

# Outcomes of Children Prenatally Exposed to Opioids

Sara Arter PhD, RN

# Disclosures

- Additional Authors: Dr. Brian Tyler, Dr. Jennifer McAllister, Dr. Liz Kiel, Ms. Ayse Guler, Dr. M. Cameron Hay
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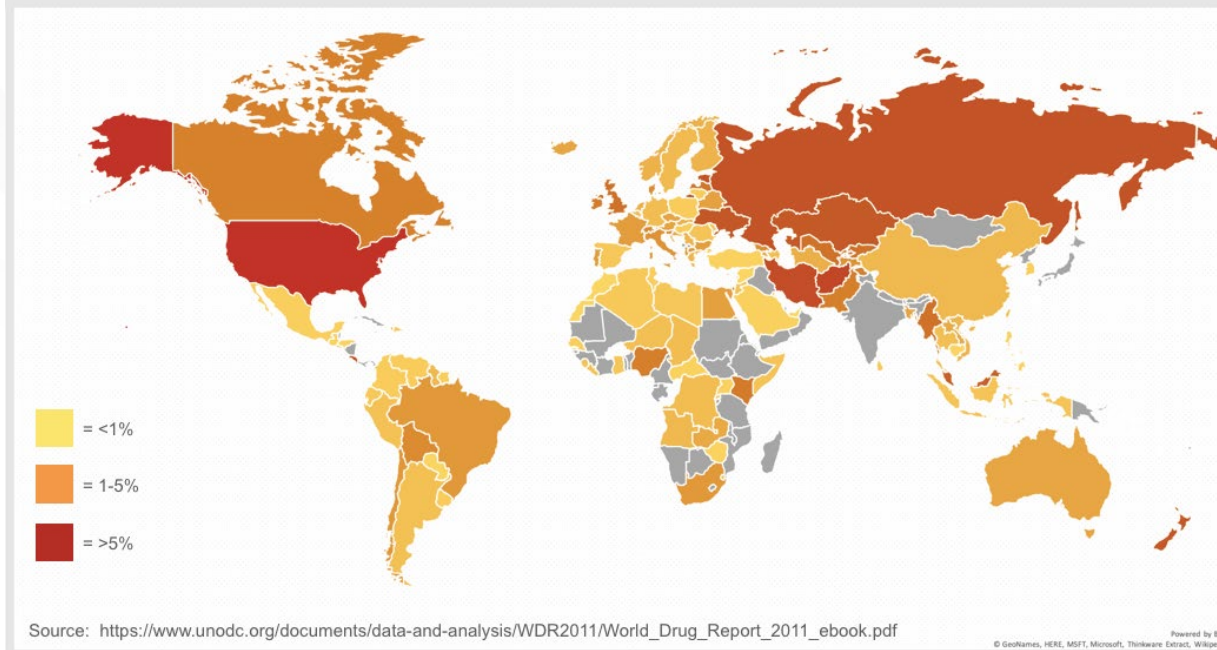
# Learner Objective

Summarize literature and gaps in knowledge related to longer-term effects of prenatal opioid exposure on child developmental outcomes.



Adapted from “Young Victims of the Opioid Epidemic” by Lilli Carre, 2017. Retrieved from <https://www.nytimes.com/2017/01/16/opinion/young-victims-of-the-opioid-epidemic.html>

Annual Prevalence of Opioid Use as a Percentage of the Population Aged 15-64



# BUT FIRST... A LITTLE BACKGROUND

# Current Trends: Exposed Children



# Importance

It is unclear how prenatal exposure to maternal opioid use affects children across the lifespan, but this is vital information given the dramatic increase in exposed children in recent years.



*Can you be born an addict? Thousands of Ohio babies are every year*, 15 Jun. 2017,  
[www.columbusrecoverycenter.com/blog/can-you-be-born-an-addict/](http://www.columbusrecoverycenter.com/blog/can-you-be-born-an-addict/)

# Evidence Review

- Lit search: PubMed, EBSCO HOST/Medline, Web of Science, UC Library, and references of included articles
- No limitation on year of publication
- Original pubs on outcomes of children 2 - 18 years prenatally exposed to opioids were included.
- **44 studies were included from United States, Australia, New Zealand, Norway, Sweden, Finland, Israel, UK, the Netherlands, Denmark, and the Czech Republic**

# Data Extraction

## Participant Information

- Age
- Gender
- Race/Ethnicity
- SES
- Pre-existing medical conditions
- Drug(s) of exposure
- Trimester/dosing of exposure
- Home setting
- Mother/caregiver demographics

## Outcomes

Academic success	Attention
Behavior	Cognition
Comprehensive development	Executive function
Hospital admission	Morbidity/mortality
Imaging	Language
Neurologic	Physical growth
Sensory motor function	Social-emotional
Vision	Miscellaneous



# Findings

Poor outcomes related to:

**Academic success**

**Behavior**

**Vision**

**Hospital admissions**

\*Issues with study methodology prohibited further analysis.

# Academic Success

Worse scores for exposed children when measured between 5-13 years in categories of:

- Reading,
- Numeracy, Arithmetic
- Writing, Grammar, and Spelling

# Behavior

Mixed results using Child Behavior Checklist in smaller studies.

However, results using large datasets included:

- 5.8% of exposed children with Behavioral or Emotional Disorders
- Mental and behavioral Disorders OR: 2.08 (CI: 1.92-2.25)
  - Adjustment Disorder 6.70 (5.09-8.83)
  - Anxiety Disorder, unspecified 3.77 (3.09-4.61)

Behavioral and emotional disorders with onset in childhood or adolescence 3.35 (3.02-3.72)

- Conduct Disorder 3.13 (2.73-3.58)
- Oppositional defiant disorder 3.67 (3.16-4.26)
- Disturbance to attention and activity 1.68 (1.40-2.01)

# Hospital Admissions

Three studies found significantly higher rates of hospitalization for exposed children related to:

- All causes and higher emergency room admissions
- Infection
- Skin/subcutaneous diagnoses
- Respiratory diagnoses
- Digestive diagnoses

# Vision

- Five studies with significantly increased rates of strabismus and nystagmus in children with prenatal opioid exposure compared with control group or general population.

# Going Forward

## **Clinicians:**

Interventions to prevent/mitigate poor outcomes already associated with prenatal opioid exposure should be initiated. Examples may include:

1. Working with school liaisons to ensure unique education needs are met
2. Educate/encourage parents/caregivers about early child eye exams
3. Collaboration with parents to reduce hospital admissions and behavior issues

## **Researchers:**

Recommendations to overcome current limitations:

1. Increased sample sizes
2. Consensus on variables to include in future studies
3. Standardize methods of measurement



**Thank You!**

Questions?

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