



## Reaping the Rewards of Vital Signs Connectivity

Hospital Achieves Dramatic Gains in Nursing Efficiency and Improves Patient Care with Welch Allyn Connex®

Through the Welch Allyn Connex® Vitals Management System, clinicians at Erie County Medical Center (ECMC) automatically transfer patient vital signs captured at the point of care to the electronic medical record (EMR) system, Meditech Client Server. By eliminating manual transcription, Connex has dramatically reduced the time required by ECMC staff to acquire and document patient vitals data, enabling them to spend more time with patients at the bedside. Moreover, the direct transfer of vitals data from Welch Allyn Spot Vital Signs® LXi devices to the EMR has virtually eliminated opportunities for errors in patients' vitals data, giving clinicians access to near real-time assessments in the EMR anytime, anywhere.

### The Challenge: Choosing the Right Point-of-Care Technology

Vital signs provide an important leading indicator of the health of a patient, and often-times yield the first clues to a patient's diagnosis and treatment options. However, even the most meticulous vitals assessments are of little help to clinicians if they are not documented correctly or in a timely way. Traditional manual workflows for documenting patient vitals data are both time-consuming and fraught with opportunities for patient ID and transcription errors. Delayed data entry into a patient's medical record can also arguably contribute to poorer patient outcomes when clinicians prepare treatment recommendations without the benefit of up-to-date vitals data for the patient.

At ECMC, vitals are typically captured at the start of each of the three nursing shifts; approximately 400 vitals signs readings are captured every day. Historically, clinicians at ECMC would document vitals on a daily worksheet or, frequently, a simple scrap of paper. At the end of rounds, nurses would manually enter the vitals signs records into the EMR through a computer workstation—a tedious process that could take up to 30 minutes for each nurse for the morning rounds alone.

### Overview

**Customer**  
Erie County Medical Center

**Location**  
Buffalo, NY

**EMR Partner**  
Meditech Client Server

**Customer Profile**  
Erie County Medical Center (ECMC) is a 550-bed regional center for trauma, burn, rehabilitation and cardiac care, and is also a major teaching facility for the University of Buffalo.



According to Peter Hazen, Assistant VP, Clinical Business Services, the decision to automate the vitals signs process was driven largely by the desire to improve nursing productivity by eliminating a necessary but burdensome task from their workday. Says Hazen, “Today, the demands on nurses are greater than ever. Typically when new point-of-care technology is introduced on the floors, the improvements it brings to patient care usually result in even more work for our nurses. So in selecting an approach to automate the vitals signs process, we wanted to make sure that it truly would make nurses’ lives easier.”

## The Solution: Eliminating Manual Transcription of Vitals Data While Streamlining Workflows with Welch Allyn Connex

With its flexible workflows for vitals capture and recording, coupled with the ability to integrate with ECMC’s existing EMR system, Meditech Client Server, Connex was the logical vitals connectivity solution for ECMC. Dawn Walters, Assistant Director of Nursing and part of the IT evaluation task force, explains: “The decision to invest in Connex was a natural technology progression for us. We were already using the Welch Allyn Spot Vital Signs® LXi devices for vitals capture, and the nurses love them. Welch Allyn’s track record and responsiveness made us confident that we could go live with Connex relatively quickly, with minimal disruption to the staff during the transition period.”

Connex takes a flexible approach to technology by recognizing the differing infrastructures that exist for lower-acuity settings. As such, Connex relies on standard technology in place in most facilities, and accommodates a variety of workflows for collecting and assessing vitals signs, such as spot-check readings and bedside monitoring. Connex also provides a number of options for recording patient vitals records to the EMR, such as batch uploads, bedside monitoring, and wireless connectivity.

At ECMC, Welch Allyn worked in collaboration with key nursing and IT staff to select a workflow where clinicians use Spot Vital Signs LXi devices to capture patient vitals signs during their rounds, and then transfer them to the Meditech EMR system via batch uploads.

