Cannabis Use and Pregnancy

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Learning Objectives

1. Review epidemiology of cannabis use in the preconception, prenatal, and postpartum periods

2. Become familiar with some possible adverse health effects of cannabis use during these periods, including recent studies

3. Discuss recommendations on how to inform and counsel women given the current state of evidence

4. Identify potential prevention and risk-reduction approaches to use in practice
Cannabis

- Most commonly used “illicit” drug in the US
  - Increasing social acceptance
  - Decreased risk perception
  - False claims of safety
- Voter support for legalization
  - Doubled since early 2000s
- Positive benefits to legalization
  - Social justice
  - Economic benefits

**All images and photos in this presentation are available for public use.**
Principal Cannabinoids of Interest

THC
- Primary psychoactive ingredient
- Reward and addition risk
- Withdrawal (heavy/daily users)

CBD
- Non-psychoactive; antiemetic, antispasmodic, anti-inflammatory

CBN
- Primary product of THC degradation
- Mildly psychoactive, less potent

Food and Drug Administration (FDA), 2019a
Cannabis Commercialization

- Marijuana
- Edibles
- Hash
- Concentrates
- Oils
- Creams
Cannabis Commercialization

Novel products
- Edibles
- Concentrated products (e.g., dabs, waxes)
- Topicals (e.g., oils, creams)

Increased potency
- Mean potency of THC has tripled since 1990s (Elsohly, et al 2016)

New modes of administration
- Smoking
- Dabbing
- Vaping
- Ingestion
- Topical application
CBD Products

• So novel that research has not caught up
• No evidence that the use of CBD during pregnancy is beneficial
• Not always what they seem – contamination of THC, other chemicals
• FDA has several studies to examine the effects of CBD ongoing

FDA, 2019a
Hemp Seed Products

• FDA performed recent assessment and found no objection for hemp seeds in foods
• Contain only trace, if any, amounts of THC
• No objection to use for pregnant and breastfeeding women

FDA, 2019b
Minimal Evidence Compared to Other Drugs

- High quality research with this population difficult
  - Federal classification as a Schedule I drug

- Insufficient surveillance systems reliant on self-report
  - National Survey on Drug Use and Health
  - Pregnancy Risk Assessment Monitoring System
  - Youth Risk Behavior Surveillance System
  - State-specific systems
Critical Windows of Focus

- Preconception (12 months prior to pregnancy)
- Prenatal (during pregnancy)
- Postpartum (birth up to one year after pregnancy)
Review epidemiology of cannabis use in the preconception, prenatal, and postpartum periods
Cannabis Use prevalence in the US, Pregnant and Non-pregnant Women

Volkow et al, 2019
Marijuana Use among Women by Pregnancy Status

PAST MONTH, 2016-2019 NSDUH, 15-44

+ Difference between this estimate and the 2019 estimate is statistically significant at the .05 level.

Substance Abuse and Mental Health Services Administration (SAMHSA), 2019
Daily or Almost Daily Marijuana Use among Women by Pregnancy Status

PAST YEAR, 2016-2019 NSDUH, 15-44

Substance Abuse and Mental Health Services Administration (SAMHSA), 2019

+ Difference between this estimate and the 2019 estimate is statistically significant at the .05 level.
Postpartum Cannabis Use

- Maternal Use:
  - 6.45% in the 2-6 months after birth (Skelton et al., 2020)
  - 18% of mothers reported using marijuana while breastfeeding (Wang et al. 2016)
- For women who abstain from cannabis use while pregnant, relapse more likely following birth (Forray et al. 2015; SAMHSA, 2019)
Prevalence of cannabis use by RML

Figure 1. Adjusted Prevalence Estimates (%) of maternal marijuana use before, during and after pregnancy by recreational marijuana legality (n = 7,258)

Skelton et al., 2020;
Biochemical Estimates of Prenatal Use

• Prenatal Use
  • Biochemical estimates reveal approximately 2x amount of users as self-report

• In California, very high rates of use
  • 22% in pregnant adolescents
  • 19% in pregnant young adults (19-24)

• Only 2.5% of women reported use to a health professional

• Also recognize limitations with biochemical estimates
  • Sensitivity (e.g., hair, urine)
  • Punitive consequences of a positive test

