Telemetry heightens nurses' vigilance, patients' mobility

Information system integration empowers clinicians and patients, making for improved point-of-care initiatives.

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Abstract: Telemetry monitoring yields better workflow and enhanced productivity. [Nurs Manage 2003:34(12):29-32]

With nurse staffing needs at an all time high, a growing number of hospitals need to manage and use information more efficiently to continue providing quality patient care. One study noted that approximately 30% of a nurse's time is spent searching for information critical to patient care.[1] In other words, a nurse working a 12-hour shift could spend up to 3 hours looking for files, test results, and other information—taking valuable time away from those who need it most: the patients.

Paper-driven processes add to the cost and inefficiency of health care, while concerns about accountability and care quality have yielded more reporting and documentation requirements. In addition, nurses struggle to access and correlate important information because it's spread among various files and departments that can sometimes take hours to locate.

An additional nursing challenge is the movement of patients from department to department, especially when critical care units become filled and less critical patients are moved to other units or transported for diagnostic procedures. When a patient is transported, relevant data can be misplaced or overlooked, leading to increased risk of medical errors and additional administrative time.

Moving to completely computerized systems gives nurses and other clinicians real-time access to all patient information, including radiology results, patient history, and test results. Through integration of information systems, nurses become empowered to fully utilize patient data to improve productivity and workflow at the point of care while improving patient outcomes.

With instant access to the information needed, clinicians can make more informed decisions about patient needs without leaving the bedside. Nurses don't have to physically retrieve patient files and images from various locations, and can instead focus more attention on their patients.

Uninterrupted surveillance

Ambulatory patients present an interesting challenge to nurses and other caregivers. While it's important for these patients to have the freedom to move around the hospital as part of their treatment, clinicians can miss changes in vital signs when the patient is connected to a bedside monitor that doesn't transmit information to a central monitoring station. Because these changes can signal critical shifts in a patient's condition, and may only last a few seconds, clinicians need to monitor the patient at all times. Enter telemetry systems.

Operating on a secure medical frequency, telemetry systems transmit physiologic data, such as heart rate, multilead ECG, and pulse oximetry data, to a remote receiver, allowing patients increased mobility while maintaining constant medical surveillance. Clinicians can then view this information at a central critical care workstation.

Telemetry systems can be integrated with handheld receivers the size of a beeper that nurses carry. These receivers alert the nurse to any high-level alarm and provide a short preview of the rhythm on a display window. The integration of this technology puts the diagnosis of dysrhythmias in the hands of the nurse at all times. This added advantage in telemetry monitoring enables the patient to be more mobile, while nurses maintain their vigilance.

Another challenge stems from critical care patient transfer. With conventional monitors, nurses must disconnect patients from monitors and

reconnect them to transport monitors each transport, leaving a gap in the recording of patient information. Monitors that move with the patient ensure continuous vital sign tracking, from admission to discharge. These monitors come equipped with rechargeable batteries that allow them to move around the hospital and dock in any area that offers a docking station. In some facilities, patients keep the same monitor for their entire length of stay, allowing nurses to spend less time on equipment management and more time with their patients. This monitoring platform provides real-time information accessible from various points within the hospital. It also offers the option of monitoring all beds at once.

While the ability to view telemetry and other patient information at the central station is important, making sure the information can be accessed anytime, anywhere proves pivotal. Installing a broad network that captures all patient vital signs and telemetry data and makes it accessible in the cardiology department, the radiology department, the provider's office or even an off-site location in near real-time, is becoming critical for patient care.

Tailored information

Numerous product categories exist that prove important in the digital recording and storing of patient information. Each system delivers specific patient data to nurses and other clinicians, supporting more informed decisions. These include:

♦ *clinical and hospital information systems (CIS and HIS):* CIS and HIS are incredibly valuable in recording, storing, and managing data digitally. CIS focuses on disease-specific information, HIS on administrative patient records.

♦ *picture archival central storage (PACS):* PACS systems help hospitals save costs on storing and handling film and get imaging results to clinicians faster. New imaging workstations integrate PACS data with information from the HIS and CIS to provide radiologists with relevant information at all times.[2]

♦ *electronic charting:* Electronic charting and reporting systems pull vital patient information from monitors in the critical care environment and make this information accessible at any point within the hospital.[3]

Although important to the decision-making process within the hospital, each of these systems has drawbacks. The information stored in HIS and CIS is generally only available in certain areas of the health care organization, and in many cases the systems are unable to talk to each other. Also, only certain staff members are trained to use the related workstations, making the information inaccessible to others. PACS workstations are typically only in the radiology department, as opposed to at the bedside, which is especially crucial in the intensive care environment.

New developments to critical care workstations may enhance the integration of digital information systems. Advanced technology integrates data from real-time devices like monitors, I.V. pumps, and ventilators with information systems, giving users a complete picture of a patient's condition, with all relevant information in context, at the bedside.

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Future benefits

Effective clinical and business decision making requires robust and sophisticated decision-support architecture.[4] Although the concept of system integration is still in its infancy, there's enormous opportunity to participate in technology acquisition that enhances practice and patient outcomes. System integration can improve your bottom line by reducing wasted time, eliminating unnecessary orders, and providing rapid clinical information for early assessment and treatment.

Information technology advances continue to dramatically change patient care delivery. Although complex, the ability to combine data from various sources is increasingly critical for making timely patient-care decisions in intensive and emergency care environments. We can anticipate an even more significant impact as integrated information access becomes the norm, not the exception. Providing access to all pertinent patient care information gives back clinicians the most valuable resource of all—time to collaborate and formulate treatment strategies that enhance patients' care plans. NM

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