CASE STUDY

Healthcare

SEA MAR
Community Health Centers
Clinica de la Comunidad

Sea Mar Community Health Centers Move to Smarter Wi-Fi to Save Doctors Time and Money

The staff at Sea Mar Community Health Centers (Sea Mar) were frustrated and so was the central IT staff of seven, already tasked with providing help desk, applications support, network management, and voice and data communication services.

Based near Seattle, Washington, Sea Mar operates 45 medical, dental, behavioral and preventative health clinics (16 with doctors) as well as long-term care facilities spanning from Vancouver, Canada to Bellingham, Washington. A high-speed MPLS backbone connects each site to its central administrative offices in Seattle.

Sea Mar Community Health Centers is a non-profit corporation operating 45 clinics throughout the Pacific Northwest. Reliable Wi-Fi was an essential element to their day-to-day practice, if only they could find it. They did.

Like many healthcare organizations, Sea Mar's 1,200 employees, which include some 200 doctors and nurses, rely on Wi-Fi daily to access its electronic medical records (EMR) system as well as to perform a variety of billing, pharmacy and medical service tasks.

Sea Mar doctors, nurses and administrative staff were having intermittent problems staying connected to its legacy Siemens wireless network. This was costing Sea Mar time and money in delivering a wide range of health care services. Dropped connections and connectivity problems as staff moved around was forcing the manual input of important patient information into its electronic medical records system. This hampered productivity and resulted in fewer patient calls and lost revenue. For a non-profit organization, this could spell disaster.

HOW SEA MAR JUSTIFIES BETTER WI-FI

- Five to eight doctors (on average) in 16 different clinics
- Each doctor required to see four patients per hour to meet productivity goals
- Each patient visit costs approximately $150
- A single missed patient visit per doctor per day from a dropped Wi-Fi connection results in a loss of $1,200 per clinic
- Total loss per clinic: $18,000+ per day

"There are two issues in the healthcare world that differentiates us from a school or a hotel or any other vertical market," said Mark Owens, IT Director at Sea Mar. "One is the noisy RF nature of hospitals and clinics. The other is the strong linkage between Wi-Fi and the services we provide as well as the urgency associated with it,"

Owens noted that from exam room to exam room, Sea Mar doctors are required to see four patients per hour to meet productivity goals. Wi-Fi is essential for these doctors to meet these goals as they use Wi-Fi-enabled tablet and notebook computers to enter data into the EMR system."

Since EMR has no paper trail it makes it very difficult for doctors to even see the patient and painfully slow to utilize the backup paper process when Wi-Fi connections are lost," said Owens. Any Wi-Fi failure translates into staff having to fallback to documenting patient care on paper thereby causing them to see fewer patients and missing their productivity goals.

"There are real dollars associated with this problem and it adds up in a hurry," said Owens. As an example, Owens said, a single facility with eight doctors is required to see about 192 patients a day (four patients per hour per doctor) with each patient visit costing approximately $150. If Wi-Fi connections were lost enough to cause each doctor to miss only one patient appointment a day, this results in a loss of approximately $1,200

COMPANY OVERVIEW

Started in 1978 with one small clinic in the South Park neighborhood of Seattle, today, Sea Mar Community Health Centers is one of the largest providers of health and human services. A non profit corporation with over 1,200 employees, Sea Mar operates 45 medical, dental, behavioral and preventative health facilities throughout the Northwest United States and Canada, providing services to low-income individuals and families.

REQUIREMENTS

- Eliminate dropped connections and unstable Wi-Fi signals
- Consistent performance in harsh RF environment
- Ubiquitous Wi-Fi coverage
- Simplified and centralized management
- Fast, easy installation and configuration
- Dynamic RF management support
- Remote management of WLAN controllers over a wide area network

SOLUTION

- Ruckus ZoneFlex 2942 Smart Wi-Fi 802.11g APs
- Ruckus ZoneDirector 1000 Smart WLAN controllers

BENEFITS

- Better coverage
- Fewer access points needed for each clinic
- Dropped connections mitigated
- Longer range connectivity
- Stronger, more reliable Wi-Fi signals
- Automatic interference avoidance in noisy RF environment provides more consistent performance at range

Ruckus® WIRELESS

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"There are real dollars associated with Wi-Fi when staff can't maintain connectivity, and it adds up in a hurry.

We've estimated, across our clinics, that merely missing one patient appointment per doctor per day due to having to manually input patient data translates into nearly $18,000 a day in lost revenue.

We've managed to fix this problem with the Ruckus ZoneFlex system."

Mark Owens
IT Director
Sea Mar Community Health Centers

per day per clinic. "With Wi-Fi problems, we can easily lose over $20,000 a day across our network of clinics," said Owens. "This was a real problem for us."

