**Standardization and optimization of epidural infusion concentrations to reduce waste and improve operational efficiency**

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**Background:** Despite national recommendations to standardize infusion concentrations, there is still minimal guidance on institution specific strategies and outcomes related to epidural infusion concentration standardization.

**Objective:** The purpose of this research project is to identify the optimal drug concentration for use in adult epidural infusions and assess the impact on operational efficiency and overall drug and fluid utilization if this concentration is used. The secondary objective is to analyze the impact of standardization on overall costs.

**Methods:** This is a retrospective data analysis at a large academic medical center in North Carolina. The two data sources include smart infusion pumps and the electronic medical record. Upon the completion of data collection, a previously validated tool known as the VERB analysis will be applied to identify standard epidural concentrations that optimize supply and resource utilization (VERB: drug vial size, number of nursing bag exchanges, rate of administration, base fluid bag volume).

**Hypothesized Outcomes:** If the proposed objectives are achieved, we hypothesize that the identification of standardized and optimized drug concentrations for use in adult epidural infusions will reduce drug and fluid waste. This reduction in pharmaceutical waste may subsequently lead to cost savings and minimization of narcotic diversion opportunities. Additionally, standardization within electronic medical record order sets and smart pump infusion drug libraries will streamline operational workflows for all disciplines involved in the ordering, preparation, and administration of epidural infusions.

**Conclusion:** Previous research suggests that health care institutions may already be inherently using "standardized" infusion concentrations. Conducting a thorough analysis of institution specific usage data may reveal opportunities for drug concentration standardization, pharmaceutical waste reduction, and enhanced operational efficiencies across the medication use process. A desirable downstream benefit of these efforts is an improvement in patient safety. Additional considerations for selecting standardized infusion concentrations include drug and compound stability, compatibility, preferred infusion device (syringe or volumetric pump), commercially available products, and existing clinical practices.