SUBSTANCE USE AND PREGNANCY

Vermont Healthcare Provider's and Patient's Knowledge, Perceptions, and Attitudes of Substance Use and Pregnancy Final Report

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Introduction and Background

Substance use including alcohol, tobacco, marijuana, and other illicit drugs during pregnancy can lead to several health and social problems for both mother and child. These can include miscarriage, stillbirth, physical malformations, effects on the physical, mental and emotional development of children, and impaired functionality as a parent, spouse, and friend (Centers of Disease Control and Prevention, 2018). The opioid epidemic has been characterized as one of the "most challenging public health issues of recent times." One of the initial responses to this epidemic was to curb prescribing practices of providers resulting in a drop from 81.3 prescriptions per 100 persons in 2012 to 58.5 prescriptions per 100 persons in 2017 (Centers for Disease Control and Prevention, 2018). However, the epidemic persisted, proving to be insidious in its reach and depth. Opioid related deaths continued to rise, indicating that the original response was insufficient at best. The US is witness to an epidemic that requires a comprehensive response. A response that charges public health, behavioral health and primary care to join forces to educate, promote policy change and, to assess, strengthen and/or integrate systems. Particularly given that those affected by substance use disorders "do not seek specialty treatment but are over represented in many general health care settings" (Kerr, 2019). Such a comprehensive response is more likely to meet to the diverse needs of the populations most affected.

Accordingly, Vermont is mobilizing in response to discerning trends in population health data on substance use during pregnancy. In 2015, alcohol use during pregnancy in Vermont was the highest across the nation at 15.8%. Pregnant women age 35 and older were the age group most likely to drink during pregnancy. Furthermore, health providers were less likely to advise pregnant women age 35 and older not drink during pregnancy (78% of the time versus 85% for younger women).

In 2017, 86% of women who had a health care visit in the 12 months before pregnancy were asked if they smoked cigarettes (compared to 81% in 2016). 74% of smokers had a doctor, nurse, or other health care worker advise them to quit smoking (compared to 76% in 2016). Marijuana use during pregnancy was associated with cigarette smoking during pregnancy. In 2017, 19% of women reported using substances other than alcohol and tobacco the month before pregnancy. The most commonly used substance was marijuana at 16%, 11% of women reported using a substance other than alcohol and tobacco during pregnancy; marijuana was the most commonly used at 8%; 85% of all women with a prenatal visit were asked if they were using drugs such as marijuana, cocaine, crack, or meth.

Hospital utilization data suggest that the rate of newborns exposed to opiates in utero has risen significantly in Vermont (2013 Vermont Rate: 33.3/1000 hospital births). In 2017, 19% of people reported using substances other than alcohol and tobacco the month before pregnancy; 4% used prescription pain relievers, 2% used Adderrall, Ritalin, or some other stimulant (Heroin, crack, and cocaine were also reported but there were too few respondents to provide an estimate). Eleven percent of women reported using a substance other than alcohol and tobacco during pregnancy; 3% reported using prescription pain relievers, and Adderrall, Ritalin, cocaine and heroin use were all reported but too few respondents to provide an estimate. 85% of all women with a prenatal visit were asked if they were using drugs such as marijuana, cocaine, crack, or meth.

In light of the epidemic, addressing substance use during pregnancy was identified as a priority for the Vermont Department of Health (VDH). In December, 2018, JSI was contacted to conduct formative evaluation for VDH's Tobacco Control Program (VTCP), Alcohol and Drug Abuse Programs (ADAP) and Maternal and Child Health Division (MCH) to better understand substance use during pregnancy—specifically, alcohol use, tobacco use, marijuana use, and opioid use. The purpose of the formative evaluation was to inform planning and priorities for communication and outreach strategies to address this public health issue. The cross-division VDH team defined pregnant and parenting women as their priority audience, as well as healthcare providers caring for women during and after pregnancy. Regarding the pregnant and parenting audience, VDH was interested in learning about their knowledge, perceptions, experiences, and practices around substance use during pregnancy as well as what Vermonters feel they need to motivate and better support them in discontinuing substance use during pregnancy. For the latter, VDH was interested in learning about provider knowledge, perceptions, and practices regarding use of these substances during pregnancy, and learning about what healthcare providers' feel they need to better support them in addressing substance use during pregnancy.

The following research questions were defined to focus the evaluation and data collection with pregnant and parenting women and healthcare providers.

- *What is the knowledge, perceptions, experiences, and practices of women and substance useduring pregnancy?*
- *What do women need to motivate or better support them in discontinuing substance use during pregnancy?*
- *What is the knowledge, perceptions, experiences, and practices of healthcare providers inVermont regarding substance use during pregnancy (i.e., alcohol, marijuana, tobacco, opioids)?*
- *What do healthcare providers need to better support them in addressing substance use during pregnancy?*

This report presents findings and recommendations from the formative evaluation and is organized into three sections: **Methodology**, **Results and Findings**, and **Recommendations**.

Methodology

JSI utilized a mixed-methods approach to conduct this study, including primary and secondary research.

Environmental Scan

JSI conducted a two-fold environmental scan to provide a picture of current known knowledge, perceptions, experiences, and practices around substance use and pregnancy. The environmental scan examined the research questions from the patient perspective and the provider perspective. The environmental scan disclosed information and learnings to guide the development of the key informant interview guide and the patient survey, as well as the knowledge gaps in the literature (more detail outlined in Attachment A and Attachment B).

Healthcare Provider Key Informant Interviews

JSI conducted structured key informant interviews with a purposeful sample of healthcare providers in Vermont who work with women during and after pregnancy. An interview guide was developed based on the research questions, and informed by an environmental scan of research examining healthcare providers' knowledge, perceptions, experiences and practices regarding substance use during pregnancy. JSI also engaged VDH for input on the focus and framing of interview questions. The interview guide included questions on: provider characteristics (e.g., provider type, practice type); perceptions (e.g., most concerning substances used during pregnancy, trends in use); provider approach to screening and counseling, use of validated tools, barriers to screening and counseling, resources and referral sources utilized for positive screens; and resources and preferences for credible and supportive information, continuing medical education or professional development and training (see Appendix C). VDH identified a sample of providers and practices to engage in interviews considering provider type, practice type, and geographic location. VDH initiated outreach to providers with a standard email introducing the study, interview opportunity, and JSI interviewers. JSI followed up by email to request participation in a 30-45-minute phone interview, and to schedule a time. Phone interviews were conducted in June and July of 2019. JSI interviewers typed notes during the discussion for subsequent qualitative analysis.

Qualitative data were examined for consistent themes, as well as contradictions to themes. Themes were examined across substances and when relevant, by specific substances (alcohol, marijuana, tobacco, opioids). Select data were coded and counted to assess prominence (e.g., most concerning substance used during pregnancy). JSI examined whether themes were qualitatively similar or different for Chittenden county/Burlington versus the rest of the state, and for primary care provider types (obstetricians, family practice physicians, midwives, and medical directors) versus other provider types interviewed, which were categorized as non-primary care provider types (maternal fetal medicine physician, pediatricians, social worker, and MAT nurse). Considering the total number of interviewees, care was taken to ensure comparisons and quotes maintain anonymity of the respondents. Additionally, considering the relatively small sample, Given the small sample and the lack of significant variation in responses by provider type, findings are not segmented by provider type or region, and are considered descriptive and informative, but not conclusive.

PRAMS Data Review

In order to learn more about how or why women successfully stop (or at least cut down) substance use, and learn what barriers to success other women face, JSI requested additional runs from 2016-2017 PRAMS data. Specifically, we asked for tabulations regarding provider-patient communications during prenatal care the possible influence of level of use and depression symptoms on the ability to quit or cut back on substance use while pregnant, and more details on quitting smoking.

Pregnant and Parenting Women Survey

The priority population for the survey were people whose primary residence was Vermont and who were currently or recently (within the past four years) pregnant. The goal was to get a convenience sample of 80-100 members of the priority population to complete the online survey. By convenience sampling we mean we took responses as they came in, rather than according to a formal sampling design and plan. Thus, the results provide insight into the actual experience of addressing alcohol, tobacco, and marijuana use during pregnancy, but may not represent fully all pregnant and parenting women.

The survey was designed in SurveyGizmo online survey software. The survey was fielded during July and August 2019, and promoted through Vermont's online community Front Porch Forum (FPF), as well as on the 802Quits Facebook page. Ads on each of these sites provided a link to the online survey. There was also limited promotion through Champaign Valley Head Start. The FPF ad targeted Windsor, Lamoille, Addison, and Chittenden counties, to align with the geographical location of the providers we interviewed. Eligible respondents who consented to the survey and then completed it were given a $10 Amazon gift card.

A total of 168 responses were collected. These records were extensively reviewed to delete repeat takers and bot responses. These were identified by IP addresses from outside the USA and Vermont area, incomplete or duplicative survey responses, and time-clustering. Seventy-three surveys were deleted. The sample size goal was attained with 95 complete and valid respondents.
The final data set of valid responses was imported into SPSS and SAS, to create frequencies and cross-tabulations of close-ended questions. Two open-ended questions were thematically coded, using Nvivo software.

Key Informant Interview Findings

A total of 17 healthcare providers were identified and contacted to participate in a key informant interview, of which 13 agreed to participate and completed an interview. The interviewees represented a variety of provider types that care for women during pregnancy, and represented 4 of 14 counties in Vermont (see Table 1). All interviewees were from group practices (versus solo). These included: Community Health Centers of Burlington; Copley Hospital, The Women's Center; Mt. Ascutney Hospital and Health Center; Planned Parenthood of Northern New England; Porter Medical Center; and University of Vermont Medical Center.

Table 1. Provider Interview Characteristics

Provider Type		**13**
Primary Care	Medical Director	1
	Midwife	3
	OB/GYN & Family Practice	4
Non-Primary Care	Maternal Fetal Medicine	1
	MAT Nurse	1
	Pediatrician	2
	Social Worker	1
Practice Type		
	Community Health Center	2
	Hospital-based Network	10
	Other – "Central Community Provider"	1
County		
	Addison	3
	Chittenden	5
	Lamoille	2
	Windsor	2
	Other – VT Statewide	1

The following research questions were defined to focus the evaluation and data collection with healthcare providers.

- *What is the knowledge, perceptions, experiences, and practices of healthcare providers inVermont regarding substance use during pregnancy (i.e., alcohol, marijuana, tobacco, opioids)?*
- *What do healthcare providers need to better support them in addressing substance use during pregnancy?*

The following bullets describe the findings and themes identified from the key informant interviews.

Provider Perceptions

Interviewees reported alcohol to be the most concerning substance used during pregnancy.[1] This was consistent across provider types and regions. Opioids and tobacco (or smoking) followed as a most concerning substance used during pregnancy.

- Considering newborns specifically, interviewees indicated **alcohol** to be the most concerning substance used during pregnancy. They expressed concern due to the established risk of fetal alcohol syndrome or health impacts on the newborn. Some also noted the lack of clarity on a known safe amount of alcohol use during pregnancy contributes to their concern.

- Considering pregnant women specifically, interviewees indicated **opioids** to be the most concerning substance used during pregnancy. Their concern is due to the perceived high risk associated with opioid use in general, including overdose, death, co-morbidities and associated risky behaviors and, neonatal abstinence syndrome or withdrawal.

> *Alcohol because we know about fetal alcohol syndrome. Then nicotine because we know about the effects of nicotine and ongoing smoking for babies. Marijuana…hmm, we don't have as much data on harmful effects.*
>
> *--Provider response to question on which substance do they find to be the most concerning when used during pregnancy*

- Although not as prominently expressed as alcohol and opioids, tobacco, smoking and/or nicotine were consistently indicated as a concerning substance used during pregnancy. Some interviewees shared that their concern is due to the known implications of smoking on birth outcomes, including preterm birth and growth restriction.

- While most providers reported marijuana was the predominant substance used during pregnancy, marijuana was not indicated to be one of the most concerning substances used during pregnancy (considering the pregnant woman or the newborn).

    - ***Key Point:*** Alcohol, followed by opioids and tobacco are considered by providers to be the most concerning substances when used during pregnancy.

Screening

Most all interviewees (12 of 13) reported that their practice employs universal screening for substance use during pregnancy. Typically, this occurs during a first visit (e.g., first prenatal visit). Specific screening

[1] Quotes used in this report are paraphrased from key informant interview discussions and notes.

usually occurs for tobacco use and alcohol use. Providers reported that specific screening for marijuana and opioids varies; some noted they specifically screen for these substances and some noted these substances are asked about generally (e.g., other drug use).

- A few interviewees indicated they also used universal or selective urine screening to identify substance use.

- Generally, screening is implemented by either a self-administered paper screening during intake (e.g., front desk provides screening form), or verbally by a health care assistant or a behavioral health provider.

- Reported use of validated tools to screen for substance use varied. A few interviewees indicated they did not use validated tools or questions to screen. Some interviewees were not sure or indicated they use standard questions. About half of the interviewees reported using validated tools for substance use screening. Tools referenced included: AUDIT, The Drug Abuse Screening Test (DAST), and the Fagerstrom Test for Nicotine Dependence. Use of SBIRT was noted by one interviewee. The pediatricians interviewed reported using Bright Futures to guide screening.

    - ***Key Point:*** Providers conduct universal screening for substance use during pregnancy, however there is variation in how screening is conducted (e.g., for specific substance versus substance use in general; use of validated questions or tools).

Patient Engagement and Counseling

Several interviewees perceive patients to be responsive to disclosing substance use in general during pregnancy, with the exception of alcohol use. One interviewee suggested that pregnancy might be a time that prompts patient interest in optimizing health and/or seeking treatment. Stigma associated with substance use can be a barrier for providers discussing this with patients. Patients may become offended, defensive, or feel judged. Uses of motivational interviewing and/or non-judgmental approaches are employed by several interviewees to engage patients in discussion. Interviewees address positive screens differently, based in part on the systems and resources they have available.

- Some interviewees called out alcohol as one substance that is not readily disclosed by patients. Additionally, some interviewees have found that alcohol can be difficult to discuss due to the stigma around using alcohol during pregnancy and because of conflicting messaging on what is a safe amount to use during pregnancy.

- Some interviewees have found discussing opioid use to be challenging due to the stigma associated with its use and because it is illegal. Interviewees suggest patients may have concerns or fear of the legal consequences of opioid use during pregnancy (e.g., child custody). One interviewee expressed concern for the possibility of women becoming the victims of judgment associated with opioid use.

- Some interviewees find it difficult to discuss marijuana use during pregnancy due to their lack of knowledge on the evidence base of the harms of using marijuana during pregnancy and the associated clinical practice guidelines for providers to address marijuana use during pregnancy. Additionally, interviewees feel the current legal status, culture and perception of harm on marijuana (e.g., it is natural and/or medicinal) make advising against marijuana use challenging amidst the lack of evidence on potential harms during pregnancy

> *It is hard to substantiate that it is not a good idea to use marijuana during pregnancy because it is hard to say what might happen…compared to alcohol and good evidence relative to fetal alcohol syndrome. It is difficult to make a good case for not using marijuana during pregnancy.*
>
> *--Provider response to question on whether use of certain substances during pregnancy are harder to discuss*

- Time was the most common reported barrier to addressing substance use during pregnancy. Interviewees shared that the time it takes to broach the issue of substance use during pregnancy and address it thoroughly is significant, and their time with a patient is always limited. Additionally, with new patients, there are so many topics to cover or there may be other priorities to cover in general, and digging in to this topic can be challenging because of the time it takes. Some providers are able to refer to a social worker or care coordinator for these conversations, which helps with the time barrier.

- Some interviewees indicated they explicitly message not to use any substance during pregnancy and provide specific reasons why not. Others recommend not using substances or to avoid using during pregnancy.

