NICU Safety-It's no accident!

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UnityPoint Health Meriter

Statement of Problem

Patient safety is critical to providing effective and efficient care in the NICU. Medical errors occur in 57% of infants born 24 to 27 weeks, compared to 3% of hospitalized term infants. Adverse events include nosocomial infections, intravenous catheter infiltrates, unintended extubations, intracranial hemorrhages, acute renal failure, respiratory arrest and hypotension. 10% of adverse events result in death and 23% result in permanent harm.

Setting

Unity Point Health-Meriter Hospital is a 42 bed level III NICU, with approximately 700 admissions a year, 20-30 (3.5%) of which are ELBW infants. Average daily census is approximately 25. There are approximately 4800 deliveries per year.

Objective

The objective of the NICU safety plan is to provide effective and safe care for all of our neonates by promoting a culture of safety based on open communication and teamwork and instituting principles of highly reliable organizations to ultimately decrease the incidence of adverse events. In the next twelve months, specific goals include the following:

1. Decrease adverse events in infants < 29 weeks at birth by 20%, from 2.65 per patient to 2.1 per patient.

2. Increase the percent of survey participants selecting "Excellent" Overall Safety Grade in the NICU by 20% (from 46.8% to 56.2%) in the 2021 Safety Culture Survey.

Measurement

Baseline assessments were performed which focused on teamwork, communication and safety climate in the NICU because these are directly correlated with the incidence of adverse events using the Overall Patient Safety Grade Survey. A NICU Focused Trigger Tool developed by IHI was used to identify adverse events.

Interventions

1. Implemented Random Safety Audits (RSA) on 2/25/2020 to systematically audit a subset of error prone points, thereby permitting coverage of complex systems over time. The RSAs consisted of a checklist of questions or review topics to assure a systematic approach to infection prevention. Feedback was immediate and reinforced "Culture of Safety" principles. These were done daily during and after rounds. Data was based on staff responses and chart review.

2. Utilization of the Line of Operations Safety Audit (LOSA) which is an observational methodology to record errors, threats to safety and behaviors used to prevent and manage errors. These were done during nine mock code simulations and feedback immediately shared with participants.

3. Implementation of brief multidisciplinary huddles each shift to discuss safety concerns, anticipated admissions and discharges. These started on 4/5/2020.

Results

Figure 1: Pareto Chart of Adverse Events in infants ≤ 29 weeks in 2019

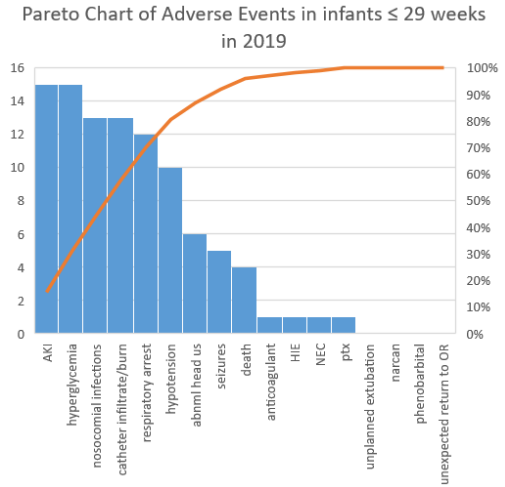


Figure 2: 2019 NICU Overall Patient Safety Grade Results

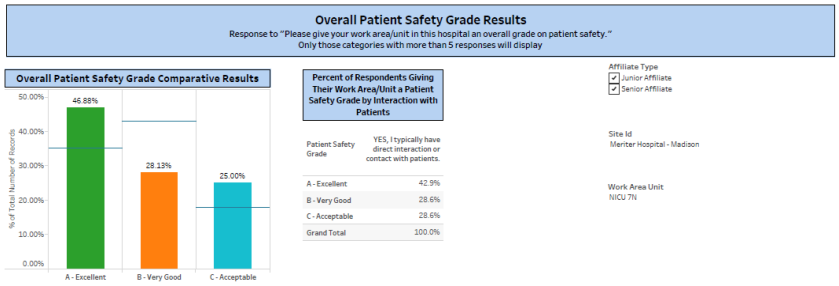
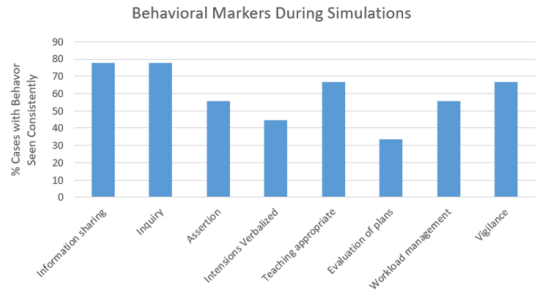


Figure 3: Behavioral Markers Observed during Simulations



Conclusions

Repeat safety assessments will be administered to all NICU staff after a twelve-month intervention. RSAs and LOSAs are ongoing tools utilized to track and provide real time feedback. This multi-faceted safety plan will improve the safety and quality of healthcare delivered to each neonate in the NICU.