

### 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 neonatrogenia
  - 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