances Management*, May 1, 2019, amended December 2, 2019. An automated dispensing cabinet is a computerized drug storage space used to dispense medications electronically and in a controlled manner to track medication use. Removing medications from an automated dispensing cabinet without an active medication order is not consistent with VHA policy.

The OIG reviewed the impact of discontinued future clinic orders on two patients. In one case, the patient presented for an appointment but had to wait for a provider to rewrite a previously written clinic medication order and for pharmacy to process the order. The second patient was delayed in receiving a scheduled monthly medication while a provider rewrote the previously written but discontinued order. In both cases, the OIG's review of the EHR showed the patients did not experience, and staff denied knowledge of patient adverse clinical outcomes, but were concerned that adverse clinical outcomes could occur because of the work-around processes.[48]

Status

During an OIG interview, a facility staff member expressed the expectation that the new EHR would eventually include the future clinic orders feature. According to VA OEHRM staff, "Medications are not supported as future recurring orders [in the new EHR] and this is covered in training. However, there is a ticket to try to enable this capability which is not a model Cerner [new EHR] design…These [solutions] are in the pipeline." As VA OEHRM staff did not provide an expected date for the solution, the OIG could not determine when the future clinic medication order function issue would be resolved.

Placing Unauthorized Orders

The OIG substantiated that registered nurses were able to enter medication orders that were not reviewed and approved by an authorized provider. The OIG found that when registered nurses entered multiple medication orders, only the initial order required provider authorization; the remaining orders did not. The OIG determined that facility staff understanding of the problem's causes and Cerner's proposed solution were inconsistent with the VA OEHRM staff's solution, indicating communication and resolution inconsistencies among VHA, Cerner, and VA OEHRM.

According to VHA policy, a medication order must be reviewed and signed by a VA provider who is authorized to prescribe medications.[49] Medications can only be provided to patients when

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[48] Within the context of this report, the OIG considered an adverse clinical outcome to be death, a progression of disease, worsening prognosis, suboptimal treatment, or a need for higher level care.

[49] VHA Directive 1108.07, *Pharmacy General Requirements*, March 10, 2017. VHA Directive 1108.13(1), *Provision and Use of Nursing Medication Management Protocols in Outpatient Team-Based Practice Settings*, February 6, 2019, amended March 13, 2019. VHA Handbook 1108.05(2), *Outpatient Pharmacy Services*, June 16, 2016, amended February 6, 2020. Providers authorized to prescribe medications include physicians, dentists, advanced practice registered nurses, physician assistants and clinical pharmacists. Registered nurses are not included in the list of authorized prescribers.

ordered by a licensed independent practitioner or other staff authorized by the facility Executive Committee of the Medical Staff.[50]

The OIG reviewed a ticket and email describing unauthorized medication ordering by nursing staff. The OIG heard from staff members who described at least one instance when a nursing staff member who was not authorized to prescribe medications was able to order a medication in the new EHR. Additionally, the OIG learned of another instance when a medication ordered by a nurse was administered to a patient without provider awareness or authorization. Nurses having the ability to prescribe medications without physician oversight was described as "dangerous" by one provider during an interview. However, staff interviewed did not report harm to patients from unauthorized medications orders.

When discussing the cause of these unauthorized nursing orders, a staff member reported that nursing staff could propose medications for patients in the new EHR, as done in the legacy EHR; however, staff believed that during the setup of user accounts in the new EHR, some nurses were given inappropriate permissions to access additional features in the new EHR. Staff stated these permissions allowed nurses to complete medication orders without provider review. In response, nurses in one clinic initially stopped inputting proposals until the matter could be resolved.

VA OEHRM staff did not corroborate facility staff's belief that inappropriate permission settings caused nurses to be able to enter unauthorized medication orders. VA OEHRM staff explained that the issue occurred when nurses entered multiple medication orders. The initial order was considered to be "proposed" and the remaining orders appeared to be authorized by the provider. Written statements and documents received from VA OEHRM staff attributed the cause to the configuration of the new EHR and a lack of staff training.

Status

The OIG identified a submitted ticket opened on November 6, 2020, regarding registered nurses' unauthorized ability to complete the medication order process. In March 2021, staff stated to the OIG that Cerner corrected the inappropriate permissions for the identified nurses who input unauthorized medication orders. As of June 2021, VA OEHRM staff reported the system configuration issue that permitted registered nurses to complete the medication order process was not resolved, was not related to inappropriate permissions, and continued to allow nursing staff to order medications. VA OEHRM staff also noted not having data to determine the frequency in which the unauthorized medication orders were created. The OIG determined this made the full scope of the issue unknown. As of June 2, 2021, VA OEHRM staff's proposed solution was in the process of being reviewed and approved through the change management process. The

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[50] Facility Memorandum 119-14-20, *Medication Management,* January 7, 2020. VHA Handbook 1100.19, *Credentialing and Privileging*, October 15, 2012. A licensed independent practitioner is "any individual permitted by law…and the facility to provide patient care services independently, [that is], without supervision or direction, within the scope of the individual's license, and in accordance with individually-granted clinical privileges."

"target completion date" provided by VA OEHRM staff was "4-8 weeks" or July to August 2021.

Some Outpatient Medication Orders Failed to Process

The OIG did not substantiate that pharmacy staff failed to process outpatient medication orders after go-live. However, the OIG substantiated that some medication orders failed to process for other reasons:

- Changes in the medication manufacturer

- Changes in a patient's insurance, and

- Consolidated Mail Outpatient Pharmacy transmission failures due to address and direction deficiencies or package size

Some uncertainty as to the status of orders potentially flowed from who had visibility into the process. When medication orders failed to process, the orders fell into queues that were visible to pharmacy staff. Non-pharmacy staff, who did not have access to the pharmacy workflows, thought that pharmacy staff had missed the orders. According to the facility policy, pharmacy staff take multiple steps to complete the processing of outpatient medication orders: "Finishing pharmacists will verify that the prescription is safe, accurate and appropriate for the patient."[51]

During interviews, pharmacists stated that pharmacy staff had not missed outpatient medication orders and described to the OIG three examples of processes in the new EHR that resulted in outpatient orders being interpreted by non-pharmacy staff as missed outpatient medication orders.

Example 1.

Unrecognized hyphenated zip codes. During the last week of January 2021, controlled substance outpatient medication orders transmitted electronically to the pharmacy from providers could not be processed. Several days elapsed before pharmacy staff became aware of the problem and submitted a ticket for resolution to Cerner. In the interim, those medication orders appeared to non-pharmacy staff as having been sent to pharmacy but not processed. Email documentation reviewed by the OIG explained the error occurred due to zip code formatting in the new EHR and affected patients with hyphenated address zip codes.

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[51] Facility Policies and Procedures, Pharmacy Service, *Labeling and Dispensing of Outpatient Prescriptions*, May 10, 2019.

Example 2.

Orders were not transmitted to facility pharmacy. *Providers were able to select visit types that resulted in outpatient medication orders not being transmitted to the facility pharmacy and potentially sent to other sites such as a DoD pharmacy. Providers incorrectly believed they had submitted the medication order correctly. A staff member attributed providers selecting non-VA visit types to a lack of training and awareness. This error occurred more frequently in the initial months after go-live and had not been noted since January 15, 2021.*

Example 3.

Orders mistakenly routed to pharmacy. *When providers ordered glucometers for patients with diabetes to monitor their blood sugar, the new EHR routed the request for a glucometer, to the facility pharmacy as it was recognized as a pharmacy item. However, glucometers were not supplied by the pharmacy department, and pharmacy was not able to fill those orders. To address this order issue, pharmacy staff encouraged providers to work with nursing staff to provide the glucometers directly to patients instead of submitting glucometer orders to pharmacy.*

According to interviewees, non-pharmacy staff's concerns about missing orders led to pharmacy staff being inundated with calls requesting assistance. According to pharmacy staff, the high number of calls affected their ability to perform assigned tasks and exhausted an already stressed department. Pharmacy staff also voiced concerns that medication delays were causing potential significant patient safety issues.

Status

A staff member stated that the processing of medication orders improved over time as staff learned to input orders into the new EHR. Several incorrect visit types have been blocked and could no longer be selected. Pharmacy staff became aware of the new EHR failure queue function and modified the pharmacy workflow process to include regular pharmacist queue checks to timely address errors and process prescriptions.

Lack of Notification

The OIG substantiated that providers and pharmacists did not receive notifications about future recurring orders for either injectable medications that were discontinued or outpatient medication

orders that did not process (unprocessed orders).[52] The OIG found that the new EHR was not configured to support such notifications.

Notifications are messages that provide information or prompt a provider to act. Notifications regarding medication orders in the legacy EHR included informing providers of unprocessed orders and discontinuation of future orders.[53]

According to staff interviews, the absence of notifications of the discontinuance of future orders had the most impact in clinics where future orders were frequently used such as mental health and substance abuse treatment clinics. Clinical staff told the OIG about being unaware of the inability to place future orders in the new EHR as they had in the legacy EHR. Staff acknowledged a lack of training regarding future orders and notifications in the new EHR.

Based on an interview with a staff member, the OIG learned that the new EHR was configured to allow future orders in the oncology clinic but that configuration feature was not available for other clinics. According to facility staff, the system configuration did not result in a notification to providers of a function that could not be performed. In other words, during interviews and document review, the OIG learned that notifications regarding unprocessed orders were not generated for providers and pharmacists in the new EHR. Without notification of unprocessed orders, staff were unaware of the problem and could not resolve issues arising from an unprocessed order in a timely manner. The OIG was informed that patients experienced delayed medication delivery due to additional workflow processes for unprocessed orders.

