

# Neonatal Case Management

By Denise H. McClinton

**N**eonatal care is one of the most costly areas of health care in the United States. The need is increasing and experts say the role of case management is integral to ensuring these patients and their families receive appropriate and cost-effective care.

“According to the National Institutes of Medicine, the United States spent more than \$26.2 billion in this area in 2005—not only on the medical care for these babies, but for lost household and labor market productivity as well as early intervention services,” says Patricia Buck, RN, neonatal case manager, ING Reinsurance, Minneapolis. “We are looking at very large numbers in terms of the services this population requires and these are increasing.”

Additionally, the Centers for Disease Control’s 2005 vital statistic birth data from the CDC states there were more than 525,000 babies, or 12.7 percent, born prematurely in the United States—an 12.5 percent increase from 2004—and the 2006 preliminary report indicates that the preterm birth rate will continue its upward trend and reach 12.8 percent, about 543,000 babies.

“Not all preterm babies end up in the neonatal intensive care unit (NICU) but the cost is great for those who do,” says Rose Bemis Heys, RN, NP, executive vice president of strategic development for Irvine, Calif.-based The Assist Group. “The March of Dimes states that in 2005, preterm birth cost the United States at least \$26.2 billion, or \$51,600 for every infant born preterm. Because there is a wide variation in length of

stay for NICU infants and there are multiple activities amenable to care management and case coordination neonatal case management is popular among payers.”

Cost constraints are a considerable concern.

“NICU care is among one of the top five claims costs with some cases hitting the million dollar mark and more. Families are often financially challenged as well, with many infants reaching the life time benefits maximum before leaving the hospital,” says Heys.

Judi Galter, NP, a nurse practitioner in Hilton Head, S.C., adds the need for neonatal case management is significant.

“We are getting more neonates in the NICUs these days and there are limited resources, so we really do need case managers assisting the parents and the insurance companies,” she explains. “We are saving babies a lot younger these days and technology is really taking off.”

Ron Taylor, president of Neonatal Consultation Services in Alpharetta, Ga., adds a recent report indicated that there were 4.3 million U.S. births in 2006, which is the largest number of children born in 45 years.

“In 2002, 12.1 percent of live births were preterm and this 12.1 percent accounted for 50 percent of all infant birth charges. The preterm birth continues to rise. The 2005 final data showed the preterm birth rate to be 12.7 percent,” he says.

Limited resources dedicated to aggressively case managing the neonate and parents also contribute to the need

for case management.

“There is also a shortage of nurses and, often, hospitals only have one social worker/discharge planner/case manager to manage the entire hospital,” he says. “Neonates often need coordination of care for a longer period of time than adults.”

## Contributing Factors

There are several reasons for the increase in premature births.

“Some of the increases in the premature births can be attributed to advances in technology and medicine, which allow physicians to try and save premature lives at increasingly lower gestational ages,” says Taylor. In addition, infertility advances have created an increase in multiple births, many of which are often admitted to the NICU.

An increase in immigration has also made an impact, according to Galter.

“Often, they do not get early prenatal case, so we are seeing a lot of what we call ‘near-term’ babies, those who are around 34 to 35 weeks,” she says.

Advancing maternal age may also be a contributor.

“A lot of women are pursuing careers and putting off having children until they’re older. Women over age 35 are at a higher risk for having a premature baby. We have made great strides in terms of the management of these mothers and we will be looking at other techniques to make these pregnancies more viable,” says Buck.

## Goals of Neonatal Case Management

Case management of neonates should ►

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be to coordinate and proactively manage the baby's health needs while promoting quality care and cost-effective outcomes. To accomplish this, a primary focus should be parent education.

Often discharges are delayed for non-medical reasons. In fact, 30 percent of all discharges are delayed for non-medical reasons, says Galter.

"For example, if the parents are not comfortable taking care of their baby or the home environment is not ready, discharge is delayed. Therefore, beginning a structured discharge planning program at time of admission is very important. This can decrease length of stay," she says. "Parents are better prepared, ready, and comfortable to take the baby home to a stable environment when the baby becomes medically ready for discharge."

Galter adds that as NICUs become more crowded and hospital staff more overworked the ability of the case manager to move the infant through the process on a timely basis becomes especially beneficial.

Taylor says there are several factors to effective case management, including:

- Utilizing a structured process that guides the case manager in understanding the neonate's clinical status and challenges
- Early identification of what is needed and how to proactively case manage the infant's stay
- Identification of appropriate community resources
- Educating and providing the parents with helpful information that will increase their comfort level in caring for their baby and for improving a safe and stable home for the infant's discharge
- Continuing to case manage the infant

after discharge

Having the parents become proactive advocates for their infant allows the hospital staff to see that they can and are willing to care for their newborn.

Encouraging the parents to care for their infant while in the NICU gives the parents an increased comfort level for when they go home with their newborn. This results in fewer re-admissions when questions of the infant's well-being arise.

"For example, you have a baby who suddenly is ready to go home, but the parents have not brought in the car seat to be tested or the baby has not had his or her hepatitis shot," explains Galter. "These minor events can delay a discharge up to two or three days."