Today, clinicians at ECMC use barcode scanners to identify patients and themselves. In addition to traditional vitals, clinicians can also document pain level and respiration rate directly into the Spot Vital Signs LXi—further streamlining the workflow. Clinicians take the device from room to room during rounds. (The Spot Vital Signs LXi can store up to 50 unique vitals assessments). At the conclusion of rounds, the clinician connects the Spot LXi to a computer workstation via a USB, calls up the Connex web application using a standard web browser, and transfers the data to the EMR system. All the information is captured automatically without transcription.

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— Peter Hazen, Assistant VP,  
Clinical Business Services



Connex uses standards-based interoperability, and leverages HL7 messaging to transfer patients' vital signs and other data to the EMR. A direct feed from ECMC's Admit Discharge Transfer (ADT) system updates patient demographics in real time, enabling Connex to validate all vitals data against current patient records and ensure that only data for current patients is uploaded to the EMR.

According to Lynn Whitehead, Nursing Education Director at ECMC, the complete transition to Connex was one of the fastest technology upgrades she's ever observed. "Adoption by our clinicians was rapid—everyone was so eager to start using Connex because the benefit to them personally was obvious and so significant. I actually had unit managers asking to move up their scheduled 'go-live' dates."

As of December 2008, ECMC has deployed approximately 55 Spot Vital Signs LXi devices across 14 Med-Surg and patient behavioral health units, all of which are now connected to the Meditech EMR system via Connex.

Training for the new connected workflow is hands-on and in real time on the floor; no special classes are typically needed. Says Whitehead, "Most of our care providers learn the new procedure after only one demonstration. Training has been remarkably quick and frustration-free—not the typical outcome when new technology is introduced on the floor."

## "We're saving so much nursing time..."

### The Benefits

#### *Increased Nursing Efficiency and Satisfaction*

According to Bill Arnold, Nursing Informatics Manager at ECMC, clinicians on the Med-Surg floor at ECMC are now able to capture and document patient vitals data in a fraction of the time previously required. Says Arnold, "With Connex, we've eliminated anywhere from 20 to 30 minutes of vitals data documentation time per nurse, per shift. Our nurses are spending less time at computer workstations and more time at the patients' bedsides. And that's had a direct impact on the quality of care we're able to provide our patients, as well as on nursing staff morale." Dawn Walters adds, "Connex has reduced our vitals documentation time by at least 95%. Our nurses are thrilled—that's not something we typically experience when we introduce new technology on the floor. And patient care has improved, because vitals assessments in the EMR are now readily available to clinicians."

ECMC is currently sending approximately 12,000 vitals records per month to the Meditech EMR system via Connex.



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Assistant Director of Nursing*

### *Improved Patient Safety via Timely and Accurate Vitals Data*

When manually documenting a full set of patient vital signs (blood pressure, systolic/diastolic pulse, respiration, oxygen saturation, heart rate, pain, respiration, and temperature) into the EMR, there are numerous potential opportunities for patient ID, transcription or omission errors. Manual transcription also increases the potential for clinical errors due to data latency (i.e., the time lag from when vitals data are captured to when they are available in the medical record).

Through the automation of the vitals capture process and integration with the EMR via Connex, physicians can have full confidence in the integrity of their patients' vitals assessments: errors associated with manual transcription are virtually eliminated, and up-to-date vitals data in the EMR are now readily available to physicians. Explains Dawn Walters, "Connex has strengthened the value of our EMR in supporting computerized physician order entry (CPOE), meds administration through the electronic meds administration record (EMAR) and other EMR applications."

### *Flexibility for Expansion*

As ECMC works toward completion of a wireless infrastructure, the transition to a wireless workflow for vitals documentation is just on the horizon. "We're saving so much nursing time with our current Connex vitals documentation workflow. The wireless approach will increase our time savings even more by enabling nurses to send a patient's vital signs results directly to the EMR at the point of care," says Arnold.

Peter Hazen agrees and adds, "I have been very pleased with our partnership with Welch Allyn. Their connectivity team is highly capable and tremendously responsive. We're eager to make the transition to the wireless solution knowing that Welch Allyn will be with us every step of the way."