

Nurses should be aware of the hazards of administering bacteriostatic and hyperosmolar solutions to infants. Benzyl alcohol, a common preservative in bacteriostatic water and saline, has been shown to be toxic to newborns, and products containing this preservative should not be used to flush IV catheters, to dilute or reconstitute medications, or as an anesthetic to start IV lines. It is recommended that medications with preservative (such as benzyl alcohol) be avoided whenever possible. *Nurses must read labels carefully to detect the presence of preservatives in any medication to be administered to an infant.*

Hyperosmolar solutions present a potential danger to preterm infants. Hyperosmolar solutions given orally to infants can produce clinical, physiologic, and morphologic alterations, the most serious of which is NEC. Oral and parenteral medications should be sufficiently diluted to prevent complications related to hyperosmolality.

There has been heightened awareness of the impact of medication errors and subsequent poor outcomes for high-risk neonates. Nurses, physicians, and pharmacists must work in cooperation to implement strategies in the NICU environment to eradicate medication errors. Technology alone has not proved to be the solution; therefore, nurses must be extremely vigilant when administering medications to preterm and high-risk infants.

Developmental Outcome

Much attention has been focused on the effects of early developmental intervention on both normal and preterm infants. Infants respond to a great variety of stimuli, and the atmosphere and activities of the NICU are overstimulating. Consequently, infants in NICUs are subjected to inappropriate stimulation that can be harmful. For example, the noise level that results from monitoring equipment, alarms, and general unit activity has been correlated with the incidence of intracranial hemorrhage, especially in ELBW and VLBW infants. Personnel should reduce noise-generating activities, such as closing doors (including incubator portholes), listening to loud radios, talking loudly, and handling equipment (e.g., trash containers). [Berg \(2010\)](#) suggests monitoring sound levels in the NICU to address problem areas. Nursing care activities (such as taking vital signs, changing the infant's position,