



DEPARTMENT OF VETERANS AFFAIRS
OFFICE OF INSPECTOR GENERAL

Office of Audits and Evaluations

VETERANS HEALTH ADMINISTRATION

Office of Emergency
Management Has Not
Deployed a Functional
Last-Resort Emergency
Communications System

AUDIT

REPORT #21-03133-48

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Executive Summary

VA provides healthcare services to veterans through its vast nationwide network of medical facilities, which includes those outside the contiguous United States. Power loss, circuit overloads, or infrastructure damage can impair communications among VA facilities during disasters or emergencies. The Veterans Health Administration's (VHA) resilient high-frequency radio network (RHFRN) was purchased to provide a last-resort method of maintaining communications at VA facilities during such conditions and would operate without reliance on external infrastructure, which could be nonfunctional. It would also enable emergency communications with other federal, state, and local agencies with high-frequency capabilities, such as the Department of Homeland Security's SHARED RESOURCES (SHARES) High Frequency (HF) Radio Program, which facilitates interagency communication. According to VHA policy, emergency communications are essential for reestablishing healthcare services to veterans, maintaining situational awareness, coordinating emergency response, and requesting resources when routine communications are not available.

On January 29, 2015, VA awarded a five-year contract to a contractor to provide high-frequency voice and data communication and linkage to telephone networks enabling radio-to-telephone communication. By January 2020, the contractor was required to furnish, install, test, and certify a fully functional RHFRN at approximately 200 VHA facilities nationwide and provide training for VA staff.

On March 24, 2020, the VA Office of Inspector General (OIG) received a hotline complaint stating that the RHFRN system was not functioning as intended. The complainant alleged waste, fraud, and abuse had occurred in the approval and implementation of the RHFRN system. The allegation also included specific complaints about the lack of required maintenance for the RHFRN radio at the VA Butler Healthcare System in Pennsylvania. The VA OIG conducted this audit to determine if VA provided effective oversight of the installation and deployment of the VHA RHFRN to ensure reliable communications capabilities during crises and natural disasters.¹

What the Audit Found

The OIG substantiated the complainant's allegation that the RHFRN was not functioning as intended. Although the OIG did not identify fraud or abuse, VA funds were wasted because the network was not operational. VA's goal of establishing a last-resort communications capability by January 2020 has, more than three years later, not resulted in a nationwide functional system. Based on an Office of Information and Technology/Office of Emergency Management (OEM) survey completed in July 2021 among VA sites with RHFRN radios, VA listed only about

¹ The review focused on VA's actions starting with the acceptance of the RHFRN system. The audit team limited the scope of the audit to the installation and deployment of the RHFRN.

60 percent of the responding sites as operational.² However, after independently testing a statistical sample of RHFRN sites, the audit team found that VA's data overstated the degree to which the network was operational.

The OIG concluded that 17 of 21 of the sampled locations did not have a fully operational RHFRN site capable of two-way voice communication for at least one of the following reasons:

- Equipment needed repair, service, or replacement.
- All necessary equipment for radio operation was not on-site.
- The radio transmissions could not be heard.
- There were no staff at the facility who could operate the equipment.

Based on these results, the audit team estimates that about 150 of the 184 sites were not operational as of October 2021.³ The audit team found that the RHFRN was inoperable nationwide because of inadequate acceptance, installation, system support, and oversight by various personnel throughout VA. On October 14, 2022, the OEM director provided documentation showing that approximately 79 percent (145 of 184) of sites have not made any successful communication since January 1, 2022. This is consistent with the OIG's independent analysis from October 2021, in which the audit team estimated 82 percent (150 of 184) of RHFRN sites were not operational.

The audit team also found that OEM did not adequately oversee the acceptance and installation of the RHFRN. For example, the audit team found no evidence that OEM provided instructions or guidance about asset delivery and acceptance. The contract states that final inspection and acceptance of a high-frequency radio station will require demonstration of operability to the OEM area emergency manager or their designee. In many cases, those who were assigned to oversee asset testing were not designated by the area emergency manager and were unaware of the acceptance requirements. During the audit, several personnel responsible for accepting delivery of the radios stated they did not understand the contractual requirements. Others did not actually observe the contractor testing the system as required by the contract.

Facility directors interviewed by the audit team also did not fulfill their responsibilities for the RHFRN. Per VHA's Resilient High Frequency Radio Network directive, medical center directors should designate adequate staff to support RHFRN operations in accordance with the VHA High-Frequency Radio Operations Plan, unpublished as of March 2022; ensure RHFRN operations are incorporated into each facility's Comprehensive Emergency Management Program; and develop and maintain facility-specific high-frequency radio standard operating

² Not all sites responded to the survey. There were a total of 169 responses to the survey.

³ According to the contract, the high-frequency network was to consist of approximately 200 radio stations. OEM reported a total of 184 radio stations.

procedures using templates OEM was supposed to supply, although there is no evidence to support that OEM distributed templates to facility directors as required by the directive.⁴ However, as of March 2022, OEM had not finalized the VHA High-Frequency Radio Operations Plan, which details the roles and responsibilities for staff involved with the RHFRN program. During the OIG site visits, staff at most facilities said they had not received standard operating procedure templates (intended to allow staff to add site-specific information) from OEM.

OEM also did not sufficiently monitor the required training for operators at each site. Although the contract did not specify training length, the 19 available site installation plans developed with the contractor required two days of training that, per the contract, was to be “hands-on” and cover both operation and maintenance of the RHFRN system.⁵ However, eight of 21 facilities signed addenda to the Functional Acceptance Test Plans that decreased the training time. This addendum states, “This change is customer (VA) initiated. Contractor... change concerns and risks were delivered to customer. However, in lieu of these concerns and risks customer chooses to proceed with the change.” Additionally, staff from only two facilities reported receiving any training on maintenance or troubleshooting. The contract also required the contractor to conduct a survey to assess the effectiveness of the training. According to OEM officials, the survey was never conducted, and they could not give a reason for why it was not completed. OEM officials stated the current training plan and requirements are inadequate and will include development of training materials in future contracts.

The audit team found disagreement between OEM and the Office of Operations, Security, and Preparedness regarding which office was responsible for the ongoing oversight of the RHFRN, contributing to a lapse in obtaining a new RHFRN maintenance contract. VHA has not had a maintenance contract for the RHFRN since the original contract expired in January 2020. Because of this lack of a new maintenance contract, several RHFRN sites, including the one in Butler, Pennsylvania, did not receive annual maintenance services.

After spending over \$8.5 million, VA is considering a second contract to assess, repair, complete, and maintain the RHFRN. The new OEM director, who assumed the role in February 2022, halted the RHFRN contracting process pending a thorough review of the program requirements, capabilities, gaps, and purpose. In October 2022, the OEM director stated the solicitation process for a new RHFRN maintenance contract was canceled in April 2022, and a thorough review of requirements is still in process. This delay in the implementation and the lack of operability of the RHFRN leave VA without dependable emergency RHFRN

⁴ VHA Directive 0320.09, *Resilient High Frequency Radio Network*, September 1, 2017. The directive was not published until September 2017, more than two years after the RHFRN contract was awarded. By March 2022, OEM had not finalized the VHA High-Frequency Radio Operations Plan.

⁵ Of the 21 sampled sites, there was no site installation plan available for the Multi-use Vehicle-04 (MUV-04) (Louisville, KY) and the radio was never installed the Brooklyn VA Medical Center. As a result, the audit team was able to review only 19 site installation plans.

communications. Without a functional RHFRN, reestablishing vital communications with VA facilities during emergencies could be problematic or impossible, which would disrupt necessary services related to veterans' and VA employees' health and safety.

What the OIG Recommended

The OIG recommended the under secretary for health ensure medical facilities monitor RHFRN training and staffing levels and maintain enough trained staff to operate the resilient high-frequency radio network. In addition, the OIG recommended the assistant deputy under secretary for health for administrative operations clarify the program office responsible for the RHFRN and the roles and responsibilities for this system and finalize the VHA High-Frequency Radio Operations Plan. The OIG also recommended that OEM, in conjunction with the contracting officer for any new maintenance contract provide guidance for facility representatives about requirements for accepting RHFRN deliverables if additional equipment is purchased, and guidance about where radios should be installed and monitored. The executive director of OEM should also ensure that sites can obtain repairs for broken or inoperable RHFRN equipment.

VA Management Comments and OIG Response

The under secretary for health concurred or concurred in principle with all the recommendations. Appendix D provides the full text of the under secretary's comments. Overall, the proposed corrective measures in VHA's action plans are responsive to the recommendations. The OIG considers recommendation 4 closed based on the actions reported by the under secretary for health. The OIG will monitor the implementation of the planned actions and will close the other recommendations once the VA has provided sufficient evidence of corrective actions.



