The integration of wireless networking and standardized protocols have provided opportunities for efficiency throughout the healthcare system. A significant advancement has been the real time connectivity of devices at the bedside with the Electronic Medical Record. One of the first devices that integrated into the EMR was the equipment that caregivers use to take vitals. A feature of the integration is that vitals data can be automatically recorded in the EMR and the data does not have to be manually entered by the caregiver.

Any time new technology or changes to processes are implemented in the acute care setting, it is critically important that decisionmakers fully understand the impact of those changes on the caregiving team. Post evaluation studies using the Time Study RN national benchmarking database were performed on 4 acute care units that were turning ON the automatically sending vitals to the EMR feature in their equipment.

The purpose of the post evaluation study was to measure the impact of automated vitals connectivity on nurse workload. The study was supervised by the Time Study RN National Benchmarking Database project manager and funded jointly by Hill-Rom, Welch-Allyn, and in-kind contributions from the Time Study RN National Benchmarking Database project.

Each study included a 1 week baseline measurement to determine the time caregivers spent manually entering vitals data into the EMR. A near identical post measurement was performed 6-12 months after the new feature was implemented for comparison. Each study included the following comprehensive measurements:

1. A Time Study RN assessment of nurse workload using the TCAB/CIT version of the Time Study RN National Benchmarking Database.
2. Standard times using direct observation time studies for Taking Vitals, Transcribing Vitals, and Recording Vitals, were determined.
3. Data Entry Errors when vitals data was entered manually were measured on 2 units.

All studies yielded similar conclusions with varying levels of detail and summary results are as follows:

Errors and Timeliness (Baseline)

We observed a 20% error rate when entering data manually. The most common error was keying errors; however, we observed multiple instances of caregivers mixing up patient transcriptions. If caregivers did not enter the data within the first 10 minutes, then the average delay was approximately 60 minutes. Observed errors were 14% more likely to happen when caregivers waited to enter the vitals data.

Standard Times

Activity	Baseline	Post Eval	% Reduction
Taking Vitals	2.42 min	1.34 min	45%

TCAB/CIT Comprehensive Assessment
% of time nurses spent taking Vitals was reduced by an average of 27% confirming the reduction in the observed standard time measurement. Similar reductions were measured on all units.

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Vitals Count	Minutes Eliminated	$ Value of Reduction
560,640	605,491	$264,952

Impact on Nursing Operations
Improving the accuracy and timeliness of vitals data in the EMR is an extremely high priority especially given its significance in diagnosis and decision making by the care team. Automated recording from the Vitals machine at the bedside to the EMR solves both the accuracy and timeliness problem.

The tasks of transcribing and entering the data represent small slivers of time throughout the work day that add complexity and chaos to nurse work. Eliminating these tasks makes it easier for caregivers to focus on more meaningful tasks and allows the caregiver to spend more time doing patient care rather than spending time doing clerical work.

Patients benefit with more quality time with caregivers, caregivers benefit with less chaos and complexity in their work day, and the accuracy and timeliness of the data is improved.

While these time savings may not result in a reduction of FTE's, it should be noted that reductions in caregiver hours can only happen over time after eliminating enough waste in the process to justify the reductions. This time savings is an important step which eliminates wasted time and will contribute to operational cost savings - now and in the future.

The comprehensive 31 page report can be accessed by CLICKING HERE.

Time Study RN National Benchmarking Database
The Time Study RN National Benchmarking Database was formed to support hospitals participating in Transforming Care at the Bedside (TCAB), (CIT), and (RTC) programs. It's purpose is to provide a benchmarking framework for evaluating the impact of new technology, processes, and nursing policy on caregivers in acute care environments.

With over 600 participating hospital units and over 1 million observations, the database has become the standard tool of choice for pre-implementation and post-implementation studies evaluating new technology and changes to nursing practice and policy on caregiver workload.

To learn more about how your hospital performs against its peers and against the national average visit the Time Study RN website (www.timestudyrn.com).