

MATERNAL OPIATE PROGRAM SPECIAL REPORT

Neonatal Abstinence Syndrome (NAS): A Preventable Crisis

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Neonatal Abstinence Syndrome (NAS) – A Preventable Crisis:

Neonatal abstinence syndrome is a withdrawal syndrome experienced by drug-exposed newborns after birth. While other drugs can cause NAS, the majority are by opiate exposure. The use of opiates by the mother often begins prior to pregnancy and stopping drug use abruptly during pregnancy can be dangerous to both the mother and baby. Treatment programs can include replacement medications but even with treatment, the newborns can go into withdrawal. An estimated 60-80% of newborns who are exposed to heroin or methadone in utero develop NAS.¹

The damage from NAS can be difficult for even seasoned medical professionals to see. The parts of the body that respond to opiates, including heroin, are concentrated in the nervous system and the intestines. The infant will have trouble feeding, with high rates of vomiting and diarrhea leading to life-threatening dehydration and poor weight gain. The central nervous system can produce tremors, exaggerated reflexes, seizures, irritability and cause reduced sleep for the newborn. The normal functions of the brain that occur without our control are called autonomic reflexes. NAS produces an increase in those reflexes. The newborn will breathe rapidly, yawn repeatedly, and the pupils will dilate without any changes to the lighting in the room.² An excess of environmental stimuli, such as bright lights or loud noises, exacerbates the symptoms and when the newborn is hungry the symptoms present with a higher degree of severity.³

A large spike in maternal opiate abuse occurred between 2006 and 2009. The rate took six years to more than double (2000-06), and only three years to more than double again (2006-09).¹

An increasing amount of drug exposure does not always lead to more severe NAS. The severity of NAS is dependent upon the type of opiate used, the use of other substances, and the timing of the use during pregnancy. The infant metabolism and birthweight also contribute to the NAS occurrence.⁴

According to the *Journal of the American Medical Association*, from 2000 to 2009 the rate of maternal opiate use/abuse increased significantly. In 2000, the rate was 1.1 per 1000 births. By 2009, the rate was 5.5 per 1000 births. A large spike in maternal opiate abuse occurred between 2006 and 2009. The rate took six years to more than double (2000-06), and only three years to more than double again (2006-09).⁵

¹ (Patrick S. , 2013)

² (Patrick S. , 2013)

³ (Hudak & Tan, 2012)

⁴ (Hudak & Tan, 2012)

⁵ (Patrick & al., 2012)

A corresponding increase in NAS occurred from 2000 to 2009. The rate of NAS per 1000 births went from about 1.2 babies per 1000 to more than 3.5 babies per 1000. This is more than a 300% increase in the rate of NAS, with the largest spike occurring between 2006 and 2009.⁶

The maternal opiate program provides an opportunity to prevent harm to the smallest victims of opiate dependency. The maternal opiate program is a collaborative effort between multiple non-profit organizations dedicated to the treatment of women, their developing children, and the benefit of the community.

The Mission of the Center for Chemical Addictions Treatment (CCAT) is to *“save lives and rebuild families by providing tools for lifelong recovery and sobriety thereby reducing costs to our community associated with untreated addiction.”*

In keeping with our mission to save lives, CCAT’s physicians, nurses, and partner organizations have begun prescribing buprenorphine to pregnant patients diagnosed with opioid dependence. Patients are thoroughly educated on the use of buprenorphine and on the signs and symptoms of distress for themselves and the developing child.

What is Buprenorphine?

Buprenorphine is a mixed opiate antagonist/agonist drug used for both long-term treatment of opiate addiction and medically supervised withdrawal/detoxification from opiates. The medication is safe and effective in minimizing withdrawal symptoms. The drug has a “ceiling effect” on the respiratory system, which means that increased doses do not necessarily lead to a lethal overdose making the drug safer than other options.⁷

Has the use of buprenorphine during pregnancy been studied?

The use of buprenorphine in medically assisted treatment during pregnancy has been studied with no adverse results for mothers or newborns.⁸ The use of buprenorphine has comparable effectiveness to methadone with a clinically significant reduction in NAS.⁹ Limited research has shown preliminary results reporting safety during breastfeeding.

