Quality Caring in the Neonatal Intensive Care Unit: The Effectiveness of the Wee Care Program

Mary Coughlin, RN, MS, NNP

Introduction

Deliberate action to improve evidence-based healthcare practices through provision of consistently reliable quality care is a recognized challenge of the healthcare industry. Leaders of this movement include the Institute of Medicine (IOM), the Institute for Healthcare Improvement (IHI) and the Joint Commission (TJC). The IHI, specifically, recognizes the need to create processes that enable clinicians to reliably provide evidence-based best practices to reduce error and improve outcomes (Cherouney et al 2005). "Measurement is at the core of quality improvement" (Martin et al 2007). Consequently, initiatives that strive to impact quality care delivery must be monitored for their return on investment.

Background

Despite major technological and scientific advances, preterm infants have a significantly greater risk than their term counterparts for a variety of medical and psychological morbidities such as chronic lung disease, intraventricular hemorrhage, learning disabilities, neurosensory deficits and behavioral problems (Aylward 2005, Bhutta et al 2002, Hack 2006, Hack et al 2005). In addition to immaturity and infection, emerging evidence suggests that environmental factors such as noise, bright lights, frequent handling and painful procedures contribute to poorer outcomes for the critically ill preterm infant (Philbin 2000, Symington and Pinelli 2006, Symington and Pinelli 2002).

Developmentally Supportive Care

Developmentally supportive, family-centered care is a practice strategy employed in the neonatal intensive care unit (NICU) that recognizes the physical, psychological and emotional vulnerabilities of infants and families. This care model aims to minimize the deleterious effects of the intensive care experience on the developing infant. Developmental care has been shown to decrease the length of hospital stay and hospital costs, improve weight gain and time to full enteral feeds as well as improve neurodevelopmental scores at 9 to 12 months of age (Jacobs et al 2002, Symington and Pinelli 2006, Symington and Pinelli 2002).

Mary Coughlin is Global Clinical Services Manager, Children's Medical Ventures.

Despite these documented benefits, there has been inconsistent adoption and implementation of developmental care practices.

The Wee Care Program

The Wee Care Program (Children's Medical Ventures, Norwell, MA, USA) focuses on process improvement in the NICU specifically as it relates to developmentally supportive care practices. Synthesizing the current body of evidence-based research and utilizing adult teaching principles presented by clinically active neonatal professionals, this program facilitates the integration of developmentally supportive, family-centered care into the NICU culture. The program consists of a pre- and post-program site assessment, two leadership workshops (held before and after the educational component), the education component, and then three clinical practice follow-up visits to assess progress, practice integration and measure outcomes.

The Wee Care Program site assessment evaluates the unit's developmental care practices across four domains that research has identified as critical to developmental care practice: the admission process, the physical environment, caregiving-handling-positioning and family participation in the NICU before and after the program. Data compiled provides a comparative reference point to Wee Care sites interested in benchmarking against other Wee Care facilities as well as documenting individual unit progress. The site assessment tool was developed by William G. Cvetnic, MD, in collaboration with other Wee Care clinical consultants and has demonstrated inter-rater reliability. The measurable parameters were assigned scores of increasing value. These values correlated with idealized developmental care practices. This tool was the first of its kind and attempted to quantify developmentally supportive family-centered care practices in the NICU. To date, 60 NICUs across the United States have participated in the Wee Care Program. A convenience sample of Wee Care site data was evaluated and presented at the 48th Annual Meeting of the European Society for Paediatric Research. [The convenience sample was comprised of Wee Care sites whose data was accessible via electronic records. Paper data was incomplete and thereby excluded from the analysis.] The data revealed a statistically significant improvement in overall post program scores ($p = 9 \times 10\text{-}5$). Data was then separated across the four domains and continued to demonstrate statistical significance.

Every high-risk newborn deserves a head start towards a healthy life.

At Children's Medical Ventures, we create quality care, process improvement and consulting programs to promote the healthy development of infants at risk. Drawing on evidence-based research and utilizing adult teaching principles presented by clinically active neonatal professionals, we challenge your clinicians and NICU staff to meet the highest standards of developmental care in support of these special babies. Call us today to learn more about our Wee Care process improvement program or for a free catalog detailing our comprehensive education and e-Learning offerings.