Marchetti et al 2017; MacDuffie et al 2020; Metz et al 2019; Young-Wolff 2020b
Findings:
• This study examined modes of cannabis administration before and during pregnancy.
• Smoking was the most common mode of administration.
• Use of > 1 mode was more common in the year before versus during pregnancy.
• Frequency of cannabis use varied with mode(s) of cannabis administration.
Reasons for Prenatal Cannabis Use

• **Self-medication**
  - Often cited as an antiemetic (relieves vomiting or nausea) (Young-Wolff, 2019, Skelton 2020)
  - Sleep aid (Skelton 2020)

• **False perception of Safety**
  - Perceived safety, relative to other substance (opioids, anti-nausea meds) (Barbosa-Leiker, 2020)
  - Feel cannabis is “natural” compared to other substances and prescription medications (Chang et al., 2019)

• **Lack of discussion from prenatal care providers**
  - Perceive lack of counseling as lack of harm/risk (Bayrampour et al. 2019; Jarlenski et al. 2016)
Women’s cannabis use before, during, and after pregnancy in New Hampshire

Kara R. Skelton, Amelie A. Hecht, and Sara E. Benjamin-Neelon

Department of Health, Behavior and Society, Johns Hopkins Bloomberg School of Public Health, 624 North Broadway, Baltimore, MD 21205, USA.

Table 2
Self-reported reasons for cannabis use by PRAMS women in New Hampshire in 2016 and 2017 (n = 193).

<table>
<thead>
<tr>
<th>Reasons for use</th>
<th>Percent (Number)</th>
<th>Preconception (n = 186)</th>
<th>Prenatal (n = 68)</th>
<th>Postpartum (n = 73)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total (n = 193)</td>
<td>n %</td>
<td>n %</td>
<td>n %</td>
</tr>
<tr>
<td>To relieve stress or anxiety</td>
<td>123 (61.75)</td>
<td>119 (64.88)</td>
<td>0.46</td>
<td>53 (78.32)</td>
</tr>
<tr>
<td>For fun or to relax</td>
<td>90 (46.92)</td>
<td>87 (50.02)</td>
<td>0.57</td>
<td>17 (26.90)</td>
</tr>
<tr>
<td>To relieve nausea</td>
<td>67 (32.42)</td>
<td>63 (33.34)</td>
<td>0.27</td>
<td>54 (84.00)</td>
</tr>
<tr>
<td>To relieve vomiting</td>
<td>47 (9.77)</td>
<td>43 (19.75)</td>
<td>0.22</td>
<td>40 (50.75)</td>
</tr>
<tr>
<td>To relieve symptoms of a chronic condition</td>
<td>19 (7.34)</td>
<td>19 (7.88)</td>
<td>0.57</td>
<td>9 (10.02)</td>
</tr>
<tr>
<td>Other</td>
<td>32 (11.47)</td>
<td>30 (11.07)</td>
<td>0.31</td>
<td>19 (15.58)</td>
</tr>
</tbody>
</table>

* Raw n with weighted proportions.

b p-values presented are for $\chi^2$ comparisons of each group with the total sample.

Skelton, et al 2020
FIGURE 2. Reasons for marijuana use during pregnancy*; 7, 8 (N = 413) — eight states, 6 Pregnancy Risk Assessment Monitoring System, 2017

* Among 418 women who used marijuana during pregnancy, five did not provide a response to reasons for use. More than one reason for use could be chosen.
7 To relieve stress/anxiety also includes written-in responses of to relieve “depression,” “anxiety,” “posttraumatic stress disorder,” “bipolar disorder,” and “conversion disorder.”
8 To relieve nausea/vomiting also includes written-in responses of “to increase appetite,” “to be able to eat,” and “to gain weight.”
Individual Characteristics Associated with Cannabis Use During Pregnancy

Other Caregiver Use

- Parental use associated with increased likelihood of marijuana and alcohol use in children (Bailey, 2016)
- Males more likely to use marijuana (25% vs 19.2%) (SAMSA, 2018)
- Most states do not regulate ECE possession of or use of cannabis in daycares (Grossman, 2018)
Factors Associated With Maternal Cannabis Use