“My vision for the maternal opiate program is to provide comprehensive treatment to women who are pregnant and addicted to heroin. We will provide a full complement of wraparound services to improve the lives of babies before they’re born.”
– Margo Spence, President/CEO
First Step Home, Cincinnati, Ohio

⁶ (Patrick & al., 2012)

⁷ (Johnston, Mandell, & Meyer, 2010)

⁸ (Comer & Annitto, 2004) (Jones, et al., 2012)

⁹ (Jones, et al., 2012)

The cost of NAS

The average cost of treatment for the newborn and the hospital stay continues to rise. According to the *Journal of the American Medical Association (JAMA)*, the cost of treating NAS has gone from \$39,400 in 2000 to \$55,400 in 2009 per incident. Seventy-eight percent of these patients qualify for Medicaid. The annual cost to Medicaid in 2000 was \$130,000,000; in 2009, the annual cost was \$560,000,000. At the current rate, the costs will exceed \$1,000,000,000 by the end of 2014. The average length of stay in the hospital for an NAS newborn is 16.4 days. Adjusted for inflation the cost of hospitalization has more than quadrupled.¹⁰

What is the Federal Government Doing?

The National Institutes of Health and the Centers for Disease Control have allocated funds for NAS treatment. The Centers for Medicare and Medicaid Services have asked states to develop a plan to stop NAS. The White House Office of National Drug Control Policy lists the issue as a top priority for the current decade.¹¹

What are we doing?

CCAT, First Step Home, and Good Samaritan Hospital stand together to raise awareness and provide treatment to pregnant addicts and their unborn children. The collaboration between these organizations provides a comprehensive reduction plan for NAS in the Greater Cincinnati community.

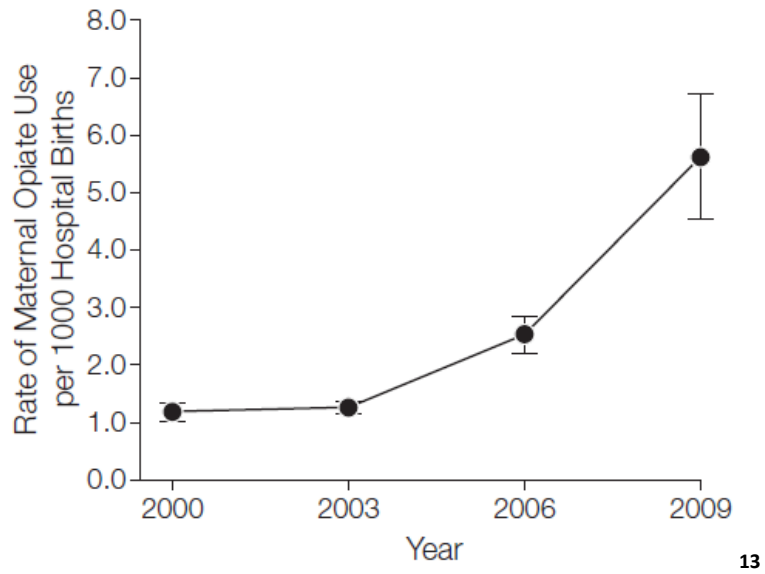
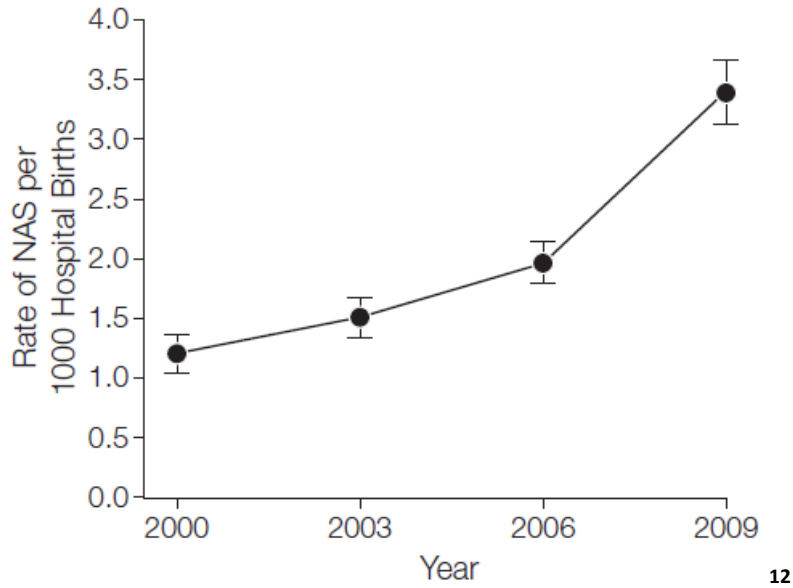
First Step Home provides housing, drug counseling, employment counseling, education programming, therapy and food. Good Samaritan provides obstetrics and gynecological services. CCAT provides safe medical supervision of buprenorphine treatment and addiction counseling. Program costs are covered by grant funds, and donations, acquired individually and collaboratively by the organizations involved.

