EVIDENCE-BASED RESOURCE GUIDE SERIES

Preventing the Use of Marijuana: Focus on Women and Pregnancy

SAMHSA
Substance Abuse and Mental Health Services Administration

CHAPTER

1

ISSUE BRIEF

Preventing the Use of Marijuana: Focus on Women and Pregnancy

National estimates show that between 3 and 7 percent of pregnant women report using marijuana while pregnant.[1,2] In 2018, there was a significant decline in illicit drug use by pregnant women. The decrease in marijuana use among pregnant women between 2017 and 2018 (7.1 to 4.7 percent) contributed to this overall decline.[2] A study of self-reported and biochemically tested marijuana use among pregnant women in California found that marijuana use during pregnancy was more common among younger women, with rates as high as 22 percent of pregnant adolescents and 19 percent of pregnant young adults (ages 19–24) screening positive for marijuana use.[3]

To assist clinicians and others in raising awareness of the known and potential harms of marijuana use during pregnancy, this guide focuses on the growing body of evidence related to maternal marijuana use. The evidence from population-based data on potential harms to newborns is mixed. Some studies rely on self-reported data, which can underestimate the proportion of women who are using marijuana and skew study findings. Other factors, such as concurrent substance use, stress, socioeconomic status, and others, can influence the baby's health.

Despite these limitations, evidence is mounting to show that babies born to mothers who report marijuana use are more likely to be preterm and underweight.[4,5,6,7]

Further, there is concern that marijuana is transferred through breast milk to the child.[8,9] The primary psychoactive ingredient in marijuana, delta-9-tetrahydrocannabinol (THC), has been found in breast milk for up to six days after maternal marijuana use.[9] Marijuana may cause problems with a newborn's brain development and may result in hyperactivity, poor function, and other consequences.[10] While further research is needed to establish whether there are adverse effects on infant development, the American Academy of Pediatrics states that breastfeeding is contraindicated in women using illicit drugs.[11]

Evidence suggests that women's concerns about how substances will affect the developing fetus can motivate them to reduce or abstain from substances (e.g., alcohol, tobacco, and illicit drugs) during pregnancy.[12,13] However, relapse tends to rise dramatically from 6 to 12 months following birth among women who abstain from marijuana use during pregnancy.[13] The postpartum period, from birth through approximately 12 months after birth, corresponds to a critical developmental period for infants.

This chapter provides an overview of marijuana use among pregnant and postpartum women, as well as the adverse health consequences for mothers and their babies that may be associated with marijuana use both during and after pregnancy.

Key Definitions

For this guide, the word "marijuana" is most often used to align with the general public's understanding of the term.[5]

Marijuana: Refers to the cannabis plant or derivative products that contain more than 0.3 percent of the chemical compound delta-9-tetrahydrocannabinol (THC), the main psychoactive component of marijuana responsible for the plant's intoxicating effects.[4]

Cannabis Use Disorder: A persisting pattern of cannabis use that results in clinically significant functional impairment in two or more domains (e.g., school, work, social and recreational activities, interpersonal relationships), within a 12-month period. Cannabis use disorder can be classified as mild, moderate, or severe.[15]

Cannabinoids: A group of chemical compounds found in cannabis. Among the more than 100 types of cannabinoids are delta-9-tetrahydrocannabinol (THC) and cannabidiol (CBD).[14]

Cannabidiol (CBD): Cannabidiol is a component of the cannabis plant that does not produce a high. Research is exploring its therapeutic potential for pain, anxiety, inflammation, and substance use disorder. An FDA-approved medication, Epidiolex, which is used to treat certain seizure disorders in children, is made from plant-derived cannabidiol. CBD can be extracted from hemp plants (containing less than 0.3% THC) and is currently being marketed in many forms for mostly unproven indications.[16]

Delta-9-Tetrahydrocannabinol (THC): The main psychoactive chemical in marijuana that is responsible for most of the intoxicating effects that people seek.[17] Marijuana potency is determined by levels of THC, which vary widely among marijuana products.

Hemp: A strain of the *Cannabis sativa* plant that contains less than 0.3 percent THC. Many CBD products are derived from hemp, though they are not yet regulated by the FDA and may be of questionable quality and consistency.[17]

Substance Misuse: The initial use of substances before an individual develops a substance use disorder. This includes excessive use of a legal substance (e.g., alcohol), use of a prescription drug in a manner or dose other than as prescribed (e.g., opioids or stimulants), or any use of an illicit drug (e.g., heroin, cocaine, alcohol for minors).[16,17,19]

Medical Marijuana Use: The use of the whole, unprocessed marijuana plant or its basic extracts to treat symptoms of illness as recommended by an authorized practitioner in a state with a medical marijuana law. The FDA has not recognized or approved the marijuana plant as medicine. Continued research may lead to the development of more medications.[16]

Recreational Marijuana: Marijuana used for non-medical purposes in jurisdictions that have legalized the purchase, possession, or consumption of cannabis for recreational use by an adult resident (21 or older).

Child-Bearing Age: Ranges of ages during which a woman may become pregnant. Child-bearing age is typically defined as 15–44 or 15–49 years of age, although it is understood that girls younger than 15 may become pregnant.[20,21]

Prevention Practice: A type of approach, technique, or strategy focused on prevention; for example, skill building with young adults or public service announcements regarding the harmful effects of marijuana use on the brain.[22]

Prevention Program: A set of predetermined, structured, and coordinated activities focused on prevention. A program can incorporate different practices. Guidance for implementing a specific prevention practice can be developed and distributed as a prevention program.[22]

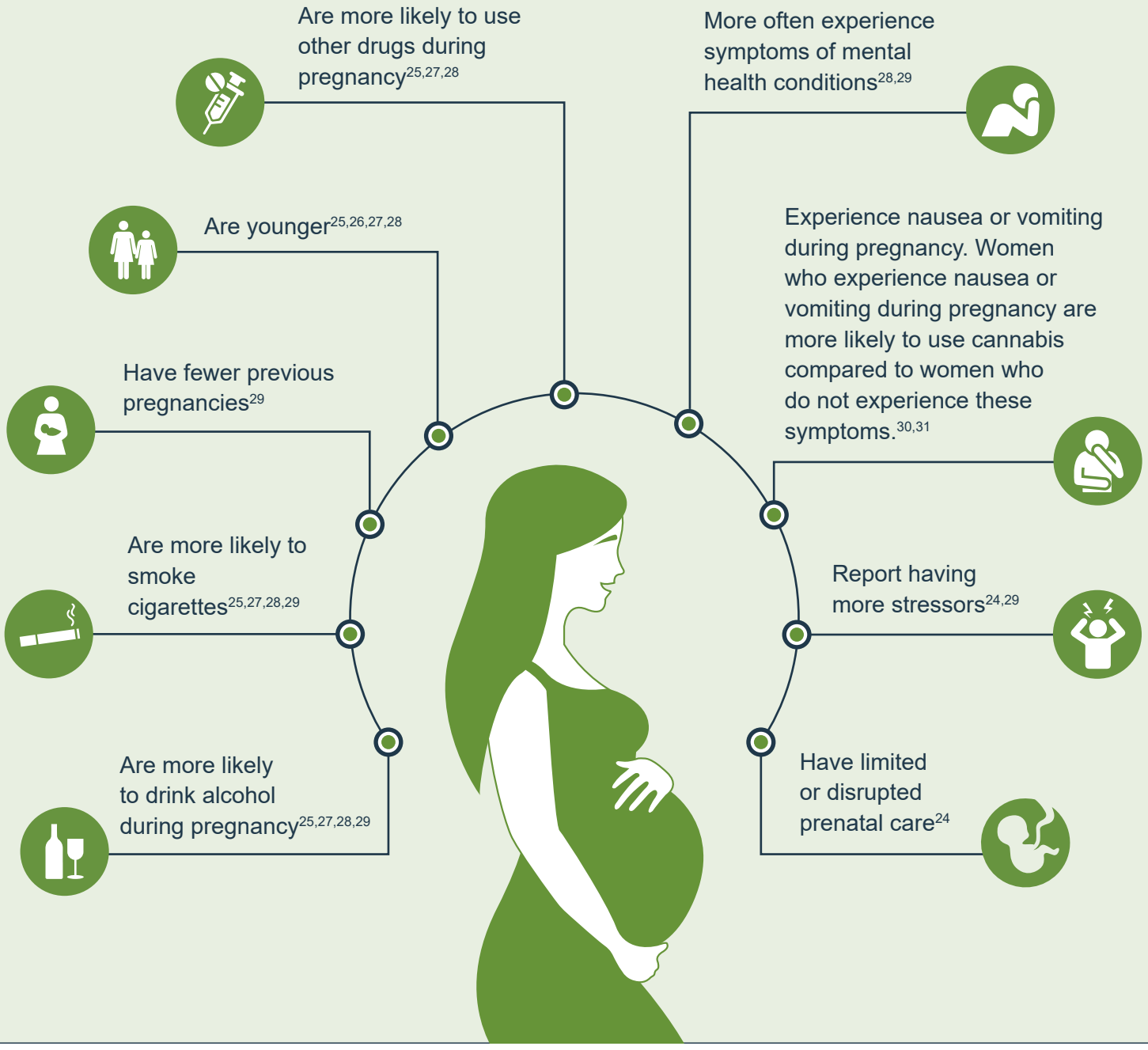
Prevention Policies: Laws, regulations, procedures, administrative actions, incentives, or voluntary practices of governments and other institutions to promote improvements in health through evidence-based health interventions.[23]