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Abbreviations

ALE	automatic link establishment
FATP	functional acceptance test plan
OEM	Office of Emergency Management
OIG	Office of Inspector General
OSP	Office of Operations, Security, and Preparedness
RHFRN	resilient high-frequency radio network
SHARES	SHARed RESources (SHARES) High Frequency (HF) Radio Program
VISN	Veterans Integrated Services Network



Introduction

During disasters and emergencies, standard communication methods can fail due to power loss, circuit overloads, or infrastructure damage. Prior to 2015, most VA medical centers lacked a last-resort communication method they could rely on should they become isolated during a disaster or emergency. A former director of the Veterans Health Administration (VHA) Office of Emergency Management (OEM) concluded that a resilient high-frequency radio network (RHFRN) would address this vulnerability. Accordingly, on January 29, 2015, VA awarded a contract through the VA Strategic Acquisition Center to purchase and install the radio network before the contract ended in January 2020.

On March 24, 2020, the VA Office of Inspector General (OIG) received a hotline complaint stating that the RHFRN system was not functioning as intended. The complainant alleged waste, fraud, and abuse had occurred in the approval and implementation of the radio network. The allegation also included complaints about a lack of required maintenance for the RHFRN radio at the VA Butler Healthcare System in Pennsylvania. The OIG conducted this audit to determine whether VA provided effective oversight of the installation and deployment of the RHFRN to ensure reliable communications capabilities during disasters and emergencies.⁶

Purpose of an Emergency Radio Network

VA's vulnerabilities to disasters and emergencies increase the risk of disruption of normal communications. For example, in the wake of Hurricane Sandy in 2012, the lack of a resilient communications link to the Manhattan VA Medical Center hampered VHA's efforts to provide needed support and assistance efficiently.⁷ Additionally, the storms of the 2017 Atlantic hurricane season put considerable, and in some cases unprecedented, stress on numerous communications infrastructures (e.g., wireless, cable, wireline, and broadcasting).

The RHFRN was acquired to provide a last-resort communications capability suited to disaster or emergency conditions. The radio network is "resilient" in that it relies on no external infrastructure, which could be nonfunctional during such conditions. RHFRN sites are installed in a fixed location or are installed as mobile units in OEM multiuse vehicles positioned throughout the country to support rapid deployment to disaster or contingency locations and response operations. The intent of the RHFRN is to provide communications capabilities across VA—including facilities located outside the contiguous United States and with other federal,

⁶ The audit focused on VA's actions beginning with the acceptance of the system. The audit team limited the scope of the audit to the installation and deployment of the RHFRN system.

⁷ In January 2021, the Manhattan VA Medical Center's name was officially changed to the "Margaret Cochran Corbin VA Campus" of the New York Harbor Healthcare System.

state, and local agencies with high-frequency capabilities—for situational awareness, response coordination, and resource requests when routine communications are not available.

The RHFRN would also enable communication with the SHARed RESources (SHARES) High Frequency (HF) Radio Program, which facilitates interagency communication and mutual support. The SHARES program, administered by the Department of Homeland Security, provides an additional means for users with national security and emergency preparedness missions to communicate when landline and cellular communications are unavailable. SHARES members use the existing high-frequency radio resources of the government, critical infrastructure, and disaster response organizations to coordinate and transmit emergency messages. SHARES users rely on high-frequency radio communications to perform critical functions, including those related to leadership, safety, maintenance of law and order, finance, and public health. This program also provides the emergency response community with a single interagency emergency message-handling and frequency-sharing system. More than 1,400 high-frequency radio stations—representing 104 federal, state, and industry organizations located in all 50 states, the District of Columbia, and several locations overseas—contribute resources to the SHARES High-Frequency Radio Program. Nearly 500 emergency planning and response personnel participate in SHARES, and approximately 200 high-frequency radio channels are available for use by SHARES members.

High-Frequency Radio

“High frequency” is a term used to describe the 1.6–30-megahertz portion of the radio spectrum. This frequency range can provide both short-range and long-haul communications. According to the Draft VHA High-Frequency Radio Operations Plan dated May 2017, high-frequency radio was selected as the emergency communication system because it has minimal infrastructure requirements, can communicate over distances of 3,000 kilometers, and is low cost. Once the initial investment in equipment is made, there are no call costs or monthly line or equipment rentals. However, this frequency range is greatly influenced by the Earth’s atmosphere, specifically the ionosphere.⁸ The constantly changing properties of the ionosphere, as well as random noise and interference, cause disruptions in high-frequency communications. In the past, a skilled radio operator was needed to establish communications and to continually adjust operating parameters. Today, this function is fully automated by using automatic link establishment (ALE) radios, which are required for the RHFRN network. ALE permits high-frequency radio stations to call and link to the best high-frequency channel automatically without operator assistance. ALE also determines the best channel to pass communications traffic and tries to establish a link between radios. The system works much like a telephone in that each radio in a network is assigned an address, similar to a call sign. One of the features of

⁸ The ionosphere, a layer of the Earth’s atmosphere that contains a high concentration of ions and free electrons, reflects radio waves.

the radio in ALE scanning is that the radio learns optimal frequencies for various times of day and operating locations.

Under the terms of the contract, the contractor was to work with the contracting officer's representative to develop facility-specific designs and submit site-specific installation plans for each medical facility at least four weeks prior to installation. This allowed each site to be set up based on individual needs and circumstances. The site-specific installation plans were to include antenna location, details of the transmitter and base station installations, cabling routes, and interconnections to the facility security monitoring system. Figure 1 is a diagram of a Codan Envoy High Frequency Radio Base Station, the radio system ordered by VHA for the emergency radio network.⁹

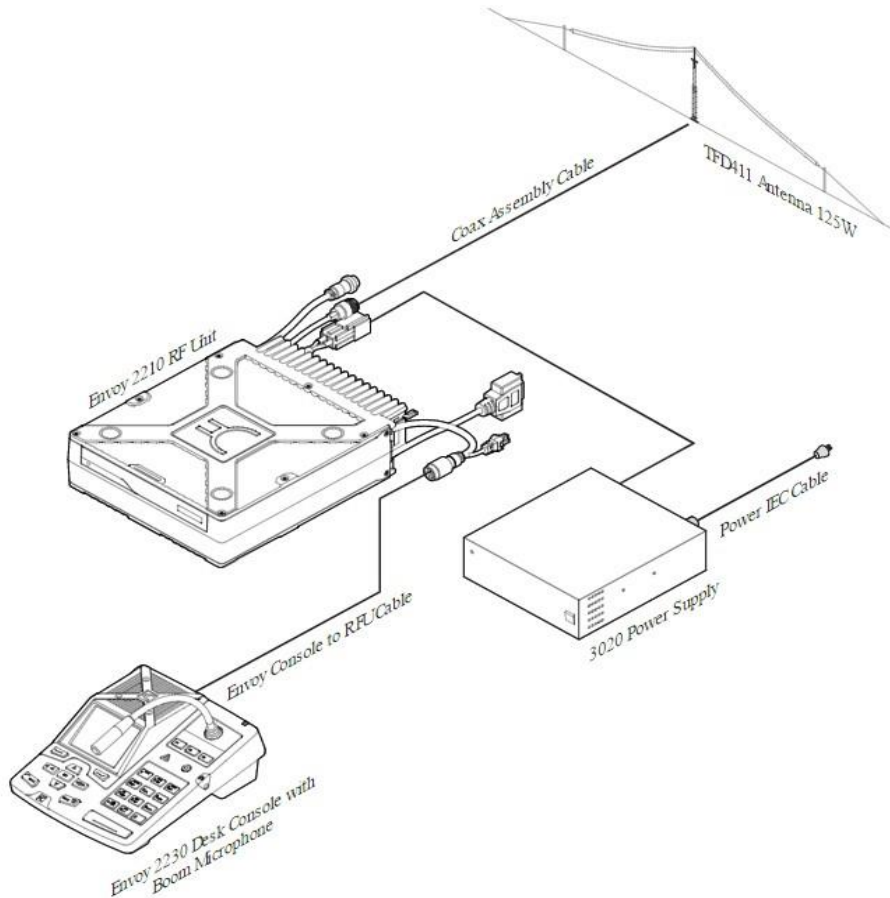


Figure 1. Diagram of a Codan Envoy 125-watt HF radio base station.

Source: Codan Communications website. (Codan Communications is the designer of the Envoy HF radio.)

⁹ The radio equipment in the figure is small enough to fit on a desk and be attached by cable to an outdoor antenna. When audit team members visited the C.W. Bill Young VA Medical Center in Bay Pines, Florida, for research, they observed the equipment sitting on a desk and attached to the outdoor antenna.

VA Contract to Deploy the RHFRN

OEM initiated a procurement in fiscal year 2015 through the Strategic Acquisition Center to purchase and install the RHFRN. The contractor was awarded a five-year contract on January 29, 2015, for installation of the RHFRN. VA paid the contractor over \$8.5 million for this service. The contractor was required to install and maintain a nationwide, state-of-the-art, “last-resort” communications capability that is easy to operate, and to train VA staff to use the system for essential communications during disasters to continue or rapidly reestablish healthcare services for veterans. To that end, the contractor was to furnish, install, test, and certify the RHFRN; provide training; and guarantee a fully functional, ready-to-operate VHA emergency radio network, all of which was to be completed before the contract ended in January 2020. The contract defined “operational” as “operability of voice, data, telephone to radio communication ... to several priority stations during day and dusk or dawn.” The audit team considered networks to be “operational” if they had two-way voice communication capability and had trained operators.

