Appropriate Telemetry Utilization

STATUS
Completed

PROJECT START DATE
4/1/2015

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PROJECT VISION

Telemetry monitoring is over-utilized in non-ICU patients, rarely leads to a change in management, and has never been shown to improve outcomes. The Society of Hospitalist Medicine, in conjunction with the ABIM Choosing Wisely Campaign, has identified reducing the use of continuous telemetry monitoring as a major focus of its efforts to reduce waste and improve health care quality. Decreasing inappropriate telemetry use would reduce costs and minimize potential for patient harm by decreasing false positives that lead to additional monitoring or testing.

GOALS & MONITORING

1. Improve service process by reducing Telemetry ordered in inpatients in non-ICU unites at UH and HCH from 1,626 days per month to 1,138 days per month by 1/31/2018

BASELINE ANALYSIS & INVESTIGATION

To examine & document the baseline state we used:

- Gemba walk which showed telemetry orders did not require clinical indication or duration.
- Process map

To analyze the baseline state data we used:

- Descriptive statistics which showed Analysis of 100 chart reviews indicated that 51% of patients did not have indications that were consistent with AHA recommendations at the time of initiation of monitoring, and only 14% of all telemetry-days met indications for monitoring. Baseline analysis over the preceding 15 months (Jan 2014-March 2015) demonstrated a mean of 1626 telemetry days per month (SD 148) with an average duration of 3.13 days (SD 0.20). Highest utilization services are Cardiology with 24.8% of all telemetry-days, Hospitalist 22.5%, CT surgery 11.6%, Neurology 10.8% and Neurosurgery 8.0%.

To benchmark we used:

- Literature review which showed The American Heart Association has guidelines which give practitioners indications and timeframes for the appropriate use of telemetry, however, knowlege of these guidelines among providers is low. Prior studies have demonstrated that implementing a hospitalist based review system or a hard stop has reduced the use of telemetry without compromising patient safety.

Summary

See Attachments: "Telemetry Process Map and Utilization Goals" and "Telemetry Baseline Data by Unit and Service"

IMPROVEMENT DESIGN & IMPLEMENTATION

Design

Based on April 2016 data, system-wide telemetry utilization has decreased by 22.1% (1266 telemetry days compared to mean monthly telemetry days from Jan 2014-March 2015 of 1626).

We've seen a 60% decrease in total utilization of telemetry on Hospitalist service patients (116 telemetry days compared to mean monthly telemetry days from Jan 2014-March 2015 of 294). Telemetry days per 100 patient days has decreased from 9.5 per 100 patient days to a mean of 2.6 telemetry days per 100 total patient days (70% reduction) on AIMA.

Lessons Learned

Force function in EMR has not had the hospital-wide spread we initially thought it would. An educational component could be added to increase awareness of over-utilization to other service areas. Limitations within the EMR:

- We were unable to put a true force function where the order would discontinue at the pre-specified duration chosen. Instead it expires and the provider has the option to renew or discontinue the order. We suspect many are being renewed.
- Duration button has a workaround where an 'indefinite' option can be chosen. This could be a cause for continued high utilization by other groups.

Detailed data is not currently available on what order options are being chosen in the EMR. Working with Epic IT to hopefully resolve this which would allow us to better assess how we could improve our interventions.

To support the improved process we designed the following forcing functions into the workflow:

- EMR indication required (Computer/Automated Tool): Based on the AHA guidelines on indications for telemetry monitoring, physicians developed a list of clinical indications to be selected when ordering telemetry. This is required at time of order in the EMR as well as a duration for monitoring (24-72 hours). See attached screenshots of new process in 'Baseline and New Telemetry'.
- removed telemetry from order set (Visual Reminder): Telemetry Order removed from general medicine admission order set to reduce inappropriate initiation of telemetry.

To track progress and reflect on effectiveness of the improvement the team used:

- Monthly Meetings: A monthly report of telemetry days are reported by service and unit. The group results are discussed at a monthly provider meeting.