With X-ray machines, a myriad of medical instruments, blue-tooth devices, microwave ovens and other sources of interference, Sea Mar's IT staff of seven wasn't able to remotely deal with RF issues as they occurred. RF problems cause packet loss, retransmissions and lower data rates and are a major cause of connectivity problems.

Sea Mar needed an intelligent Wi-Fi system that could automatically deal with these RF issues on a localized basis and without manual troubleshooting. Owens complained that the cost of performing a single-site RF analysis ranged from $3,000 to over $4,500. "With 45 sites, are you kidding?" Sea Mar had deployed 80 (between one to six per clinic) Siemens AP2610 802.11g access points and Siemens C100 controllers across all its clinics.

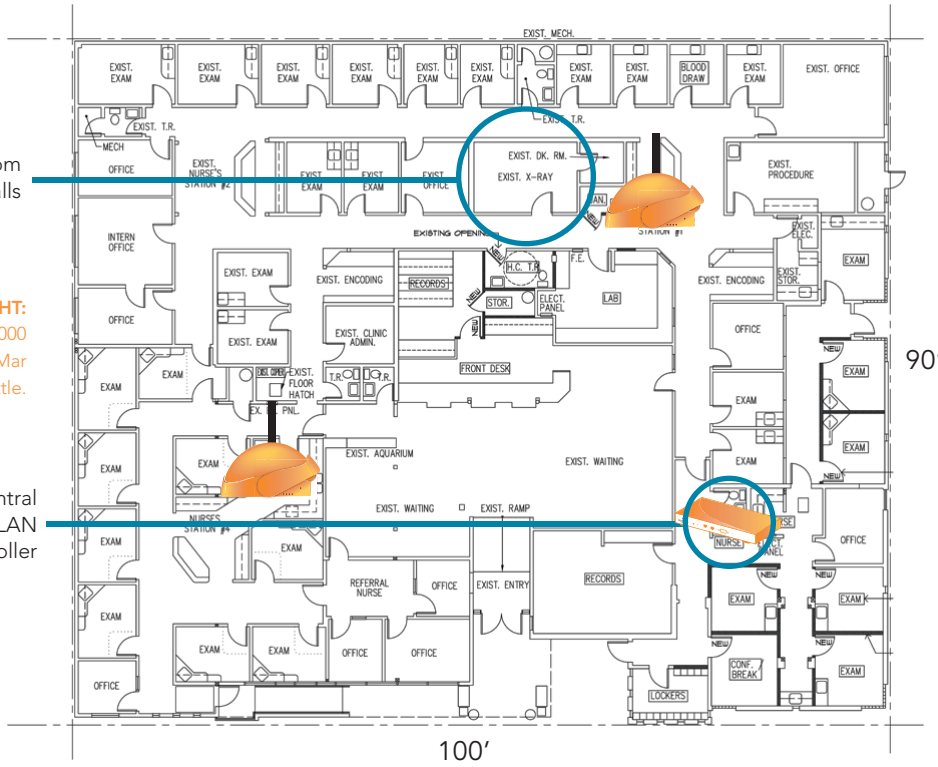
Sea Mar began deploying the Ruckus ZoneDirector 1000 Smart WLAN controllers and ZoneFlex 2942 802.11g Smart Wi-Fi access points in facilities close to its headquarters. Sea Mar's initial goals were to fix unstable connectivity issues when roaming between APs and to improve coverage and performance with fewer APs.

Sea Mar's model was to deploy a local ZoneDirector controller and APs in each clinic. However, some clinics didn't have the user density to justify a controller at every site. Because ZoneFlex APs can be installed as standalone APs or as part of a centrally managed controller-based WLAN, Sea Mar was able to only deploy APs in some site and entire WLAN in others, but manage the entire network as a unified system. Using the low-latency of its MPLS network, discrete APs at different sites can be managed by a remote controller at its headquarters.

"We've found the Ruckus ZoneFlex system to be quite flexible in terms of how it could be deployed," said Owens. "We liked that. But more importantly we liked the simplicity. Having never been formally trained on the system, we were able to configure an entire WLAN and get it operational within 30 minutes. This was huge, given that our IT staff is limited but our Wi-Fi requirements are vast."

Another big benefit for Sea Mar was eliminating RF site surveys. With an integrated smart antenna system in each APs, the Ruckus ZoneFlex system is able to continually adapt Wi-Fi signals to the environment in real time. This obviates the need to constantly re-survey clinics or constantly tune the Wi-Fi network as things change.

"This was important to us because clinics have a lot of moving parts," said Owens. "There are medical instruments that transmit who knows what and they are all over the place. Having a Wi-Fi system that can deal with this without human intervention is a major benefit for us."



RIGHT: One of 45 typical 10,000 square feet Sea Mar Health Centers in Seattle.

RUCKUS WIRELESS