



THE OPIOID EPIDEMIC AND NEONATAL ABSTINENCE SYNDROME

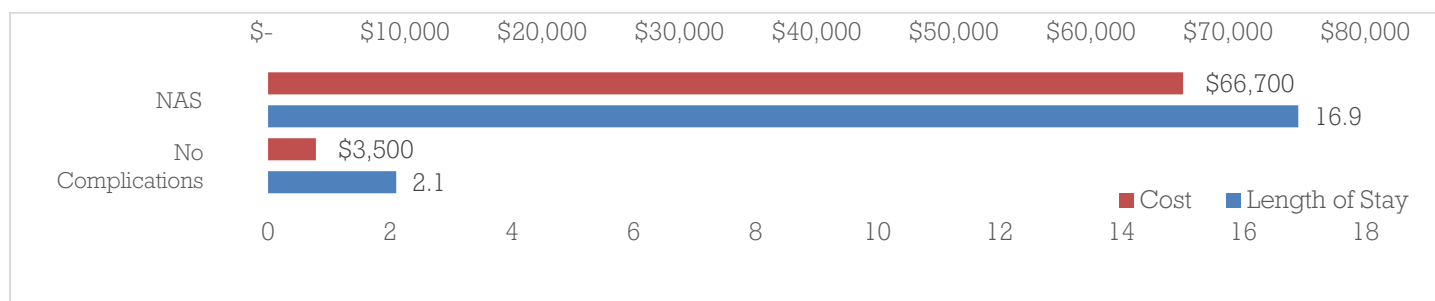
HOW NURSES CAN HELP MOMS BREAK THE CYCLE

Substance use—particularly the misuse and addiction to opioid pain relievers—is a public health crisis in the United States, and increasingly impacts some of the most vulnerable members of society: pregnant women and their babies. Built on more than four decades of research, Nurse-Family Partnership[®] (NFP) is founded on principles that help moms and families use their strengths to address challenges in their lives, including substance use and mental health disorders. For policymakers seeking to break the cycle of substance use in their communities, the NFP model and our nurses help moms make positive changes in their own health and the health of their babies.

THE COSTS OF OPIOIDS AND NAS

Between 2000 and 2009, opioid use increased among women who gave birth in the United States from 1.19 to 5.63 per 1,000 hospital births per year.¹ Infants exposed to opioids in the womb may develop neonatal abstinence syndrome (NAS), a drug withdrawal syndrome characterized by symptoms such as tremors, breathing and feeding difficulties, temperature instability, seizures, and low birth weight. Rates of NAS vary widely across the United States, ranging from 0.7 cases per 1,000 births in Hawaii to 33.4 cases per 1,000 births in West Virginia in 2013.²

NAS introduces a significant burden on hospitals and neonatal intensive care units: in 2012, an infant with NAS had a mean hospital stay of 16.9 days and a mean hospital charge of \$66,700, compared to 2.1 days and \$3,500 for a term infant without complications.³ In 2014, Medicaid covered 82 percent of NAS births, up from 73.7% of NAS births in 2004, and over the same period total hospital costs for NAS births that were covered by Medicaid increased from \$65.4 million to \$462 million.⁴



Average Cost and Length of Stay of Infants Born with Neonatal Abstinence Syndrome Vs. No Complications, 2012

1 Patrick, S. W., Schumacher, R. E., Benneyworth, B. D., Krans, E. E., McAllister, J. M., & Davis, M. M. (2012). Neonatal abstinence syndrome and associated health care expenditures: United States, 2000–2009. *Journal of the American Medical Association*, 307(18), 1934–1940.

2 Ko JY, Patrick SW, Tong VT, Patel R, Lind JN, Barfield WD. Incidence of Neonatal Abstinence Syndrome - 28 States, 1999-2013. *MMWR Morb Mortal Wkly Rep*. 2016 Aug 12;65(31):799-802. doi: 10.15585/mmwr.mm6531a2.

3 Patrick SW, Davis MM, Lehmann CU, Cooper WO. Increasing incidence and geographic distribution of neonatal abstinence syndrome: United States 2009 to 2012. *J Perinatol* 2015;35:650–5.

