

[CASE STUDY]

Customer: Women & Infants Hospital

Solution: Purpose-built, clinical grade handsets and professional integrated messaging



WOMEN & INFANTS HOSPITAL ASCOM WIRELESS COMMUNICATIONS HELP OPEN NEW NICU

Women & Infants Hospital (W&I) in Providence, RI is part of Care New England which was formed in 1996 to continually improve the health and well-being of the people and communities of southeastern New England. Care New England is comprised of three hospitals and a wellness center as well as a home health, hospice and private duty nursing services.

W&I Hospital recently expanded its NICU facility five-fold from 9,800 square feet to over 50,000 square feet spread over two floors. W&I Hospital delivers over 10,000 babies a year with over 1,300 admissions into their NICU. Its NICU is the 4th largest NICU in the USA and is comprised of 75 separate rooms where the mothers can also stay and sleep in the same room with their infant. The new NICU has had consistent capacity rates of between 70-80 babies since it opened.

The Challenge

As soon as Women & Infants hospital in Providence Rhode Island decided to build a new wing and add a large NICU with private rooms, Dr. James F. Padbury realized that they needed to enhance the way they communicated to ensure their track record of excellent patient safety and satisfaction. Dr. Padbury immediately started researching different types of technology and companies that were experts on hospital communications and workflow improvements. He formed a committee comprising both clinical and technology people that quickly realized that they need to incorporate a new wireless voice and messaging system that would allow their people to be more mobile while covering a much larger work environment.

Tom King, Manager of Technology Services was part of this hospital-wide committee tasked with choosing an on-site wireless system that would meet the hospital's current needs and future vision of a fully integrated mobile workforce. The committee was looking for a system that would cover the entire hospital but with specific requirements due to the expansion of the NICU. The committee realized that they needed to enhance the hospital's communications because the new NICU would be much larger and include separate rooms. Each floor has a central nursing station staffed by a unit secretary and two wings with rooms off both sides of the hallways.

A new system for communication was identified as a top priority before moving into the new facility because the new units' layout would make it much more difficult to locate and communicate with medical personnel. The committee required a communication system that was easy to use, would provide automated physiological alerts to nursing staff as well as immediate conference call set-up for code teams and infant delivery teams.

[CASE STUDY]



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— Beth Taub, Nurse Manager, NICU

Prior to installing the Ascom system, W&I utilized overhead paging, Nextel handsets and pocket pagers as their primary means of communication and alerting. These communication devices worked well in the past; however, they conflicted with the hospital’s goal of providing a much quieter and stress-free environment for the mothers and their infants.

Beth Taub, Nurse Manager of the NICU said, “The NICU is definitely a much quieter environment since we do not have to turn the volume up high like we had to do with the Nextel handsets to compete with the overhead paging.” The committee evaluated several vendors including Ascom, Cisco and Vocera before making their final choice. They compared and weighted “Key Decision Criteria” such as the ability to text message, messaging context/length, screen size and ease of use in their overall evaluation. King said, “After conducting on-site trials as well as visiting other Ascom customers, the choice was easy to go with Ascom. We recognized their unique expertise and capabilities in providing advanced messaging and that was just as important to us as the voice communications.”

Dr. James F. Padbury was also very instrumental in the decision to choose Ascom as the communication system within the NICU. Dr. Padbury is the Pediatrician-in-chief at W&I as well as a professor of Pediatrics for Perinatal Research. Dr. Padbury states that, “Having the Ascom system up and running properly was a requirement to meet their move in date. In fact, Dr. Jesse Bender performed over 15 live ‘Medical Simulations’ with the Ascom system at the new hospital before they moved in.”

The Ascom Solution

W&I Hospital chose the Ascom solution which consists of the FreeNET VoWiFi i75 handsets along with the Unite Professional Messaging Suite for integrations to numerous clinical systems. With its global headquarters in Gothenburg, Sweden and US headquarters in Research Triangle, NC, Ascom is the world’s largest on-site wireless solutions provider. Ascom has over 75,000 installations worldwide and specializes in the healthcare market.

[CASE STUDY]



“We could not have stayed connected to medical people without the Ascom system. This system is critical to providing excellent patient care and we have increasingly relied on it to save time and allow us to spend more time on patient care.”

— James F. Padbury, MD, Pediatrician-in-Chief

W&I started by deploying about 100 Ascom FreeNET VoWiFi i75 handsets on both floors of the new NICU to leverage its existing 802.11 WLAN Nortel-branded Trapeze 2300 series access points and controllers. The Ascom handsets were set up on a separate VLAN with their own SSID to provide the best Quality of Service (QoS) possible. The system was then tied into the hospital’s Avaya PBX for outside calls utilizing the Ascom T1 VoIP Gateway with PRI trunks. This allows anyone to roam anywhere within the hospital coverage area while making and receiving both messages and voice calls within or outside the hospital.

The system quickly grew to over 220 handsets over the first two months of deployment as hospital staff began to experience the value that the new system provided. The medical staff at W&I have really embraced the value of sending alarms from different clinical systems directly to care givers’ handsets. The Ascom Unite Professional Messaging Suite provides the connectivity and software necessary for sending these alarms automatically and directly to the primary person first and to their back up when they are busy.

The clinical staff utilize the Ascom Staff Assignment Graphical User Interface at the beginning of each shift to assign themselves to the rooms for which they are providing care. All of the alarms and messages associated with the mother and infant for those rooms are automatically sent to their Ascom handset for quicker response.

