

Implementation of a Dextrose Titration Protocol and Order Set in the Neonatal Intensive Care Unit to Reduce Practice Variation and Improve Nurse Autonomy



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PURPOSE

The aim of this project was the implementation of a standardized process to facilitate a more efficient titration of IV dextrose for term and late pre-term patients admitted to the Neonatal Intensive Care Unit (NICU) for treatment of hypoglycemia thereby decreasing the mean duration from the time glucose levels are obtained until the rate of IV fluids is modified by 40% (from 52.3 minutes to 20.9 minutes). The secondary aim was to improve nursing and provider satisfaction by providing more autonomy and limiting the unnecessary steps of the weaning process.

BACKGROUND

The project was implemented in a 42 bed NICU in a large academic medical facility in the Texas Medical Center, Houston, Texas.

METHODOLOGY

The new guideline was implemented using the plan-do-study-act (PDSA) methodology. Pre and post survey data analysis conducted using the Wilcoxon rank sum test. Analysis of the baseline and pilot data from the intervention was conducted using the 2-sample t-test.

RESULTS

The pre-intervention survey showed that 49.6% of the respondents were dissatisfied or very dissatisfied with the dextrose weaning protocol and 88.9% agreed/strongly agreed that a weaning protocol would improve the workflow, 81.4% agreed/strongly agreed that it would provide more autonomy and 93.4% agreed/strongly agreed that it would decrease delays in the weaning process. The successful pilot of the protocol and associated order set resulted in reductions in the mean patient average time from 52.3 minutes pre-intervention compared to 21.9 minutes post-intervention which represents a statistically significant reduction as analyzed using the 2-sample t-test with a p-value of 0.015. The mean patient time standard deviation was 38.1 minutes pre-intervention compared to 27.1 minutes post-intervention which is not a statistically significant difference when analyzed using the 2-sample t-test with a p-value of 0.194.

IMPLICATIONS

The successful implementation of this protocol and order set resulted in improved consistency in practice due to limited variation. The pilot data shows a significant reduction in the average time from blood glucose measurement and intervention demonstrating more effective and efficient titrations. No adverse events such, inappropriate dose adjustments were identified. There was increased nursing satisfaction with the weaning process and feelings of autonomy.