Women Who Use Marijuana During Pregnancy

In 2018, **5.4 percent** of women reported using illicit drugs during pregnancy.[2] The drug most commonly used by pregnant women was marijuana.[2]

Notably, **34–60 percent** of women who use marijuana continue use during pregnancy, with many believing that it is relatively safe to use during pregnancy and less expensive than tobacco.[24]

Socioeconomic conditions and other risk factors such as those listed below may contribute to the same pregnancy outcomes otherwise attributed to marijuana. As a result, it is difficult to assess how much of an effect is specifically due to marijuana exposure. Compared to women who do not use marijuana during pregnancy, women who use marijuana during pregnancy:



Risk Factors for Marijuana Use

Research suggests that, in addition to personal factors, the social contexts in which people grow up, live, work, and play have a major influence on marijuana use and on the development of cannabis use disorder.[24]

While research on risk factors specific to marijuana use during pregnancy and the postpartum period is limited, evidence from broader young adult populations may be relevant for understanding and preventing substance misuse among pregnant and postpartum women.

Factors that can contribute to marijuana use in young adults include use by peers, family members, accessibility, and beliefs about whether or not marijuana is harmful. Additional factors contributing to cannabis use disorder in young adults also may be related to genetics, early trauma, or mental illness. Other influences driving use can include fluctuations in family structure, maternal substance use, poor academic performance, sexual or physical trauma, early initiation of smoking and alcohol consumption, and aggression and delinquency. Furthermore, risk factors such as early initiation, beliefs about risks and benefits, and access to or availability of marijuana are particularly relevant to pregnant and postpartum women.[25,28, 32,33]

Early Initiation of Marijuana Use

Early onset of marijuana use is associated with a higher risk of developing cannabis use disorder.[34]

With regard to the development of cannabis use disorder, several different studies have found varying rates of cannabis use disorder among lifetime users, ranging from 9 percent to nearly 20 percent.[35]

Beliefs About Risks and Benefits of Marijuana

Recent research points to changing perceptions about the harms of marijuana use. In 2018, one in four 12th graders reported that regular marijuana use poses a great risk (26.7 percent—which is less than half of what it was 20 years ago).[36] In 2014, 33 percent of adults reported they believed regular marijuana use was harmful, compared to 50.4 percent in 2002 reporting the same.[37]

Many women who use marijuana during pregnancy believe it is relatively safe.[24] They use marijuana to treat and alleviate symptoms of nausea and vomiting during pregnancy. Research on the prevalence of marijuana use by pregnant women is limited. The prevalence of self-reported prenatal marijuana use is between 2 percent and 5 percent in most studies.[28,38,39,80] A recent study of 279,457 pregnant women in northern California, however, has reported prenatal marijuana use among pregnant women with severe nausea and vomiting at 2.3 percent, but 15 percent reported marijuana use for mild nausea and vomiting.[40] Another study found that 96 percent of mothers who continued using marijuana during pregnancy reported that they did so to treat nausea.[31]

Availability of and Access to Marijuana

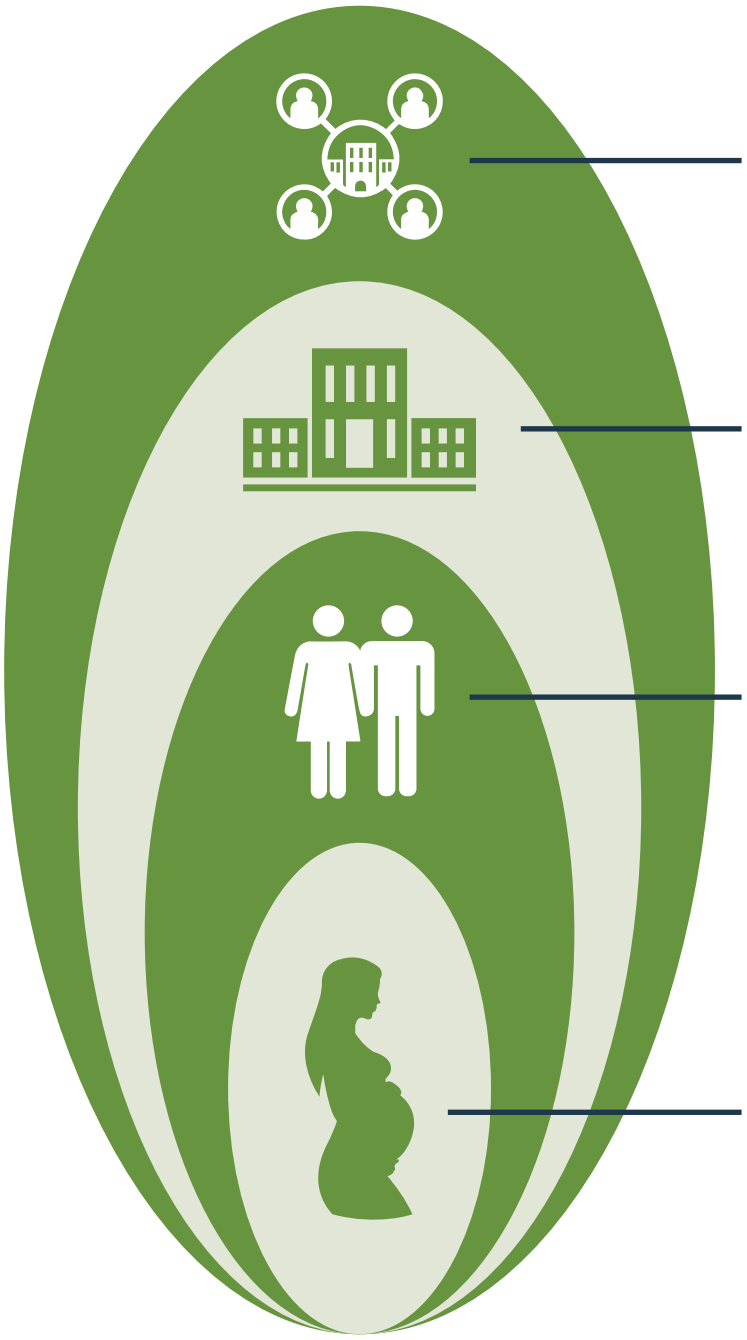
There are multiple factors contributing to the perceived safety of marijuana use. As of June 25, 2019, 14 states and territories have approved adult-use marijuana/cannabis.[41] A total of 34 states, the District of Columbia, Guam, Puerto Rico, and the U.S. Virgin Islands have approved comprehensive, publicly available medical marijuana/cannabis programs.[41]

