HCAi Department of Health Care Access and Information

Advisory Guide Series

A15

NURSE CALL SYSTEMS

FOR
ALL BUILDINGS UNDER
OSHPD JURISDICTION

Previously PIN 60 Temporary Wireless Nurse Call System

Office of Statewide Hospital Planning and Development

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INTRODUCTION

Nurse call systems are vital communication tools designed to be used in various healthcare environments. They allow residents or patients to request assistance from care givers, nursing staff, and other healthcare providers. These systems are critical for ensuring that residents or patients can reach medical and/or other professionals when needed. Systems, such as Code Blue, often save lives during medical emergencies. It is important that nurse call systems be designed and installed as required by the Title 24 building codes and other applicable standards to ensure that they will function properly when most needed. This *Advisory Guide* is intended to assist the designer, installer, and inspector in achieving this goal.

Also, see OSHPD's *"Design Guide for Working on Projects under OSHPD Jurisdiction – Tips from the Experts"* on HACI's website for information on how to prepare design documents, which includes examples, tips, methods, and approaches that have been successfully used on numerous projects, benefitting all parties involved in the planning, design, and construction of hospital construction projects in California. Following the guidelines presented in the Guide and the tips from the experts will increase the likelihood of a successful project for all parties involved.

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Chapter 7 SAFETY STANDARDS FOR HEALTH FACILITIES
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2022 California Building Code (CBC), Title 24, Part 2:
Section 907.2.6.2.2 Automatic fire detection
Section 11B-609.3 Spacing
Table 1224.4.6.5 Location of Nurse Call Devices

2022 California Electrical Code (CEC), Title 24, Part 3
Section 517.34 – Critical Branch, (A)(4) - Nurse call systems

Section 517.41 – Required Power Sources, (B.1 Exception No. 2) Alternate Source of Power Requirements

Section 517.44 Delayed Automatic Connection to Equipment Branch, (A)(6) and Exception No. 1 and 2

Section 517.123 - Call Systems, (A) General

2022 National Fire Protection Association (NFPA) 99 Section 7.3.3.1 (Nurse Call Systems)

American National Standards Institute/ Underwriters Laboratories (ANSI/UL) 1069 (Standard for Hospital Signaling and Nurse Call Equipment)

Access is provided to the codes promulgated by OSHPD through the California Building Standards Commission website (https://www.dgs.ca.gov/en/BSC/Codes) with active links to each publisher's website for read-only public access versions of the codes.

Part 1, California Administrative Code
Part 2, California Building Code, Volumes 1 and 2
Part 3, California Electrical Code (Note: Accessed through the National Fire Protection Association (NFPA), however, requires the creation of a user account to view the Free Access - NFPA 70: 2022 California Electrical Code - NFPA 70 (2020 NEC®))
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SECTION 2
ACRONYMS AND DEFINITIONS

Acronyms and Definitions assist the user in recognizing and identifying various acronyms and terms generally used in OSHPD documents. Please refer to the Master Glossary of Acronyms and Definitions on the HCAI website at https://hcai.ca.gov/document/master-glossary-of-acronyms-and-definitions/

NOTE: The terms listed below used in this *Advisory Guide* are defined in the Master Glossary of Acronyms and Definitions referenced above.

Components

Direct Replacement

Emergency Repairs

Maintenance

NOTE: The terms listed below used in this *Advisory Guide* are defined in the UL 1069 Glossary and are specific to Nurse Call Systems.

Alarms – A signal typically generated automatically, which annunciates an abnormal condition (e.g., the opening of an emergency exit door or an unauthorized entry to narcotics storage).

Battery Back-up – A battery source to power the nurse call system during power outages. Outages include complete failure or brown-out of the AC and the brief periods during switching between the main AC source and the hospital's standby power source. The battery back-up can be an integral part of the system or an optional add-on. The duration for which it will supply power is specified by the manufacturer.

Code Call – A distinctive audible and visual signal representing a life-threatening situation that requires immediate action

Fundamental Operation – An essential/required operation whose primary function is to provide notification and/or reset/cancellation of a staff-initiated call signal to alert the staff. An NCS must contain devices that perform all these fundamental operations.

- Call annunciation at a nurse's station (audible and visual)
- Call annunciation at the dome light
- Call-placed indicator on the patient station (visual).
- Zone annunciation (audible and visual)
- Call reset/cancellation

Nurse Call System – A system of components that provides audible and visual communication between patients and hospital personnel.

Nurse Control Station (Nurse' Console or Duty Station) – A component, intended to be located at the nurses' station, which provides audible tones and visual annunciation of incoming calls. Typically, it also provides audio communication between the nurse and the patient. Many other features are optionally available. Also called nurse master station.

