



## Understanding the Impact of Prenatal Substance Exposure: Implications for Early Childhood Programs

This document provides discussion on implications of prenatal substance exposure for early childhood programs. Included is discussion on:

- I. Prevalence of prenatal substance exposure
- II. Impact of prenatal substance exposure on child development
- III. Implications for early childhood programs: Strategies to facilitate identification of children who may have been prenatally exposed; and to implement in the classroom to address and manage some of the challenges experienced by children with prenatal exposure
- IV. A collaborative effort in improving outcomes for families affected by prenatal substance exposure
- V. Training and additional Resources

### **I. Prevalence of Prenatal Substance Exposure**

Each year, an estimated 400,000–440,000 infants (10–11% of all births) are affected by prenatal alcohol or illicit drug exposure (Young et al, 2009). Prenatal exposure to alcohol, tobacco, illicit drugs and other substances has the potential to cause a wide spectrum of physical, emotional, and developmental problems. The impact of prenatal exposure is affected by many factors. [See section *II. Impact of Prenatal Substance Exposure for additional information*].

States and jurisdictions are reporting an increase in the number of infants who are born prenatally exposed to opioids (e.g. prescription pain medications and heroin). Infants who are prenatally exposed to opioids can develop Neonatal Abstinence Syndrome<sup>1</sup> (NAS). The incidence of NAS increased from 1.20 per 1,000 hospital births in 2000 to 3.39 in 2009 (Patrick et al., 2012). In a study of 299 neonatal intensive care units (NICU) across the country, the rate of NICU admissions for infants with NAS increased from 7 cases per 1,000 admissions in 2004 to 27 cases per 1,000 admissions in 2013 (Toila et al., 2015).

Although the increased rate of NAS is alarming, it is important to continue to recognize and address the needs of infants who are prenatally exposed to other substances. According to the 2013 National Survey on Drug Use and Health, 15.4% of pregnant women ages 15-44 reported use of tobacco, 9.4% reported current alcohol use and 5.9% reported use of illicit drugs (9 categories including marijuana, heroin and non-medical use of prescription medications) [SAMHSA, 2014].

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<sup>1</sup> According to the American College of Obstetricians and Gynecologists, Committee on Health Care for Underserved Women and the American Society of Addiction Medicine, NAS is an expected and treatable condition that follows prenatal exposure to opioids. For additional information, visit <https://www.acog.org/-/media/Committee-Opinions/Committee-on-Health-Care-for-Underserved-Women/co524.pdf?dmc=1&ts=20160404T1622275413> and the below *Training Resources*.

## **II. Impact of Prenatal Substance Exposure**

Understanding the impact of prenatal exposure on child development is important for early childhood programs to develop the appropriate programming and curriculum for affected children. The harm caused to the child can be significant and long-lasting, especially if the exposure is not detected and the effects are not treated as soon as possible. The impact of prenatal exposure is affected by a variety of factors, including what type of substance the infant was exposed to; whether the infant was exposed to multiple substances; whether the mother is able to access substance use treatment and achieve and maintain recovery; and a variety of other factors. Other factors include the parent-child bond and attachment; parenting skills; child's access to services and mother's access to prenatal care and other services (Strathearn & Mayes, 2010). Striking are studies that have found the importance of environmental factors:

*"[...] across a number of models with and without covariates, environmental risk accounted for more variance in developmental trajectories than did prenatal exposure." (Carta, et al, 2001)*

The far-reaching impact of prenatal exposure to alcohol must be addressed:

*"Prenatal alcohol is predictive of decreased executive functioning in early childhood that could not be attributed to environmental factors." (Noland et al, 2003)*

*"The sole cause of Fetal Alcohol Spectrum Disorders is the fetus being exposed to alcohol during the pregnancy." (SAMHSA, FASD Center for Excellence)*

*"Of all the substances of abuse (including cocaine, heroin and marijuana), alcohol produces by far the most serious neurobehavioral effects in the fetus." (Institute of Medicine, 1996)*

Fetal Alcohol Spectrum Disorders (FASD) is an umbrella term describing the range of physical, mental, behavioral and learning disabilities experienced by children who are prenatally exposed to alcohol and can include the following diagnoses:

