

Gerber Memorial Health Services Gains the Power of Wireless with a Plan for Growth and Expansion

EXECUTIVE SUMMARY

Gerber Memorial Health Services

Gerber Memorial Health Services (GMHS) is located in Fremont, Michigan, 45 miles northwest of Grand Rapids. It is the only hospital in Newaygo County (population 48,000), a very popular rural vacation community.

GMHS, founded 1918, is a 77-bed not-for-profit community hospital that offers a complete range of basic medical services you would find in urban hospitals. It has consistently been named one of the Top 100 Hospitals in the United States.

Challenge

Continuing its quest to improve the level of staff efficiency and healthcare provided to its community, GMHS realized the need to implement a secure wireless local area network to support its new laboratory information and patient care management systems and provide guest access, as well as support future healthcare information technology applications, wireless IP telephony and asset location services.

GMHS also wanted to find a way to deploy the network as budgets permitted, with the initial installation meeting current requirements and a blueprint for improving network performance as additional applications were rolled out.

Solution

GMHS contracted with Azure Solutions for IntelliPlan wireless local area network design services, which resulted in a WLAN design that accommodated GMHS' current and future wireless network requirements while permitting an interruption- and obsolescence-free phased implementation.

Cisco Systems Unified Wireless Network, including Wireless LAN Controller, Wireless Control System, Lightweight Access Points, Secure Access Controller Server and Catalyst switches were deployed to meet GMHS wireless requirements .

Value

- Wireless local area network design permitting deployment to meet current requirements and enhancement to meet future requirements without interruption to existing applications.
- Highly secure, HIPAA-compliant, robust WLAN capable of supporting advanced services like wireless IP telephony and asset location services.

Community hospital provides mobility for new laboratory information and care management systems with a wireless local area network blueprint that provides for interruption-free enhancement to support future applications.



CHALLENGE

Consistently recognized as one of the Top 100 Hospitals in the United States, Gerber Memorial Health Services (GMHS) of Fremont, Michigan continuously looks for innovative ways to improve its operations and the level of care it provides to its community and patients.

The 77-bed, 132,000 square foot, not-for-profit community hospital recognized that it would need a wireless local area network (WLAN) to realize the maximum benefits from its new laboratory information system from SCC and a care management system from Care Fusion by extending access to mobile caregivers. GMHS also wanted to use the network to provide guest wireless access services to patients, visitors and guests.

“Azure demonstrated a strong understanding of wireless local area networks in healthcare. They took the time and effort to understand our current and future applications and designed a wireless network that accommodates those applications. ”

Peter Mulford

Director, Information Technology
Gerber Memorial Health Services

GMHS also anticipated future implementations of other healthcare information systems (HIS) applications that would require a wireless network and the potential use of the network for such other applications as wireless IP telephony and 802.11-based asset location services.

The hospital was also aware of the experiences of other organizations who had implemented WLANs and found that, over time, as more and more applications were enabled for wireless mobility, the networks proved to be unable to provide the capacity required by the applications. GMHS wanted to ensure that its new WLAN would be robust enough to support such future uses.

And, in an effort to meet capital spending budgets, GMHS desired a strategy for enhancing its WLAN over time, constructing the network as budgets allowed and applications required. Ideally, the network could be implemented in phases, with coverage and capacity growing as required, with no obsolescence to equipment required for previous phases and no interruption to existing applications during periods of network expansion.

SOLUTION

IntelliPlan - A Budget-Conscious, Scalable WLAN Design

GMHS began investigating system integrators for its new wireless network and identified Azure Solutions of Rochester Hills, MI as an experienced integrator of wireless networks in healthcare environments. Not only did Azure have extensive experience in healthcare; it had a demonstrated understanding of designing networks specifically to support applications and advanced services such as wireless IP telephony. Azure approached the project with a consultative approach, striving to learn of GMHS' current and future plans for the network and the impact of the applications that GMHS intended to deploy over time.

GMHS was also intrigued by Azure's innovative WLAN design service offering, IntelliPlan. IntelliPlan was developed in response to what Azure had identified as an emerging need in the WLAN marketplace for capacity-based WLAN designs that could grow to meet an enterprise's future needs without interruption to applications already supported by the WLAN.

Azure had witnessed a growing number of healthcare providers and enterprises whose WLAN, originally designed to provide coverage with little regard to the network capacity required to support applications added over time, was proving incapable of serving as a communications infrastructure for current network loads. These networks required a complete redesign and new installation, and Azure developed IntelliPlan as a scalable design method that would allow enterprises to expand their WLAN as applications required and budgets allowed while ensuring that such expansion would not disrupt communications for existing applications that relied on the WLAN.