The contracted RHFRN was to provide emergency high-frequency two-way radio voice and data communication, linkage to the public switched telephone network (i.e., the landline telephone system), and cellular and internet protocol telephone networks enabling radio-to-telephone communication. For example, if a facility’s phone and internet service became inoperable, the facility should be able to use its RHFRN to maintain communications. The contract required the contractor to provide hands-on introductory training in the operation and features of the system, including associated training materials for no fewer than eight persons at every location upon completion of the installation. The contractor was also to provide a commercial standard warranty covering full functionality and operability of the network components for three years after installation and provide ongoing maintenance and repair services as needed (at least annually).

Most VHA facilities were to have a 125-watt fixed radio system that was expected to reach all other fixed RHFRN stations within a 600-mile radius.¹⁰ Remote stations in Hawaii, Alaska, and Puerto Rico equipped with 500-watt stations were expected to reach the mainland 500-watt stations in Loma Linda, California; Seattle, Washington; and Bay Pines, Florida, respectively. Thirteen designated backbone stations were supposed to have a second radio with a telephone interface allowing any station within range to place a high-frequency radio-to-telephone call, thus allowing distress communications from any station in the RHFRN to be received.¹¹ The usual mode of communication was expected to be regional to stations within a 600-mile radius,

¹⁰ A fixed RHFRN station is defined as an immobile RHFRN station fixed in an assigned or installed location.

¹¹ Backbone stations are those that receive and transmit signals with all VHA proposed radio station locations. Each backbone site is designated a set of fixed or mobile sites within its communications radius over which to maintain communications control.

such as between neighboring facilities and networks. Long-range communications were to be made through stepwise voice message relay across the RHFRN or through the telephone interface capability.

The contract planned for approximately 200 radio stations in the RHFRN. In August 2021, OEM reported to the audit team that 184 RHFRN stations were installed nationwide.

VHA Guidance for Emergency Communications Via a High-Frequency Radio Network

VHA provided two main guidance documents to describe the roles and responsibilities for staff involved with the RHFRN program: VHA Directive 0320.09 and the Draft VHA High-Frequency Radio Operations Plan. The directive was published in September 2017. However, as of March 2022, OEM had not finalized the VHA High-Frequency Radio Operations Plan. In the absence of other guidance, the Draft VHA High-Frequency Radio Operations Plan serves as the clearest source of guidance on the subject.

Per VHA Directive 0320.09, VHA should provide and ensure the operability and readiness of the RHFRN as an alternative form of communication for all VHA inpatient facilities during disasters, communications outages, and infrastructure failures to support effective and rapid recovery of VHA services.¹² The directive also defines key terms and establishes responsibilities of personnel working with the radio network, including VHA executives, Veterans Integrated Services Network (VISN) directors, VA medical facility directors, RHFRN site coordinators, and radio operators.¹³ VA Office of Operations, Security, and Preparedness personnel were not listed in the directive, and thus had no delegated responsibilities for RHFRN.

The directive references the VHA High-Frequency Radio Operations Plan, which defines the operational scope, design, and communications processes for the RHFRN. Although the VHA High-Frequency Radio Operations Plan has not yet been finalized, the draft provides information about the planned RHFRN deployment at the different sites. For example, the draft explains that once a system is installed and fully operational, the planned capabilities and functions include voice communications, texting communications, and telephone interconnectivity through the RHFRN. However, over-the-air voice communications is the primary function provided by the RHFRN, allowing information to be exchanged across the entire network.

The Draft VHA High-Frequency Radio Operations Plan discusses network communication conditions and the necessary steps for each communication condition. For example, during communication condition 3 (nonemergency status), 24/7 monitoring is voluntary. During communication condition 1 (system activation), all primary backbone sites must be monitored

¹² VHA Directive 0320.09, *Resilient High Frequency Radio Network*, September 1, 2017.

¹³ VHA divides the United States into 18 regional networks, known as VISNs, which manage day-to-day functions of medical centers and provide administrative and clinical oversight.

24/7 to support nationwide communications for a real-world anticipated or occurring emergency response. However, VHA never provided guidance about where radio equipment should be located within a facility or about nonemergency monitoring schedules to ensure radio calls will be heard during an emergency.

Responsibilities of VHA Executives

The deputy under secretary for health for operations and management is responsible for ensuring the VISNs and medical facilities operate and maintain the RHFRN in accordance with VHA Directive 0320.09, which refers to the VHA High-Frequency Radio Operations Plan, once finalized. The assistant deputy under secretary for health for administrative operations is responsible for providing direct oversight to OEM. Per the directive, the director of OEM oversees the RHFRN. In this capacity, the director's responsibilities include

- establishing and maintaining the RHFRN;
- providing guidance and support to VA facilities to maintain RHFRN readiness;
- developing and maintaining high-frequency program capabilities through annual review of the VHA directive, the VHA High-Frequency Radio Operations Plan (once finalized), and other RHFRN guidance;
- ensuring long-term sustainment of the RHFRN by providing training, warranty services, ongoing maintenance, repairs, equipment replacement, and procurement,
- providing RHFRN communications support to VHA leaders; and
- coordinating deployment of equipment and personnel to support RHFRN communications during emergency or disaster operations.

VISN Officials' Responsibilities

VISN directors, or their designees, have several responsibilities related to the RHFRN. These responsibilities include supporting the RHFRN for facilities within their VISN with a high-frequency radio and designating necessary staff to support training, operations, and maintenance in accordance with the VHA High-Frequency Radio Operations Plan, once finalized, for any VISN-assigned high-frequency radios.

Facility Officials' Responsibilities

VA medical facility director responsibilities related to the RHFRN include designating a position or individual to serve as the facility site coordinator, ensuring development and maintenance of facility-specific high-frequency radio standard operating procedures, designating an adequate number of staff to support RHFRN operations such as facility radio operators, supporting high-frequency communications tests and emergency or disaster communications as delineated

in the VHA High-Frequency Radio Operations Plan, and ensuring high-frequency radios are used for appropriate communications (not for transmitting unauthorized information).

Facility RHFRN site coordinator responsibilities include developing and maintaining facility-specific high-frequency radio standard operating procedures, coordinating facility participation in scheduled SHARES and RHFRN drills and communication tests, providing high-frequency radio readiness reports monthly or as requested in accordance with the VHA High-Frequency Radio Operations Plan, reporting changes in operational status or system configuration to OEM and reporting any maintenance issues, supporting OEM-provided training on high-frequency radio operations, and establishing and maintaining facility SHARES membership.

Facility RHFRN radio operator responsibilities include ensuring the high-frequency radio equipment is used and operated in accordance with RHFRN guidance and maintaining proficiency on radio operations and network control procedures.

Mobile radio custodian responsibilities include establishing and maintaining SHARES membership and participating in scheduled SHARES and VHA radio network communications tests, maintaining proficiency on radio operations and network control procedures, maintaining site-specific standard operating procedures and guides or checklists to facilitate critical communications and maintain proficiency, reporting changes in operational status or maintenance issues to OEM, and supporting OEM-provided training.

Results and Recommendations

Finding: VHA Could Not Verify Operability of Most of Its RHFRN Sites

The OIG substantiated the allegation that the RHFRN system was still not functioning as intended. VHA's efforts to establish a last-resort communications capability by January 2020 have, approximately three years later, not resulted in a fully functional system. In July 2021, the Office of Information and Technology/OEM distributed a survey to VA facilities equipped with RHFRN radios to determine the operational status of the equipment. This information was necessary to develop the performance work statement for a new contract to fully assess, test, and repair the system. The survey instructions included a presentation instructing these sites to power on the radios and determine operational status. Of the 169 responding sites, only about 60 percent reported that the radios were "operational," although the survey did not define this term.

Therefore, the audit team selected a sample of sites to determine the equipment's operational status using the contract definition. The team also evaluated whether these facilities have trained staff capable of operating the equipment in the event of an emergency.¹⁴ The audit team found that 17 of 21 sampled locations did not have an operational RHFRN capable of two-way voice communication because equipment needed repair, service, or replacement; necessary equipment for radio operation was not on-site; the radio transmissions could not be heard; or there were no trained staff at the facility who could operate the equipment. Based on this sample, the audit team estimated that about 150 of the 184 RHFRN sites nationwide (82 percent) were not operational as of October 2021. Moreover, the audit team learned that after spending over \$8.5 million initially, VA was considering a second contract to assess, repair, complete, and maintain the RHFRN. However, the new OEM director, who assumed this role in February 2022, halted the RHFRN contracting process pending a thorough review of the program requirements, capabilities, gaps, and purpose. In October 2022, the OEM director stated that the solicitation process for a new RHFRN maintenance contract was canceled in April 2022.

