Preventing Accidental Infusions in Babies
The Johns Hopkins Hospital

Program/Project Description.
In the NICU, there are a high percentage of infants receiving both IV fluids (parenteral) and enteral nutrition through identical or compatible administration sets. As noted in the Enteral Feeding Misconnections: A Consortium Position Statement published in the Joint Commission Journal on Quality and Patient Safety, the reported cases of tubing misconnections are not large in number; however, they have the potential for serious patient harm including embolus, sepsis, or even death. Our goal was to identify an appropriate enteral feeding system and pump and implement the product change within the NICU. The ideal system started with the pump and ended with the NG tube that entered the baby. Knowing that less manipulation leads to potentially less contamination, the infection control benefits were also considered when evaluating a possible solution.

Process.
The process included evaluating all potential enteral feeding systems for neonates and pediatric patients on the market through vendor interview and sample evaluation. Each system was evaluated for: non-compatibility with our current IV system used in the NICU, being user friendly with a limited number of pieces, infection control concerns, color, cost, and not needing to be modified to be used in various clinical situations. Feedback as well as specific recommendations for product changes were provided to the vendors. Other hospitals were also contacted for any valuable feedback concerning specific enteral systems and pumps. A pilot of the potential enteral feeding system was conducted in a limited number of patients for approximately one month while soliciting staff feedback.

Solution.
An enteral feeding system was chosen that included an enteral syringe, extension set, and NG tube that did not connect to our current IV system and met the additional criteria. A syringe pump specifically programmed and labeled enteral for use with the enteral syringes was also chosen. The enteral feeding system and pump were introduced on a specific day and around the clock in-services were provided to staff on that day and the days that followed. Within a few hours, all patients in the NICU had converted to using the new enteral system and pump. A written form of the in-service was provided and posted for staff.

Measurable Outcomes.
With one week into the product change and changes in practice, no immediate results can be provided. The end result is that this NICU has eliminated the possibility for a misconnection between an IV and an enteral feeding. Therefore, we expect a target number of zero accidental infusions.

Sustainability.
With a product replacement, the old products have been completely removed from this unit. Enteral products that were IV compatible are no longer a choice in stock. From this point, it remains important for other units that receive our patients (procedure areas, ORs, receiving units) to be aware of the product change in order to continue to provide safe administration of enteral products. We are working with these units/areas to obtain the appropriate stock items.

Role of Collaboration and Leadership.
Collaboration existed across many departments: NICU Nursing, Pediatric Nursing, Neonatology and NICU Medical Director, Dept of Pediatric Nutrition, Hospital Epidemiology and Infection Control, Johns Hopkins Supply Chain Services. Organizational leadership was actively engaged and came at a crucial moment from the Chief of Pediatrics and Pediatrics Asst. Administrator in securing new enteral-only feeding pumps that were outside normal capital expenses.

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