- Several providers use a harm reduction and/or trauma informed approach. One noted she recognizes substance use is a coping strategy and she wants to support patients in coping strategies. She refers patients to behavioral health for support. One tactic shared for addressing substance use during pregnancy, informed by these approaches, is to first ask the patient if it is OK to talk about the effects of using substances during pregnancy. If it is OK, the provider and patient talk about it and discuss not using or limiting or cutting back use (e.g., reduce smoking by half). Examples of messaging to patients that interviewees use includes:
    - *Generally, we know it is best to use*

> *Ask if it is OK to talk about the effects of substances during pregnancy. If it is OK with the patient, I then talk about it being best not use or limit use during pregnancy. I ask if they want to meet with the behavioral health specialist. Many are receptive to having the discussion and seeing the behavioral health specialist….In an ideal world no one would use substances, but if a person needs to use, I suggest they work on cutting back and use the smallest amount for the least amount of time.*
>
> *--Provider response to question on approach to advising patients when they screen positive.*

the least amount of substances during pregnancy.
    - *It is best to not use psychoactive drugs during pregnancy [regarding marijuana] because we don't know the harms to the baby.*

- Some interviewees are firmer in their guidance with specific substances. One shared she is more directive with alcohol because that one scares her the most. An example of messaging to patients that interviewees use is:
    - *There is no safe amount of tobacco, alcohol, marijuana or opiates during pregnancy.*

- About half of the interviewees noted that they were familiar with Plans of Safe Care, and are actively using them.

- Some interviewees have access to a co-located behavioral health specialist and refer all of their patients to this provider during pregnancy. Others have a co-located behavioral health specialist or social worker that they refer to when a patient screens positive for substance use.
    - While some interviewees have good access to mental health, behavioral health, and/or social work services for their patients, these resources were also identified as a gap they are in need of to better serve and support patients.
    - Some interviewees also refer to MAT clinics or providers for opioid use, however access to MAT providers or clinics was noted as a resource in need, particularly for providers outside of Chittenden County (i.e., in Addison County and rural areas of the state).
    - Some interviewees refer to the Quitline, NRT or tobacco treatment specialists.

❖ ***Key Point:*** Discussing substance use during pregnancy can be challenging for providers considering stigma associated with use (which varies by substance), perception of harm, and time. Approaches used to advise, counsel and/or refer to address substance use during pregnancy vary across interviewees.

Provider Engagement and Education

Professional associations noted by interviewees include: American College of Obstetricians and Gynecologists, American College of Nurse Midwives, American Society for Addiction Medicine and American Academy of Pediatrics.

- Interviewees also referenced the Vermont Department of Health, University of Vermont, Dartmouth Hitchcock, Blueprint for Health's Women's Health Initiative and SAMHSA as resources to inform practice and obtain professional development.

- Preferred formats for obtaining or receiving information on this topic include grand rounds, webinars, online learning modules, lunch seminars, and digital briefs.

- Interviewees expressed need for print education materials to share with patients and visual aid tools to support delivery of patient education.
    - Regarding tobacco use, one interviewee called out need for more education on vaping and guidance on screening for vaping.
    - Regarding marijuana, interviewees noted need for materials (for providers and patients) on marijuana use during pregnancy to ensure effective messaging.

- ***Key Point*:** Providers rely on professional associations, conferences and grand rounds to stay informed and current on addressing substance use during pregnancy.

Substance Use and Pregnancy: PRAMS Data Review

Several published Vermont Department of Health (VDH) reports use Pregnancy Risk Assessment Monitoring System (PRAMS) survey data to describe the prevalence of substance use prior to and during a mother's most recent pregnancy (Table 2). A clear trend in the data is that most women who reported using alcohol, cigarettes, and marijuana, stopped during pregnancy. A second clear trend is that there are a substantial number who continue to use during pregnancy.

Table 2: Substance use prior to and during pregnancy, PRAMS 2016-2017 data[i]

Substance used	Prevalence of use 3 months before most recent pregnancy	Prevalence of use during last 3 months of pregnancy
Cigarettes	23%	13%
Alcohol	70%	16%
Marijuana	15% (1 month prior)	8% (any time during)

In order to learn more about how or why women successfully stop (or at least cut down) substance use, and learn what barriers to success other women face, JSI requested additional runs from 2016-2017 PRAMS data. Specifically, we asked for tabulations regarding provider-patient communications during prenatal care, the possible influence of level of use and depression symptoms have on the ability to quit or cut back on substance use while pregnant, and more details on quitting smoking.

Discussions with Providers

Regarding a checklist of topics, women recall their providers asking them about substance use more than anything else except breastfeeding plans (Table 3). Providers are often directive as well; 84.7% (82.9% to 86.4%) of women who had a prenatal care visit were advised not to drink alcohol while pregnant. Similarly, about 75% (70.2% to 79.4%) of women recalled their provider advising them to quit smoking.

Table 3: Frequency of providers asking about topics during prenatal care visits

Topic	Prevalence	95% Confidence interval
If I planned to breastfeed my baby	97.6%	96.7% to 98.2%
If I was smoking cigarettes	97.5%	96.6% to 98.2%
If I was taking any prescription medications	97.4%	96.5% to 98.1%
If I was drinking alcohol	96.5%	95.4% to 97.3%
Doing tests to screen for birth defects or diseases that run in my family	90.9%	89.4% to 92.2%
If I planned on using birth control after the baby was born	90.1%	88.6% to 91.4%
If I was feeling down or depressed	88.2%	86.6% to 89.7%
If I was using drugs like marijuana, cocaine, hash, crack or meth	84.3%	82.4% to 86.0%

Topic	Prevalence	95% Confidence interval
If someone was hurting me emotionally or physically	84.1%	82.2% to 85.8%
Pre-term labor signs	81.2%	79.2% to 83.0%
Know how much weight to gain during pregnancy	67.0%	64.6% to 69.2%
If I wanted to be tested for HIV	54.9%	52.5% to 57.3%
Health of my teeth and gums	51.3%	48.8% to 53.7%
Using a seat belt during pregnancy	47.5%	45.1% to 50.0%

Weighted percentages are presented to account for the complex design of the PRAMS survey. The sample size for these questions ranged from 1,707 to 1,728.

- ***Key points***: Nearly universally, women recall that their providers asked about alcohol and cigarette consumption, prescription drug use and other drug use during at least one prenatal care visit. Other topics can be opportunities to also address substance use. For example, weight gain during pregnancy was also often discussed; diet and nutrition are another pathway to review how substance use can affect baby's birth weight (nicotine), discuss ways of handling nausea during pregnancy (alternatives to marijuana), and ways to change diet, including substitutes for alcohol. Providers' advice can potentially be reinforced or further explicated by other members of the practice team, so there is enough time to cover what is especially useful for each patient.

Pre-Pregnancy Use, Depression, and Likelihood of Quitting During Pregnancy

PRAMS asks whether or not women drank (Table 4) or smoked cigarettes (Table 5) during their last trimester of pregnancy. Comparing pre-pregnancy use to third trimester use gives some indication of changes made. The bottom line is that light users had far more success than heavier users.

We attempted to examine e-cigarette use however, there were too few e-cigarette users to meaningfully break out this subgroup. We examined use of over-the-counter pain relievers and found that pre-pregnancy use was high (74.2%; 95% CI: 72.0% to 76.2%), and declined during pregnancy but remained common (67.1% to 95% CI: 64.7% to 69.3%). Prescription drug use was rare, but did not change during pregnancy. The pre-pregnancy rate was 4% (3.1% to 5.2%) and during pregnancy, the rate was 3.9% (3.1% to 5.0%)

Depressive symptoms were somewhat common (about 20% prior to pregnancy, about 16% during pregnancy). Smokers with depression symptoms were less likely to abstain during the last trimester (Table 6).

Table 4: Level of pre-pregnancy alcohol consumption, and likelihood of quitting during pregnancy

Pre-pregnancy drinking level	Percent who did not drink during the last trimester (95% CI)
None	98.2% (93.1% to 99.6%)
< 1 drink/week	87.7% (84.2% to 90.6%)
1-3 drinks/week	79.8% (75.9% to 83.3%)
4-7 drinks/week	61.8% (53.6% to 67.6%)

Pre-pregnancy drinking level	Percent who did not drink during the last trimester (95% CI)
8-13 drinks/week	59.4% (47.4% to 70.4%)
>= 14 drinks/week	50.8% (31.7% to 69.7%)*

Weighted percentages are presented to account for the complex design of the PRAMS survey. The number of respondents who responded to the question about drinking in the last trimester (column 3) was 1,387. Some results (*) were based on a sample size of less than 60 so may be unrealiable.

Table 5: Level of pre-pregnancy cigarette use and likelihood of quitting during pregnancy

Pre-pregnancy cigarette use	Percent who did not smoke during the last trimester (95% CI)
< 1 cigarette/day	96.9% (87.6% to 99.3%)*
1-5 cigarettes/day	61.7% (49.4% to 72.7%)
6-10 cigarettes/day	45.6% (34.8% to 56.8%)
11-20 cigarettes/day	25.3% (18.7% to 53.4%)
21-40 cigarettes/day	**
>= 41 cigarettes/day	**

Weighted percentages are presented to account for the complex design of the PRAMS survey. The actual number of smokers who responded to the question in column 2 was 286 and actual number of respondents to the question in column 3 was 216. Some results (*) were based on a sample size of less than 60 so may be unrealiable.Some results (**) were suppressed due to very small numbers who smoked heavily and endorsed one or other question.

Table 6: Depressive symptoms and association with alcohol and cigarette use while pregnant

	Prevalence (95% CI)
Among all respondents:	
Pre-pregnancy (3 months prior) depression	20.0% (18.1% to 22.0%)
During pregnancy depression	16.1% (14.4% to 18.1%)
Depression symptoms during pregnancy among those who had pre-pregnancy depression	65.0%
Among women who smoked prior to pregnancy:	
Cigarette use during pregnancy among those who were also depressed while pregnant	69.1% (59.8% to 77.1%)
Cigarette use during pregnancy among those who were not depressed while pregnant	50.4% (44.0% to 56.7%)
Among women who drank alcohol prior to pregnancy:	
Alcohol use among during pregnancy among those who were also depressed while pregnant	19.2% (13.8% to 26.0%)
Alcohol use during pregnancy among those who were not depressed while pregnant	23.3% (20.8% to 26.0%)

- ***Key point:*** The ability of women to abstain from drinking or cigarettes is inversely associated with pre-pregnancy consumption levels. This drop-off in successful abstinence is particularly great for smokers. While it is not surprising that greater use makes it difficult to quit, it is a reality check. Ascertaining alcohol and tobacco quantity/frequency could help triage those who will need more support and perhaps more intensive methods (e.g., NRT or brief counseling etc.) to help change their use.

- ***Key point**:* About 1-in-5 women had depression before pregnancy and another 1-in-5 reported depression during pregnancy. Depressed smokers had significantly greater cigarette use while pregnant. Depression was not associated with greater alcohol use while pregnant. Women who are trying to quit smoking and are also burdened with depressive symptoms may benefit from behavioral health or other supportive services that could address one or both needs.

Quitting Smoking: Provider Suggestions, Patient Actions

PRAMS contains detailed checklists about specific methods recommended by providers, and about actions taken by women regarding quitting smoking (Table 7, Table 8).

Table 7: Suggestions made by providers during prenatal care visits to help patients quit smoking

What provider did or said	Prevalence	95% Confidence interval
Spend time with me discussing how to quit smoking	47.4%	41.5% to 53.3%
Refer me to a national or state Quitline (like 802Quits)	43.9%	38.2% to 49.8%
Provide me booklets, videos, or other methods to help me quit smoking on my own	40.8%	35.2% to 46.7%
Ask if a friend or family member would support my decision to quit	37.4%	31.8% to 43.3%
Suggest I attend a class or program to stop smoking	36.4%	30.9% to 42.3%
Suggest I set a specific date to stop smoking	32.8%	27.6% to 38.6%
Recommend using nicotine gum	30.2%	25.1% to 35.9%
Recommend using nicotine patch	29.0%	23.9% to 34.6%
Refer me to counseling for help with quitting	15.9%	12.1% to 20.5%
Prescribe nicotine nasal spray or inhaler	5.2%	3.1% to 8.7%
Prescribe a pill like Zyban or Wellbutrin (bupropion) to help me quit	**	**
Prescribe a pill like Chantix (varenicline) to help me quit	**	**

Weighted percentages are presented to account for the complex design of the PRAMS survey. Some results (**) were suppressed due to very small numbers who endorsed a question.

Table 8: Actions taken by patients while pregnant to help quit smoking

Patient actions	Prevalence	95% Confidence interval
Try to quit on my own (cold turkey)	71.1%	65.5% to 76.2%
Set a specific date to stop smoking	29.1%	7.8% to 15.4%
Use an e-cigarette	14.1%	10.4% to 18.8%
Use nicotine patch, gum, lozenge, nasal spray/inhaler	13.8%	10.4% to 18.2%
Use booklets, videos, etc.	11.0%	7.8% to 15.4%
Use the internet	10.0%	7.0% to 14.2%
Call a Quitline	9.4%	6.5% to 13.3%

Other	7.4%	4.6% to 11.7%
Attend class	3.7%	2.0% to 6.7%
Use counseling	3.2%	1.7% to 5.8%
Use Zyban	**	**
Use Chantix	**	**
Use a cessation app	**	**
Use a cessation texting program	**	**

Weighted percentages are presented to account for the complex design of the PRAMS survey. Some results (**) were suppressed due to very small numbers who endorsed a question.

- ***Key points:*** The majority of smokers did not recall a specific suggestion made by their provider to help them quit smoking. About 50% did say their provider spent time with them "discussing how to quit smoking". Around 40% were referred to a Quitline or provided books or videos. Most (two-thirds or more) did not discuss other supportive activities or pregnancy-appropriate nicotine replacement. The primary method used by women to try to quit (71.1%) was to quit cold turkey, and very rarely were any other methods employed. There is not enough contextual detail in the survey data to understand why or under what circumstances providers recommended certain strategies and when patients employed them. But these results indicate some education/strategies/support for providers and patients to help bridge the gap in identifying what might work and how to try it out.

Survey of Pregnant and Parenting Women Findings

Our survey of 95 pregnant and parenting women complements the PRAMS data by providing more detailed information specific to our project goals. The survey ascertained information about three specific substances: alcohol, marijuana, and tobacco. We purposely excluded opioids and other illicit drugs or misuse of prescription drugs. There were two reasons for this:

- We would have needed to collect something on the order of 1,000 community-based surveys to expect to get 10 responses from opioid users.
- The survey was already asking about 3 substances and we were concerned about adding more questions or complexity to the survey and respondent burden.

Description of Respondents

A total of 95 surveys were completed by Vermonters who were currently (49%) or had recently been pregnant (38% within the past year; 13% 2 to 4 years ago) (Table 1). Front Porch Forum was the most effective means of recruitment (Table 9).

Respondents were primarily between the ages of 26 and 49 (85%), and white, non-Hispanic (80%). Annual house hold incomes were skewed to middle and higher levels, since 45% had incomes over $75,000 and a third had incomes between $50,000 and $75,000. By way of comparison, the 2017 median household income in Vermont was $57,513 (Census.gov/quickfacts/VT).