OEM did not provide necessary oversight and guidance for several critical facets of the RHFRN program, including accepting delivery of equipment, facilitating maintenance and repair, documenting trained operators, and operating the system. Further, VHA staff did not fulfill the requirements to properly manage the RHFRN program at their sites in accordance with VHA Directive 0320.09. The lack of maintenance for the radio networks occurred because VA has not

¹⁴ VA contract number VA119-15-D-0003, to provide an Emergency High Frequency Radio Network, signed by the contracting officer on January 29, 2015. Per paragraph 5.4.2.e of the contract, "Final inspection and acceptance of an HF radio station will require demonstration of operability. Each installation shall be tested and demonstrated to be operational, including operability of voice, data, telephone to radio communication, 2G ALE, and non-ALE communications to several priority stations during day and dusk or dawn to the VHA AEM or their designee, in accordance with the Functional Acceptance Test Plan (FATP) to be jointly developed after award."

had a maintenance contract in place since the original contract ended in January 2020. The result: without a functional RHFRN, VA medical facilities lack a last-resort communication method in case they were isolated during a disaster.

What the OIG Did

The audit team conducted interviews with OEM; VA's Office of Operations, Security, and Preparedness (OSP); the Strategic Acquisition Center; and VA medical center staff responsible for the RHFRN to determine the operational status of the radio system at large. OEM indicated that there were 184 VA medical facilities with a RHFRN, and the audit team conducted virtual site visits at 21 of those locations. See appendix C for more information on the sampling method. The stratified sample consisted of four types of high-frequency radio units: backbone sites, fixed 125-watt sites, fixed 500-watt sites, and mobile sites.¹⁵ For locations in which staff stated their RHFRN system was operational, the audit team conducted a virtual observation via Microsoft Teams to verify the two-way voice communication capability of the network. The audit team also reviewed documents from sites and other offices, including OEM, OSP, the Strategic Acquisition Center, and the Office of Information and Technology.

The following determinations formed the basis for the finding and led to the OIG's recommendations:

- More than 80 percent of the RHFRN was not operational as defined by the contract or did not have trained staff capable of operating the equipment in the event of an emergency.
- OEM and site personnel did not adequately oversee the installation and maintenance of some RHFRN radios.
- Deficiencies in system training and operational knowledge impair RHFRN function.
- OEM and OSP disagreed about the transfer of RHFRN program management and allowed the maintenance contract to lapse.
- OEM did not provide guidance about monitoring the RHFRN in nonemergency conditions or placement of RHFRN equipment within a facility.

¹⁵ Backbone sites were supposed to have a second radio with a telephone interface allowing any station within range to place a high-frequency radio-to-telephone call, thus allowing distress communications from any station in the RHFRN to be received even if the stations in range are not being monitored at the time.

More Than 80 Percent of the RHFRN Sites Could Not Make Two-Way Voice Communication

To determine the operational status of the RHFRN sites, OEM staff distributed a survey in July 2021 instructing sites to power on their radios and self-report the operational status of the network. Of 184 RHFRN radio locations, 169 responded. Based on the responses, OEM determined that 101 of the 169 responding sites (about 60 percent) were operational. These data are not a complete inventory and may not be accurate because seven locations reported twice, and some locations did not respond. To independently validate which sites were operational, the audit team tested a random sample of OEM's 184 reported RHFRN sites to determine if they were capable of two-way voice communication, which is the contract definition of "operational," and if they had trained staff capable of operating the equipment in the event of an emergency. The OIG found 17 of the 21 sampled sites could not contact another VA facility via high-frequency radio on the day of the OIG virtual site visit. Based on its sample, the audit team estimated that approximately 150 of 184 of the RHFRN sites throughout the nation (82 percent) were not fully operational. Table A.1 in appendix A provides the status of the randomly sampled facilities.

VHA policy requires that each VA facility maintain a quantity of trained operators sufficient to operate the RHFRN 24/7 for four days should the need arise. However, the audit team found only four of the 21 sampled sites had both a working RHFRN unit *and* at least three operators who could potentially operate the radio in 8-hour shifts, which would allow for 24-hour operations in the event of an emergency. As of the date of the OIG test, the Erie VA Medical Center in Pennsylvania, and the Marion VA Medical Center in Illinois had three operators and a working radio, the Vancouver Emergency Operations Center mobile trailer in Washington had five operators and a working radio, and the Tibor Rubin VA Medical Center (Long Beach, California) had six trained operators and a working radio.

The OIG found the remaining 17 sites were not able to demonstrate two-way voice communication with another VHA high-frequency radio location on the day of the OIG virtual site visit because equipment needed repair, service, or replacement (six of 17); necessary equipment for radio operation was not on-site (three of 17); the radio transmissions could not be heard (seven of 17); or there were no trained operators at the facility who could verify operability (one of 17). The following examples illustrate reasons for inoperable radios:

- According to the Life Safety and Emergency Manager at the Wilmington VA Medical Center in Delaware, the facility could not transmit because the tuner was broken.
- At the Atlanta VA Medical Center in Decatur, Georgia, the Emergency Preparedness Coordinator stated they did not have the radio on-site because it had been sent to OEM for testing.

- Although OEM reported an on-site radio at the Brooklyn VA Medical Center in New York, the high-frequency radio was never installed because the chief engineer found the structural analysis proposal unacceptable. Specifically, the proposal did not include a calculation of the structural loads from the installed equipment compared with the structural capacity of the building to absorb additional loads generated by the new antenna mounts and anchors.
- The Fayetteville VA Medical Center in North Carolina removed its RHFRN radio in March 2017. According to the emergency management specialist, the radio was returned to VA because they had more reliable communications, the network was not monitored, and not all sites were using the RHFRN.

In addition, the audit team found that of the 184 sites OEM reported as having RHFRN radios, three locations had never had radios installed. These locations were the Providence VA Medical Center in Rhode Island, the Margaret Cochran Corbin VA Campus of the New York Harbor Health Care System in Manhattan, and the Fort Wayne VA Medical Center in Indiana.

On October 14, 2022, the OEM director provided documentation showing that approximately 145 of 184 of sites (79 percent) have not made any successful communication since January 1, 2022. This is consistent with the OIG's independent analysis from October 2021, in which the audit team estimated that 150 of the 184 RHFRN sites (82 percent) were not operational.

Without operable RHFRNs, VA facilities facing a disaster or emergency are vulnerable to disrupted or severed inter- and intra-agency communications that are critical for reestablishing healthcare services to veterans, maintaining situational awareness, coordinating emergency response, and requesting resources when other routine communication methods are unavailable.

OEM and Site Personnel Did Not Adequately Oversee the Installation of Some Radios and Implementation of the RHFRN

The OIG found (1) OEM did not provide timely guidance to sites, (2) individuals who were neither the area emergency manager or a designee oversaw asset testing and were unaware of the acceptance requirements, and (3) these site personnel did not ensure that the contractor performed all required tests to verify equipment and services conformed with applicable contract quality requirements. In addition, the contracting officer's representative, who was also the RHFRN program manager prior to their 2019 retirement, appears to have approved payment to the contractor based on Functional Acceptance Test Plans (FATPs) signed by individuals who were unauthorized to accept the equipment according to the terms of the contract. Furthermore, medical center directors did not consistently fulfill their responsibilities for the implementation of the RHFRN.

OEM Did Not Provide Complete or Timely Guidance to Sites

VHA provided two guidance documents to describe the roles and responsibilities for staff involved with the RHFRN program: VHA Directive 0320.09 and the Draft VHA High-Frequency Radio Operations Plan. However, the directive was not published until September 2017, more than two years after the RHFRN contract was awarded and approximately two-thirds of the sampled sites had their equipment installed. Additionally, as of March 2022, OEM had not finalized the VHA High-Frequency Radio Operations Plan.

The directive references the VHA High-Frequency Radio Operations Plan, which defines the scope, design, and communications processes for the RHFRN. Although the plan has not yet been finalized, the draft provides information about the intended RHFRN deployment at the different sites. For example, the draft explains that once a system is installed and fully operational, the planned capabilities and functions will include voice communications, texting communications, and telephone interconnectivity through the RHFRN. Voice communications is the primary function provided by the RHFRN, allowing information to be exchanged across the entire network and equipment was to remain powered and configured in the ALE scan mode 24/7.

The Draft VHA High-Frequency Radio Operations plan discusses network communication conditions and the necessary steps for each communication condition. For example, during communication condition 3 (nonemergency status), 24/7 monitoring is voluntary. During communication condition 1 (system activation), all primary backbone sites must be monitored 24/7 to support nationwide communications for a real-world anticipated or occurring response. However, VHA never provided guidance about where radio equipment should be located within a facility or about nonemergency monitoring schedules.

Per VHA Directive 0320.09, VHA should provide and ensure the operability and readiness of the RHFRN as an alternative form of communication for all VHA inpatient facilities during disasters, communications outages, and infrastructure failures to support effective and rapid recovery of VHA services. The directive also defines key terms and establishes the responsibilities of personnel working with the radio network; however, VA OSP personnel are not listed in the directive, and thus have no delegated responsibilities for RHFRN.

Staff at 15 of 21 facilities stated OEM did not provide or they did not recall receiving standard operating procedure templates intended to allow staff to add site-specific information, as required by VHA Directive 0320.09. OEM provided the audit team with a copy of the test protocol procedures for periodic testing of the radio network after installation, VHA Directive 0320.09, and a template for a facility high-frequency Annex for Emergency Operations Plan—all of which provide information and guidance related to use of external communication systems and methods at a VAMC during emergencies. OEM staff stated that these documents would have been communicated via email by the former program manager, who retired in September 2019, but remaining OEM staff do not have copies of past communications

sent to facilities. Additionally, OEM staff provided no documentation of standard operating procedure templates to the audit team, which may have provided needed guidance for system operation and testing.