Status

According to OEHRM staff, as of June 2021, the functionality to allow notifications for discontinued future orders and unprocessed orders was not resolved and no date for resolution was provided by VA OEHRM staff. VA OEHRM staff stated that the new EHR did not have the built-in capability to support future clinic orders but that development was in the pipeline. As VA OEHRM staff did not provide an expected date for the solution, the OIG could not determine when the issue would be resolved. Pharmacy staff identified different queue categories for unprocessed medication orders and monitored these regularly. A non-pharmacy staff member told the OIG they learned to "babysit the chart" to monitor ordered medications and to follow up directly with pharmacy staff to ensure medications were processed and provided timely to patients.

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[52] The OIG interpreted orders that do not process as the processing of a medication order after it has been entered by a provider and subsequently acted upon by pharmacy ending with delivery to the patient.

[53] Computerized Patient Record System (CPRS) User Guide: GUI Version, April 2021.

Alerts

The OIG substantiated medication alerts that were generated in the new EHR were confusing. The OIG was informed that providers did not receive training about medication alerts or that the training was incomplete.

Alerts are electronic messages sent to providers in the EHR for informational awareness and guidance on clinical decisions about patients.[54] In the legacy EHR, providers were notified of various potential medication problems by order check alerts. For example, providers received alerts related to incomplete medication orders, patient allergies, interactions, dosage, duplicate medications; and other critical medication alerts.[55]

According to a provider, alerts were available in the new EHR but staff reported difficulties identifying pertinent information after receiving an alert. A provider described entering multiple medications and then receiving an alert about one of the medications; however, the alert did not identify the medication that had triggered the alert. The provider reported having to call the pharmacy to review the multiple medication orders to identify the one that triggered the alert.

A provider told the OIG about making multiple calls to pharmacy requesting assistance to address medication alerts that did not clearly describe the reason the alert was generated. A facility staff member told the OIG, the confusion caused by non-specific medication alerts led to disruption of pharmacy and non-pharmacy staff workflows and patient care.

In another patient care setting, a staff member reported a ticket had been placed that also described increasing time demands with medication alerts while ordering medications for patients.

Interviewed staff were also asked to describe what led to the confusion related to addressing medication alerts. Two staff brought up concerns with the completeness of the training provided to facility staff, with one stating directions to address medication alerts was absent from training.

Status

According to an email sent to facility staff on February 16, 2021, the number of medication alerts to providers was reduced when alerts related to drug-drug duplicate (duplication of medications with similar therapeutic effects) and drug duplicate (same medication) medication orders were turned off. At the time of the OIG review, a staff member reported that medication alerts were becoming more helpful and comparable to the legacy EHR. Similarly, another staff member stated that medication alerts were received less frequently over time. However, in June 2021, VA OEHRM staff informed the OIG that the confusing alert issue was not resolved and additional

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[54] Computerized Patient Record System (CPRS) User Guide: GUI Version, April 2021.
[55] Computerized Patient Record System (CPRS) User Guide: GUI Version, April 2021.

information related to the cause or status of any improvements or future improvements was not available. As VA OEHRM staff did not provide an expected date for the solution, the OIG could not determine when the issue would be resolved.

Prescription Status

The OIG substantiated that providers were unable to check the status of filled prescription orders. The OIG found that although staff could view a prescription status, the status was not consistently accurate due to system functionality and medication orders entering error queues in the new EHR.

To ensure patients' continuous, uninterrupted medication therapy, staff should be able to assess the status of a prescription, determine where in the filling and dispensing process the prescription is located, and provide this information to patients when requested. Pharmacy staff are required to follow VHA and facility policies when dispensing outpatient prescriptions.[56] Several steps exist in the filling and dispensing process that determine the prescription status:

- Providers electronically enter the medication order in a patient's EHR.[57]

- Pharmacists review the order for therapeutic appropriateness including drug interactions, allergies, and adverse drug reactions.[58]

- Patients receive the medications through the mail or, if urgently needed, from the pharmacy.[59]

- Medications mailed from either the facility or the Consolidated Mail Outpatient Pharmacy are tracked to monitor the delivery status.[60]

During interviews, facility staff members told the OIG that they knew of ways to assess the status of filled prescriptions after go-live but frequently obtained inaccurate information. The inaccuracies led staff to seek pharmacy staff assistance as a work-around when checking on the status of medications. Some staff reported directly contacting pharmacy staff rather than attempting to find the status information in the new EHR. A staff member described patient care delays due to the extra time needed to retrieve accurate information from pharmacy staff. One staff member expressed frustration with the process:

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[56] Facility Policies and Procedures, Pharmacy Service, *Labeling and Dispensing of Outpatient Prescriptions*, May 10, 2019.

[57] Facility Memorandum 119-10-19, *Prescribing Medication and/or Supplies for Outpatient Use*, September 13, 2019.

[58] Facility Policies and Procedures, Pharmacy Service, *Labeling and Dispensing of Outpatient Prescriptions*, May 10, 2019.

[59] Facility Memorandum 119-10-19.

[60] VHA Handbook 1108.05(2).

> We cannot see when they've [medications] been dispensed, we cannot see when
> they've been shipped; we cannot see if the patient has called into the pharmacy
> with a complaint that they are not receiving their medications, none of that
> information is any longer available to us. And our patients are still coming to this
> clinic expecting us to have the same ability we had before to see if pharmacy has
> received their order, if pharmacy has processed their order, and if pharmacy has
> dispensed and shipped their order. We have no access to any of that, it's not in
> there. We are completely useless.

When asked about the cause of inaccuracies in assessing the status of prescribed medications, a
pharmacy staff member reported a lack of training in the new EHR prescription order check
function and order failure queues. The staff member also indicated they initially struggled to
manage prescriptions sent into unfamiliar order check queues and address prescription errors.
Non-pharmacy staff members did not have access to the failure queues, which contributed to
their experience of retrieving inaccurate information on the status of a prescription from the new
EHR.

Status

As of June 8, 2021, the OIG learned that facility staff continued to have difficulties checking the
status of ordered outpatient medications. Staff reported continuing to call pharmacy staff
multiple times daily to assess the status of ordered medications as information contained in the
new EHR continued to be inaccurate. When asked if there were plans to improve the accuracy of
the information in the new EHR, frontline staff were unable to identify actions implemented or a
timeline for resolution.

The OIG followed-up with VA OEHRM staff who reported that the issue of staff viewing
inaccurate information when checking the status of ordered medications was not resolved and
that a time line for resolution of this issue was unavailable. As VA OEHRM staff did not provide
an expected date for the solution, the OIG could not determine when the issue would be resolved.

Difficulties Tracking Mailed Controlled Substances

The OIG substantiated that some facility staff had difficulties consistently tracking mailed
controlled substances. Pharmacy staff were able to readily track such prescriptions but
non-pharmacy staff did not have the same ability. The OIG found that the lack of system
functionality and the inability for non-pharmacy staff to view prescription tracking in the new
EHR led to non-pharmacy staff reviewing inaccurate tracking information.

According to VHA policy, patient medications are provided via mail to improve staff efficiency and provide good customer service for patients.[61] Controlled and non-controlled medications are mailed from the facility pharmacy or a Consolidated Mail Outpatient Pharmacy.[62] Mailed medications are tracked to monitor delivery status.[63]

When asked by the OIG, pharmacy staff denied knowledge of controlled substances being mailed without the ability to track those prescriptions. A pharmacy staff member stated after go-live, mailed prescription tracking information was at times available only to pharmacy staff. The lack of tracking information in the new EHR would have made it appear as though the medication was sent without the ability to track the medication. The pharmacy staff member further described that tracking information contained in pharmacy outpatient filling and labeling software was not consistently reflected in the new EHR due to a lack of communication between some pharmacy systems and the new EHR.

The OIG learned that a report entitled the "discern report" was available in an area of the EHR that non-pharmacy clinical staff would not typically access when providing and documenting care to patients that included some prescription tracking information. Non-pharmacy clinic staff used the discern report as a work-around to gain information about mailed prescriptions. However, staff who used the discern report for tracking purposes indicated the information was not always reliable.

Status

As of June 7, 2021, a pharmacy staff member reported that non-pharmacy staff continued to access inaccurate tracking information related to ordered prescriptions. The result was that non-pharmacy staff continued to frequently contact pharmacy staff to assess the tracking status of a medication. A pharmacy staff member attributed the continued difficulties to misinformation in the discern report and a lack of non-pharmacy staff training to access tracking information related to medications.

Prescription Drug Monitoring Program

The OIG substantiated the electronic completion of a PDMP query in the new EHR did not automatically populate the action in the patient's EHR. To be in alignment with VHA documentation requirements (entry of completion of the query in a specific progress note), providers needed to manually enter the information.

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[61] VHA Handbook 1108.05(2).

[62] VHA Handbook 1108.05(2).

[63] VHA Handbook 1108.05(2).

