

Boston Children's Hospital: Our Journey to Smarter Infusion Pumps

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Introduction

Boston Children's Hospital (BCH) identified a need for new infusion pumps and took advantage of the opportunity to implement smart pumps. Historically, BCH has utilized IV and PCA Infusion Pumps from several different vendors to give patients IV medications and fluids depending on the type of therapy. The multi-vendor pump strategy was challenging for Clinical and BioMedical staff and was recognized as a potential patient safety risk. Transitioning to a single vendor pump system provided a straighter path to future pump integration within the Electronic Medical Record (EMR) and standardized the clinician's workflow; which in turn lends itself to increase patient safety and future integration.

Method

A multi-disciplinary team was formed with BioMed, Pharmacy, Nursing and ISD to decide upon infusion pumps "must haves." Decision on which infusion pump would be used throughout the pilot was made after a house wide pump fair. After creating and deploying a pilot "pump library;" a pilot was held for 1 week that took place in various locations throughout BCH; including the Operating Rooms, Cardiac Intensive Care Unit, Neonatal Intensive Care Unit, 2 Inpatient Surgical Floors and Oncology Floors. After consensus to transition throughout the house to these new pumps; design was developed collaboratively by Nursing, Pharmacy and Anesthesia. Members of the project team, and subject matter experts reviewed the proposed library in depth and came to consensus for all decisions inclusion of configuration settings and overall medication library design. ISD teams of Networking and Network Operating Systems helped with the creation, maintenance and implementation of servers that were needed for wirelessly maintaining the libraries on the BCH network and on the pumps. The "train the trainer" approach was used for education of clinicians that would need to be trained on the infusion pumps. Multiple team members came together for implementation day. Each patient received their specific pump configuration patient by patient.

Results

Each patient was delivered infusion pumps specially to replace their existing set ups. In addition, new pump tubing and accessories were delivered to each Code Cart. Vendor representatives were also on site to help with implementation, however only BCH Nurses and Clinicians were permitted to exchange and program the pumps for each patient. 95% of all inpatients had been transitioned to new infusion pumps by completion of Day 1. By Day 5, all patients had been transitioned over to the new pump system. Extremely careful planning and solid team work among multiple teams resulted in a successful conversion.

Discussion

Understand, document, communicate and learn Nursing and Anesthesia workflows. Learn and try to understand IT infrastructure of Servers and Networking. Next steps for us includes Infusion Management! Seamless flow of information from the order in the EMR-> Infusion Pump for Auto Programming-> with information flowing back to the EMR for viewing and documentation in the patients record. Bidirectional, closed loop medication administration using BCMA Wireless Scanning. Ability to associate from patient -> device->order and medication ingredient.

References:

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