Table 9: Survey Respondent Characteristics (n=95)

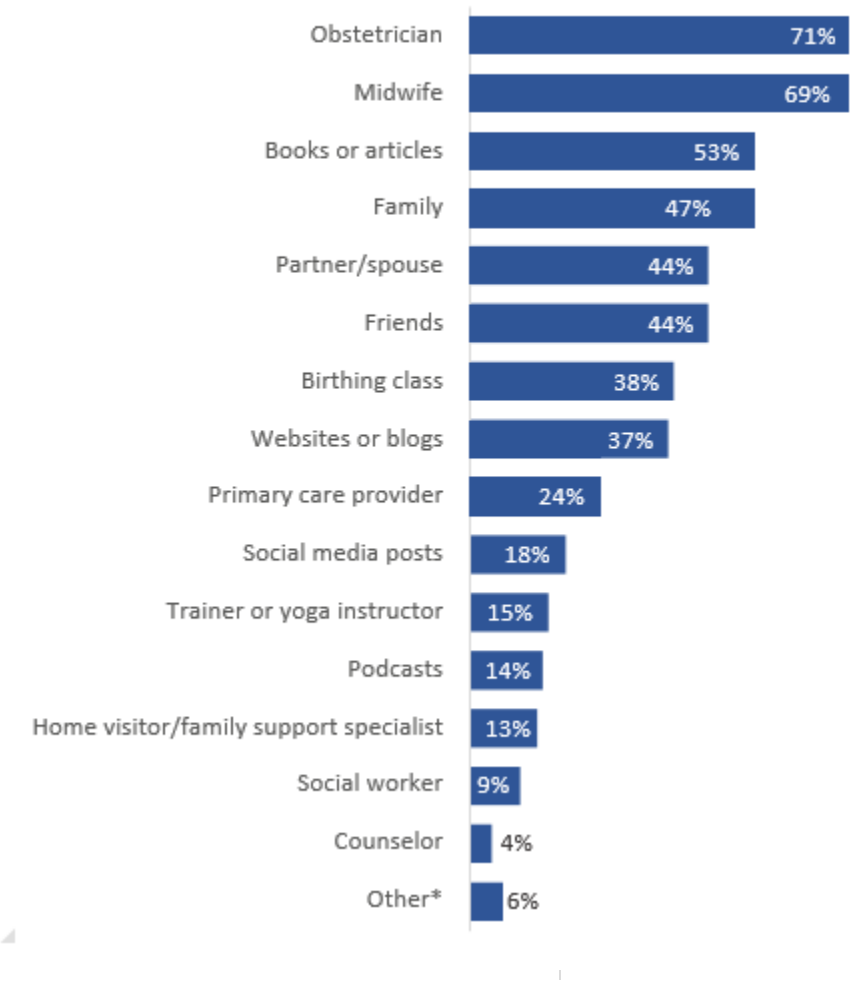
Characteristic	*Value*	*Percent Reporting*
Survey Recruitment		
	Front Porch Forum	65%

	Facebook	32%
	Champlain Valley Head Start	3%
Length of time since pregnancy		
	Currently pregnant	49%
	In the last year	38%
	2-4 years ago	13%
Age		
	15-18 years	1%
	19-25 years	14%
	26-34 years	56%
	35-49 years	29%
Race/Ethnicity		
	White, Non-Hispanic	80%
	People of Color	20%
Household Income		
	Less than $25,000	7%
	$25,000 to $49,999	17%
	$50,000 to $74,999	31%
	$75,000 or more	45%

Trusted Sources of Information during Pregnancy

Respondents most trusted sources of information were their obstetricians and midwives (70%), and people close to them (family, 47%, partner/spouse, 44%, friends, 44%). about 70%). Interestingly, about half of respondents also mentioned books or articles (53%) as a trusted resource.

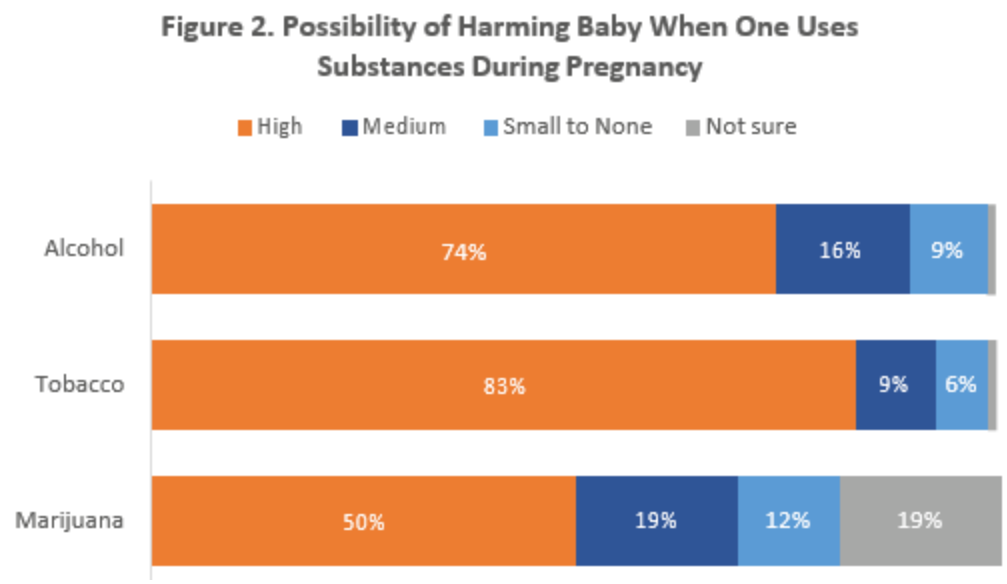
Figure 1. Trusted Sources of Information During Pregnancy (n=95)

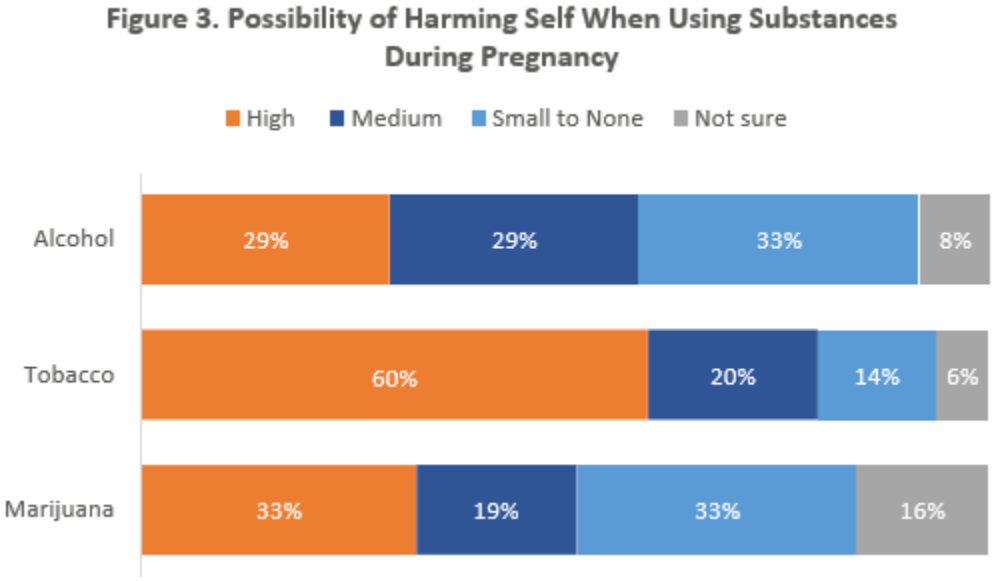


**Other includes doula, hypnobirthing therapist, self, and WIC.*
NOTE: Participants could choose more than one answer, therefore total sums to greater than 100%.

Perception of Harm due to Alcohol, Tobacco, and Marijuana

Comparing alcohol, tobacco, and marijuana use during pregnancy, women perceived the greatest harm to the baby (80%) and to themselves (60%) was from using tobacco. Most (74%) also agreed alcohol was highly harmful to the baby, and fewer thought that about themselves (29%). Beliefs about the harm from marijuana is very varied, with half believing there is no to medium harm to the baby. (Figure 2, Figure 3).

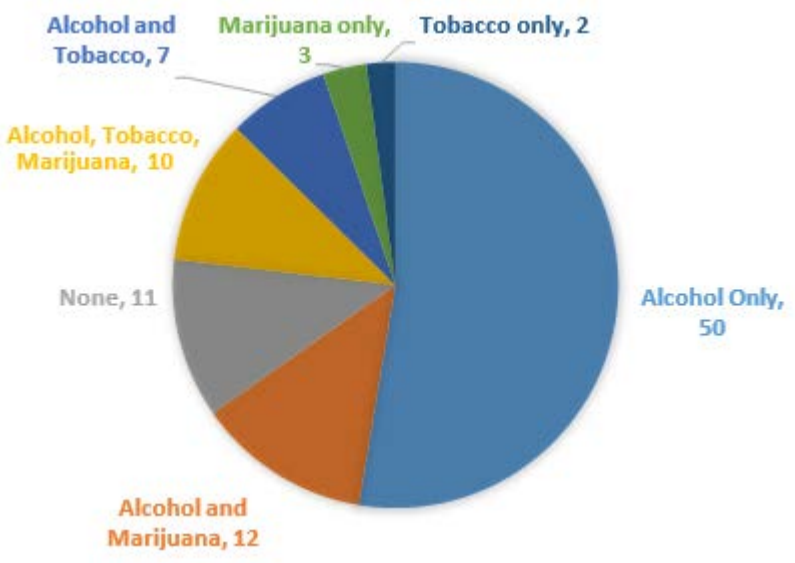




Pre-pregnancy Substance Use and Changes made During Pregnancy

The 95 respondents to the survey primarily used alcohol prior to their most recent pregnancy, either solely (n=50) or in combination with either tobacco or marijuana (n=19). Figure 4 presents the number of women by substance combination.

Figure 4. Types of substances used prior to most recent pregnancy (n=95)



Alcohol Use

Of the 83% of respondents who drank alcohol before their most recent pregnancy, many were relatively less frequent drinkers. About 40% reported that they drank on an average of one to five days per month (Figure 5). Another 18% drank on an average of six to ten days per month. Less than 10% drank on more than 20 days in a month. On a typical day that they drank, most (89%) had one or two drinks prior to their most recent pregnancy (Figure 6).

Figure 5. Average Number of Days per Month Consumed Alcohol Prior to Pregnancy (n=79)

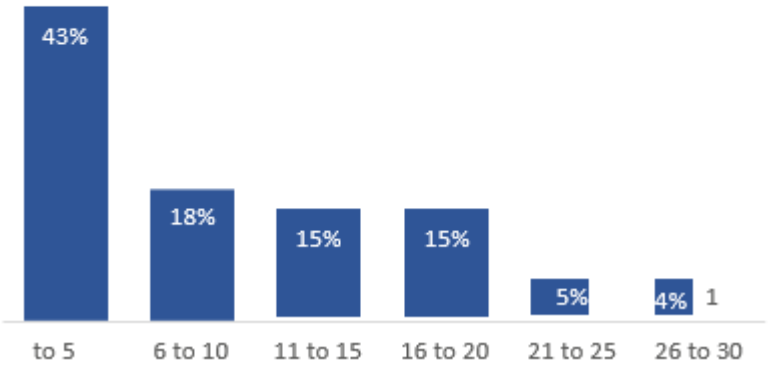
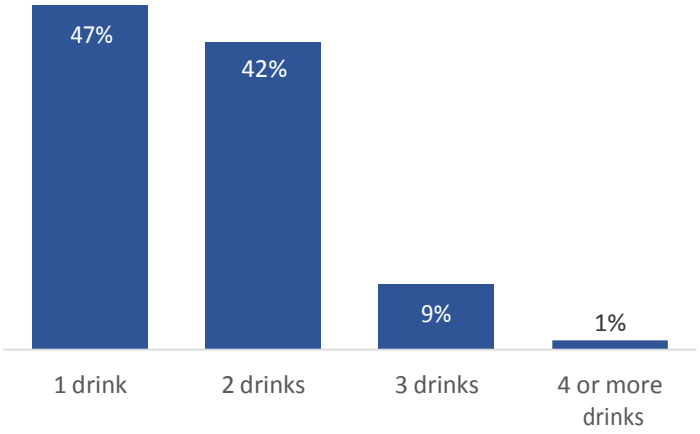
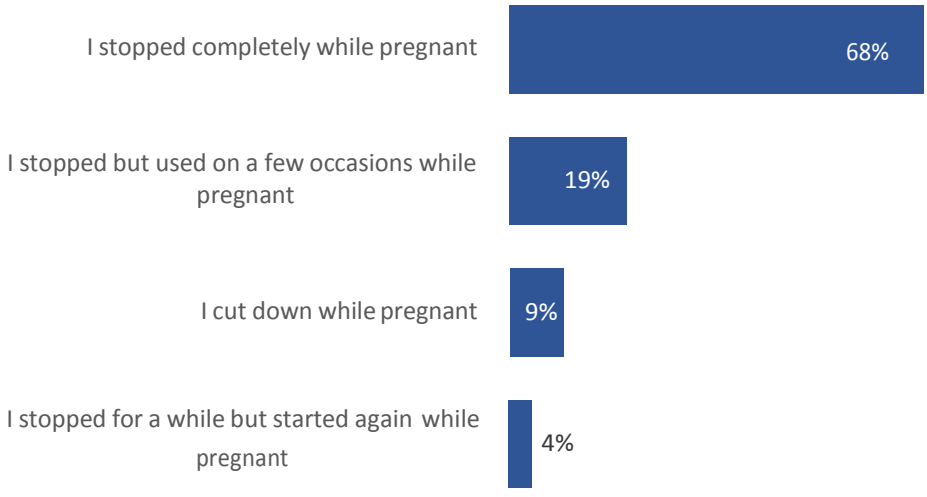


Figure 6. Amount of Alcohol Consumed on a Typical Day Prior to Pregnancy (n=78)



Most (94%) of those that drank alcohol prior to their most recent pregnancy tried to change their alcohol consumption during pregnancy. Over two-thirds stopped drinking completely while pregnant, and another 19% reported using alcohol on only a few occasions (Figure 7).

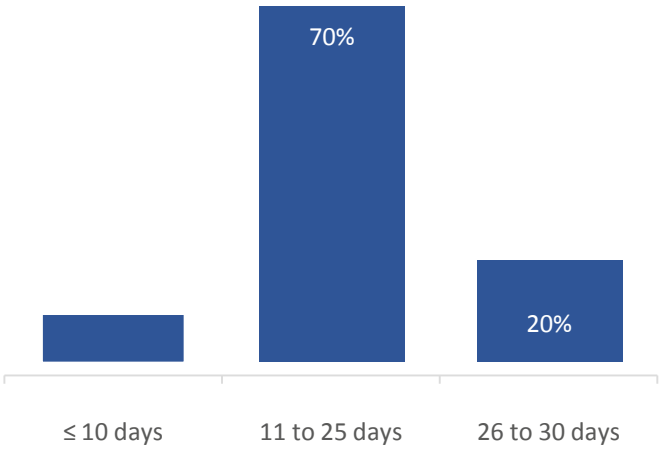
Figure 7. Change in the Amount of Alcohol Consumed During Pregnancy (n=78)

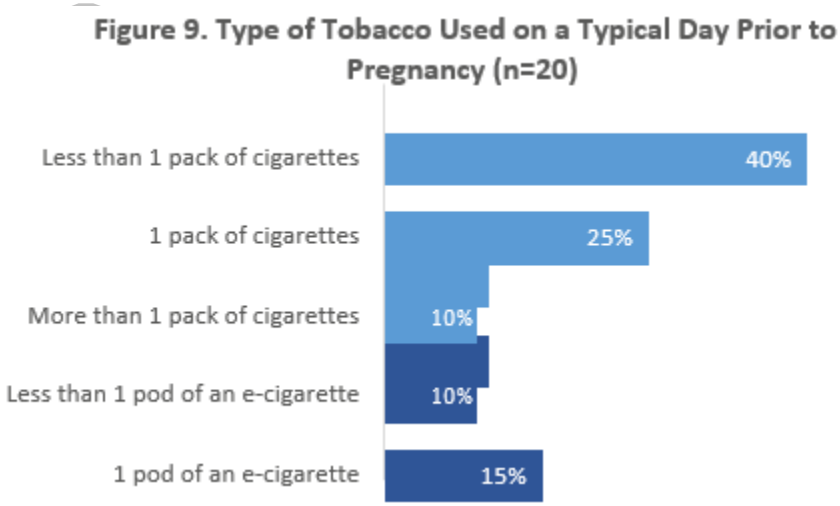


Tobacco Use

One in five (20%) of the respondents reported using tobacco prior to their most recent pregnancy. Of those that used tobacco before their most recent pregnancy, 20% used almost every day. A majority used occasionally: between 11 and 25 days a month (70%) (Figure 8). Of those that used tobacco prior to their most recent pregnancy, most reported using cigarettes (75%) and a quarter reported using e-cigarettes (25%) (Figure 9). No respondents chose multiple products. On a typical day, a majority of those that used cigarettes smoked a pack or less and those that used e-cigarettes used one pod or less.