The purpose of the PDMP is to "promote safety of controlled substance use and to decrease drug diversion and substance use disorders among patients nationwide."[64] The PDMP is a state-controlled substance monitoring program that requires pharmacy staff to transmit records each time a controlled substance is prescribed and given to a patient.[65] VHA providers are required to initiate a PDMP query, review the patient's controlled substance medication history, and document the PDMP query results in a progress note within the EHR in accordance with state law.[66]

The OIG learned that the process to review and document the PDMP in the new EHR differed from the legacy EHR. In the legacy EHR, the provider or designee reviewed the patient's state of residence PDMP database and created a progress note in the EHR to document the PDMP review. The pre-defined note within the patient's EHR afforded providers an easily identifiable and reviewable method to ensure patient safety when prescribing controlled substances. If the patient lived close to two or more states, providers reviewed bordering states' PDMP databases.

A provider described the new EHR PDMP process as follows:

- The view PDMP report button was selected.

- The new EHR initiated a search of the Washington State PDMP database.

- A clickable option was available to indicate the PDMP query and review was completed.

- The new EHR recorded the PDMP review as completed.

However, according to a facility staff member, the PDMP review did not populate progress notes, which is required by VHA directive. The completion of the query was reportedly captured by the computerized workflow but the workflow was not captured in the patient's EHR. Additionally, the facility staff member was initially uncertain whether the new EHR query retrieved records only from the state of Washington or included adjacent states. The facility staff member later learned the PDMP search within the new EHR only included the state of Washington, and that PDMP reviews of neighboring states required manual queries and documentation.

The OIG received conflicting opinions from facility-prescribing providers about the utility of the new EHR's PDMP query process. One provider described frustration and confusion when completing the PDMP review in the new EHR. The PDMP results and verification of review were not easily viewed as they had been in the legacy EHR, but staff were told the results could be retrieved when necessary for auditing purposes. In contrast, another provider described the

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[64] VHA Directive 1306(1), *Querying State Prescription Drug Monitoring Programs (PDMP)*, October 19, 2016, amended October 21, 2019.

[65] VHA Directive 1108.07.

[66] VHA Handbook 1108.05(2). VHA Directive 1306(1).

new PDMP process as an improvement over the legacy EHR, stating that PDMP reviews were
more efficient and completed more regularly.

The OIG noted differences in the experience and understanding of the PDMP process between
the two prescribing providers who voiced contrasting viewpoints during interviews. One
provider had prior experience in using the Cerner EHR at a non-VA facility.[67] The other provider
was working in the new EHR for the first time. The OIG team identified the discrepancy in
familiarity with the new EHR between the two providers as one reason for the differences in
their experience and descriptions. The two providers also shared that there were instances when
the PDMP review process in the new EHR did not function. One of the providers reported that
when that happens, a manual review of state PDMP websites outside of the new EHR is
necessary.

Status

To determine whether documentation populating in the new EHR following staff PDMP review
met VHA requirements, the OIG contacted the facility's Chief of Staff and Acting Chief of
Quality, Safety, and Value. The Acting Chief of Quality, Safety, and Value stated that the new
EHR recorded the "time, date, and name of the reviewer," which was similar to what was
manually recorded in the legacy EHR. The response from the Chief of Staff reported a lack of
awareness of concerns relating to the PDMP and a belief the new EHR met VHA standards for
documentation. The facility responses were not congruent with the response from VA OEHRM
staff, who reported concerns with the adequacy of the new EHR PDMP documentation and
stated that VA staff were attempting to assess if the current review met necessary standards for
medical record documentation. The response from VA OEHRM staff did not identify a projected
date for resolution of this matter.

Medication Orders Summary

The OIG substantiated that implementation of the new EHR resulted in medication order-related
deficiencies. The new EHR system configuration did not support future medications orders in all
clinics. Future orders written by mental health and substance treatment clinics were
automatically discontinued without notification to ordering providers. After discovering the
automatic discontinuance, providers wrote stat orders on the day of a patient's visit or arranged
for colleagues to write orders in their absence in anticipation of a patient's visit. The OIG
substantiated these work-around processes resulted in workflow inefficiencies, potential patient
safety risks, and medication delays as well as increased risks for orders being missed. Facility
staff explained to the OIG that they expected the new EHR to eventually include functionality

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[67] In this instance, Cerner EHR denotes a version of the EHR available to healthcare professionals before the build
of the new EHR that went live at the facility in October 2020. The facility's go-live version had not been used in
prior healthcare settings.

for providers to write for future clinic orders. VA OEHRM staff did not provide an expected date of resolution.

The OIG substantiated that registered nurses were able to order some medications without those orders being reviewed and approved by an authorized provider. The OIG found that when registered nurses entered multiple medication orders, only the initial order required provider authorization while the remaining orders did not. The OIG determined that facility staff understanding of the problem's causes and Cerner's proposed solution were inconsistent with VA OEHRM staff's solution, indicating communication and resolution inconsistencies. At the time of the OIG's inspection, VA OEHRM staff's proposed solution was in the process of being reviewed and approved through the change management process. VA OEHRM staff did not provide an expected date of resolution.

Some medication orders failed to process but not because pharmacy staff missed the orders. Non-pharmacy staff misattributed unprocessed orders to pharmacy staff not taking action. However, unprocessed medication orders were redirected to queues that were visible to pharmacy staff. Pharmacy staff checked the queues and took action to address errors and process prescriptions.

Similar to the lack of notification of the discontinuance of future orders, the OIG found that providers and pharmacists did not receive notification about outpatient medication orders that did not process as the new EHR was not configured to do so. As VA OEHRM staff did not provide an expected date of resolution, the OIG could not determine when the issue would be resolved.

The OIG substantiated that medication alerts in the new EHR were confusing and providers reported not receiving training or receiving incomplete training. During interviews, staff reported difficulty in differentiating between critical and other medication alerts in the new EHR. In a June 2021 response to an OIG inquiry, VA OEHRM staff acknowledged the confusing alert issues were not resolved and reported being unable to provide additional information related to status of improvements. As VA OEHRM staff did not provide an expected date for the solution, the OIG could not determine when the issue would be resolved.

The OIG substantiated that providers were unable to readily assess the status of a filled prescription order. During interviews, facility staff told the OIG that they could view the status of a prescription but due to system functionality and relocation of information to different queues, the information was not always accurate. The inaccuracies led staff to call or seek out pharmacy staff for assistance as a work-around when checking on the status of medications. VA OEHRM staff did not provide an expected date for resolution.

Some facility staff had difficulties consistently tracking mailed controlled substances. Pharmacy staff were able to track such prescriptions but non-pharmacy staff did not have the same ability. The OIG found that the lack of system functionality and the inability for non-pharmacy staff to view complete prescription tracking information in the new EHR led to non-pharmacy staff

reviewing inaccurate tracking information. Accessing the discern report that included some tracking information yielded some information but was still not complete or consistently accurate. As of June 7, 2021, a pharmacy staff member reported that non-pharmacy staff continued to have difficulties accessing accurate tracking information related to ordered prescriptions. Pharmacy staff attributed the continued difficulties to misleading information in the discern report and a lack of non-pharmacy staff training to access medication tracking information.

The OIG substantiated that the electronic completion of a PDMP query in the new EHR did not automatically populate the action in a progress note in a patient's EHR. The OIG noted conflicting opinions from facility leaders and VA OEHRM staff related to what documentation practice would meet VHA requirements. The response from VA OEHRM staff did not identify a projected date for resolution of the outstanding questions surrounding the PDMP documentation issue. As VA OEHRM staff did not provide an expected date for the solution, the OIG could not determine when the issue would be resolved.

Table 3. Summary of Medication Orders Allegations and Findings

Medication Orders	Allegations	OIG Determination	Status*
Discontinuance of Future Orders	The new EHR discontinued future medication orders written by providers.	Substantiated	Unresolved
	The new EHR discontinued future medication orders, requiring providers to write stat or immediate orders and causing medication delays for patients.	Substantiated	Unresolved
	Because the new EHR discontinued future medication orders, providers who were going to be absent, arranged for colleagues to write orders for recurring medications, which created inefficiencies, increased risks for orders being missed, and possible patient safety issues.	Substantiated	Unresolved
Placing Unauthorized Orders	In the new EHR, registered nurses were able to order medications without the medication orders being reviewed and approved by the medical provider.	Substantiated	Unresolved
Processing of Outpatient Orders	Pharmacy staff using the new EHR failed to process outpatient medication orders.	Not Substantiated	Not Applicable
	Some outpatient medication orders failed to be processed and appeared missing to non-pharmacy staff.	Substantiated	Unresolved

Lack of Notification	The new EHR did not notify prescribing providers and pharmacists about future recurring injectable medication orders that were discontinued or outpatient medication orders that did not process.	Substantiated	Unresolved
Alerts	Medication alerts in the new EHR were confusing and providers did not receive training on them.	Substantiated	Unresolved
Prescription Status	In the new EHR, providers were unable to assess the status of a filled prescription order.	Substantiated	Unresolved
Tracking Mailed Controlled Substances	In the new EHR, pharmacy staff were unable to consistently track mailed controlled substance prescriptions.	Not Substantiated	Not Applicable
	In the new EHR, non-pharmacy staff were unable to consistently track mailed controlled substance prescriptions.	Substantiated	Unresolved
PDMP	After electronic completion of a PDMP query, providers' progress notes were not automatically populated in alignment with VHA policy, which required additional work for providers.	Substantiated	Unresolved

Source: OIG analysis.
* Status of issues reflect the time frame from late January through early June 2021.