Patient Care Area – Those areas, designated as follows, in accordance with the type of patient care anticipated:

- Critical Care Unit – Special care units, intensive care units, coronary care units, angiography laboratories, cardiac catheterization laboratories, delivery rooms, operating rooms and similar areas in which patients are intended to be subjected to invasive procedures and connected to line operated, electro-medical devices.
- General Care Area – Patient bedrooms, examining rooms, treatment rooms, clinics and similar areas in which it is intended that the patient be connected to electro-medical devices such as heating pads, electrocardiographs, drainage pumps, monitors, otoscopes, ophthalmoscopes and peripheral intravenous lines.
- Bath Area (Bath Station – CEC 717.123 (C)) - Patientcare areas that are commonly wet while patients are present. These include standing water on the floor or drenching of the work area where the fluids would likely come in contact with the patient or staff. Routine housekeeping procedures and incidental spillage of liquids does not constitute a bath area.

SECTION 3
NURSE CALL SYSTEMS

Nurse call systems are required in hospitals, skilled nursing facilities, intermediate care facilities, acute psychiatric hospitals, and certain OSHPD 3 clinics according to Title 24, Part 2 (also known as the California Building Code) Sections 1224.4.6.5, Table 1224.4.6.5, 1225.4.1.7, and 1228.4.6. Section 517.123 in Part 3 (also known as the California Electrical Code) contains the nurse call requirements and locations. *Advisory Guide A8 – Electrical Guide for Health Care Facilities* – APPENDIX D can help ensure a safe and code-compliant nurse call system installation. New nurse call systems must also comply with UL 1069.

The California Building Code (CBC), Chapter 11B Accessibility to Public Buildings, does not contain scoping provisions for nurse call devices. The dimensions for their location placement are in Section 517.123 (C) Bath Stations, of the California Electrical Code as noted above. These devices are required in both accessible and non-accessible toilet and bathing facilities. To ensure compliance with the grab bar spacing requirements of (CBC) Chapter 11B Section 609.3, nurse call devices may need to be relocated. See Section 6 of this guide for details.

An on-site local nurse call server must be provided. If an auxiliary off-site nurse call server is also provided, the local nurse call server must always be maintained operational to ensure that all calls are received at the local on-site continuously monitored location. If the off-site nurse call server fails it must always fail over to the local on-site server.

Code Blue calls (code calls) are to be distinct from all other calls. OSHPD recommends the color for Code Blue to be BLUE as this is industry standard. Some facilities have requested a unique color for NICU infant code call lights. Any color variance from Blue requires California Department of Public Health (CDPH) approval. The facility can develop a consistent color requirement for all other devices except fire alarm, which industry standard is RED.

OSHPD recommends using the same criteria for Code Blue as for the Fire Alarm when in Private mode since the nurse call system is basically notifying staff and not public for code calls and general nurse calls. The audible requirement for fire alarm is 10 decibels for private mode.

Refer to Section 1 *Code References* of this *Advisory Guide* for additional requirements for nurse call systems in health care facilities. Refer to OSHPD's CAN 2-0 *OSHPD Jurisdiction* on HCAI's website for more information regarding OSHPD's jurisdiction for the various health care environments.

SECTION 4
NURSE CALL SYSTEM TESTING

The suggested testing process detailed below is offered to provide inspector of record, design professionals and installers a consistent method of testing installed Nurse Call systems and to help ensure a code compliant, safe system has been installed prior to being put into service and to avoid any negative patient care impact. Also refer to the APPENDIX in this *Design Guid*e for a recommended NURSE CALL SYSTEM TESTING AND INSPECTION CHECKLIST.

For new systems: Test 100% of all newly installed equipment. During the system operational testing, ensure the system will operate as intended when 10% of maximum number of stations or minimum of 3 units are operated simultaneously.

Test every patient and staff call station including all duty stations for correct function.

Test all bathrooms pull stations and ensure pull cord length is set for correct function and length off the floor (12” max.).

Test all dome lights are functioning properly including all zone lights. Verify line of sight is maintained to zone light from nurse station along the path of travel to alerting light even if cross corridor doors close. If line of site cannot be maintained with cross corridor doors closed, an additional zone light will be required to direct personnel to alerting light.

Verify all calls coming into the nurse station are correctly identified from initiating location.

Verify all call cancel features function correctly.

Verify cord out feature issues notification properly.

Test Code Blue system for distinct tone and flashing light at room location and any zone lights on the path of travel from nurse station.

Verify Code Blue alarm can only be reset at the location of activation.

Verify that overhead speaker system operates correctly.

Code Blue is required to be audible over ambient noise levels at the respective patient room nurse station. Audible and visual code signals are to be provided at a continuously staffed station (24hr).

For Code Blue incoming call verification testing, activate 10% of units or a minimum of 3 units, whichever is greater in the affected system and verify all calls are recorded correctly for location and that audible and visual signals annunciate at an on-site continuously monitored location and no calls are dropped.

