

# Drug Endangered Children: What You Need to Know

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Critical Conversations  
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# Disclosures

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- No financial disclosures
- No conflicts of interest

# Outcomes for Session

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- Describe the effects of prenatal drug and alcohol exposure on infants and children.
- Discuss drugs of abuse that children may be exposed to prenatally
- Discuss interventions for infants and children exposed to prenatal drugs and alcohol
- Inform participants of community resources available to children and families impacted by prenatal drug and alcohol exposure.

# Substance Use in Iowa: National Research Studies

[www.drugrehab.com](http://www.drugrehab.com)

## Welfare Professionals:



79.6%

say drug abuse causes or contributes to 50%  
of all cases of child maltreatment.

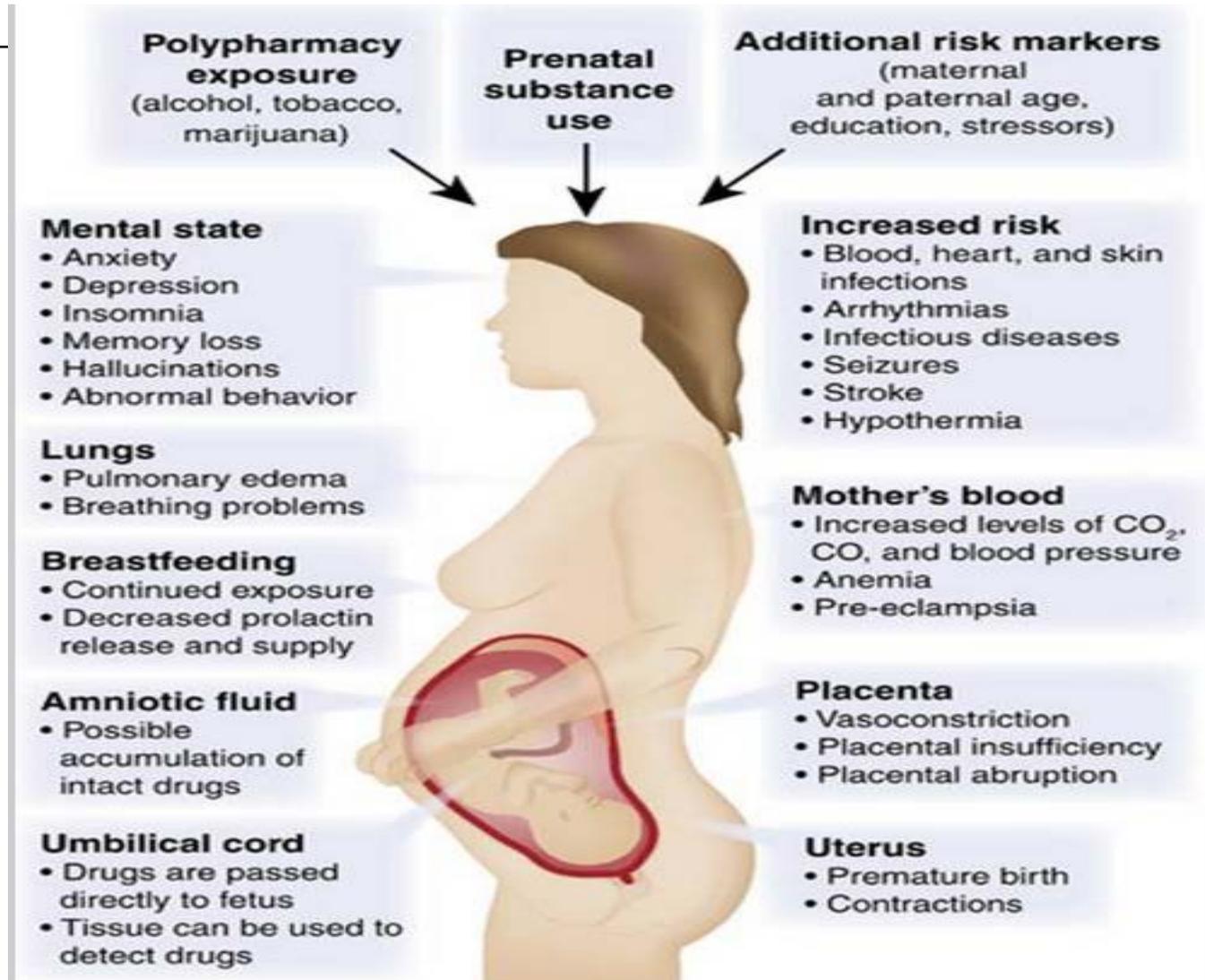
75.7%

say children of addicted parents are more  
likely to enter foster care.

