

## **SECTION 275223 - NURSE CALL & WANDER MANAGEMENT**

### **PART 1 GENERAL**

#### **1.1 SUMMARY**

- A. This specification provides the minimum requirements for a supervised audio-visual Voice over IP-based (VoIP) Nurse Call System. The Nurse Call System shall include, but not be limited to all equipment, materials, labor, documentation, and services necessary to furnish and install a complete, operational VoIP-based Nurse Call System.
- B. This specification provides minimum requirements for Wander Management, including, but not limited to all equipment, materials, labor, documentation, and services required to furnish and install as complete and operational Wander Management system solution. Wander Management solution must be compatible with, and configured with Security system door access control system provided under Division 28 00 00 and with Nurse Call and Electronic Healthcare Records (EHR) solutions.
- C. This specification notes Owner-provided Electronic Healthcare Records (EHR) product solution, for purpose of ensuring that the provided Nurse Call and Wandering Management must be seamlessly integrated with the Owner's EHR solution.
- D. Processing, network and power supply equipment in support of Communications, Security, Audiovisual, Digital Signage, IPTV and Paging/Background Music and Nurse Call systems shall be housed in vertical equipment cabinets and wall mounted devices within the local proximity IT IDF or Main Server room. Coordinate equipment location with the IT room with all Divisions 27 and 28.
- E. Locations and types of Nurse Call components required by the Owner are detailed on the TG series drawings for purposes of defining the Owner requirement and the Basis of Design.

#### **1.2 DEFINITIONS**

- A. Owner: The facility purchasing and taking possession of the Nurse Call and patient Wandering Management and EHR systems upon installation.
- B. Manufacturer: The company responsible for the production and design of the Nurse Call and Wandering Management systems.
- C. Vendor: The company which (re)sells the Nurse Call and Wandering Management systems to end users.
- D. Design-Builder: The company contracted to facilitate, in part or in whole, the installation of the Nurse Call and Wandering Management systems.
- E. Staff Console: A central point to monitor and respond to calls placed with the Nurse Call and Wandering Management systems. The Staff Console, also called a master

station, displays incoming calls from patients and connected healthcare equipment, and provides a means for the user to prioritize, triage and/or respond to selected events.

- F. Audio Station: A device used to place and annunciate calls through the Nurse Call System. Also, a primary point of two-way communication between patients or visitors and staff or between staff. Audio Stations can be standard (no touch-screen interface) or graphical (touch screen interface).
- G. Smart Bed Connector: Provides the interface for connecting beds, pillow speakers and medical devices to the Nurse Call System.
- H. Call Switches: Initiating devices that provide the ability to call for assistance from the patient room and allow for communication through the Nurse Call System.
- I. Corridor Lights: Also called done / zone lights, a set of configurable LED lights which provide a visual signal to indicate the status and location of various events occurring in a nursing unit.
- J. Pillow Speakers: A hand-held device used to place calls and indicated patient requests (e.g. medication or bathroom requests) through the Nurse Call System as well as control entertainment and lighting from the patient bed.
- K. Electronic Whiteboard: A real-time dashboard, typically displayed on large central monitors, displaying Nurse Call System, patient and smart bed information.
- L. Smart Bed: A hospital bed capable of sharing bed status, patient weight, patient presence, and alarm data with the Nurse Call System.
- M. Wrist Bracelet: wrist brackets in similar form to athletic training data bracelets, with integral wireless data identification of wearer's cataloged identity, with wireless frequency transmitter capable of being detected by compatible electronic proximity sensor/detectors, with integral battery capable of powering the device for 10-years.
- N. Electronic Proximity Sensor: Wall or Ceiling installed electronic device capable of detecting wireless radio transmission of Wander Management wrist band. Cabled to either Wander Management control processor, or direct to Division-28 security access control system.
- O. Electronic Healthcare Records (EHR): online, IT cloud-based patient healthcare records system, including software application licensing, IT network electronics in support of EHR, nurse/staff accessible computer interfaces and reliable Internet service in support of EHR.
- P. EHR Kiosk: Nurse/staff accessible computer interfaces in support of electronic healthcare records application, either wall or desktop mounted, located at intersections of household corridors and nursing stations, with IT network and electrical services. Coordinate locations with Owner.
- Q. Mobile Phone: Owner-provided mobile phone device/mobile computer with touch screen, capable of cellular phone voice communications, WiFi access to local and cloud-based application servers and the Internet, and the running of healthcare

application software specific to HER, Nurse Call and Wandering Management.

