Emergency Nurse Transport of Telemetry Patients: Benefits and Drawbacks

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Problem: Emergency nurse-accompanied telemetry transport on admission to the hospital is a common practice. Potential drawbacks include inefficient use of nursing resources, unnecessary telemetry transports, and disruption of care for remaining ED patients.

Methods: This was a 2-part descriptive quality improvement study using retrospective chart review and prospective documentation of patient transports. Charts were selected by American Heart Association Practice Standards for ECG Monitoring to classify transported telemetry patients into 3 categories. Patient characteristics and adverse events were assessed. Prospectively, the length of transport time and the number and severity of patients the transport nurse left in the emergency department were also recorded.

Results: Zero adverse events occurred during any transport. Transport time ranged from 5 to 38 minutes, with a mean of 16.5 minutes. The normal patient ratio increased for nursing staff remaining in the emergency department for the period of the transport, with 74% of patients left in the emergency department classified into high-risk Emergency Severity Index categories 1 and 2.

Implications for practice: Findings provided evidence that low-risk telemetry patients had minimal chance of adverse events during transport and highlighted added risks for the remaining emergency patients. Alternative models and interventions are needed to identify appropriate patients for telemetry transport, assign appropriate staff such as licensed paramedics for transport, and evaluate alternative models of nursing care and teamwork in the emergency department.

Key words: Telemetry; Telemetry classification; Monitoring standards; Emergency nursing; Ticket to Ride

Chest pain and related symptoms are the second leading reason for ED visits, accounting for more than 7 million visits in 2011.[1] Patients presenting to the emergency department with syncopal episodes, dizziness, chest pain, and related symptoms often require telemetry observation or admission with an order for telemetry monitoring. Other patients are admitted to telemetry because of their cardiac history, although the current problem may not be cardiac related. It is common practice for patients admitted to the hospital with an order for telemetry to be monitored at all times, including during transport out of the emergency department. This logical safety requirement may have unintended consequences in most emergency departments due to limited staffing resources.

The goal of our quality improvement project, led by our Research/Advancement Committee, was to evaluate the benefits and hidden drawbacks of emergency nurse transport of the telemetry patient. Once an admission order specifies telemetry, policy in our facility dictates that a nurse must accompany the monitored patient whenever the patient leaves the emergency department, including to the

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admission unit. At our hospital, substantial nursing time is spent ensuring the safety of telemetry patients. Once an admission bed is ready, the emergency nurse must give report to the receiving telemetry unit followed by report to another emergency nurse on his or her remaining ED patients. We knew that these transports removed the emergency nurse from the department each time a telemetry patient was admitted; we wanted to quantify the amount of time the nurse spends out of the emergency department. In the event the patient experiences a cardiac arrest during the transfer, an Advanced Cardiac Life Support (ACLS) trained emergency nurse with a monitor is present to handle the situation. However, studies have shown that the likelihood of adverse events occurring during the transfer of stable telemetry patients is minimal.[2] The benefit of the nurse transporting 1 telemetry patient must be balanced against the risks and needs of multiple patients left behind in the emergency department.[3] Some hospitals are developing protocols that determine when it is safe to remove a patient from telemetry for transport.[4] Others are focused on ensuring that telemetry is limited to those who truly need it.[5,6]

Our objectives were to conduct an overall assessment of the patients we transported with telemetry on admission including (1) life-threatening events during transport by severity of cardiac diagnosis, (2) the time duration the nurse was absent from the emergency department, and (3) acuity of the patients remaining in the emergency department. We wanted to explore the potential benefits and drawbacks of registered nurse (RN) transport of telemetry patients (Figure 1).

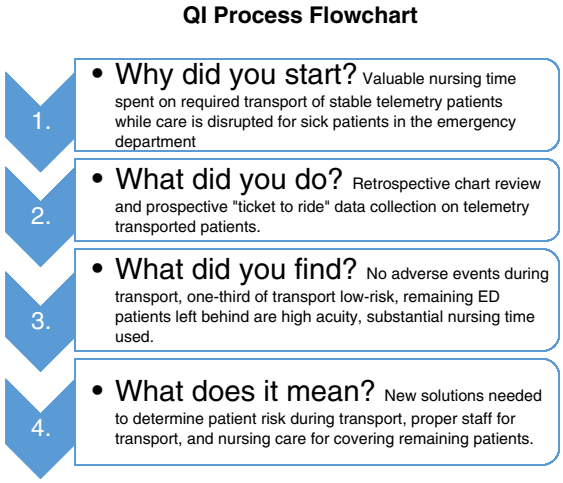

FIGURE 1
Quality improvement process flowchart using Squire's guidelines.

Methods

This 2-part descriptive study was conducted in a suburban 80-bed adult emergency department accounting for approximately 86,000 annual visits. Our facility is a Magnet not-for-profit hospital that has 650 inpatient beds located in the Southeastern United States. The ED team is comprised of approximately 170 emergency nurses and 70 ED technicians, many of whom are paramedics. The study was planned by our ED Research/Advancement Committee. Institutional Review Board (IRB) approval was obtained at our study site prior to implementation.

PART 1: RETROSPECTIVE STUDY

The retrospective chart review was based on 960 patients requiring telemetry who were admitted to the intensive care unit (ICU), step-down, or telemetry units in November 2012. Our ED Research Committee members used the list of telemetry patients provided by our information technology department and reviewed a total of 330 electronic patient records (34%). Chart selection was determined by reviewing the 960 cases in sequential order, including the first 105 records in each of the three 2004 American Heart Association (AHA) Practice Standards for Electrocardiographic Monitoring in Hospital Settings categories.[7] The sample size was determined based on a power analysis to detect differences in adverse events by AHA classification with a power of 0.80, alpha 0.05, and effect size 0.03.[9] We recorded the "reason for telemetry" order, AHA classification, age, sex, Emergency Severity Index (ESI) level, admission diagnosis, and any adverse event occurring during transport or within 15 minutes of arrival to a telemetry unit. We defined adverse events as *serious changes*, such as acute altered mental status, lethal cardiac arrhythmias, sudden onset of chest pain, syncopal episode, or major change in vital signs or oxygen saturation, including "Code Blue" (cardiac arrest) or "Code Rescue" (clinical deterioration).

PART 2: PROSPECTIVE STUDY

The second part of our study investigated the amount of time nurses spend transporting these patients to their admitted rooms and collected data on their assigned patients remaining in the department. We conducted the prospective study over a 3-week period. Our hospital policy required all patients admitted with telemetry orders to have constant monitoring for the first 24 hours. Emergency patients admitted to telemetry, step-down, or ICU departments were connected to a portable monitor/