Decreasing the Inappropriate Use of Telemetry in a Community Hospital

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Background/Significance

- Cardiac monitoring in the hospital setting is widely oversused
- There is poor adherence by providers to guidelines established by the American Heart Association (AHA) for the appropriate use of telemetry
- Excessive use of telemetry has led to an overabundance of distracting alarms, unnecessary testing and increased costs
- Alarm fatigue leads to potential negative consequences for patients

Purpose/Goal

- Improve patient safety by decreasing alarm fatigue and unnecessary testing
- Implement a process to decrease the use of telemetry in non-critical care patients in a community hospital

Methods

- Design: Retrospective chart review of 200 non-critically ill adult hospitalized patients and determination of appropriateness of telemetry based on established guidelines
- Intervention: Provide evidence-based education on appropriate telemetry utilization and modify the computerized provider orders to require ordering provider to choose the appropriate indication
- Analysis: Descriptive and comparative statistics of the sample, telemetry utilization rates and the proportion of inappropriately-ordered telemetry days

Abridged AHA Guidelines

- Class 1: Critical illness, cardiac arrest or cardiac surgery, Acute Coronary Syndrome, s/p pacemaker, 2nd or 3rd degree heart block with/w/o pacemaker, CHF, tachybradyarrhythmia, hypokalemia, titration of proarrhythmic drug, overdose of proarrhythmic agent
- Class 2: Post-acute MI, chest pain, syncope, stroke or TIA, risk of QT prolongation, uncomplicated ablation or cardiac catheterization
- Class 3: GI bleed, rate controlled atrial fibrillation, simple post-op

*Class 1 & 2 = Appropriate. Class 3 = Inappropriate

Results

- Total of 200 charts selected, 594 telemetry days analyzed
- Patient characteristics:
  - Pre-intervention: Gender: 52% female, 48% male
  - Avg. Age: 71.0 years
  - Length of stay: 3.4 days
  - Post-intervention: Gender: 49% female, 51% male
  - Avg. age: 66.7 years
  - Length of stay: 3.2 days
- Top 3 diagnoses: chest pain, transient ischemic attack and rapid atrial fibrillation

- Provider adherence to AHA guidelines:
  - Class 1: 40.0% adherence
  - Class 2: 55.0% adherence
  - Class 3: 25.0% adherence

- % All Non-ICU Inpatients on Telemetry:
  - Pre-intervention: 38.0%
  - Post-intervention: 28.1%

Conclusion/Discussion

- An initiative to reduce the inappropriate use of telemetry can effectively be implemented in a community hospital
- Implementation of a combined intervention of evidence-based education and a revised electronic telemetry order resulted in: 33.8% reduction of inappropriately ordered telemetry 26.1% reduction in overall telemetry days
- A force function to document the reason for telemetry from a pull-down menu in the computerized provider order entry (CPOE) system provides an effective patient safety tool
- There was no discernable change in frequency of codes or other negative outcomes following implementation
- The success of the project was bolstered by the support by administration, nursing and medicine departments, and securing buy-in from key stakeholders
- Although this project focused on the non-critical care areas of the hospital, the order revision was implemented throughout the inpatient units

Implications for Future Research

- Literature suggests that overuse spans two key areas including inappropriate initiation and continuation beyond indicated duration. This study was not optimized to evaluate appropriateness of duration of telemetry use.
- Expansion of this intervention to other areas of the hospital may result in further reductions in inappropriate telemetry use.
- Further data will need to be collected to assess sustained reduction of telemetry usage.

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