### **1.3 SUBMITTALS**

- A. The Vendor will provide product data for each component, including manufacturer's specifications.
- B. The Vendor will provide drawings detailing the system including, but not limited to, the following:
- C. The Vendor shall provide a single-line block diagram showing cabling interconnection of all components for this specific system.
- D. The Vendor shall provide a CAD drawing of the floor/floors where the Nurse Call System will be installed.
- E. The Vendor will provide wiring diagrams detailing wiring for power, signal, and control systems and differentiating clearly between manufacturer-installed and field-installed wiring.
- F. The Vendor shall provide a report of field tests and observations.
- G. The Vendor will provide maintenance data for system to include in the operation and maintenance manual.
- H. The Vendor shall ensure in writing that proposed provided Nurse Call and Wandering Management solution is compatible with Owner's current electronic healthcare records system, known as PointClickShare.

### **1.4 QUALITY ASSURANCE**

- A. The complete Nurse Call System shall be provided by a single manufacturer and obtained through the Original Equipment Manufacturer (OEM) as the single source.
- B. The complete Wandering Management System shall be provided by a single manufacturer and obtained through the Original Equipment Manufacturer (OEM) as the single source.
- C. The Manufacturer shall be a firm experienced in manufacturing, installing and maintaining Nurse Call and Wander Management Systems. The Manufacturer of the Nurse Call and the Wander Management System equipment shall be regularly involved in the design, manufacture, and distribution of all products specified in this document. These processes shall be monitored under a quality assurance program that meets ISO requirements.
- D. All equipment and components shall be the Manufacturer's most recently released model.
- E. The Manufacturer's authorized representative who is trained, certified and/or approved for managing installation shall be responsible for the satisfactory installation of the complete Nurse Call and the Wander Management System. All

equipment and components shall be installed in strict compliance with the Manufacturer's recommendations.

- F. The Manufacturer's representative shall provide equipment and components, which comply with the requirements of these specifications. Equipment or components, which do not provide the performance and features required by these specifications, will not be accepted, regardless of Manufacturer.
- G. All Nurse Call and the Wandering Management system components, inclusive of staff locating, shall be the catalogued products of a single Supplier. All products shall be listed by the Manufacturer for their intended purpose.
- H. All Wander Management System components, inclusive of staff locating, shall be the catalogued products of a single Supplier. All products shall be listed by the Manufacturer for their intended purpose.
- I. The manufacturer shall maintain technical support services capable of providing users of the system with training, parts, and emergency maintenance and repair both on site and remotely.
- J. All connected nurse call components shall be tested to ensure that a fully functioning system is designed and installed.
- K. The VoIP-based Nurse Call and the Wander Management System shall utilize Ethernet topology, switches, and devices. These devices shall make up a UL 1069 Listed nurse call LAN/WAN (Local Area Network/Wide Area Network).
- L. The system solution should conform to FDA Class II exempt medical device standards.
- M. The system solution shall support compliance with HIPPA requirements for sharing and displaying patient information.
- N. The system solution must conform to applicable codes, rules, regulations, and laws of the hospital authority and local jurisdiction for hospital nurse call systems. Manufacturer will provide proof of certification for regulatory compliance from issuing authority.
- O. The system solution, inclusive of electrical components, infrastructure components, devices and accessories, shall comply in all respects and shall be labeled in accordance with the requirements of the specifications, manufacturer's recommendations and Underwriters Laboratories Inc. (UL) 1069 – Standard for Hospital Signaling and Nurse Call Equipment.
- P. All required Security access control and visual monitoring in support of Nurse Call and Wandering Management shall be coordinated with and provided by Division 28- Electronic Safety and Security.
- Q. All components used must be RoHS (Reduction of Hazardous Substances) compliant.
- R. Provided product system solution must be seamlessly integrated with, and

compatible with Owner's current online Electronic Healthcare Records application product known as PointClickShare.

## **1.5 MANUFACTURER**

- A. For purposes of the Design-Build bridging documents, the Basis of Design is based on the Hill-Rom Voalte product series, however other cost-effective proposed product solutions meeting, or exceeding the minimum standards for this project will be considered for approval by the Owner.
- B. For purposes of the Design-Build bridging documents, the Basis of Design of the Wander Management solution is based on the Accutech ResidentGuard product series, however other cost-effective proposed product solutions meeting, or exceeding the minimum standards for this project will be considered for approval by the Owner.
- C. For purposes of compatibility, provided Nurse Call and Wandering Management product system solution must be compatible with Owner's current online Electronic Healthcare Records application product known as PointClickShare.

