Objectives

- Recall the NICU-specific risk factors associated with medication errors
- Contrast the various methods of reporting and researching medication errors including the underlying contributing factors
- Outline the components of a safety culture and the application of such culture to reduce medication errors
- List common adverse medical events associated with care of the NICU patient population
- Explain the significance of human factor engineering on the reduction in medication errors
- Describe and contrast high technological approaches being used to reduce medication errors with low technological approaches in use
- Relate the most common aspects of NICU care associated with an increased risk of iatrogenic complications
- Be aware of the most relevant findings of major studies focused on adverse events and medical errors in neonatology

Content Outline

1. What Nurses Can Do Right Now to Reduce Medication Errors in the Neonatal Intensive Care Unit
   1.1 NICU-specific risk factors associated with medication errors
   1.2 Definition of medication error with incidence and types of errors
   1.3 Methods to reduce medication errors
      1.3.1 Systems approach
      1.3.2 Technology
      1.3.3 Error reporting
         1.3.3.1 Triggers
      1.3.4 Double check of medications before administration
         1.3.4.1 Barcoding
         1.3.4.2 Other healthcare provider check
         1.3.4.3 Basic 5 Rights–Plus 4 More
      1.3.5 Culture of safety
   1.4 Role of distractions in medication errors
      1.4.1 “Sterile cockpit” concept
      1.4.2 NICU design aspects

2. Adverse Medical Events in the NICU: Epidemiology and Prevention
   2.1 Patient safety term definitions
   2.2 Pathway to patient harm
   2.3 Reliability & failure
   2.4 High-tech approaches to medication error prevention
      2.4.1 CPOE
   2.5 Low-technological approaches to medication error prevention
   2.6 Intravascular catheter complications
   2.7 Nosocomial infections
   2.8 Fatigue & human error
   2.9 Communication failures
   2.10 Workload & staffing pattern impact
   2.11 Development of a patient safety program

3. Iatrogenic Disorders in Modern Neonatology: A Focus on Safety and Quality of Care
   3.1 Definition of iatrogenia & historical background
      3.1.1 Major iatrogenic disorders during evolution of neonatology
   3.2 Types of iatrogenic disorders
   3.3 Iatrogenic complications of modern neonatal therapies
      3.3.1 Medical
      3.3.2 Medication
      3.3.3 Parenteral nutrition
      3.3.4 Invasive monitoring
      3.3.5 Central venous lines

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Neonatal Patient Safety

Content Outline continued

3.3.6 Peripherally inserted central catheter lines
3.3.7 Respiratory management
    3.3.7.1 Air leaks
    3.3.7.2 Endotracheal intubation complications
    3.3.7.3 Bronchopulmonary dysplasia
3.3.8 Retinopathy of prematurity

3.4 Prevention of neoiatrogenia
    3.4.1 IOM recommendations
    3.4.2 Neonatal intensive care quality collaborative

Reading Material Resources

This self assessment module is based on the resources listed below. A copy of each article is included with the module.

“What Nurses Can Do Right Now to Reduce Medication Errors in the Neonatal Intensive Care Unit”, Clifton-Koeppel, Robin, Newborn and Infant Nursing Review, Volume 8, No. 2, June 2008, pp. 72-82

“Adverse Medical Events in the NICU: Epidemiology and Prevention”, Morriss, Jr., Frank H., NeoReviews, Volume 9, No. 1, January 2008, pp. e8-e23

“Iatrogenic Disorders in Modern Neonatology: A Focus on Safety and Quality of Care”, Ramachandrappa, MD, Ashwin, et al., Clinics in Perinatology, No. 35, 2008, pp. 1-34