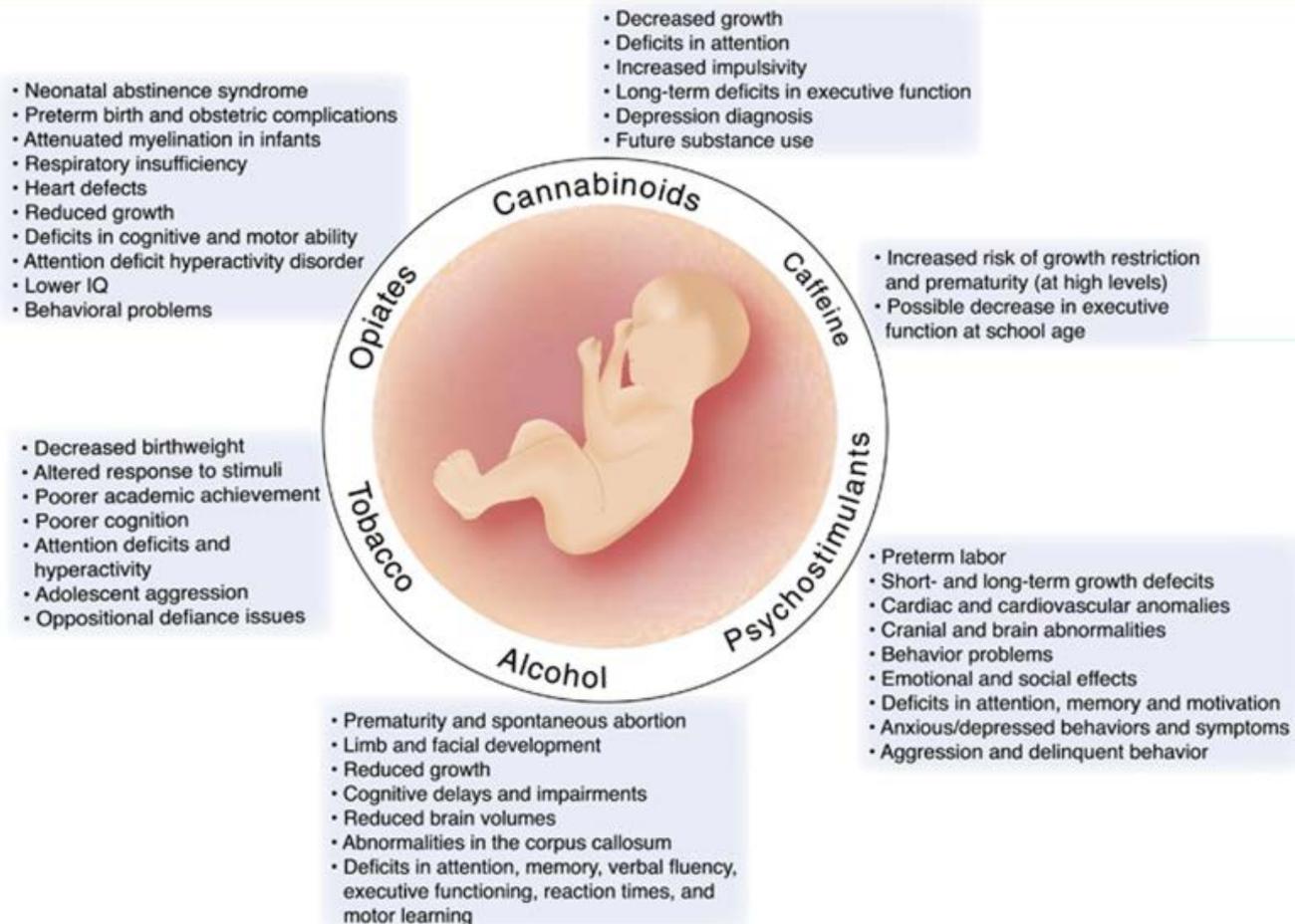
71.6%

say drug abuse is the top cause for a dramatic  
rise in child maltreatment in recent decades.

# Substance Use in Iowa: Impacts on Mother and Fetus



# Consequences of In Utero Exposures to Substance Use



# Prenatal Drugs of Exposure

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## ○ Illegal Drugs

- "Presence of illegal drugs" is defined as occurring when an illegal drug is present in a child's body as a direct and foreseeable consequence of the acts or omissions of the person responsible for the care of the child.
- Note: "Illegal drugs" are defined as cocaine, heroin, amphetamine, methamphetamine, other illegal drugs (including marijuana), or combinations or derivatives of illegal drugs which were not prescribed by a health practitioner.

# Substance Use in Iowa: Methamphetamines

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# Substance Use in Adults: Methamphetamines

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- AKA meth, crystal, chalk, ice
  - Extremely addictive stimulant drug, usually smoked, snorted or injected
  - Economic costs up to \$25B/year
  - Devastating to health of individual and family dynamics
  - High association with child neglect and abuse
- NIDA. DrugFacts. Methamphetamine. 2014.

# Substance Use in Iowa: Methamphetamines in Pregnancy

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- Consequences of In Utero Exposures:
  - Preterm labor
  - Intrauterine growth retardation
  - Cardiac and cardiovascular abnormalities
  - Cranial abnormalities
  - Brain abnormalities

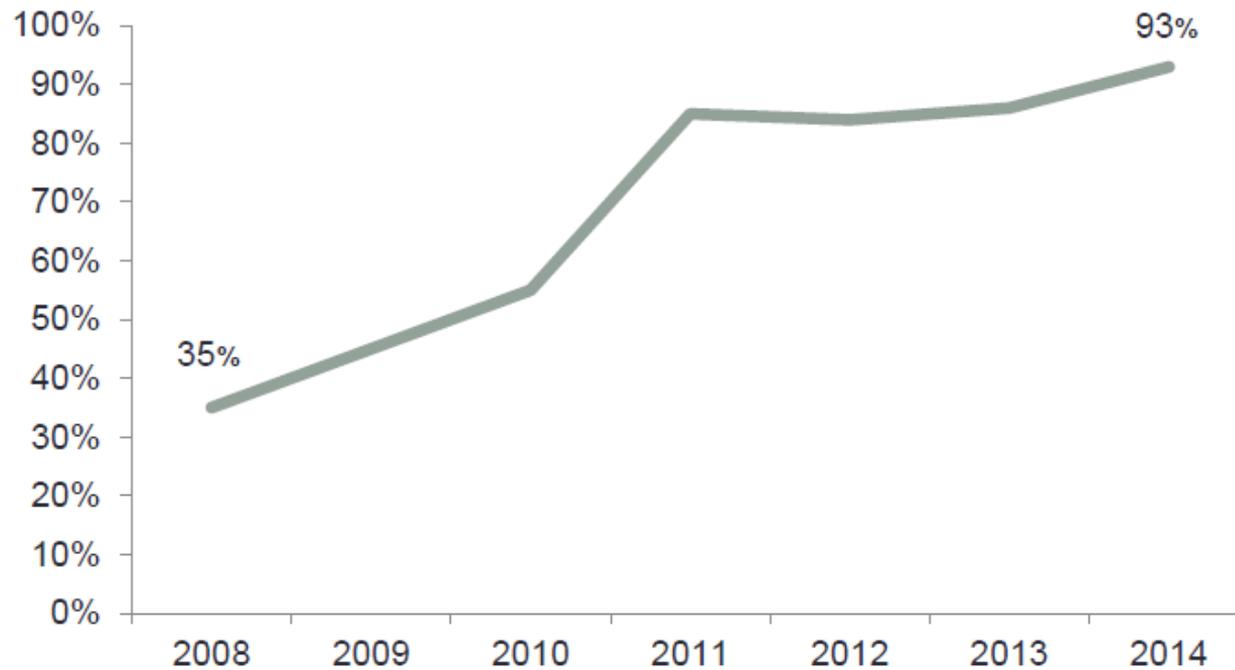
# Substance Use in Iowa: Meth Consequences in Children

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- Consequences to Child of in Utero Exposures:
  - Behavior problems
  - Emotional dysregulation
  - Social deficits
  - Increased risk of neglect and abuse
  - Deficits in attention, memory, and motivation
  - Depression and anxiety
  - Aggression and delinquent behaviors

# Substance Use in Iowa: Methamphetamines

## Iowa Meth Purity Crime Lab Fiscal Year Averages



Source: IDPS, 2014

# Substance Use in Iowa: Cocaine

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# Substance Use in Iowa: Cocaine

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- Babies born to mothers who use cocaine during pregnancy have increased risk of prematurity
- low birth weights and smaller head circumferences,
- shorter in length than babies born to mothers who do not use cocaine

# Substance Use in Iowa: Cocaine

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- exposure to cocaine during fetal development may lead to subtle, yet significant, later deficits in some children.
- These include behavior problems (e.g., difficulties with self-regulation) and deficits in some aspects of cognitive performance, information processing, and sustained attention to tasks
- Some deficits persist into the later years, with prenatally exposed adolescents showing increased risk for subtle problems with language and memory,
- Brain scans in teens suggests that at-rest functioning of some brain regions—including areas involved in attention, planning, and language—may differ from that of non-exposed peers

# Substance Use in Iowa: Cannabis

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## New Marijuana

Examples of High THC Concentrates Found in Iowa



# Substance Use in US: Cannabis

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- Marijuana—Greenish-gray mixtures of the dried, shredded leaves and flowers of the hemp plant, *Cannabis sativa*
- THC (delta-9-tetrahydro-cannabinol) is primary psychoactive chemical
- Cannabinoids - 500 other chemicals present
- Cannabidiol – Specific cannabinoid currently under investigation for treatment of intractable seizures and other medicinal purposes

2015.