- Sociodemographic characteristics
- History of/current drug use
- Severe nausea and vomiting in pregnancy
- Mental health
- Partner use
- Domestic Violence
- Family history of abuse
- Physical, emotional, sexual trauma
- Access to treatment
- Normalization of use
- Stigmatization
- Accessibility to:
  - Contraception
  - Health care
  - Housing
- Sociodemographic characteristics
- History of/current drug use
- Severe nausea and vomiting in pregnancy
- Mental health

NASEM, 2017; SAMHSA, 2019
Factors associated with prenatal use

- **Past use**
  - 34-60% of women continue cannabis use into pregnancy (Passey, et al. 2014; Beatty, et al. 2012)
  - 18% of users met criteria for abuse, dependence, or both (Ko, 2015)
  - 20% of women use who use before pregnancy continue use during and after pregnancy (Skelton, 2020)

- **Sociodemographic characteristics**
  - Single women, younger age (15-24), lower education, lower income

- **Mental health**
  - Depressed women (Goodwin, 2020)
  - Experienced stressful life events (Allen, 2020)

- **Severe nausea and vomiting**
  - More likely to report use and heavier use (Young-Wolff et al. 2018)

- **Partner use**
  - Women reporting partner use were 3.3-fold more likely to use (Bartlett, 2020)

- **Sexual Minority Women**
  - Non-heterosexual women more likely to report use (Schuler et al. 2020)
Poll Question 1

Compared to the national average of prenatal cannabis use, Florida’s prevalence of cannabis use is:

1. Less than the national average
2. About the same as the national average
3. Higher than the national average
Self-reported Marijuana Use Among Pregnant Women, US and Florida, 2002-03 to 2017-18

Substance Abuse Trends Alert! Report from the Florida Alcohol and Drug Abuse Association and the State of Florida, Department of Children and Families
Become familiar with some possible adverse health effects of cannabis use during these periods
A pregnant woman discloses to you that she has been smoking marijuana and using edibles almost daily, mainly for anxiety and sleep. How do you respond?

1. Do not respond; there is too much unknown cannabis use in pregnancy to counsel
2. Counsel the woman only on the legal consequences and even CPS involvement if she continues to use cannabis
3. Counsel the woman that it is okay for her to continue edibles, but she should stop smoking marijuana
4. Discuss what is known about cannabis use during pregnancy from a health perspective: what are potential harms – both maternal and fetal
5. Use motivational interviewing to make personalized goals to abstain from cannabis use, meeting the woman where she is.
6. Provide evidence-based resources for the woman
Former US Surgeon General’s Warning
Limitations of Existing Evidence

Cannabis Assessment
- Included in category with other illicit drugs (e.g. heroin, cocaine)
- Unable to isolate cannabis impact
- Examine all available forms of cannabis
- Self-report

Sample
- Small sample size=not enough power
- Timing of sample collection to exposure

Failed to
- Control for use of other substances (e.g., tobacco, alcohol)
- Capture contemporary use patterns
- Examine role of mental health

Design
- Observational, retrospective

MacDuffie et al 2020
Effects of cannabis exposure
Effects of cannabis use: Preconception
<table>
<thead>
<tr>
<th>Category</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hormone regulation</td>
<td>- Sex drive</td>
</tr>
<tr>
<td></td>
<td>- Reduced hormone production needed for ovulation</td>
</tr>
<tr>
<td>Fertility</td>
<td>- Disruption of menstrual cycles</td>
</tr>
<tr>
<td></td>
<td>- Depression of ovarian follicular maturation</td>
</tr>
<tr>
<td>CBD exposure</td>
<td>- Estrogen signaling</td>
</tr>
</tbody>
</table>

Almada et al 2020 O’llenecia et al 2019 ;
Mechanisms of MCH Cannabis Exposure

- **Indirect**
  - In-utero
  - Breastmilk
  - Secondhand smoke

- **Direct**
  - Accidental ingestion

- **Caregiver Use**
  - Inability to safely care for infant
  - Improper storage of cannabis products
  - Driving under the influence
Effects of cannabis use: Prenatal
Prenatal Effects

