There is a lack of data evaluating the impact of hard limit implementation into intelligent infusion pump technology (IIPT). The purpose of this study was to determine if incorporation of vasopressor upper hard limits (UHL) into IIPT increases efficacy of alerts by preventing pump programming errors” Vadiei et al (2017).

Abstract:

BACKGROUND: There is a lack of data evaluating the impact of hard limit implementation into intelligent infusion pump technology (IIPT). The purpose of this study was to determine if incorporation of vasopressor upper hard limits (UHL) into IIPT increases efficacy of alerts by preventing pump programming errors.

METHODS: Retrospective review from five hospitals within a single healthcare network between April 1, 2013 and May 31, 2014. A total of 65,680 vasopressor data entries were evaluated; 19,377 prior to hard limit implementation and 46,303 after hard limit implementation. The primary outcome was the percent of effective alerts. The secondary outcome was the proportional dose increase from the soft limit provided.

RESULTS: A reduction in alert rate occurred after incorporation of hard limits to the IIPT drug library (pre-UHL 4.7% vs. post-UHL 4.0%) with a subsequent increase in the number of errors prevented as represented by a higher effective alert rate (pre-UHL 23.0% vs. post-UHL 37.3%; p < 0.001). The proportional dose increase was significantly reduced (pre-UHL 188% ± 380%] vs. post-UHL 95% ± 128%; p < 0.001).

CONCLUSIONS: Incorporation of UHLs into IIPT in a multi-site health system with varying intensive care unit and emergency department acuity increases alert effectiveness, reduces dosing errors, and reduces the magnitude of dosing errors that reach the patient.
Reference:


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