During the Code Blue 10% incoming call verification test, disconnect the primary power source and verify that no calls are lost when back up battery is activated.

Perform battery Volt-Ampere capacity test per manufacturer recommendations. (Small backup battery is usually capable of approximately 10 minutes run time and is usually located in the head end equipment cabinet in IT Room)

Verify that if an auxiliary off-site nurse call server is in use that the local nurse call server is always maintained operational to ensure that all calls are received at the local on-site continuously monitored location. If the off-site nurse call server fails it must always fail over to the local on-site server.

Verify that if less than 100% of calls can be displayed, call priority is maintained with retrieval capability that displays high priority calls in lieu of alerting from additional routine calls.

Call Priority with Fire Alarm

Highest to lowest priority with 1 being highest to 4 being lowest priority.

1. Code Red (color Red).
2. Code Blue (color Blue).
3. Staff Emergency (any color distinct to staff emergency not red or blue or any other call).
4. Any other nurse call that the facility wants to prioritize by color as long as it's not a duplicate color of the top 3 highest priority code calls.
5. Cancelation of priority calls can only happen at the origination of the call and not be canceled remotely.

Call Priority without Fire Alarm

Highest to lowest priority with 1 being highest to 4 being lowest priority.

1. Code Blue (color Blue) UL 1069 17.10, NFPA 99 sec. 7.3.3.1.8.1
2. Staff Emergency (any color distinct to staff emergency not red or blue or any other call)
3. Any other nurse call that the facility wants to prioritize, color any as long its not duplicate color of the top 2 highest priority code calls.
4. Cancelation of priority calls can only happen at the origination of the call and not be canceled remotely.

Call Priority without Fire Alarm or Code Blue

Highest to lowest priority with 1 being highest to 3 being lowest priority.

1. Staff Emergency (any color distinct to staff emergency and not duplicated with another call type).
2. Any other nurse call that the facility wants to prioritize, color any as long its not a duplicate color of the staff emergency.
3. Cancelation of priority calls can only happen at the origination of the call and not be canceled remotely.

If the system is supervised, test the supervisory function by unhooking a wire at patient station and verify the audible alert signal. If the audible alert can be silenced, a visual signal shall remain active until repairs are completed. If the system has fuses, remove the fuse to verify the supervisory alarm visual remains functional.

Verify if the nurse call system is interfaced with the fire alarm system. Test complete system with the fire alarm system activated to ensure all calls and alarms function correctly.

The fire alarm function is to be distinct and obvious both at the nurse station and at the patient room dome light on the corridor side. The recommended industry standard for Fire Alarm color is RED.

Verify if there are any manufacturer supplemental features such as nurse locaters, panic buttons or pagers and test these devices according to the manufacturers required tests.

Verify the approved plans and specifications have listed submittals for all supplemental equipment and that all equipment is labeled and listed compliant to UL 1069.

Perform random inspection of 10% of installed low voltage alarm notification devices to ensure proper wire terminals have been used per UL 1069. Positive snap type connectors, quick connect or crimp style connectors that require special tool for installation are required. Screw type wire nut connectors are not allowed.

Ensure the Manufacturers Operational Manual is available on site, preferably in the main Nurse Station record files.

Review the Manufacturers Installation Instructions and perform any field required tests for all installed equipment.

A Checklist is provided in the **Appendix** that may be used for testing and inspection of the nurse call system prior to placing it in service.

SECTION 5
TEMPORARY NURSE CALL SYSTEMS

Nurse call services must be maintained during replacement of a permanent nurse call system, or when the existing system is down for major repairs or maintenance, if patients are present in the nursing unit. This *Advisory Guide* describes OSHPD's policy regarding the minimum requirements for the use of a temporary nurse call system while the permanent nurse call system is being replaced or while major repairs or maintenance is undertaken on an existing system. There are several alternative methods for accomplishing this:

1. Bring up a new permanent hard-wired UL 1069 and Title 24 compliant nurse call system in tandem with the existing nurse call system, thus ensuring that a code-compliant nurse call system is always functional in occupied patient units. Once installed and tested, the old system can be dismantled.

2. Use a UL 1069 and Title 24 compliant wireless nurse call system while repairing or replacing the existing system, thus ensuring that a code-compliant nurse call system is always functional in occupied patient units. The UL 1069 wireless system may be used as the permanent nurse call system if it meets all code requirements should the facility want to do so.

3. While it is preferable to bring up a new code compliant nurse call system in tandem with the existing nurse call system, as described in items 1 and 2 above, this may not always be practical. Therefore, a temporary non-UL 1069 wireless nurse call system may be used to maintain nurse call services and patient care in the nursing unit if approved by CDPH for means and methods, including but not limited to devices and locations, the number of patient rooms served, the acuity of patients served, duration of the temporary wireless system, etc. If this alternative is used, a written approval from CDPH for the temporary wireless system must be submitted to OSHPD with the application for the nurse call replacement project.

