Although smart infusion pumps are intended to prevent medication errors by alerting users about doses that exceed set thresholds, a large number of clinically insignificant alarms and alerts create the potential for alert and alarm fatigue” Shah et al (2018).

Abstract:

Although smart infusion pumps are intended to prevent medication errors by alerting users about doses that exceed set thresholds, a large number of clinically insignificant alarms and alerts create the potential for alert and alarm fatigue. We searched the PubMed, Scopus, and Cumulative Index to Nursing and Allied Health Literature (CINAHL) databases for peer-reviewed literature (January 1, 2004-August 31, 2017) on managing smart pump alerts, alarms, and related fatigue. Twenty-nine articles that met the inclusion criteria were reviewed and organized into themes. Smart pumps give users two types of signals: alarms that indicate mechanical issues such as occlusion, air in the line, or low battery; and clinical alarms that indicate that a programmed dose exceeds a predefined safety limit. Mechanical alarms occur with greater frequency than clinical alerts, but alarms and alerts vary widely by pump model, patient population, time of day, month, and type of drug. Several causes of clinically insignificant alerts and alarms may be actionable, and strategies proposed in the literature include development of a multidisciplinary team to oversee the quality improvement effort with involvement of end users, standardization of medication administration practices, widening of drug limit library thresholds when clinically appropriate, maintaining up-to-date drug limit libraries, and interoperability. Whereas many strategies have been proposed, and case studies have been reported, none have been rigorously evaluated. In addition, more research is needed related to managing occlusion and air-in-line alarms, especially for complicated infusions. Future work should focus on the evaluation of specific and replicable alert and alarm reduction strategies with a greater emphasis on quantitative metrics.

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