4 Winkelman TNA, Villapiano N, Kozhimannil KB, Davis MM, and Patrick SW. Incidence and Costs of Neonatal Abstinence Syndrome Among Infants with Medicaid: 2004-2014. *Pediatrics*. 2018 Apr;141(4). pii: e20173520. doi: 10.1542/peds.2017-3520.

NURSE-FAMILY PARTNERSHIP'S ROLE

For NFP moms with addiction or dependency in pregnancy, nurses serve as a lifeline, connecting moms with substance abuse counseling, encouraging them in recovery and ensuring their babies are screened and treated for any opioid-related health problems. In many instances, nurses offered a singular voice of hope to struggling moms and families.

The education, licensure, and skillset of registered nurses makes them uniquely suited to help care for women and children affected by substance use. NFP nurses:

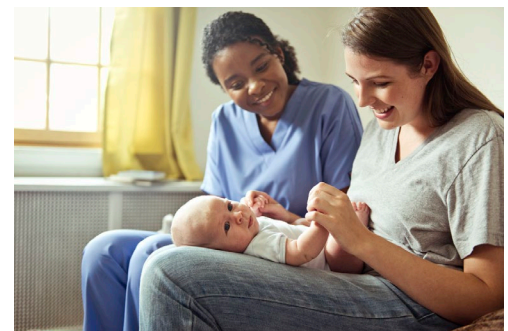
- Assess physical and mental health;
- Assess for signs and symptoms of withdrawal in the mom and in the infant;
- Connect moms with resources in the community;
- Educate moms about medications and medical treatment; and
- Coordinate care with other disciplines, including substance abuse counselors, obstetricians, pediatricians, and social workers.
- Some NFP teams also include mental health specialists as part of the care team.

NFP nurses also receive extensive education in delivery of the NFP model. The model is built on and includes behavioral change theory and motivational interviewing, two key tools in caring for moms with substance use disorder.

OUTCOMES AND FUTURE RESEARCH

Validated outcomes of NFP, based on over four decades of research, include a 79% reduction in preterm delivery among women who smoke cigarettes,⁵ a 56% reduction in emergency room visits for accidents and poisonings in the second year of the child's life,⁶ and 61% fewer arrests of mothers by child age 15.⁷

In 2017, the Prevention Research Center at the University of Colorado began a study on NFP implementation with mothers who have had a previous live birth, focused on families at highest risk. Part of this research will assess NFP's impact on mothers with substance use disorders and babies with NAS. NFP is also exploring connections with inpatient health care programs, often called pregnancy recovery centers, that provide services to pregnant women addicted to opioids. NFP nurses can provide an extended source of recovery support for moms enrolled in these programs and their babies.



A PATH FORWARD

NFP empowers first-time moms to transform their lives and create better futures for themselves and their babies, including those impacted by the opioid epidemic. Working with our partners in many disciplines, NFP can help communities break the cycle of substance abuse among their most vulnerable citizens. For more information on NFP's work to help moms and babies with substance use and mental health issues, email SAMHWorkgroup@nursefamilypartnership.org.

⁵ Olds DL, Henderson CRJ, Tatelbaum R, Chamberlin R. Improving the delivery of prenatal care and outcomes of pregnancy: a randomized trial of nurse home visitation. *Pediatrics* 1986 Jan;77(1):16-28.

⁶ Olds DL, Henderson CR Jr, Chamberlin R, Tatelbaum R. Preventing child abuse and neglect: a randomized trial of nurse home visitation. *Pediatrics* 1986 Jul;78(1):65-78.

⁷ Reanalysis of: Olds DL, Eckenrode J, Henderson CR Jr, Kitzman H, Powers J, Cole R, Sidora K, Morris P, Pettitt LM, Luckey D. Long-term effects of home visitation on maternal life course and child abuse and neglect. Fifteen-year follow-up of a randomized trial. *Journal of the American Medical Association* 1997 Aug 27;278(8):637-43.