



Articles

Neonatal Clinical Nurse Specialist in Improving Neonatal Care through Outreach to Referral Hospitals



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ABSTRACT

In the United States, the majority of babies are born at community hospitals that have a limited ability to care for premature or ill neonates. Regionalization was developed in the early 1970's in an effort to improve the outcomes of these neonates and pregnant women. Hospitals were designated a level of care based on their resources and capability to care for the premature or ill neonates and pregnant women. The highest level of care is the regional center. A requirement of these centers is to provide outreach education and initiatives to the referral hospitals in their referral area. The perinatal/neonatal clinical nurse specialist working in regional centers is an ideal position to lead the hospital outreach initiative to improve the care of neonates and pregnant women in the referral area.

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In the United States approximately 4 million babies are born each year, with 98.6 percent of the babies being born at hospitals.¹ A large percent of babies are born at hospitals considered to be community hospitals. Of the 4 million babies born, 12% are considered premature², approximately 3% are born with birth defects³ and many other babies develop sepsis, other disorders or are withdrawing from substances they were exposed to in utero, requiring the babies to need specialized care beyond the care of the normal healthy newborns.

Improving the care that sick and premature neonates receive prior to transfer to a tertiary/quaternary referral center is of utmost importance, as this care can influence a neonate's long term prognosis and outcome.⁴ Regionalization of perinatal care was initially done in the United States to improve the outcomes of babies born in community hospitals, but regionalization has disappeared in most parts of the United States in the past 15 years for multiple reasons. Some of these reasons for the deregionalization of care are the lack of consensus among care providers on where a baby should be cared for, the enforcement by governing bodies to hospitals practicing in their scope of practice, states no longer requiring certificate of needs to increase the level of care they provide and the creation of Affordable Care Organizations (ACO). While regionalization is no longer the driving force there is still a need for tertiary and quaternary neonatal intensive care units to provide educational, quality improvement initiatives and other services to community hospitals and their staff to help them to improve the care they provide to the sick or premature baby in the initial moments after birth and during the stabilization period, in order to improve outcomes for all babies born in the United States.

History of Perinatal Regionalization

The beginnings of regionalization of perinatal care in the United States occurred as a result of multiple factors beginning with the Regional Medicine Programs initiative in 1965.⁵ While the Regional Medicine initiative was not aimed at perinatal/neonatal care, it was the stepping stone for wider distribution of the regional concept because of its success of improving outcomes in adults. The Perinatal/Neonatal initiative led by Drs. Joseph Butterfield and Jerold Lucey (who later founded the Vermont Oxford Network) along with others began with composing a policy statement on regionalization of perinatal/neonatal care, which was endorsed by the American Medical Association (AMA) in August of 1971.⁵ In 1976, the American Academy of Pediatrics (AAP), American College of Obstetricians and Gynecologists (ACOG) in collaboration with the March of Dimes (MOD) published the landmark report of "Towards Improving the Outcome of Pregnancy."⁶ This landmark report was responsible for the development of the regionalization of perinatal/neonatal healthcare in most states in the United States.

When perinatal regionalization began, all of the critically ill newborns who survived were cared for in major academic centers in each region. However the babies were not born at the academic centers, so neonatal critical care transport and Outreach education became integral part of regionalization as community hospitals needed education and training in the care of the sick and premature neonate.⁶ The education provided focused on the didactic instruction on resuscitation and stabilization of the neonate, crisis prevention and transport preparation as well as hands on training of new skills needed to care for the sick and premature neonate.

In the past 15 to 20 years, states that operationalized regional systems of perinatal care have experienced a disruption of the system for various reasons. The dawning of managed care, increased competition

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between hospitals, the increased numbers of neonatologists, neonatal nurse practitioners, and nurses who have been educated and trained in the specialty field, have encouraged the building of neonatal intensive care units outside of academic centers; and competition for healthcare dollars among hospitals has influenced where high-risk infants are born, thus eroding the regionalized care system.⁷ While formal regionalized systems of care have disappeared in most of the United States including the state the author lives in, the need for community hospitals to have education and assistance in caring for sick newborns has not diminished.

Regional centers need to continue to meet the needs of their referral center and a specialty Clinical Nurse Specialist (CNS) is the ideal person to collaborate with the referral hospitals to assess, plan, implement, evaluate and facilitate initiatives for better practice and outcomes as well as help with cost savings. A study by the National Association of Clinical Nurse Specialists (2013) demonstrated that CNS's were able to decrease costs to hospitals by preventing hospital acquired infections, reducing length of stay in hospitals, improving prenatal care and preventing readmissions.

Outcomes of Neonates and Levels of Care

While regionalization has lost favor, the AAP and the ACOG continue to recommend specific levels of care for both the neonate and the pregnant women.^{8–10} The recommendation for regionalization of perinatal and neonatal care is an effort to assure that mothers deliver at and neonates are born at facilities that have the capability to provide the level of care needed by the mother and neonate.

