



Evidence-based perinatal protocols at Novant Health

Several new standards focused on maternal and infant morbidity are showing excellent results.

In 2016, as the U.S. maternal death rate continued to climb, Novant Health took action to decrease incidence of postpartum hemorrhage through a three-year project led by the multidisciplinary team at Novant Health Forsyth Medical Center. It is one of several new protocols designed to reduce perinatal morbidity rates through evidence-based protocols and elimination of unnecessary medical interventions. The results have been dramatic.

The hemorrhage project involved several components:

- **Readiness** — strategically located, preloaded supply carts including lifesaving medications
- **Recognition and prevention** — quantification of blood loss through weighing of pads and fluids
- **Risk assessment** — ongoing hemorrhage risk assessment starting at admission and periodically during the intrapartum period through an EHR tool that triggers standing orders
- **Team and family education** — regarding new processes and protocols, particularly postpartum management
- **Response** — a new “Code OB” with regular drills and debriefings, standing postpartum hemorrhage orders, massive transfusion protocols and fast access to blood

Since 2016, Forsyth Medical Center has decreased its maternal transfusion rates, requiring four or more blood transfusions, by 60%.



“Have some moms needed transfusions? Yes,” says Ann Smith, DNP, NNP-BC, director of Novant Health Women’s & Children’s Institute at Forsyth Medical Center. “But by identifying risk and abnormal blood loss earlier, women are not experiencing full-blown postpartum hemorrhage.”

Many of the new protocols at Forsyth Medical Center align with initiatives of the Perinatal Quality Collaborative of North Carolina (PQCNC), Smith says. But the hospital was ahead of the game when PQCNC launched its statewide hemorrhage initiative in 2017.

Hypertension in pregnancy

That was also the case with the Conservative Management of Preeclampsia (CMOP) project. Begun in 2014 — predating a similar PQCNC initiative — CMOP created evidence-based standards to minimize risk of maternal stroke while reducing unnecessary preterm births.

Per CMOP protocol, nurses learn best practices for taking blood pressures to ensure accuracy, and systolic or diastolic pressures of 160 or 110 trigger standing orders to begin labetalol and a hypertensive crisis protocol. Pharmaceutical supplies are monitored to ensure immediate availability. Patient education tools were also created to ensure patient understanding of the importance of frequent monitoring and rapid treatment.

The key to avoiding C-section in cases of preeclampsia or maternal hypertension is timely treatment. After CMOP was implemented, the number of affected patients who received treatment within one hour increased from 65% to 82%.

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Safe reduction of primary C-sections

In January 2019, the team began to focus on reducing the rates of primary C-sections. Smith acknowledges that with the comorbidities of its patient population, Forsyth Medical Center probably will not achieve the PQCNC’s stretch goal of 20% — the target is 22% which is an aggressive 5% reduction for Forsyth Medical Center — but the larger goal is choosing the appropriate treatment for each mother to keep both mother and baby safe.

Another multidisciplinary team was created to develop interventions that will most impact C-section rates.

“If a mom isn’t progressing in labor the way we’d like her to, the team refers to our evidenced-based pre-caesarean checklist to make sure they have tried everything possible to help her progress,” Smith says. “When a C-section is not the best choice for a particular mom, we do everything in our power to support a vaginal delivery.”

The protocol works best when there is support from everyone involved. Nurses received advanced education on labor support techniques with a focus on repositioning, use of the peanut ball and use of the labor curve. Families are encouraged to attend prenatal classes to understand the various techniques that facilitate labor ahead of time. The hospital has also received support from obstetric providers, posting its overall primary C-section rate as well as posting each ob clinic rate. That way, each ob clinic knows how it compares to others. Physician leaders also share individual rates with each ob provider.

The hospital’s primary C-section rate averaged 27% in 2018 and has trended downward since hitting the target of 22% or less.

Better drug management for babies

Two other promising projects seek to overhaul standard conventions for administering certain medications to babies.

While hospitals traditionally prescribe a standard course of antibiotics to any baby admitted to the NICU or considered at risk for Group B strep, Forsyth Medical Center now prescribes fewer antibiotics for usually less time — based on individual assessment. Evidence showed that not all term, well babies who had been exposed to Group B strep needed treatment, but could be screened using an early onset sepsis screening tool to determine if the infant was at high risk or not.

Another area of opportunity was NICU infants with late-onset sepsis. Treating these infants with a shortened course of vancomycin only and avoiding stronger antibiotics limited antibiotic exposure, which is considered less likely to contribute to future resistance. Since the three-year project began in 2016, Novant Health has decreased antibiotic exposure in the NICU by 38% overall and 70% in newborns.

In most hospitals, morphine is the standard treatment for neonatal abstinence syndrome. In 2018, Forsyth Medical Center switched to buprenorphine that can be weaned more often and is administered based on an evidence-based method that gauges withdrawal symptoms. Now addicted babies spend less time in the hospital, and the average course of treatment has dropped from 14.5 to 8.5 days.

“We are focused on high quality and safety,” Smith says. “Our goal is to achieve better outcomes for our moms and their babies. We owe that to them.”

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