• Cannabinoids readily crosses the placenta, entering fetal bloodstream ([Richardson et al., 2016](#))
  • Produce high levels of carboxyhemoglobin ([Soto et al., 2013](#))
  • Interferes with normal placental development
  • Fetal concentrations of THC about 1/3 levels of mother ([Soto et al., 2013](#))
• Other chemicals in cannabis products also pass through placenta
• Heavy exposure linked to “withdrawal” like syndrome in newborns ([Huizink, 2013](#))
• Many reviews and several meta-analyses exist on this topic, with conflicting evidence based on included studies
Fetal Growth & Birth Weight

- Weak evidence for **any use** and reductions in birth weight, length, or head circumference
- Greater evidence of a **dose-response relationship**:
  - Fetal growth restriction (Janisse, 2014)
  - Low birth weight (<5.5lbs) (NASEM, 2017; SAMHSA, 2019)
  - Small for gestational age (Warshak et al., 2015)
- Evidence that timing of exposure is important
  - 1st and 2nd trimester use (ACOG, 2017; Paul et al 2020)
- Daily marijuana use has been associated with:
  - Impaired fetal growth and increased placental vascular resistance. (Brar et al 2019)
Pre-term Birth

- Infant born <37 weeks gestation:
  - Some studies have not found a relationship due to uncontrolled confounding (e.g., tobacco, alcohol) Gunn et al. 2016
  - Systematic review with meta-analysis found association between heavy marijuana use and preterm birth (Conner et al 2016)
  - Mounting evidence for prenatal cannabis use and preterm birth (SAMHSA, 2019, Corsi et. al 2019)
NICU Admission

• NASEM: “there is little evidence on the statistical association between maternal cannabis smoking and admission of the infant to the NICU” [NASEM, 2017]

• Admittance to Neonatal Intensive Care Unit ([Gunn, et al. 2016; Warshak et al., 2015, Corsi et al., 2019])
Conflicting evidence

• **Maternal Outcomes:**
  • Quality and duration of labor
  • Certain birth outcomes
    • Miscarriage
    • Risk of stillbirth
    • Placental abruption

• **Infant Outcomes:**
  • Perinatal mortality
  • Gestational length
  • Birth defects
  • Congenital abnormalities

[1] SAMHSA, 2019; Volkow et al. 2017
Data on Long-term Effects of Prenatal

- ABCD Study
- Ottawa Prenatal Prospective Study
- Maternal Health Practices and Child Development Study
- Generation R Study
Long-term Child Health Effects

- Impaired Neurodevelopmental outcomes
  - Visual acuity and verbal reasoning
  - Impaired executive functioning
    - Attention problems
    - Hyperactivity, impulsivity

- Mental Health
  - Depression
  - Anxiety
  - Aggressive Behaviors

- Risk for Future substance use
  - Substance misuse among youths and young adults (Madras et al. 2019)

- Lack of dose-response relationship; effects by heavy or chronic use; effects by use type

Overall, insufficient evidence, Jacques, 2014; NASEM, 2017; SAMHSA, 2019; Volkow et al. 2017
The ABCD Study

- Study that examined self-reported exposure in pregnancy with a large sample
- Only for women continuing use after maternal knowledge of pregnancy:
  - Lower birth weight
  - Intracranial volume
  - Psychosocial behaviors

1st study that indicates point of exposure may be key in effects of prenatal use
- Endocannabinoid type 1 receptor not expressed 5/6 gestation- women reported on average finding out they after 7 weeks

Paul et al 2020
Effects of cannabis use: Postpartum
Postpartum Cannabis Use

- Concern for maternal health:
  - Postpartum mental health
  - Ability to adequately care for infant
  - Attachment disturbances

- Adverse infant health outcomes
  - Tainted breastmilk
  - Second-hand smoke exposure
  - Accidental ingestion of cannabis
  - Early initiation of marijuana use

Bertrand et al, 2018; Mourh & Rowe 2017; Reece-Stemtan et al 2015; Skelton et al. 2020; SAMHSA, 2019; Sokol, 2018
Marijuana Use by Breastfeeding Mothers and Cannabinoid Concentrations in Breast Milk

Bertrand, K., Hanan, N.J., Honerkamp-Smith, M.E., Best, B.M., & Chambers, C.B. (2018). Marijuana is the most commonly used recreational drug among breastfeeding women. With legalization of marijuana in several US states and a 1990 study in which authors documented psychomotor deficits in infants breastfed by mothers using marijuana, there is a need for information on potential exposure to the breastfed infant. Our objective with this study was to quantify cannabinoids in human milk after maternal marijuana use.