3. Medication Reconciliation

The OIG substantiated that inaccurate medication lists in the new EHR presented challenges for staff conducting medication reconciliation.[68] For some providers, changes made to update patient medication lists that would allow an accurate reconciliation of current medications during one visit did not appear at the time of the next visit (discussed below in medication list continuity section). Inaccurate medication lists did not include discontinued, expired, or clinic medications (those administered during a clinic visit), which made it difficult for staff to discern patients' relevant medication history. Medication lists printed by staff from the new EHR for patient use were not patient-friendly and were incomplete and inaccurate. Staff developed work-arounds to carry out patient care but these strategies were time-consuming and vulnerable to human error.

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[68] VHA Directive 2011-012, *Medication Reconciliation*, March 9, 2011. The medication reconciliation process "entails identifying, addressing, and documenting medication discrepancies found in the VA electronic medical record as compared with the medication information supplied by the patient" that is "communicated to the patient, caregiver or family member, and appropriate members of the health care team."

Medication lists inform providers of a patient's medication history including medication names, strengths, and directions.[69] VA providers are expected to conduct medication reconciliation according to facility policy. When conducting medication reconciliation, they rely on medication lists to establish an accurate list of a patient's current medications.[70] Through comparing medication information communicated by a patient to the medication information in the patient's EHR, providers identify and address medication discrepancies, such as duplications or omissions, and update the medication list in the EHR.[71] Providers rely on accurate medication lists to guide treatment decisions.[72] Patients rely on accurate medication lists to fill medication containers, order medication refills, and share their medication regimens with non-VA providers.[73]

Medication List Continuity

The OIG substantiated that changes some staff made to patients' medication lists in the new EHR during medication reconciliation did not take effect or were not carried over to the next appointment. The OIG found that changes to medication lists endured following reconciliation if staff performed reconciliation as designed.[74]

Medication list experiences differed for staff familiar with the new EHR from those using the new EHR for the first time.[75] The OIG was told that a lack of training contributed to staff inaccurately completing the medication reconciliation process. Untrained staff told the OIG that medication lists did not retain updates and reverted to the prior version.

Due to lack of confidence in the accuracy of medication lists, untrained staff reconciled medications by comparing those listed in Joint Longitudinal Viewer and the legacy EHR and then manually entering the dose, route, and frequency of each into the new EHR. The OIG was told that staff's use of a work-around—the review of multiple systems to assess past medication lists—increased the risk for human error, including transcription errors and the selection of

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[69] Pharmacy Benefits Management Services, "VA Medication Reconciliation," accessed March 3, 2021, https://www.pbm.va.gov/PBM/VAMedicationReconciliation/VA_Medication_Reconciliation.asp. VHA Directive 1164, *Essential Medication Information Standards*, June 26, 2015. Medication lists include active, recently expired, and discontinued medications; medications given at other VA facilities; and non-VA medications, including over-the-counter products and medications prescribed by non-VA providers or filled at non-VA pharmacies.

[70] VHA Directive 2011-012.

[71] VHA Directive 2011-012.

[72] VHA Directive 2011-012.

[73] Jeff Belden et al., "Inspired EHRs Designing for Clinicians," August 5, 2014, accessed March 3, 2021, http://inspiredehrs.org/Inspired_EHRs_Designing_for_Clinicians.pdf.

[74] The corrected medication lists did not include clinic medications, which as noted previously, did not appear on medication lists.

[75] The OIG considered staff members who had used the new EHR in previous work settings to be staff familiar with the new EHR.

inactive orders. On occasion, staff reconciled the same medications multiple times for a patient because the new EHR did not maintain changes made during previous appointments.[76]

Staff familiar with the new EHR described medication reconciliation as a complex, time-consuming, multistep process that required an overall understanding of how the new EHR worked. One staff member noted that if staff reconciled a subset of a patient's full medication list, the result was an incomplete medication reconciliation that required additional changes. This knowledge gap contributed to errors and explained varied user experiences.

Some staff reported not receiving training or direction related to performing medication reconciliation prior to go-live. Facility staff were initially supported by the new EHR consultants for two weeks after go-live while also being offered written guides and trainings by other VA staff from outside the facility to assist with training staff who did not receive training prior to go-live.[77] According to a staff member:

> We were the first site to go-live with Cerner. We did not get any training or direction on medication reconciliation for some time… So we were all kind of flying blind in the dark. We could not figure out how to actually reconcile medications.

The OIG determined that medication reconciliation in the new EHR took all staff a substantial amount of time to complete due to the complexity of the multistep process. The OIG was told that in many instances, staff had to review other systems for medication lists and reenter legacy EHR medications into the new EHR. Staff reported the reconciliation process could take between 30 and 60 minutes, even when performed by an experienced provider. As a result, providers had less time during appointments to spend with patients and clinic capacity was reduced.

Status

Although staff reported the medication reconciliation accuracy and continuity problems on November 9, 2020, through the ticket system, the problem was not immediately resolved. Staff followed-up on submitted tickets, submitted additional tickets, and held discussions during meetings with facility and VA OEHRM stakeholders for a resolution to medication reconciliation deficiencies. Staff noted an improvement in medication list continuity since early March of 2021.

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[76] For example, a staff member told the OIG that a patient who required weekly to biweekly appointments had a list of approximately 50 medications, which staff initially reconciled at each visit.

[77] VA Directive 0006, *Talent Management System (TMS) E-Learning Section 508*, September 18, 2012. The VA's Talent Management System is a web-based application used to disseminate training and education to VA employees.

According to VA OEHRM staff, "if information is updated on the patient's 'Medication History' or 'Medication Reconciliation' it [the information] persists across encounters as long as the changes were signed. If this is not functioning, then it is a technical, not config [system configuration] issue, but I have not heard of it personally." The OIG learned that Cerner presented a resolution to address aspects of medication reconciliation problems on May 12, 2021, but the OIG could not confirm the date for resolution implementation as VA OEHRM staff did not provide an expected date.

Medication List Inaccuracies

The OIG received allegations regarding two types of medication list inaccuracies that are discussed below:

- Discontinued and expired medications

- Clinic medications

As noted above, the ability to conduct a thorough medication reconciliation rests on the review of an accurate listing of the patient's medications. Providers are therefore encouraged to verify that the patient's current medication list is complete and accurate.

Discontinued and Expired Medications

The OIG substantiated that discontinued and expired medications did not appear on patient medication lists during medication reconciliation in the new EHR, which presented a patient safety risk. The OIG found that super users and those with prior experience working in the new EHR did not have problems finding discontinued and expired medications and attributed the complaint to a lack of training on how to customize settings and search for orders in the new EHR.

Facility staff stated that expired and discontinued medication information was not easily and readily viewable during medication reconciliation. Staff's ability to view expired and discontinued medications was dependent on applying the correct user settings. As instructed by a facility leader, staff used Joint Longitudinal Viewer and the legacy EHR when completing medication reconciliation to verify medication lists, a time-consuming work-around and one that increased the risk for human error and the selection of obsolete orders.

The OIG learned from VA OEHRM staff that the new EHR was configured to display only active medications during medication reconciliation; as discontinued and expired medications were not active, they were not displayed. Staff reported instances when patients did not receive needed medications because staff were not aware the medications had expired and needed to be reordered. VA OEHRM staff confirmed in written communication that "there are limitations with regards to what medications will pull into this section, either way it only displays ACTIVE medications current state and therefore inactive prescriptions do not import." A staff member

described this functionality as lacking compared to the legacy EHR, which included discontinued and expired medications on patients' medication lists.

Status

At the time of the OIG's inspection, discontinued and expired medications were not viewable on patient medication lists during medication reconciliation. According to VA OEHRM staff, "Med rec [reconciliation] can't be configured to show recently expired meds, if it were possible it would be ideal to add. Discontinued meds is [*sic*] trickier both in terms of config [system configuration] and technical design, but similarly my understanding is that its [*sic*] not possible to display in that [medication reconciliation] menu." The OIG could not determine if the discontinued and expired medications could or would be made viewable in medication lists. As VA OEHRM staff did not provide an expected date for the solution, the OIG could not determine when the issue would be resolved. The OIG learned that staff continued to hand document medication lists to maintain continuity and accuracy.

Clinic Medications

The OIG substantiated that medications administered to patients in clinic, including recurring injectable medications, did not appear on patients' medication lists during medication reconciliation in the new EHR. The OIG determined that lack of clinic medication orders on medication lists presented a patient safety risk. The OIG found that staff could locate and view clinic medications within the new EHR, but success was dependent on training and correct user settings, and was time-consuming.

As in the case of discontinued and expired medications, a staff member explained that because clinic medications did not appear on medication lists, staff could not easily ascertain a patient's complete medication history. To obtain a complete history inclusive of clinic medications, staff searched for information in a different part of the patient's EHR than the section used for documenting clinic notes, combed through numerous progress notes, and consulted with the patient.

Without a complete medication list, providers are unable to make informed treatment decisions, which could result in ordering duplicate or contraindicated medications. An example described by a provider highlights the importance of providers having a complete medication history to prevent adverse events.[78]

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[78] In a patient who is already taking buprenorphine and naloxone, the addition of an opioid would likely cause diminished opioid effectiveness. The patient in question did not experience an adverse clinical outcome but this example illustrates the potential for patient safety concerns.

Example 4.