Facility Staff Provided Inadequate Oversight of RHFRN Asset Testing

The audit team interviewed facility representatives who oversaw the installation of the RHFRN system at 11 of the 21 sites. The team was unable to interview the representatives from the remaining 10 sites for various reasons: some individuals had retired or were on extended leave, some sites were missing signature pages in their FATP that would have identified the designee, and one site rejected installation of an RHFRN.¹⁶ The OIG found no evidence that any of the personnel who could be identified had received any instructions or guidance from OEM about asset installation. According to the contract, each installation should be tested and demonstrated to be operational by the contractor to the OEM area emergency manager or a designee, in accordance with the FATP.

However, the auditors confirmed that eight of the 11 facility representatives who were interviewed and signed the FATP were not OEM area emergency managers or their designees. When questioned about guidance provided to the sites on accepting delivery of the RHFRN, OEM staff noted, it is not known what instructions were provided and no documentation is available. In addition, the contracting officer's representative, who retired in 2019 and until that time was also the RHFRN program manager, appears to have approved payment to the contractor based on FATPs signed by individuals who were unauthorized to accept the equipment according to the terms of the contract.

Additionally, six of the 11 facility representatives interviewed stated the contractor did not properly demonstrate the operability of the RHFRN. Specifically, the contractor was required to test and demonstrate each installation to be operational, including communicating with several priority stations. These six facility representatives stated the contractor only communicated with the contractor's integration center and not with other priority stations as required by the contract.

Further, four of the facility representatives stated they did not understand the FATP or contractual requirements before accepting the radio equipment for their site. A facility representative at another site did not appear to understand the FATP or contractual requirements because he did not ensure the contractor performed the tests required by the contract prior to acceptance. At two facilities, the facility representative did not observe the contractor perform the FATP before signing off on installation.

¹⁶ The FATP describes the test procedures for the VA emergency RHFRN program and identifies system and functional tests to be performed to verify compliance with the technical evaluation criteria listed in the performance work statement.

OEM and Medical Center Directors Did Not Consistently Fulfill Their Responsibilities for RHFRN Implementation

VHA Directive 0320.09 details several responsibilities for medical center directors, including (1) designating an adequate number of staff to support radio operations in accordance with the VHA High-Frequency Radio Operations Plan (unpublished as of March 2022), (2) ensuring radio operations are incorporated into the facility Comprehensive Emergency Management Program, and (3) ensuring development and maintenance of facility-specific high-frequency radio standard operating procedures (although there is no evidence to support that OEM distributed templates to facility directors as required by the directive). During the OIG's 21 virtual site visits, the audit team found instances in which these responsibilities were not fulfilled. Specifically,

- six had no trained operators, and three had only one trained operator,
- 13 sites did not include the RHFRN in their facility-specific Comprehensive Emergency Management Program, and
- 15 did not have facility-specific high-frequency radio standard operating procedures.

Deficiencies in System Training and Staff's Operational Knowledge Impaired RHFRN Function

The RHFRN is not functioning nationwide, in part because of poor training and limited staff operational knowledge. OEM did not adequately track training, and the contractor-provided training was shorter than the agreed-upon time. Although the contract did not specify training length, the site installation plans developed with the contractor required two days of training that, per the contract, was to be hands-on and cover both operation and maintenance of the RHFRN system. Personnel at 19 of 21 sampled sites could not confirm that the training covered maintenance, and it was not consistently hands-on according to employees who took it. Further, the contractor did not conduct the required participant survey to determine training effectiveness. Had OEM ensured the contractor conducted the required survey, radio operators' dissatisfaction with the training might have been identified sooner.

OEM Did Not Sufficiently Monitor or Facilitate Training at RHFRN Sites

OEM did not sufficiently monitor the number of trained operators at each site or facilitate additional system training when staff turnover occurred. When asked about the number of trained operators at each site, OEM staff stated that training occurred at the time of installation and referred the audit team to a SharePoint site. The contract required the contractor to submit evidence of training to the OEM area emergency manager within 10 days of the training. OEM should have had records of all training; however, upon review, the audit team found the

SharePoint site only has training records for 26 of the 184 RHFRN sites. In response to the team's query, OEM staff conceded the existing training plan and requirements were inadequate.

Most Site Personnel Did Not Receive the Training Required by the Contract

OEM also did not sufficiently monitor the required training for operators at each site. Although the contract did not specify training length, the team noted that each of the 19 available site installation plans that were developed with the contractor required two days of training.¹⁷ Additionally, the contract specified that the training was to be hands-on and cover both operation and maintenance of the system.

The OIG reviewed documentation and interviewed personnel at all 21 sampled facilities and found that only staff from the Martinsburg VA Medical Center in West Virginia reported receiving two days of training. Staff at eight of 21 sampled facilities signed addenda to the Functional Acceptance Test Plans decreasing the training time, and this addendum states, "This change is customer (VA) initiated. Contractor ... change concerns and risks were delivered to customer. However, in lieu of these concerns and risks customer chooses to proceed with the change." For example, Tibor Rubin VA Medical Center in Long Beach, California, decreased training to two hours. Of the 21 sites sampled, only 14 sites were able to report the amount of training they received, 12 sites reported receiving two hours or less of training, and personnel at four sites stated they only received 30 minutes of training.

Staff from seven of the sites could not explain why training time was decreased. Staff at the eighth facility explained that leaders wanted shorter training and asked for the basics only. The training materials that OEM provided to the audit team could not have been fully covered in 30 minutes to one hour. For instance, a training video available on the OEM SharePoint site is about 45 minutes, and the training PowerPoint deck has about 130 slides.

When questioned about decreasing the training hours in the FATPs, OEM representatives also could not explain why training time was decreased, nor could they indicate how many sites received the two-day training.

Further, during interviews with the audit team, VA employees did not consistently describe the training as hands-on or as covering maintenance. For example, an employee at the Marion VA Medical Center in Illinois described the training as watching a contractor's representative try to make a call. A Lee County VA Clinic employee described the training as a lecture and demonstration rather than hands-on training, and an employee at the Omaha VA Medical Center in Nebraska stated the training focused on high-frequency radio theory rather than on how to

¹⁷ Of the 21 sampled sites, there was no site installation plan available for the Multi-use Vehicle-04 (MUV-04) (Louisville, KY) and the radio was never installed the Brooklyn VA Medical Center. The audit team was only able to review 19 site installation plans.

answer or accept calls. Additionally, only staff at the Martinsburg and Vancouver facilities reported receiving any training on maintenance or troubleshooting. Staff from the West Los Angeles VA Medical Center in California stated that the maintenance training consisted of making sure the unit was plugged in.

OEM Failed to Ensure a Survey of Training Participants

The contract required the contractor to conduct a survey assessing the effectiveness of the training as a quality assurance measure. According to OEM, that survey was never conducted, and several personnel interviewed by the audit team were not satisfied with the training they received from the contractor. For example, a VA employee from Wilmington, Delaware, stated the training was not very thorough; a VA employee from Atlanta, Georgia, stated it was similar to a lecture and was not very good; a VA employee at the Carl T. Hayden VA Medical Center in Phoenix, Arizona, stated the 2018 training was highly technical and was not helpful at all; and a retired former VA employee who is now a VA volunteer from Marion, Illinois, stated there was little training from the contractor when the radio was installed. Had the survey been completed, OEM would have received more timely feedback about the training.

OEM and OSP Disagreed about the Transfer of RHFRN Program Management and Allowed the Maintenance Contract to Lapse

Disagreement regarding which office was responsible for the ongoing oversight both during the contract and after it expired contributed to the lapse in obtaining a maintenance contract and oversight of the program. In a signed memorandum to the OIG, dated March 1, 2021, the executive director of OEM, who retired in January 2022, stated that because the RHFRN program was transferred to OSP in 2019, he believed that OSP was responsible for developing and executing a new maintenance and support contract.¹⁸ However, VHA Directive 0320.09 was still in effect and states that the OEM director is responsible for establishing and maintaining the RHFRN. Although the retired executive director contends the RHFRN program was transferred to OSP, OEM was unable to provide evidence showing that the program had in fact been transferred to OSP, and OSP's chief security officer stated his office never accepted responsibility for the program. Due to the continued disagreement over the responsibility for the program, there has been no maintenance contract in place since the original contract expired in January 2020, and local staff at several facilities have been unable to maintain the radios in a working status.

According to the director of OEM, who served from December 2017 to January 2022, there was a mutual understanding and commitment between OEM and OSP concerning a temporary

¹⁸ Memorandum to VA OIG Hotline Case No. 2020-02919-HL-1090 (2020-14539), March 1, 2021, director's response to reported hotline allegations regarding the RHFRN.

reassignment of the program manager/contracting officer's representative to transfer the RHFRN to OSP's Office of Emergency Management and Resilience. According to the assistant deputy under secretary for health for administrative operations, OSP agreed to include the RHFRN program in its continuity of operations program because OSP maintains high-frequency radios in VA's continuity sites, and OEM transferred two full-time-equivalent positions to OSP for that purpose.