NIDA. DrugFacts – Marijuana.

# Substance Use in Iowa: Marijuana in Pregnancy

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- Increased Risks Before Birth:
  - 2.3 times greater risk of stillbirth. NIDA. Substance Use in Women. 2015
  - Associated anemia (Hb < 11g/dL)

# Consequences of In Utero Exposures to Substances

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- THC: (possible confounders of nicotine/ alcohol):
  - Increased risk for preterm delivery
  - Low birth weight / height
  - Increased NICU placement
  - Smaller inner aorta diameter
  - Increased risk for tremor/startle response

Gunn. BMJ. 2016.

# Substance Use in Iowa: Opioids

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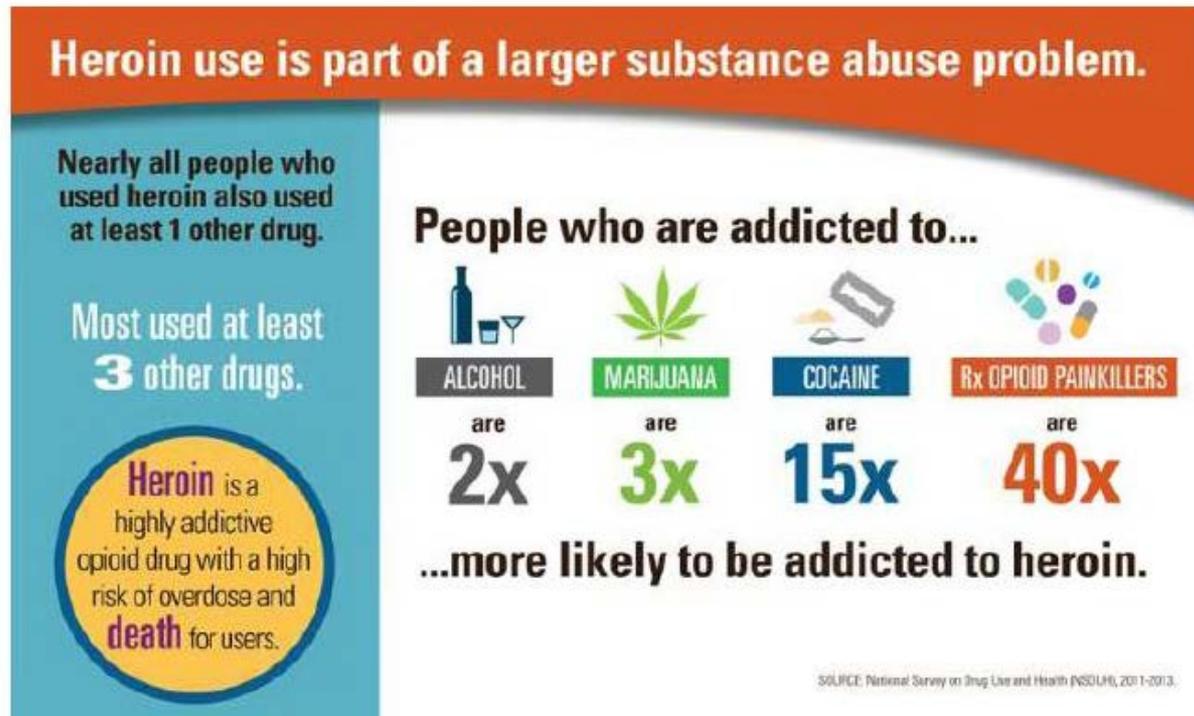
# Substance Use in Iowa: Opioids

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- Opioids: Painkilling substances
  - Impact brain areas controlling emotion and diminish the effects of a painful stimulus
  - Prescribed for medical, surgical, and dental pain
  - Opioid prescriptions **quadrupled** since 1999 BUT the amount of pain reported has had **no overall change** <http://www.cdc.gov/drugoverdose/epidemic/index.html>

# Substance Use in Adults: Risk for Heroin Use

## Rx-Heroin Trends



NSDUH, 2013

# Consequences of In Utero Exposure: Opioids before Birth

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- Growth retardation
- Preterm labor
- Complications during delivery

# Neonatal abstinence syndrome

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- Neonatal abstinence syndrome (NAS) is a group of problems that occur in a newborn who was exposed to addictive opiate drugs while in the mother's womb.

# Neonatal Abstinence Syndrome

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- Two major types of NAS are recognized:  
NAS due to prenatal or maternal use of substances that result in withdrawal symptoms in the newborn
- postnatal NAS secondary to discontinuation of medications such as fentanyl or morphine used for pain therapy in the newborn.

# Symptoms of neonatal abstinence syndrome

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- Symptoms of withdrawal may begin as early as 24 to 48 hours after birth, or as late as five to 10 days.
- Most common drugs heroin, OxyContin and oxycodone

# Consequences of Opioid Exposure at Birth:

## Neonatal Abstinence Syndrome

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- Blotchy skin coloring (mottling)
- Diarrhea
- Excessive crying or high-pitched crying
- Excessive sucking
- Fever
- Hyperactive reflexes
- Increased muscle tone
- Irritability
- Poor feeding
- Rapid breathing
- Seizures
- Sleep problems
- Slow weight gain
- Stuffy nose, sneezing
- Sweating
- Trembling (tremors)
- Vomiting

Premature babies may not have the classic signs of withdrawal but more often experience the following symptoms:

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- • tremors (trembling)
- • high-pitched crying
- • rapid breathing
- • poor feeding

## Finnegan Scoring Tool

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...is a clinical drug withdrawal assessment tool used by healthcare providers to determine the severity of withdrawal signs exhibited by infants exposed to opioids in utero

If the baby is scoring 8 or greater, pharmacologic intervention is recommended (AAP)