> *Undetected Dispensed Opioid. An urgent care provider prescribed an opioid medication to a patient who was also taking Suboxone (buprenorphine and naloxone) for opioid use disorder, which was contraindicated. The provider who managed the patient's buprenorphine and naloxone told the OIG that the EHR did not show that the patient received an opioid from the urgent care provider.*

The OIG learned that following administration of a clinic medication the order status changed to inactive. A facility staff member told the OIG that like discontinued and expired medications, clinic medications did not appear on medication lists because the new EHR was configured to display only active medications during medication reconciliation. Staff told the OIG they would have to know to look on the Medication Administration Record of the new EHR and manually change the search criteria to a specific date, since standard Medication Administration Record dates in the new EHR only go back 48 hours (see figure 2), or search on the inactive medication list, a view that many staff did not have set up as a default (see figure 3).
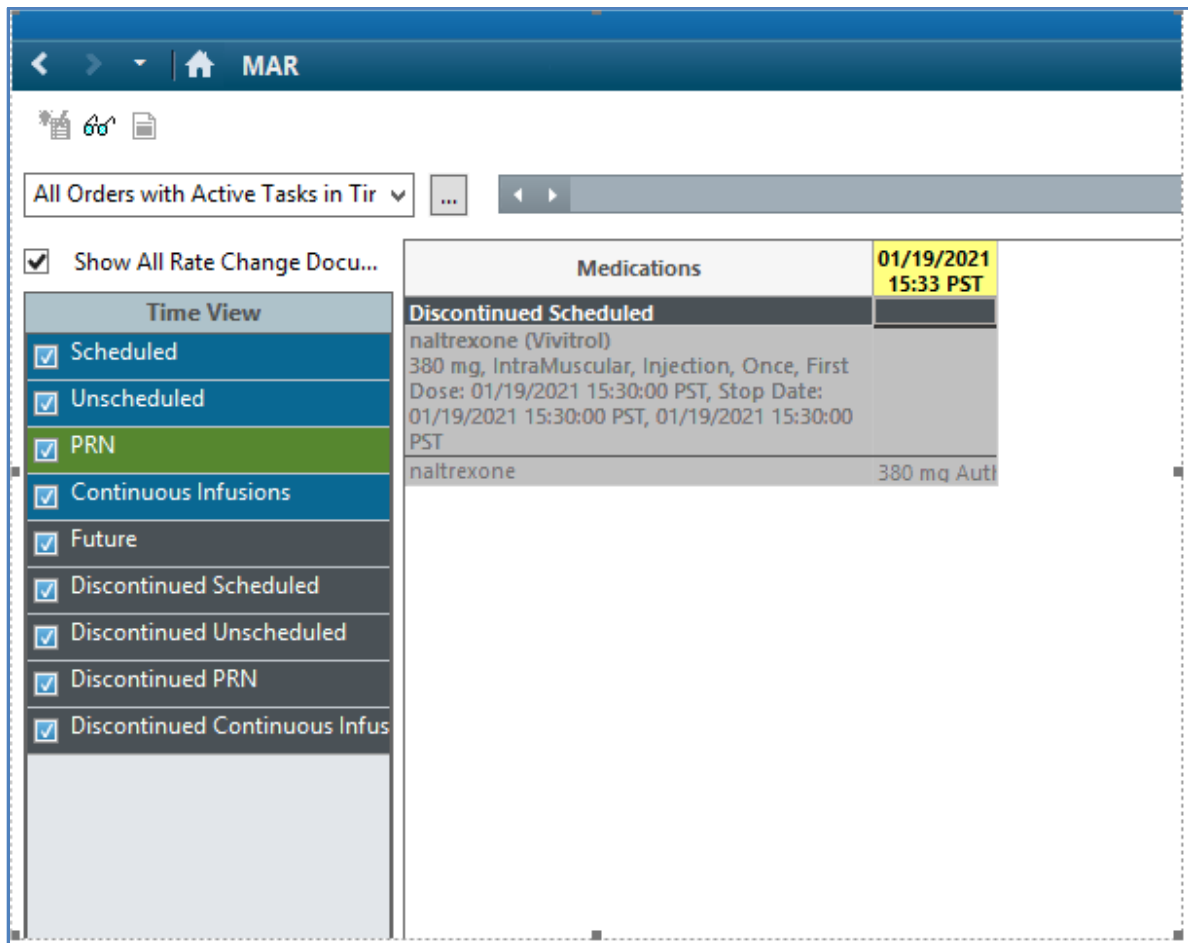

Figure 2. Screenshot of Medication Administration Record showing naltrexone order (deidentified). Source: Screenshot of the new EHR.

	$		▽	Order Name	▲		Status	Refills Remaining	Complian...	Complia...	Dose ...	Details
⊿ Inactive												
⊿ Medications												
				naltrexone (Vivitrol)			Completed					380 mg, IntraMuscular, Injection, Once, First Dose: 01/19/20...
				naltrexone (Vivitrol)			Discontinued					380 mg, IntraMuscular, Injection, Once, First Dose: 01/06/20...
				naltrexone (Vivitrol)			Completed					380 mg, IntraMuscular, Injection, Once, First Dose: 12/09/20...
				naltrexone (Vivitrol)			Discontinued					380 mg, IntraMuscular, Injection, Once, First Dose: 12/07/20...
				naltrexone (Vivitrol)			Discontinued					380 mg, IntraMuscular, Injection, every 4 wk, Order Duration...
				naltrexone (Vivitrol)			Discontinued					380 mg, IntraMuscular, Injection, every month, First Dose: 1...

Figure 3. *Screenshot of naltrexone appearing as inactive medications (deidentified).*
Source: Screenshot of the New EHR.

Status

At the time of the OIG's inspection, staff confirmed that administered clinic medications became inactive and did not appear on active medication lists; the issue had not been resolved. VA OEHRM staff explained that clinic medications were recorded and viewable in several areas in the new EHR.[79] The OIG was not informed of plans to make automatically discontinued clinic medications viewable in medication lists.

Medication Lists and Patient Use

The OIG substantiated that medication lists in the new EHR were not patient-friendly (informative to patients). The OIG found that medication lists excluded essential information required by VHA to form a complete (no missing medications) and accurate (correct medications) list during medication reconciliation.[80] The OIG determined that the new EHR was not configured to support the functionality of printing complete patient medication lists.

In its strategic plan, the VA Office of Information and Technology asserted a goal of veterans experiencing "seamless interactions" leading to "improved patient engagement and consistent customer experiences."[81] Medication instructions that are not written in plain language understandable by facility staff and patients are not consistent with either VHA's or VA Office of Information Technology's patient-centered goals.

A staff member informed the OIG that prior to go-live, it was their practice to provide patients with updated medication lists. The medication lists in the new EHR available to be printed and provided to patients were not accurate, clear, or easy for patients to understand. For example, a patient's printable list included Latin abbreviations (*TID* rather than *three times a day* and *QID* rather than *four times a day)* to indicate frequency that would not be familiar to most patients

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[79] "In-clinic medications are recorded in the MAR [Medication Administration Record] and MAR Summary, available to all users in the menu. It will also be seen as an order in the documentation of that encounter. PowerPlan orders are viewed in the Orders component and menu Order page."

[80] VHA Directive 1164. VHA requires that medication lists imported in the health care record and shared with patients contain essential information including name, strength, and directions for use.

[81] VA OIT, *2020-2022 Strategic Plan*, https://www.ea.oit.va.gov/EAOIT/docs/Oct2020/IRM-Strategic-Plan-FY2020-2022-v26.pdf, accessed December 8, 2021.

(see figure 4).[82] Another patient's medication list imported from the legacy EHR into the new
EHR was missing patient instructions; instead, the term "*legacy*" appeared in place of medication
directions (see figure 5).

The OIG's review of ticket data supported that, unlike the legacy EHR, staff were unable to print
user-friendly, easy-to-understand medication summaries for patients. During interviews, staff
reported not relying on the new EHR printed medication lists to give to patients. Instead, staff
manually typed medication lists with medication directions on a separate document and printed
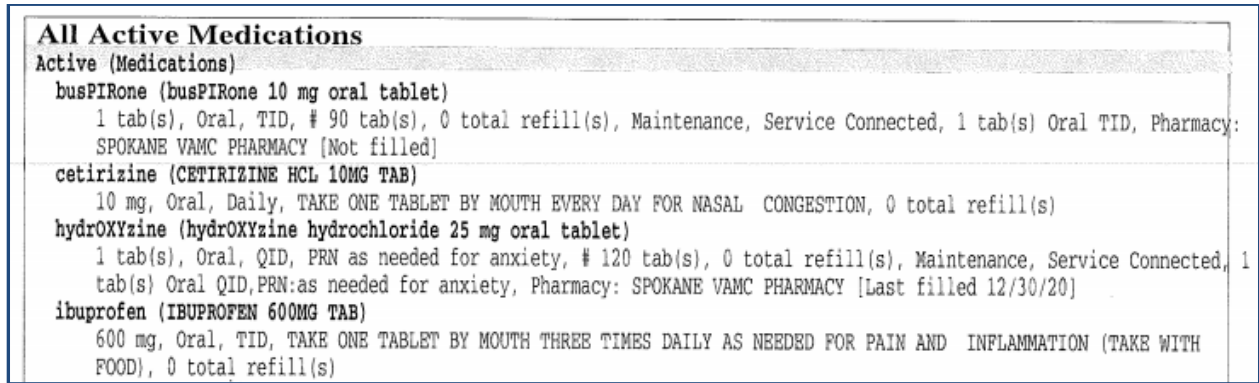the manually typed lists for patients.

```
All Active Medications
Active (Medications)
  busPIRone (busPIRone 10 mg oral tablet)
     1 tab(s), Oral, TID, # 90 tab(s), 0 total refill(s), Maintenance, Service Connected, 1 tab(s) Oral TID, Pharmacy:
     SPOKANE VAMC PHARMACY [Not filled]
  cetirizine (CETIRIZINE HCL 10MG TAB)
     10 mg, Oral, Daily, TAKE ONE TABLET BY MOUTH EVERY DAY FOR NASAL  CONGESTION, 0 total refill(s)
  hydrOXYzine (hydrOXYzine hydrochloride 25 mg oral tablet)
     1 tab(s), Oral, QID, PRN as needed for anxiety, # 120 tab(s), 0 total refill(s), Maintenance, Service Connected, 1
     tab(s) Oral QID,PRN:as needed for anxiety, Pharmacy: SPOKANE VAMC PHARMACY [Last filled 12/30/20]
  ibuprofen (IBUPROFEN 600MG TAB)
     600 mg, Oral, TID, TAKE ONE TABLET BY MOUTH THREE TIMES DAILY AS NEEDED FOR PAIN AND  INFLAMMATION (TAKE WITH
     FOOD), 0 total refill(s)
```

