

Background information

Máxima Medical Center's new Woman-Mother-Child center

In collaboration with Philips, the Máxima Medical Center in Veldhoven, the Netherlands, has created one of the first European centers to provide comprehensive family-centered care. Although it sounds simple, creating a hospital environment of fully integrated mother and child care can be complex. It combines the latest in design and construction concepts with high-quality medical technology and training for hospital staff on the industry's evidence-based clinical practices.

Normally, care has to be organized around a building's layout. In the case of the Woman-Mother-Child center, the reverse was true: the accommodation was built to support the entire care process. Throughout the facility, the concept of family-centered care has been incorporated using solutions focused on developmental care concepts through pregnancy, labor and delivery, and post-natal baby care in the neonatal intensive care unit (NICU).

Research shows implementing family-centered and developmental care in the neonatal intensive care unit NICU environment can be effective in improving infant medical outcomes, decreasing length of stay and decreasing the hospitalization costs that come with the complex care neonates need.¹

Labor and delivery

The Labor and Delivery rooms at the Máxima Medical Center are designed so that the mother receives all her care – antepartum, delivery, postpartum, breastfeeding support and discharge – in one private room. This concept is not yet widely deployed in Europe. If at any point during the process the woman experiences problems, appropriate medical staff and equipment are brought into the mother's room so that she does not have to move. A mobile point-of-care ultrasound device is one example of equipment that can be instantly moved into the labor and delivery rooms.

Philips and the Máxima Medical Center have initiated a study based on a new design concept, which could be the foundation for solutions to facilitate a more positive labor and delivery experience for women giving birth in the hospital. The design concept aims to support women during the process of labor by visualizing the progress and providing her with real-time breathing support.

Two main elements will be explored: The first is a smartphone application, for use before, during and after the delivery, that helps women to practice and prepare different

¹ *Developmental Care, Changing the NICU Physically and Behaviorally to Promote Patient Outcomes and Contain Costs – Neonatal Intensive Care, Vol. 17, No 2 – March/April 2004; Developmental Care: The impact of Wee Care Developmental Care Training on Short-term Infant Outcome and Hospital Costs – Newborn and Infant Nursing Reviews, Vol 2, No 1, March 2002*

labor breathing techniques prior to delivery. The second element is an interactive visual animation projected on the wall of the delivery room. This visualization grows and changes in response to physiological data obtained by contraction monitoring, and is combined with a labor breathing guide that provides the woman with timely support to cope with contractions. The visualization, which is unique to the birth, is stored in the smartphone app as a personal reminder of the birth experience.

Philips' design concept also aims to optimize hospital workflow. The visualization could help staff to see how a woman's labor is progressing at a single glance, contributing to an active management of labor.

Neonatal Intensive Care Unit (NICU)

To enhance the bonding experience, premature babies at the Máxima Medical Center were recently moved to the new accommodation in the Center, where they can stay with their mothers and fathers during treatment and receive nursing care in individual family rooms that provide privacy, quiet and an enhanced developmental care environment. Until now, mothers have typically remained on an obstetric ward while their babies were sent to a traditional NICU. In the new accommodation, recovering mothers and their newborn babies will receive treatment together in private rooms.

A vital aspect of that care is monitoring of the baby's condition. A monitoring system designed by Philips has been implemented, making it possible to care for mother and baby in a private room instead of in a conventional centralized NICU setting. The new system brings together the available information the hospital has about the baby (vital signs, lab results, medical images, medication, planned medical treatment, etc.), making it easily accessible to caregivers. Staff can then spot changes immediately, and respond appropriately.

Other solutions for the NICU include therapeutic support positioning products such as Philips SnuggleUps and Bendy Bumpers, which provide optimum support and containment for the premature baby. The SnuggleUp is a soft cozy nest that helps to provide proper positioning and physiological stability. The Bendy Bumper family includes bendable positioning aids that can be molded into the desired shape to promote containment and to allow the baby to extend and retract its muscles to promote musculoskeletal development.

Also available at the NICU is the Philips NeoPAP breathing system developed specifically to treat newborns and infants with Respiratory Distress Syndrome. The NeoPAP's lightweight patient interface and bonnet design are intended to be light, less bulky and patient friendly. The interface does not need to be fitted tightly to an infant's face to be secure, helping to minimize the pressure points that often lead to irritation and, in some cases, tissue damage.

Global Wee Care

In addition to being an equipment provider, Philips is guided by a commitment to family-centered care. The internationally-recognized Global Wee Care program supports developmentally friendly practices, such as helping to support a hospital's healing environment and partnering with families. Global Wee Care includes hands-on in-hospital multidisciplinary training on admissions, positioning, caregiving, and feeding premature infants.

From the hospital to the home

Philips is dedicated to encouraging breastfeeding, as breast milk provides optimal nutrition and immunoprotection for newborn babies. Since the launch of the first baby feeding bottle in 1984, Philips has worked closely with scientists and clinicians to understand babies and support women in breastfeeding. With this in-depth understanding, Philips develops products that reflect the way babies feed naturally and is dedicated to supporting mothers at every stage of breastfeeding. Philips is proud of its heritage of innovation and collaboration, underpinned by robust scientific data.