## Neonatal abstinence score\*

Date: _____														
System	Signs and symptoms	Score	Time of assessment											
			24	2	4	6	8	10	12	14	16	18	20	22
<b>Metabolic/vasomotor/respiratory disturbances</b>														
	High-pitched cry	2												
	Continuous high-pitched cry	3												
	Sleeps <1hr after feeding	3												
	Sleeps <2hrs after feeding	2												
	Sleeps <3hrs after feeding	1												
	Hyperactive Moro reflex	1												
	Markedly hyperactive Moro reflex	2												
	Mild tremors disturbed	1												
	Moderate-severe tremors disturbed	2												
	Increased muscle tone	2												
	Excoriation (specific area)	1												
	Myoclonic jerks	3												
	Generalized convulsions	3												
<b>Central nervous system disturbances</b>														
	Sweating	1												
	Fever <37.2-38.2°C	1												
	Fever >38.4°C	2												
	Frequent yawning (>3-4 Times)	1												
	Mottling	1												
	Nasal stuffiness	1												
	Sneezing (>3-4 Times)	1												
	Nasal flaring	2												
	Respiratory rate >60/min	1												
	Respiratory rate >60/min with retractions	2												
<b>Gastrointestinal disturbances</b>														
	Excessive sucking	1												
	Poor feeding	2												
	Regurgitation	2												
	Projectile vomiting	3												
	Loose stools	2												
	Watery stools	3												
<b>Summary</b>														
	<b>Total score</b>													
	<b>Scorer's initials</b>													
	Initiation of therapy (+)													
	Increase in therapy (↑)													
	Decrease in therapy (↓)													
	Discontinue therapy (!)													

A score greater than 8 on three consecutive scorings indicates a need for pharmacologic intervention.

\* Based on Finnegan scoring system.

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# Training Resource for Scoring

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- [https://www.ihs.gov/odm/includes/themes/responsive2017/display\\_objects/documents/NAS-Nursing-Staff-Education.pdf](https://www.ihs.gov/odm/includes/themes/responsive2017/display_objects/documents/NAS-Nursing-Staff-Education.pdf)

# Feeding

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- The American Academy of Pediatrics (AAP), The American College of Obstetricians and Gynecologists (ACOG), and the Academy of Breastfeeding Medicine (ABM) support breastfeeding among opioid-dependent women if the women are enrolled in substance abuse treatment and no contraindications to breastfeeding are observed, such as ongoing drug use or HIV infection

# Feeding

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- Frequent small feedings are preferable and should provide 150-250 kcal/kg per 24 hours for proper growth of the infant undergoing significant withdrawal.
- Neonates undergoing treatment of NAS have increased caloric requirements and may develop hyperphagia. Therefore, careful monitoring of fluid intake and weight gain are essential.

# Treatment for Neonatal Abstinence Syndrome

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- Some babies may need medications to treat severe withdrawal symptoms, especially for seizures and to help relieve the discomfort and problems of withdrawal.
- The treatment drug is usually in the same class as the substance the baby is withdrawing from.
- Once the signs of withdrawal are controlled, the dosage is gradually decreased to help wean the baby off the drug

# Medications

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- Opioids are currently considered the first-line therapy. Second-line therapy has been phenobarbital. Phenobarbital has been effective for the treatment of opioid withdrawal seizures. Clonidine has been shown to be an effective and safe second-line medication for the treatment of NAS symptoms refractory to opioid therapy. [

# What's the Recommended Treatment for Pregnant Opiate Addicts?

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- Going through opiate withdrawal during a pregnancy greatly increases the risks of miscarriage. For safety, pregnant women are strongly advised to avoid opiate withdrawal.
- The most commonly recommended treatment for pregnant women who are addiction to heroin or other opiates is methadone maintenance treatment.

# Prenatal Drugs of Exposure: Alcohol

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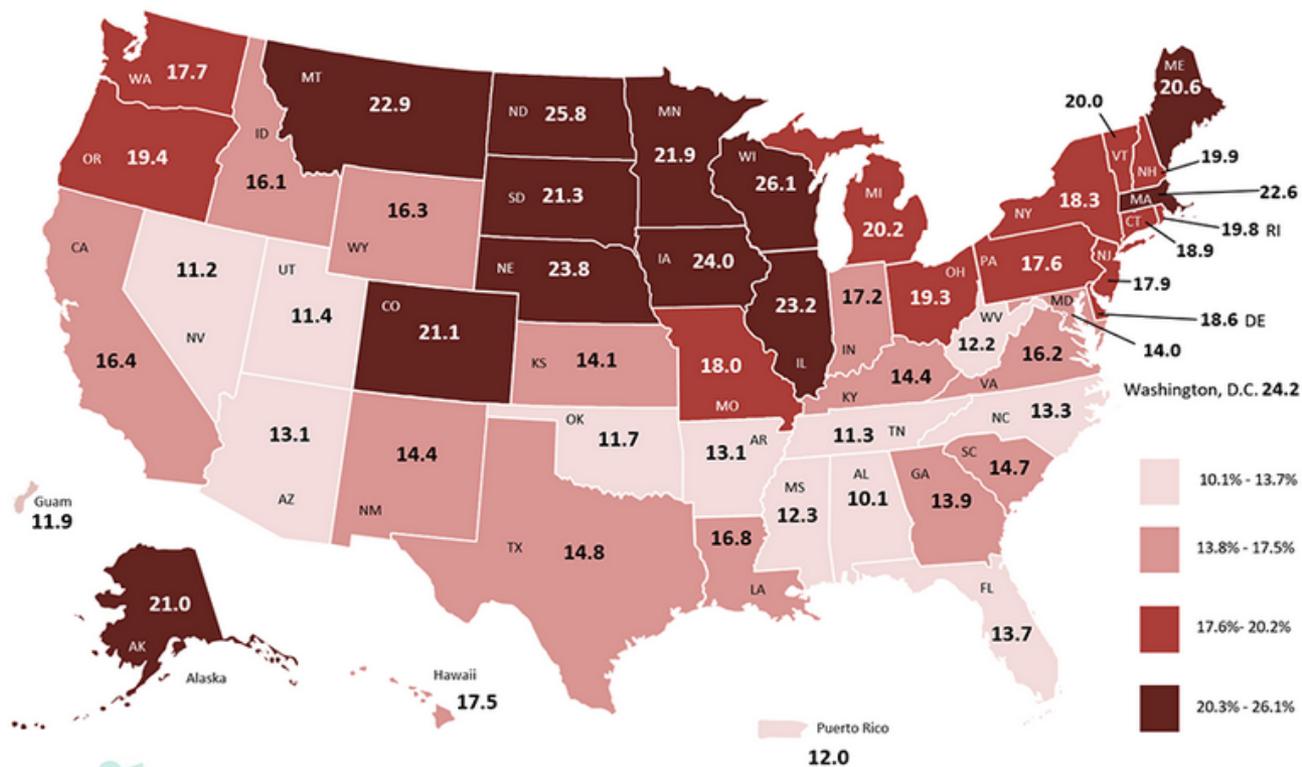
# Substance Use: Alcohol in Pregnancy