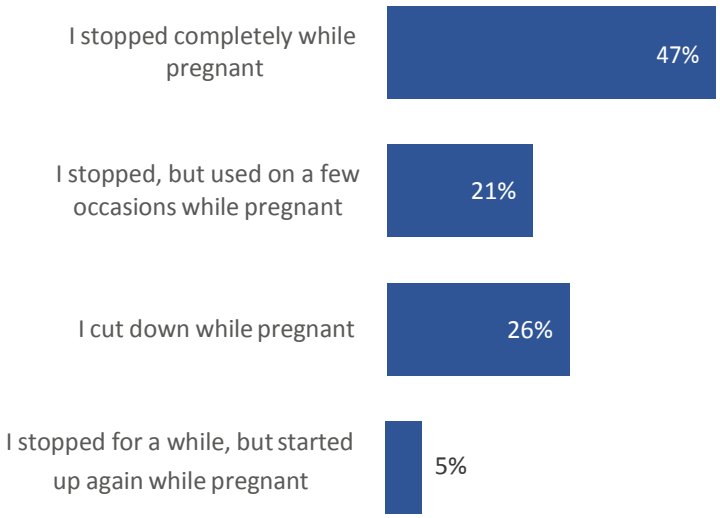
Figure 8. Number of Days per Month Used Tobacco Prior to Pregnancy (n=20)





Most (95%) of those that used tobacco prior to their most recent pregnancy tried to change their tobacco consumption during pregnancy (data not shown). About half (47%) stopped tobacco use completely while pregnant, 21% stopped but still used tobacco on a few occasions, and a quarter (26%) cut down use during their pregnancy (Figure 10).

Figure 10. Change in the Amount of Tobacco Consumed During Pregnancy (n=19)



Marijuana Use

A quarter (26%) of respondents reported using marijuana prior to their most recent pregnancy (data not shown). Of those that used marijuana before their most recent pregnancy, a third (36%) used infrequently (less than five days per month), another third (32%) used on an average of 6 to 10 days per month, 28% used an average of 15 days per month, and only 4% used every day (Figure 10). Every respondent (100%) who used marijuana prior to their most recent pregnancy tried to change their marijuana use during pregnancy (data not shown). About two-thirds (64%) stopped marijuana use completely while pregnant, 16% stopped but still used marijuana on a few occasions, and 16% cut down use during their pregnancy (Figure 11).

Figure 10. Average Number of Days per Month Used Marijuana Prior to Pregnancy (n=25)

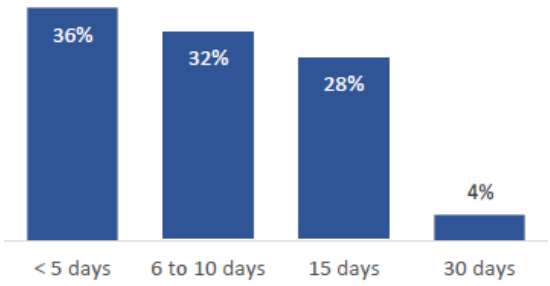


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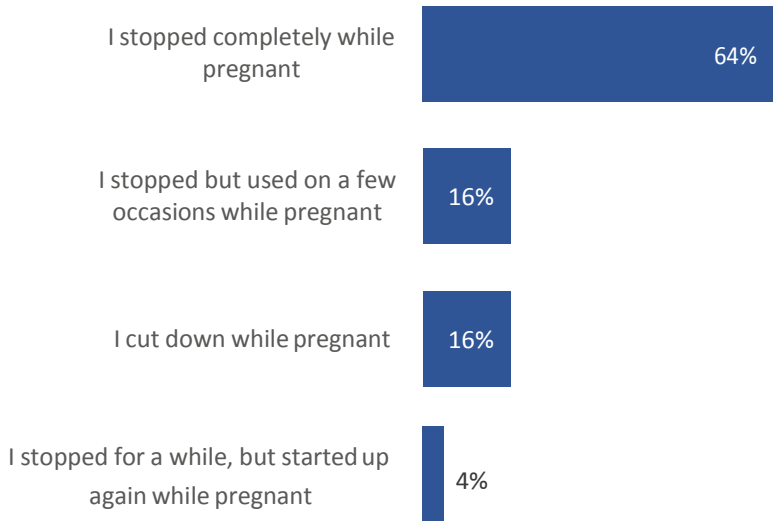
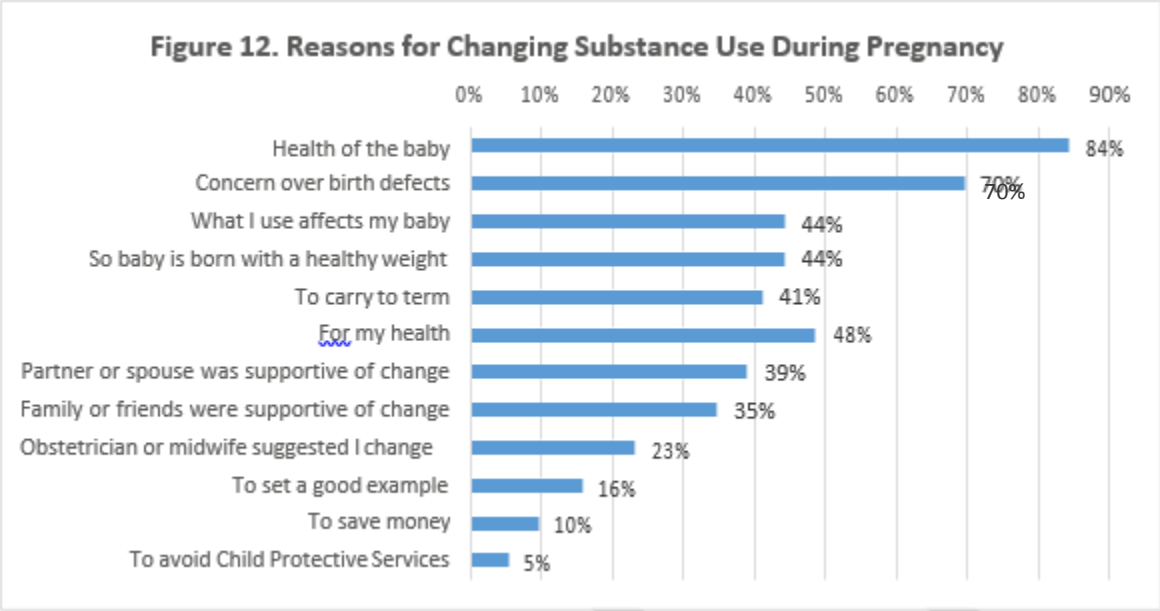
Figure 11. Change in the Amount of Marijuana Consumed During Pregnancy (n=25)



- ***Key points***: The majority of women believed tobacco was highly harmful to their baby and to themselves. While most also believed that alcohol was highly harmful to their baby, several put that risk in the medium-to-low-range. There was a range of beliefs about the harm from alcohol to themselves, and from marijuana (for both baby and self). However, consistent with the PRAMS data findings, most women stopped using alcohol (68%), tobacco (47%), and/or marijuana (64%) completely while pregnant.
- ***Key point:*** The PRAMS data established that those with heavier pre-pregnancy use – especially for tobacco – had a more difficult time quitting during pregnancy. The survey data sheds some light on the nuanced ways women may change their substance use during pregnancy. Some do not stop completely but may cut down or pause use during pregnancy. This may be a function of the amount of used prior to pregnancy, or beliefs about the harm each substance causes to the baby and to themselves.

Reasons why respondents changed their substance use and reasons why some found it hard to do so

Pregnant and parenting women responded with many reasons for making a change to their alcohol, tobacco, and/or marijuana use. On average, they selected 5.0 reasons. Nearly all, 87% (n=83) selected at least one reason related to the welfare of their baby (Figure 12; top 5 reasons).



Consistent with the fact that most respondents were able to make some sort of change in their use of alcohol, tobacco, or marijuana; fewer provided reasons why they were not able to make a change. About half either said the question was not applicable or skipped the question altogether (no one skipped the previous question about why they tried to make a change).

Several of the reasons provided were not endorsed, or only endorsed by 1-2 people (e.g., lack of support from partner/spouse or family/friends, or that the substance was not harmful, etc.). There were three conceptually-related reasons selected, and were provided by a group of 16 respondents:

- Change is really hard, 7.4% (n=7)
- Habit or addiction, 11.6% (n=11)
- Nothing worked, 6.3% (n=6)

Among this core group of 16 women who expressed difficulty quitting or cutting down, nearly all were regular to heavy users of their substance(s) of choice:

- Prior to pregnancy, nearly all used 15-30 days per month;
- Prior to pregnancy 11 of the 16 used 2 or 3 substances (alcohol, tobacco, or marijuana)

❖ ***Key points***: The health of the baby was a clear and crucial motivator for respondents to abstain or cut down substance use while pregnant. Given the range of beliefs about harm, particularly for marijuana, these results imply respondents were erring on the side of caution. While the majority abstain from their substance (s) of choice, others cut down, stop/start, or use occasionally. Clear information about the relative harm from each substance, whether harm varies by the amount consumed or by trimester would be helpful to address this variation.

❖ ***Key points:*** Other reasons, including their own health and supportive partners/spouses, friends/family, and providers were also important reasons to change substance use. Consistent with the PRAMS data, there was a subgroup of heavier users who struggled to change their use. Results from our provider interviews described some reluctance to screen for level ofsubstance

use during PNC visits. Perhaps one way to overcome the stigma for collecting that data is to suggest it is for the good of the baby, since identifying the heavier users is necessary to help them make a change.

Methods that Actually Helped Respondents Change their Substance Use during Pregnancy

Every option we listed on the survey was helpful to at least some women (Table 10), averaging 4.3 methods endorsed. However, the majority of respondents were actually helped through supportive people (partner/spouse, family, friends, talking with their provider), adopting healthier habits and self-care, in part through knowledge gleaned or passed along through books or articles (websites, blogs, podcast).

Table 10. Things that actually helped or could have helped respondents change their substance use during pregnancy

Method	Actually Helped	Could Have Helped	No Opinion
Partner/spouse support	65%	11%	24%
Family/friend support	58%	13%	29%
Adopt healthier habits	56%	13%	31%
Talk to Provider (OB, midwife)	54%	15%	31%
Focus on self-care	54%	21%	25%
Books, articles	53%	18%	29%
Websites, blogs, podcasts	47%	18%	35%
Quitting cold turkey	43%	15%	42%
Change social activities	42%	18%	40%
Pregnancy class	33%	26%	41%
Parent education	31%	30%	39%
Social media posts	30%	18%	52%
Home visitor	26%	33%	41%
Group or family therapy	24%	29%	47%
Smoker's Quitline	19%	13%	68%
Nicotine Gum	18%	16%	66%
12-step program	18%	20%	62%
Support Group	15%	31%	54%
Financial incentives	15%	35%	50%
Counselor or case manager	13%	35%	52%
Addiction treatment	13%	35%	52%
Housing, food, transport help	11%	44%	45%

Text message or phone support	11%	26%	63%

There were a couple of actions which most respondents did not use, but some thought could have helped: help with housing, food, or transportation (44%), financial incentives (35%), and one or more behavioral health services (53%;. counselor or case manager, addiction treatment, support group).

We examined responses by alcohol use (n=79), tobacco use (n=19), and marijuana use (n=24) and found that the same primary reasons were selected regardless of substance. There was somewhat greater endorsement of having supportive partner/spouse and of talking to one's provider among tobacco users. Half of tobacco users endorsed the use of a Smoker's Quitline. There was somewhat greater endorsement of books and articles and adopting healthier habits among marijuana users. We also examined the subgroup of heavier users who had a hard time making a change in their use. These women thought nearly all the listed options actually or could have helped.

Advice Respondents would give to Other Women Trying to Change their Alcohol, Tobacco, or Marijuana Use During Pregnancy, and Anything Women Wished they would have Known When Pregnant

There were a several common themes in the advice provided by respondents. Their advice reflected the noted focus on the health of the baby, the value of supportive people and providers, and adopting healthier habits including diet and exercise. These key themes as well as some sample, actual statements are given in Table 11.

Table 11: Responses to the open ended question "What advice would you give another woman trying to change her substance use – alcohol, tobacco, or marijuana – while pregnant?" Key themes and example responses.
Theme #1: Focus on your baby to motivate you to quit or cut down (n=31) *"think of your baby", "you can harm the baby", "I've met children harmed by these practices, particularly alcohol while pregnant. Seeing what it means for kids, I would never do that.", "do not use substances while pregnant, it's not worth the risk to your baby", "I think it all comes back to the health of the baby", "think about your unborn child – give them the best chance at life", "All substances cross the placenta through the umbilical cord and enter the baby's bloodstream. So your decision of changing is right."*
Theme #2: Seek the help you need/It is ok to seek the help you need to quit (n=12) "There are support services out there if you are having trouble abstaining on your own. And don't feel worried about being judged. People will see you are trying to the best for you and your baby.", "Maybe it is hard to quit, but try to get help from the experts and family if necessary.", "Consider nicotine replacement therapy, which suppresses these impulses. Nicotine gum, lozenges, and patches can improve your chance of success when you join a quit program as well.", "Well my advice [is to] talk to their health care provider about healthy diet and lifestyle.", "Talk to your obstetrician for advice."
Theme #3: Find substitutes for substance that you used that are healthy and pleasing (n=7)

Table 11: Responses to the open ended question "What advice would you give another woman trying to change her substance use – alcohol, tobacco, or marijuana – while pregnant?" Key themes and example responses.
"I gave myself permission to buy non-alcoholic drink mixers like juice, seltzer, tonic water, lemons, limes, etc. so that I could have a fancy drink and not feel like I was missing out on alcohol.", "Find other things to fill the voids. In place of alcohol I would find really good nonalcoholic drinks to enjoy. Instead of using marijuana to relax I would take a bath with a cup of tea, for example.", "Take part in an activity like yoga or a parent's class to distract yourself.", "Use distraction and you use new ways to relax. There are many choices. You can exercise, blow your breath, listen to your favorite music, connect with friends, enjoy a massage, or make time for a hobby. Try to avoid stressful situations in the first few weeks after quitting."
Theme #4: Accept the sacrifices of your maternal role (n=5); The restriction is temporary – you can make it (n=3) "I would give the advice you have to look toward the future and put your 'Mom Senses' first. You have to think about the sacrifices that you are going to be willing to make after your child is born…", "Pregnancy and breastfeeding lasts for such a short time, and it deserves the best of you!", "Once you are pregnancy and expecting a child, you can no longer make selfish decisions. Consider the health to your child and just stop.", "If you want to harm your body and health that is one thing, but don't harm an innocent child, put their needs first.", "While it is also important to maintain good health habits once the baby arrives, quitting alcohol, tobacco, and marijuana during pregnancy is temporary and perhaps viewing it as such would help some get over the hurdle of this change in habit/behavior."
Theme #5: Surround yourself with supportive people (n=9) "Reach out!", "Support from family, friends, and health care providers is key to making a plan and sticking with it.", "Having said that, I am an alcoholic in recovery for 3.5 years. I got sober in AA and highly recommend the program. If you are open-minded and take what you need from meetings, you are outfitted with powerful tools to combat the addiction. It was beyond helpful to hear other alcoholics stories about sobriety, their triumphs and failures. A sense of belonging was immensely helpful.", "No [advice] does not differ [by substance]. I would say to surround yourself with supportive people – family, friends, professionals.", "Surround yourself with people who are supportive and aren't going to sabotage your efforts.", "Tell your friends, family, and others who are trying to quit. They can encourage you to keep going…", "I think education about the effects on a developing fetus is important, as well as support from family and friends."
Theme #6: Clearly explain the risk, including gradations by substance and level of use (n=3); small amount of alcohol is ok (n=3) "Simple and clear information about the harms any substances could do would be helpful.", "…I think being realistic with women about the difference in the riskiness of these substances is important…", " I don't think having a drink every so often (once a week or less) would have a negative effect on my pregnancy."

There were fewer responses to the second open-ended question about things women wished they knew when pregnant), but there were enough to identify 4 themes (Table 12). Most (n=54) respondents did not express an opinion to this question, or said they did not have any unknowns during pregnancy. For nearly half who did provide a response, some themes also found in other parts of the survey were

noted. Throughout the survey there were responses that indicated some respondents did not consider light alcohol consumption during pregnancy risky behavior; about one-quarter rated alcohol as no to medium risk to the baby (Figure 2). In this question, some respondents mentioned a potentially influential book by Emily Oster, Expecting Better, which notes "drinking safely during pregnancy" on the cover (Figure 13). There was one blog also mentioned by a few respondents that is potentially influential called "Expecting Science", which tries to collect and present scientific pregnancy-related information, including about alcohol during breastfeeding and pregnancy.