METHODS: Between 2014 and 2017, 50 breastfeeding women who reported marijuana use provided 54 breast milk samples to a research repository, Mommy’s Milk. Concentrations of Δ9-9-tetrahydrocannabinol (Δ9-THC), 11-hydroxy-Δ9-tetrahydrocannabinol, cannabidiol, and cannabinol were measured using liquid chromatography mass spectrometry electrospay ionization.

RESULTS: Δ9-THC was detectable in 34 (63%) of the 54 samples up to ~6 days after last reported use; the median concentration of Δ9-THC was 9.47 ng/mL (range: 1.01–323.00). Five samples had detectable levels of 11-hydroxy-Δ9-tetrahydrocannabinol (range: 1.33–12.80 ng/mL) or cannabidiol (range: 1.32–8.56 ng/mL). The sample with the highest concentration of cannabidiol (0.56 ng/mL) did not have measurable Δ9-THC. Cannabinol was not detected in any samples. The number of hours since last use was a significant predictor of log Δ9-THC concentrations (−0.03; 95% confidence interval [CI] −0.04 to −0.01; P = .005). Adjusted for time since last use, the number of daily uses and time from sample collection to analysis were also significant predictors of log Δ9-THC concentrations (0.51; 95% CI 0.03 to 0.99; P = .039; 0.08; 95% CI 0.00 to 0.15; P = .038, respectively).

CONCLUSIONS: Δ9-THC was measurable in a majority of breast milk samples up to ~6 days after maternal marijuana use.
Breastmilk and THC

• THC is:
  • highly lipophilic (clings to fat)
  • Stored in lipid filled tissues
  • May inhibit production of prolactin
• In breast milk, THC is:
  • Detectable up to 6 days after maternal use
  • Appears to be a compounding effect
• Absorbed and metabolized by infant
  • Detectable THC in infant feces
  • Systematic absorption of cannabis
• Bertrand et al, 2018; Mourh & Rowe 2017; Reece-Stemtan et al 2015; SAMHSA, 2019,
Cannabis Exposure via Breastmilk

- Infants exposed during development of central nervous system could affect brain development
  - Delays in motor development, psychomotor deficits
- Short term effects:
  - Infant accumulation due to slow elimination
  - Infant sedation
  - Poor infant feeding – poor weight gain in the 1st month of life
- Mixed evidence on long-term effects on infant development
  - Impacted by prenatal exposure
  - Concurrent substance use while breastfeeding

No conclusive evidence, but growing concern Bertrand et al, 2018; Mourh & Rowe 2017; NASEM, 2017; Reece-Stemtan et al 2015; SAMHSA, 2019
• Most child cannabis exposures are:
  • Accidental ingestions
  • Highest among children 1-3
  • Edibles

• Level of evidence is poor
• Higher rates in legalized states

• Increases in cannabis exposures in the US result in:
  • Medical Consequences
    • Pediatric hospitalizations
    • NICU stay

Wang et al 2016; Richards et al, 2017
THC Exposure in children

- Hypotonia
- Seizures
- Lethargy
- Ataxia
- Tachycardia
- Respiratory Depression
- Vomiting

Richards et al, 2017
Second-hand Smoke Exposure in Infants and Children

- Little evidence in this area, maternal or infant exposure
- Second-hand smoke contains THC
  - Same physical effects as direct exposure (Richards et al, 2017)
- Chronic exposure during infancy or childhood may lead to neurological impairments:
  - Executive function
  - Memory
  - IQ
  (Wilson et al. 2018)
Research Gaps

- Dose-response relationship
- Effects by product type
- Accuracy of biological measures
- Acute/chronic effects by exposure type
- Effects of CBD

Household Use

Mourh & Rowe 2017; NASEM, 2017; SAMHSA, 2019
The American College of Obstetricians and Gynecologists

ACOG COMMITTEE OPINION

Number 722 • October 2017

Committee on Obstetric Practice

This document reflects emerging clinical and scientific advances as of the date issued and is subject to change. The information should not be construed as dictating an exclusive course of treatment or procedure to be followed.