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- Institute of Medicine (1996): “Of all the substances of abuse (including cocaine, heroin, and marijuana), alcohol produces by far the most serious neurobehavioral effects in the fetus.”
- Severity & Timing of EtOH Use
  - ‘Moderate’ binge drinking (3-5 drinks in one episode) more serious than 1-2 drinks per day

# Substance Use in Iowa: Alcohol: Binge Drinking Data

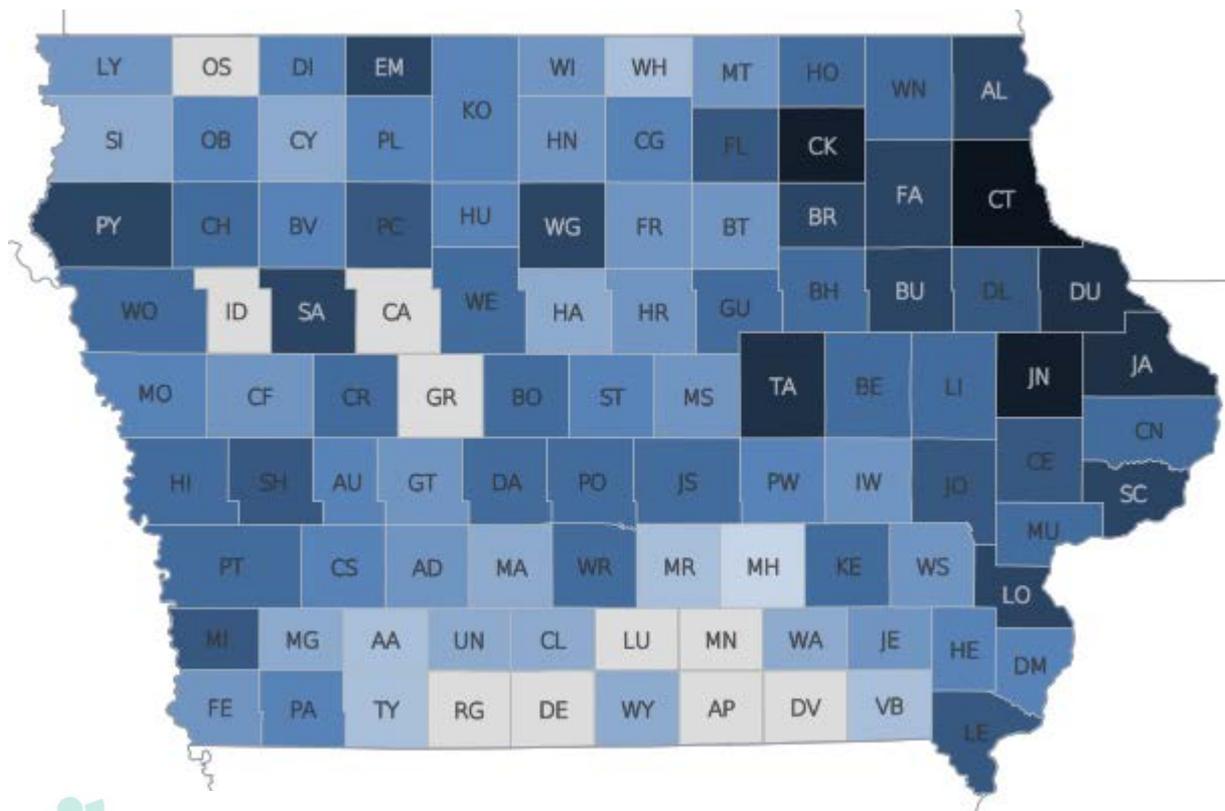
**Map 3: Weighted Prevalence Estimates of Binge Drinking<sup>†</sup>  
Among Women Aged 18 – 44 Years — BRFSS, 2013**



<sup>†</sup>Four or more drinks on any one occasion during the last 30 days

# Substance Use in Iowa: County Data re Binge/Heavy Alcohol Use

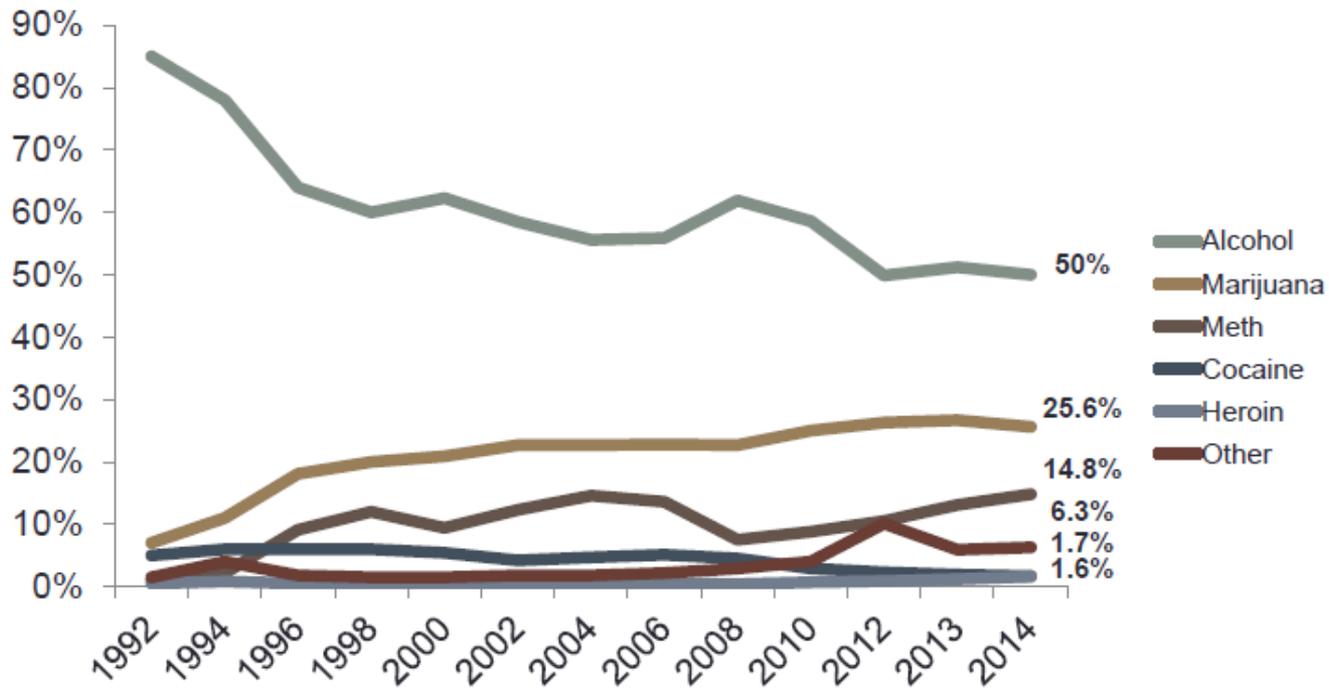
<http://www.countyhealthrankings.org/app/iowa/2013/measure/factors/49/map>