She advises case managers to be proactive and to "push the discharge along" as the baby progresses. Teaching parents about feeding and health care issues they will have to tend to at home, such as changing a colostomy bag, can not only increase the parents' confidence but also avoid costly emergency department visits and readmissions.

"If you start teaching the parents early on, you encourage the parents to learn early on. These are parents that know what they're doing when the baby goes home and they feel more comfortable," says Galter. "A premature baby that hits the emergency room more often than not gets readmitted, increasing costs. So by teaching and getting the parents to understand these issues enables them to become advocates for their children."

Buck agrees.

"Nurses at the bedside in the intensive care unit, the physicians, and the health care team within the hospital do an excellent job of educating these parents. Yet, case managers can also be

an important resource to the family to provide additional education," she says. "From past experience, we know that parent education will impact the timing of the baby going home from the hospital to a safe environment."

According to Buck, early identification and early involvement is critical.

"There are a lot of services that the families need during the inpatient stay as well as following discharge and there needs to be a coordination of efforts to make sure that all involved are working toward a timely discharge for these babies, making sure that they're utilizing in-network facilities, and also assuring that the appropriate level of care has been assigned to these babies," she says.

According to Heys, there are several components of neonatal case management that should be considered, including:

- Improvement of respiratory status and reducing the risk for chronic lung disease by assessing stages and types of ventilator support and withdrawal
- Proper weight gain by evaluating nutritional status and suggesting supplementation and feeding advancement according to the clinical progress
- Management of complications by coordinating, scheduling, and arranging of procedures and referrals to subspecialists in a timely manner
- Achieving discharge readiness by reducing family stress and increasing their preparedness for infant discharge, which is accomplished by starting discharge planning on day one of hospitalization using evidence-based tools and arranging for timely referrals for home care services, vaccinations, medications, and treatments in preparation for the discharge

- Timely discharge of the infant to optimize length of stay and decrease readmissions through all of the above methods
- Forensic claims review and negotiation of hospital bills to assure appropriate and fair payment for care rendered

### Assessing the Risk

Although clinical issues vary depending on the neonate and the gestational term, there are several conditions and treatments that are commonly found in the NICU and are related to an extended length of stay.

According to Heys, the following are most common:

- Respiratory distress and ventilation management
- Congenital heart defects and surgeries
- Necrotizing enterocolitis
- Other major anomalies or infants with multiple anomalies
- Futile care for infants that are not viable or have defects that are not compatible with life
- Very preterm or very low birthweight infants
- Extracorporeal membrane oxygenation (ECMO)

Other indicators, according to Taylor, include cardiac and circulatory birth defects and lack of oxygen, resulting in asphyxia, which leads to seizures, cerebral palsy, and developmental issues.

Additionally, apnea, bradycardia, advanced stage retinopathy of prematurity (ROP), and intolerance of feedings can be factors that delay discharge to home.

For near-term neonates, respiratory distress is a strong indicator of an extended length of stay.

“Very low-birth-weight babies are being born resulting in long-term issues of chronic lung disease,” says Buck.

Galter agrees.

“Their lungs are not mature; they either need to go on a ventilator or a CPAP and so they start their life behind the 8-ball,” she says. “Also, another issue

is apnea. A lot of these babies start getting some apnea, so that must be controlled before they are discharged.”

Infection and feedings are important factors in terms of the timing of when they are able to come home safely, according to Buck.

### Current Trends in Neonatal Case Management

Due to critical health care issues and rising costs, the need for neonatal case management continues to increase; nonetheless, experts say it is a challenging process.

“Neonatal case management is one of the most difficult areas of care management. Much of the difficulty arises from the wide variation in neonatal practice and the emerging developments in technology. Infants that just 10 years ago would not have survived are living and have life-long consequences,” says Heys.

Parent education remains an important challenge for case managers.

“Case managers are encouraging parents to be proactive for their infants and are becoming a good source of support for the parents throughout the infant’s hospitalization and for the first several weeks at home,” says Galter. “As case managers, we must focus more on care coordination during and after discharge from the NICU and educating the parents much earlier in the baby’s NICU stay, including getting the parents more engaged earlier in the care of their neonate.”

Going forward, the focus will need to remain on working with the families, says Buck, as many parents are overwhelmed and under-prepared for having a premature baby.

“Along with that come a lot of issues for the parents. Depression can be an important issue for these moms and something that needs to be evaluated and dealt with very early on,” she says. “Additionally, discharge to home can be traumatic for all parents, including those with an unstable family situation as well

as very well educated families that do not have a lot of other stressors.”


She urges case managers to continue to provide education and support to these families while the babies are in the inpatient setting as well as following the continuum to support them with a lot of the needs they will have once they’re discharged from the hospital.

To provide effective case management, it is important to have the clinical as well as the technical expertise to deal with the changing environment.

Galter says a considerable challenge is that the majority of case managers are adult case managers and the NICU is a unique environment with different terminologies, procedures, and medications. She advises case managers to learn by reading textbooks and spending time in the NICU as a volunteer as it will help improve communication with the NICU team.