"As a result of Azure's willingness to work with our application provider, we were able to realize the shortcomings of the wireless security capabilities of the hardware the provider was supplying and were able to change to client devices that offered more robust wireless network security."
Howard Lee
Director of Laboratories
Gerber Memorial Health Services

“After a few years, early adopters of wireless LANs are recognizing that their current wireless LANs are not well-suited to supporting long-term goals and requirements. The early wireless networks were designed to provide coverage for portable network access and are not readily upgraded to provide additional capacity or support applications that require true mobility and roaming such as wireless voice. IntelliPlan enables enterprises to cost-effectively meet new wireless network requirements without having to shut down the network and disrupt applications in order to rearrange the wireless network,” said John Anderson, director of sales for Azure Solutions.

GMHS realized that IntelliPlan would provide a blueprint for a WLAN that could be implemented to meet existing requirements and be expanded as required for new applications and as budgets permitted.. IntelliPlan would not only provide a design for a WLAN that would support GMHS’ most demanding anticipated services, wireless IP telephony and 802.11-based asset tracking, but also provide a design for a network that would initially utilize a subset of the “voice-ready” networks access points, configured to meet current coverage and capacity requirements. GMHS would be able to deploy a network that would be within current budget limitations, support its laboratory information and care management systems and be capable of expansion without interruption.

GMHS’ WLAN - A Foundation for the Future

Upon completion of its IntelliPlan wireless network design, GMHS was able to select the coverage and capacity desired of its WLAN to support its new applications and bring the project in under its current capital budget, able to initially deploy fifty percent of the access points required for the “voice-ready” network in order to support its new applications, while preserving the ability to enhance the system to provide additional capacity and coverage when additional applications and services were added.

Azure Solutions was then contracted to supply and implement GMHS’ new Cisco Systems’ Unified Wireless Network, consisting of Wireless LAN Controller, Wireless Control System and Lightweight Access Points. The system also allowed GMHS to implement a WLAN in a remote medical office building, extending access to the laboratory information and care management system, while realizing centralized network control and management with the main network’s controller system.

“With Azure’s IntelliPlan wireless network design, we are able to implement a wireless network as our requirements and budget allow and are assured it can be expanded to support the most demanding applications without interruption or obsolescence”

Peter Mulford
Director, Information Technology
Gerber Memorial Health Services

HIPAA security requirements are met with the network’s ability to provide Wi-Fi Protected Access (WPA and WPA2) and Cisco’s Secure Access Control Server, which was selected to provide centralized identity networking and simplified user management experience for the network by combining authentication, user and administrator access, and policy control from a centralized identity networking framework. Azure also integrated the Secure Access Control Server with GMHS’ existing LDAP directories.

Azure also upgraded GMHS’ wired network with Cisco Catalyst switches, in order to support new VLANs implemented to segregate network traffic, improve network security and efficiency and provide power over Ethernet to the WLAN’s access points.

VALUE

Gerber Memorial Health Services implemented a highly secure, HIPAA-compliant wireless local area network that provided mobile caregiver access to its new laboratory information and care management systems and provided wireless internet access to patients, family members and visitors.

The laboratory information system will provide caregivers with instant access to laboratory results, reducing the waiting times associated with waiting for the return of lab results. The care management system will promote positive patient identification (PPID) at the bedside, utilizing wireless barcode readers and barcoded patient wristbands. PPID protects caregivers from making preventable errors and patients from the consequences of those errors by helping to safeguard clinical processes most prone to error.

The hospital expects to realize improved patient care and patient satisfaction, with caregivers gaining efficiency and able to spend more patient-facing time and making more timely assessments of patient conditions as a result of the immediate, mobile access to the information provided by the new healthcare information systems applications.

As a result of the improved levels of patient care, the hospital anticipates that it will also realize improved patient throughput from faster patient recovery resulting from the improved care levels and patient satisfaction and increased caregiver efficiency.

The hospital was able to implement a network, within budget, that provided coverage and capacity sufficient for supporting current applications and capable of being enhanced to support the most demanding applications without interruption to applications dependent upon the network. The Cisco Unified Wireless Network will simplify network management and administration tasks for GMHS' Information Technology staff, and Azure Wireless' IntelliPlan wireless network design will provide for efficient and orderly network expansion.

In the future, the network design is capable of supporting wireless IP telephony, which would provide caregivers and staff with anywhere, anytime telephone access, and support location tracking services, reducing costs associated with unknown staff and patient location and lost, misplaced and underutilized medical equipment.

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