



Angel Eye Web-Camera System

Background & Goal

Most pregnant mothers expect to have a full-term pregnancy with a healthy baby to take home a day or two after delivery. When a neonate is delivered preterm or with a health condition that requires an extended hospital stay, it is difficult for mothers and fathers to remain at the hospital continuously and still maintain other family responsibilities, especially when parents live in remote or rural areas outside of an urban center. This often leaves the mother, the baby, or both far away from family and friends, which adds yet another level of stress on these families. Hospitalized infants frequently suffer delayed developmental milestones since they cannot hear the sounds of their mothers and other family members and NICU babies regularly suffer a stilted reentry into the family upon discharge from the hospital.

Dr. Sarah Rhoads redesigned and enhanced the Angel Eye Web-Camera System (Angel Eye) based on her research studies with the goal of helping mothers, fathers, and family members maintain a virtual presence in the NICU when they are unable to be physically with their hospitalized neonate.



Project Description

Angel Eye serves parents and families of neonates hospitalized in the neonatal intensive care unit (NICU) by using technology to improve communication and collaboration of families and providers. Angel Eye allows for a continual video feed from the neonate's isolette/crib through a password protected, HIPAA-compliant website. Parents can decide which family members and friends can use the system and provide them with the log-on information. The Angel Eye™ system provides its users two primary features: 1) one-way video of the hospitalized neonate transmitted virtually to the user and 2) one-way audio of the user as transmitted to the hospitalized neonate using an audio-controlled system that safely controls decibel levels. Also, for the first time in the NICU, Angel Eye has implemented a two-way chat feature in which mothers and NICU nurses can communicate through the portal.

With these technological capabilities, parents and family members can talk, sing, or read to their neonate, while watching the reaction of their neonate from a distance. Angel Eye also empowers families to introduce siblings of the hospitalized neonate to promote family bonding.

Evidence of Success

From 2010 to 2015, 1023 families and over 2,600 individuals used Angel Eye to connect and communicate with their neonate at the University of Arkansas for Medical Sciences (UAMS). Dr. Rhoads successful innovation caught the eye of an investment capitalist and, in 2012, Angel Eye developed into a company. This opportunity resulted in the total number of Angel Eye camera systems increasing to 579 deployed throughout 28 hospitals in 14 states and 2 countries.

Enhanced parent communication such as provided through Angel Eye has been proven to decrease stress and anxiety in mothers and fathers. In addition, Angel Eye reduced the financial stress otherwise experienced by families of neonates in the NICU. Due to tremendous medical advances related to survival of the tiniest of babies, length of stay in the NICU has steadily increased. On average, a NICU stay is 20 days with an average cost of \$3,000 per day (2010). The financial costs incurred by parents physically visiting their neonate 3 times a week during a 20 day period averages \$2039/couple for rural parents making the minimum wage (\$7.90/hr.) and \$5079/couple for urban parents making the national average (\$25.80/hr.) Angel Eye helps alleviate this hardship while enabling parents and family members to bond with their hospitalized neonate.

About Raise the Voice

Through *Raise the Voice*, the American Academy of Nursing is mobilizing its 2,200 fellows, partner organizations and health leaders to ensure that Americans hear and understand the exciting possibilities for transforming the health system – and also that they see how nurses are leading the way. For more information about this Edge Runner and others, please visit www.AANnet.org.

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