One study found that states that allow medical marijuana have seen increases in marijuana treatment admissions among pregnant women.[42] The study also found there was no association between medical marijuana laws and the number of treatment admissions among non-pregnant women.[42]

Studies have cited other factors—including uncertainty regarding adverse perinatal consequences, the perceived therapeutic effects of marijuana, and a lack of counseling from healthcare providers—as contributing to the perceived safety of marijuana use among pregnant women.[28]

Further Contributing Risk Factors

While research on the risk factors associated with marijuana use among pregnant and postpartum women is limited, studies of other substance (e.g., alcohol, tobacco) use during pregnancy may inform our understanding of the complex interplay between contributing factors. Examples include:



Societal Factors:

- Policies that punish women for their substance use during pregnancy, including incarcerating women with SUDs, thereby limiting access to effective treatments[43,44]

Community Factors:

- Limited access to contraception and subsequent unplanned pregnancy[45,46,47]
- Limited access to health care[47,48]

Relationship and Genetic Factors:

- Family history of alcohol and other substance misuse[47,49]
- Physical, emotional, or sexual trauma as a child or adult[45,50,51]
- Romantic partner who has a substance use disorder[47,49]

Individual Factors:

- Personal history of alcohol and other substance misuse[49,50,52,53,54]
- Personal history of inpatient treatment for substance or alcohol misuse and/or history of inpatient mental health treatment[55]
- Post-traumatic stress disorder (often tied to adverse childhood experiences)[56,57]
- Previous birth to a child adversely affected by substance use in utero[47,58]

Most people who use marijuana start between the ages of 15 and 18. Among the 11.3 million women ages 12 and older who currently used marijuana in 2018, 3.4 million are between the ages of 18 and 25.[2] Women are at highest risk for developing SUDs during their reproductive years, especially between the ages of 18 and 29.[59]

Potency and Content of Marijuana

Compared to the marijuana of 30 years ago, marijuana today is widely recognized as more potent.[60] The potency of marijuana has consistently increased, with THC levels rising from approximately 4 percent in 1995 to about 17 percent in 2017.[60,61] Much of the evidence on the risks and adverse outcomes of marijuana use comes from older studies using less potent forms of marijuana.

The FDA does not regulate marijuana. Consequently, marijuana may include contaminants such as pesticides and fungus; however, most states with legal cannabis have implemented regulations about pesticide use. The FDA recommends that pregnant and breastfeeding women talk with a health care provider about the potential adverse health effects of marijuana use.[18]

The FDA has approved one cannabis-derived (CBD) drug product for the treatment of two forms of severe epilepsy, and three THC-related drug products for the treatment of nausea and vomiting caused by cancer chemotherapy or weight loss and poor appetite in patients with AIDS. These medications are only available with a prescription from a licensed healthcare provider.[18]

Harms Associated with Marijuana Use by Pregnant and Postpartum Women

Use of marijuana during and after pregnancy may pose risks to both mother and baby. Some research has documented effects of marijuana use during and after pregnancy, but much remains to be learned. Women should be aware of the realities and serious nature of these potential harms. Secondhand marijuana smoke contains THC and many of the toxic chemicals found in cigarette smoke. Exposure to secondhand marijuana smoke has been measured in nonsmokers.[81,82] THC does accumulate in human breast milk, but its effect on infants remains unknown. Because an infant's brain is continuing to develop, consuming THC in breast milk could affect brain development. Research is limited in this area, but it is a growing concern.

Birth Outcomes

Women who frequently or regularly use marijuana during their pregnancy may be more likely to experience worse birth outcomes, including low birth weight babies and preterm delivery, compared to pregnant women who do not use marijuana.

Studies show a clear association between prenatal marijuana use and low birth weight that is dependent on the mother's level of use.[5,25,63] Preterm birth has been associated among women who used marijuana during pregnancy.[83,84] Not all studies, however, have found this association between marijuana use and preterm birth, due to other confounding factors such as tobacco or other substance use.[7,10,63] This is also likely a result of differing methodological approaches, including poor quantification of marijuana exposure and a lack of documentation for preterm birth in many studies. A systematic review and meta-analysis of maternal marijuana use and adverse neonatal outcomes found an association between heavy marijuana use and preterm birth.[6]

Breastfeeding Outcomes

Currently, there are insufficient data regarding the effects of marijuana use on breastfeeding infants. However, research suggests that chemicals from marijuana can be passed to infants through breast milk.[64] THC is stored in fat and is released slowly over time, meaning an infant can still be exposed through breast milk even after a mother stops using marijuana.[38,63,64,65,66]

Additionally, studies show that women who smoke marijuana breastfeed for less time after birth.[5,29,67] Breastfeeding is recommended by the American Academy of Pediatrics because it benefits a baby's immune system, including antibodies, immune factors, enzymes, and white blood cells, all of which protect against diseases and infections even after the child has weaned.[68]

Childhood Outcomes

Research on this is limited (few longitudinal studies) and results are mixed because the women were also found to be using other substances (alcohol, tobacco). Also, data on these women were collected about 20 years ago, when potency of marijuana was much lower than what is used today. The relationship between marijuana use during pregnancy and other childhood outcomes is unclear. There is some evidence to suggest that prenatal exposure is linked to children's lower scores on tests of visual problem-solving, visual-motor coordination, and visual analysis.[69,70,71,72] Prenatal marijuana exposure also is associated with decreased attention span and behavioral problems and is an independent predictor of marijuana use by 14 years of age.[73,74,75] Effects of prenatal marijuana exposure on school performance remain unclear, with research having produced mixed results.[5,76,77,78]

The following major medical associations have advised against marijuana use during pregnancy:

- **The American College of Obstetricians and Gynecologists (ACOG)** recommends women not use marijuana during pregnancy.[24]
- The **American Academy of Pediatrics** released its first official guidelines in 2018 advising women who are pregnant or breastfeeding to avoid marijuana use because it is not safe for them or their children.[25]
- The **National Council of State Boards of Nursing** states in its 2018 National Nursing Guidelines for Medical Marijuana that advanced practice registered nurses must consider the available scientific evidence around risks to particular groups of patients, including those of child-bearing age, pregnant women, and infants.[62]

Cannabidiol Products

CBD is marketed as a variety of products including drugs, food, dietary supplements, cosmetics, pet food, and other animal health products.

Other than Epidiolex® to treat rare, severe forms of epilepsy, the FDA has not approved any other CBD products.

Some CBD products are being marketed with unproven medical claims. Misleading and false claims associated with CBD products may lead consumers to put off seeking important medical care, such as proper diagnosis, treatment, and supportive care.

There are many unanswered questions about the science, safety, and quality of products containing CBD. No compelling evidence shows that the use of CBD oil during pregnancy (or at other times) is beneficial.

The FDA is working toward learning more about CBD, including its effects[79]:

- On the body, such as toxicity to the liver, when someone ingests CBD regularly over a long period of time
- From cumulative exposure across a broad range of consumer products
- On special populations (e.g., the elderly, children, adolescents, pregnant and breastfeeding women) or types of animals (e.g., species, breed, or class)

While some women seek to treat pregnancy-related nausea and vomiting by self-medicating with marijuana or cannabis products, **there is no evidence to show that marijuana helps manage morning sickness or that it is safe to use during pregnancy.**

- **Marijuana use is more common in pregnancies with severe nausea and vomiting.** Women experiencing severe symptoms are nearly four times as likely to use marijuana compared to women not experiencing nausea and vomiting. Those with mild symptoms are more than twice as likely to use marijuana as compared to women not experiencing nausea and vomiting.[40]

- While there are FDA-approved cannabinoid medications to treat nausea and vomiting caused by cancer chemotherapy, **there have not been comparable tests done in women who are pregnant or breastfeeding.**[18,24]

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CHAPTER

2

WHAT RESEARCH TELLS US

Effective Practices to Prevent Substance Use During Pregnancy

When examining program effectiveness, it is often difficult to isolate programs focused exclusively on preventing marijuana use. Women who use marijuana during pregnancy may also use other substances, such as tobacco, alcohol, or illicit drugs. Sometimes women who use marijuana during pregnancy also have experienced poverty, poor diet, interpersonal violence, or intergenerational trauma, any of which can influence pregnancy outcomes.[1] Due to these factors, very few studies focus solely on preventing perinatal marijuana use. The best evidence available consists of prevention research on other substances.