Figure 13. Cover of the Book "Expecting Better"

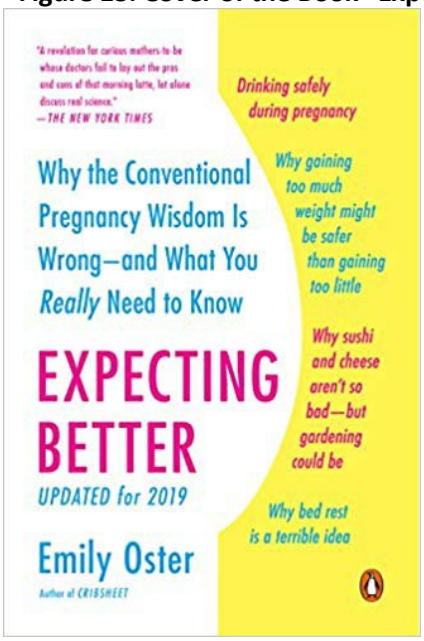


Table 12: Responses to the open ended question "Is there anything you wish you would have known when you were pregnant?" Key themes and example responses.
Theme #1: Specific resources or information or activities they found about later they wished they knew about while pregnant (n=7) "Wish I'd had Emily Oster's books in my first pregnancy. Also the blog Expecting Science.", "About the pregnancy resource center where we live.", "Benefits of yoga", "How to change a diaper", "There seems to be a back and forth consensus about having an occasional alcoholic beverage…", "I wish I had known about Dr. Dynasaur for pregnant women when I first became pregnant. It would have saved me money and change my approach to receiving health care."
Theme #2: Areas of health concern during pregnancy (n=7) "[I should have] quit smoking. ", "I lost a lot of weight before I got pregnant and I didn't get a chance to [continue] when I went off the strict diet…I wished I had more help with that so that I didn't gain all the weight back while pregnant.", "I wish I knew more about good weight gain. People in the community said I wasn't gaining enough, so I ate even though I was not hungry. I am still struggling to lose the weight.", "How to enjoy safe sex while pregnant.", "How to eat well and stay healthy". "Nutrient and healthy food sources during pregnancy.", "Safe sports while pregnant."
Theme #3: Preparing for post-partum and breastfeeding (n=6)

"How to prepare myself for postpartum, the physical recovery, hormonal swings, and exhaustion.", "I didn't get any info about what my recovery was going to be like until after it happened. I didn't think to ask.", "..I wish there was better postpartum care and support available.", "Enjoy sleep while you can..", "How hard the postpartum period would be."

Theme #4: Handling worry/anxiety (n=4) and handling the unknowns (n=4)

"That I was strong enough to get through it and I would get through it – I had a difficult pregnancy", I wish there was more support around maternal anxiety.", "Not to worry so much!", I wanted to know the sex of the baby."

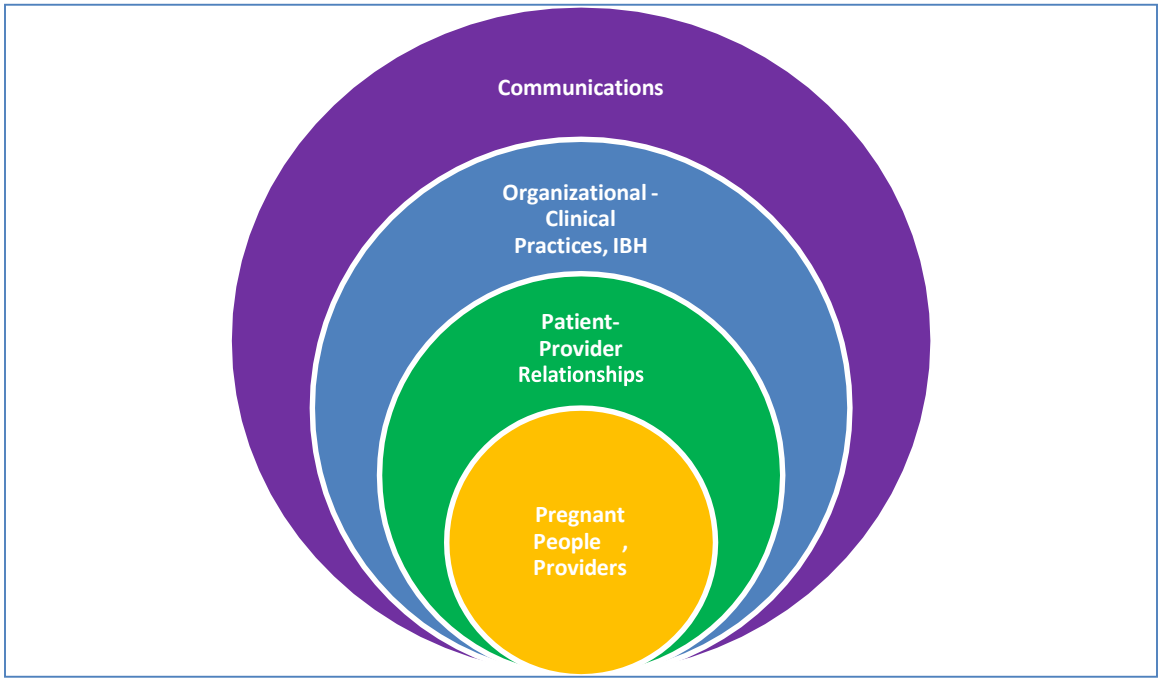
- ***Key Points***: Respondents provided to types of advice: (1) taking direct action to put the health of the baby ahead of old habits, and (2) relying on relationships, information and seeking help to be successful. Women clearly want others to know that it is effective to "reach out" – that it is ok to ask your provider questions, to ask for friends, family, partners/spouses for help with changing habits during pregnancy. That it is also ok to engage in self-care by substituting other activities to take the edge off of cravings (with intent, mindfulness).
- ***Key points:*** Incorporating substance use change with "adopting healthier habits" such as nutrition and weight gain and activities, which also carry into the post-partum period. Providers/agencies/care organizations can leverage women's desire to protect their baby from harm to assess substance use levels, depression and anxiety symptoms to better step-up care for those having the hardest time quitting, including connecting women to behavioral health care. VDH should be aware of the information provided by poplar books and websites, and consider addressing inaccurate sources or promoting accurate sources.

Recommendations

Recommendations are organized into focus areas based on a variation of the social-ecological model (Figure 14). The areas have been informed by the various tasks of the formative evaluation project--environmental scan, key informant interviews, and patient survey. Recommendations are informed by feedback gathered from discussions with VDH. These recommendations are intended to inform VDH program, education, outreach and communications strategies addressing substance use before, during and after pregnancy.

Please note that JSI's recommendations are written in gender-neutral tone to be inclusive and sensitive. The report as a whole was **not** updated in gender-neutral tone due to the research questions being geared specifically at women during and after pregnancy from the beginning of the project; we did not feel we should change the research questions or activities prior to the final report and presentation.

Figure 14. Conceptual Model of Recommendations for Moving Forward from the Formative Research



Note: IBH stands for integrated behavioral health

Individual Level: Pregnant People and Providers

Patient education. Provide clear and consistent evidence-based information to pregnant people on the risks of harm from substance use during pregnancy, and the concept of "thresholds" (i.e., the degree to which women may perceive it is safe to use/consume substances).

- Develop guideline-based information and education materials and/or messaging for pregnant people on the risks of using substances during pregnancy, specifically for marijuana and alcohol (and level of use, timing of use).
- Develop information and education materials and/or messaging that is actionable, contextual, and unbiased, and clearly states the risks of using substances while pregnant. When risks of harm are unknown or uncertain, state so. Provide tactics and/or resources to aid abstaining or reducing use during pregnancy.
- Develop information and education materials and/or messaging on marijuana use before, during, and after pregnancy).

Provider education. Provide clear and consistent evidence-based information to providers caring for pregnant people on the risks of harm and the concept of "thresholds" (i.e., the degree to which women may perceive it is safe to use/consume substances). Further information is needed on:

- Research, evidence and guidelines on the risks of harm for marijuana and alcohol use during pregnancy.
- Information on gradations of risk either by substance, level of use, or timing of use (e.g., during $1^{st}/2^{nd}/3^{rd}$ trimester, post-partum period, etc.).
- What is known and unknown for marijuana use before, during, and after pregnancy to inform counseling and messaging.
- Several providers utilize the Women's Health Initiative (WHI) protocols and tools, but others are unclear what protocols and tools are available and how to access them.

Consider providing a curated list of information sources (websites, blogs, books, podcasts) for providers to use to refer patients to, thereby ensuring evidence-informed and/or guideline based information to patient.

Interpersonal Level: Patient-Provider Relationships

- **Providers are generally considered trusted resources by their patients**. Patients trust their providers to explain what is known and unknown about health risks.
    - Giving providers practical ways to express and explain the uncertainty of the health effects of marijuana in particular, and substances in general, and how to make decisions in the face of uncertainty would be useful.
    - Grand Rounds, information sheets, printed materials, and conferences are considered ideal ways to distribute this information.
- **Healthcare providers expressed uncertainty in VDH's recommended approach to addressing and counseling on specific aspects of substance use during pregnancy**. To enable a trusted provider-patient relationship, providers need clear information from VDH and trusted sources (i.e., ACOG, SAMHSA) of the risks of substance use, including during pregnancy.
    - **Alcohol** – Providers vary in their counseling approach for addressing alcohol use during pregnancy including harm reduction and cutting back to no safe amount. Ensure there are clear guidelines from VDH to providers on recommended screening and advising or messaging to patients on alcohol use during pregnancy, specifically addressing quantities or levels of use.
    - **Marijuana** – Healthcare providers are unclear on the evidence on risks of harm for marijuana use during pregnancy. This is an opportunity for VDH to identify guidelines and/or adopt guidance for providers when addressing and advising patients on marijuana use before, during, and after pregnancy; provide clear and consistent information to healthcare providers to guide their advising and messaging to their patients.
    - **Tobacco** – Most healthcare providers feel confident in screening, advising, and referring for tobacco use during pregnancy, with the exception of vaping. There is opportunity for outreach and education to providers on what vaping is, risks of vaping, including during pregnancy, screening for vaping and advising and referring for vaping during pregnancy.

Organizational Level: Clinical Practice

- **Improvement in Screening Guidelines**
    - **Adopt and implement a Life Course Approach**. Screening for substance use as a routine practice may facilitate an unbiased approach and potentially create a culture in which people can feel empowered by knowledge and informed choice, leading to positive behavior change. Consider promoting a proactive counseling approach -- substance use screening for all people of childbearing age (not just prenatal care) through the life course (when planning and trying to become pregnant, prenatal, postpartum) in all healthcare settings (primary care, home visiting, etc.).
        - Pregnant Vermonters place a high importance on the health of their baby; however, the health of the pregnant and parenting person is particularly important as well. Predominantly in postpartum, there is high recidivism for tobacco users. In addition to routine screening in postpartum care, consider interventions to prevent postpartum

relapse. One example might include integrating harm reduction strategies and conversation into routine postpartum care.
    - **Screen for depression.** Incorporating depression brief screening into routine practice may normalize the assessment, which could make screening less stigmatizing during pregnancy.
    - **Assess stress and anxiety.** Incorporating an assessment of anxiety, or stress into routine practice may normalize the assessment, which could make screening less stigmatizing during pregnancy.

- **Behavioral Health Integration**
    - Incorporating behavioral health into obstetrics care (i.e., LICSW, LCSW) as routine practice could be useful to supporting providers and patients in addressing substance use during pregnancy. Extending a provider's time to discuss substance use, or integrating behavioral health providers will or may require adjustments to workflow. However, these adjustments are necessary for a stepped approach to support people for changing their substance use before, during, and after pregnancy.
    - Several practices in Vermont (particularly, Chittenden county) are already doing great work in behavioral health integration with maternal and child health. Consider 1) utilizing existing practices in Vermont to learn from their experiences with behavioral health integration and 2) a Community of Practice to engage practices to share current processes and learn from each other.
    - MAT services and needs vary across the state. Consider conducting a needs assessment to better understand 1) what MAT services are available for pregnant Vermonters in their communities 2) are there adequate services available to pregnant Vermonters in their community and 3) if not, what surrounding areas have sufficient MAT services and are able to accept referrals of pregnant people needing MAT.

Communications

- Communications on substance use during pregnancy should use a tone that assumes a pregnant person is already motivated to have a healthy baby. Additionally, communications should incorporate messaging on how taking steps to be a healthier person is beneficial to both the pregnant person and fetus/baby, contributing to both of their health and well-being now and in the future.
    - Many people are motivated to quit using substances during pregnancy for the health of the baby, which is a short-term motivator. Consider reframing tobacco messaging from "taking a break" during pregnancy to becoming a "non-smoker/tobacco user" to help reframe quitting from temporary while pregnant to a permanent change to contribute to the health and well-being of the person and the baby.
- Many practical ideas for self-care were provided by the respondents to the survey (alcohol substitutes, yoga, etc.). When developing communications for people during pregnancy, consider incorporating ideas, activities or tactics on how to reduce, avoid and/or abstain using substances during pregnancy and beyond.
- Those with heavier use of substances and/or anxiety or depression might need more intensive support such as behavioral health brief intervention (or referral for specialized care), or NRT to support people in reducing or abstaining from substance use during pregnancy and beyond. Consider communications or messaging on need for and availability of strategies to support Vermonters with heavier use in reducing and/or abstinence or cessation.
- Promote resources such as websites, books, etc. for information, education, and support to help people change their use of substances during pregnancy and inform on other aspects of pregnancy and parenting. Supports may be appealing for some who perceive feelings of stigma or judgement from people and/or providers due to substance use during pregnancy.

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ATTACHMENT A

Providers Knowledge, Beliefs, Attitudes, and Behaviors Around Substance Use During Pregnancy Environmental Scan

March – April 2019

Purpose

The purpose of this environmental scan is to provide an overview of research examining health care providers' knowledge, perceptions, experiences and practices regarding substance use during pregnancy. The environmental scan will focus on alcohol, tobacco, marijuana, and opioids including prescription medications not taken as prescribed. Vermont's PRAMS data indicate high rates of alcohol and tobacco use during pregnancy, compared to national rates. While substance use during pregnancy is less prevalent than prior years, it remains a concern for the state.

Alcohol Use During Pregnancy, Vermont PRAMS 2015 – 2017

In 2015,

- Alcohol use during pregnancy in Vermont was the highest across the nation at 15.8%
- Pregnant women aged 35 and older were the age group most likely to drink during pregnancy; while this age group was the least likely to be advised by a health care provider to not drink during pregnancy
- Women who drank alcohol before pregnancy were more likely to use other drugs.

In 2017,

- 15% of women drank alcohol during their pregnancy
- 97% of all women with a prenatal visit were asked about their alcohol use

Smoking During Pregnancy, Vermont PRAMS 2015 - 2017

- Smoked 3 months prior to pregnancy
  - 28% (2015)
  - 24% (2016)
  - 22% (2017)
- Smoked at time of survey
  - 20% (2015)
  - 16% (2016); US Average = 7%
  - 14% (2017)
- Smoked during last trimester
  - 16% (2015)
  - 14% (2016)
  - 12% (2017)
- Women who smoked before or during pregnancy were more likely to use other drugs.

In 2017,

- 86% of women who had a health care visit in the 12 months before pregnancy were asked if they smoke cigarettes (compared to 81% in 2016)
- 74% of smokers had a doctor, nurse, or other health care worker advise them to quit smoking (compared to 76% in 2016)

Marijuana Use During Pregnancy, Vermont PRAMS 2015-2017

- Marijuana use during pregnancy was associated with cigarette smoking during pregnancy.

