

Improving utilization of dose error reduction systems by standardizing smart pump data sets across a healthcare system

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Objectives

- Identify barriers to using dose error reduction systems (DERS)
- Identify challenges associated with using one standard data set across a variety of hospitals
- Identify the benefits of centralized management of DERS

ISMP Best Practice 8:

Programmable Infusion Pump with DERS

- a) Administer medication infusions via a programmable infusion pump utilizing dose error-reduction systems (DERS).
 - b) Maintain a 95% or greater compliance rate for the use of DERS.
 - c) Monitor compliance with use of smart pump DERS on a monthly basis.
 - d) If your organization allows for the administration of an IV bolus or a loading dose from a continuous medication infusion, use a smart pump that allows programming of the bolus (or loading dose) and continuous infusion rate with separate limits for each.
- Allocate resources for ongoing maintenance, updating, and testing of the software and drug library for all smart infusion pumps.
 - Ensure drug library content is consistent with the drug information and nomenclature (e.g., drug name, dosing units, dosing rate) in the EHR.
 - Plan for the implementation of bi-directional (i.e., auto-programming and auto-documentation) smart infusion pump interoperability with the electronic health record.

Getting started

- 13 separate data sets
 - Adult and Pediatric
- 5 – 12 profiles in each data set
- Variable updating frequencies
- Infusion pumps move with patients on transfer

Barriers to DERS utilization

- Front line confidence in the DERS
 - Incorrect concentrations
 - Missing drugs
 - Incorrect limits/excessive overrides
- Inconsistent maintenance
 - New additions
 - Updates as utilization changes
 - Doesn't match EHR

Process

- Smartpump Maintenance Team
 - Centralized/Standard reporting of issues
- Align with EMR updates
- Routine updates:
 - Monthly
 - Time sensitive
- Integrated with Medication Safety Team

DERS Utilization

- 13 hospitals accounting for > 900,000 infusions quarterly
 - Standard data set implemented between May & October 2019

	2019 Q1	2020 Q4
DERS Utilization	72%	81.2%
Range	50.7 – 93.2%	53.4 – 93%

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