DRAFT STATEMENT OF WORK

Clinical Notification Platform

for the

Hunter Holmes McGuire

Veteran Affairs Medical Center

Table of Contents

I. Background

The Joint Commission's 2016 Hospital National Patient Safety Goal (NPSG.06.01.01) states hospitals are to continuously make improvements to ensure that alarms on medical equipment are heard and responded to on time. At the Hunter Holmes McGuire VAMC, secondary alarms are utilized to assist clinical staff when dealing with alarms. However, the current equipment does not meet the functional needs required by clinical staff to provide the highest level of care possible to our Veteran population. Additionally clinical alarm fatigue is an identified patient safety risk at the McGuire facility. Expanding alarm management tools to include data aggregation and more comprehensive secondary alarms and notifications will help the clinical staff create and enforce alarm management policies.

II. Scope

The contractor shall be responsible for the design, delivery and installation of a turnkey enterprise wide clinical alarm and notification platform for the Hunter Holmes McGuire VAMC in Richmond, VA.

III. Summary of Requirements

OFFEROR shall propose implementation of the middleware, hardware and software system that will provide clinical staff with real time visibility of context-rich patient and event data from VistA, integrated alert and call systems, and mobile devices. The alerts delivered to the wireless phones shall include information pertinent to the alert, such as the affected patients' name and primary diagnosis (extracted from VistA based on the location of the alert or alerting system). The system must read and write patient data from VistA as needed, extracting context data from the patient's health record to improve the quality of alerts and annotating the record with timestamped alert information (including the nature of the alert, when it was acknowledged by staff, escalations or redirections, and the identity of the staff responder).

1. Middleware

- At a minimum the proposed middleware system shall possess the following capabilities :
    - Support standard voice alerts, including any received from bedside microphones or staff phone calls delivered by the existing call manager (NEC PBX).
    - Differentiate between different alert systems and transmit context appropriate to the alerting system
    - Distinguishes between routine or emergency calls and allows different audio and visual cues to be assigned.
    - Facilitate role-based escalation of alerts among all device types
    - Provide coverage for 350 clinical beds

- Provide secure messaging capabilities, including the ability to accept, escalate, auto escalate, and view additional information.

- The solution should include enterprise-wide licensing to provide RICVAMC the ability to expand the solution as the hospital expands in the future.

- The middleware system shall be accessed on devices via an application. This may be a desktop application, web-based application, or mobile application.

    - ❖ No Protected Health Information shall reside on devices used to access the middleware system. All alarm or patient information shall be stored on a local server installed in the RICVAMC data center.

- Workflows to be included:

    - Wireless Nurse Call Notifications with context: Deliver nurse call alert with "At Risk" information to the assigned care team member(s) to increase Staff Efficiency and Patient Satisfaction. Must have ability to accept, escalate, auto escalate, and view additional information.

    - Patient Monitoring: Deliver physiological monitoring alerts to nurse. Must have ability to accept, escalate, auto escalate, and view additional information. Must include ability to view waveforms.

    - Critical Patient Monitoring and Telemetry Alarms with False Positive Validation: Deliver an alert to the Tele tech who validates, then sends to nurse to reduce alarm fatigue. Must have ability to accept, escalate, auto escalate, and view additional information. Must include the ability to view waveforms.

- For future expansion, the middleware must be compatible with the following workflows:

    - STAT/NOW Order Alerts: Deliver VistA/CPRS alert to the assigned Nurse notifying them that a STAT Order has been placed to increase Staff Efficiency and Patient Safety. Must have ability to accept, escalate, auto escalate, and view additional information.

    - PRN Effectiveness Follow-up Reminders: Deliver an automatic follow-up reminder to the assigned nurse to increase Staff Efficiency and Patient Safety. Must have ability to accept, escalate, auto escalate, and view additional information.

    - Critical Lab and Test Results Alerts: Deliver alert to physician with the option to accept, forward, or be reminded again in a user defined timeframe to increase Staff Efficiency and Patient Safety. Must have ability to accept, escalate, auto escalate, and view additional information.

    - PACT Appointment Reminder, Patient Check-in, and Room Assignment Notifications: Deliver notification to care team and Veteran to increase

Efficiency and Patient Satisfaction. Must have ability to accept, escalate, auto escalate, and view additional information.

- Code and Rapid Response Team Alerts: Deliver an alert to the specific Code or Rapid Response Team with Accept, Escalate, and Two-way closed loop communication. Must have ability to accept, escalate, auto escalate, and view additional information.

