

CARE IN THE NEONATAL INTENSIVE care unit (NICU) is traditionally based on medical and nursing tasks that may not include responding to the behavioral cues of infants. Over the past 20 years, support for relationship-based, individualized developmental care has been growing, along with randomized, controlled trials demonstrating both the medical and the neurobehavioral benefits of this type of care. In preparing to educate staff about developmentally supportive care at a large, tertiary pediatric hospital with 120 neonatal beds, strategies for success had to be implemented early in the planning process.

PRELIMINARY STEPS

Critical components that were assessed and/or developed before the beginning of the education effort included (1) readiness of staff for education on developmental, individualized care for infants, (2) medical and nursing administrative support for the program, and (3) funding sources.

Readiness for Developmental Care Education

Before attempting a massive education program, readiness and support for developmental care had to be assessed at several different levels. A survey of nursing staff was conducted. Staff were asked to rate the significance of stress cues, handling techniques, environmental modifications, and other developmental practices.¹ Respondents were provided with a rating score from 1 through 5, with 1 reflecting “no importance” and 5 reflecting “extremely important.” Staff were asked to rate 12 items and were also requested to choose their top three areas of interest. Eighty-two intermediate-care nurses responded, with 78 percent considering the developmental issues as very (27 percent) or extremely (51 percent) important. Forty-six neonatal intensive care nurses returned the survey, with more than 84 percent deeming the identified developmental practices as very (28 percent) or extremely (56 percent) important. Top areas of interest named by staff included assessment of cues (both stress and self-regulatory), environmental modifications, and positioning/handling techniques. Taking the time to survey staff really paid off in terms of predicting acceptance and in successful implementation of a developmental program at such a large institution.

Administrative Support

The next step involved gaining full support from both medical and nursing administrations so that the training could become a reality. This step took almost one year to complete.

**Instituting
Developmental Care:
One Unit’s Success Story**

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A slide presentation was developed to illustrate developmentally supportive care of hospitalized infants. This presentation was delivered by the clinical nurse specialist to numerous groups, including the physician-in-chief, chief executive officer, vice president of nursing services, board of trustees, chief of neonatology, medical director of neonatal areas, and the assistant directors of nursing for each neonatal area. The potential benefits to infants and the hospital in terms of quality of

care, length of stay, cost savings, and customer (family) satisfaction were emphasized. The most striking demonstration of the program’s value was by the infants themselves. Infants pictured receiving developmentally supportive care exhibited restful, calm stability compared with pictured infants cared for using the more traditional approach, who appeared less comfortable and displayed obvious behavioral stress cues.

Financial Support

A proposal was written outlining a developmental program, the training needed for its implementation, and a five-year plan with budget. The time spent in gaining support was well worth the effort. The proposal was accepted and given full support and partial funding by the hospital, with part of the funding expected from donors. The slide show was again presented, this time to the research and development funding officers and to potential donors—with success. After about six to eight months, donations provided enough money to go ahead with training.

A variety of funding resources was available, but the key to success was collaboration with people and departments who regularly used their expertise to assist the project from the financial perspective. It was also critical that potential donors understand what they are donating money for, so several community relations publications describing the proposed program were prepared that could be sent out to the community or used by those seeking resources.

PLANNING THE EDUCATIONAL PROGRAM

A Developmental Education Committee was formed to research educational offerings. This committee worked from the assumption that everyone who provided direct or indirect care in the neonatal areas would need some education to support the change in care-delivery philosophy and to avoid creating inconsistent pockets of developmental care practice throughout the nurseries. Realizing that a change in philosophy could not be achieved overnight, a team that included nurses, physicians, administrators, and therapists approved a

five-year plan to produce a formal developmental program with specific objectives and implementation methods.

Educational offerings were reviewed, and two choices were made. It was determined that a core group would receive the Neonatal Individualized Care and Assessment Program (NIDCAP) training.² All other staff, including support staff, would attend developmental care seminars and practical application workshops provided by Wee Care Neonatal Systems, Inc.³ The combination of educational programs (NIDCAP and Wee Care) was chosen for a variety of reasons.

