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Implementing Quality into Practice: Nurse Driven Protocol to Reduce Unnecessary Telemetry Use

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Executive Summary

Introduction of the Problem

Healthcare costs in the United States are growing at an unsustainable rate. Approximately one in three healthcare dollars, or 30% of healthcare costs, are spent on wasted care; care that is potentially avoidable, and care that would not negatively affect the quality of care if omitted. To address growing costs and associated waste, providers are being challenged to become stewards of limited healthcare resources and provide high value care.

In the inpatient setting, high value care has been applied to the use of continuous telemetry monitoring. As part of the American Board of Internal Medicine's Choosing Wisely initiative, the Society of Hospital Medicine issued the recommendation to reduce unnecessary use of continuous telemetry monitoring outside of the intensive care unit (ICU). Yeow et al. (2018) reported that approximately 43% of patients on continuous telemetry in the non-ICU inpatient setting are monitored despite not having a recommended indication for continuous monitoring. Outside of its primary purpose continuous telemetry monitoring rarely positively impacts clinical decision making or patient outcomes and overuse can lead to unnecessary and costly diagnostic work-ups, cause alarm fatigue, lead to emergency department congestion due to delays in inpatient transfer, and increase institutional financial burden. Implementation of a nurse driven evidenced based practice protocol for discontinuation of continuous telemetry monitoring may reduce the inappropriate telemetry use among adult patients hospitalized outside of the ICU.

Literature Review

Use of continuous telemetry monitoring in the inpatient setting has become routine practice despite lack of level one evidence to support its use. Any available evidence on continuous telemetry monitoring is retrospective. The American Heart Association practice

standards, based solely on retrospective studies and expert opinion, have consistently been used in the literature to define appropriate versus inappropriate telemetry use.

Literature on nurse driven telemetry discontinuation protocols is limited but the available evidence has suggested that such protocols can be effective. Perrin et al. (2016) developed and implemented nurse managed telemetry discontinuation protocol on a 15-bed adult medical acute care unit and reported a 75% decrease in the likelihood of remaining on telemetry until discharge as well as a mean decrease of 25 hours of telemetry monitor use. Zadvinskis, Schweitzer, Murry, and Wood (2018) evaluated the effectiveness of a charge nurse led evidence based practice team titled “Tele Talks” on two cardiology inpatient medical units. The results demonstrated removal 77 monitors and reception of 74 time-sensitive orders during that time, estimated savings of \$6,347 in just 30 days for two nursing units.

In evaluating the effectiveness of interventions to reduce unnecessary telemetry use, it is important to note that the literature has shown these intervention to not only be effective but also safe. Consistent with previously discussed research findings, Xie et al. (2018) retrospectively analyzed 230 rapid response teams and code events at a tertiary care center during the post-intervention phase of a project designed to reduce unnecessary telemetry use. The results demonstrated no significant difference in adverse events during the intervention and post-intervention period.

Methodology

This project was a quality improvement project designed to implement a nurse driven evidenced based practice protocol for discontinuation of continuous telemetry in order to reduce the unnecessary continuous telemetry use among adult patients hospitalized outside of the ICU. The target population was adult patients admitted to the project site with a provider order for

continuous telemetry monitoring at or exceeding 48 hours. The principal investigator was given permission from the Vice President of Medical Affairs, Vice President of Clinical Services, and the unit Director. The Institutional Review Board at Southern Illinois University at Edwardsville and Sarah Bush Lincoln Health Center both approved this project prior to project implementation.

A telemetry discontinuation protocol was developed by an interdisciplinary team that included three physicians, one advanced practice registered nurse, and three registered nurses. The protocol was applied by unit charge nurses to patients who had an order for continuous telemetry at or exceeding 48 hours to determine if a patient was eligible for discontinuation without requiring consultation with the ordering provider. Data was collected by unit charge nurses during project implementation and then calculated post-intervention. The primary outcome measured was total number of telemetry monitors discontinued during the 90-day project period.

Evaluation

In the 90-day project period, the protocol was applied on 73 days; no data was collected on days when protocol was not used. The total number of patients with orders for continuous telemetry on the unit was 973. The total number of patients meeting inclusion criteria was 318. Using the nurse driven protocol for removal, a total of 45 telemetry monitors were discontinued without requiring consultation with the ordering provider. Based on the estimated average cost of \$82.44 per day (Benjamin, Klugan, Luckmann, & Fairchild, 2013) and average dedicated nurse time of 20 minutes per patient per shift (Chen, Park, Young, Chalikonda, Laothamatas, & Diemer, 2018), the net savings was \$3,709.80 and 30 hours of nurse time. There were zero codes blues and five rapid response team activations in the 90 days prior to the project period and zero

code blues and three rapid response team activations during the 90 day project period. The conclusion was that a nurse driven telemetry discontinuation protocol was effective in decreasing unnecessary telemetry use without increasing patient harm.

Impact on Practice

Overutilization and unnecessary use of continuous telemetry monitoring in the inpatient setting is a target of implementing high value care in hospital medicine. This project focused the implementation of an evidenced based nurse driven protocol for telemetry discontinuation in adult patients hospitalized outside of the ICU. The protocol was effective in reducing institutional financial burden and reducing nurse related telemetry tasks. In addition, the protocol was successfully applied without requiring additional provider input and without increasing patient harm.

Conclusion

Given the focus in healthcare on high the value care intended to improve health delivery and eliminate wasteful practices, healthcare organizations are being forced to review current practices and reduce unnecessary costs. One area of focus in the inpatient setting is to reduce unnecessary use of continuous telemetry monitoring in adult patients hospitalized outside of the ICU. This project demonstrated successful implementation of an evidence based nurse driven protocol for telemetry discontinuation on adult patients hospitalized outside of the ICU without requiring provider consultation. The results suggest that the protocol may be applied to other inpatient units within this community-based hospital.

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