The risk factors and issues surrounding other types of substance misuse during pregnancy may be similar to those surrounding marijuana use during pregnancy. This chapter focuses on a broader evidence base that includes studies of programs and practices designed to prevent substance misuse including, but not limited to, marijuana. Evidence-based programs are those that have demonstrated effectiveness in preventing or reducing substance misuse and its consequences.

Evidence of effectiveness falls along a continuum, from strong to weak. Strong evidence of a program or practice's effectiveness comes from strong evaluation studies. Evidence is most compelling when studies of a practice or program are scientifically rigorous, numerous, and include testing among various populations and settings.[2]

Prevention of Unintended Pregnancy

In 2011, 45 percent of pregnancies in the United States were unintended.[3] Women may continue to use substances without realizing they are pregnant. They may be unprepared or unable to stop using substances when they become pregnant.[3]

There is abundant evidence on the effectiveness of various contraception methods that are effective among women who frequently misuse substances or have a substance use disorder (SUD).[4] Women who are using substances and do not wish to become pregnant should consider using one of these methods. The evidence for contraception methods is not included in this chapter.

Criteria for Assessing the Evidence

An expert panel developed the following criteria to guide the selection of evidence-based practices featured in this chapter. According to the expert panel, an evidence-based practice must:

- Be supported by evaluation studies that, at a minimum,
    1. Employ a quasi-experimental research design with equivalent intervention and comparison groups;
    2. Use methods to isolate the effects of the intervention and rule out alternative explanations for the outcomes found; and
    3. Demonstrate prevention of, or reduction in, marijuana or other substance use prior to, during, or following pregnancy.
- Include sound theory or logic that connects the evidence-based practice to the prevention of marijuana or other substance misuse (including alcohol and tobacco) prior to, during, or following pregnancy
- Be incorporated into one or more programs that address risk or protective factors for marijuana or other substance misuse prior to, during, or following pregnancy

Screening, Brief Intervention, and Referral to Treatment (SBIRT)

Primary care and obstetrical providers often use screening, brief intervention, and referral to treatment (SBIRT) to identify alcohol and tobacco use among pregnant women. The U.S. Preventive Services Task Force recommends the use of SBIRT to address substance misuse, as do professional societies such as ACOG.[5-7]

Using a validated screening questionnaire, SBIRT helps identify women who misuse marijuana or have cannabis use disorder. Simply asking about alcohol and other substance use can also result in behavior change.[8] When a healthcare provider recognizes that a woman is engaging in marijuana or other substance misuse, the woman receives brief counseling (5–10 minutes) from a trained prenatal provider.

During this brief intervention, prenatal providers often use motivational interviewing techniques that help women determine their interest in making life changes through individualized goal setting.[9] Women whose screening results indicate that they have cannabis use disorder—and who have accepted they are in need of treatment—will receive a referral from the provider for treatment.

Since SBIRT studies that focus on marijuana use and pregnant women are limited, information from studies of other substances such as tobacco, alcohol, and illicit drugs contributes to the understanding of what works.[10] Computer-based screening and brief intervention have had positive initial acceptability by women and are associated with healthy pregnancy outcomes.[11, 12]

Outcomes Associated with SBIRT

- Decreases in alcohol consumption during pregnancy[11-15]
- Decreases in alcohol-exposed pregnancies[11-15]
- Decreases in preterm labor rates[16-20]

- Decreases in neonatal intensive care admissions[16-20]
- Increases in infant birthweight[16-20]
- Decreases in number of infants exposed to maternal illicit drug use[16-20]

- Decreases in number of heavy drinking days during postpartum period[21]

Integrated Clinics for Pregnant and Parenting Women

Integrated clinics, sometimes referred to as integrated programs, are co-located health promotion and substance misuse prevention providers for pregnant and parenting women and their children. These clinics are "one-stop shops" that typically offer prenatal care, general primary care, counseling for mental and substance use disorders, services for parenting and child development, and other necessary supports (e.g., housing, transportation, legal aid, case management).

Such supports are designed to promote health equity by helping women who may be at increased risk for poor pregnant and postpartum outcomes—due, for example, to limited income and educational opportunities, mental illness, domestic violence, or sexual or other trauma—access the critical care that is readily available to other women who do not face such challenges.[22, 23]

Although the integrated clinic model has been around since the 1970s, the majority of states lack these clinics. Integrated clinics can function successfully with limited funding in existing primary care clinics via a person-centered medical home model.[23]

According to the Institute for Healthcare Improvement, the maternity medical home model adopts medical home principles to perinatal care and also incorporates several key elements that address risk factors and behaviors, such as substance misuse, that can affect a mother's health and birth outcomes.

Key elements included in the maternity medical home model include:[24]

- A standardized risk assessment to identify a woman's needs
- A focus on first-trimester entry into prenatal care
- Care coordination to ensure that a woman receives all needed services during pregnancy
- Standardized care pathways to target common risk factors for poor birth outcomes and ensure each woman receives all recommended care
- Enhanced access such as expanded hours and improved ability to contact providers
- Person-centered care, including shared decision making about key aspects of perinatal care (such as where and how labor and delivery take place)

The medical home model includes:[25]

- A personal physician
- A physician-directed medical practice
- Whole-person orientation
- Coordinated and integrated care
- A quality and safety focus
- Enhanced access to care
- Payment that recognizes the value offered to individuals by the model

Evidence indicates that integrated clinics improve prenatal appointment attendance, birth outcomes, parenting, and overall maternal mental health.[26-31]

Outcomes Associated with Integrated Clinics

- Reductions in maternal substance misuse prior to, during, and after pregnancy[26-29]
- Increased engagement in treatment and prenatal care for women who use marijuana[28]

- Improvements in infant outcomes and child welfare[30]

- Improved attendance for postpartum appointments[31]
- Decreased rates of breastfeeding discontinuation[31]
- Increased use of effective postpartum contraception, including long-acting reversible contraception (LARC)[31]

Health Communication Campaigns to Change Behaviors

Health communication campaigns seek to promote change or produce outcomes among a certain population or the general public. Health communication campaigns can:[32]

- Provide direct information to those who are expected to adopt a healthy behavior or change an unhealthy behavior
- Use multiple communications methodologies such as social media, television, radio, and appointments with healthcare professionals and outreach workers
- Influence the adoption of healthy behaviors by changing knowledge and beliefs about behaviors, perceived social norms, and actual skills and confidence in skills

There is limited research on the effectiveness of communication campaigns to prevent or reduce marijuana use among pregnant or postpartum women. However, it is possible to extrapolate from evaluations of communication campaigns that focus on other substances and target the general population or other audience segments.

For example, health communication campaigns have been effective in changing beliefs about tobacco use, preventing the initiation of tobacco use, and promoting tobacco cessation.[33] Campaigns have been especially effective in reducing tobacco use among youth. These campaigns use commercial marketing tactics, including branding of messages, images, and warning labels, to refute pro-substance influences and increase pro-health messages and influences.

Successful health communication education campaigns require a great deal of thoughtful planning on the front end. A recent study reports that states using more aggressive negative messaging regarding alcohol use during pregnancy in such campaigns actually saw worse pregnancy outcomes and higher costs.[34, 35]

To be effective, key messages should provide accuracy and consistency without shaming or blaming women.[36] Messaging that is more likely to be effective will target the reasons women use marijuana during pregnancy, explain the known and possible risks of marijuana use during pregnancy, and promote the use of medications known to be safe in pregnancy.