## **1.6 SYSTEM DESIGN & CONFIGURATION**

- A. The Nurse Call, Wander Management and EHR system kiosks shall be capable of supporting up to 2,000 Internet Protocol (IP) addressable devices (graphical audio stations, staff consoles, room control boards) across a single enterprise.
- B. IP addressable devices shall be TCP/IP (Transmission Control Protocol/Internet Protocol) based and their IP addresses should be issued via Dynamic Host Configuration Protocol (DHCP).
- C. Preset host file lookup shall be resolved using Domain Name System (DNS).
- D. The Nurse Call, Wandering Management and EHR system cabling should be of standard Ethernet topology utilizing dedicated minimum CAT6 home runs to each location.
- E. The Nurse Call System shall support fiber cable for interconnections between Power over Ethernet switches.
- F. Nurse Call System architecture shall utilize an internal power supply; not external power supplies. Any systems requiring power supplies to be installed separately from the control equipment will not be accepted.
- G. Systems requiring separate cabling for main power shall not be accepted. Separate cabling for Uninterruptible Power Supply (UPS) backup in IT Closets (Intermediate Distribution Frame or Main Distribution Frame) is permitted.
- H. A backup, battery power supply should be available in the event that the main power supply should fail.
- I. Head end equipment / controller equipment shall be standard 19" rack mountable.

- J. Servers used to support the Nurse Call System shall use a Windows Server OS and a SQL database.
- K. The Nurse Call System shall support the option to use distributed server setup.
- L. The Nurse Call System shall support the use of virtual machines in the Owner's existing data center. Any virtual machines used for the Nurse Call System shall support high availability.
- M. The Nurse Call, Wandering Management and EHR System shall support the use of LAN and WAN connections. WAN connections must meet the following latency requirements:
  - N. Real Time Locating System – 10 milliseconds or less, bidirectional.
  - O. VoIP – 100 milliseconds or less, unidirectional.
- P. It should be possible to configure the Nurse Call, Wandering Management and EHR System using a modular, flexible Graphical User Interface (GUI) application that provides the ability to:
  - Q. Manage (add, delete, modify) staff assignments by unit, patient room.
  - R. Assign and remove patient safety status for falls, skin and/or pulmonary risk(s).
  - S. View electronic whiteboard data.
  - T. Configure Nurse Call System automated reminders.
  - U. Utilize active directory for single sign on access to the GUI and reporting applications.
  - V. Configure the display of patient data to comply with HIPPA regulations.
  - W. Provide an audit trail for changes made in the application when an active directory integration is in place.
- X. The Nurse Call System shall be network-based and incorporate decentralized, distributed intelligence architecture.

## **PART 2 PRODUCTS – MANUFACTURER FURNISHED EQUIPMENT**

### **1.1. GENERAL CONDITIONS**

- A. The Nurse Call System shall allow both data and voice to be distributed over a common network infrastructure. The Nurse Call System shall consist of (include):
  - (1) Staff Consoles
  - (2) Patient and Staff Audio Stations (Standard and/or Graphical)
  - (3) Smart Bed Connectors

- (4) Call Switches
  - (5) Remote Audio Devices
  - (6) Corridor (Dome / Zone) Lights
  - (7) Room Control Boards (RCB)
  - (8) Power over Ethernet (PoE) Switches
  - (9) Bed Interface Device (pillow speaker, bed and auxiliary input)**
  - (10) Configuration Software
  - (11) Electronic Whiteboard
  - (12) Real-Time Locating System infrastructure. Reporting Software and Smart Beds.
- B. The Wander Management System shall allow both data and voice to be distributed over a common network infrastructure. The Wander Management System shall consist of (include):
- (1) Resident/Patient wearable bracelets
  - (2) Sensors, located near exit doors
  - (3) Power over Ethernet (PoE) Switches
  - (4) Wander Management system processor, software configurable.
  - (5) Configuration Software
  - (6) Real-Time Locating System infrastructure. Reporting software.
  - (7) Automated integration with Division-28 Security access control
- C. The Owner-provided EHR application shall be supported by electronic touch-sensitive EHR PC-kiosks, at locations coordinated with the Owner, allowing secure data to be distributed over a common network infrastructure.

## **2.1 STAFF CONSOLES**

- A. All staff consoles must have antimicrobial additives in the plastics to prevent biodegradation due to bacterial residue.
- B. All staff consoles must have at least a 10 inch (25.4 cm) full color LCD touch-screen interface.
- C. The touch screen shall utilize programmable soft keys as opposed to a mechanical dial/touchpad.
- D. The staff console shall support the connection of an external keyboard.