During an interview with the audit team, the OSP chief security officer stated that OSP never agreed to take control of the RHFRN program from OEM. From his perspective, OSP has oversight responsibility for departmental policy, and OEM has program responsibility to manage the radios. According to the chief security officer, the transfer of the two full-time-equivalent positions from OEM to OSP was for managing regional responses with the Federal Emergency Management Agency. Additionally, the chief security officer stated OSP became involved with the RHFRN program to try and fix it as part of its work to develop departmental policy for VA. The program manager/contracting officer's representative served a temporary assignment to assist in writing that policy, which was never published.

During the audit, the team asked OEM for documentation required per VA policy showing the RHFRN program transfer from OEM to OSP.¹⁹ OEM officials stated this documentation does not exist and acknowledged the transfer never happened. The audit team also reviewed and confirmed that the Organizational Realignment Memo from March 14, 2019, which transferred the two full-time-equivalent positions and one Senior Executive Service position from OEM to OSP, does not specifically identify the RHFRN program as part of the transfer. Further, VHA Directive 0320.09 is still in effect and states that the OEM director is responsible for establishing and maintaining the RHFRN; providing guidance and support as needed to VA facilities to establish and maintain network readiness; and ensuring long-term sustainment of the network by providing training, warranty service, ongoing maintenance, repairs, equipment replacement, and procurement.

Even though the RHFRN program was never transferred, OEM officials emailed facilities and OEM staff informing them that the program had been transferred to OSP. For example, an August 15, 2019, email addressed to VISN staff, the VHA RHFRN group, and OSP personnel stated that the program was being transferred to OSP as of that week.²⁰ One facility provided the OIG team with an email entitled, "Future of RHFRN," which was sent on September 26, 2019, to RHFRN representatives. This email stated that the transition of the RHFRN program to OSP's Office of Emergency Management and Resilience, Operations and National Security Services, would require a high level of user-initiated management and coordination and stated the points of

¹⁹ VA Directive 0213, *Department of Veterans Affairs Organizational Changes Policy*, August 26, 2014.

²⁰ VHA email about RHFRN program transfer to OSP from VHA Office of Emergency Management, August 15, 2019.

contact for all future RHFRN business were the chief of the Office of National Communications services and the director of VA OSP operations and National Security Services.²¹ Finally, the director of OEM emailed OEM staff on February 6, 2020:

If you are receiving questions, comments and concerns please forward the information below to all your contacts in the HF radio programs. Please be advised this program is no longer part of OEM, the contract ended today and we in OEM cannot answer any questions related to this program.²²

Three RHFRN Sites Did Not Receive Warranty Services as Required by the Contract

The contract required the contractor to provide a commercial standard warranty covering full functionality and operability of the network components for three years after installation. The audit team found that at two of the 21 sampled sites (Atlanta, Georgia, and Fayetteville, Arkansas,) the RHFRN was inoperable during the three-year warranty period but was not repaired.

The Atlanta VA Medical Center RHFRN radio was accepted as installed with a signed FATP on September 14, 2018. The radio was then reported to OEM as inoperable in January 2019. The Fayetteville RHFRN radio in Arkansas was accepted as installed with a signed FATP on February 14, 2018. The facility radio was then reported to the contractor as inoperable on April 28, 2019. The audit team found there were no plans to repair these radios before the audit team conducted site visits to these locations in September 2021. OEM was not able to explain why the radios were not repaired during the warranty period under the previous contract. When asked, the contracting officer did not recall any discussion of warranty issues.

In response to the 2020 hotline allegation, the audit team found that a third facility—the Butler VA Medical Center—also had an incomplete warranty repair. The incomplete repair led to an inoperable facility radio during the audit period. Specifically, according to the FATP, the Butler radio was accepted as installed on March 31, 2016. Butler site personnel reported the radio as inoperable to OEM on January 16, 2019, and the contractor was notified on January 18, 2019. The contractor acknowledged the request for repair on January 23, 2019. The inoperable unit was shipped to the contractor in April 2019. The contractor returned the inoperable unit to Butler in February 2020 without repairing it. When a Butler VA Medical Center staff member assigned to the RHFRN asked why the repairs had not been completed, the contractor’s representative stated the warranty period had already expired and that the unit was retained by the contractor, as the out-of-warranty procedures for repair were discussed within OEM. The out-of-warranty

²¹ VHA email regarding the future of RHFRN from VHA Office of Emergency Management, September 26, 2019.

²² VHA email advising VHA OEM staff from the director of the VHA Office of Emergency Management, February 6, 2020.

procedure within OEM was never established, so the inoperable unit was returned to Butler without being repaired at the end of the contract. According to an OEM official, OEM provided an operational radio to Butler in March 2021. In January 2022, OEM stated the Butler radio had been installed and is operational.

RHFRN Site Personnel Did Not Request Annual Maintenance Services Provided by the Contract

According to the contract, maintenance services are required on an as-needed basis and no less than annually. The audit team found that 17 of the 21 sampled facilities did not have documentation or other evidence showing they had received maintenance on the RHFRN at least annually. When the audit team inquired, facility-level staff provided various answers, such as they were unaware that general maintenance was to be performed by the contractor, they believed that maintenance was handled by OEM or the VISN, or they were not aware of any maintenance being completed and did not have maintenance records. When questioned, OEM staff were unable to explain why the annual maintenance services were not completed at these 17 facilities.

OEM Did Not Provide Guidance about Monitoring the RHFRN in Nonemergency Conditions or RHFRN Locations

VHA Directive 0320.09 does not explain how to monitor RHFRN radios in nonemergency conditions, and OEM has not provided final guidance to ensure that incoming transmissions will be heard. The VHA High-Frequency Radio Operations Plan draft includes an appendix that describes what times the radio is monitored, if at all.²³

Any incoming calls will not be answered if a radio is not monitored, although a missed call should appear in the call history log. For example, when the Erie, Pennsylvania, radio operator attempted to verify the system was working by calling multiple sites, the operator did not receive a response. Subsequently, the audit team could not verify whether the system was able to transmit or receive communications at that time. Also, when the audit team conducted an in-person research site visit to the C.W. Bill Young VA Medical Center in Bay Pines, Florida, the RHFRN radio was in an unmonitored mechanical room by the roof. The audit team asked how Bay Pines staff know to monitor the radio to determine if staff in Puerto Rico, for example, need help during an emergency. None of the three staff members present during the research visit were able to explain when they check the radio for incoming transmissions, and VHA never provided guidance about where radio equipment should be located within a facility.

²³ Veterans Health Administration, High Frequency Radio Communications, *DRAFT HF Radio Operations Plan*, May 2017.

Conclusion

In January 2015, OEM contracted for a nationwide ready-to-operate RHFRN that should have been completed by January 2020. Several years and more than \$8.5 million later, the OIG found that VHA still lacks a functional, nationwide high-frequency radio network and estimates that approximately 150 of the 184 RHFRN sites (82 percent) were not operational as of October 2021. As of October 2022, OEM reported that approximately 145 of the 184 sites (79 percent) have not made any successful communication since January 1, 2022.

Inadequate acceptance, installation, training, oversight, and system support—primarily by OEM but with contributors at multiple levels of VHA—resulted in network inoperability and delay. As of March 2022, OEM had not finalized the VHA High-Frequency Radio Operations Plan, and there is no evidence that OEM distributed templates to facility directors as required by VHA Directive 0320.09. This potentially had a cascading effect, as medical center directors from at least 15 sites could not fulfill their responsibility under the same directive to develop facility-specific high-frequency radio standard operating procedures using OEM-supplied templates.

The audit team also found that in some instances, OEM and site personnel did not adequately oversee the installation of the radio systems, which may have contributed to the overall inoperable condition of the network. Site personnel did not adequately oversee tests per the contract to verify operability and, thus, did not ensure the equipment and services conformed with contract quality requirements. OEM did not sufficiently monitor the training that the contractor provided to radio operators at each site. OEM stated the current training plan and requirements are inadequate and they plan to include development of new training materials as a significant element in any future contracts. Further, the original contract required the contractor to conduct a survey assessing the effectiveness of the training; however, the audit team found no evidence that this survey was ever conducted. The audit team also found disagreement regarding which office was responsible for the ongoing oversight of the RHFRN, which contributed to the lapse in overseeing the program and obtaining a new network maintenance contract.

Until this system is fully operational, VHA will continue to remain vulnerable to national or local emergencies that impair normal communication methods, placing employees, veterans, and others in unnecessary danger.

Recommendations 1–6

The OIG made one recommendation to the under secretary for health:

1. Ensure medical facilities monitor resilient high-frequency radio network training and staffing levels and maintain enough trained staff to operate the resilient high-frequency radio network.

The OIG made two recommendations to the assistant deputy under secretary for health for administrative operations:

2. Ensure that the appropriate stakeholders know the program office responsible for the resilient high-frequency radio network and understand the roles and responsibilities for the Veterans Health Administration's Resilient High-Frequency Radio Network program.
3. Finalize the Veterans Health Administration High-Frequency Radio Operations Plan.