Outcomes Associated with Health Communication Campaigns

Outcomes of campaigns implemented as part of comprehensive tobacco control programs:

- Prevention of tobacco smoking initiation in youth[37]
- Promotion of tobacco smoking cessation in adults[37-39]
- Reduction in relapse rates among individuals who have quit smoking[40]

Campaigns that elicit negative emotions through graphic and personal portrayals of the health consequences of tobacco use can lead to:

- Motivation for smokers to quit[37-39]
- Reduction in tobacco use among youth and young adults[33, 41]

Social Norms

Social norms are implicit or explicit rules about which behaviors are acceptable in society. Social norms change is an opportunity to change behavior on a societal level.[42] By changing public perception, public health campaigns can "de-normalize" risky behavior. Most work on social norms change has been done with tobacco, starting with the Surgeon General's 1964 report.[43]

Contingency Management for Reducing Use

Contingency management is one of the most effective approaches to treating SUDs. Typically implemented in clinical settings, contingency management relies on "operant conditioning," or providing rewards to individuals based on their level of behavioral change. In the case of marijuana use, the behavioral change would be periods of abstinence.

When implementing contingency management, the clinician will:[44, 45]

1. Arrange for regular testing to ensure that the individual is abstaining from substance use.
2. Provide agreed-upon and tangible rewards, such as vouchers, when the individual abstains.
3. Withhold the reward or incentive from the individual when substance use is detected.
4. Assist the individual in establishing alternate and healthier activities to replace the rewards derived from substance use.

Many programs use this practice during pregnancy to promote healthy prenatal behavior in women, such as reducing or quitting substance misuse.[46, 47] Contingency management has proven effective for helping pregnant women quit smoking.[48] It is also effective for helping women in general abstain from cocaine, tobacco, and heroin.[47, 49, 50]

A recent systematic review of evaluation research shows that incentives for tobacco smoking cessation may be especially effective for pregnant women.[51] While no studies focus on the effectiveness of contingency management to prevent marijuana use in pregnancy, one study reveals the potential of the practice to decrease marijuana use for a set amount of time in young adults (ages 18–25 years) not seeking to discontinue long-term use.[52] This study is particularly relevant, as 7.5 million women between the ages of 18 and 25 use marijuana and are in the child-bearing age range.

Outcomes Associated with Contingency Management

Pregnant and postpartum women who are introduced to contingency management are more likely to:

- Be willing and able to engage in SUD treatment[47]

- Be willing to quit or temporarily stop smoking tobacco products during pregnancy and the postpartum period[48]

- Reduce use of illicit drugs such as cocaine and heroin[47, 49, 50]

Postpartum Home Visits by Health Professionals

The postpartum period can be a risky time for women to relapse and engage in substance misuse. This is a time when women experience the loss of the social and medical support they received during their pregnancy. Approximately 1 in 9 women experience postpartum depression.[53] Women face the challenges of caring for a helpless newborn while simultaneously struggling to heal their own bodies. These stressors may be risk factors for marijuana misuse.

Further, breastfeeding mothers are at risk for passing chemical components of marijuana to their infants.[54] Being under the effect of marijuana may impact child care duties. These factors can lead to infant neglect and harm.[55]

Several practices help women cope with challenges in the postpartum period. Of these, one of the most studied is home visitation. The Health Resources and Services Administration (HRSA) and other public and private organizations provide support for home visitation programs. Home visitation programs can include help from health, social service, and child development professionals. Families that elect to participate receive regular, planned home visits during which they learn family management and childcare strategies that are likely to improve family functioning and child health outcomes.

According to HRSA, home visits may include:

- Supporting preventive health and prenatal practices
- Advising mothers on how best to breastfeed and care for their babies
- Helping parents understand child development milestones and behaviors
- Promoting parents' use of praise and other positive parenting techniques
- Working with mothers to set goals for the future, such as continuing their education or finding employment and childcare solutions

Outcomes Associated with Home Visiting Programs

- Improvement in infant and child health[56-61]
- Reduction in substance misuse among children as they grow into adolescence and young adulthood[62-64]
- Reduction in child abuse and neglect[65, 66]
- Improvement in child social and emotional development[67, 68]
- Improvement in child school readiness[67, 68]

- Improvement in maternal health[56-61]
- Linkages and referrals to appropriate social supports and resources for the family[69]
- Improvement in family economic self-sufficiency[70]
- Increase in positive parenting practices[67, 71]

Policies to Prevent and Reduce Marijuana Use

Concerns about the implementation of punitive strategies may deter women from seeking health care during and after pregnancy.[72, 73]

The evidence shows that policies can prevent the initiation of substance misuse and reduce current adolescent use.[74-78] Initiation of marijuana use in adolescence is a risk factor for marijuana use during pregnancy. Thus, preventing marijuana use among adolescents is one method for reducing marijuana use among pregnant women.

Much of the research concerning policies to reduce substance use in adolescent populations focuses on alcohol use. There is little research on the impact of marijuana policies. Implementation and evaluation of policies designed to prevent and reduce underage drinking and its associated consequences offer some guidance that may be applicable to preventing or reducing marijuana use during adolescence.

Lawmakers have developed, enacted, and applied policy strategies that target society- and community-level influences to reduce underage drinking and its associated consequences. These strategies include raising the minimum legal drinking age, setting a lower blood alcohol concentration (BAC) limit for young drivers, and limiting commercial and social access to alcohol.

Outcomes Associated with Policies to Reduce Underage Drinking

Policy

Increase the price through excise taxes and other methods

Outcome

Reductions in:

- Underage consumption[74-78]
- Consumption frequency[74-78]
- Amount consumed[74-78]
- Motor vehicle fatalities[76, 79-81]
- Occurrences of driving while intoxicated[76, 79-81]

Policy

Provide deterrents to using or incentives for not using, such as driver's license suspension following an offense or reducing the BAC limit for young people

Outcome

Reductions in:

- Minors in possession violations[85, 86]
- Traffic deaths[87, 88]

Policy

Restrict use and sale of alcohol at youth and community events

Outcome

Reductions in:

- Underage consumption[82-84]
- Negative social and legal consequences of underage consumption[82-84]

Policy

Restrict advertising to minors

Outcome

Reductions in:

- Youth traffic fatalities[89]
- Alcohol consumption[90]
- Occurrences of binge drinking[90]

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CHAPTER

3

Examples of Effective Prevention Programs

This chapter highlights six prevention programs designed to address and reduce substance misuse among pregnant and postpartum women. Each program uses one or more of the evidence-based practices described in Chapter 2. The Chapter 2 practices featured include:

- Screening, brief intervention, and referral to treatment (SBIRT)
- Integrated clinics for pregnant and parenting women
- Health communication campaigns to change behaviors
- Contingency management for reducing marijuana use
- Postpartum home visits by health professionals
- Policies to prevent and reduce marijuana use

While there may be programs that focus on the prevention of marijuana use among pregnant or postpartum women, there is limited research or data available on the effectiveness of any such program.

The best available data comes from programs that focus on preventing tobacco, alcohol, opioids, heroin, and other substance misuse among pregnant and postpartum women. Lessons from these successful programs may be applied to programming for marijuana use prevention. For example, while the CDC's *Tips From Former Smokers® (Tips®)* campaign addresses tobacco use, its strategies focus on messaging that affect behaviors and, therefore, can be generalized to address marijuana use as well.

Choosing Programs

While there are additional effective programs that could have been featured in this chapter, the programs described below were considered to be well defined, promising, and representative of prevalent practice models, according to the technical panel of experts who provided input on this guide. These programs meet the evidence-based criteria and practices featured in Chapter 2. Each program has achieved positive outcomes for the prevention of substance misuse among pregnant or postpartum women.

Overview of Programs Featured

	Kaiser Permanente Early Start	*Tips*® Campaign	BABY & ME - Tobacco Free	University of New Mexico Milagro Program	Minimum Age of Purchase, Sale, and Server Laws	Advertising Restrictions
Evidence-Based Practice(s) Featured	SBIRT Integrated Clinics	Health Communication Campaign	Contingency Management	Integrated Clinics Postpartum Home Visits	Policies to Prevent and Reduce Marijuana Use	Policies to Prevent and Reduce Marijuana Use
Substance(s) Addressed	Alcohol Tobacco Illicit Drugs	Tobacco	Tobacco	Tobacco Alcohol Marijuana Opiates Methamphet-amine Illicit Drugs	Alcohol	Alcohol
Focus on Pregnancy	✓	✓	✓	✓		
Focus on Postpartum Period			✓	✓		
Populations of Focus	Pregnant Women	General Public Women of Child-Bearing Age Pregnant Women	Pregnant Women Postpartum Women Qualifying Support Partner	Pregnant and Postpartum Women with Substance Use Disorders Family Members	Youth less than 21 years of age	Youth less than 21 years of age

Format of the Chapter

For each of the six programs featured within this chapter, uniform headings present information such as key features, implementation strategies, populations of focus, outcomes, and more.