- E. The staff console display shall provide an adjustable tilt mechanism for viewing clarity.
- F. The call pending screen on the staff console shall allow at least six calls to be visible without the need to scroll. The staff console shall provide a simple scrolling function to view additional calls when more than six pending calls are present.
- G. The staff console shall provide visibility to patient data without the use of a separate PC. Patient data and staff location should display automatically (without need of a user-initiated query) upon receipt of a call from a patient.
- H. The staff console shall provide a cleaning mode which, when activated, will temporarily disable the front panel buttons or touch screen for 15 seconds, and display a message to indicate that the device is in cleaning mode.
- I. The staff console must be capable of desk-mounted or wall-mounted installation.
- J. The staff console must monitor single or multiple nursing units based on facility configuration. Monitoring configuration must be adjustable by nursing unit.
- K. The staff console should provide two-way full-duplex staff-to-patient and staff-to-staff voice communications. Systems utilizing one-way (half-duplex) audio will not be accepted.
- L. Staff consoles should include a handset for private communication and should also support speaker phone for monitoring events.
- M. Staff consoles shall have the ability to adjust talk and listen volume levels on a room-by-room basis. Nurse Call Systems using group or zone-wide audio adjustments will not be accepted.
- N. Staff consoles shall be capable of placing a call to staff using the display screen.
- O. The staff console shall visually display and audibly annunciate patient calls, system alerts, and calls / alarms from connected healthcare equipment.
- P. The user should be able to prioritize, select and respond to each event.
- Q. Audible call annunciation shall be configurable and shall indicate priority level.
- R. Incoming calls shall be displayed in the colors assigned to their specific priority levels.
- S. The staff console shall provide visual identification of the calling station(s) and display call information including room number, priority, call type, wait time, status, patient name, patient risk, patient notes, assigned caregiver(s), and location of assigned caregiver(s).
- T. Staff console shall have the ability to classify a normal, incoming call as another call type.
- U. The staff console shall facilitate text message / SMS delivery of the specific call type (ex. pain request) to the applicable caregiver on a wireless phone



- V. The staff console must log all calls, including incoming calls, altered call types and cancelled calls, for reporting purposes.
- W. The staff console shall be IP-based, utilizing VoIP technology.
- X. The staff console shall connect to the nurse call network and receive data utilizing CAT5e/6 cable and powered Ethernet. No separate power supply, external transformer or wiring shall be used.

## **2.2 AUDIO (PATIENT / STAFF) STATIONS**

- A. Audio stations shall have antimicrobial additives embedded in the plastic to prevent breakdown due to bacterial residue.
- B. Audio stations shall provide two-way full-duplex staff-to-patient and staff-to-staff voice communications with two built-in speakers and a separate microphone.
- C. Audio stations must be equipped with two call buttons and a cancel button, at a minimum.
- D. Any audio station may be configured to act as a patient or staff station.
- E. Staff / duty stations have all the functionality of an audio station with the exception of a code blue lever.
- F. The Nurse Call System shall allow for each patient room to have a dedicated audio line to prevent “line busy” indication when calling back into patient locations.
- G. Standard and graphical options for patient and staff stations must be available and able to co-exist within the same unit and Nurse Call System.
- H. Audio stations shall mount in a 3-gang back box.
- I. Audio stations shall provide a cleaning mode which, when activated, will temporarily disable the front panel buttons or touch screen for 15 seconds, and display a message indicating that the device is in cleaning mode.
- J. Audio stations shall have a dedicated code blue lever for actuating a code blue call.
- K. Audio stations shall have two speakers to provide clear audio throughout the patient room
- L. Audio stations shall not have call devices (beds, other equipment) connected directly to the audio station via a cable.
- M. Audio stations shall have a visible LED to indicate call and communication status.
- N. Audio stations shall not have dual in-line package (DIP) switches that require manual setting by field personnel. Audio stations utilizing manual DIP switches will not be considered.
- O. Audio stations shall be hot swappable and not require system shutdown or removal of power prior to replacement.

- P. All audio stations shall be supervised so that if a device is not able to function – the device becomes powered down for example – then it will send an alert through the Nurse Call System.