In 2017,

- 19% of women reported using substances other than alcohol and tobacco the month before pregnancy; the most commonly used substance was marijuana (16%)
- 11% of women reported using a substance other than alcohol and tobacco during pregnancy; marijuana was the most commonly used (8%)
- 85% of all women with a prenatal visit were asked if they were using drugs such as marijuana, cocaine, crack, or meth

Other Substance Use During Pregnancy, Vermont PRAMS 2015 - 2017

- **Hospital utilization data** suggest that the rate of newborns exposed to opiates in utero has risen significantly in Vermont (2013 Vermont Rate: 33.3/1000 hospital births)

In 2017,

- 19% of women reported using substances other than alcohol and tobacco the month before pregnancy; 4% used prescription pain relievers, 2% used Adderrall, Ritalin, or some other stimulant (Heroin, crack, and cocaine were also reported but there were too few respondents to provide an estimate)
- 11% of women reported using a substance other than alcohol and tobacco during pregnancy; 3% reported using prescription pain relievers, Adderrall, Ritalin, cocaine and heroin use were all reported but too few respondents to provide an estimate.
- 85% of all women with a prenatal visit were asked if they were using drugs such as marijuana, cocaine, crack, or meth
- 3% received MAT during pregnancy
- 3% received MAT after their baby was born

The Vermont Department of Health is interested in the following questions:

1. **What is the knowledge, perceptions, experiences, and practices of healthcare providers in Vermont regarding substance use during pregnancy?**

2. **What do healthcare providers need to better support them in addressing substance use during pregnancy?**

The information acquired in this environmental scan will be used to develop interview guides with healthcare providers in Vermont, and to inform the interpretation of findings and recommendations from formative evaluation on substance use during pregnancy among Vermonters.

Methods

John Snow Inc. Research & Training (JSI) conducted a search for peer-reviewed articles for this environmental scan in March 2019. Peer-reviewed research articles published from 2009 to 2019 were identified by searching for the following key terms on PubMed and Google Scholar:

- Provider
- Nurse
- Midwife
- Alcohol
- Marijuana

- Tobacco
- Opioids
- Substance use
- Beliefs
- Attitude
- Behaviors
- Knowledge
- Barriers
- Pregnancy
- Harm reduction
- Smoking cessation

Searches performed included several combinations of key terms above. Searches were initially limited to studies performed in the United States. In the second round of searches, the term "harm reduction" was used to target research around providers advising cutting back on substance use, and searches were expanded to outside of the United States if particularly relevant.

To maintain the intended focus of this environmental scan, certain articles were excluded, such as studies that focused on providers' beliefs and knowledge around substance use but did not include or consider pregnant women or new moms specifically. Most studies that failed to include U.S. research participants were excluded as well, although a number were included given their high relevance to the scan. The environmental scan provides insight on providers' beliefs, knowledge and attitudes across substances noted above, with specific focuses on 1) alcohol and 2) why providers might be screening for tobacco but not advising patients to quit. A total of 18 articles were deemed relevant to this environmental scan.

Key Findings

Key findings are outlined below separated first by key findings across all substances and second among individual substances including alcohol, tobacco, marijuana, and other prescription drugs not used as prescribed.

1. **Key findings on knowledge, perceptions, experiences and practices of providers regarding substance use during pregnancy –** Main themes across all substances include the following: competing priorities and time constraints, lack of adequate screening skills and training, lack of evidence-based information, unclear protocols for screening and potential follow up, relationships between healthcare provider and patient, and healthcare providers' own biases and perceptions regarding substance use during pregnancy.

2. **Knowledge, perceptions, experiences and practices of providers regarding alcohol use during pregnancy –** Health care providers are consistently faced with management of challenging healthcare needs of their clients while providing adequate care; patients experience poverty, unemployment, homelessness, domestic violence, and child protective issues; factors that have been shown to correlate to increased alcohol and drug use. Managing these complex situations becomes time consuming and stressful for providers and may be discouraging to address during prenatal visits. Some providers note that this level of care management is beyond their

professional judgement. In addition, providers that have been willing to intervene have found little to no support from relevant partner agencies.

3. **Knowledge, perceptions, experiences and practices of providers regarding tobacco use during pregnancy** – General knowledge and perceptions of providers align very closely with #1 above. Specifically for tobacco, the Health Department requested JSI to look into why providers may screen for tobacco use but do not also consistently advise patients to quit or cut back on use. Findings indicate providers recognize the importance of providing support to women who are unable or not ready to quit. Harm reduction approaches include tobacco reduction and improvements to other aspects of wellness, such as nutrition, stress, relationships, and social support.

4. **Knowledge, perceptions, experiences and practices of providers regarding marijuana use during pregnancy -** Overall, providers generally view marijuana to be less harmful or dangerous than other substances used during pregnancy. Providers feel they have limited knowledge about the adverse consequences of marijuana use during pregnancy to be able to leverage to use during counseling conversations. Counseling levels for marijuana during prenatal visits varies drastically across patients and providers; Physician assistants and nurse practitioners were less likely offer marijuana education or counseling to women than obstetrics-gynecology physicians and residents or certified nurse-midwives.

5. **Knowledge, perceptions, experiences and practices of providers regarding other prescription drugs not taken as prescribed (including opioids) -** Prevalence of opioid misuse among pregnant and parenting women is difficult to accurately measure because most databases group use of all substances under one umbrella. Furthermore, data that specifically describe the prevalence of opioid misuse during pregnancy are potentially biased by a willingness to honestly answer surveys. Providers who project a caring and nonjudgmental attitude can build strong rapport with these patients, engender trust, and facilitate effective communication. This approach decreases patient anxiety, improves effective coping abilities, yields more productive patient-provider interactions, improves prenatal care attendance, and leads to better clinical outcomes all pregnant patients who use or are suspected of using illicit substances should be questioned about tobacco, alcohol, and other substance use, comorbid mental health conditions, and social service needs.

Overarching Findings on Providers' Knowledge, Perceptions, Experiences, and Practices Regarding Substance Use during Pregnancy and Strategies for Success

We reviewed 30 total studies, 14 of which were deemed most relevant for this environmental scan and reviewed in close detail. Information was elicited from providers through several different methods; most studies included semi-structured key informant interviews (4) with midwives, nurses, obstetric providers, and women's health care providers. Additional studies were narrative synthesis of relevant studies (2). The size of the studies, in terms of the number of providers involved, ranges from 8 to 190 participants. The study with the smallest sample size (n=8) is the one study that did a second round of interviews to confirm common themes among nurses. The narrative synthesis focusing on drugs and alcohol (Oni, et. al) was particularly relevant for inclusion in this environmental scan.

Semi structured Face to face Key informant interviews (n=12) with midwives
Semi structured Face to face interviews with nurses (n=8) following up with 4 for confirmation of emerging themes
Controlled trial from 2 health centers
Qualitative research synthesis (8 studies with 190 participants)
Semi structured Interviews with obstetric providers (n=51)
Semi-structured interviews with women's health care providers (n=81)
Narrative synthesis (9 studies total)
Narrative synthesis (28 studies) tobacco
Semi-structured interviews (n=19) tobacco
Semi-structured interviews (n=27) tobacco maternity service managers
Survey (n=252) ACOG members tobacco
Focus groups (n=15) tobacco midwives
Observational study (n=116 visits) obstetrics visits
Narrative synthesis (n-29) tobacco

Knowledge	• Lack of adequate screening skills and training: Several studies mentioned providers' concerns about adequate screening skills for 1) initiating the screening around substance use, a difficult area to cover in a fist visit and 3) skills for handling and managing the woman's case if screened positive. • Lack of evidence-based information: most prevalent for marijuana, but also relevant to alcohol, tobacco and opioids. Providers note through several studies the lack of evidence-based information to inform pregnant women as to specific examples of the adverse health outcomes while using substances during pregnancy. • **Strategies** o Help healthcare providers improve their interpersonal skills so they can strategically elicit relevant information from clients o Motivational interviewing techniques can help women feel more comfortable to share alcohol or drug use and to get help (supporting a woman-centered and non-judgmental approach) o Offer classes to nurses in the hospital setting on how to care for pregnant and parenting women who misuse opioids (continuing education opportunity). o None of the studies involving nurses mentioned having current resources or options for pregnant and parenting women who misuse opioids – would be critically important to ensure inpatient nurses have this information available to them.
Perceptions	• Healthcare providers' own biases and perceptions: Common perceptions such as "women know not to drink during pregnancy" and "women know drinking or using substances during pregnancy is harmful" may prevent providers from screening all patients for substance use. • **Strategies** o Provision of screening all women for alcohol or other drugs in general health assessment as a routine practice may facilitate an unbiased approach and potentially create a culture in which

	women can feel empowered by knowledge and informed choice, leading to positive behavior change. o Providers who project a caring and nonjudgmental attitude can build strong rapport with these patients, engender trust, and facilitate effective communication. This approach decreases patient anxiety, improves effective coping abilities, yields more productive patient-provider interactions, improves prenatal care attendance, and leads to better clinical outcomes all pregnant patients who use or are suspected of using illicit substances should be questioned about tobacco, alcohol, and other substance use, comorbid mental health conditions, and social service needs.
Experiences	• Time constraints: Several studies mentioned the time constraints providers are faced with during prenatal visits. With several competing priorities, substance use is not always addressed adequately. • Relationships between healthcare provider and patient: While trying to build rapport, it can be difficult to ask particular difficult questions about the woman's personal life especially around substances. Some providers feel if they ask during the first visit, they might not ask again in efforts to build trust with the patient. • Nurses should collaborate with other disciplines to reevaluate policies to guide nurses who serve patients who misuse opioids.
Practices	• Unclear protocols: Providers feel uncertain of the correct protocols to follow if a woman were to screen positive or admit to use of substances during pregnancy. Guidance around available resources and referral policies and procedures are unclear to help the woman receive the care she needs. • **Strategies** o Screening at multiple points and subsequent visits should be encouraged to identify substance-using pregnant women and offer support for making behavioral changes. o One study found that electronic administration of SBIRT can have the same positive effects of in-person administration of the tool. Electronic administration of SBIRT (e-SBIRT) can reduce time commitment and training needs and can enhance SBIRT's reliable delivery. Both e-SBIRT and SBIRT significantly reduced days of primary substance use over the follow-up period. At 3 months, substance use was reduced by 4 days in the usual care group, 7 days in the e-SBIRT group, and 6.3 days in the SBIRT group. This finding supports the American Congress of Obstetricians and Gynecologists' opinion that the use of SBIRT can reduce or stop the use of substances that risk harm to women's health and the health of their children. Increasing access to SBIRT via electronic delivery may be a cost-effective and practical approach for the implementation of this intervention in busy reproductive healthcare centers o **Link:** SBIRT Playbook https://sbirtnh.org/wp-content/uploads/2019/02/perinatal-playbookFINALdig-2.pdf

Alcohol (3 citations)

Several studies have assessed providers' knowledge, perceptions, experiences and practices regarding alcohol including use during pregnancy, screening during pregnancy, and counseling during pregnancy. These studies were summarized in the narrative Particularly relevant to this environmental scan is a narrative synthesis (9 relevant studies) specific to barriers that healthcare providers face in screening pregnant women for alcohol and drug use. Other relevant articles include semi structured key informant interviews with midwives (n=12) and a controlled trial from two health centers focused on implementation of SBIRT.

Knowledge	• **Lack of adequate screening skills and clear protocol** for managing women who use alcohol or other drugs in pregnancy – lack of skills and clear protocol has resulted in health care professionals being reluctant to screen considering inadequate resources for ongoing management if screens are positive. Protocols and resources are lacking in clarity as well. o "Maybe it would be easier (to ask a client about their alcohol consumption) if you knew what to do if the question was answered. If you were well resourced, knew how to facilitate it, give the right information, in the right way." "Not enough training. Use of screening tools not decided on from management/on a system level." • Another study (Jones et. al) mentioned that in Australia, there are very clear guidelines for the expectation of healthcare providers who care for pregnant women. It is the expectation that all healthcare providers who care for pregnant women state the following two facts about their provision ofcare: o All pregnant women should be asked about their level of alcohol consumption. If women are drinking over the recommended NHMRC levels during pregnancy, then a full assessment of alcohol intake should be undertaken and appropriate referrals should be made. A validated screening tool such as T-ACE, TWEAK or AUDIT should be used. o All pregnant women should be given information on the risks associated with drinking alcohol during pregnancy, and advised that no completely safe level of alcohol consumption has been determined for the fetus. • Jones, et. al also found that many of the midwives were unsure of the exact specifics, although most mentioned FAS. None of the midwives in this study noted discussing risks with patients, partly to reduce stress but also because of their perception of the patient's lack of knowledge in this area.
Perceptions	• **Healthcare providers' perceptions of alcohol or other drug use by pregnant women** – common perceptions can serve as barriers to effective screeningand

	intervention as needed. Some common perceptions were that most women did not drink alcohol during pregnancy; pregnant women know not to drink; asking about alcohol could seem judgemental. Similarly in marijuana, healthcare providers did not recognize marijuana as a dangerous or illicit drug to use during pregnany. Finally, perceptions play a critical role in adequate care – often times, women are assumed to be "at no risk" or at "low risk" for alcohol, tobacco, and other drug use because of their ethnic , cultural, or socio-economic background. • Another (Diekman et. al) study found that 97% of providers stated that they always asked patients about alcohol use. However, fewer reported discussing the adverse effects of drinking on the developing fetus; 50% advised all women about adverse effects, 36% only advised current drinkers, and 13% only advised those with risk factors such as previous histories of heavy alcohol or drug use. • Another study (Jones et. al) found that if the woman reported they were not a drinker, the providers would not provide risk reduction guidance. "If they answered yes then I'd really have to start on the risk of what could happen. But if they answer no, we've got so many other things to talk about that I'm not going to go into alcohol. It would be a waste of time."
Experiences	• **Relationship between healthcare providers and pregnant women** – in situations where healthcare providers feel that the rapport between them and the pregnant women was not sufficient enough to establish a trusting relationship, they were uncomfortable addressing maternal alcohol or drug use (*especially at the first visit). o "The other thing that makes it difficult is that at booking you have only just met the person. So, you are already asking a lot of personal questions. You probably haven't ever met her before and then you are required to take action whether it will be for alcohol or gender based violence." • A survey of Canadian pregnancy care providers found that while 76% felt it was their role to manage alcohol use problems, only 54% felt prepared to deal with pregnant women's alcohol use problems, and 71% felt prepared to access alcohol-related resources for pregnant women. • **Under-reporting or none/false disclosure** – one study found that the presence of family during the prenatal visit along with fear or child protective services involvement resulting in barriers to disclosing alcohol and other drug use. In addition, the "social expectation" that pregnant women are not supposed to drink was thought to result in under-reporting or false disclosure. • **Concerns about guilt and anxiety** – Providers have concern with guilt and anxiety their clients may face if asked about their alcohol or drug use. "Women often feel guilty when they drink alcohol before they knew they were pregnant. I try to downgrade their feelings of guilt by telling them that alcohol is not dangerous when there is no blood contact between mother and child"

	• Another study (Diekman et. al) within the US with a national random sample of 1000 obstetricians and gynecologists found that 65% of healthcare providers cited patient sensitivity as a barrier affecting assessment and management of pregnant patients' alcohol use.
Practices	• **Competing priorities and time constraints** – due to visit time constraints, alcohol screening is considered a low priority. o "We've got to do domestic violence, alcohol use, smoking, you know and all the stuff. If somebody says I smoke then we have to give them all the literature, the DVD, arrange for referrals. So you can imagine, alcohol is only one of the aspects and sadly it is not the most important one because there is not a lot of evidence there that we have a lot of children who have fetal alcohol syndrome" • Several studies (Jones et. al) mention that while a large % of providers are reporting that they are informing their patients to reduce or refrain from alcohol consumption during pregnancy; there is a discrepancy of what the women are hearing during their appointments. o Less affluent women aged 18–24 years with higher alcohol consumption were most likely to report that they did not receive advice from their doctor o US data on 279 women who drank through their pregnancies show that only 60% of women had been advised to stop drinking, with 37% reporting that they were not told anything about drinking during pregnancy, and 3% reporting that they were told it was 'okay' to drink o Another potential reason for differences could be the lack of clarity on the part of health professionals in an attempt to minimize aggravation to the doctor–patient relationship o In a small study, (n=12) Differences may be accounted for by patients' lack of comprehension of advice due to defense mechanisms or cognitive shortcomings

Tobacco (7 citations)

Several studies focus on the perceptions and knowledge of providers and their experience and practices around tobacco use during pregnancy; including a focus on cessation and harm reduction. Most studies were conducted through semi-structured interviews (2) and others through focus groups with midwives, observational study through obstetric visits. Also included in the summary are three narrative syntheses of relevant literature.

