

# EMPOWERING NURSES WITH WIRELESS PHONES

## FIVE BEST PRACTICES AND REAL-WORLD CASE STUDIES

STRATEGIC WHITE PAPER

Wireless phones help nurses work more efficiently and become more responsive to patient needs. When integrated with nurse call systems, wireless phones also help create quieter, more restful environments that encourage healing and improve patient satisfaction. Based on our experience providing nurse mobility solutions to organizations around the globe, Alcatel-Lucent has developed five recommendations for healthcare facilities looking to equip nurses with wireless phones. Real-world case studies confirm the benefits.



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# NURSES NEED WIRELESS PHONES

Nurses are an amazing group of people. They were multitasking long before the term came into common use. Nurses' many tasks and diverse responsibilities also mean they're highly mobile. During every shift, they move back and forth among patients' rooms, the nurses' station, the medication cart and any number of other locations, seemingly without stopping.

No matter what type of facility nurses work at — hospital, nursing home, assisted living facility, hospice — they're the hub of patient-centered communications. Nurses need to stay in touch with other nurses, doctors, pharmacists, radiologists, dieticians, physical therapists, family members and of course, patients, through the always-on "nurse call" system. With aging populations in most areas of the world, nurses are now often caring for more patients and sicker patients. As their responsibilities increase, so too do the demands on their time and the need to quickly reach the right people at the right time.

To help nurses stay in touch with a wide range of people while on-the-move, many healthcare facilities are deploying nurse mobility solutions that simplify communications. Solutions typically include wireless phones that use Wi-Fi® or Digital Enhanced Cordless Telecommunications (DECT) technology and are integrated with nurse call systems. The combination delivers important benefits:

- Nurses become more efficient and effective. Nurses spend less time walking to fixed-line phones and more time making or taking calls when and where needed. This accelerates decision making.
- Healthcare facilities become more restful. Wireless phones that vibrate silently notify nurses when they are needed. This reduces dependency on overhead paging, leading to a quieter environment and happier patients.
- Patient satisfaction increases. When nurses can respond to patient calls from anywhere in the facility and immediately redirect the call to another person if needed, patients feel that nurses are more responsive to their needs. This improves the patient experience.

Quieter hospitals and satisfied patients can also help hospitals improve their ratings on Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) surveys.

Research shows that hospitals in the United States waste about 12.3 billion dollars annually due to communications inefficiencies. Of that money, 40 percent, or about 5 billion dollars, is due to latency in nurse communications<sup>1</sup>.

1 Quantifying the Economic Impact of Communication Inefficiencies in U.S. Hospitals, Ritu Agarwal, Daniel Z. Sands, and Jorge Díaz Schneider, Journal of Healthcare Management, Volume 55, Number 4 July/August 2010.

# BEST PRACTICES HELP ENSURE SUCCESSFUL DEPLOYMENTS

Before deploying wireless phones for nurse mobility, healthcare facilities need to look beyond the phones themselves to consider factors such as the network, nurses' needs, integration requirements and workflow scenarios. Based on our experience providing nurse mobility solutions to healthcare facilities around the globe, Alcatel-Lucent recommends five best practices to help ensure successful deployments.

## 1. Make sure the wireless network is ready

The wireless network must be able to deliver the coverage and capacity required to support a large number of wireless phones. A shortage of either of these aspects will lead to complaints that "these phones don't work". If nurses can't trust the reliability of the wireless phone system, they will likely revert back to using fixed-line phones; far worse, they could miss a crucial call.

Naturally, all clinical areas need wall-to-wall coverage. But nurses also travel to many non-clinical areas in the facility — break rooms, the cafeteria, a bench on the grounds, vending machines, elevators and meeting rooms. To keep nurses in touch at all times, these areas also require full coverage.

Capacity is also very important. Nurses tend to congregate in certain areas such as nurses' stations and staff lounges. Even if there are fixed-line phones in the vicinity, they will use their wireless phones if they have them. It's crucial that these high-traffic areas have sufficient capacity to handle many simultaneous calls.

## 2. Let nurses make and receive outside calls

Nurses need to communicate with the outside world. Restricting wireless phones to calling only other phones within the facility will dilute the benefits of providing the phones.

Communications between nurses, other staff, off-site medical personnel and patients' families must be fast and easy, no matter where the other parties are located. Consider a scenario where a nurse needs to consult with a doctor about a patient's condition in the middle of the night. Valuable time is lost if the doctor has to call a switchboard and be placed on hold while the nurse who sent the page is located.