## 2.3 GRAPHICAL AUDIO STATIONS

- A. The Nurse Call System shall provide the option for graphical touch screen audio stations in patient rooms. There should be no requirement to mount a standard patient station in the same room as a graphical station. Systems that require a standard and graphical station in patient rooms will not be considered.
- B. One graphical station should act as both a nurse call station and a workflow-enhancing device capable of managing both patient-focused and staff-focused applications.
- C. The graphical station shall include configurable action request buttons to route non-patient calls to appropriate facility staff (e.g. the “clean room” button routes a call to janitorial staff). These calls will include the type of request and the room number.
- D. The graphical station shall provide automated reminders which notify staff of recurring patient care actions (e.g. nurse rounding reminders).
- E. Reminders will automatically send a notification to the configured destination (e.g. staff console, staff handset) including room number and time until call is due, when a call is due or, if configured, in advance of a call coming due.
- F. Reminder time parameters shall be configurable by the user via the Nurse Call System software application. The settings shall include event frequency and required length of time in the patient room to complete an event.
- G. When used with integrated staff locating, the Nurse Call System shall be capable of resetting the time for any pending reminders when the appropriate staff member is located in the corresponding patient room.
- H. The graphical station shall be capable of setting patient risk status for falls, pulmonary and skin risks. When used with a Hill-Rom® smart bed, upon selecting a risk category for a patient room, the Nurse Call System will automatically enable any configured safety alert and alarm parameters (e.g. initiating a nurse call when bed rails are lowered for a patient who is a falls risk) and enable the bed exit alarm.
- I. Graphical audio stations shall have the ability to scroll up or down to view a list of information contained on the display.
- J. Graphical audio station shall display a list of available locations, rooms and staff which can be selected and called directly from any graphical station.
- K. Each graphical audio station shall allow the ability to open a dedicated audio path. Systems requiring an audio bus topology that share voice paths over multiple rooms shall not be accepted.
- L. Graphical audio stations shall have the ability to display active calls by indicating

the room number, bed number and type of call on the display. These calls may be answered from any graphical station on the unit.

- M. When used with integrated staff locating the graphical audio station shall provide a list of available staff with name, title, and current location.
- N. The graphical audio station shall provide an out-of-room mode.
- O. When enabled, the out-of-room mode will place recurring reminders on hold, automatically complete on-demand reminders, and disable risk-based alarms.
- P. When disabled, reminder and alarm settings will be activated to their original state.
- Q. A single graphical audio station must be capable of managing activity for a patient room with up to two beds. Systems that require a graphical audio station per bed and cannot accommodate two beds on one graphical station will not be accepted.

## **2.4 SMART BED CONNECTORS**

- A. The Nurse Call System shall use bed connectors, such as Audio Station Bed Connectors (ASBC), and locate them near the patient bed to allow for flexible placement of audio stations
- B. The bed connector shall connect a pillow speaker, a bed and an auxiliary equipment jack input to the nurse call network.
- C. Bed connectors shall provide relay contact isolation for entertainment and lighting controls.

## **2.5 ANCILLARY CALL SWITCHES**

- A. Call switches shall be furnished as specified and placed in ancillary areas accessible by staff as indicated by local building codes.
- B. Call switches shall have a call lever or button, a red, call placed LED, and an optional call cancel button.
- C. Where indicated, call switches shall provide a cord attached to the lever to allow a patient who has fallen to pull the cord to activate a call.
- D. Call switches shall be supervised by the system to alert staff in the event of a cable or switch failure.
- E. One or more Call Switches are required for each of the Long Term Care building's exterior patio garden areas, with weather proof components, mounted on pylons at standard ADA accessible height. Coordinate locations with Owner, Architect, Landscape architect and Division 26.

## **2.6 LAVATORY AND SHOWER/ BATH CALL SWITCHES**

- A. When a lavatory or shower / bath call switch is activated, visual indication of the call displays at the dome light associated with the patient room, and an appropriate call indication registers on the staff console, as well as on any installed

annunciators.

- B. The lavatory call switches have a nurse call lever, a red, call placed LED, and a call cancel button.
- C. Shower / bath switches have a blue nurse call lever and a red call placed LED.
- D. A cord attached to the lavatory or the shower / bath call switch lever lets a patient who has fallen place an emergency call using the cord.
- E. Lavatory call switches should connect to the assigned room box via a category 5e/6 UTP cable and RJ45 connector.
- F. Shower / bath switches may be mounted on the wall inside the shower.
- G. Shower / bath switches shall be water resistant.