NIDCAP is an intensive research-based program that requires extensive training of key staff in individualized developmental assessment, planning, and implementation. Two neonatologists, one developmental pediatrician, three neonatal nurse practitioners, and one child life specialist received NIDCAP training for certification. The didactic component of the program was provided for managers and key staff to garner their support and enhance their knowledge of the theory and application of developmental care. For NIDCAP certification, the time commitment is at least one year devoted to practice observations, followed by developmental reports that describe the infant's physical and behavioral responses and provide recommendations for an individualized plan. The goal in our institution is for trainees who achieve certification to (1) follow identified infants using their advanced skills to assess and plan their care with the family and health care team, (2) mentor other staff in reading and responding appropriately to infants' cues, (3) serve as role models in application of developmental care practices, and (4) assist in developing policies or practice changes to support the developmental care philosophy. Trainees who do not achieve certification can also be effective as knowledgeable resources, role models, and change agents. After the first year, more staff, including physical and occupational therapists and nurses, will be offered the NIDCAP certification course as defined in the program proposal.

Wee Care Developmental Training Seminars are a broad-based overview of developmental theory and practical application that is less intensive than NIDCAP. Wee Care Neonatal Systems, Inc. was chosen because of its specialized consultants and ability to provide training in

developmental care on a massive scale. The organization would conduct training for more than 300 people at Texas Children's Hospital: physicians and nurses; respiratory, physical, and occupational therapists; child life specialists; social workers; secretaries; environmental services personnel; diagnostic imaging and laboratory technicians; and others. The goal was to provide all attendees with the same information on developmental care theory and application at the same time.

Support staff received a 2-hour overview of developmental care and participated in discussions on how to support the change from their job perspective. Direct care providers were given an 8-hour program on theory, assessment, and application of developmental care. Content covered included (1) neurologic development, (2) developmental theories and testing, (3) behavioral cues, (4) environmental issues, (5) positioning and handling techniques, (6) family-centered care principles and techniques, and (7) outcomes of developmentally supportive care. This was achieved by a 4-hour didactic component in the morning followed by three afternoon workshops for a total of 7.5 hours of continuing education credit. Although scheduling more than 200 people into small-group sessions was a major challenge, the planning group believed that hands-on practice in groups of 10–12 participants per trainer was essential if staff were to integrate the principles of developmental care into actual practice once the trainers were gone.

Workshops were provided in which staff using bean bag dolls could practice developmental modifications to traditional techniques such as positioning with equipment and routine care such as developmental bathing, feeding, and weighing. A family-centered care workshop gave staff the opportunity to discuss ways of supporting parents and to role-play hypothetical situations using a family-friendly approach.

The seminar was a weeklong event. Three groups of 60 people (180 staff members) participated in the didactic component in four-hour sessions throughout the first day beginning at 11:00 AM and ending at 11:10 PM. The following day the second half of the program was scheduled as six workshops on three different developmental applications: (1) positioning, (2) developmental care practice, and (3) family support. Each topic was attended by 10–12 staff (total 60) with one instructor for each of the six

workshops, which rotated hourly. Participants were designated as either A or B on their program syllabi and rotated through the six workshops based on their alphabetical appointment. To support this program, a multitude of details had to be handled, including snacks, lunch, building security after hours, parking, and bus transportation to the education building. The second day began at 11:00 AM and ended at 11:00 PM. Even with the grueling schedule, the program evaluations by staff were enthusiastic, with glowing assessments of the presenters.

The third day was another full day of support-staff insertions and meetings with physicians, nursing management, and the Developmental Education Committee comprised of staff nurses; physical, occupational, and respiratory therapists; educators; and management. Wee Care therapists, developmental specialists, and nurses conducted rounds in each unit, providing encouragement, answering practical application questions, and teaching developmental assessment and care at the bedside.

The final day was another opportunity for staff to attend the entire seminar, with both didactic and workshop components provided in one eight-hour day rather than split over a two-day period. By the time the event was over, the presenters and the Developmental Education Committee were both exhilarated and exhausted.

EVALUATION

Physicians and nursing administrators immediately noticed the difference in atmosphere in the units. Environmental modifications were occurring in every unit. Because baseline data had been collected on environmental sound levels and on positioning skill of nursing staff before the training, it was possible to conduct an evaluation afterward to see if learning was being applied.

Pre- and post-education sound measurements showed a decrease in the maximum sound levels (L_{max}) in three of the five units. Our goal was to decrease noise levels from the previous year by 5 percent. Sound measurements were taken over 24-hour periods for five days (including one weekend day) in all quadrants of each unit.