*“Collaboration and innovation have been the keys to our early success. Long-term, the program needs to find insurance coverage and additional grants to provide the services to more women and most importantly, help prevent NAS among Cincinnati’s smallest victims of opiate addiction.” – Sandi Kuehn,
President/CEO
Center for Chemical Addictions Treatment*

¹⁰ (Patrick S. , 2013)

¹¹ (Patrick & al., 2012)

Statistics



¹² (Patrick & al., 2012)

¹³ (Patrick & al., 2012)

The Center for Chemical Addictions Treatment (CCAT) has provided alcohol and drug treatment to adults for more than forty years. The staff of sixty-five persons, including nurses, physicians, counselors and professional staff, assures that quality care is provided 24 hours a day, 7 days a week in the medical detox and short-term residential programs at one location, Ezzard Charles Drive in Cincinnati, Ohio.

As a not-for-profit, the majority of operating revenue comes from public sources, the largest being the Hamilton County Mental Health and Recovery Services Board. CCAT served more than 1,500 men and women last year. Continuous accreditation by the Joint Commission since 1975 is a testament to the quality of services and administration. Additionally, the Ohio Department of Alcohol and Drug Addiction Services certifies the agency to provide residential and outpatient care. CCAT was the winner of the Better Business Bureau's Torch Award for Marketplace Ethics in 2006, a 2010 Honoree, and proudly displays the GuideStar Wise Giving Seal.

First Step Home is a Residential and Outpatient treatment program dedicated to women-centered care for addictions and co-occurring mental health and trauma related issues. The agency is nationally accredited by CARF and certified to provide services by the Ohio Department of Drug and Alcohol Services and the Ohio Department of Mental Health. The agency focuses on bringing best practice, collaborative partnership, and diversification of funding needed to address the needs of women of all ages.

The agency was founded in 1993 in response to the need for a Residential treatment facility that would permit children, ages 0 through 12, to live with their mothers during treatment. This facility increased participation in substance abuse treatment and reduced the barrier of women being forced to place their children in foster care for extended periods. In addition, First Step Home also serves single women, pregnant women, women with criminal justice involvement, and women with long histories of abuse.

First Step Home has served over 2,900 women and 1,800 children in the past 19 years. They have provided individual and group counseling, residential services, life skills training, nutrition classes, case management, financial counseling, access to medical care, on-site child care, mental health services, family programming, parenting classes, vocational assistance, and twelve step meetings. Upon completion of the Residential program, women have the opportunity to move into Outpatient treatment and transitional housing supervised by First Step Home where they continue to be surrounded by other women and children in recovery. During this period, they attend aftercare sessions for up to 18 months in support of their recovery.¹⁴

Good Samaritan Hospital has played a crucial role in the Cincinnati community since 1852, and the commitment to providing the best possible care continues today. A Catholic institution founded by the Sisters of Charity, Good Samaritan is the oldest and largest private teaching and tertiary health care facility in Greater Cincinnati, sponsored by Catholic Healthcare Initiatives.¹⁵

¹⁴ (First Step Home, 2014)

¹⁵ (Good Samaritan Hospital, 2014)

For further information, please access the following references:

Annitto, W. J. (2000). Detoxification with buprenorphine of a pregnant heroin addict. *The American Journal On Addictions*, 9(1), 92-93. doi:10.1080/10550490050172272

Comer, V. G., & Annitto, W. J. (2004). Buprenorphine: A Safe Method for Detoxifying Pregnant Heroin Addicts and Their Unborn. *The American Journal On Addictions*, 13(3), 317-318. doi:10.1080/10550490490460256

DeMio, T. (2014, February 1). Help pours in to addicted moms-to-be. *The Cincinnati Enquirer*, p. A1.