- Fetal Alcohol Syndrome (FAS): Growth deficiency; unique cluster of minor facial anomalies (small eyes, smooth philtrum, thin upper lip); severe central nervous system dysfunctions
- Partial FAS: Some growth deficiency and facial anomalies; severe central nervous system dysfunctions
- Alcohol Related Neurodevelopmental Disorder (ARND)/Fetal Alcohol Effects (FAE)
- Static Encephalopathy (SE): Severe dysfunctionality in central nervous system
- Neurobehavioral Disorder (ND): Moderate dysfunctionality in central nervous system

For more information on FASD:

<http://fasdcenter.samhsa.gov/educationTraining/FASDBASICS/FASDTheBasics.pdf>

The wide range of issues and delays that a child with prenatal exposure can experience can be categorized into the following categories.

- Cognitive Development: Includes developmental delays, intellectual deficits, deficits in expressive language, dysregulation during infancy and increased rates of ADHD

- Executive Functioning: Includes damage to the frontal lobes and prefrontal cortex which impacts all areas of functioning, including emotional control, memory, ability to plan/organize and inhibition. Behavioral symptoms may resemble ADHD.
- Academic Deficits: Related to difficulties with reading comprehension; written expression; fine motor delays; emotional and behavioral disturbances; and speech and language delays
- Memory Deficits: Wide range – visual and verbal memory; attention and concentration; information processing
- Sensory Dysfunction: Source of agitation and discomfort, leading to distractibility, irritability, behavioral outbursts and interferences with overall functioning. Can mimic ADHD and other disorders.
- Emotional Difficulties: Related to limbic system damage. Includes emotional lability (e.g. involuntary crying or laughing or other emotional display), anxiety, depression, impulsivity
- Behavioral Difficulties: ADHD, conduct disorders, attachment deficits, mood swings, tantrums
- Social Deficits: Related to emotional dysregulation, inability to anticipate consequences, and impulsivity

See this presentation for additional detail and discussion:

[http://www.cffutures.org/files/B4\\_ImpactOfPrenatalSubstanceExposureOnChildrenAndAdolescents.pdf](http://www.cffutures.org/files/B4_ImpactOfPrenatalSubstanceExposureOnChildrenAndAdolescents.pdf)

### **III. Implications for Early Childhood Programs**

Being able to identify, understand and respond to the cognitive, behavioral, language, motor and social-emotional delays that children with prenatal exposure may experience can inform how early childhood programs can best meet the needs of affected children.

Early identification of children with potential delays can be accomplished by:

- Asking parents, other family members, friends and caregivers about their concerns
- Obtaining a comprehensive prenatal, family and early childhood history
- Using a standardized tool to screen for cognitive, behavioral and language delays
- Observing the child playing and interacting, especially in his/her own natural environment

When there is some indication that a child is experiencing delays, to best understand how to meet the child's needs, a referral can be made for/to:

- The child's pediatrician or doctor
- An Infant/Toddler Mental Health Specialist
- A full developmental assessment that involves a developmental pediatrician, speech and occupational therapists, a child psychologists, and other professionals (sometimes referred to as an Arena Assessment: [https://depts.washington.edu/isei/iyc/22.3\\_King.pdf](https://depts.washington.edu/isei/iyc/22.3_King.pdf))
- The Program for Infants and Toddlers with Disabilities (IDEA Part C): A federal grant program that assists states in operating a comprehensive statewide program of early intervention services for infants and toddlers with disabilities, ages birth through age 3 years, and their families. (State Example: <http://dph.georgia.gov/sites/dph.georgia.gov/files/MCH/FAQ%20substance%20exposed%20infants%20for%20web.pdf>)

The results of any and all assessments and additional information can then be used to develop the Individualized Family Service Plan that includes the following components.