# Substance Use in Iowa

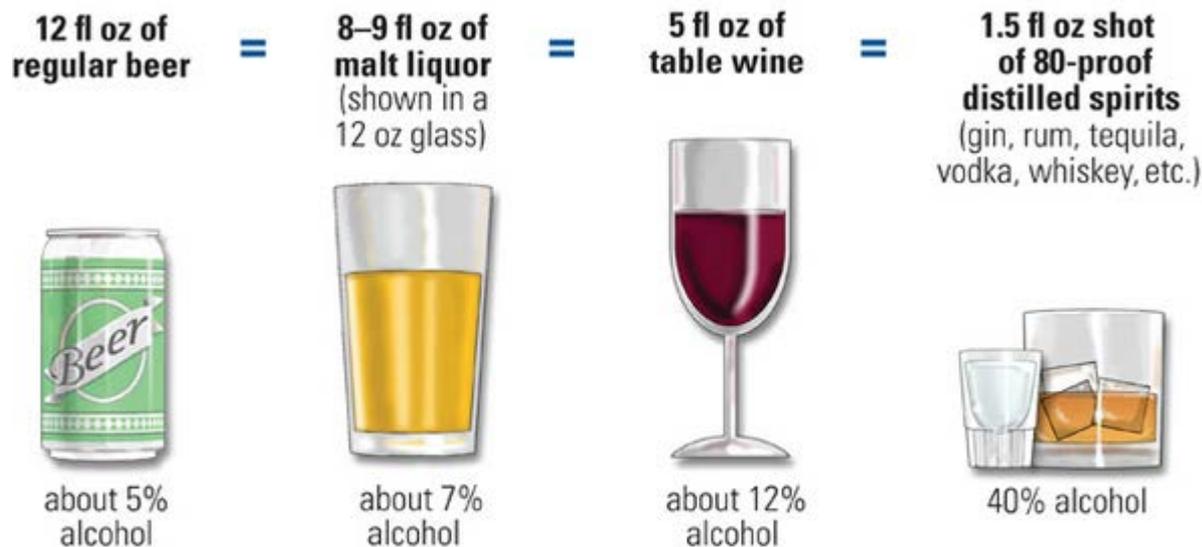
## Drugs of Choice: All Iowans

Primary Substance of Choice by Iowans in Treatment



# Substance Use in Iowa: Alcohol

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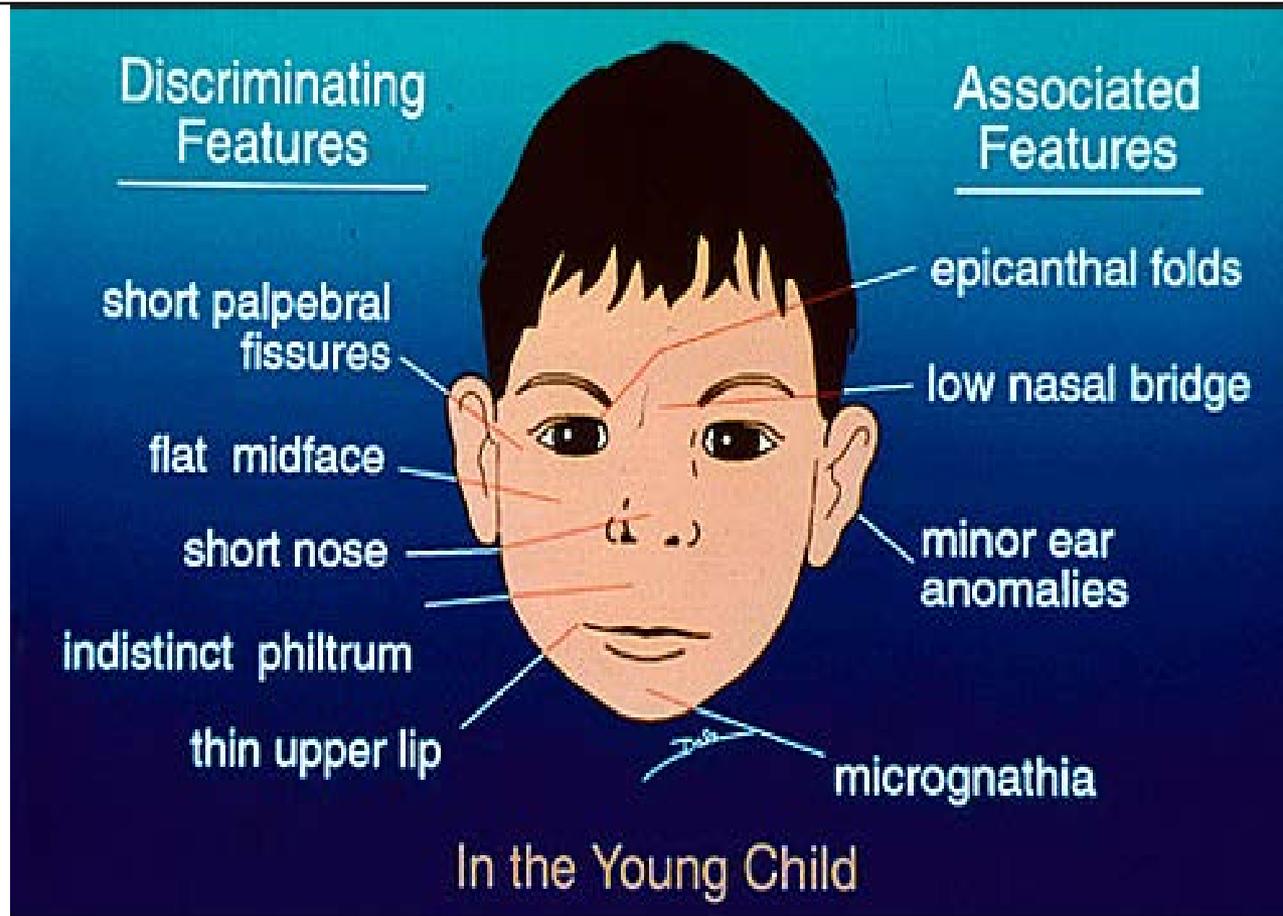
The percent of “pure” alcohol, expressed here as alcohol by volume (alc/vol), varies by beverage.