DeMio, T. (2014, January 24). Idea born to help the most vulnerable addiction victims. *The Cincinnati Enquirer*, p. B1.

First Step Home. (2014, April 1). *About Us: First Step Home*. Retrieved from First Step Home Web site: www.firststephome.org

Good Samaritan Hospital. (2014, April 1). *About Good Samaritan Hospital*. Retrieved from Good Samaritan Hospital Website: <http://www.trihealth.com/hospitals-and-practices/good-samaritan-hospital/>

Holbrook, A. M., Baxter, J. K., Hendree, E. J., Heil, S. H., Coyle, M. G., Martin, P. R., . . . Kaltenbach, K. (2012). Infections and obstetric outcomes in opioid-dependent pregnant women maintained on methadone or buprenorphine. *Addiction*, 107(Suppl. 1), 83-90. doi:10.1111/j.1360-0443.2012.04042.x

Holbrook, A. M., Jones, H. E., Heil, S. H., Martin, P. R., Stine, S. M., Fischer, G., . . . Kaltenbach, K. (2013). Induction of pregnant women onto opioid-agonist maintenance medication: An analysis of withdrawal symptoms and study retention. *Drug and Alcohol Dependence*, 329-334.

Hudak, M. L., & Tan, R. C. (2012). Neonatal Drug Withdrawal. *Pediatrics*, 540-580.

Johnson, A., Mandell, T., & Meyer, M. (2010). *Treatment of Opioid Dependence in Pregnancy: Vermont Guidelines*. Montpelier: Vermont Department of Health.

Johnston, A., Mandell, T., & Meyer, M. (2010). *Vermont Buprenorphine Practice Guidelines*. Montpelier: Vermont Department of Health.

- Jones, H. E., Heil, S. H., Baewert, A., Arria, A. M., Kaltenback, K., Martin, P. R., . . . Fischer, G. (2012). Buprenorphine treatment of opioid-dependent pregnant women: A comprehensive review. *Addiction, 107*(Suppl 1), 5-27.
- Kakko, J., & Helig, M. S. (2008). Buprenorphine and methadone treatment of opiate dependence during pregnancy: Comparison of fetal growth and neonatal outcomes in two consecutive case series. *Drug And Alcohol Dependence, 96*(1-2), 69-78. doi:10.1016/j.drugalcdep.2008.01.025
- Kyei-Aboagye, K. K., Acker, D. B., & MacBain, D. D. (1998). The effect of postdetoxification drug-free residential living on birth outcome in the pregnant drug abuser. *Substance Abuse, 19*(3), 123-128. doi:10.1023/A:1021355213104
- Patrick, S. (2013). Neonatal Abstinence Syndrome: Scope and Evolving Issues. *TIPQC Annual Meeting* (pp. 1-68). Ann Arbor: University of Michigan Children's Hospital.
- Patrick, S., & al., e. (2012, May 9). Neonatal Abstinence Syndrome and Associated Healthcare Expenditures - United States. *Journal of the American Medical Association, 307*(18), 1934-40.
- Schroeder, S. (2014, March 11). Addiction injected into Kenton Co. race. *The Cincinnati Enquirer*, p. A1.
- Shieh, C., & Kravitz, M. (2006). Severity of Drug Use, Initiation of Prenatal Care, and Maternal-Fetal Attachment in Pregnant Marijuana and Cocaine/Heroin Users. *Journal of Obstetric, Gynecologic, & Neonatal Nursing: Clinical Scholarship for the Care of Women, Childbearing Families & Newborns, 35*(4), 499-508. doi:10.1111/j.1552-6909.2006.00063.x
- Stewart, R. D., Nelson, D. B., Adhikari, E. H., McIntire, D. D., Roberts, S. W., Dashe, J. S., & Sheffield, J. S. (2013). The obstetrical and neonatal impact of maternal opioid detoxification in pregnancy. *American Journal of Obstetrics & Gynecology, 209*(267), 1-5. doi:10.1016/j.ajog.2013.05.026
- Waal, H. (2013). Is Sustained Release Naltrexone An Option for Heroin-Dependent Pregnant Women? *Addiction, 108*(2), 252-253. doi:10.1111/j.1360-0443.2012.03940.x

If you or someone you know has a drug or alcohol problem and needs help, contact one of our Admissions professionals in confidence at (513) 381-6672 or visit our website www.ccatsober.org for more information.