Although more than 50% of healthcare providers are likely to ask women about their smoking status and advise pregnant smokers to quit, fewer than 50% either assess readiness to change, assist in smoking cessation, or arrange for follow-up appointments/referrals. Important provider-specific, patient-specific, and system/organizational barriers were found to hinder the provision of SC by HCP.

Knowledge	• Provider-specific barriers are hindrances to engaging pregnant smokers which originate from the HCPs' own self-efficacy or perceived ability in intervening. The most commonly reported barriers were a lack of knowledge regarding patient counseling and referral to treatment, low confidence in personal intervention skills, and low confidence in using nicotine replacement therapy (NRT) for pregnant women • Providers reported lacking communication skills, focusing on providing information on smoking harm, accepting cutting down cigarettes as adequate, while following the 'Stages of Change' model and only providing treatment options to motivated patients. Lack of time, nicotine replacement therapy cost and safety concerns, and being unfamiliar with the Quitline were perceived as challenges. • Enablers included clinicians' knowledge of the harms of smoking in pregnancy, clinicians' skills in communicating with pregnant women, positive emotions, professional role and identity, the potential of training and of champions to influence practice, and systems that regulated behavior. • Strategies: o Clear detailed nicotine replacement therapy guidelines for special populations o Visual resources they [providers] could use to discuss treatment options with patients. o Discuss NRT or ENDS use as an alternative to smoking o
Perceptions	• Other barriers included perceptions that HCPs' advice cannot influence a patient's behavior, tobacco dependence treatment is not the role of HCPs working with pregnant women, SC interventions for pregnant smokers are ineffective, and that advising pregnant smokers to quit can be detrimental to the patients' relationship with the HCP. • Key barriers included systems which did not support implementation or monitoring, lack of knowledge, skills and training, perceived time restrictions, 'difficult conversations' and perceiving smoking as a social activity
Experiences	• A large majority of ob-gyns feel that it is important for pregnant and postpartum women to quit smoking, and report asking all pregnant patients about tobacco use at the initial prenatal visit. Fewer ob-gyns follow-up on tobacco use at subsequent visits when the patient has admitted to use at a prior visit. o Multiple studies have shown clinician advice and counseling to be effective in helping pregnant women quit. This finding implies is it makes sense for ob-gyns to follow-up. • The primary barrier to intervention was reported as time limitations, though other barriers were noted that may be addressable through the provision of additional training and resources offered to physicians. • Strategies

	○ Support changes to reduce tobacco use and improve health by linking women with a range of support (e.g., nutritional support, housing, counseling) •
Practices	• (1 study from England) A large proportion of obstetrician-gynecologists reported never or inconsistently screening their pregnant patients for the use of noncombustible tobacco products (chewing tobacco, snuff/snus, electronic cigarettes, and dissolvables) during pregnancy. 53% reported screening pregnant women at intake for noncombustible tobacco product use all or some of the time, and 40% reported none of the time. • Obstetric providers asked about smoking in 98% of the 116 visits analyzed, but used 3 or more of the 5 A's in only 21% (24) of visits. In no visits did providers use all 5 A's. In 54% of the visits, providers gave patients information about smoking; most commonly, about risks associated with perinatal smoking. • Strategies ○ Visual resources they [providers] could use to discuss treatment options with patients. ○ Ensure the opportunity for women to identify their needs and goals to reduce tobacco-related harms ○ Discuss opportunities to reduce exposure to secondhand smoke for themselves and others ○ An example of a harm-reduction approach in clinical practice is to advise a woman who is breastfeeding to reduce the infant's exposure to nicotine by waiting to smoke until immediately after nursing. This allows most of the nicotine to clear the woman's system before the next breastfeeding. During pregnancy, a tobacco-specific harm reduction approach may be to recommend that the woman reduce the number of cigarettes smoked or limit her exposure to the secondhand smoke of partners, family, and friends. Although the results of tobacco control research suggest that reduced use during pregnancy does not have significant health benefits for the fetus/child, there is evidence that pregnant women view this as a valuable step toward cessation ○ Instead of focusing narrowly on advice to quit, providers can also suggest harm-reduction strategies for women who may not be ready or able to quit. In assessment of readiness to quit, a provider can value and support the woman's choices and self-determination regarding her tobacco use and acknowledge the pressures and issues that may be hindering her ability to reduce or quit smoking.

Marijuana (4 citations)

"Anything above marijuana" is the general provider consensus. Studies in this area were conducted through semi structured interviews (2) and others through narrative synthesis (2). Overall, providers general view marijuana to be less harmful or dangerous than other substances used during pregnancy.

Providers feel they have limited knowledge about the adverse consequences of marijuana use during pregnancy to be able to leverage to use during counseling conversations. Another study noted that inconclusive evidence regarding the risk ofmarijuana use during pregnancy, healthcare providers express their unfamiliarity and unawareness of conclusive evidence regarding potential risks associated with maternal marijuana as a barrier for screening/counseling.

Knowledge	• Providers thought marijuana is **not as dangerous as other illicit drugs** – providers consistently mentioned medical concerns with fetal risks with opiates, but noted there is not clear concern or evidence that marijuana is associated with medical issues for the fetus. Providers generally categorized marijuana as less concerning than alcohol or tobacco. o "[Marijuana] is not like cocaine where you could obtain an abruption, bleeding or…death. Marijuana I think is more difficult to have a direct… correlation [to pregnancy risks]." o "[For] marijuana, I try to encourage people to stop, but not really all that strongly. … We always talk about methadone and problems with [opiate] use in pregnancy and… cocaine obviously is another really important one that I would spend a lot of time on….I mean, outcomes [for marijuana use during pregnancy] are not as important. There are no syndromes caused by marijuana that we know of. It doesn't affect the pregnancy, health outcomes the same way [as other drugs]" o If a patient said, "Oh I'm using alcohol, cocaine and marijuana and I smoke," I probably would spend time talking about alcohol and cocaine. … It's kind of picking your battles a little bit because you have such a quick visit. And it's frustrating sometimes when [you're] glossing over [marijuana use]….We don't talk about it probably to the extent that we should. • Providers are **not familiar with evidence regarding potential risks** related to perinatal marijuana use – providers were not familiar with any concrete evidence they could share with their patients about the adverse consequences of marijuana use during pregnancy. General consensus of if we "knew" what marijuana did during pregnancy, we might talk about it more, but don't feel they have the adequate information to share with patients.
Perceptions	• Providers thought patients **did not view marijuana as a drug** – providers acknowledged that some patients may not disclose of marijuana use when asked about drug use, which can be problematic when relying on self-reporting.
Experiences	• Providers described **asking about marijuana separately/directly as a strategy** - "I found over the years and especially here in [this] clinic that if you say 'Drugs?' they all say, 'No.' So I say, 'Drugs including weed or including marijuana?' and I get better answers."
Practices	• Not directly addressed in articles reviewed.

Opioids (2 citations)

Fewer studies relevant to providers' perceptions, knowledge, experience and practice with opioids specifically during pregnancy were prevalent during the environmental scan. Most studies focused on patient perception. Two studies were pulled for this environmental scan; one designed as a semi-structured interview with nurses and another narrative synthesis of relevant research.

Common themes of nurses' perceptions caring for this population (pregnant and parenting women who arrive at hospital with history of opioid use).

Knowledge	• **Needing more knowledge** – nurses shared desire for more education around opioid misuse and caring for their patients. Nurses also shared a desire for more information about available resources for families returning home (especially to rural areas). • Nurses expressed the need for earlier education for the patients (rather than waiting until arriving at the hospital) – suggest education begins even prior to conception, or at least consistently during prenatal care during outpatient visits so that women/mothers are not surprised when baby expresses addictive qualities. The perceived lack of opioid education for patients was expressed by all survey participants. Additional education and training would be appreciated for improved nursing care for pain. • Another article suggests that stopping amphetamine use during pregnancy can improve outcomes, clinicians feel they need clear guidelines on how to best promote cessation among pregnant patients with amphetamine disorders.
Perceptions	• **Feeling challenged** – internal struggle of providing the best care while dealing with biases of caring for pregnant and parenting women who misuse opioids. Biases are related both to participant's personal biases themselves and/or the judgement of fellow nurses. Nurses described pregnant and parenting women who misuse as more demanding of their time due to the pain management. Several nurses noted they try their best to put aside their judgements and biases to be able to provide high-quality nurse care. • **Expressing concern** – all participants noted concerns about safety for the mother and newborn. The concerns begin at birth relating to the mothers ability to provide basic newborn care along with the possibility of withdrawal turning into neglect once the mother was home and out of the watchful eye at the hospital.
Experiences	• **Knowing the truth** – nurses noted the concern about being able to provide the highest quality of nursing care without potentially knowing the full truth about the misuse from the mothers. Knowing more accurate information about the use (frequency, duration, dose) may help them provide better care for mom and baby – but this is seen as a major obstacle. • Research notes major concerns for mothers living in rural areas; these patient populations tend to utilize less services in general, increased alcohol

	consumption, and more mental health issues than those who live in urban settings. More research needed to identify barriers here. o Another article notes addiction has dramatically increased among women living in rural areas.
Practices	• Not directly addressed in articles reviewed.

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ATTACHMENT B

Patients Knowledge, Perceptions, Experiences, and Motivations Around Substance Use During Pregnancy: Environmental Scan

April – May 2019

Purpose

The purpose of this environmental scan is to provide an overview of research examining pregnant and parenting women's knowledge, perceptions, experiences and motivations regarding substance use during pregnancy. The environmental scan will focus on alcohol, tobacco, marijuana, and opioids including prescription medications not taken as prescribed. Vermont's PRAMS data indicate high rates of alcohol and tobacco use during pregnancy, compared to national rates. While substance use during pregnancy is less prevalent than prior years, it remains a concern for the state of Vermont.

Alcohol Use During Pregnancy, Vermont PRAMS 2015 – 2017

In 2015,

- Alcohol use during pregnancy in Vermont was the highest across the nation at 15.8%
- Pregnant women aged 35 and older were the age group most likely to drink during pregnancy; while this age group was the least likely to be advised by a health care provider to not drink during pregnancy
- Women who drank alcohol before pregnancy were more likely to use other drugs.

In 2017,

- 15% of women drank alcohol during their pregnancy
- 97% of all women with a prenatal visit were asked about their alcohol use

Smoking During Pregnancy, Vermont PRAMS 2015 – 2017

- Smoked 3 months prior to pregnancy
  - 28% (2015)
  - 24% (2016)
  - 22% (2017)
- Smoked at time of survey
  - 20% (2015)
  - 16% (2016); US Average = 7%
  - 14% (2017)
- Smoked during last trimester
  - 16% (2015)
  - 14% (2016)
  - 12% (2017)
- Women who smoked before or during pregnancy were more likely to use other drugs.

In 2017,

- 86% of women who had a health care visit in the 12 months before pregnancy were asked if they smoke cigarettes (compared to 81% in 2016)
- 74% of smokers had a doctor, nurse, or other health care worker advise them to quit smoking (compared to 76% in 2016)

Marijuana Use During Pregnancy, Vermont PRAMS 2015-2017

• Marijuana use during pregnancy was associated with cigarette smoking during pregnancy.
In 2017, • 19% of women reported using substances other than alcohol and tobacco the month before pregnancy; the most commonly used substance was marijuana (16%) • 11% of women reported using a substance other than alcohol and tobacco during pregnancy; marijuana was the most commonly used (8%) • 85% of all women with a prenatal visit were asked if they were using drugs such as marijuana, cocaine, crack, or meth

Other Substance Use During Pregnancy, Vermont PRAMS 2015 - 2017

• **Hospital utilization data** suggest that the rate of newborns exposed to opiates in utero has risen significantly in Vermont (2013 Vermont Rate: 33.3/1000 hospital births)
In 2017, • 19% of women reported using substances other than alcohol and tobacco the month before pregnancy; 4% used prescription pain relievers, 2% used Adderrall, Ritalin, or some other stimulant (Heroin, crack, and cocaine were also reported but there were too few respondents to provide an estimate) • 11% of women reported using a substance other than alcohol and tobacco during pregnancy; 3% reported using prescription pain relievers, Adderrall, Ritalin, cocaine and heroin use were all reported but too few respondents to provide an estimate. • 85% of all women with a prenatal visit were asked if they were using drugs such as marijuana, cocaine, crack, or meth • 3% received MAT during pregnancy • 3% received MAT after their baby was born

The Vermont Department of Health is interested in the following questions:

1. **What is the knowledge, perceptions, experiences, and practices of women and substance use during pregnancy?**
2. **What do women need to motivate or better support them in discontinuing substance use during pregnancy?**

The information acquired in this environmental scan will be used to develop a patient survey for pregnant and parenting Vermonters, and to inform the interpretation of findings and recommendations from formative evaluation on substance use during pregnancy among Vermonters.

Methods

John Snow Inc. Research & Training (JSI) conducted a search for peer-reviewed articles for this environmental scan in April-May 2019. Peer-reviewed research articles published from 2005 to 2018 were identified by searching for the following key terms on PubMed and Google Scholar:

- Patient

- Pregnant
- Parenting
- Alcohol
- Marijuana
- Tobacco
- Opioids
- Substance use
- Beliefs
- Attitude
- Behaviors
- Knowledge
- Motivations
- Barriers
- Pregnancy
- Harm reduction
- Smoking cessation

Searches performed included several combinations of key terms above. Searches were initially limited to studies performed in the United States. In the second round of searches, the term "harm reduction" was used to target research around providers advising cutting back on substance use, and searches were expanded to outside of the United States if particularly relevant.

To maintain the intended focus of this environmental scan, certain articles were excluded, such as studies that focused on individual's' beliefs and knowledge around substance use but did not include or consider pregnant women or new moms specifically. Most studies that failed to include U.S. research participants were excluded as well, although a few were included given their high relevance to the scan. The environmental scan provides insight on patient's knowledge, perceptions, experiences and practices across substances noted above. A total of 20 articles were deemed relevant to this environmental scan.

Key Findings

Key findings are outlined below, separated first by key findings across all substances and second among individual substances including alcohol, tobacco, marijuana, and other prescription drugs not used as prescribed.

1. **Key findings on knowledge, perceptions, experiences and practices of patients regarding substance use during pregnancy –** Substance use during pregnancy is associated with physical and psychosocial harms to both the mother and child. Despite advances in research and treatment, many women continue to use substances throughout pregnancy. Women identified comprehensive services throughout all stages of pregnancy (before, during, and after) as a need, as well as comprehensive resources available to them to learn more about substances and the effect they have on themselves, their fetus, and a newborn baby.

2. **Knowledge, perceptions, experiences and practices of patients regarding alcohol use during pregnancy –** Key themes included confusion over safe levels of alcohol consumption in

pregnancy, a lack of detail in the advice given, as well as conflict between health professionals' advice and women's own experience of a previous pregnancy and the reported experience of friends and relatives. Societal influences and experience shape women's attitudes in addition to advice given by healthcare professionals.

3. **Knowledge, perceptions, experiences and practices of patients regarding tobacco use during pregnancy** – Smoking is a comforting habit and reduces feelings of stress. Partners, friends, and family who smoke often provide support for quitting during pregnancy, but women might assume they will start up again after the baby is born. This is particularly true if their partners/friends/family are skeptical of the health effects of smoking on babies or adults. Women being treated for substance use disorder (SUD) tend to minimize the short term risks to themselves of smoking, and so feel they can put off quitting (most did not quit while pregnant). Also, women with SUD may not consider nicotine a drug since it is "not mind alteringor illegal."

4. **Knowledge, perceptions, experiences and practices of patients regarding marijuana use during pregnancy -** Understanding how pregnant women obtain and understand this information is important because such information can have a profound influence on individuals' knowledge and attitudes, and can form the basis for behavioral change. Commonly reported sources of information about perinatal marijuana use included Internet searching and anecdotal experiences or advice from family or friends. Few women reported receiving helpful information from a health care provider or social worker specific to marijuana. Women perceived a lack of evidence about harms of perinatal marijuana use, and reported being dissatisfied with the quality of information. Most women said they desired information about the effects of perinatal marijuana use on infant health; but that the quality of the information they did obtain was mixed and they were not sure whether research had shown any ill effects of perinatal marijuana use.