Kaiser Permanente Early Start

https://earlystart.kaiserpermanente.org

Program Description

Kaiser Permanente's Early Start is a program to improve neonatal outcomes for babies of substance-using women who receive care at community-based outpatient obstetric clinics. The program integrates substance use prevention and treatment services with routine prenatal care and places Early Start specialists within the care team to provide counseling services on-site.

Pregnant women at risk for using alcohol, tobacco, and/or misusing other substances during pregnancy receive immediate assessment, intervention, and ongoing case management services with their routine prenatal visits. Referrals to SUD treatment and other community support programs are available. Most women see the Early Start specialist only once, though women who need additional support can receive follow-up visits.

Opportunities

The Early Start Program provides pregnant women with a range of benefits to help them have a healthy pregnancy and a healthy baby, including:

- Facilitating universal screening and early identification of pregnant women misusing substances
- Integrating SUD services into routine prenatal care
- Providing specialist counseling services on-site at the primary care clinic

Implementation Strategies

Staffing: In large clinic settings, staffing consists of one full-time licensed Early Start specialist for every 1,800 births. In smaller community settings, the amount of staffing time needed could be prorated according to the number of annual births occurring at several clinics.

Cost: Kaiser's Early Start implementation costs in northern California were $670,600 annually (including costs for 27.4 full-time equivalent Early Start specialists). A cost-benefit analysis showed a net cost benefit averaging $5,946,741 per year, indicating that the benefits derived from implementing the program far outweighed the costs of implementing it.[1]

Early Start

Key Features

- The program's co-location in a prenatal clinic ensures universal screening and consistent early identification of substance misuse.
- Licensed Early Start specialists provide assessment, information, and early intervention.
- The program incorporates prenatal provider education, consultation, and training to support effective program operation.

Evidence-Based Practice

SBIRT; integrated clinics

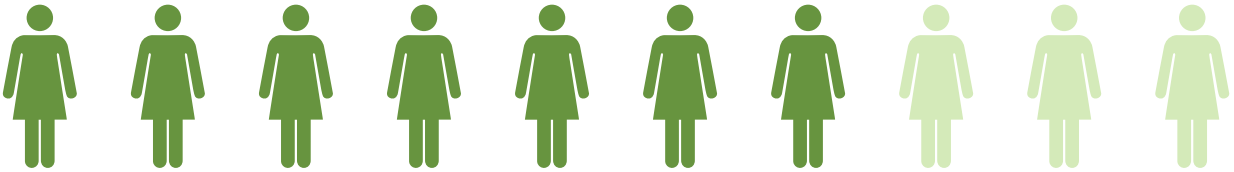
Preventing Substance Misuse

Alcohol; tobacco; illicit drugs

Populations of Focus

Women served in Kaiser Permanente prenatal care settings who use substances. Kaiser Permanente is a large not-for-profit health plan that serves 12.3 million members across the United States.

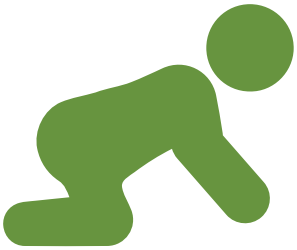
Outcomes



Of women who participated in the program, **69%** did not engage in any illicit drug use during pregnancy or through delivery.[2,3]

Mothers who participated in the program also experienced:

- Fewer preterm deliveries[4,5]
- Fewer stillborn births[4,5]
- Fewer placental abruptions[4,5]
- Lower cost of maternal care, as compared to women with SUDs who did not participate in the program[1]



Babies born to mothers who participated in the program experienced:

- Lower rates of assisted ventilation[4,5]
- Healthier birth weights[4,5]

Key Features[6]

- Media placement for this campaign reaches three-quarters of U.S. adults.[6]
- *Tips* advertisements have appeared on television in all U.S. media markets through commercial advertising time on cable television networks.[6]
- The campaign had a ubiquitous national buy and a local "buy up" strategy in which the campaign was broadcast through smaller local television channels in media markets with a high prevalence of cigarette smoking.[6]

Evidence-Based Practice

Health communication campaign

Preventing Substance Misuse

Tobacco

Populations of Focus

The general public, women of child-bearing age, and pregnant women. Secondary audiences include family members, healthcare providers, and faith communities.

It is important to note that the evidence on health effects of marijuana use is still emerging. A campaign centered on health effects should be careful to focus on those aspects of health risks of marijuana that are well-established (e.g., low birth weight, preterm birth, transfer of THC to baby in breast milk, cognitive effects on offspring).

Tips From Former Smokers® *(Tips®)* Campaign

https://www.cdc.gov/tobacco/campaign/tips/index.html

Program Description

The Centers for Disease Control and Prevention (CDC) launched the *Tips From Former Smokers®* (*Tips®*) campaign in March 2012. The *Tips* campaign features profiles of real people who are living with the serious long-term health effects of smoking and exposure to secondhand smoke. Over the course of this campaign, *Tips* has featured compelling stories from former smokers about their smoking-related diseases and disabilities, and the toll these conditions have had on their lives.

Tips advertisements focus on the health issues that are caused by, associated with, or made worse by smoking or secondhand smoke exposure. One of these issues is preterm birth.

Key messages in the *Tips* campaign include:

- Smoking causes immediate damage to your body, which can lead to long-term serious health problems.
- For every person who dies because of smoking, at least 30 people live with a serious smoking-related illness.
- Now is the time to quit smoking

Opportunities

Through the *Tips* campaign website, the CDC provides free resources for those seeking to quit or help others quit smoking. Examples of these materials include:

- Social media images
- FAQs
- Expert talking points
- A pocket card for talking with smokers who want to quit

These materials are customized for use by specific audiences, including faith-based organizations, healthcare providers, organizations serving military members and veterans, and organizations serving residents in public housing.

The *Tips* campaign website also offers clinical tools for providers to help them counsel individuals on how to quit smoking (https://www.cdc.gov/tobacco/campaign/tips/partners/health/index.html).

Implementation Strategies

The *Tips* campaign is a national initiative that is well-funded and designed by an advertising firm. Essential lessons for implementation of smaller-scale communication campaigns include:

Planning: Consider key messages, define target audiences, and focus on reach and channels for getting the message out.

Stakeholder engagement: Engage key stakeholders—including healthcare providers, opinion leaders, and other influential people—in getting the message out.

Graphic and personal portrayals of negative health consequences: Demonstrate the real harms that are associated with substance use in ways that are likely to elicit an emotional response.

Outcomes

It is estimated that **80% of US cigarette smokers** saw at least one *Tips* message in 2012. Audiences averaged 23 views over a 12-week period.[6]

As a result of the *Tips* campaign:[6-10]

Non-smokers reported increased conversations with family or friends about the dangers of smoking.

Exposure to the ads was associated with increased smoking cessation among pregnant women.[11]

Non-smokers reported greater knowledge of smoking-related diseases.

1.64 million smokers made a quit attempt.

100,000 smokers quit for good.

Smokers who saw ads reported greater intentions to quit within 30 days and 6 months.

Approximately 17,000 premature deaths from smoking were averted.

Smokers who saw the ads multiple times reported even greater intentions to quit.

179,000 years of healthy life were gained.

Key Features

- Women, and family members who live with the pregnant woman, are asked to attend four prenatal sessions where they receive information, resources, and other supports to help them quit smoking.
- After approximately two sessions, women and/or family members are tested for tobacco use using a carbon monoxide (CO) monitor.
- Those who are tobacco-free are rewarded with vouchers for diaper and baby wipe purchases.
- After childbirth, women can return monthly to the program to continue CO testing. Women receive diaper and baby wipe vouchers for each month they remain tobacco-free.