“If you can speak to the neonatologist or the nurse practitioner in their language, they tend to accept your help and are grateful for it,” she says. “If you’re going to be a neonatal case manager, then you need to learn about the lingo, and what goes on.”

Neonatal care management is one of the resources that employers, health plans, and families will depend on to create better outcomes, both clinical and financial. Going forward, neonatal case management will focus on improving clinical care and creating case management programs that assess length of stay and measure return-on-investment.

“One size does not fit all in the NICU, so care management strategies and care plans need to be individualized and regional variations accounted for,” says Heys. “A current trend is to have an expert physician on the care management team to consult with the treating team and work in conjunction with the nurse case manager to map out the course of care and goals for each infant and family.”  

## Facts & Figures

- There were more than 4,140,419 million births in 2005. (*National Center for Health Statistics, Births: Preliminary Data for 2005*)
- The preterm birth rate rose from 12.5 percent to 12.7 percent for 2004-2005. (*National Center for Health Statistics, Births: Preliminary Data for 2005*)
- More than 525,833 infants are born prematurely each year. (*National Center for Health Statistics, Births: Preliminary Data for 2005*)
- The percentage of infants delivered at less than 37 weeks of gestation has risen by 20 percent since 1990. (*National Center for Health Statistics, Births: Preliminary Data for 2005*)
- The percentage of infants born very preterm (less than 32 weeks gestation) rose very slightly to 2.03 percent, while late preterm births (34-36 weeks) increased from 8.9 to 9.1 between 2004 and 2005. (*National Center for Health Statistics, Births: Preliminary Data for 2005*)
- The percentage of infants born low birthweight has increased more than 20 percent since the mid-1980's, and is currently 8.2 percent of all births. The 2005 level is the highest level reported since 1968. (*National Center for Health Statistics, Births: Preliminary Data for 2005*)
- Almost two-thirds of all childhood hospital stays are for newborns and neonates (babies up to 30 days old); the vast majority of these stays (nearly 95 percent) are for the birth of infants in the hospital. (*HCUP Fact Book 4, Agency for Healthcare Research and Quality, October 2003*)
- Children younger than 1 year comprise only 1 percent of the U.S. population, but they account for nearly 13 percent of all hospital stays. The vast majority of these stays are newborn infants. (*HCUP Fact Book 4, Agency for Healthcare Research and Quality, October 2003*)
- Five of the top 10 most common diagnoses for neonates are for either respiratory problems or infections. (*HCUP Fact Book 4, Agency for Healthcare Research and Quality, October 2003*)
- The most common neonatal conditions that require extension of the newborn hospital stay or return to the hospital are conditions associated with bilirubin metabolism (hemolytic jaundice), prematurity (including respiratory distress), respiratory problems, infections, and birth defects. (*HCUP Fact Book 4, Agency for Healthcare Research and Quality, October 2003*)
- Three of the top 10 diagnoses with the longest length of stay are conditions originating in the newborn period: prematurity, respiratory distress, and cardiac and circulatory birth defects. (*HCUP Fact Book 4, Agency for Healthcare Research and Quality, October 2003*)
- The average length of stay for a newborn with some type of complication is nearly 7 days — this is nearly 5 days longer than for newborns without complications. (*HCUP Fact Book 4, Agency for Healthcare Research and Quality, October 2003*)
- Premature babies were up to twice as likely to survive when treated at a busy, advanced-care center (more than 100 preemies per year) instead of one of the many community hospitals that have opened NICUs in recent years. Less than one quarter of very-low-birth-weight deliveries occurred in facilities with NICUs that offered a high level of care and had a high volume, but 92% of very-low-birth-weight deliveries occurred in urban areas with more than 100 such deliveries. (*Phibbs, Cairan S. et al, Level and Volume of Neonatal Intensive Care and Mortality in Very Low-Birth-Weight Infants, New England Journal of Medicine, May 24, 2007*)
- Increased risk of death when using less experienced NICUs ranged from 119% to 272%. (*Phibbs, Cairan S. et al, Level and Volume of Neonatal Intensive Care and Mortality in Very Low-Birth-Weight Infants, New England Journal of Medicine, May 24, 2007*)
- The incidence of multiple births has increased 88 percent for twin births and 43 percent for triplets+ births from 1980 to 2003. (*National Center for Health Statistics, 2005*)
- Multiple infants, resulting from assisted reproductive technology, were born to 35.6 percent of women less than 35 years of age, 30.9 percent of women 35 to 37 years old, 25.1 percent of women 38 to 40 years old, and 16.1 percent of women 41 to 42 years old. (*CDC, Division of Reproductive Health, ART Report: 2005*)
- The twin birth rate rose 2 percent in 2004, to 32.3 twins per 1,000 births, another record high. The twinning rate has climbed 42 percent since 1990 and 70 percent since 1980. (*National Center for Health Statistics, Births: Final Data for 2004*)
- In multiple births, 60 percent of twins, 90 percent of triplets, and virtually all other higher order multiples are born preterm. (*March of Dimes 2003*)

Source: The Assist Group ([www.assistgroup.com](http://www.assistgroup.com))

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