The OIG made three recommendations to the executive director of the Veterans Health Administration Office of Emergency Management:

4. If additional resilient high-frequency radio network equipment is purchased, work with the contracting officer to provide guidance to facility representatives to ensure they verify radios are fully functional before acceptance.
5. Conduct a risk assessment and provide guidance for the placement of resilient high-frequency radio networks within facilities and any needed monitoring schedules.
6. Ensure sites can obtain repairs for broken or inoperable resilient high-frequency radio network equipment.

VA Management Comments

The under secretary for health concurred with recommendations 1, 2, and 4 and concurred in principle with recommendations 3, 5, and 6, and provided actions plans for each. Given the evolving environment of nationwide emergency communications and the Cybersecurity and Infrastructure Security Agency's new strategic plan, OEM will work with agency stakeholders to determine the future need, requirement, and use of a high-frequency radio network within VHA. If stakeholders determine it is appropriate to continue this program, OEM will take the additional actions described in the next paragraphs to address the open recommendations.

For recommendation 1, OEM will ensure adequate training and staffing as applicable. In response to recommendation 2, as part of recertifying the national policy, OEM will make certain the policy clearly identifies the responsible program office and the responsibilities of the appropriate stakeholders.

To address recommendation 3, OEM will revisit any actions needed to finalize the operations plan after stakeholders finish discussing the program's future. The under secretary for health requested closure of recommendation 4, given that OEM does not plan to acquire any additional high-frequency radios. If VHA determines additional radios are required, OEM will work with

stakeholders to ensure facility representatives are aware of their responsibilities in accepting new equipment.

To address recommendation 5, OEM will complete a risk assessment if stakeholders agree that one is needed. For recommendation 6, OEM will coordinate with responsible officials to ensure sites have operable equipment.

The under secretary for health provided a target completion date of June 2024 to implement recommendations 1, 2, 3, 5, and 6. Appendix D provides the full text of VHA's comments.

OIG Response

The OIG considers the corrective action plans provided by the under secretary to be responsive to the intent of recommendations 1, 2, 3, 5, and 6. The OIG considers recommendation 4 closed based on the actions reported by the under secretary for health. The OIG will monitor the implementation of the planned actions and will close the other recommendations once the VHA has provided sufficient evidence of corrective action.

Appendix A: Operational Status of OIG-Sampled RHFRN Facilities (In Sample Order)

Table A.1. Operational Status Summary for OIG-Sampled RHFRN Facilities

Site name	Not operational	Operational
Omaha VA Medical Center in Nebraska	X	
John D. Dingell VA Medical Center in Detroit, Michigan	X	
Fayetteville VA Medical Center in Arkansas	X	
Erie VA Medical Center in Pennsylvania*		X
Bob Stump VA Medical Center in Prescott, Arizona	X	
Wilmington VA Medical Center in Delaware	X	
Kerrville VA Hospital in Texas	X	
Atlanta VA Medical Center in Decatur, Georgia	X	
Martinsburg VA Medical Center in West Virginia	X	
Central Alabama VA Medical Center in Tuskegee	X	
Tibor Rubin VA Medical Center in Long Beach, California [†]		X
Marion VA Medical Center in Indiana	X	
West Los Angeles VA Medical Center in California	X	
Brooklyn VA Medical Center in New York	X	
Carl T. Hayden VA Medical Center in Phoenix, Arizona	X	
Fayetteville VA Medical Center in North Carolina	X	
Marion VA Medical Center in Illinois [‡]		X
Lee County VA Clinic in Cape Coral, Florida	X	
San Juan VA Medical Center in Puerto Rico	X	

Office of Emergency Management Has Not Deployed a Functional
Last-Resort Emergency Communications System

Site name	Not operational	Operational
Vancouver Mobile Emergency Operations Center Trailer [§] in Washington		X
Multi-use Vehicle-04 (MUV-04) (Louisville, Kentucky)	X	
Total	17	4

Source: VA OIG analysis of statistically sampled RHFRN facilities during the audit period.

**The site coordinator, who is also a licensed amateur radio operator, confirmed the RHFRN at the Erie VA Medical Center is operable. During the test conducted by the OIG during the virtual site visit, no site responded to the calls. However, during the radio demonstration at the Tibor Rubin VA Medical Center in Long Beach, California, the audit team confirmed Erie's radio was operational.*

†Tibor Rubin VA Medical Center radio staff called Erie VA Medical Center radio staff to make sure the Erie VA Medical Center radio was monitored during the OIG test. During the test, the audit team witnessed a successful radio demonstration of two-way communication between the Tibor Rubin VA Medical Center and the Erie VA Medical Center.

‡The radio operator coordinated with a local amateur radio operator to demonstrate radio operability and confirmed on his cell with the other radio operator that communication was heard; however, the three audit members cannot confirm two-way communication was successful since transmission was inaudible via a Microsoft Teams video call.

§ Coordination with VISN 20 radio operator before the radio demonstration to demonstrate radio operability.

Appendix B: Scope and Methodology

Scope

The audit team performed its work from August 2021 to December 2022 to determine if VA provided effective oversight of the installation and deployment of the VHA RHFRN to ensure reliable communications capabilities during crises and natural disasters. The audit included a universe of the current list of 184 nationwide RHFRN sites (both fixed and mobile sites) provided to the audit team by OEM on August 13, 2021. The original list OEM provided had 191 radio sites, but the audit team removed seven of those sites from its universe as they were either non-RHFRN sites or reported not having a radio installed.

Methodology

The OIG reviewed applicable laws, regulations, policies, procedures, and documentation related to the installation and deployment of the RHFRN. The audit team conducted interviews with OEM, OSP, the Strategic Acquisition Center, and VA medical center staff responsible for the RHFRN to determine the operational status of the system. The team also requested and reviewed documentation from OEM, OSP, the Office of Information and Technology, and the Strategic Acquisition Center. During 21 virtual site visits performed during the months of September and October 2021, the team interviewed staff, requested and received documentation, and observed site personnel who operate these radios. The team interviewed available site leaders including the medical center director or associate director, site coordinators, and at least one other radio operator if available.

Internal Controls

As required by generally accepted government auditing standards, the audit team determined the significance and obtained an understanding of internal controls.²⁴ The team identified the following three components and six principles associated with the audit objective and proposed recommendations 1–6 in the finding to address the deficiencies identified in the following controls:

- Control Environment
 - Principle 2—Exercise Oversight Responsibility
 - Principle 3—Establish Structure, Responsibility, and Authority
 - Principle 5—Enforce Accountability

²⁴ GAO, *Standards for Internal Control in the Federal Government*, GAO-14-704G, September 2014.

- Control Activities
 - Principle 10–Design Control Activities
- Monitoring
 - Principle 16–Perform Monitoring Activities
 - Principle 17–Evaluate Issues and Remediate Deficiencies

Fraud Assessment

The audit team assessed the risk that fraud and noncompliance with provisions of laws, regulations, and contracts, significant in the context of the audit objectives, could occur during this audit. The team exercised due diligence in staying alert to any fraud indicators by

- interviewing personnel who accepted RHFRN equipment at sampled sites,
- reviewing limited contracting documentation,
- maintaining awareness of potential fraud indicators, and
- soliciting the OIG’s Office of Investigations to determine if there were any active or pending investigations related to the audit.

The OIG did not identify any instances of fraud or potential fraud during this audit.

Data Reliability

Computer processed data was used to determine the number of RHFRN sites. The computer processed data used for this purpose was determined to be reliable for the purpose of this audit. To support this report’s findings, the audit team observed equipment and site personnel using that equipment for its intended purpose, collected testimonial evidence (interviews and email exchanges with personnel at OEM, OSP, and other VA/VHA staff), and collected documentary evidence (e.g., data call requesting a master list of RHFRN equipment that is working and not working, contracting officer files, receipt and acceptance documentation, training materials, continuity of operations plans, and policy documents such as VA and VHA memorandums, handbooks, and directives). The sources of evidence included VA personnel and volunteers working with the RHFRN program and equipment at OEM, OSP, and medical facilities who provided testimonial, physical, and documentary evidence such as current VA policy documents such as VA and VHA memorandums, and directives.

The OIG believes the documents obtained are sufficiently reliable to support its objectives, conclusions, and recommendations.

Government Standards

The OIG conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that the OIG plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for the findings and conclusions based on audit objectives. The OIG believes the evidence obtained provides a reasonable basis for the findings and conclusions based on the audit objectives.

Appendix C: Statistical Sampling Methodology

Approach

The audit team reviewed a statistical sample of 21 RHFRN sites to quantify which RHFRN sites were inoperable.

Population

The review population included 184 RHFRN sites that OEM reported to the audit team as having an RHFRN radio.

Sampling Design

The audit team selected a statistical sample of 21 sites from the population of 184 RHFRN sites that OEM reported to the audit team. The population was stratified by radio type and categorized in four strata, as seen in table C.1.