Evidence-Based Practice

Contingency management

Preventing Substance Misuse

Tobacco

Populations of Focus

Pregnant women who use tobacco or who recently quit. In some programs, qualifying support partners or family members may also enroll. BABY & ME – Tobacco Free programs are available in more than 20 states.

BABY & ME – Tobacco Free Program™

http://babyandmetobaccofree.org

Program Description

The BABY & ME – Tobacco Free Program™ is an evidence-based smoking cessation program created to reduce the impact of tobacco use on pregnant and postpartum women and their children. The program's primary goal is to reduce infant mortality and morbidity by helping women stop or reduce smoking while pregnant and after childbirth. The program also helps family members who live with pregnant and postpartum women avoid tobacco use.

During pregnancy, the program engages women and family members in prenatal information sessions. Those who stop smoking while attending the sessions are provided with incentives, such as diaper vouchers. Women are encouraged to return to the program after their child is born. Women who continue to abstain from tobacco receive incentives up to 12 months postpartum.

Opportunities

The BABY & ME – Tobacco Free Program helps pregnant and postpartum women, as well as their families, by:

- Ensuring program facilitators are trained in motivational interviewing techniques and are focused on the stages of change
- Developing individualized tobacco cessation strategies in partnership with each woman, tailored to her situation
- Incentivizing regular program participation and progress through vouchers
- Providing ongoing monitoring of smoking behaviors during both pregnancy and the postpartum period

Implementation Strategies

Staffing: Agencies, stakeholders, and facilitators must complete a one-day training. During the training, participants are given all information and materials necessary to implement and enroll women into the program. Additional technical assistance is available through the national BABY & ME – Tobacco Free program office.

Funding sources: Some states and health insurance providers reimburse sites offering the program. Additional funding may be identified and available through partnerships with departments of public health, community-based health centers, physician offices, and other health and human service agencies.

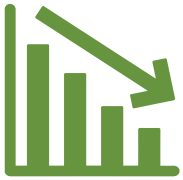
Outcomes

Women who participate in the BABY & ME – Tobacco Free Program have better maternal and infant outcomes.[12-14]

Participants of the program who attend at least three sessions have reduced rates of low-birthweight babies compared to nonparticipants.[13]

Women who attend at least 3 prenatal sessions significantly reduce the average number of cigarettes smoked daily compared to those who attend fewer sessions or are nonparticipants.[13]

Implementation of the program in Colorado resulted in a 72% success rate in terms of smoking reduction and cessation at 6 months postpartum.[15]



The program estimates that it has saved $1.9 million in healthcare costs for newborn care.[14]

Key Features

- Treatment plans are customized to fit the needs of the expectant mother and include prevention strategies and supports.
- Treatment teams made up of relevant healthcare professionals holistically address each woman's needs.
- Care is integrated with UNM hospitals and allows the provider team to follow women and their newborns during inpatient hospital stays.
- Medication-assisted treatment (MAT) is available for women with an opioid use disorder (OUD), with all maternity care providers prescribing buprenorphine.

Evidence-Based Practices

Integrated clinics; postpartum home visits

Preventing Substance Misuse

Tobacco; alcohol; marijuana; opioids; methamphetamine; other illicit drugs

Populations of Focus

Pregnant women and their families with SUDs throughout New Mexico and surrounding areas, with most participants residing in the Albuquerque metropolitan area. More than 90 percent of the women in the program have an OUD and are on MAT. Many, however, have polysubstance misuse, most commonly reporting methamphetamine and marijuana as secondary substances.

University of New Mexico Milagro Program

https://hsc.unm.edu/health/patient-care/behavioral-health/addiction-recovery/prenatal-program.html

Program Description

The University of New Mexico (UNM) Milagro Program is for pregnant women with an alcohol and substance use history or who are currently using substances. The program seeks to prevent and treat substance misuse during and after pregnancy. Women involved in the program receive their prenatal care from UNM Health System providers in the system's family medicine clinics. Additionally, a team of providers, including counseling, case management, and other professionals, works together to ensure the well-being of the mother. The team works with the pregnant woman and her family before and after the baby is born.

The program started in 1989 and is one of the oldest integrated prenatal programs that addresses SUDs. The program screens for many substances, including tobacco, alcohol, marijuana, opioids, and other drugs. Due to the program's integrated approach to health care, it can address the needs of women through inpatient stays, outpatient clinic visits, in the community, and even at home. Services include high-risk prenatal care, SUD treatment and counseling, case management, parenting classes, domestic violence support groups, trauma counseling, anger management counseling, and relapse prevention planning.

Opportunities

Care is provided through an integrated network of inpatient and outpatient healthcare and social service providers. Integrated provider teams develop trauma-informed care and treatment plans to address prenatal care, childbirth and postpartum care, substance use prevention and treatment, and care for the baby. Individualized treatment plans may include:

- In-hospital care for stabilization with methadone or buprenorphine
- Services offered in English and Spanish
- Treatment for spouses and partners

- Coordination with affiliated residential facility, an alternative to incarceration
- Collaboration and postpartum transition of care to a program for the entire family which provides trauma-informed care including case management; newborn, pediatric, and developmental care for babies; and ongoing substance use care including MAT for parents for up to three years after delivery

Implementation Strategies

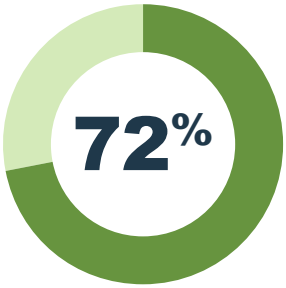
Staffing: Integrated provider teams include case managers, care coordinators, community health workers, nurses, substance misuse counselors, family medicine residents, and staff physicians.

Costs: Much of the program's cost can be covered by health insurance. In some cases, state policies dictate whether case management services are reimbursed.

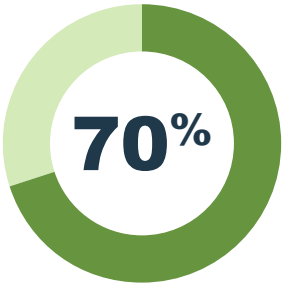
Funding sources: The Milagro program was originally funded by a SAMHSA grant. The program has sustained operations through a combination of state and local funding, combined with medical billing.

Outcomes

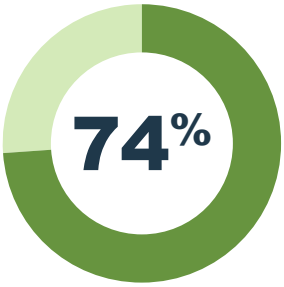
The Milagro program offers impressive benefits to the women it serves:[16,17]



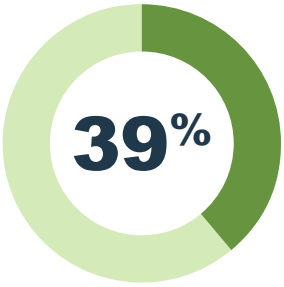
of pregnant women prescribed buprenorphine continued on the medication until delivery.



of women who start MAT for OUDs have negative urine drug screenings, meaning they are no longer engaging in opioid use.



of the women will be breastfeeding their infants upon hospital discharge following delivery.



of the women will be breastfeeding their infants at 2 months after delivery.

Key Features

- State-specific policies have been designed to reduce underage drinking by limiting minors' access to alcohol.
- Policies can regulate the minimum age of alcohol purchase, seller, and server laws.
- Policies also can control pro-alcohol messaging through alcohol advertising restrictions.

Evidence-Based Practice

Policies to prevent and reduce marijuana use

Preventing Substance Misuse

Alcohol

Populations of Focus

Youth less than 21 years of age

Minimum Age of Purchase, Sale, and Server Laws

https://alcoholpolicy.niaaa.nih.gov

Program Description

Evidence shows that policies limiting minors' access to alcohol can reduce alcohol initiation and consumption among adolescents, both of which have been linked to problem drinking in adulthood.[24] Similarly, early initiation of marijuana use is linked to marijuana use during pregnancy.[19-23]

Minimum age of alcohol purchase, seller, and server laws are a suite of alcohol control policies that stipulate the minimum age for alcohol transactions.