The Rauland-Borg Responder 4 Nurse Call system is integrated with the Ascom system and allows patients to call directly from the bedside to a Unit Secretary who can then ask what the patient needs before she sends someone down to the room. An alarm will also be sent to the nurse if the patient has any trouble and pulls the toilet cord in the bathroom. Finally, any nurse can push the Code Blue button on the wall in each room to instantly alert the Code Blue team who will all be set up on a conference call so they can be in instant communication as they make their way quickly to the appropriate room.

The Space Labs Patient Monitoring equipment is also integrated with the Ascom system to send several different physiological alarms. It is important to send the most critical alarms from the Patient Monitoring System, taking care not overload the clinical staff to the point that mobile alerts become annoying. W&I decided to send only five types of what they considered their “core essential alarms”. They now send Hi/Lo pulse rate, oxygen saturation, Low Heart Rate, Leads Off and Pulse OX sensor disconnect. If a clinician is too busy and does not answer within a pre-set time frame or if they escalate the alert by pushing one of the soft keys on the handset, the alarm is sent to their backup clinician for assistance. This back up system and automated process ensures that someone will always be available to provide immediate care for the patient.

Medical staff is also receiving critical lab values from the Cerner Laboratory Information System directly to their Ascom handsets. The nurses like this feature because they no longer have to waste time constantly calling down to the lab to find out if the results are ready. The integration of LIS to Ascom handsets allows the nurses to administer medication sooner, thereby increasing patient satisfaction.

[CASE STUDY]



Ascom i75 handsets with the Unite Messaging Suite, are the only healthcare-specific devices capable of smart integration with clinical and nurse call systems.

The Ascom i75 phones have an assortment of color face plates that can be easily changed to differentiate functions or locations. The Assistant Nurse Manager in charge of the NICU always carries the purple handset which is shared from shift to shift. Each member of the NICU Delivery Team carries a red phone so that they are easily identified. The Delivery Team consists of approximately 14 Physicians, Nurses, Respiratory Therapists and the Nurse Manager.

They respond to calls an average of 12 times every day. The Unit Secretary is the person responsible for initiating a call to each of the team members by pushing the red staff assist button on the top of her "Delivery Team" Ascom handset. The Ascom handset automatically sends an alert to all members of the team. Each member is immediately joined onto a full-duplex conference call so they can discuss the situation and coordinate care even before they arrive. The Unit Secretary is also responsible for initiating calls to the Code Team who are easily identifiable by their orange Ascom phones.

Results & Benefits

The NICU is very pleased with the Ascom system. Dr. Padbury states that, "We could not have stayed connected to medical people without the Ascom system. This system is critical to providing excellent patient care and we have increasingly relied on it to save time and allow us to spend more time on patient care." Everyone at the hospital agrees that the new floor layout with private patient rooms required a new way to communicate because care givers are more spread out and unable to visually see each other as they had been able to do in the past. The new Ascom system provides immediate communication between individuals or groups regardless of their location on the floor or in the hospital.

There is no doubt that the new NICU is much quieter than it was before the Ascom system. Hospital studies have shown that a quieter environment is more conducive to healing, allowing patients to enjoy more of the uninterrupted sleep that they need. Improved patient comfort will result in increased patient satisfaction and potential increase in HCAHPS Scores for the hospital.

[CASE STUDY]

The Unit Secretary enjoys using the Ascom phones for the quick and easy process of transferring a call directly to the primary nurse for a baby whose parents are calling for an update. The Unit Secretary can also speak directly with patients when they press the Nurse Call button in their rooms. With a short conversation, the Unit Secretary can determine what is needed before dispatching the appropriate person to a room. This process ensures the best utilization of limited resources by sending a CNA with ice chips or an RN with pain medicine.



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In addition to the nursing staff, many other departments have benefited from the Ascom system. The Ascom system has hospital-wide coverage and is used by Case Managers, Respiratory technicians, Radiology, Lab, Pharmacy and Physicians throughout the hospital. This wide-spread usage of wireless voice and messaging allows instant communication and quicker response especially between departments. All of the nurses have stated that even though they drop their Ascom phones frequently, the handsets hold up very well and continue to work. Nurses also complemented the Ascom handsets’ ability to be disinfected after every shift. The disinfection feature is even more important this year with the prevalence of the H1N1 virus and its increased risks for pre-mature babies. The nurses also liked the backlit display for use in darkened rooms where a patient is trying to rest.

The inverted text feature allows users to quickly read a text message upside down without removing the phone from their scrubs. Nurses also like the large font option which allows them to review text alerts and caller ID without reading glasses. The Ascom phones have dramatically cut down on the number of missed calls and voice mail messages that busy employees need to follow up on at the end of each day.

Summary

Since opening the new and expanded NICU, W&I agrees that selecting Ascom was the right decision. The physiological alarms and messaging capabilities were just as important as the ability to have clear voice communications. The Ascom system allows caregivers to spend more time with their patients instead of tracking down people, data, messages and voice mail. Simply put, “We couldn’t operate effectively without the Ascom system,” says Tom King, Manager of Technology Services. The hospital is now in the process of expanding the Ascom system further by adding alarms from its GE Acute Monitoring System (AMS) which is monitoring adult patients. To find out how Ascom communication solutions can improve operations at your facility please call 877-71ASCOM or visit www.ascom.us.