“The purpose of this quality improvement project was to develop an algorithm and assess its effectiveness in reducing PIV infiltrations in neonates.” Wilder et al (2014).

Reference:

Wilder, K.A., Kuehn, S.C. and Moore, J.E. (2014) Peripheral Intravenous and Central Catheter Algorithm: A Proactive Quality Initiative. Advances in Neonatal Care. October 13th. .

IV infiltration algorithm developed to improve neonatal infusion therapy http://ctt.ec/gj3ZA+ @ivteam #ivteam

Click To Tweet

Abstract:

PURPOSE: Peripheral intravenous (PIV) infiltrations causing tissue damage is a global issue surrounded by situations that make vascular access decisions difficult. The purpose of this quality improvement project was to develop an algorithm and assess its effectiveness in reducing PIV infiltrations in neonates.

SUBJECTS: The targeted subjects were all infants in our neonatal intensive care unit (NICU) with a PIV catheter.

DESIGN: We completed a retrospective chart review of the electronic medical record to collect 4th quarter 2012 baseline data. Following adoption of the algorithm, we also performed a daily manual count of all PIV catheters in the 1st and 2nd quarters 2013.

METHODS: Daily PIV days were defined as follows: 1 patient with a PIV catheter equals 1 PIV day. An infant with 2 PIV catheters in place was counted as 2 PIV days. Our rate of infiltration or tissue damage was determined by counting the number of events and dividing by the number of PIV days. The rate of infiltration or tissue damage was reported as the number of events per 100 PIV days. The number of infiltrations and PIV catheters was collected from the electronic medical record and also verified manually by daily assessment after adoption of the algorithm.

OUR MAIN OBJECTIVES: To reduce the rate of PIV infiltrations leading to grade 4 infiltration and tissue damage by at least 30% in the NICU population.

OUTCOME MEASURES: Incidence of PIV infiltrations/100 catheter days.

PRINCIPAL RESULTS: The baseline rate for total infiltrations increased slightly from 5.4 to 5.68/100 PIV days (P = .397) for the NICU. We attributed this increase to heightened awareness and better reporting. Grade 4 infiltrations decreased from 2.8 to 0.83/100 PIV catheter days (P = .00021) after the algorithm was implemented. Tissue damage also decreased from 0.68 to 0.3/100 PIV days (P = .11). Statistical analysis used the Fisher exact test and reported as statistically significant at P < .05.

CONCLUSIONS: Our findings suggest that utilization of our standardized decision pathway was instrumental in providing guidance for problem solving related to vascular access decisions. We feel this contributed to the overall reduction in grade 4 intravenous infiltration and tissue damage rates. Grade 4 infiltration reductions were highly statistically significant (P = .00021).

Thank you to our partners for supporting IVTEAM