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NATUS NEURO EPILEPSY-FOCUSED TECHNOLOGY DELIVERS COMPREHENSIVE, INTEGRATED, LONG-TERM MONITORING SOLUTIONS

Major technological advances and surgical success rates in the treatment of epilepsy are driving demand for advanced, IT-integrated, long-term monitoring (LTM) solutions in the epilepsy monitoring unit (EMU). As a result, hospitals, neurology departments, epileptologists and allied healthcare professionals are turning to the epilepsy specialists at Natus Neuro to integrate and synchronize data from monitoring equipment for high-quality, effective, LTM clinical and research solutions.

Providing industry-leading epilepsy technology for more than 80 years, Natus Neuro deploys complete LTM solutions in some of the most demanding monitoring environments at the most prestigious institutions around the globe. These integrated solutions include the Natus Quantum® LTM Amplifier, NeuroWorks® Software, Nicolet® Cortical Stimulator, and Cerebrum Enterprise Solution™.

The Epilepsy Center at Boston Children's Hospital is an eight-bed, Level IV epilepsy facility operating within the hospital's Department of Neurology. As Director of Technology for the department, Jack Connolly oversees all technical staff and IT operations, including the epilepsy center. Connolly finds it especially beneficial that the Natus Quantum LTM Amplifier can be used for both clinical and research needs, eliminating the need to connect a patient to two separate systems.

"Before the Quantum Amplifier, we had to use two machines simultaneously for EEG recording," explained Connolly. "After the recording, it was a nightmare trying to figure out how to deal with time lock between the two systems. You had to try and sync the recordings on two separate computers."

Using the Natus Quantum 256-channel LTM amplifier, recordings on all channels are collected in a single file.

"With our neurosurgery cases, for example, which may have close to 200 channels, we can record that on one system and see it all on one screen," said Connolly.

When it comes to security and peace of mind for Connolly, who works in the largest pediatric neurology department in the U.S., Natus Neuro's HIPAA-compliant XLSecurity enables role-based security with Active Directory integration.

"We allow our entire neurology department to see Natus through Citrix – so there are a lot of users. But we can then limit the amount of access by specialty and focus," observed Connolly. "Epileptologists, for example, have broad access to the EEG data; however, we don't want to give them the ability to inadvertently delete patients. We give that chore to an IT person with full access to manage adding and removing patients."

At the Level IV Comprehensive Epilepsy Clinic at Beth Israel Deaconess Medical Center (BIDMC), IT security and integration has taken on a critical role since the center switched from its in-house LTM equipment eight years ago.

That's when Susan Herman, M.D., who directs the hospital's EMU and ICU-EEG monitoring program, says BIDMC chose a single-vendor solution for its neurology department, including the EMU.

"At that point, Natus was the only vendor that could meet – or in some cases exceed – the strict IT security requirements for our hospital," noted Dr. Herman. "And further advances now allow centrally managed logins with single sign-on, role-based authentication. It's really improved our ability to maintain security of the data."

Dr. Herman, who specializes in Epileptology and Neurology and is Assistant Professor of Neurology at Harvard Medical School, also appreciates the advantages of a new functionality that allows the Nicolet® Cortical Stimulator to be controlled through software while using the Quantum LTM Amplifier.

"It's a major advantage in terms of safety and efficiency, because we no longer have to be plugging and unplugging electrodes in order to attach them to the cortical stimulator; it significantly reduces the amount of time it takes to do functional brain mapping," explained Dr. Herman. "It's clear when the circuit is open, when it closes, and which electrodes are being stimulated, so creating the report from the cortical mapping is also more efficient."

The hospital's Comprehensive Epilepsy Clinic sees more than 3,500 outpatient visits annually and performs more than 4,500 neurophysiological studies each year. BIDMC has fixed, wired EEG machines in the EMU as well as portable machines spread throughout the hospital, although most are still connected to the hardwire network.

NATUS NEURO EPILEPSY MONITORING SOLUTIONS

- Natus Quantum® LTM Amplifier – a compact, patient-wearable amplifier that enables clinical EEG, and long-term scalp and intracranial epilepsy monitoring and research
- Natus NeuroWorks® Software – a cutting-edge solution for all of your EEG, LTM, ICU, sleep and research studies, exhibiting an advanced software for clinical excellence
- Nicolet® Cortical Stimulator – a compact, digital, portable unit that aids in identification and mapping of the areas of the brain that control speech, sensory, vision and motor skills
- Cerebrum Enterprise Solution™ – an innovative software rollout tool designed to automate the software upgrade process for multi-bed sites

"The ability to have the data go to a central, offsite server means the techs don't have to run around and download the data from every machine to the central location before we can review it," said Dr. Herman.

Despite her initial skepticism about the remote location, Dr. Herman said the database structure allows her team to have the EEG data rapidly transmitted, cached and ready as soon they want to look at it. Dr. Herman also said it's important to be able to record directly to the server wirelessly with the ability to automatically fallback to local recording in the event of a wireless outage.

"We have a couple of locations where the hospital's wireless connectivity isn't great, but in most places we've been able to use the wireless networks when we don't have a wired network jack, so that really is an advantage," observed Dr. Herman. "The database for archiving is actually very reliable, so we haven't had any issues with missing or lost data."

For device and software updates, Cerebrum Enterprise helps organizations minimize downtime and maximize performance, enabling software installation on multiple units simultaneously. What used to be a seven-day software upgrade process for Connolly, for example, has been cut to about four hours.

"When a new upgrade comes out, I can push that upgrade from my desk to all the EEG machines in clinics requiring an update, all at the same time," said Connolly.

For Dr. Herman, the responsiveness of the support desk has been also been important.

"We've had good service, particularly with ongoing studies where a patient is being monitored and you need to fix something; the support desk has been very helpful," said Dr. Herman.

Natus Neuro develops comprehensive, epilepsy-focused solutions to meet the needs of level I – level IV epilepsy centers. More than just an EEG company, Natus enables leading clinical and research programs – both outpatient and inpatient – to deliver the best patient care possible.

With leading-edge equipment, outstanding service and advanced technical support, Natus Neuro also maintains a Training Academy platform focused on educational programs to better support customers in the use and optimization of Natus Neuro products.

To partner with Natus Neuro and discover how our clinician-led technology can address your unique epilepsy needs, visit neuro.natus.com or contact us at 800-356-0007.