INTERIM UPDATE: This committee Opinion is updated as highlighted to reflect a limited, focused change in the language and supporting evidence regarding marijuana use and neonatal outcomes.

Marijuana Use During Pregnancy and Lactation

ACOG, 2017
Marijuana Use During Pregnancy and Breastfeeding: Implications for Neonatal and Childhood Outcomes

No amount of marijuana has been proven safe to use during pregnancy or while breastfeeding.

Ryan et al., 2018
I, Surgeon General VADM Jerome Adams, am emphasizing the importance of protecting our Nation from the health risks of marijuana use in adolescence and during pregnancy. Recent increases in access to marijuana and in its potency, along with misperceptions of safety of marijuana endanger our most precious resource, our nation’s youth.

KNOW THE RISKS. TAKE ACTION. PROTECT OUR FUTURE.
BREAK
Discuss recommendations on how to inform and counsel women given the current state of evidence.
What can Behavioral Health Professionals do?

- Counsel women who are intending to become pregnant, currently pregnant, or breastfeeding to discontinue cannabis use
  - Use Motivational Interviewing (MI) to make life changes through individualized goal setting
  - Communicate effects for both direct and indirect exposure
- Provide tailored resources for women
- Link women with non-punitive community supports
- Counsel women on responsible cannabis use with children in the home
  - Ensure women know what to do in the event of an accidental child ingestion
How to counsel women, given state of evidence?

- Provide scientific, accurate information
- Use clear, direct, simple messaging
- Restate laws in a simple manner
- Brief handouts or links to resources
- Magnets or other easy to find materials to post in home
- Use technology and social media (e.g., Twitter, Facebook)
Key Discussion points: Pregnancy

There is no evidence to show that marijuana use helps manage morning sickness.

Marijuana use directly affects the brain. Developing brains, like the growing fetus and infant, are especially susceptible to the adverse effects of marijuana.

Eating foods or drinking beverages that contain marijuana have different risks than smoking, and also have a higher amount of THC.

Using marijuana during pregnancy may increase the baby’s risk for developmental problems.
Key Discussion Points: Postpartum

- **Health Effects of Use**
  - Maternal health
  - Breastfeeding
  - Second-hand smoke

- **Safe storage:**
  - Store any cannabis products in locked, out of reach place for children
  - Never leave cannabis products, including paraphernalia around the home or in reach of children

- **Safe use**
  - Do not smoke around infants and children, including in the home
  - Cannabis containing products should not be used when actively caring for child
  - Don’t use cannabis and drive
A pregnant woman discloses to you that she has been smoking marijuana and using edibles almost daily, mainly for anxiety and sleep. How do you respond?

1. Do not respond; there is too much unknown cannabis use in pregnancy to counsel
2. Counsel the woman only on the legal consequences and even CPS involvement if she continues to use cannabis
3. Counsel the woman that it is okay for her to continue edibles, but she should stop smoking marijuana
4. Discuss what is known about cannabis use during pregnancy from a health perspective: what are potential harms – both maternal and fetal
5. Use motivational interviewing to make personalized goals to abstain from cannabis use, meeting the woman where she is.
6. Provide evidence-based resources for the woman
Identify potential prevention and risk-reduction approaches to use in practice

Preventing adverse maternal and child health effects
Cannabis Cessation in Women

- Women are 3x more likely than men to report physical withdrawal symptoms
  - Mood symptoms
    - Irritability
    - Increased anger
    - Restlessness
  - Gastrointestinal Symptoms:
    - Nausea
    - Vomiting

(Copersino 2010)
Utilizing Effective Practices in Preventing Substance Use

- Screening, brief intervention, and referral to treatment (SBIRT)
- Integrated clinics for pregnant and parenting women
- Health communication and social marketing campaigns
- Home visiting programs
- Contingency management for reducing use
- Policies that protect