- Pre-discharge and Real-Time Discharge Notifications: Deliver pre-discharge and/or real-time discharge notification to Med, Transport, EVS, Dietary, Nurse, and MD teams. Must have ability to accept, escalate, auto escalate, and view additional information.

- Fire Alarm Contextual Notifications: Deliver Fire Alarm notification with building, floor, and room information. I.E. Fire Alarm Bld46 Room 422. Must have ability to accept, escalate, auto escalate, and view additional information.

- Report Available Notification with report context: Deliver notification to MD's that specific reports are available so they do not have to log in/out to check. Must have ability to accept, escalate, auto escalate, and view additional information.
- Temperature Monitoring Alerts: Deliver status of temperature from existing TempTrak temperature monitoring system to appropriate staff with ability to accept, escalate, auto-escalate, and view additional information. Must have ability to accept, escalate, auto escalate, and view additional information.

- Interactive Patient Entertainment Notifications: Deliver various alert, alarm, and notifications to/from the GetWellNetwork system to assigned care team members to improve operations and response to Veteran requests. Must have ability to accept, escalate, auto escalate, and view additional information.

2. Mobile Devices

a. The contractor will include hardware, software and enterprise licensing for 350 beds at the RICVAMC, including FIPS 140-2 compliant mobile devices. All included devices should accommodate the proposed architecture, including maintenance and subscriptions as necessary to allow access to new software version releases, as well as any major software updates, during the term of coverage for no additional cost.

b. The mobile device solution shall be the Zebra MC40 handheld devices. If, at the time of award, OI&T TRM approvals are pending or not valid, alternate mobile devices as outlined in Section 5.b.iii shall be provided. Included in the quote should be at minimum 550 Zebra MC40 mobile devices. Additional accessories to be included are 400 spare MC40 batteries, 35 8-bay battery only charging stations, 30 4-bay battery only charging stations, and at least 100 micro USB to USB cable and 100 USB power adapters. Although not required, a value added requirement is an additional 200 MC40 devices each with a micro USB to USB cable and USB power adapters.

c. If OI&T TRM approvals are not secured for the MC40 at the time of award, the proposal shall utilize other FIPS 140.2 compliant mobile devices. Known acceptable handheld devices include but are not limited to iOS 9 devices such as an iPhone. iPhone devices

must not have a sim card (e.g. Verizon, Sprint, or T-Mobile wireless network access). For this solution, the quote should contain at minimum 550 devices. Additional accessories required are 400 spare batteries, 35 8-bay battery only charging stations, 30 4-bay battery only charging stations, and at least 100 USB charging cables designed for the mobile device quoted and 100 USB power adapters. Although not required, a value added requirement is an additional 200 devices each with a USB charging cable and USB power adapters.

d. However, if the mobile devices quoted do not have an interchangeable battery, 1000 devices are required. Additional accessories for this solution are 35 8-bay phone charging stations utilizing cables, not fixed connectors, 30 4-bay phone charging stations utilizing cables not fixed connectors, and at least 100 USB charging cables designed for the mobile device quoted and 100 USB power adapters. Although not required, a value added requirement is an additional 200 devices each with a USB charging cable designed for the device quoted and USB power adapters.

e. VA owned OI&T devices will be utilized as available, potentially decreasing the amount of devices required. If the number of devices required changes at the time of award, this will be communicated by the COR to the Contracting Officer.

3. Integrated System Requirements

a. The contractor will need to work with the vendors listed below in order to configure the appropriate connections with the middleware software.

i. Simplex Grinnell Nurse Call

- Contractor will work with existing nurse call distributor, Simplex Grinnell, to configure the alarm data output connection.

- Contractor will need to provide all necessary hardware, software and licensing required to connect the nurse call to the middleware software.

ii. Philips Patient Monitoring

- Contractor will work with existing patient monitoring vendor, Philips, to configure alarm data output connection to communicate with middleware software. This TCP/IP connection will be configured to use the HL7 protocol.

- Contractor will need to coordinate with Philips, and provide equipment, installation and configuration of required components including, but not limited to the mobility gateway, additional hardware, software and licensing.

iii. VistA/CPRS

1. Contractor will provide necessary hardware and software required to create an HL7 link between middleware and VistA.

4. Hardware

    a. The contractor will provide all hardware necessary to make the solution functional including, but not limited to, application servers, backup servers, call manager servers, mobile devices and charging devices.