# Substance Use in Iowa: Alcohol

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- Consequences to Fetus:
  - Spontaneous abortion
  - Intrauterine growth retardation
  - Prematurity
  - Reduced brain volumes / corpus callosum abnormalities

# Substance Use in Iowa: Alcohol in Pregnancy



# Substance Use in Iowa: Alcohol in Pregnancy

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## o Fetal Alcohol Spectrum Disorders - Consequences:

- **#1 cause of intellectual disability in North America**
- Infants and Toddlers: Increased irritability, slow development, motor deficits, hyperactivity, light sensitivity
- Grade-School Years: Short attention span, memory deficits, poor coordination, low self-esteem

# Neurobehavioral Manifestations of Prenatal Exposure to Substances

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# Newborn Neurobehavior

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- Newborn neurobehavior refers to the ability of infants to interact with their environment, to respond to stimuli as they occur, and to interact appropriately with the caregiver

# Key areas of neurobehavior affected by prenatal drug exposure

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- *motor behavior* – reflexes, motor control, coordination of motor activities;
- *orientation* – the infant’s ability to respond to visual and auditory stimulation;
- *state control* – the infant’s ability to regulate his behavior by moving appropriately through the various states of arousal – from sleep to awake to crying and irritable – and to calm himself in response to the demands of the environment.

# Postnatal Environment

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Drug-exposed infants may be at greater risk of harm in the postnatal environment than in the prenatal environment both from direct exposure to substances of abuse after birth and from the dynamics of untreated substance abuse in the child's environment

# Impact of abuse on kinship care

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- Substance abuse is a driving factor in the tremendous increase in the number of children in out-of-home placement

# Impact on grandparents

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- Significant increase in the number of children in grandparent headed households
- Full time parenting responsibilities for grandchildren associated with increased psychological distress in grandparents

# Reid et al., 1999

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- “There is an irreconcilable clash between the rapidly ticking clock of cognitive and physical development for the child and the slow motion clock of recovery for the parent addicted to alcohol or drugs”

# Implications for Practice, Research and Policy

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- Professionals need to be prepared to screen for substance abuse in pregnant women
- Children exposed to drugs prior to birth need ongoing monitoring of their growth, development and behavior
- Children need to be monitored for exposure to drugs after birth
- Recognize the relationship between substance abuse, domestic violence, and child abuse
- Increased access to substance abuse treatment is critical
- Permanency planning is major issue

# Opportunity Lies in Iowa's Response

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- Manage addiction as a **public health** problem
- Support recovery by providing effective substance abuse treatment resources
- Intervene to Protect Children
- Connect Services and Work Together

# Symptoms of Drug Exposure In Infants—Not Drug Specific

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- Feeding Problems
- Sleep Problems
- Irritability
- Tremors
- Increased Tone
- Hyper Mobility
- Small for Gestational Age
- Small head
- Vomiting
- Poor tracking
- Poor Suck
- Voracious Appetite
- High Pitched Cry
- Tachypnea (rapid breathing)

# Symptoms in Toddlers and Preschoolers

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- Speech Delays
- Difficulty with Mood Regulation
- Behavior Problems
- Poor Anger Control
- Aggressive Outbursts
- Easily Distracted
- High Activity Level
- Poor Attention Span
- Difficulty Concentrating
- Resistance to Change In Routine
- Poorly Organized Play Skills

# Symptoms in Toddlers and Preschoolers

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- Difficulty Reading Social Cues
- Easily Over Stimulated
- May Withdraw Completely When Stimulated
- Sleep Disturbance
- Unpredictable Behavior
- Toe Walking, Clumsy

# Symptoms in School Age and Teenage Years

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- Increased risk of attention deficit
- Increased risk of behavior problems
- Possible increase risk of learning disabilities

# Substance Abuse and Child Abuse

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- In all ages of children observe for and evaluate for:
- Sexual abuse
- Physical Abuse
- Child Neglect
- Emotional Abuse

# Relationship Between Child Abuse and Substance Abuse

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# What is Child Abuse Under Iowa Law?

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- The Department of Human Services has the legal authority to conduct an assessment of child abuse when it is alleged that:
- The victim is a child.
- The child is subjected to one or more of the categories of child abuse defined in Iowa Code section 232.68:

# Categories of Child Abuse

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- Physical abuse
- Mental injury
- Sexual abuse
- Child prostitution
- **Presence of illegal drugs in a child's body**
- Denial of critical care
- **Manufacturing or possession of a dangerous substance (defined in Iowa Code 232.2)**
- Bestiality in the presence of a child
- Allows access to a registered sex offender
- Allows access to obscene materials
- The abuse is the result of the acts or omissions of the person responsible for the care of the child.

# INTERVENTIONS

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HOW CAN I HELP  
THE CHILD WHO  
HAS BEEN  
EXPOSED TO  
DRUGS?



# Evaluation

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- Drug exposed infants/children need ongoing medical, developmental and behavioral follow up
- Depending on the symptoms the infant/child shows, may need evaluation by PT,OT,Early Intervention Providers, Speech Therapists, Mental Health Providers and Special Education Services

# Techniques In Working With Drug Exposed Children

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- Provide a calm environment
- Be aware of signs of escalated behavior and frantic distress states before they occur
- Use calming and special care techniques on a regular basis
- Encourage developmental abilities when the infant/child is calm and receptive using only one stimulus at a time

# Intervention Techniques Cont.

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- Work or stimulate only one system at a time
- Start with the tactile system—recommend infant massage training for caretaker
- Because of super sensitivity of many of these infants it is imperative to decrease light and noise
- When holding the infant, use firm contact on as much of the body surface as possible
- Stay alert for signs of overstimulation- yawns, hiccups, sneezes, grimaces, changes in skin color, change in respirations, and eye aversion or tightly closing eyes

# Interventions Continued

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- Many infants do not track well—work on having infant track objects
- Feeding problems are common—observe a feeding if possible; common findings are poor coordination of suck and swallow, compulsive sucking, leaks milk during feeding, prolonged feedings, sleeps through feedings, tremendous appetite, overeating, and resistance to accepting new foods when solids are introduced

# Feeding Interventions

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- Infant massage prior to feedings
- May need to offer small amounts more often if baby is voracious feeder
- Wake to feed if baby tends to sleep through feedings
- May be necessary to try different types of nipples/bottles to find one that works best
- Pacifiers

# Toddlers and Preschoolers

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- CONSISTENCY!!! Consistent wake up, meal time, snack time, bed time
- Provide additional support, guidance, and structure during stress/transition
- Provide outlet for excessive energy—outdoor activities, recreation area, exercise, recess
- Avoid fatigue
- Have a few important, clear, consistent, realistic rules—don't overload the child with rules

# Toddler and Preschooler

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- Avoid formal/large gatherings if this triggers undesired behavior—These children may continue to be easily over stimulated
- Have child play with one or two toys at a time—avoid having large numbers of toys out at one time
- Enforce rules with non physical punishment
- Avoid negative comments—“don’t do that”  
“no” “stop that”

# Toddler and Preschooler

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- Monitor for aggressive behavior and significant temper tantrums/rage episodes; Many of these children need follow up with mental health professionals/play therapists
- Parent Child Interaction Therapy (PCIT)
- Respite/time out/support for caretakers
- Speech delay is often see; Sign language or use of pictures may be helpful in allowing expression of anger, sadness, etc.