SAMHSA, 2019
Screening, brief intervention, and referral to treatment (SBIRT)

- Asking about use can prompt change
- Validated questionnaires help to identify women who misuse cannabis or have Cannabis Use Disorder (CUD)
- Providers briefly counsel women on use and help women set individualized goals
- Women who indicate wanting treatment will be referred from provider
- Research on SBIRT in women using cannabis is limited

ACOG, 2008; Hostage et al., 2020; SAMHSA, 2019
Ask and Discuss Cannabis Use

- Asking about use can prompt change
- In a recent study, 48% of providers did not respond to disclosure of prenatal cannabis use
  - When providers did respond, they discussed punitive consequences of use (e.g., CPS involvement if detected at time of delivery) (Holland et al 2016)
  - No information on health-related risks or outcomes (Holland et al 2016)
- Many women are dissatisfied with health care provider communications about perinatal cannabis use (Bayrampour et al 2019; Jarlenski et al 2016)
- Lack of cannabis-related counseling is often perceived as an indication of safety (Bayrampour et al 2019)
**SCREENING QUESTIONS**

**Q:** Have you used marijuana in the last year?
- If no:
  - Go to question 2
- If yes:
  - When was the last time you used marijuana?
  - How do you use marijuana? What form of marijuana do you use? How often do you use and how much?
  - If pregnant: How has your use of marijuana changed since finding out you are pregnant?

**Q:** Does anyone use marijuana in your home?
- If yes or no:
  - It is important to ensure that your home is safe for your child. Make sure that any potentially harmful substances are out of reach of your child, including marijuana, alcohol, prescription drugs or household substances.
  - If yes:
    - Provide additional education on avoidance of secondhand smoke and safe storage, more information below.

**WELL-WOMAN/TEEN VISITS**

- Discuss contraception options if patient wants to continue recreational or medical marijuana, alcohol or other substance use and/or does not desire pregnancy.
- If patient desires a pregnancy, discuss importance of cessation of marijuana and other potentially harmful substances. Consider use of contraception while the patient is working towards cessation of substances.

**MARIJUANA PREGNANCY & BREASTFEEDING GUIDANCE CONTINUED**

**TALKING POINTS (LAWS)**

- If pregnant women report their substance use to their prenatal health care provider and/or have a positive drug test during a prenatal care visit, Colorado law prevents that information from being used in criminal prosecution. (C.R.S. § 13-25-136)
- Tetrahydrocannabinol (THC), both recreational and medical, is considered a schedule 1 drug under federal and Colorado law. (C.R.S. § 18-18-203)
- Current Colorado law defines a baby testing positive at birth for a Schedule I substance (including recreational or medical THC or other drugs) as an instance of child neglect, which requires a report to social services. (C.R.S. § 19-3-102)

Please inform your patient:
Marijuana is now legal for adults over 21. But this doesn’t mean it is safe for pregnant moms or babies. Some hospitals test babies after birth for drugs. If your baby tests positive for THC at birth, Colorado law says child protective services must be notified.
Integrated Clinics

- Co-located healthcare and substance misuse providers for pregnant and parenting women and their children
  - “One-stop shop”
- Evidence shows integrated clinics improve:
  - Attendance for prenatal and postpartum appointments
  - Birth, infant, and child welfare outcomes
  - Increased engagement in treatment and care for women using cannabis
- Helps promote health equity

Milligan et al, 2011; SAMHSA, 2019
Health communication programs

• Targeted public health messaging
  • Pre-defined target group/segment
  • Addresses unique motivations of target group

• Acknowledge that research is still developing, but provide evidence-based resources

• Change societal norms- “de-normalize” risky behavior

• Culturally relevant and appropriate
  • Image
  • Tone
  • Socio-cultural norms
  • Language

• Use direct, clear messaging:
  • E.g., “There is no safe amount of cannabis use while pregnant or breastfeeding”

CHALLENGE: NOT OVERSTATE EVIDENCE
BABY YOUR BABY
Home Visiting Programs

• Especially important in postpartum period
• Home visiting programs can promote:
  • Improvement in maternal, infant, and child health
  • Linkages and referrals to social supports and resources for the family
  • Reductions in child abuse and neglect
  • Increases in positive parenting practices