Figure 4. Screenshot of printed medication list for a patient (deidentified).
Source: Screenshot of the new EHR.
*The medication list contains terms such as TID and QID that may be unfamiliar to a patient.
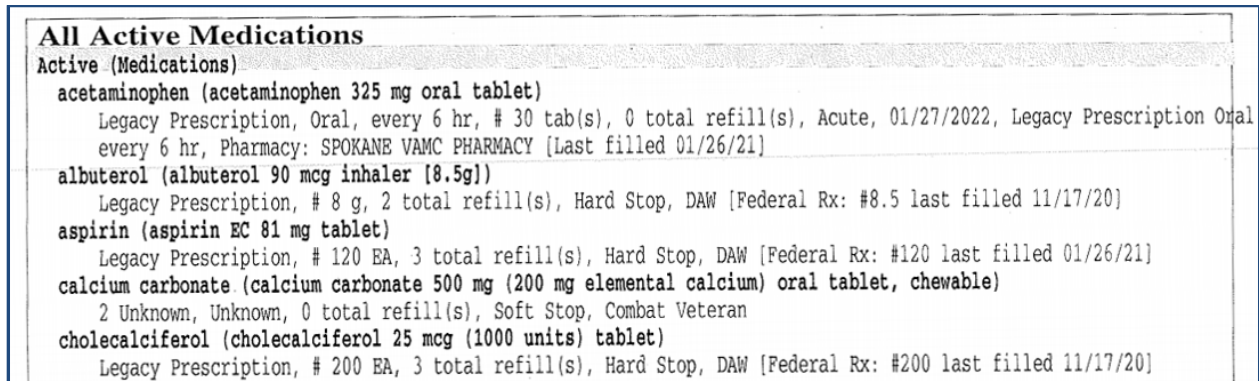
```
All Active Medications
Active (Medications)
  acetaminophen (acetaminophen 325 mg oral tablet)
     Legacy Prescription, Oral, every 6 hr, # 30 tab(s), 0 total refill(s), Acute, 01/27/2022, Legacy Prescription Oral
     every 6 hr, Pharmacy: SPOKANE VAMC PHARMACY [Last filled 01/26/21]
  albuterol (albuterol 90 mcg inhaler [8.5g])
     Legacy Prescription, # 8 g, 2 total refill(s), Hard Stop, DAW [Federal Rx: #8.5 last filled 11/17/20]
  aspirin (aspirin EC 81 mg tablet)
     Legacy Prescription, # 120 EA, 3 total refill(s), Hard Stop, DAW [Federal Rx: #120 last filled 01/26/21]
  calcium carbonate (calcium carbonate 500 mg (200 mg elemental calcium) oral tablet, chewable)
     2 Unknown, Unknown, 0 total refill(s), Soft Stop, Combat Veteran
  cholecalciferol (cholecalciferol 25 mcg (1000 units) tablet)
     Legacy Prescription, # 200 EA, 3 total refill(s), Hard Stop, DAW [Federal Rx: #200 last filled 11/17/20]
```

Figure 5. Screenshot of printed medication list for a second patient (deidentified).
Source: Screenshot of the new EHR.
*The medication list does not contain complete instructions for the patient, such as the frequency to take
medications.

Staff found that manually typing medication lists as a work-around was inefficient, caused
delayed patient care, and reduced clinic capacity compared to before the new EHR

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[82] *TID* means three times a day and *QID* means four times a day.

implementation. Additionally, staff were concerned that manually typing medication information could produce errors, which represented a potential patient safety issue.

Status

At the time of the OIG's inspection, staff informed the OIG that medication lists printed by nursing staff (not providers) continued to show *legacy* within the medication instructions. According to VA OEHRM staff, a solution was developed to address the issue of staff not being able to print complete patient medication lists "which somewhat addresses that need." As of June 2, 2021, VA OEHRM staff was preparing to announce the solution. The OIG was not informed of when the new medication list function would be available to staff or when the issue would be fully resolved. As VA OEHRM staff did not provide an expected date for the solution, the OIG could not determine when the issue would be resolved.

Medication Reconciliation Summary

The OIG substantiated that changes made to patients' medication lists during reconciliation by some staff did not remain. The new EHR medication reconciliation process presented challenges for staff. Some staff reported that they were not adequately trained or supported by the new EHR trainers. Without adequate training, staff were unprepared to perform medication reconciliation efficiently. As VA OEHRM staff did not provide an expected date for the solution, the OIG could not determine when the issue would be resolved.

Medication lists were inaccurate due to discontinued, expired, and clinic medications not being readily found in the new EHR, which presented a medication safety risk. As a work-around, staff manually reviewed other systems or reviewed new EHR documents to gain a complete medication picture, which was both time-consuming and subject to human error. Without accurate medication documentation, providers cannot safely make treatment decisions. As VA OEHRM staff did not provide an expected date for the solution, the OIG could not determine when the issue would be resolved.

The OIG substantiated that medication lists in the new EHR did not contain information required by VHA to form a complete and accurate list during medication reconciliation and were not patient-friendly. As a work-around, staff manually typed medication lists to provide to patients. Staff found that manually typing medications was a time-consuming process that reduced the time available to spend with patients and introduced the possibility for human error. As VA OEHRM staff did not provide an expected date for the solution, the OIG could not determine when the issue would be resolved.

Table 4. Summary of Medication Reconciliation Findings

Medication Reconciliation	Allegations	OIG Determination	Status*
Medication List Continuity	Staff had to update medication lists at every visit because updated medication information did not carry over to the next appointment.	Substantiated	Unresolved
	Medications disappeared from the reconciled medication list and medication lists were inaccurate following reconciliation.	Substantiated	Unresolved
	Staff manually entered medication lists following medication reconciliation, which introduced increased risk for error and possible safety concerns.	Substantiated	Unresolved
	Medication reconciliation required a significant amount of time to complete per patient.	Substantiated	Unresolved
Medication List Inaccuracies	Discontinued and expired medications were not viewable on medication lists during medication reconciliation, creating a patient safety issue.	Substantiated	Unresolved
	Medications administered in clinic, including recurring injectable medications administered once, did not appear on medication lists, creating a patient safety issue.	Substantiated	Unresolved
Medication Lists and Patient Use	Medication lists were not patient-friendly.	Substantiated	Unresolved

Source: OIG analysis.

* Status of issues reflect the time frame from late January through early June 2021.

Conclusion

The OIG conducted an inspection to assess a range of allegations received by the OIG regarding medication management challenges associated with implementation of the new EHR. The OIG categorized the allegations reviewed into three areas of concern: data migration, medication orders, and medication reconciliation. At the time of the OIG's inspection, many of the identified problems remained unresolved. Deployment of the new EHR without resolution of the deficiencies presents risks to patient safety.

Further discussion of allegations related to clinical care coordination challenges after go-live, ticket process concerns identified by the OIG during its evaluation of the allegations, and underlying factors related to all substantiated allegations can be found in the companion reports of the OIG's trilogy of reports on this matter.

Recommendations

1. The Deputy Secretary ensures that substantiated and unresolved allegations discussed in this report are reviewed and addressed.

2. The Deputy Secretary ensures medication management issues related to the new electronic health record that are identified subsequent to this inspection be reported to the Office of Inspector General for further analysis.

Appendix A: Electronic Health Modernization

In the 1980s, VA developed one of the earliest EHRs that became VistA in 1996.[83] VistA is a comprehensive health information system and EHR that provides all capabilities required for VA clinical, business, and administrative processes, and serves an essential role in VA's healthcare delivery mission. In June 2017, former VA Secretary David Shulkin determined that a "substantial investment" was required in order to maintain and improve VistA's operational capability, and "keep pace with the improvements in healthcare information technology and cybersecurity." Further, after many years of attempting to achieve EHR interoperability, VA and the DoD were unable to adopt the same EHR or create a congressionally required interoperable medical record platform.