4. Some other method for providing nurse call services to patients as approved by CDPH for means and methods, including but not limited to devices and locations, the number of patient rooms served, the acuity of patients served, duration of the temporary system or alternative approach, etc. If this alternative is used, a written approval from CDPH for the temporary method or system must be submitted to OSHPD with the application for the nurse call replacement project.

   The requirements for a temporary wireless nurse call system depend on the type of patient care area and length of time that the temporary wireless nurse call system will be in service. Patient care spaces are classified as either *General Care Spaces* or *Critical Care Spaces* as defined in Article 517.2 of the California Electrical Code (CEC). Also refer to Section 2 – *Acronyms and Definitions* of this Guide

   Approved construction documents for a nurse call system replacement project shall clearly describe the method that will be used to maintain nurse call services during the

replacement project installation. When a temporary nurse call system is utilized to maintain nurse call services, sequence of work shall indicate that temporary nurse call devices, systems, methods, etc. are installed or initiated and tested prior to decommissioning and removal of the existing permanent nurse call system and must remain operational until the new permanent system is tested by the inspector of record.

SECTION 6
UPGRADE TO AN EXISTING NURSE CALL SYSTEM

Upgrades to an existing nurse call system that consist of changing nurse call devices, including direct replacement of components, may reuse the existing boxes, conduit, and/or cabling/conductors at their current location if the system is compliant with the codes and standards in effect at the time it was installed. However, nurse call system upgrades must comply with the fundamental operation requirements in Title 24, Part 3 (also known as the California Electrical Code), Section 517.123 and UL 1069.

Any additions to or modifications of the nurse call system, other than replacing devices, must comply with current codes and standards.

Nurse call devices in an accessible toilet room that project into the space required by CBC Section 11B-609.3 Spacing, shall be relocated to comply with the requirements of both CBC Section 11B-609.3 and CEC Section 517.123. 11B-609.3 does not permit any projection. See Figure 11B-609.3 Spacing of Grab Bars in the CBC.

The use of existing nurse call box locations that do not comply with current codes and standards, or the codes and standards at the time of installation, may be considered by the Office on a case-by-case basis through an Alternate Method of Compliance application.

The design professional is responsible for providing OSHPD sufficient information to determine if the original installation was in accordance with the codes and standards in effect at the time of the installation. Refer to Advisory Guide A–14 - Remodel for additional information.

Refer to the FREER Manual Section IX: *FREER PROJECT TABLE CI-2 - NURSE CALL SYSTEMS* and Section X: *Criteria (a) - COMMUNICATIONS/INFORMATION SYSTEMS CRITERIA* on HCAI's website for additional information.

SECTION 7
REPAIR OR MAINTENANCE OF EXISTING NURSE CALL SYSTEM

The scope of minor repair or maintenance work of an existing nurse call system cannot be a complete replacement or upgrade of the permanent nurse call system. Minor repairs or maintenance requests are a direct replacement of malfunctioning devices within one patient room and/or its adjacent toilet room, or a maximum of four devices within other locations. Devices interconnected to the fire alarm system will not be considered an excluded project. Major repairs and devices connected to the fire alarm system will be considered an upgrade to the permanent nurse call system – refer to Section 6 of this *Advisory Guide*. Also refer to the FREER Manual Section IX: *FREER PROJECT TABLE CI-2 - NURSE CALL SYSTEMS* and Section X: *Criteria (a) - COMMUNICATIONS/INFORMATION SYSTEMS CRITERIA* on HCAIs website.

The existing box(es), conduits(s), cabling, etc. will typically be used for minor repair and maintenance work. Contact the OSHPD field staff to see if the repair or maintenance work includes replacement of these items it will be considered minor or major repair/maintenance. For periodic maintenance or repairs, test all replaced devices. Refer to Advisory Guide A-14 – Remodel for additional information. Refer to PIN 72 – Emergency Work for repair work that needs to be performed on an emergency basis.

APPENDIX
NURSE CALL SYSTEM TESTING AND INSPECTION CHECKLIST

Please see the Nurse Call System Testing and Inspection Checklist on our HCAI website.

REVISION HISTORY

Version 1.0	August 2025	First issued and used Policy Intent Notice (PIN) 60 Temporary Wireless Nurse Call System as the basis to develop this new Advisory Guide. The following information describes how the PIN was updated to this new guide. In addition to the temporary wireless nurse call system information, this guide includes general information about nurse call systems, testing procedures, how to upgrade an existing system, and the repair or maintenance of an existing system. This guide also includes a testing and inspection checklist.