

Pediatric Nurse Practitioners in the Neonatal ICU

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Abstract

The Comprehensive Center for Bronchopulmonary Dysplasia (CCBPD) at Nationwide Children's Hospital (NCH) in Columbus Ohio is at the forefront of care for patients with chronic lung disease as a result of prematurity. Although this unit is part of Nationwide Children's Neonatal Network, we utilize the expertise of Pediatric Nurse Practitioners, who work autonomously at the full scope of their practice. Our Advanced Practice Providers (APPs) care for infants with moderate to severe Bronchopulmonary Dysplasia from 36 weeks corrected gestational age to 2-3 years old. This presentation outlines the Chronic Care Model of the BPD unit at Nationwide Children's Hospital, and the ways that Pediatric Nurse Practitioners function as part of our larger multidisciplinary team. The aim of this presentation is to promote the proper integration of Pediatric Nurse Practitioners into Neonatal Intensive Care and to outline the ways that these providers continue to guide patient care in the BPD unit at Nationwide Children's Hospital.

Objectives

- Define Nationwide Children's Hospital (NCH) Comprehensive Center for Bronchopulmonary Dysplasia (CCBPD) Unit's Chronic Care Model.
- Discuss the impact of pediatric nurse practitioners (PNP) in the neonatal intensive care unit (NICU) at NCH.
- Describe the benefits of having a PNP as part of a large multidisciplinary NICU team.

Bronchopulmonary Dysplasia

As survival rates of extremely low birth weight and premature infants continue to rise, the incidence of BPD remains unchanged. BPD is the most common cause of late morbidity related to preterm birth. The most severe chronic cases require prolonged mechanical ventilation, as well as frequent high dose systemic steroids and long-term diuretic usage, which negatively affect growth and development. As a general guideline, for infant born at less than 36 weeks' gestation, BPD is graded based on severity according to their respiratory support needs at 36 weeks post menstrual age.

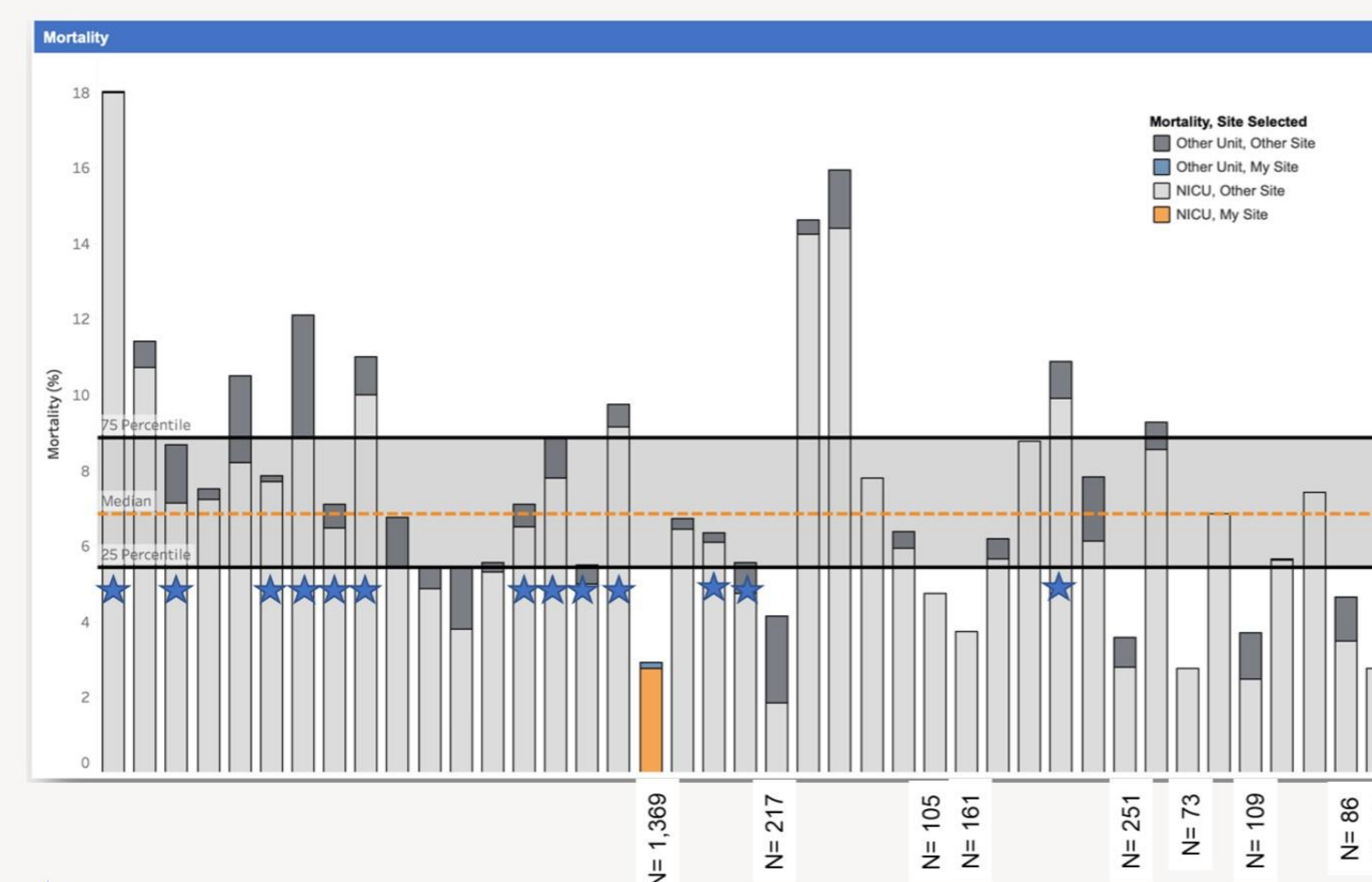
BPD Management using a Chronic Care Model