SAMHSA, 2019
Contingency Management

- Typically implemented in clinical settings
- Relies on “operant conditioning”- rewarding individuals based on level of change
- Effective in reductions or abstinence from tobacco, alcohol, and illicit drugs
- Limited evidence for only cannabis users
  - One study found it helped young adults decrease cannabis use in a set amount of time for adults ages (18-25 years) Schuster et al 2016
  - As cannabis use in is more prevalence in this age group, this may be a promising approach

SAMHSA, 2019
Advocate for Policies That Protect

- Use best practices from alcohol and tobacco control to prevent initiation of use
- Rethink ways safe disclosure of cannabis use can occur
  - e.g., pediatricians as mandatory reporters, CPS involvement
- Prohibit marketing to children and youth
- Regulate use & possession for childcare centers

SAMHSA, 2019
## Enhanced Surveillance

### Existing surveillance systems
- PRAMS
- YRBSS

### Local and state governmental programs
- Home visiting programs
- WIC

### Innovative methods
- Milk Banks
- Health care providers
- Other caregivers
## Enhanced Cannabis Education and Training

### Healthcare professionals
- Women's health
- Primary care
- Behavioral health
- Lactation consultants

### Policymakers
- State
- Local

### Government program staff
- Home visitors
- WIC
- Social workers
- Staff implementing prevention programs

### Cannabis field
- Dispensary staff
Resources for Behavioral Health Professionals
Free download:
https://www.nap.edu/catalog/24625/the-health-effects-of-cannabis-and-cannabinoids-the-current-state
Preventing the Use of Marijuana: Focus on Women and Pregnancy

Free download:
http://store.samhsa.gov
Getting to Outcomes Model

- SAMHSA, 2019
**Cannabis Info Cards**

**Marijuana Use During Pregnancy Isn’t Worth the Risk.**
There’s too much we don’t know about its effects on baby.

**Baby Eats What Mom Consumes.**
THC can be passed to baby through breast milk.

**Smoking, Eating, Vaping.**
No matter how marijuana is used during pregnancy, there’s a risk for baby.
Marijuana use during pregnancy can be harmful to your baby's health. The chemicals in marijuana (in particular, tetrahydrocannabinol or THC) pass through your system to your baby and can harm your baby's development.1-7

Although more research is needed to better understand how marijuana may affect you and your baby during pregnancy, it is recommended that pregnant women do not use marijuana.17

What are the potential health effects of using marijuana during my pregnancy?

- Some research shows that using marijuana while you are pregnant can cause health problems in newborns—including low birth weight.10,11
- Breathing marijuana smoke can also be bad for you and your baby. Marijuana smoke has many of the same chemicals as tobacco smoke and may increase the chances for developmental problems in your baby.12,13

Can using marijuana during my pregnancy negatively impact my baby after birth?

- Some research shows marijuana use during pregnancy may make it hard for your child to pay attention or to learn; these issues may only become noticeable as your child grows older.1-7

Sources:

Helpful Links With Information Related to Marijuana During Pregnancy

From CDC:
What You Need to Know About Marijuana Use and Pregnancy
https://www.cdc.gov/marijuana/factsheets/pregnancy.htm

From SAMSHA:
Marijuana and Pregnancy
https://www.samhsa.gov/marijuana/marijuana-pregnancy

From MotherToBaby:
Marijuana Fact Sheet
https://mothertobaby.org/fact-sheets/marijuana-pregnancy/pdf/

From March of Dimes:
Pregnancy and Marijuana Use
Key takeaways: Cannabis and MCH

• No safe level of cannabis use
• Increasing compelling evidence on adverse effects of cannabis use, particularly for women during critical life stages
• Evidence-based communication with women about what is known is imperative
• Individualized approach to counseling and treatment
• Potential prevention and risk-reduction approaches exist
Reviewed epidemiology of cannabis use in the preconception, prenatal, and postpartum periods

Discussed some possible adverse health effects of cannabis use during these periods, including recent studies

Discussed recommendations on how to inform and counsel women given the current state of evidence

Identified potential prevention and risk-reduction approaches to use in practice
Example of a clear handout
Questions?
Thank you!

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