# Toddler and Preschooler

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- Therapeutic daycare may be helpful in encouraging interaction with same age peers to help develop speech and language skills or personal/social skills in the child

# School Age Child

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- Monitor for attention, behavior and learning problems
- Monitor school performance and provide intervention as appropriate
- Provide mental health counseling/interventions as indicated
- Monitor for substance abuse

# School Age Child

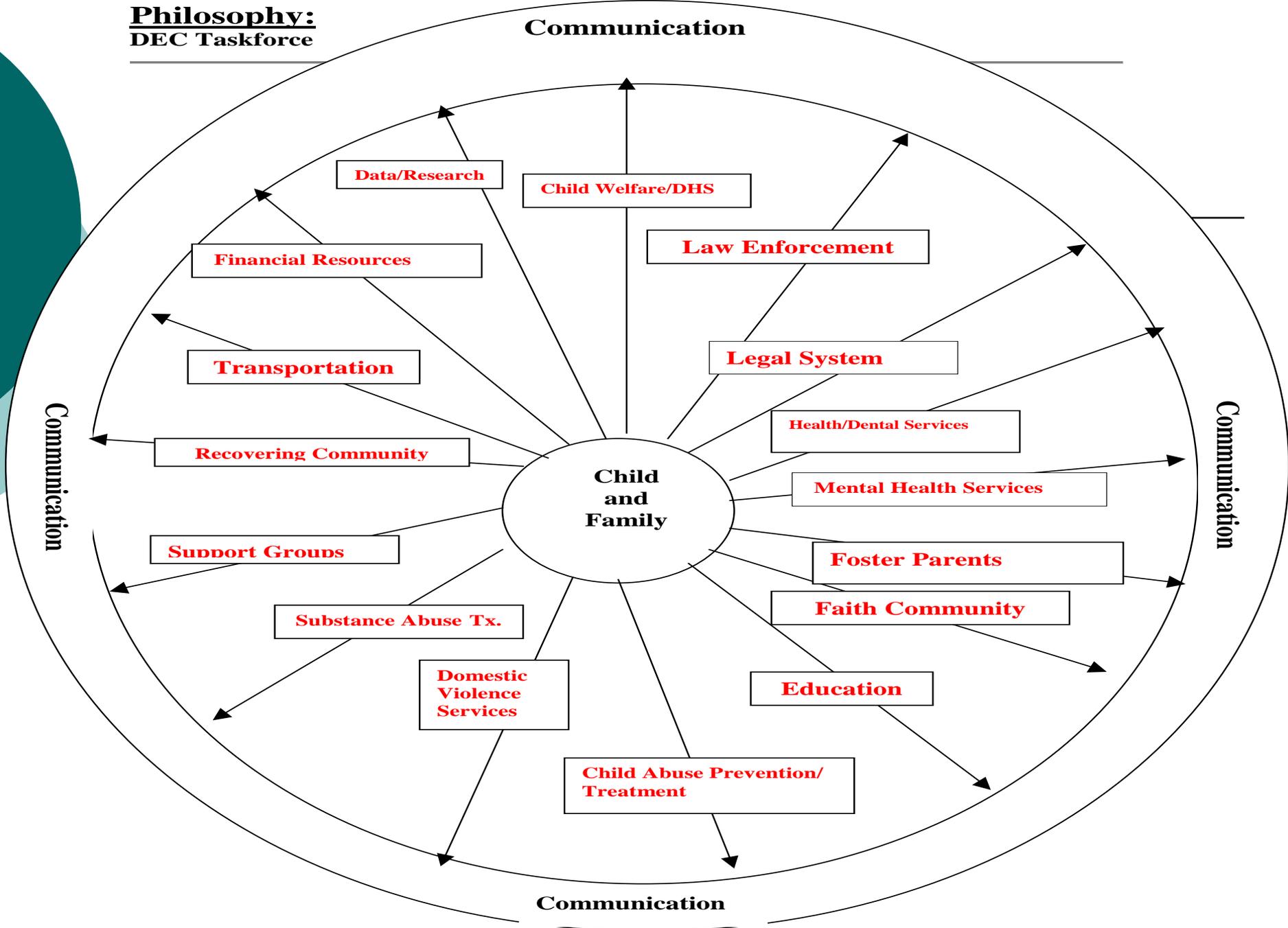
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- Child may have difficulty dealing appropriately with social situations
- May withdraw or act out
- Individual or group therapy may be needed
- Need to assess for possible underlying psychiatric disorders

# Adolescent

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- Monitor for attention, behavior and learning problems
- Monitor school performance and provide intervention as appropriate
- Monitor for substance abuse





# RESOURCES

# Resources for parents

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- Parent Partners
- <http://www.dhs.state.ia.us/cppc/networking/Parent%20Partners.html>
- 24/7 Dads
- [http://dhs.iowa.gov/Consumers/Child\\_Support/Fatherhood/Projects.html](http://dhs.iowa.gov/Consumers/Child_Support/Fatherhood/Projects.html)
- Family Treatment Court
- <http://www.iowacourtsonline.org/wfData/files/ChildrensJustice/Februarynewsletter2011.pdf>
- Community Partnership for Protecting Children
- <http://iowacommunitypartners.org/>



# Resource for Providers

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- 4 P's Plus Screen for Substance Use in Pregnancy
- Screening tool to identify pregnant women at risk for alcohol, tobacco and illicit drug use
  
- Beth Moore  
Grant Coordinator  
Iowa Children's Justice  
1111 East Court Avenue  
Judicial Building  
Des Moines, IA 50319  
319-398-3545 ext 2122  
[Beth.Moore@iowacourts.gov](mailto:Beth.Moore@iowacourts.gov)

# Web Sites

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National Institute on Drug Abuse

[www.nida.nih.gov](http://www.nida.nih.gov)

American Academy of Pediatrics

[www.aap.org](http://www.aap.org)

Adoption Institute

[www.adoptioninstitute.org](http://www.adoptioninstitute.org)

# Web Sites

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Annie E. Casey Foundation

[www.aecf.org](http://www.aecf.org)

Center for Effective Practice and Collaboration

[www.air.org/cecp](http://www.air.org/cecp)

Zero to Three

[www.zerotothree.org](http://www.zerotothree.org)

# Web Sites

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Governor's Office of Drug Control Policy

<http://www.iowa.gov/odcp/#>

Iowa DEC Alliance

<http://www.iowadec.net/>

Prevent Child Abuse Iowa

<http://www.pcaiowa.org/>

Child Health Specialty Clinics

<https://chsciowa.org/>

# Web sites

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- National Alliance for Drug Endangered Children
  - <http://www.nationaldec.org/>
- Kids Count Data Center
  - <http://datacenter.kidscount.org/locations>

# Questions

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# Thank You

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"Children may be the victims of fate..they must never be the victims of neglect" JFK