The Comprehensive Center for Bronchopulmonary Dysplasia at Nationwide Children's Hospital (NCH) is a 24-bed unit with patients from 36 weeks corrected gestational age to 2-3 years old. Management of patients with chronic severe BPD focuses on Pro Growth, Respiratory Stability and Developmental outcomes. The Multidisciplinary team is specifically trained in the care of these patients and their families. This team includes Neonatologists, Nurse Practitioners, Bedside RNs, Respiratory Therapists, Pharmacists, Physical/Occupational/Speech Therapists, Dieticians, Behavioral Psychologists, Social Workers and Care Coordination.

Outcomes and Scope Of Practice

Based on the 2019 AAP Neonatal Provider Workforce report, Pediatric Nurse Practitioners contribute to optimal NICU outcomes through advanced graduate education, national certification, and clearly defined scopes of practice, providing comprehensive assessment, diagnosis, daily clinical management, procedural care, and continuity in collaboration with neonatologists. PNPs and Neonatal Nurse Practitioners (NNPs) share foundational nurse practitioner competencies defined by the National Organization of Nurse Practitioner Faculties (NONPF), such as scientific foundations, advanced clinical judgment, quality improvement, interprofessional collaboration, systems-based practice, ethics, and independent practice. Acute care certified PNPs further build on these competencies through focused preparation in critical care physiology, invasive monitoring, and pharmacologic management across the pediatric age continuum, including neonates; when integrated into the NICU through structured orientation, competency validation, and collaborative care models, PNP-ACs enhance workforce flexibility and continuity of care while preserving the specialized role of NNPs for the most complex neonatal patients.

CCBPD Mortality



★ = centers with >400 patients

PNP's Role In The NICU

Pediatric Nurse Practitioners in the NICU at NCH treat patients from 32 weeks gestational age and older. This includes ventilator management, medication management and nutritional support. PNPs in the NICU have a wealth of knowledge regarding newborn and infant care, as well as developmental milestones and therapies to support medically complex toddlers and children.

As part of the CCBPD PNPs are trained to perform procedures independently including but not limited to; intubations, procedural sedation, arterial punctures, arterial line placement, lumbar punctures and chest tube placement.

Role Contributions to CCBPD

One of the main focuses of CCBPD is providing family centered developmental care. To meet this objective PNPs serve as a vital part of a larger multidisciplinary team. Advance practice providers also practice at the highest level, contributing to quality improvement, policy/procedure modification, case study developments and research. PNPs lead and/or participate frequently in many of the following unit-based initiatives;

- Daily Nurse Lead multidisciplinary rounds
- Practitioner lead weekly virtual rounds
- Strategic Partnership Meetings
- Monthly Journal Club
- NICU based committee leaders
- PNP lead nursing education
- Family Care Conferences
- Weekly rounds with Pulmonary Hypertension, ENT, Feeding, Cardiology and Nephrology consult teams
- Coordination of all Consult Service communication
- Admission, discharge and transfer coordination

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