

Improving Medication Safety in the NICU

Shelley B. Thibeau, RNC

Ochsner Health System

Margaret T. Pizzitola

Problem: According to the Institute of Medicine, two out of every one hundred admissions experience a preventable adverse drug event. The pediatric population is especially vulnerable to medication errors due to variability in weight, lack of standardization of medication dilutions, and lack of awareness of medication safety practices. A comprehensive approach to improving medication safety in pediatric patients requires changes in organizational culture and medication administration practices

Evidence: An electronic search of medication errors stored in a standardized occurrence reporting system was completed. Collected data included medication errors in the NICU categorized under the four processes: prescription, transcription, dispensing, and administration. Flow mapping of existing organizational practices identified system weaknesses in medication policies.

Strategy: Rapid cycles for improvement using the PDSA model were used to implement best practices identified during a two year Vermont Oxford Network collaborative.

Practice change: Practice changes resulting from the project included: improving organizational safety culture, standardization of medication concentrations and revision in processes for prescribing and verifying medications.

Evaluation: Medication errors and “near misses” were identified over time using Run Charts to reflect impact of practice changes on overall error rates.

Results: A total of 11,753 patient days were used to determine results. Reporting of “near misses” increased from 0.7 to 21.91/1000 pt days. Medication errors reaching the patient decreased from baseline at peak of increased reporting from 5.27/1000pt days to 3.6/1000 pt days.

Recommendations: Lessons learned reiterate that organizational safety cultures are needed to increase awareness of the need for medication safety and can impact buy-in for needed practice changes. A multidisciplinary approach will ensure system changes adequately address organizational processes in medication delivery systems. The conclusions expressed are those of the authors and not necessarily those of the participants in the NIC/Q 2005 Collaborative or the Vermont Oxford Network.

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