Improving Medication Safety in the NICU
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“Be the change you wish to see in the world.”

(Ghandi)

Objectives

1. List the most common medication errors in the NICU
2. State three reasons why the NICU patient is at an increased risk for medication errors as compared to other patients in the hospital.
3. Describe the development of a medication safety program in the NICU

“Despite our best efforts, medication errors happen every day, to every kind of person, in every health care setting.”

(Michael R. Cohen, Institute for Safe Medication Practices”)

I. Adopt A Philosophy of Learning

A. Medication safety in the NICU includes a philosophy of learning about medication hazards from many sources.

1. Learning from the larger context of medication errors from other hospitals, specialties, and organizations and evaluating the applicability to the NICU.
   a. Betsy Lehman, Dana Farber Cancer Institute, 1995
   b. Josie King, Johns Hopkins, 2001
   c. Ben Kolb, Martin Memorial hospital, 2002

2. Learning from medication errors that have occurred in other NICU’s and evaluating risk within your own NICU.
   b. Indiana, 2006: heparin overdose
c. California, 2007: heparin overdose
d. Texas, 2008: heparin overdose

B. Despite efforts to the contrary, human brains have limitations
   1. Multitasking is a myth
   2. We need to understand the true limits of our brain power; learning about how the brain works can make you safer!

   "We cannot fix what we do not know is wrong."
   (author unknown)

II. To Be Better We Must Understand the Extent of the Problem
   A. Institute of Medicine Report, published in 2000 identified the extent of patient deaths resulting from preventable medical errors.
   B. A recent report identifies that 1 in 20 hospitalized patients will receive the wrong medication, 3.5 million will get an infection from a health care provider who failed to wash hands prior to patient contact.
   C. The JCAHO identifies communication as the root cause of the majority of sentinel events reported over the last 10 years.
   D. Patient safety events are common in the NICU with over half of these events considered preventable. NICU’s are considered at-risk environments due to both the patient population and the environment in which care is delivered:
      1. Intensive care unit with complex work environments and communication strategies
      2. In some cases, patients’ beds are moved to meet changing acuity
      3. Patients with changing and fragile biological systems
      4. Non-verbal patient population resulting in a patient that does not participate in the identification process, care processes
      5. Patients with long-term hospital stay resulting in increased risk of exposure to patient safety events
      6. Patients may not wear ID bands due to fragile skin or ID bands do not stay in place
E. The most common errors reported in the NICU vary and include medication errors, errors in diagnosis, procedural errors, and errors in identification.

1. Medication errors are the most common error reported in the literature. The extent of medication errors varies in the literature with one of the highest to be 5 medication errors in 91 medication orders per 100 admissions.

2. The most common medication error in the NICU also varies. Dosing errors during all phases of the medication use process.

3. Those pediatric patients experiencing a medication error are more likely to suffer harm from that error. The NICU is considered one of the highest risk areas for medication errors as the patients experience the most errors and have the potential for serious side effects from those errors.

4. Medication administration in the NICU is risky as medications used are considered off-label, often dispensed in adult-strengths requiring dilution, dosing is per Kg of weight, dosing can be complex.

5. “The smaller the patient, the greater the risk”

F. What are the most common safety events in your NICU?

“Never doubt that a small group of thoughtful citizens can change the world: indeed it’s the only thing that ever has.”

(Margaret Mead)

III. Improving Medication Safety Means: Reporting Our Errors and Implementing Solutions

A. Health care providers who know and understand the risks within their work environment are safer as they are more likely to employ behaviors to mitigate risk.

B. Barriers to reporting include: organizational silence, lack of belief that reporting will change the “status quo”, fear of retaliation, cumbersome reporting system, culture of the unit.

C. Encouraging reporting of safety events must be followed by transparency. Sharing of the patient safety data with the health care providers is crucial to provide
understanding and encourage ongoing reporting.

D. Solutions to serious or ongoing patient safety events can be generated with ongoing, open discussions with health care providers involved in direct care activities.

IV. Improving Medication Safety in you NICU:

A. Look first at your own medication safety practice: is it safe?
B. Do you report the errors that occur?
C. Are you distracted during medication administration? Do you distract others?
D. Do you perform double checks prior to medication administration? Are these double checks performed completely, independently and uniformly?
E. Are you a key component to the presence or absence of a safety culture in your unit? How do you react when reminded about a missed safety step?
F. Do you know the most common medication error (or problem-prone process) in your unit (do you have situational awareness?)?
G. What is taught to the new hires in your unit?

“We are what we repeatedly do. Excellence then, is not an act but a habit”

(Aristotle)

IV. Medication Safety Means: Implementing Solutions to Reduce Adverse Events

A. Technology can improve patient safety by standardizing processes, improving efficiency and managing data. However, technology alone is not enough to make an environment highly reliable.

B. Human factors research identifies common “work arounds” that occur when technology is poorly applied or understood, or too complex to use in a busy, hospital setting.

C. Technology (physician order entry, bedside bar coding of medications, “smart” IV pumps) in concert with a health care provider knowledgeable about patient safety events can provide a robust safety event.

D. NICU’s can begin to improve medication safety by implementing: robust reporting
systems with sharing of data, standardized checklists, standardized hand-offs, safe medication practices including independent double checks, safe organization of medication room, reducing distractions, and promotion of a culture of safety. 

E. Nurses can improve their own patient safety practice by implementing the following: independent double checks of medications, reporting of patient safety events, “open” communication between staff members, reducing distractions, accountability to all safety procedures

“Knowing is not enough; we must apply. Willing is not enough; we must do.” 

(Johann Wolfgang von Goethe)

References


35. Ebright, P., Patterson, E.I., Chalko, B. et al. (2003), Understanding the complexity of registered nurses' work in acute care settings. Journal of Nursing Administration, 33, 630-638.