## **2.7 BATHROOM LAVATORY STATION (REMOTE AUDIO DEVICES)**

- A. When a bathroom / lavatory station is activated, visual indication of the call displays at the dome light associated with the patient room, an appropriate call indication registers on the staff console, as well as on any installed annunciators, and full audio is enabled between the patient and the staff member answering the call.
- B. The bathroom / lavatory station shall be capable of two-way audio communication.
- C. The lavatory call switches have a nurse call lever, a red call placed LED, and a call cancel button.
- D. A cord attached to the lavatory call switch lever lets a patient who has fallen place an emergency call using the cord.
- E. Lavatory call switches should connect to the assigned room box via a category 5e/6 UTP cable and RJ45 connector.

## **2.8 CORRIDOR (DOME / ZONE) LIGHTS**

- A. Corridor lights shall use Light Emitting Diode (LED) technology. Corridor lights that utilize incandescent bulbs will not be accepted.
- B. Corridor lights shall be capable of mounting in a 1-gang back box.
- C. Corridor lights shall have eight separate bulbs divided into eight distinguishable sections capable of indicating multiple, simultaneous events.
- D. Each corridor light section shall be capable of indicating at least seven colors.
- E. Corridor lights shall be configurable via programming to allow for multiple illumination, color and/or flash patterns to designate call priority, call type, staff presence and/or patient risk status.
- F. Corridor lights shall allow for a selection of configurable overlays to be used to

clearly distinguish between call type or staff presence information. (e.g. a flashing 'N' to indicate a nurse is needed).

- G. Corridor lights shall be capable of audible annunciation for specific, configurable call types. Separate annunciation device(s) connected to the corridor light will not be accepted.

## **2.9 ROOM CONTROL BOARDS (RCBs)**

- A. RCBs shall be mounted in protective enclosures when mounted above ceiling.
- B. The Nurse Call System shall support a dedicated RCB setup which maintains single-point-of-failure. Any systems designed with a daisy-chain or similar setup which does not ensure single-point-of-failure will not be accepted.
- C. The RCB shall accommodate connection to up to two audio stations, the corridor light, lavatory switch, bath / shower switch system alarm interface, and stat clock interface.
- D. The RCB shall be powered by the home run cable connected to the Power over Ethernet switch. The RCB connects to the Power over Ethernet switch with a Category 5e/6 UTP cable (home run cable).
- E. The RCB shall utilize LEDs to indicate power and status. Additionally, all connection points for the room devices shall have LEDs to indicate if the communication channels are active.
- F. The RCB shall have a heartbeat light to indicate that software is active.

## **2.10 POWER OVER ETHERNET (PoE) SWITCHES**

- A. PoE switches must be UL1069 approved.
- B. The Nurse Call System shall be compatible with Cisco Catalyst 4500 series utilizing the WS-x4748 UPOE+E line card, Cisco Catalyst 3850 series UPoE Switches, and Hill-Rom's proprietary PoE switch.
- C. PoE switches shall have a minimum of 24 ports with a maximum power output of 1800 watts.
- D. PoE switches shall mount in a standard 19" network rack and shall be 1RMU high.
- E. PoE switches connect, at a minimum, to RCBs, staff consoles, annunciators, and other PoE Switches.
- F. PoE switches shall follow standard Ethernet deployment standards.
- G. PoE switches shall use RSTP protocol for redundant links for each switch or stack of switches in the Nurse Call System.

## **2.11 PILLOW SPEAKERS**

- A. Connection to the bed connector shall utilize a standard Champ 50 series 2-type

AMP connector.

- B. All pillow speakers shall have a minimum four button capacity.
- C. All pillow speakers shall have the option to display labels designating Nurse Call, TV channel and reading light buttons.
- D. Additional buttons for pain and bathroom visit requests should be available on the pillow speaker.
- E. The Nurse Call System should have the ability to route pain and bathroom request calls differently from a standard pillow-speaker-initiated patient call.
- F. Pillow speakers shall have LEDs to indicate successful call placement and an open audio channel.
- G. Pillow speakers shall have a speaker for entertainment audio and nurse call audio.
- H. When the audio channel between staff and the patient is opened, audio to the patient shall go through the pillow speaker.
- I. Microphones shall be built into the pillow speaker to enhance audio through the patient station.
- J. Volume can be adjusted on a per room basis, directly from the pillow speaker.
- K. Pillow speaker housing shall be a high impact UL recognized, 94-VO rated, or better, polystyrene.
- L. Pillow speaker internal switches shall be Micro Brand switch rated for 10 million cycles.

## **2.12 ELECTRONIC WHITEBOARD**

- A. The electronic whiteboard shall display Nurse Call System data including patient room number, patient name, patient notes, assigned patient risk protocol, assigned staff, nurse call type, call wait time, and staff presence.
- B. The electronic whiteboard shall be displayed using a LAN PC or smart LCD display.