- Ongoing assessment to ensure that the child's needs are being met
- Interventions that address the challenges experienced by the child. These can include:
  - Provision of structure, consistency and predictability while avoiding timed activities.
  - Help child work through transitions: Allow child to feel a sense of completion before transitioning to the next task. Adapt tasks for the child. Work with the child to develop strategies for transition.
  - Help develop self-regulation
  - Distinguish between willful behavior and neurological deficits
  - Multi-sensory learning
  - Identify triggers of overstimulation, including the physical environment (e.g. plain walls, hanging items, soft lighting, etc.); modeling of calm, organized behavior
  - Work with the child to develop skills to manage and cope with difficulties in attention, self-regulation and social skills.
- Assignment of a staff to the child to manage and help the child cope with delays and behavioral issues
- Pair the child with a positive peer role model

See this presentation for additional information:

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Curriculum for young children with developmental and behavioral difficulties include:

- The Incredible Years: The goal of the curriculum is to prevent and treat young children's behavior problems and promote their social, emotional, and academic competence.  
<http://incredibleyears.com/>
- Lynn Katz, EDD, has developed a curriculum to address the language delays and social-emotional issues experienced by children with prenatal exposure. Her contact information is as follows:
  - (305) 325-1818 ext. 307
  - [lkatz@miami.edu](mailto:lkatz@miami.edu)
  - University of Miami, Linda Ray Intervention Center/Director; Research Associate Professor, Department of Psychology; Director/FDLRS-UM Multidisciplinary Educational Center
  - Early Childhood Special Education Graduate Program Director, Department of Teaching and Learning; *Legacy for Children* (Miami) Technical Assistance Team Lead

#### **IV. A Collaborative Effort: 5-Point Intervention Framework**

There are multiple opportunities to intervene on behalf of newborns, infants and children with prenatal exposure to substances. The publication *Substance-Exposed Infants: State Responses to the Problem* (<https://www.ncsacw.samhsa.gov/files/Substance-Exposed-Infants.pdf>) presents a 5-point intervention framework. The framework serves as a comprehensive model that identifies five major time frames – Pre-Pregnancy, Prenatal, Birth, Neonatal, Childhood and Beyond, when intervention can help reduce the potential harm of prenatal substance exposure. Often, Early Childhood programs interact with children

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with prenatal exposure at the fifth point of intervention. Yet, the information necessary to identify, understand and respond to the needs of children with prenatal exposure is often collected by various other service providers during the earlier points of intervention. A collaborative approach can facilitate sharing of information and coordination of care and services that are critical for affected children and their families.

#### **V. Training and Additional Resources**

Through the *Substance-Exposed Infants In-Depth Technical Assistance* (SEI IDTA) project, the National Center on Substance Abuse and Child Welfare (NCSACW) worked with 6 states who examined their policies and procedures in working with pregnant women with opioid and other substance use disorders. The 6 states were Connecticut, Kentucky, New Jersey, Virginia, West Virginia and Minnesota. <https://ncsacw.samhsa.gov/technical/sei-idta.aspx>

NCSACW Webinar Series: *Understanding Opioid Use Disorders and Treatment, Neonatal Abstinence Syndrome – Implications for Collaborative Practice*

Webinar series on the treatment of opioid use disorders during pregnancy and its impact on the infant. The series discusses a variety of topics including an overview of clinical standards of care in the treatment of opioid use disorders, implications for the various service systems that work with affected families and explores collaborative practice solutions. <https://ncsacw.samhsa.gov/resources/resources-mat.aspx>

#### Training Resources

- NCSACW provides three no-cost tutorials that focus on the intersection of substance abuse and child welfare; and support and facilitate collaboration between child welfare, substance use and the courts. The tutorial geared for child welfare may be helpful for Early Childhood programs, particularly the material on working with families and infants with prenatal exposure and collaborating with partners. <https://www.ncsacw.samhsa.gov/training/default.aspx>
- *Understanding Substance Abuse and Facilitating Recovery: A Guide for Child Welfare Workers*. Provides information on the biological, psychological, and social processes of substance use disorders; describes strategies to facilitate and support alcohol and drug treatment and recovery; and explains the benefits of collaborative practice. This may be helpful for Early Childhood programs in understanding the impact of parental substance use. <https://ncsacw.samhsa.gov/files/Understanding-Substance-Abuse.pdf>

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