This recommendation is the result of many years of research that demonstrates that the level of care that a neonate receives affects the neonate's long term outcomes. Outcomes such as death, severe inter-ventricular hemorrhages, and necrotizing enterocolitis are lower for babies born in regional centers with the highest level of care. When comparing babies born at centers with the highest level of neonatal intensive care unit (NICU) and with the highest volume of very low birth weight babies to babies that were born at a lower level of care hospitals and transferred to the higher level NICU, those born at the high level NICU have the improved birth outcomes.^{11,12}

The levels of care for both neonatal and perinatal correspond to each other with a hospital needing to have an equal level of care for both the pregnant woman and neonate. A summary of the levels of care is as follows.^{8,9}

| Level of Care | Type of Care | Definition |
|---------------|-------------------|---|
| Level I | Basic Care | Care of uncomplicated pregnancies and newborns of 35 weeks of gestation and greater. The ability to detect, stabilize and initiate management of unanticipated maternal–fetal or neonatal problems that occur during the antepartum, intrapartum or postpartum period until transferred to a higher level of care. |
| Level II | Specialty Care | Level I capabilities in addition to being able to care for select pregnancies and neonates of 32 weeks of gestation or greater. Care of select antepartum, intrapartum and postpartum problems such as severe preeclampsia and placenta previa in the absence of prior uterine surgery. Care of the neonate to include continuous positive pressure or ventilation for less than 24 h. |
| Level III | Subspecialty Care | Level II capabilities plus care of neonates <32 weeks and < 1500 grams with more complex maternal medical conditions, obstetric complications and fetal conditions such as suspected placenta accreta, placenta previa with prior uterine surgery, or placenta percreta, adult respiratory distress syndrome and early preeclampsia at less than 34 weeks gestation. Care of the neonate includes those <32 weeks gestation or <1500 g birth weight or with medical or surgical conditions. |

(continued)

| Level of Care | Type of Care | Definition |
|---------------|--------------------------------------|---|
| Level IV | Regional Perinatal/ Neonatal Centers | Ventilation may be provided for >24 h and may include conventional, high frequency, and the use of nitric oxide. Medical and surgical subspecialists should be available for the neonate. Level III capabilities plus on-site medical and surgical care of the most complex maternal conditions and critically ill pregnant women and fetuses in the antepartum, intrapartum and postpartum period. For the neonate, the care of the most complex and critically ill neonates with onsite surgical and medical subspecialists including the ability to do complex cardiac and other surgeries. |

Regional centers, with services that meet the criteria of Level III and Level IV classification, provide stabilization and transport, education and skills training, analysis and evaluation of practice and outcome data, and the coordination of quality improvement initiatives with the Level I and II referral hospitals located in the catchment/geographic area.^{8,9} The quaternary center would also provide services to the tertiary referral facilities as well when needed.

Neonatal Clinical Nurse Specialist and Outreach Initiatives

While traditional Outreach programs were associated with the provision of education based on transport data to the healthcare providers of the referral hospitals and health departments in their referral area, to improve the care of the pregnant woman and neonate, Outreach programs have grown and changed over the years. Outreach programs also now include education assessments, nursery assessments, providing a forum for managers and educators of the referral hospitals to meet and discuss ideas and care issues as well as to develop consistent policies and procedures for their patients, as well as providing quality improvement initiatives and collaboratives in order to improve care of the pregnant women and neonates.

The perinatal or neonatal Clinical Nurse Specialist (CNS) is the ideal person to spearhead an outreach initiative due to her expertise and educational training. The CNS is an advance practice nurse who is an expert clinician in her field of nursing practice, as well as provides education and support to nursing and interdisciplinary staff and facilitates change and innovation in healthcare systems.^{13,14} This correlates with the *National Association of Clinical Nurse Specialists*¹⁵ statement on the CNS role operating in the three spheres of influence of the patient, nurse/nursing practice and organization/systems leadership. The CNS, like other advance practice nurses competencies, fall in the seven competencies of advance practice nurses as described by Hamric et al. of direct clinical care, evidence-based practice, consultation, leadership, collaboration, coaching and guidance and ethical decision making.¹⁶ The perinatal/neonatal CNS's expert knowledge of the physiologic and psychological needs of the patient population they have specialized in, as well as their knowledge in evidence-based practice, leadership, consultation, collaboration, coaching and guidance, and ethical decision making, is an important quality needed in order to lead a successful outreach program. The CNS role rather it is in a specific unit, a system or a region helps to ensure the highest quality of care is provided to all patients and their families while working in conjunction with their physician and nursing colleagues.¹⁷

Implementation of the seven competencies into the CNS Outreach role is varied depending on many factors, including but not limited to if states are regionalized, the facility of employment of the CNS, the needs and desires of the referral hospitals and where the CNS is in her career and role development. Examples of how the seven competencies have been implemented by this author in her job role are discussed below by competency.

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