1. **Minimum age of purchase laws** prohibit minors from buying or attempting to buy alcoholic beverages.
2. **Minimum age of seller laws** specify a minimum age for employees who sell alcoholic beverages in off-premises establishments (e.g., liquor, grocery, and convenience stores).
3. **Minimum age of server laws** specify a minimum age for employees who serve or dispense alcoholic beverages in on-premises establishments (e.g., bars and restaurants).

Legal parameters of these policies—including age restrictions, compliance checks, vendor/retailor sanctions, and more—vary by state. State-level information on key components of purchase, seller, and server laws, as well as the use of false identification, can be found at the Alcohol Policy Information System website: https://alcoholpolicy.niaaa.nih.gov.

Opportunities

Laws regulating the minimum age of alcohol purchasers, sellers, and servers are designed to change drinking behavior among young people, many of whom are women of child-bearing age. The same would be true of similar policies limiting minors' access to marijuana (in states where recreational marijuana use has been legalized).

Youth marijuana use prevention champions and stakeholders can collaborate with community leaders to pinpoint ways to strengthen existing laws in states where recreational marijuana use has been legalized. For example, if the state does not already do so, champions and stakeholders can consider enhancing current efforts to prevent minors from using false identification (ID) to purchase marijuana by:

- Prohibiting the production, sale, distribution, possession, and use of false IDs for attempted marijuana purchase
- Implementing universal ID checks of all marijuana customers
- Requiring two or more different ID cards at point of purchase
- Issuing driver licenses and state ID cards that can be electronically scanned[24]
- Allowing retailers to confiscate apparently false IDs for law enforcement inspection[25]
- Using holographs and colors to make the manufacture of false IDs more difficult[26]

Implementation Strategies

Collaboration: Foster collaboration between prevention champions/stakeholders and community leaders and their staff to help draft revisions to, and shepherd, new legislation.

State-level support: Utilize media advocacy strategies to increase awareness and garner state-level support for policy revisions.

Enhanced enforcement activities: Enhance enforcement activities (through collaboration between stakeholders and community leaders) related to minimum age of transaction laws, such as compliance checks or compliance surveys and responsible server training.

Informational opportunities: Provide informational opportunities (other than direct mail) to retailers and the general public about policy changes, compliance requirements, enforcement methods, and penalties as needed to enhance deterrence effects.[27]

Additional guidance: Learn more about implementation strategies for underage alcohol control policies, and consider how they could be translated into underage marijuana prevention policies, through the following resources:

- Report to Congress on the Prevention and Reduction of Underage Drinking
- State Performance and Best Practices for the Prevention and Reduction of Underage Drinking
- Effectiveness of Sanctions and Law Enforcement Practices Targeted at Underage Drinking Not Involving Operation of a Motor Vehicle
- Policies to Reduce Commercial Access to Alcohol
- Regulatory Strategies for Preventing Youth Access to Alcohol: Best Practices

Outcomes

Underage drinking policies lower drinking rates among underage youth:

- Compared to geographic areas with fewer underage drinking policies, areas with four or more underage laws (e.g., laws requiring a minimum age for servers and sellers, fake ID restrictions, laws on attempts to purchase or consume, laws requiring the posting of warning signs in alcohol outlets) have:[28]
  - Lower alcohol use rates
  - Lower rates of drinking in the past 30 days
  - Lower binge-drinking rates
- States with stricter laws regarding the use of false IDs to purchase alcohol have:[29]
  - Lower rates of alcohol-related traffic fatalities involving underage drinkers
- States with laws establishing 21 as the minimum age to sell alcohol have:[28]
  - Lower alcohol use
  - Lower binge-drinking rates

Key Features

- State-level advertising regulations have been designed to reduce underage drinking through provisions that prohibit false or misleading alcohol advertising, advertising that targets underage youth, and advertising where youth are likely to be present, including on college campuses.[30]
- Other kinds of restrictions (e.g., local ordinance or voluntarily implemented business, event, or organizational policies) have been designed to minimize youth exposure to alcohol promotion and advertising in public venues, such as on public transportation and at community events.[31]

Evidence-Based Practice

Policies to prevent and reduce marijuana use

Preventing Substance Misuse

Alcohol

Populations of Focus

Youth less than 21 years of age

Advertising Restrictions

http://www.camy.org/_docs/research-to-practice/promotion/legal-resources/state-ad-laws/CAMY_State_Alcohol_Ads_Report_2012.pdf

Program Description

Evidence shows that policies restricting exposure to pro-alcohol advertising can reduce alcohol initiation and consumption among adolescents, both of which have been linked to problem drinking in adulthood.[18] Similarly, early initiation of marijuana use is linked to marijuana use during pregnancy.[19-23]

Advertising restrictions include any policies that limit advertising of alcoholic beverages, particularly advertisements that expose young people to pro-alcohol messages. Such policies can include regulations on electronic media (e.g., radio, television, internet), print media (e.g., magazines and newspapers), outdoor billboards, and signs.

Opportunities

Policy restrictions on alcohol advertising to minors can be applied to prevention efforts around marijuana use in women of child-bearing age, many of whom are minors and would be included in the primary audience of any such efforts.

Several lessons from alcohol advertising policy restrictions could benefit similar restrictions around marijuana (in states where its recreational use has been legalized) including:

- Establishing a distance threshold, including all types of marijuana advertising, and displaying the international "child" symbol on any billboard in the exclusionary zone
- Prohibiting advertising in student publications of all college campuses located in the state that have a substantial readership less than 21 years old, providing exceptions to protect advertisers' ability to reach those of legal age
- Considering a multifaceted approach by combining advertising restrictions with other underage marijuana use prevention efforts or interventions to maximize overall effectiveness (in terms of alcohol use, examples of such interventions include keg registration, mandatory responsible beverage service training, and enforcement of bar capacity regulations)[32]

Implementation Strategies

Lawmaking body: Most states use their Alcoholic Beverage Control (ABC) agency to administer advertising regulations, since alcohol distributors and retailers must obtain licenses from this agency to do business in a state. The ABC agency has the authority to enact regulations, investigate infractions, and impose sanctions as needed.[30]

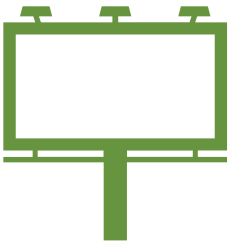
Experienced team members: Individuals or organizations with expertise in supporting the adoption, implementation, and enforcement of new regulations (or modifications to existing regulations) are essential to implementing alcohol advertising restrictions.

Prevention champions and stakeholders:
Stakeholders committed to preventing marijuana use among minors (including pregnant women) are key to mobilizing and building support for this type of policy within a community. Stakeholders can include law enforcement; religious, educational, or parent groups; town councils; and local advertising or marketing firms.

Additional guidance: Learn more about implementation strategies for underage alcohol advertising regulations, and consider how they could be translated into underage marijuana advertising regulations, through the following resources:

- Alcohol Marketing and Advertising: A Report to Congress
- Center on Alcohol Marketing and Youth
- Out of Home Advertising Association of America: Code of Industry Principles

Outcomes



Underage alcohol advertising regulations lower drinking rates among underage youth. Both partial bans and complete bans on alcohol advertising have been associated with reduced alcohol consumption in 20 countries.[33,34]

States with laws prohibiting alcohol advertising targeting minors have fewer youth alcohol-related, single-vehicle, driver traffic fatalities compared to states without this regulation.[35]

Alcohol advertising regulations have been associated with:[36]

- Lower rates of adolescent alcohol consumption
- Reduced frequency of adolescent alcohol consumption
- Older age of first alcohol use

Youth who lived in markets with less alcohol advertising were found to:[37]

- Drink less
- Increase their drinking more modestly until their early 20s

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Substance Abuse and Mental Health Services Administration