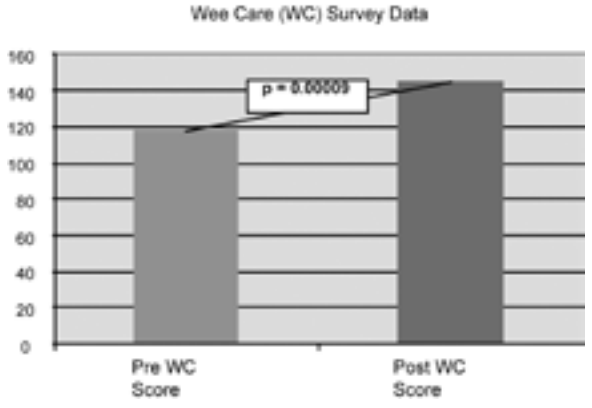
www.childmed.com

800.345.6443

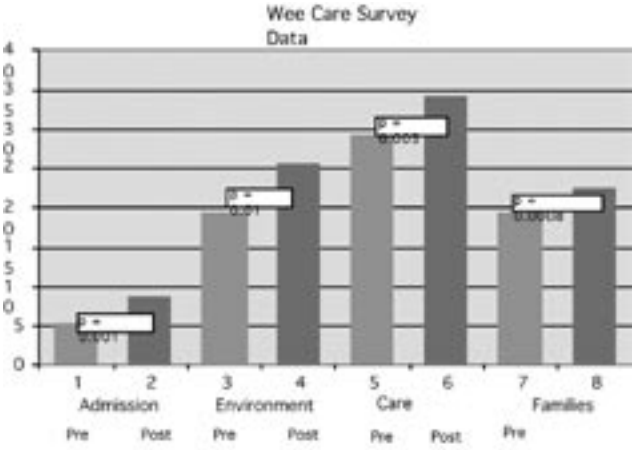
PHILIPS

Children's Medical Ventures

sense and simplicity



* The convenience sample was comprised of Wee Care sites whose data was accessible via electronic records. Paper data was incomplete and thereby excluded from the analysis.



Data was then separated across the four domains and continued to demonstrate statistical significance.

Future Direction

As global healthcare leaders acknowledge the importance of evidence-based quality care delivery in improving patient outcomes and reducing healthcare costs, organizations are challenged with operationalizing methodologies that will achieve this aim (NAS 1999, Whitfield et al. 2001, Nolan et al. 2004). Children's Medical Ventures' Wee Care Program responds to this quality care movement and provides administrators and clinicians with practical, evidence-based, staff-wide education couched in a process improvement model to yield measurable, sustainable practice change in the NICU (Turnage Carrier 2000, Hendricks-Munoz et al. 2002, Altimier et al. 2004).

References

1 Altimier LB, Eichel M, Warner B, Tedeschi L, and Brown B. Developmental care: changing the NICU physically and behaviorally to promote patient outcomes and contain costs. Neonatal Intensive Care 2004;17(2):35-39.

2 Aylward GP. Neurodevelopmental outcomes of infants born prematurely. J Dev Behav Pediatr 2005; 26(6):427-440.

3 Bhutta AT, and Anand KJ. Vulnerability of the developing brain: neuronal mechanisms. Clin Perinatol 2002;29(3):357-372.

4 Cherouny PH, Federico FA, Haradon C, Leavitt Gullo S, and Resar R. Idealized Design of Perinatal Care. IHI Innovation Series white paper. Cambridge, Massachusetts: Institute for Healthcare Improvement; 2005. (Available on IHI.org)

5 Hack M. Young adult outcomes of very-low-birth-weight children. Semin Fetal Neonatal Med 2006;11(2):127-137.

6 Hack M, Taylor HG, Drotar D et al. Chronic conditions, functional limitations, and special health care needs of school-aged children born with extremely low-birth-weight in the 1990's. JAMA 2005;294(3):318-325.

7 Hendricks-Munoz KD, Prendergast CC, Caprio MC, and Wasserman RS. Developmental care: the impact of Wee Care developmental care training on short-term infant outcome and hospital costs. Newborn and Infant Nursing Reviews 2002;2(1):39-45.

8 Jacobs S, Skolt J, Ohlsson A. The Newborn Individualized Developmental Care and Assessment Program is not supported by meta-analyses of the data. J Pediatr. 2002 Jun;140(6):699-706.

9 Martin LA, Nelson EC, Lloyd RC, and Nolan TW. Whole System Measures. IHI Innovation Series white paper. Cambridge, Massachusetts: Institute for Healthcare Improvement; 2007. (Available on IHI.org)

10 National Academy of Sciences. To err is human: Building a safer health System; 1999. Retrieved from NAP.EDU/books/0309068371/HTML.

11 Nolan T, Resar R, Haraden C, and Griffin FA. Improving the Reliability of Healthcare. IHI Innovation Series white paper. Cambridge, Massachusetts: Institute for Healthcare Improvement, 2004. (Available on IHI.org)

12 Symington A and Pinelli J. Developmental care for promoting development and preventing morbidity in preterm infants. Cochrane Database Syst Rev 2006(2):CD001814.

13 Symington A, Pinelli JM. Distilling the evidence on developmental care: a systematic review. Adv Neonatal Care 2002;2(4):198-221.

14 Turnage Carrier C. Instituting developmental care: one unit's success story. Neonatal Network 2000;19(2):75-78.

15 Whitfield J, Charsha D, and Sprague P. In search of excellence—the Neonatal Intensive Care Quality Improvement Collaborative. Health Care Research and Improvement 2001;14:94-97.