5. Device Messaging

    a. The contractor will enable messaging services between mobile devices (regardless of type) and desktop computers

        - System shall accommodate incoming secure messages
        - Messages sent shall use a secure encrypted non-SMS delivery mechanism. No personal health information may reside on the end point devices
        - Different sounds should be available for assignment depending on the nature of the notification

    b. VISTA Integration/CPRS Compatibility

        - This integration shall include an inbound HL7 interface from VistA, send messages, and automatically document the alert and response in the patient's electronic health record

SOLUTION DEPLOYMENT & SUPPORT

a. Contractor shall deploy solution, including end-user training, first week "go-live" support, follow up support (on-site and remote), capture/evaluation of metrics during the deployment, technical training for in-house staff, support for at least (1) year.

b. The contractor should propose milestones dates for the following critical path elements at the facility

    i. Discovery

        - Assemble Project Team
        - Schedule Internal Kick-Off Call
        - Assess Project Readiness

    ii. Initiate

        - Conduct Kick-Off Call with Site
        - Define System Endpoints involved
        - Define high level project timeline
        - Deliver appliances and license keys

    iii. Design

        - Clinical Workflow Assessment (onsite)
        - Customize Project Plan
        - Finalize Project Plan with site

iv. Deploy
- Appliance Installation
- Connectivity to the external systems established
- Application configuration
- Application testing (onsite)
- System Integration testing (onsite)
- User Acceptance Testing (onsite)
- Training (Onsite)
- Go-Live (Onsite)

v. Post Implementation
- 30 Day Review
- 60 Day Review

vi. Closure
- Project Closure with site sign-off

The solution shall support one hundred eighty nine (189) inpatient beds, including the following units: Medicine (45 beds), Spinal Cord (64 beds), and Community Living Center (80 beds).

IV. Deliverables

Deliverables include:

1) System design documentation satisfying the technical requirements in the Project Overview.
2) A detailed, time-phased project plan, updated as significant changes occur, including annotation of the critical path.
3) All required hardware, software, and licensing, including physical FIPS 140-2-compliant hand-held mobile devices, alert software, voice mailbox (possibly on the NEC PBX), and Instant Messenger/Softphone applications for optional use.
4) A workflow design that optimizes business practices in order to maximize the utility of the middleware system's capabilities with the mobile devices.
5) A migration plan that shall cause the least impact to users when migrating to the new enterprise communications system.
6) Clinical design sessions as necessary to propose an automatable workflow and provide initial on-site training (length and content to be proposed by Contractor) to users during deployment.
   Recorded or offline training materials for use in training staff after deployment.

Required at time of Offer

1) System design documentation satisfying the technical requirements in the Project Overview.
2) A detailed, time-phased project plan, including annotation of the critical path.
3) All required hardware, software, and licensing, including physical FIPS 140-2-compliant hand-held mobile devices, alert software, voice mailbox (possibly on the NEC PBX), and Instant Messenger/Softphone applications for optional use.
4) A workflow design that optimizes business practices in order to maximize the utility of the middleware system's capabilities with the mobile devices.
5) A migration plan that shall cause the least impact to users when migrating to the new enterprise communications system.
6) Clinical design sessions as necessary to propose an automatable workflow and provide initial on-site training (length and content to be proposed by Contractor) to users during deployment.
   Recorded or offline training materials for use in training staff after deployment.

Provide multiple year warranty/assurance extensions on the entire system. Procuring, receiving all shipments, storage, and managing the installation of all equipment, parts, software, and software licenses to complete any required upgrades to existing systems

and make operational the RICVAMC clinical alarm and notification platform. Responsible for maintaining an accurate detailed inventory list of the installed equipment, software with version release, and licenses count totals.

V. Security Requirement's

VI. Future Requirements

The Government anticipates the need for non-personal services for continued support beyond initial installation as outlined in this SOO. The contractor shall address its interest and ability in which within their offer as to its desire and ability to support this need beyond initial installation for the Government's consideration. The Contractor shall be required to submit a separate offer with its anticipated pricing associated with providing on-site full time support. The responsibilities of this position are anticipated to be as follows:

1. **Assurance System Support Personnel:**

- One full time employee (FTE) on site at RICVAMC
- Answering user questions
- Diagnosing and addressing software errors
- Administering Software Upgrades and System Maintenance
- Remote support capabilities
- Mobile device support
- Additional end-user or technical training, as needed

This portion would be executed via a separate contract vehicle and is hereby determined to be outside the scope of this requirement.