Similarly, consider a nurse trying to reach a family member to notify them about a change in patient condition; or a family member trying to get a status update on a loved one. Delays, missed calls and calls transferred to nurses' stations staffed by people who may not be aware of the patient's status can lead to frustration, and serious heartache in some cases. The ability for nurses and family members to quickly and easily reach one another is very attractive for all involved.

To ensure that people can quickly call a nurse back, the phone number transmitted out from a nurse's phone — the automatic number identification, or ANI — needs to be the number for that device, not a general switchboard number. Today, most people carry mobile phones and rely on missed call logs to return phone calls. Reaching the switchboard instead of the nurse who called them will only add to delays and frustration.

Some healthcare facilities even give patients the direct dial number for their nurse so they can use their bedside phone to call them instead of using the nurse call system.

### 3. Integrate with nurse call systems

Nurse call buttons at bedsides and in washrooms initiate a call to the nurses' station, activate lights outside the room and generate an alert loud enough to be heard throughout the ward. Many healthcare facilities are extending these types of alerts to include a direct link with the responsible nurse's wireless phone. This allows patients to connect directly to their nurse with minimal delay and less noise.

When integrating wireless phones with nurse call systems, it's important to:

- Provide location information in text format so nurses can see at-a-glance which room and alarm source (bed, toilet, shower) the call is coming from.
- Include texting capabilities on nurses' phones so they can distribute tasks as required. For example, a call for a blanket or ice could be redirected to a nurse's aide, while a call for pain medication would go to the Registered Nurse (RN) on duty.

### 4. Solicit the opinions of all stakeholders for a flexible solution

A common mistake when deploying a nurse mobility solution is to gather requirements only from nursing department heads. The solution's success will depend on how broadly it is adopted by the front-line nursing staff and aides that will be using it on a daily basis.

Another common mistake is to look deeply into the needs of one hospital department and assume those needs represent all nurses throughout the hospital. This is very rarely the case. Nursing in an intensive care unit (ICU) is very different from nursing in a medical-surgical unit or an emergency department. The solution must be flexible to support the needs of each department. Requirements for call routing, how nurse call escalation and acknowledgements are handled, and even how the phones ring — or don't ring — will be different in each case.

### 5. Anticipate and plan for workflow changes

Successful deployments of wireless phones for nurses require numerous sessions at a whiteboard, reviewing typical scenarios from beginning to end to ensure that all possibilities are considered. Pay special attention to questions such as:

- Where should calls be directed if the phone isn't answered or is in use?
- How long do you wait for an answer before directing the call to the next phone?
- For integrations with nurse call systems, how will alarms be cleared? Should multiple phones ring in some scenarios? What information should text messages include?

Remember that ideas that seemed great on the whiteboard may not be ideal on the ward. Make sure to include time to adapt and customize scenarios after deployment. These customizations require collaboration between nursing staff and the information technology (IT) staff deploying the solution.

## CASE STUDIES PROVIDE INSIGHT

Healthcare facilities that are considering a nurse mobility solution should also take the opportunity to learn from the experiences of others that have already deployed such a solution. Their strategies and choices, and the results, can provide insight into approaches that may not have otherwise been considered.

### Children's Hospital of Pittsburgh quietly informs nurses

Children's Hospital of Pittsburgh of the University of Pittsburgh Medical Center (UPMC) is one of the top pediatric, research and medical education facilities in the US. When it opened its new state-of-the-art campus, it turned to Alcatel-Lucent to supply an advanced voice, data and wireless network infrastructure that would support the hospital's goals for care and research at the new campus. Keeping nurses quietly informed while on-the-move was a key goal.

With 400 miles of cabling in the 296-bed main hospital alone, and 2000 wireless access points, the network provides access for more than 4000 computers, including mobile monitor carts, and allows alerts and monitoring of patient vitals to be sent directly to nurses' wireless phones. The network routes all voice and paging calls directly to wireless devices, virtually eliminating them from the public address system and making the hospital a quieter, less stressful environment.

### Suncoast Hospice increases efficiency and comfort levels

Suncoast Hospice is America's largest, non-profit, community-based provider of in-home, palliative care services. As part of its efforts to improve mobility, collaboration and communications throughout its Florida-based organization, Suncoast installed an Alcatel-Lucent switch supporting a wireless LAN (WLAN) in Hospice House, a 75-bed acute care and end-of-life inpatient facility designed to resemble a private home. The residential wireless gateway provides, among other services, a two-way live link between inpatients and mobile hospice staff carrying wireless phones.