In February 2017, the DoD began deployment of its new EHR, known as Military Health System (MHS) GENESIS. At its core, MHS GENESIS is the commercial EHR developed by the Cerner. On June 1, 2017, former VA Secretary David Shulkin announced it to be in the public's interest to contract with Cerner to have a common EHR platform across VA and the DoD.[84] In this announcement, Secretary Shulkin determined that VA may issue a solicitation directly to Cerner for the acquisition of the EHR system that the DoD was deploying.

On May 17, 2018, former Acting VA Secretary, Robert Wilkie announced that the VA had signed a $10 billion contract with Cerner to transition to a new EHR system. Since the new VA-wide EHR would share the same commercial software platform and data hosting environment as the DoD EHR, VA would further benefit from the DoD's recent early deployment experience.[85] DoD began the rollout of MHS GENESIS in Spokane, Washington on February 7, 2017, at Fairchild Air Force Base and continued that roll out at additional sites in the Pacific Northwest. The DoD's early EHR deployments faced multiple delays and setbacks. DoD shared lessons learned to assist and guide VA's deployment strategy.[86]

To oversee the VA new EHR deployment, the VA OEHRM was established in June 2018.[87] VA OEHRM responsibilities include management of the preparation, deployment, and maintenance

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[83] "History of IT at VA," DigitalVA, accessed January 31, 2020, https://www.oit.va.gov/about/history.cfm. Within the context of this report, the VistA system is referred to as the legacy EHR. Office of Information and Technology, *VA Monograph*, January 13, 2017, accessed January 11, 2020, https://www.va.gov/VISTA_MONOGRAPH/VA_Monograph.pdf.

[84] VA, Office of the Secretary, *Determination and Findings,* June 1, 2017.

[85] The United States Senate confirmed Robert Wilkie as the Secretary of Veterans Affairs on July 23, 2018. Mr. Wilkie was the Acting Secretary from March 28 to May 29, 2018.

[86] VA OEHRM staff reported that DoD shared lessons learned to inform EHR configuration decisions.

[87] "VA Establishes Office of Electronic Health Record Modernization to Support Transition from Legacy Patient Data System," accessed June 17, 2021, https://www.va.gov/opa/pressrel/pressrelease.cfm?id=5084.

of the new EHR.[88] VA OEHRM leadership includes an Executive Director, Chief Medical Officer, and Chief Technology Integration Officer.[89]

EHRM Milestones

March 28, 2020. The facility was scheduled to be the first VHA medical center to implement the new EHR. However, on February 10, 2020, a VA spokesperson announced the new EHR's deployment would be postponed, six weeks prior to the intended go-live date, as the new EHR was only "75-80 percent" ready.

April 3, 2020. The former VA Secretary informed Congress that the COVID-19 pandemic necessitated a shift in overall priorities and directed that VA OEHRM efforts take a non-intrusive posture with VHA healthcare operations to ensure that health care at VHA facilities was not impeded. As reported by a facility staff member, when the COVID-19 pandemic caused facility priorities to shift, only a limited number of staff continued new EHR-related work.

August 7, 2020. VA announced that activities at the facility for an October go-live of the new EHR had resumed.[90] VA work not directly involving facility staff had continued during the COVID-19 pandemic delay. VA work during that time included infrastructure readiness requirements at the facility and completion of the requisite 73 interfaces for go-live, including design, build, connectivity, and technical testing requirements.[91]

October 24, 2020. Facility providers and administrators began using the new EHR for clinical and administrative work.

March 19, 2021. Nearly five months after the go-live of the new EHR at the facility, VA announced that an ongoing analysis of the facility's new EHR post-deployment activities had prompted a "strategic review" and "need for a schedule shift" of future go-live sites. The review was planned to last less than 12 weeks. The VA Secretary commented[92]

> A successful EHR deployment is essential in the delivery of lifetime, world-class health care for our Veterans....After a rigorous review of our most-recent deployment at Mann-Grandstaff VA Medical Center, it is apparent that a strategic

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[88] On June 25, 2018, the former Acting VA Secretary, Peter M. O'Rourke, established VA OEHRM.

[89] "Leadership," VA Office of Electronic Health Record Modernization, accessed January 17, 2020, https://www.ehrm.va.gov/about/bios.

[90] VA, *VA Responds to COVID-19 with Schedule Revisions to Electronic Health Record Implementation*, accessed October 22, 2020, https://www.ehrm.va.gov/news/article/read/va-responds-to-covid-19-with-schedule-revisions-to-electronic-health-record-implementation.

[91] The VA OEHRM Director of Change Management opined that, in hindsight, the lack of VA OEHRM contact during this period was a significant factor, which hindered Change Management's ability to prepare facility staff for the upcoming transition.

[92] "VA announces strategic review of Electronic Health Record Modernization program."

review is necessary. VA remains committed to the [Cerner] solution, and we must
get this right for Veterans.

In the role of Acting Deputy Secretary, Dr. Carolyn Clancy, led the strategic review effort with
frequent engagement from VA Secretary Denis McDonough.

July 2021. The VA published the initial results of the strategic review through the
Comprehensive Lessons Learned Report. The VA identified key areas "to ensure the success of
future deployments and to prevent and reduce issues at future sites":

- Improving the veteran experience

- Ensuring patient safety

- Providing extended training to frontline employees

- Building confidence at VA sites

- Implementing organizational and program improvements

- Improving operational efficiencies

- Making governance effective

- Centralizing data management for workers and veterans[93]

December 2021. The VA announced an updated deployment plan for the new EHR. The
plan included a revised deployment schedule and outlined changes in management and
governance of electronic health record modernization (EHRM) "to address previously
identified organizational challenges with limited stakeholder inputs in decision-making,
accountability, and information sharing transparency."[94] The future EHRM management
structure announced by VA did not include VA OEHRM staff and identified a new
position to lead the VA's EHRM, the Program Executive Director for EHRM Integration,
working under the Deputy Secretary.[95]

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[93] "Electronic Health Record Comprehensive Lessons Learned Report," VA Electronic Health Record
Modernization, accessed January 12, 2022, https://federalnewsnetwork.com/wp-
content/uploads/2021/07/071421_va_ehr_lessonslearned_FNN.pdf. The VA's report summarized the results of a
strategic review of the new EHR's deployment.

[94] VA Office of Public and Intergovernmental Affairs "VA advances Electronic Health Record Modernization
program," news release December 1, 2021, https://www.va.gov/opa/pressrel/pressrelease.cfm?id=5745.

[95] VA Office of Public and Intergovernmental Affairs, *Electronic Health Record: Comprehensive Lessons Learned,
Progress Update, November 2021,* accessed December 1, 2021, https://www.va.gov/opa/docs/EHRM-
Comprehensive-Lessons-Learned-Progress-Update-FINAL-11-29-21.pdf. "VA Advances Electronic Health Record
Modernization."

Appendix B: Prior OIG Reports

The following is a summary of facility or new EHR-related reports released by the OIG since 2020.

In a report issued November 10, 2021, the OIG conducted an audit of VHA and VA OEHRM's implementation of the patient scheduling component of the new EHR at two sites, the Chalmers P. Wylie VA Ambulatory Care Center in Columbus, Ohio, and the Mann-Grandstaff VA Medical Center in Spokane, Washington. The OIG made eight recommendations to address deficiencies with training and implementation of the new EHR's scheduling system.[96] As of December 1, 2021, eight recommendations remained open.

The OIG also reviewed training for the facility's transition to the new EHR. In a report issued July 8, 2021, the OIG made 11 recommendations to address deficiencies related to EHR training content and delivery, the evaluation of training, Cerner's contractual performance for training, reviewing governance of the electronic health record modernization effort, establishment of a group with expertise in VHA operations and Cerner electronic health record use, tracking EHR patient complaints, and assessing employee morale.[97] As of December 1, 2021, 11 recommendations remained open.

The OIG conducted an audit of VA's development and reporting of cost estimates for information technology upgrades needed to support the EHRM program. The OIG made six recommendations related to ensuring an independent cost estimate, reassessing the cost estimate for program-related information technology infrastructure upgrades in in accordance with VA-cost-estimating standards, development of procedures in alignment with VA cost estimate guidance, ensuring cost estimates for all information technology infrastructure upgrades are disclosed in the program life-cycle cost estimates presented to Congress, formalizing agreements with Office of Information and Technology and VHA to identify expected funding contributions from each entity, and establishing procedures for updating life-cycle cost estimated and ensuring disclosure in congressionally mandated reports.[98] The report was issued July 7, 2021; as of December 1, 2021, six recommendations remained open.

The OIG conducted an audit of VA's development and reporting of costs estimates for physical infrastructure upgrades necessary to support the new EHRM program. The OIG made five recommendations related to ensuring an independent life-cycle cost estimate including physical and infrastructure costs, VHA development of a cost estimate for physical infrastructure

[96] VA OIG, *New Patient Scheduling System Needs Improvement as VA Expands Its Implementation*, Report No. 21-00434-233, November 10, 2021.
[97] VA OIG, *Training Deficiencies with VA's New Electronic Health Record System at the Mann-Grandstaff VA Medical Center in Spokane, Washington*, Report No. 20-01930-183, July 8, 2021.
[98] VA OIG, *Unreliable Information Technology Infrastructure Cost Estimates for the Electronic Health Record Modernization Program*, Report No. 20-03185-151, July 7, 2021.

upgrades in accordance with VA-cost-estimating standards, incorporation and updating of upgrade costs in facility assessments, and disclosure of costs to Congress.[99] The report was issued May 25, 2021; as of December 1, 2021, five recommendations remained open.

