ChimeNet

CASE STUDY

Conducting a wireless site survey at Lawrence + Memorial Hospital

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— Kimberly Kalajainen
Vice President and Chief Information Officer
Lawrence + Memorial Hospital

INDUSTRY: Healthcare

BUSINESS CHALLENGE: The marked advances in technology, as well as the hospital's increasingly complex use of technology and a system-wide upgrade to Epic, convinced them that they needed a significant wireless network upgrade.

NETWORK SOLUTION: ChimeNet's survey identified 790 new wireless access placements for secure data, voice, and location services.

BUSINESS VALUE: Lawrence + Memorial Hospital saw the direction in which the healthcare landscape was going and was able to improve its wireless capabilities.

Conducting a wireless site survey at Lawrence + Memorial Hospital

Client

LAWRENCE + MEMORIAL HOSPITAL, is a not-for-profit, general, acute care hospital that has been serving Southeastern Connecticut since 1912. It is licensed for 280 beds and provides patient care to medical, surgical, pediatric, rehab, psychiatric and obstetrical patients.

LAWRENCE + MEMORIAL HOSPITAL IN NEW LONDON, CT, had a wireless network that did not provide the capacity required for the new clinical systems being adopted at hospitals across the country.

"We saw the direction in which the healthcare landscape was going and knew we needed to improve our wireless capabilities," said Jason Walsh, Network Coordinator at L+M Hospital, a 280-bed, not-for-profit acute care hospital that has been in operation since 1912.

The hospital upgraded in 2007 to a Cisco Unified Lightwight Wireless Environment network, and that worked well for a number of years, Mr. Walsh said, but ultimately the marked advances in technology, as well as the hospital's increasingly complex use of technology and an EMR upgrade to Epic, convinced them that the hospital needed a significant overhaul.

That's when it turned to ChimeNet, a Cisco Wireless Specialized Partner and technology affiliate of the Connecticut Hospital Association in Wallingford, CT. L+M selected ChimeNet in 2015 to conduct a wireless site survey at L+M Hospital, the Lawrence and Memorial Medical Group locations, Westerly Hospital in Rhode Island , and all of the remote offices associated with both hospitals.

The job was immense – ChimeNet's engineers walked 1 million square feet across 22 different sites in two states. The project involved more than 400 hours of labor. And, due to some unforeseen circumstances, it needed to be done in a month, instead of the seven weeks initially scheduled for the project.

"It was an extremely tight window," said David LaSalata, Director of Business Development at ChimeNet. "We rose to a very significant challenge and completed the job on time and within budget."

Ultimately, the team identified 790 locations for new wireless access points across the 22 sites, Mr. LaSalata recorded in a written report that described the methods used and results of all work performed. The document also included heat maps with areas of concern clearly defined, such as trouble spots and persistent interference, as well as all wireless access points positioned by name, channel, and AP model numbers identified.

Kim Kalajainen, Vice President and Chief Information Officer at L+M, said she "can't say enough" about the ChimeNet staff who completed the wireless survey.

"The ChimeNet folks were incredibly flexible," said Ms. Kalajainen. "We probably had about four or five iterations of the statement of work as we were trying to prioritize our different facilities. As it turned out, there was a lot of work that had to be done over the holidays in order to meet our deadlines. It took incredible dedication for them to meet those deadlines."

Ms. Kalajainen said L+M was thrilled with the final product.

"When I think back to the type of deliverable we got when we did our last significant wireless project, the ChimeNet deliverable was leaps and bounds better," said Ms. Kalajainen. "It was a great document that allowed us to have a very fluid process from the completion of the ChimeNet deliverable right into doing the work with our contractors."

Mr. Walsh agreed, and said L+M's commitment to the project far outpaced other vendors who have done similar work for the hospital system.

"This wasn't a hit-and-run operation that plopped their deliverable on the conference room table and boarded a plane," Mr. Walsh said. "The responsiveness and communication didn't really change after that final deliverable."

The success of the project was due to a few very important factors.

First, the hospital and engineers on ChimeNet's team had a close working relationship that enabled both sides to respond quickly to challenges. Second, the engineers and others at ChimeNet worked around the clock – including over the Christmas and New Year's holidays – to make sure the project was completed on time.

"The best part about it was we banded together to get it done. We're a small company and we ate the whale one bite at a time," said Rob Mongillo, Senior Network Engineer for ChimeNet.

"Even though the hours were long, the ChimeNet staff worked as a team to overcome obstacles and deliver quality work," added Ralston Edwards, ChimeNet's lead project engineer for the surveys.

The types of obstacles the ChimeNet team encountered would be familiar to anyone who has ever attempted to do an active wireless site survey inside a hospital originally built in 1912, and which must accommodate different uses, like x-ray equipment, cancer treatment, and operating rooms.

"Most of the hospitals in Connecticut, including L+M, are older institutions that have been expanded greatly, and that has created environments that have been repurposed, such as a cancer center that is now administrative offices. Those environments created substantial challenges," said Mr. Mongillo.

L+M Hospital, which has undergone numerous expansions since its inception, is built out of brick, concrete, and cinder block, while sections of the interior walls are still made of plaster with wire mesh, which refracts a wireless signal.

One section of the building had lead-lined walls, and the cancer center's walls are 12-inches thick, which meant that each room has to be outfitted with its own access points because the signal won't travel.

The scope of the project itself was also challenging, the engineers said, because they were surveying for three different types of wireless access – location, data, and voice services – which are all integral to the hospital's ability to function safely and efficiently.

Location services, which allow hospital staff to tag and locate both equipment and patients, is particularly important. For example, patients who are fall risks would have tags on them that set off an alarm, triggered by the wireless signal, if they get out of bed. A wireless location service also allows the hospital to find expensive machinery quickly.

"When you're talking about clinical applications, the stakes are high," said Mr. LaSalata.

To survey properly for location services, though, ChimeNet had to walk each area 9 times to know where to install the three access points necessary for the function. Those triangulated access points must be able to communicate with each other so that if one fails, the other two know to increase their power.

In a hospital setting, this type of survey is made even more challenging by the necessity of putting on full protective gear every time you enter a quarantined room, the ChimeNet engineers said. Simply getting into certain areas proved difficult sometimes because the rooms were being used for surgery, delivery, or other hospital functions that could not be disturbed.

"There are highly sensitive areas within a hospital. We had to make four different visits to Labor and Delivery," said Matt Hoey, Director of Operations for ChimeNet. "And we conducted the site survey in the operating rooms in the evenings."

The ChimeNet staff praised L+M for working cooperatively with them during the process, saying that everyone from the nurses to the IT staff were helpful, understanding, and patient.

Ms. Kalajainen, from L+M, returned the compliment.

"The project was managed really well, and any issues were dealt with very promptly on both sides," she said. "It ended up being a great success."

By the NUMBERS

ChimeNet engineers **WALKED 1 MILLION SQUARE FEET** across 22 different sites in two states.

ChimeNet's work involved more than **400 HOURS OF LABOR.**

The team **IDENTIFIED 790 LOCATIONS** for new wireless access points.

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