The L_{max} decreased in NICUs A and B by 15 and 9 percent, respectively, and in Infant II by 16 percent. We were pleasantly surprised to find that these units surpassed our original goal. This information was given to staff to reinforce their efforts because the major change had been staff behavior. Even now, staff are quick to report if they think the units are noisier and to request reinforcement or education. Physicians were very interested in the data and have made tremendous strides in reducing their own contribution to noise pollution in the units. They have also requested that a full noise analysis be conducted twice a year and reported to all staff.

Positioning skill had been measured for two periods before the education effort, with dismal results. The clinical special-

ist, with the help of physical and occupational therapy, designed an appropriate observation tool. Data collectors were taught to use the tool and had to achieve reliability in observation of appropriate positioning by demonstrating their own ability to position correctly using bean bag dolls to demonstrate competency.

Using the approved tool, data collectors randomly assessed infants in three positions: (1) prone, (2) side-lying, and (3) supine. They were also asked to determine whether positioning aids supported the infant's position and/or were used according to protocol. Before the educational program, about 24 percent of infants met the criteria for correct positioning. Four weeks after the weeklong education event, we evaluated positioning skill again. The data provided another opportunity to give our staff positive feedback. Overall, 73 percent of infants were positioned following general positioning principles. Positioning aids were used correctly 76 percent of the time. The evaluation also provided information for the next positioning education program, which was to be offered seven months later.

The Quality and Outcomes Management Department reported an unexpected gain. Its data showed a significant decrease in restraint use by protocol in the NICU, even though the number of eligible infants had almost doubled. It attributed the improvement to reduced stimuli and increased comfort of neonatal patients.

REINFORCEMENT

Ongoing evaluation is necessary to maintain change in practice. The first two positioning education programs allowed staff to practice positioning with dolls and equipment, but learning was not well applied until after the programs presented by Wee Care Neonatal Systems, Inc. and NIDCAP. The Developmental Education Committee concluded that it was helpful to bring in outside instructors who support the aims of our developmental program and to demonstrate the hospital's commitment to the program. The data implied that learning had occurred, but the Developmental Education Committee is convinced that maintenance of quality developmentally supportive care for all infants in the neonatal areas requires vigilance, ongoing education, and individual reinforcement if it is to become as routine as traditional care methods.

Finally, recognizing that all staff would benefit from change, continued improvements were essential in education to other services. Residents now receive an introductory program on developmentally supportive care and its relationship to the medical plan for their patients. Physicians receive a "Five-Minute Developmental Moment" that is informative or provides program updates at each neonatology service meeting; these are well attended by about 50 physicians each month. To make these "moments" memorable, a computer show (sometimes containing a few bits of animation and

always incorporating pictures that speak volumes) is developed for each meeting. During staff inservices, participants enthusiastically play developmental “Jeopardy,” with packets of fruit snacks or chocolate candy for winners. Computer-designed T-shirts with developmental slogans and fun graphics were a hit this past year.

SUMMARY

Each institution is different, with its own unique needs and challenges, as well as specific obstacles to overcome. Support will sometimes be found where it is least expected. Patience and persistence are certainly required for success. We relied on the efforts of many individuals and held to our belief that developmental care is necessary—not optional. For our institution, the time frame from proposal to program implementation was about two years. However, planning and strategizing to garner support from staff and the administration began a year earlier. Only one of our NIDCAP trainees is destined at this time for certification. Administration is adding support for NIDCAP trainees by increasing paid time for the huge number of practice hours required. Additional mentoring and one-on-one coaching for NIDCAP trainees will continue as the second group begins the process.

Developmental care programs can be implemented successfully in both large and small NICUs. Education plays a key role in moving management and staff toward the philosophic change necessary for long-term commitment and progress in developmentally supportive care for infants and their families. Although our program has started with a bang, we realize we must continue a concentrated effort to ensure that a philosophy of developmental care will continue to emerge and grow in our hospital. Changing the way hospital staff see and respond to babies and their families is a goal worthy of patience and persistence.

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Carol Turnage Carrier is the neonatal clinical nurse specialist at Texas Children's Hospital in Houston. She is a graduate of Vanderbilt University and is NIDCAP certified. She is former chairperson for the NANN Pharmacology Committee that produced the first self-study pharmacology module for NANN members. Carol was the first recipient, in 1991, of the SIG Award for Excellence in Advanced Clinical Practice. She has published articles on neonatal nursing practice and, more recently, on research into the use of speaking valves in infants and children with tracheostomies.