In a facility-related report issued April 27, 2020, the OIG reviewed the new EHR's implementation to evaluate the potential impact of the transition on access to care, as well as the capabilities that would be initially available. The OIG made eight recommendations to address the impact of the transition to the new EHR.[100] As of December 1, 2021, three recommendations remained open.

A separate report was issued the same day in which the OIG examined VA's physical and information technology infrastructure to determine readiness to proceed with the new EHR implementation and to identify infrastructure challenges that could affect the overall system deployment schedule. The OIG made eight recommendations to address infrastructure-related deficiencies.[101] As of December 1, 2021, three recommendations remained open.

On January 8, 2020, the OIG issued another facility-related report that addressed concerns with a departure of providers, inadequate staffing leading to intensive care unit closure, decreased operating room availability, and a temporary leadership appointment. The OIG found that facility leaders were aware of the concerns and had made management decisions to address them. The OIG did not find that the identified concerns were problematic. The OIG recommended that the Facility Director act to ensure that patients have timely access to care.[102] As of February 23, 2021, no recommendations remained open.

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[99] VA OIG, *Deficiencies in Reporting Reliable Physical Infrastructure Cost Estimates for the Electronic Health Record Modernization Program*, Report No. 20-03178-116, May 25, 2021.

[100] VA OIG, *Review of Access to Care and Capabilities during VA's Transition to a New Electronic Health Record System at the Mann-Grandstaff VA Medical Center, Spokane, Washington*, Report No. 19-09447-136, April 27, 2020.

[101] VA OIG, *Deficiencies in Infrastructure Readiness for Deploying VA's New Electronic Health Record System*, Report No. 19-08980-95, April 27, 2020.

[102] VA OIG, *Review of Staffing and Access Concerns at the Mann-Grandstaff VA Medical Center, Spokane, Washington*, Report No. 19-09017-64, January 8, 2020.

Appendix C: Deputy Secretary Memorandum

Department of Veterans Affairs Memorandum

Date: February 28, 2022

From: Deputy Secretary (001)

Subj: Healthcare Inspection - Medication Management Deficiencies after the New Electronic Health
Record Go-Live at the Mann-Grandstaff VA Medical Center in Spokane, Washington (Project Number 21-
00656-HI-1129) (VIEWS 6814467)

To: Assistant Inspector General for of Healthcare Inspections (54)

Thank you for the opportunity to review the Department of Veterans Affairs (VA) Office of Inspector
General (OIG) draft report "Medication Management Deficiencies after the New Electronic Health Record
Go-Live at Mann-Grandstaff VA Medical Center in Spokane, Washington." The report contains two
recommendations for the Deputy Secretary.

I concur with the first recommendation in this report. I have included as an attachment to this
memorandum an action plan jointly developed by the Electronic Health Record Modernization Integration
Office (EHRM IO) and the Veterans Health Administration to address this recommendation.

Regarding the second recommendation, I respectfully do not concur. I have included additional context
for VA's assessment of this recommendation in the attached action plan.

Please contact the EHRM IO Program Executive Director with questions.

(Original signed by:)

Donald M. Remy

Attachment

Deputy Secretary Response

Recommendation 1

**The Deputy Secretary ensures that substantiated and unresolved allegations
discussed in this report are reviewed and addressed.**

<u>**VA Response:**</u> Concur.

Target Date for Completion: May 10, 2022.

Comments

The Department of Veterans Affairs (VA) will review and address all substantiated and
unresolved allegations cited in this report. The Electronic Health Record Modernization
Integration Office (EHRM IO) and the Veterans Health Administration (VHA) are
engaged in a "Get Well" plan to evaluate all identified problem sets and develop action
plans surrounding any unresolved issues. Since the timeframe identified in the report
(January 2021 to June 2021), EHRM IO and VHA have already coordinated to address
3 of the 21 substantiated and unresolved allegations cited in this report:

Issue:	Medication Lists.
Allegation:	Medication lists were not accurately imported into the new Electronic Health Record (EHR).
Resolution:	The information was accurate, but VA determined that the volume of data made it challenging for end users to synthesize. The EHRM IO Data Migration team, the EHRM Pharmacy Council and the VHA Pharmacy Benefit Management Services team have collaborated to implement comprehensive improvement on the data migration processes for medication lists at the Mann-Grandstaff VA Medical Center (VAMC) and all sites moving forward.
Issue:	Medication Lists.
Allegation:	Medication lists were imported into the new EHR as free text.
Resolution:	VA determined that free-text migration of medication lists occurred for only 0.7% of all historical medication records migrated and none of which were active or actionable. Nevertheless, the EHRM IO Data Migration team, the EHRM Pharmacy Council and the VHA Pharmacy Benefit Management Services team have established new methodologies for legacy prescriptions to improve their actionability and functionality.

Issue: Medication List Continuity.

Allegation: Staff had to update medication lists at every visit because updated
              medication information did not carry over to the next appointment.

Resolution: VA resolved this with a configuration change.

Recommendation 2

The Deputy Secretary ensures medication management issues related to the new electronic health record that are identified subsequent to this inspection be reported to the Office of Inspector General for further analysis.

VA Response: Do not concur.

Target Date for Completion: Not applicable.

Comments

EHRM IO, VHA, the Office of Information and Technology (OIT) and other VA stakeholders are working closely with Cerner to address the issues regarding the electronic health record implementation at the Mann-Grandstaff VAMC. VA anticipates that the number and nature of patient safety reports will fluctuate as potential patient safety events in areas such as care coordination and medication management are identified, reported, investigated and resolved.

This recommendation does not include any clear parameters that would allow VA to eventually close the recommendation. VA respectfully non-concurs with this recommendation on the basis that it creates a continuous reporting requirement to the Office of the Inspector General (OIG) with no end date or defined parameters to otherwise permit closure of the recommendation.

OIG Comment

Particularly given the number of significant patient safety issues identified in this report, the OIG remains concerned about these safety issues and the ability of the new EHR to support the delivery of high quality healthcare. This is not an open-ended recommendation and will be closed when VA demonstrates that there is an effective and sustainable process to identify and address patient safety issues. The OIG intends to vigorously pursue patient safety issues identified with the new EHR. VA also has an obligation under the IG Act as amended to provide promptly all information requested by the OIG. Thus, although the request for medication management issues identified after the OIG inspection is included in a recommendation, VA already has the obligation to provide this information regardless of whether VA concurs with the recommendation.

Appendix D: Under Secretary for Health Memorandum

Department of Veterans Affairs Memorandum

Date: February 14, 2022

From: Deputy Under Secretary for Health, Performing the Delegable Duties of the Under Secretary for Health (10)

Subj: OIG Draft Report, Healthcare Inspection – Medication Management Deficiencies after the New Electronic Health Record Go-Live at the Mann-Grandstaff VA Medical Center in Spokane, Washington (2021-00656-HI-112)

To: Office of the Assistant Inspector General for Healthcare Inspections (54)

Thank you for the opportunity to review and comment on the Office of Inspector General draft report Medication Management Deficiencies after the New Electronic Health Record Go-Live at Mann-Grandstaff VA Medical Center in Spokane, Washington. The Veterans Health Administration concurs with the action plan developed by the Office of Electronic Health Record Modernization and is committed to supporting it.

Comments regarding the contents of this memorandum may be directed to the GAO OIG Accountability Liaison Office at VHA10BGOALACTION@va.gov.

(*Original signed by*:)

Steven L. Lieberman, M.D

Appendix E: VISN Director Memorandum

Department of Veterans Affairs Memorandum

Date: February 1, 2022

From: Director, Northwest Network (10N20)

Subj: Healthcare Inspection - Medication Management Deficiencies after the New Electronic Health Record Go-Live at the Mann-Grandstaff VA Medical Center in Spokane, Washington

To: Under Secretary for Health (10)

1. VISN 20 acknowledges receipt of the report and appreciates the review completed by the VA Office of Inspector General.

2. In review of the report, we note that there were no recommendations for the Mann-Grandstaff VA Medical Center or VISN 20 Office. VISN 20 remains committed to a safe implementation of the new electronic health record (EHR) and will support actions to effectively address the recommendations.

3. VISN 20 appreciates the ongoing dedication of the Mann-Grandstaff VA Medical Center staff to Veterans throughout the activation of the new EHR.

(*Original signed by*:)

Teresa D. Boyd, DO

Appendix F: Facility Director Memorandum

Department of Veterans Affairs Memorandum

Date: February 1, 2022

From: Medical Center Director, Mann-Grandstaff VAMC (668/00)

Subj: Healthcare Inspection - Medication Management Deficiencies after the New Electronic Health
Record Go-Live at the Mann-Grandstaff VA Medical Center in Spokane, Washington

To: Director, Northwest Network (10N20)

1. The Mann-Grandstaff VA Medical Center acknowledges receipt of the report and appreciates the review completed by the VA Office of Inspector General.

2. In review of the report, we note that there were no recommendations for the Mann-Grandstaff VA Medical Center.

3. Mann-Grandstaff VA Medical Center remains committed to a safe implementation of the new electronic health record (EHR) and will support actions to effectively address the recommendations.

(Original signed by:)

Robert J. Fischer, MD

Medical Center Director

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