Client › **Lehigh Valley Health Network (LVHN)**

The Challenge:
Help Lehigh Valley Health Network (LVHN) enhance ICU patient care through 24/7 remote access and monitoring.

The Solution:
Employ the EDS multiport device/terminal server to network-connect ICU medical equipment onto a single platform and facilitate the secure flow of patient data to the clinical information system.

The Result:
The automated flow of information from ICU monitoring equipment to the clinical information system allows intensivists to better monitor patient progress for improved patient care.

> Our intensivists are able to monitor patients more effectively and make quicker, better informed, often life-saving decisions.

Luke Savage,
System Analyst/Programmer
Lehigh Valley Health Network

The Challenge: Addressing the Need for Real-Time Patient Information

Lehigh Valley Health Network (LVHN) is a top ranked U.S. hospital and among the largest and oldest teaching facilities in Pennsylvania. With a medical staff of over 1,100, LVHN takes research, diagnostics and patient care in innovative directions.

As complications and mortality rates decrease when specialized doctors called "intensivists" manage intensive care unit (ICU) patients, LVHN needed a way to allow these professionals to monitor ICU patients around the clock without overwhelming them with information flowing from the one or more devices connected to over a hundred patients. The hospital needed a cost-effective, secure solution to automate the flow of information from bedside equipment to a central clinical information system (CIS) for real-time patient monitoring.

LVHN chose a CIS that integrates the critical care system onto one platform and creates electronic medical records that enable proactive patient care. However, to enable the system and facilitate secure information flow over their network, LVHN needed a robust serial-to-Ethernet converter to translate the patient data coming from the bedside devices to TCP/IP communications.

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The Solution: Lantronix Links Patients with Intensivists

Lantronix recommended the EDS, a hybrid Ethernet terminal/multi-port device server enabling remote access and management of virtually any edge device, including medical equipment, kiosks, POS/retail terminals or security equipment. EDS allows up to 16 serial devices to be quickly network-connected using robust SSH or SSL security. The EDS' sleek design and desktop or wall-mount capability make it the perfect choice for installation in hospital environments.

LVHN initially launched its new CIS in the advanced ICU. Each bed was equipped with a computer, the Lantronix EDS, high resolution video and two-way audio. As real-time patient data was gathered, the EDS transmitted it securely over the network to the hospital's data center, where it was processed by the CIS and monitored constantly by a remote team of intensivists. These "tele-intensivists" were then able to track patient data in real time and immediately alert the onsite hospital ICU team of any adverse patient conditions. Using the video and audio system, the tele-intensivists were able to assist the local care team as if they were with them. Intensivists were also able to set up customizable alerts to automatically warn of any serious changes in a patient's condition.

Once the new system proved itself in the advanced ICU environment, LVHN upgraded its Labor & Delivery rooms and "Code Red" trauma and operating rooms.

The Results: Better Information Leads to Better Life-Saving Decision Making

According to Luke Savage, System Analyst, the new clinical information system "has revolutionized the way Lehigh Valley Health Network monitors its intensive care patients." The new technology allows LVHN intensivists to virtually be in many places at once, which in turn allows them to more quickly note important changes in patient status and make proactive and potentially life-saving decisions more quickly.

Because patient data coming from the various ICU medical devices are recorded automatically and consolidated into one place, the new CIS has dramatically decreased documentation times and improved documentation quality. The paperwork reduction has had the added benefit of allowing clinicians to spend more time with their patients. According to Elliot J. Sussman, M.D., LVHN's president and CEO, "Pioneering this technology reinforces our commitment to clinical innovation and service excellence to provide the best care for our patients and their families."

About Lehigh Valley Health Network

Recognized by US News & World Report for 13 consecutive years as one of America's Best Hospitals, LVHN includes three Pennsylvania hospital facilities, eight regional health centers and numerous regional primary/specialty care physician practices. Specialties include trauma care at the region's most experienced trauma center, pediatric certified burn care at the regional Burn Center, kidney and pancreas transplants, perinatal/neonatal, cardiac, cancer, and neurology and complex neurosurgery capabilities with national Primary Stroke Center certification. LVHN is a national Magnet hospital for nursing excellence, and been three times listed by Fortune Magazine as one of America's best places to work. Visit www.lvh.org for more.

For more information on the EDS, visit **www.lantronix.com/edsps**

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