

## Paper Session A4: Contemporary Issues in RN Staffing

### *The Associations between Nurse Education, Experience and Certification and Nurse-Patient Ratios in the NICU*

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**Purpose:** The neonatal intensive care unit (NICU) is one of the most nurse-intensive hospital settings. This is due to the high acuity care required by very low birth weight (VLBW), premature infants. Professional characteristics of nursing staff may influence how nurse-patient ratios vary according to the acuity level of infants in the NICU.

**Theoretical Framework:** From the perspective of organizational sociology the theoretical framework used in this study links the nurse's work environment to patient outcomes.

**Methods:** A prospective, observational study design was used to collect data from 70 NICU's from the Vermont Oxford Network (VON), an international quality improvement collaborative. Data were collected once per calendar on a single weekday, weeknight, or weekend shift. Shifts were randomized across sites and quarters. The dependent variable was the nurse-to-infant ratio for each unit. Independent variables were compositional features of the nursing staff, NICU level, and the hospital's ANCC certified Magnet status.

**Results:** The average nurse cared two infants but this ratio varied with acuity. The nurse-to-patient ratio ranged from the highest to lowest acuity level from 0.92 to 0.36. Almost three-fifths of the nurses in the sample had a BSN degree and greater than 5 years experience, although these percentages were higher for Level C units, which provide more complex services. One-fifth of nurses had neonatal specialty certification, but this percentage was lower in Level C units and in Magnet hospitals. The staffing ratios were similar in Magnet and non-Magnet hospitals although the Magnet hospital NICUs had higher percentages of BSN-degree and specialty certified staff.

**Conclusions and Implications:** Nurse staffing ratios are influenced by the professional background and experience of the nursing staff and the infants' acuity. Units with more Bachelor's-prepared nurses, more experienced nurses and those with neonatal certification had lower nurse-to-patient ratios, suggesting that nurses with greater education, experience and certification could more efficiently care for vulnerable premature infants.