The Vice President of Information Systems at Suncoast Hospice describes the benefits: "When a patient or visiting family member needs quick assistance, they can immediately speak with a core team member by wireless phone wherever they are in the complex or adjacent grounds. Compare this to the traditional method of summoning help using a bedside call button. Many times, the patient's call simply causes a series of lights to flash outside each patient room, which almost always causes concern that the caregiver doesn't see it. Such old systems detract from our residential atmosphere by looking highly clinical and sterile. Direct voice contact is far more efficient, comforting and therefore respectful to patients and their families."

### Advocate Health Care aims for silence

Advocate Health Care is the largest, fully integrated, not-for-profit healthcare delivery system in Chicago. As with most healthcare facilities, nurses are at the heart of the vast majority of interactions at Advocate Health Care. The openness of the Alcatel-Lucent OmniPCX™ Communication Server simplified integration of paging and nurse call systems that transmit emergency information to mobile device displays.

With the evolution towards the so-called "silent hospital", Advocate Health Care wants to suppress public addresses as well as overhead pages, and to simplify the difficult call

"Alcatel-Lucent was introduced to the project as the latest in the game of any of our key partners. However, they handled the challenge of meeting our deadlines very well. They were able to create a design for the campus based on an Alcatel-Lucent infrastructure in record time, and were very competent in local recruiting and training adequate numbers of staff to get the cabling and server implementation, network validation and final testing done. They also went through a certification process with every one of our application vendors – more than a hundred – in less than a couple of months in order to get all our applications up on the network. When there were any issues, Alcatel-Lucent addressed them quickly and completely, and the way they partnered with us was extremely positive. I have no regrets about having selected them and about relying on them to implement at this level of complexity, especially during such a complex and busy time."

**CIO, CHILDREN'S HOSPITAL  
OF PITTSBURGH**

process of locating and communicating with highly mobile healthcare professionals. The deployment of mobile phones will help to achieve these goals; the call process will be simplified, and the call will directly reach the right person with real-time information on the call subject. The information can originate from a button pushed by a patient, or by patient sensors sending a variety of medical information.

## THE RIGHT PARTNER BRINGS TOOLS AND EXPERTISE

The most successful deployments of nurse mobility solutions follow a true team approach involving all stakeholders: IT, nurses, doctors and the solution vendor. The solution vendor should bring knowledge of nurse mobility and communications requirements, experience deploying nurse mobility solutions and a flexible toolkit of solution components.

Alcatel-Lucent understands the steps that healthcare facilities should take to ensure successful deployment of nurse mobility solutions and has experience partnering with major healthcare organizations looking to increase nurse mobility. Our toolkit for nurse mobility solutions includes all of the components needed:

- Wireless LAN ([WLAN](#)) and [DECT](#) handsets that provide durability, a lightweight form factor and long battery life.
  - Handsets have bright displays with plenty of space to display text messages.
  - Handsets include vibration mode so calls can be received silently for a quieter, more restful healing environment.
- Open private branch exchanges (PBXs), such as the [Alcatel-Lucent OmniPCX Office Communication Server](#), [Alcatel-Lucent OmniPCX Enterprise Communication Server](#) and [Alcatel-Lucent OpenTouch™](#), that can be integrated with existing voice solutions. This flexibility allows healthcare facilities to add a nurse mobility solution with no impact to their existing phone system.
- Robust wireless networking using [OmniAccess™ WLAN](#) or IP DECT solutions.

We work with application partners that can integrate any number of other input sources, including temperature, door and moisture sensors and telemetry systems, with our wireless handsets. We also work with partners that have built nurse call systems that are validated for operation on our OmniPCX family of voice products.

### DID YOU KNOW,

The 2012 Best of Interop award for Collaboration was presented to Alcatel-Lucent for its innovative OpenTouch™ Conversation (OTC) solution?



## ABBREVIATIONS

|      |                                              |
|------|----------------------------------------------|
| Term | Expansion                                    |
| CIO  | Chief Information Officer                    |
| DECT | Digital Enhanced Cordless Telecommunications |
| ICU  | intensive care unit                          |
| IT   | information technology                       |
| PBX  | private branch exchange                      |
| RN   | Registered Nurse                             |
| UPMC | University of Pittsburgh Medical Center      |
| WLAN | wireless LAN                                 |

## RESOURCES

For more information about our nurse mobility solutions, visit [www.alcatel-lucent.com/healthcare](http://www.alcatel-lucent.com/healthcare).