

Choosing a Nurse Call System for Your Senior Living Facility

There are approximately 16,000 nursing homes and Skilled Nursing Facilities, and over 33,000 Assisted Living Communities in the United States today. The number of Independent Living Communities is hard to determine because they are largely unregulated. In most cases these buildings have a facility wide nurse call system so a resident can notify staff by pressing a button or a pendant that they are in duress. The level of care may determine what the system is called.

In Skilled Nursing Facilities, they are almost always called a nurse call system. In Assisted Living Facilities they tend to be called emergency call systems or call systems. Residents in this level of care don't like the negative connotations when the term nurse is added. In Independent Living they are generally called PERS (Personal Emergency Response Systems.) In independent living they even get confused with Individual subscription systems like Life Alert or Philips Lifeline which residents add to their phone line, pay a monthly fee and it will dial an outside line to check on the person. Nurse Call Systems are required in Skilled Nursing Facilities, but requirements in Assisted Living Facilities vary from state to state. Since Independent living is not regulated there is generally not a nurse call requirement unless the project has Federal dollars involved and has been required by HUD to install one. This article deals with choosing and implementing a call system in your facility.

As an owner or an operator of a senior living facility you should be making an informed choice about the call system you will be installing in your building. Many owner operators seem misinformed that all call systems are alike and base the purchase almost solely on the initial front-end costs. In my experience with new facility construction or remodels, many times the choice of the call system is left to the architect, electrical engineer, low voltage contractor or general contractor. The problem with this approach is architects and engineers don't have expertise in the all the different systems. They tend to recommend systems they have used in the past based on brand recognition without regard to actual customization. Low voltage or electrical contractors generally pick systems they get financial incentives for by becoming part of the call systems manufacturer's dealer network. General contractors choose the lowest cost alternative that will work. As an owner or operator choosing the lowest initial cost system can haunt you years down the road.

Reasons for Implementing a Nurse Call System.

Skilled Nursing

They are mandatory and may give you efficiency gains requiring less staffing. A more advanced system may be a marketing tool. Reporting capabilities for family's peace of mind.



Assisted Living

It may be mandatory.

You have to have one for marketing purposes because your competition has one.

Reporting capabilities.

Risk Management

What are the effects to your bottom line or reputation if an emergency happens and a resident cannot get help in a timely manner?

Incremental Revenue

Your residents may be using a fee per month telephone service that typically calls your staff anyway. In this case, you purchase a system, charge them the monthly fee and create a new revenue stream. Typically, the break-even point is between thirteen to thirty months not taking depreciation into consideration. Your census is the biggest variable in this scenario.

Making an Informed Decision

If your facility is large enough, you should at a minimum have a team with representatives of your administrative, clinical, maintenance, training, construction, operations, marketing and IT departments. The representatives should all have input on which system to proceed with. Administrative members will generally give input on financial considerations like total cost of ownership. Clinical and operations members will be concerned with the reporting and functionality of the system. They may even give you insight to where you will gain dollars back from efficiency gains. Training representatives will give you insight into the ease of use and along with the maintenance team, your ongoing operating costs. Marketing gives you insight into census gains you can make against your competition. Finally, IT will be able to determine your networking and integration capabilities.

Making an Informed Decision

Does the manufacturer sell direct or use dealers. Who services the equipment, the manufacturer or dealers?

ELB Technologies is a consulting, manufacturing and installation firm. System design, equipment repairs, and on-site service is handled in-house by our trained engineers and technicians. 100% of our products have a 1-year warranty.

Call System History

Basic operation

A call system works like this: a resident presses a device that audibly notifies staff to attend to that particular resident. The next type of system is a visual call system. An example is a pull cord usually hung in bathroom and other rooms in the living quarters of a resident. The wires from this switch run back to the central board. When a light comes on the staff alert board, the staff knows what room to respond to. The upgraded version of this system will add corridor lights outside the residents room. This is style of nurse call that has been around for fifty years. These systems tend to be the cheapest option during new construction, but do nothing more than turn a light on or off. Since wired call systems may be over thirty years old, cost issues arise when the wiring fails, the facility wants to remodel or expand, or a facility wants to add reporting capabilities.

Wireless Call System Operation

Newer technologies using wireless call systems are now available. Wireless call systems add the added benefit of mobile devices such as pendants or the ability to connect bed or chair alarms and have the ability to have the alarms work in covered areas of the building or grounds. The term "covered areas" of the building is used because back of the store areas generally do not need coverage unless a facility is concerned about security. Some facilities are campuses on large acres of land so they may only choose to have coverage on outdoor patios, gardens or walking trails. Wireless call systems are easily scalable to suit the small building to the large campus.

Wireless call systems use a network of antenna devices that send the signal back to the head end equipment. Wireless call systems usually have the benefit of being supervised, which means the facility is alerted if any of the devices fails. They will also usually have battery backups for devices that are plugged in so they can still operate if the power fails. Wireless systems are also let a facility add devices at anytime. In addition the devices can be easily moved in case the furniture is moved in a room.

Today, mid-range wireless systems require staff members to physically go to the device and reset the emergency call device. This ensures staff does not reset an alarm remotely without checking on a resident.

Infrastructure

UL 1069 - Wired systems are almost always UL 1069 compliant which is the regulatory standard for almost all systems in hospitals. There is a new UL 1069 standard for wireless call systems in the seventh edition. The new standard basically calls for a system that supervises the devices every ninety seconds. This means the device tells the computer "I'm here and working" every ninety seconds. If not, a device fault would be sent to notify your staff.

Choosing a Wireless Technology

Spread Spectrum

ELB Technologies commercial grade technology affords the most powerful and affordable wireless sensor network available to the Wireless Nurse Call environment. Our self-healing and self-configuring EchoStream Commercial Mesh Network sets a new standard for performance and reliability in a wireless sensor network, designed for multiple applications, two-way sensors. When choosing a wireless technology, it is essential to compare the capability each technology provides to your application needs. By knowing the capabilities of each wireless technology, you can identify the one best suited to your needs.

WiFi

WiFi, short for Wireless Fidelity, is the term used for the core technology of high-speed wireless local area networks (WLAN) based on IEEE 802.11 specifications. This well-established technology is capable of moving large amounts of data over a moderate distance, usually measured in hundreds of feet, making it a perfect fit for mobile computing applications. Airports, hotels, restaurants, coffee shops, and entire communities now offer public access to the Internet using WiFi. WiFi systems require an established infrastructure in order to perform. It is a perfect choice when line power is available at the end device, but high power consumption and limited range make it ill-suited for battery-powered remote devices.

ZigBee™

ZigBee was created to provide an economic, standards-based wireless networking solution that supports low data rates, low power consumption, security and reliability. ZigBee systems utilize a mesh network typology to send small data packets through a series of nodes, where each node of the network repeats the messages from its neighbor, until the message reaches the head end. The range of a ZigBee system is typically less than 500 feet. Today, if a ZigBee node is used to repeat messages, it is likely line powered, allowing the node to continuously listen for the message. As this is a relatively new and still evolving technology, only a few applications have hit the market in the home, building, and industrial automation fields. Latency may be too lengthy for applications where urgency is required, such as life safety or security.