## **2.13 WANDER MANAGEMENT**

- C. Staff shall issue Wander Management electronic wireless transmitter wrist bracelets to patients. Wrist bracelets are battery powered (with 10-year life battery).
- D. Electronic proximity sensors capable of sensing Wander Management electronic wireless transmitter wrist bracelets, shall be located near household exit doors, and configured to communicate with Wander Management processor.
- E. Wander Management processor shall be software configurable for configuration of desired actions during an event in which a wrist bracelet is detected in close proximity to a household exit or elevator.

- F. Wrist bracelets are intended for purposes of supporting automated interaction with wander patient/resident proximity sensors.
- G. During an event of detection of patient/resident in close proximity to an exit, the Wander Management system will:
  - (1) Automatically issue command to Division-28 security access control system to immediately lock the adjacent exit door(s), and other exit doors and elevators, as defined by the Owner.
  - (2) Automatically issue alert to nearby staff for the event, including display of the patient/resident name and portrait image on the Staff's wireless PDA.
  - (3) App on Staff's wireless PDA will continue the alert until Staff cancels the alert.
  - (4) Should the alert not be cancelled in pre-determined time period, alert will be expanded to adjacent Household and later to all Households.
- H. Should a life-safety emergency condition be in progress immediately prior to, or during the Wander Management alert, the conditions of the life safety event shall take priority over security access control of all exit doors over the pre-defined conditions for Wander Management alerts.

## 2.14 INTEGRATIONS

- A. The Nurse Call and Wander Management System shall be capable of direct integrating with:
  - i. Staff wireless mobile phones and pendants, with application software installed and configured for each mobile device.
  - ii. Staff locating systems
  - iii. ADT systems for patient information and patient-to-staff assignments
  - iv. 3rd party locating applications
  - v. Bed exit and fall prevention alarm systems
  - vi. Patient equipment (ex. Pump, vent, etc.)
  - vii. EMR, bi-directionally
  - viii. PC monitors and large screen monitors, such as Flat Panel LCD or Plasma display, for display of electronic white board data.
  - ix. Wander Management patient/resident bracelets
  - x. Wander Management electronic patient proximity sensors
- B. The Nurse Call and Wander Management System provider shall have experience partnering and integrating with primary third-party system providers.

- C. The Nurse Call and Wander Management System provider shall be capable of providing remote diagnostics and issue resolution for any integrations established with the Nurse Call and Wander Management System.
- D. Wireless handset Integrations shall use the native interface of the handset provider.
- E. The integration with the wireless provider shall enable the Nurse Call & Wander Management System to identify when a wireless handset is on or off the network and properly automate and route call escalations.
- F. The integration with the wireless provider shall allow the user options such as call decline and call back when the handset receives a message from the Nurse Call System.
- G. ADT integration for staff assignments shall employ a full feature interface engine to send, receive, or send and receive information.
- H. The Nurse Call System shall support a direct integration with a patient smart bed and an EMR system. At a minimum, this shall enable:
  - (1) Receiving patient risk from the EMR into the Nurse Call System.
  - (2) Sending nurse call data to the EMR.
  - (3) Sending patient weight and/or bed head-of-bed angle to the EMR.
- I. The Nurse Call System shall be capable of smart bed side-rail communication including:
  - (1) Visual notification of a disconnected smart bed via a centralized display on the unit.
  - (2) Visual and audible annunciation of bed exit calls.
  - (3) Visual and audible annunciation of patient calls.
- J. The Nurse Call & Wander Management System shall take data feeds from medical devices and send relevant alerts through the Nurse Call & Wander Management System.
- K. The Nurse Call & Wander Management System shall share RTLS locator badge and wireless phone information when integrated with these systems.

## **2.15 COMPLEMENTARY PRODUCTS**

- A. REAL TIME LOCATING EQUIPMENT
- B. The Real Time Locating System (RTLS) shall be web-based.
- C. RTLS shall be capable of the following:
- D. Monitor the location and movement patterns of staff.
- E. Integrate with the Nurse Call System to automatically cancel a normal patient call,



or action request calls, and illuminate the corridor light once an assigned staff member is present in a patient room. Priority or urgent calls should be manually cancelled in all circumstances.