Table C.1. RHFRN Radio Site Sample*

Population	Total number of sites	Sampled items
Backbone site	11	1
Fixed 125-watt	153	17
Fixed 500-watt	6	1
Mobile	14	2
Total	184	21

Source: VA OIG-sampled universe of RHFRN sites reported to the OIG by OEM as having an installed RHFRN radio on August 13, 2021.

**To ensure maximum proportionality between stratum population sizes and sample sizes, two of the strata have sample sizes of one. These two small strata were combined into a single pseudostratum (with appropriate weights assigned to each sampled unit) for purposes of sampling variance estimation.*

Weights

Samples were weighted to represent the population from which they were drawn, and the weights were used in the estimate calculations. For example, the team calculated the error rate estimates by first summing the sampling weights for all sample records that contained the given error, then dividing that value by the sum of the weights for all sample records.

Projections and Margins of Error

The point estimate (e.g., estimated error) is an estimate of the population parameter obtained by sampling. The margin of error and confidence interval associated with each point estimate is a measure of the precision of the point estimate that accounts for the sampling methodology used. If the OIG team repeated this audit with multiple samples, the confidence intervals would differ for each sample but would include the true population value approximately 90 percent of the time.

The OIG statistician calculated the weighted population estimates and associated sampling errors. These calculations accounted for the complexity of the sample design.

The sample size was determined after reviewing the expected precision of the projections based on the sample size, potential error rate, and logistical concerns of the sample review. While precision improves with larger samples, the rate of improvement does not significantly change as more records are added to the sample review. Figure C.1 shows the effect of progressively larger sample sizes on the margin of error.

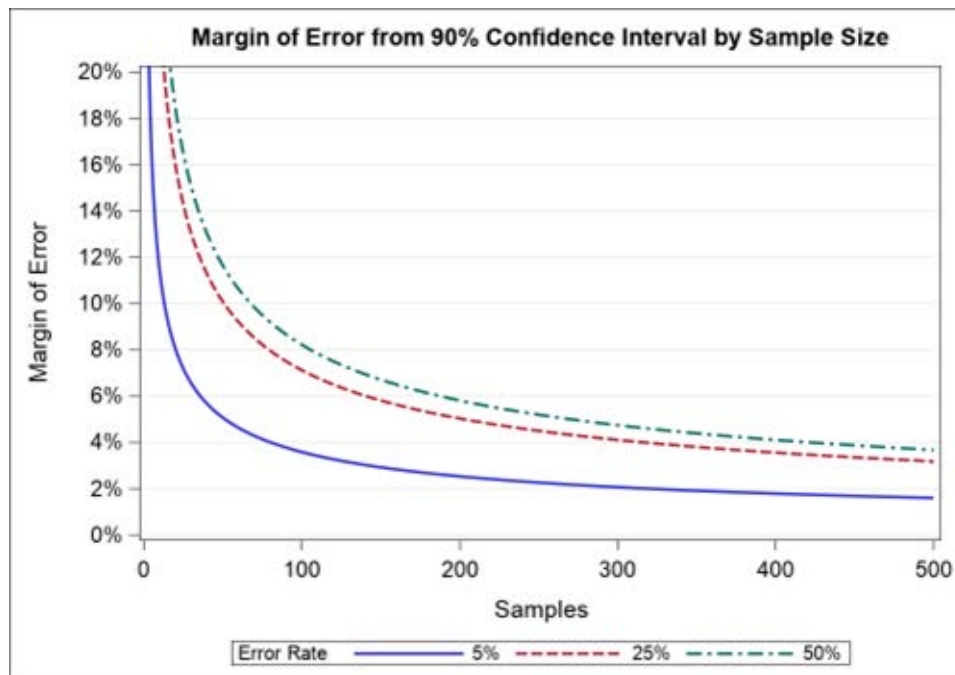


Figure C.1. Effect of sample size on margin of error.

Source: VA OIG statistician's analysis

Projections

Table C.2 displays the results of statistical analysis of the sample data. The table includes an estimate of the percentage of sites with errors and of the total number of sites with errors. Confidence intervals were calculated using the conservative Clopper Pearson approach and are

therefore asymmetrical around the point estimate. As such, the margin of error is calculated as half the difference between the two limits of a two-sided 90-percent confidence interval.

Table C.2. Statistical Projections

Projection	Point estimate	Margin of error based on two-sided 90-percent confidence interval	Two-sided 90-percent confidence lower limit	Two-sided 90-percent confidence upper limit	One-sided 90-percent confidence lower limit	Count from sample
Error rate	81.52%	16.1%	61.8%	93.9%	65.8%	17
Number of sites with errors	150	30	114	173	121	17

Source: OIG data analysis.

Appendix D: VA Management Comments

Department of Veterans Affairs Memorandum

Date: January 30, 2023

From: Under Secretary for Health

Subj: OIG Draft Report: Audit of VHA Office of Emergency Management's Resilient High Frequency Radio Network Deployment and Oversight (2021-03133-AE-0153) (VIEWS 9275183)

To: Assistant Inspector General for Audits and Evaluations (52)

1. Thank you for the opportunity to review and comment on the Office of Inspector General (OIG) draft report, "Office of Emergency Management Has Not Deployed a Functional Last-Resort Emergency Communications System." The Veterans Health Administration (VHA) concurs or concurs in principle with the recommendations and provides an action plan in the attachment.

2. The VHA Resilient High-Frequency Radio Network (RHFRN) was established in 2017 to provide emergency communication capabilities for medical centers using a Primary, Alternate, Contingency and Emergency (PACE) methodology. Subsequent to implementing VHA's RHFRN program, in 2018 the Cybersecurity and Infrastructure Security Agency (CISA) was established to enhance public safety interoperable communications at all levels of government and provide extensive support to communicate in an all-hazards environment. CISA recently released its first strategic plan in September 2022.

3. Given the evolving environment of nationwide emergency communications and CISA's new strategic plan, VHA's Office of Emergency Management will be working with Agency stakeholders to determine the future need, requirement and use of a high-frequency radio network within VHA.

The OIG removed point of contact information prior to publication.

(Original signed by:)

Shereef Elnahal, M.D., MBA

Attachment

Recommendation 1. Ensure medical facilities monitor resilient high-frequency radio network training and staffing levels and maintain enough trained staff to operate the resilient high-frequency radio network.

VHA Comments: Concur. The VHA Office of Emergency Management (OEM) will work with stakeholders within the Department to determine the future need, requirement and use of a high-frequency radio network. The appropriate actions shall then be taken to ensure adequate training and staffing levels where applicable.

Status: In progress

Target Completion Date: June 2024

Recommendation 2. Ensure that the appropriate stakeholders know the program office responsible for the resilient high-frequency radio network and understand the roles and responsibilities for the Veterans Health Administration's Resilient High-Frequency Radio Network program.

VHA Comments: Concur. VHA has national policy that establishes roles and responsibilities for the resilient high-frequency network (VHA Directive 0320.09). This national policy is due for recertification. As part of recertification, OEM will work with stakeholders within the Department to determine the future need, requirement and use of a high-frequency radio network. The appropriate actions shall then be taken to ensure the recertification of the Directive clearly identifies the responsible program office and roles and responsibilities for the appropriate stakeholders.

Status: In progress

Target Completion Date: June 2024

Recommendation 3. Finalize the Veterans Health Administration High-Frequency Radio Operations Plan.

VHA Comments: Concur in principle. The operations plan will depend on the results of VHA's work with stakeholders within the Department and any updates or revisions to national policy. OEM will revisit actions to resolve this recommendation when those discussions have been completed.

Status: In progress

Target Completion Date: June 2024

Recommendation 4. If additional resilient high-frequency radio network equipment is purchased, work with the contracting officer to provide guidance to facility representatives to ensure they verify radios are fully functional before acceptance.

VHA Comments: Concur. At this time, VHA does not anticipate purchasing additional high-frequency radio network equipment and asks OIG to close this recommendation. If at some distant future date, VHA chooses to invest further in equipment for this program, OEM will collaborate with any potential contracting officers to ensure facility representatives are aware of their responsibilities for verifying equipment functionality before accepting delivery. OEM will work with Department stakeholders to determine the future need, requirement and use of a high-frequency radio network.

Status: Completed

Completion Date: December 23, 2022

Recommendation 5. Conduct a risk assessment and provide guidance for the placement of resilient high frequency radio networks within facilities and any needed monitoring schedules.

VHA Comments: Concur in principle. OEM will work with Department stakeholders to determine the future need, requirement and use of a high frequency radio network. If stakeholders deem a risk assessment is needed, the OEM, in collaboration with others, will conduct it.

Status: In progress

Target Completion Date: June 2024

Recommendation 6. Ensure sites can obtain repairs for broken or inoperable resilient high-frequency radio network equipment.

VHA Comments: Concur in principle. OEM will work with Department stakeholders to determine the future need, requirement and use of a high-frequency radio network. If the decision is to continue this program, OEM will coordinate with responsible officials for ensuring sites have operable equipment.

Status: In progress Target Completion Date: June 2024

For accessibility, the original format of this appendix has been modified to comply with Section 508 of the Rehabilitation Act of 1973, as amended.

OIG Contact and Staff Acknowledgments

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