



These findings indicate that the majority of alerts generated are bypassed by clinicians at the point of care, a symptom of alert fatigue” Marwitz et al (2019).

Abstract:

**BACKGROUND:** The Institute for Safe Medication Practices (ISMP) describes high alert medications (HAM) as medications that represent a heightened risk of patient harm when used in error. IV smart pumps with dose error reduction systems (DERS) were created to help address medication administration errors. Compliance with DERS provides a measure of how accurately a hospital uses smart pump technology to reduce IV medication error.

**OBJECTIVE:** The primary purpose of this research was to use the REMEDI dataset, an aggregate, multi-hospital database inclusive of smart pump analytics, to improve the current understanding of clinical practices for IV HAM administration.

**METHODS:** Descriptive analyses and analysis of variance (ANOVA) were used to test for differences in the mean DERS alert override rate, and mean DERS alert override to reprogram ratio between non-HAM and HAM overall, by hospital system, and by pump type.

**RESULTS:** High mean override rates for non-HAM (73.8%) and HAM (75.8%) and high override to reprogram ratios for both non-HAM (7.30) and HAM (9.92) were seen. No significant differences were found in override rates ( $p = 0.23$ ) and override to reprogram ratios

( $p = 0.06$ ) between non-HAM and HAM. By hospital system, significant variability in override rates and override to reprogram ratios were seen. By pump type, there were no significant differences in the mean override rates (Baxter:  $p = 0.09$ ; BD  $p = 0.34$ ; ICU Medical  $p = 0.18$ ) and the mean override to reprogram ratios (Baxter  $p = 0.84$ ; BD  $p = 0.03$ ; ICU Medical  $p = 0.63$ ) between non-HAM and HAM.

**CONCLUSIONS:** These findings indicate that the majority of alerts generated are bypassed by clinicians at the point of care, a symptom of alert fatigue. Given the potential for significant patient harm with HAM and the high DERS alert override rates that routinely occur during IV medication administration, this study provides further support for clinician-driven IV smart pump innovation to improve alert fatigue.

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### Reference:

Marwitz, K.K., Giuliano, K.K., Su, W.T., Degnan, D., Zink, R.J. and DeLaurentis, P. (2019) High-alert medication administration and intravenous smart pumps: A descriptive analysis of clinical practice. *Research in Social & Administrative Pharmacy*. February 22nd. .

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