- F. Expand the platform to support Hand Hygiene Compliance Tracking.
- G. Interface with 3rd party RTLS partners for applications such as Patient Wandering, Asset Tracking and Temperature Monitoring.
- H. RTLS shall display staff presence in an area each time the locator badge signal is picked up by an infrared receiver. This location is displayed on each staff console and graphical audio station within the unit.
- I. Each RTLS staff locator badge shall have a unique identification number which can be assigned to a single staff member.
- J. RTLS hardware shall be used to define distinct patient rooms, hallways and staff locations. Devices shall be able to segregate spaces to the level of a “patient room” even in the even if that “room” does not have walls (i.e. patient bay with curtain only).

## **2.16 REPORTING**

- A. The Nurse Call and Wander Management System shall make optional reporting software available to the Owner.
- B. Reporting software shall utilize Nurse Call and Wander Management System data to generate reports related to event occurred, calls placed, call type, call time, call duration, , patient and staff assignment, and staff activity.
- C. When the Nurse Call System is used in conjunction with smart beds, the reporting software shall allow the user to generate reports related to patient safety events utilizing bed data history.
- D. When the Nurse Call and Wander Management System is used in conjunction with RTLS, the reporting software shall allow the user to generate reports on staff location in relation to nurse call activity, call response time, and rounding data.
- E. Reporting software shall display reports as visual dashboards, scorecards, tables or graphs.

## **2.17 SMART BEDS (If Applicable)**

- A. Smart Bed application only required if specifically elected by the Owner.
- B. The Nurse Call System shall facilitate delivery of alerts to assigned caregivers via staff wireless devices when bed status monitoring settings are out of compliance. Alerts shall be configurable for bed exit sensors, head rails position, foot rails position, bed position, and brake status.
- C. The Nurse Call System shall display smart bed data on the electronic whiteboard. Smart bed data shall include head of bead angle, patient weight, bed exit alarm

status, side rail positions, bed position, brake status, bed maintenance indicator, and bed exit history.

- D. When used in conjunction with smart beds and RTLS, the Nurse Call System shall auto-disable safety alerts based on staff presence in the patient room.
- E. The Nurse Call System shall be capable of enabling smart bed alerts and alarms when the user assigns a risk status to a patient room – using either the Nurse Call System software application or a graphical audio station in the patient room – and the patient is detected in the bed.
- F. The Nurse Call System shall integrate with a smart bed without requiring a direct, wired connection to an audio station.

### **PART 3 EXECUTION**

#### **3.1 INSTALLATION**

- A. The installer must install the Nurse Call and Wander Management System equipment in compliance with the manufacturer's installation and implementation specifications.
- B. Manufacturer shall effectively coordinate the installation process. This would include but not be limited to reviewing correct placement of cables, correct mounting of devices, and monitoring the installing Design-Builder's compliance with the installation schedule.
- C. Install wiring in compliance with ANSI/TIA-569 Commercial Building Standards Telecom Pathways and Spaces.
- D. The Nurse Call and Wander Management System must be tested per the manufacturer's instructions to confirm that it was installed and is functioning as designed.
- E. Submit a report containing an as-built package with all test results and drawings.
- F. It is further intended that upon completion of this work, the installer shall provide complete information and drawings describing and depicting the entire system(s) as installed, including all information necessary for maintaining, troubleshooting, and/or expanding the system(s) at a future date, and complete documentation of system certification.
- G. The Manufacturer shall offer the Owner the option to purchase evidence-based training led by experienced clinicians.
- H. All required empty conduit pathways, cable raceway, junction and wall boxes and electrical services in support of Nurse Call and Wandering Management shall be coordinated with and provided by Division 26- Electrical.
- I. All required Information Technology services including cabling, cabling terminations, cable pathways, network switches and servers in support of Nurse

Call and Wandering Management shall be coordinated with and provided by Division 27- Communications.

- F. Processing, network and power supply equipment in support of Nurse Call and Wandering shall be housed in vertical equipment cabinet within the local proximity IT IDF or Main Server room. Coordinate equipment location with the IT room with Divisions 27 and 28.

## **2.18 SUPPORT**

- A. 24x7x365 technical support telephone line staffed by experienced and trained product support specialists, free of charge for customers with SMA.
- B. Technical support shall be capable of handling first-line support of Nurse Call and Wander Management System and/or 3rd party, integrated systems.
- C. The Nurse Call and Wander Management System shall be capable of remote issue diagnosis and resolution for 90% or more of the expected issues that may arise. Systems requiring onsite diagnosis and remedy in more than 10% of cases will not be considered.
- D. Nurse Call and Wander Management System shall not require the use of specialized tool kits to perform routine maintenance, calibration or physical checks of the system.

END OF SECTION