5. **Knowledge, perceptions, experiences and practices of patients regarding other prescription drugs not taken as prescribed (including opioids) -** The most frequent barriers to seeking substance use treatment include accessibility, acceptability, increasing gestational age, and financial barriers. In comparison to urban residents, rural residents are less likely to have health insurance, healthcare providers and services are also in short supply, and individuals travel longer distances to treatment facilities. A primary motivating force for pregnant and parenting women to enter substance use treatment is "motherly love," concern for the well-being of the fetus, and the desire to provide care for the new child or existing children.

Overarching Findings on Patients' Knowledge, Perceptions, Experiences, and Motivations Regarding Substance Use during Pregnancy

ALL substances

Substance use during pregnancy is associated with physical and psychosocial harms to both the mother and child. Despite advances in research and treatment, many women continue to use substances throughout pregnancy. Three studies were reviewed in depth that discuss substance use in general (including alcohol, tobacco, marijuana, and opioids). One study looked at pregnant and parenting women in an early intervention program for substance use through focus groups (n=16), another conducted in depth interviews with recently pregnant women who used alcohol or other drugs while

pregnant (n=30), and finally another study looked at women who had used tobacco, alcohol, marijuana or other drugs at some point before their most recent pregnancy (n=693) through a prospective Early Growth and Development Study.

Knowledge	• One study found that public understanding of science (PUS) emerged as a theme through focus groups. Explanations given for perceptions stemmed from a general lack of understanding of science. For instance, women made statements confirming the misconception that a substance being natural equates to safety: "I feel that marijuana is the least dangerous out of methadone, cigarettes, alcohol, anything. I feel that that's the least evil of them all." Another woman stated: "Opiates are natural! They come from a plant...It's not always harmful in the body. Long-time use, alcohol is worse for the body than steady use of heroin." • Women revealed that they were more likely to base health decisions on anecdotal evidence and personal experiences as opposed to medical advice: "All my sisters, all their mothers smoked weed while they were pregnant. My youngest sisters all seem fine! They are all amazing."
Perceptions	• Women who were using illegal substances and did not feel afraid of being identified as substance users; pregnancy was a time of great uncertainty for most of the women, and this was compounded by the threat of detection. This was especially true for women who did not know what to expect at prenatal appointments or delivery. o Some women believed they were drug-tested at every prenatal visit and that every baby delivered at the hospital had his or her meconium tested for drugs. o Other women felt that the decision to test mothers and babies was on a case-by-case basis. o Others thought that babies could not be drug-tested without the parents' permission.
Experiences	• Stressors related to continuing substance use during pregnancy include societal pressures, partner relationships (abusive, dysfunctional, sometimes with a substance user), financial strain, and pregnancy (nicotine helps with pregnancy stress – not wanting to deal with withdrawal stress on top of pregnancy stress). Internal stressors include guilt due to substance use (guilt due to using, and using due to guilt). • In one study, women described substance use as a coping strategy. Service providers need to be understanding of women's circumstances and accept setbacks, while still holding them accountable for their actions. • In another study, (n=30) twenty-two women (73.3%) reported that during their pregnancies they had been afraid of being identified as substance-users. The scenarios of which they were most afraid were testing positive for substances at

	prenatal visits or after delivery, losing custody of their newborns and/or their older children, and experiencing criminal justice consequences for their substance use. The remaining eight women (26.7%) in the sample reported that they were not afraid of detection. For most of these women, this was because they were not using illegal substances. Though they recognized the harmful effects of alcohol and tobacco, they were not worried about being tested, having positive test results, losing their children or being arrested. o Six women (27.3%) adhered to the idiom that honesty is the best policy and were up-front with medical practitioners. They felt that being honest showed that they were good mothers despite their substance use and they hoped that doctors and nurses would appreciate their honesty and affirm their motherhood identities. o Another set of strategies women employed was to keep to themselves, avoiding friends and family who might report them to CPS. The strategy of avoiding people may be based on women's past experiences with CPS. • Of twenty-two women who reported having past contact with CPS, the most commonly mentioned source of contact (n =10, 45.5%) was a report to CPS by a third party. • The most common strategy employed by women afraid of detection was avoidance of medical care (n = 12, 54.5%). This strategy included scheduling visits around their substance use so that any tests would come up negative, skipping some visits, or avoiding prenatal care altogether.
Motivations	• Women noted that while several factors increased stress and were essentially a negative experience; they were motivational in discontinuing use. For example, child welfare involvement was identified as a stressor however led to discontinuation of use (to note – this can lead some women to hide their substance use). • In addition, the negative perception of the public served as a motivator for some women in one study to quit. One woman stated: "I didn't want people to look at me like what they would have expected for me – to lose my son and to not be a good mom." • Women noted not wanting to only prove to themselves they could quit, but also prove to others (others being family members, friends, and service providers). Women identified that having confidence in their ability to achieve their goals was important. • The relationship between a woman and her medical provider might be one way

	that socioeconomic status grants some substance-using women privileges and health benefits. If a woman has health insurance and a private doctor with whom she has a long history, honesty may be a safe strategy that allows her to receive support and treatment specific to her risk status. If, in contrast, a woman must rely on a public health clinic that she can attend only when pregnant and where she may see a different doctor every time, she may not know the doctor or the practice's drug testing and reporting policies and will not have the opportunity to develop a trusting relationship with the practitioner.

Recommendations for service providers from one study:

- Women identified the need for comprehensive services. They suggested the establishment of in-patient treatment for pregnant women with wraparound programming ranging from detoxification to aftercare. This ideal program would offer essential skills classes, parenting groups, and provision of other instrumental needs.
- Lack of resources available to women during pregnancy. They recommended that resource materials (e.g., pamphlets about services for pregnant women with substance use issues) should be readily available in the community.
- Healthcare professionals should have comprehensive information on the full range of services that pregnant women with substance use problems might need, including detoxification centers, treatment programs, shelters, food banks, pregnancy outreach programs, aftercare services, parenting programs, and child care services.
- For those who work with children and youth to recognize that the cycle of trauma, abuse, and substance use often begins early in life.

ALCOHOL

Six papers relating to alcohol use during pregnancy were reviewed. They were published between 2005 – 2018. The methods included two surveys of pregnant women to investigate beliefs and practices regarding drinking during pregnancy (n=171 and n=1103), two papers focused on semi-structured telephone interviews with pregnant women, one PRAMS data analysis of 33 states and 95,728 women who reported any alcohol drinking in 3 months prior to pregnancy, and one study handed out questionnaires to women and their partners attending antennal clinics and pregnancy assessment units.

Drinking alcohol during pregnancy can have a profound consequence on the fetus and can result in life-long deficiencies and disabilities. The term fetal alcohol spectrum disorder (FASD) typically encompasses all alcohol-related deficiencies or disabilities as an "umbrella term." Screening for alcohol use early in pregnancy may help identify those who need support to stop or reduce their alcohol consumption.

Key points:

- Screening for prenatal alcohol use should be a priority and is seen as an opportunity for education and support.
- Alcohol screening strategies for all women of childbearing age should be considered in primary care.
- Future work should focus on the views of women deemed at high risk of alcohol exposure in pregnancy, such as those who smoke.
- Antenatal smoking cessation resources may be transferable to alcohol management initiatives.

Knowledge	• In one study, most pregnant women were unsure of the specific risks of alcohol use during pregnancy, but some noted low birth weight, birth defects,difficulties conceiving and FAS. • While most of the pregnant women reported that they did not discuss alcohol with their midwife, their attitudes toward midwives giving advice werepositive; they felt it was important for women to be fully informed about the risks of consuming alcohol and that this was part of the role of the midwife. • One study found that there was evidence of confusion regarding safe levels of alcohol in pregnancy: 'drinking is safe in later pregnancy' and '1–2 drinks on a special occasion isn't bad'. Women hold misconceptions of what is acceptable to consume while pregnant. Some women are unsure of the risk and dangers of alcohol to the baby, and although some women understand and recognize the effects, others may not necessarily view alcohol consumption as having health implications for their baby • Education and information are essential and facilitate informed choice Women expressed their need for education and support: 'I'd prefer for the guidelines regarding alcohol and pregnancy to be much clearer, it is currently toovague.' • Women suggested that the use of screening for alcohol use during pregnancy could help identify those at risk and enable appropriate support to be given by the healthcare provider
Perceptions	• In general, one study found that there were not any disadvantages to asking about alcohol consumption. The majority of participants thought that there were clear benefits in midwives providing alcohol advice to pregnant women, both in general terms to ensure that women were informed about the risks and to potentially identify anyone who may have issues with alcohol and ensure that they are referred to the appropriate services. • One study found that some of the pregnant women felt that it was part of the midwives' role to ask these questions, and others mentioned the use of generic questions/questionnaires making it easier. However, some noted that it [substance use] may be difficult to raise due to the changes in information over time in relation to assessments of the risks of alcohol consumption (i.e. changing guidelines and contradictory research findings) and how that may impact on health professionals. • (89.2%) participants (153 women, 36 partners) thought that no alcohol should be consumed while pregnant. A further 20 (9.4%) (16 women, four partners) thought that 1–2 units per week was a safe amount to drink, and three (1.4%) people (two women, one partner) thought that more than 3 units on an occasion was safe. • Women who reported abstinence during pregnancy were often very clear in their views, for example 'drinking during pregnancy is wrong', recognised alcohol as harmful to their baby and saw their baby's health as paramount: 'putting babyat risk' and 'baby's safety should come first'
Experiences	• One study found that pre-pregnancy drinking behavior differed by pregnancy intention status with a higher proportion of individuals with subsequent unwanted pregnancies reporting both binge and heavy drinking. • Binge drinking was more common than heavy drinking in the final 3 months of pregnancy and did differ by pregnancy intention (1.2% of intended/mistimed

	pregnancies vs. 2.6% of unwanted, p b 0.001). • When comparing overall drinking change from pre-pregnancy to the last 3 months there were no differences between those who quit, reduced, or drank at the same level or more across categories of pregnancy intention. • Women with an unwanted pregnancy were as likely to quit or reduce drinking during pregnancy compared with women whose pregnancies were described as intended or mistimed (AOR 1.15 [95% CI: 0.99, 1.33]). • Women with an unwanted pregnancy had an increased odds of reporting binge drinking during pregnancy compared with women whose pregnancies were described as intended or mistimed (AOR 1.40 [1.07, 1.83]). • During phone interviews, many pregnant women did not recall being asked about alcohol consumption. When prompted about the initial 'booking-in' [prenatal] visit, they usually stated that they had been asked as part of a 'routine' history check rather than being actively engaged in a discussion about alcohol consumption and its risks. • Participants noted that, in general, the only time alcohol is discussed is at the initial consultation visit. Some of the reasons identified were time constraints during visits and the need to discuss other pregnancy and health issues, as well as the fact that most of the women noted they have ceased drinking or rarely drank. • While at least half of the pregnant women (6) indicated that alcohol was not discussed with their midwife and no advice was given, those who did report having a discussion noted the advice was either that no alcohol was the best option or a glass every now and again was 'okay' but a safe amount was really unknown. • Out of the 171 pregnant women, 70 (40.9%) reported that they stopped drinking before they became pregnant and 90 (52.6%) stopped drinking when they found out they were pregnant. An additional five women continued to drink after they found out they were pregnant, but stopped when they saw their midwife for the first time (first trimester). • Of the 203 participants who completed questions 3 and 4, 177 (87.2%) said that they would be happy for their or their partner's blood to be tested for alcohol in a future pregnancy. A total of 168 (82.8%) individuals said they would be happy to have their baby's meconium tested for alcohol consumption. Altogether, 25 people said no to both forms of testing
Motivations	• The majority of women had positive responses towards screening for alcohol to ensure their baby is healthy. The statements illustrate that women want the best for their babies; however, they feel more support is needed to ensure safety within their pregnancy: 'routine screening may help identify the people [who drink] and protect the fetus'. Screening was also felt to offer reassurance, feelings of safety and reduced risk to the baby, and to allow women to make informed choices due to an increased understanding of the effects of alcohol misuse during pregnancy.

TOBACCO

Eight papers relating to tobacco use during pregnancy were reviewed. They were published from 2012 and 2017 in: Nicotine and Tobacco Research (4), Maternal and Child Health Journal (3), and Addiction Behavior (1). Three papers described qualitative studies in which currently pregnant or newly postpartum women participated in focus groups (2 papers) or in-depth interviews (1 paper). A total of 67 women are represented in these studies (~22 per study). The other 5 papers described secondary data analyses of baseline questionnaire data collected among women who consented to participate in research/intervention studies. A total of 1,790 women are represented in these studies (range of 64 to 693 per study; ~360 per study).

The high rate of using electronic cigarettes for smoking cessation may reflect the fact that they replace some of the sensory motor aspects of conventional smoking. They are also readily available, widely marketed, and come in a variety of flavors. Studies are needed to determine the risks or benefits of e-cig use for smoking cessation in pregnant women and they impact on reproductive and developmental outcomes. "Regulation of these products is needed to ensure that toxicant exposure is minimized (e.g., flavors approved for oral use may be unsafe when inhaled) for people who may use them, including pregnant women."

Knowledge	• One study found that a majority of focus group participants identified benefits to quitting for the babies but not for themselves. The most common benefits cited were for the overall health of the baby, preventing low birth weight and SIDS, and negative effects of second hand smoke. Benefits to women mentioned were reduced cancer risk, lower blood pressure, improved lung health, and better hygiene (fewer odors, hand discoloration). • Women who were not concerned about the bad health effects of smoking to their own health were more likely to intend to return to smoking (OR=1.6).
Perceptions	• In a focus group with 21 women, many participants did not feel susceptible to the health-related effects of smoking or felt they would not experience them in the near future. They also tended to not view tobacco as a drug, especially compared to their drug of choice for which they were receiving SUD treatment. (Perceived smoking as legal, not mind or mood altering). Women perceived the benefits of smoking as stress relieving and providing a sense of comfort and freedom. • Another study found that through two focus groups with 22 women receiving MAT, most reported a desire to stop smoking, that doing so would give them a sense of empowerment, and held negative opinions the about the smell and taste associated with smoking. • Women who said their reason for smoking was temporary rather than permanent were more likely to intend to return to smoking (OR =2.1), as were those who self-identified as a smoker rather than as a non-smoker were far more likely to intend to return to smoking (OR=8.7).
Experiences	• In a focus group with 21 women, one respondent called smoking "my one remaining vice", while working hard to quit other substances. Partners could also be a barrier for quitting, when they are smokers, and/or are skeptical of

	the health effects of smoking. For this group, most (9/20) did not try to quit, or tried but relapsed while pregnant (7/20), and a few (4/20) were able to quit smoking during pregnancy. No information provided as to how. • Another focus group study with women receiving outpatient MAT noted that there is a very strong need/craving for smoking. Participants described smoking as a comfort for the stressors in their lives, and not necessarily having other ways of coping with stress. These women face additional, unique stressors, such as navigating the substance abuse and legal systems, and concerns about coming off MAT after pregnancy. None of the smokers quit while pregnant. Women reported no success with NRT in the past (the patch); concerns over side effects of Chantix, such as nightmares. o "Cigarettes literally control me" o "You want a cigarette after everything" • Those who were abstinent for a shorter duration during pregnancy were more like to endorse intension to smoke again, as were women who did not want to be pregnant. None of the demographic factors, nor other pregnancy factors, were significant predictors intention to start smoking postpartum. • Another study interviewed 24 women during their postpartum hospital stay (women who had been smokers and quit during pregnancy) regarding motivations behind smoking and reflections on quitting while pregnant. Three common themes were identified: o Being enmeshed in social networks with prominent smoking norms; ▪ "Everyone around me was smoking" ▪ During pregnancy many felt supported in quitting, but that support fell away once the baby was born; friends or family assumed they would want to start smoking again; ▪ Familiar activity of going out together for a smoke; ▪ Smokers stick together/ have special rapport. o Being tempted to smoke by members of their social networks; ▪ Particularly tempted by having partners who smoke; ▪ Many anticipated a social setting would be strongest temptation to smoke – wanting to smoke when having a drink, watching others smoke. o Changing relationship with the smokers in their social networks as a result of their non-smoking status. ▪ Alteration in how other smokers perceived them; feeling guilty for not smoking anymore, feeling self-conscious and judged. ▪ Missed connections with some family or friends when smoking was part of their interaction. • Another study utilizing an electronic screening process of pregnant women who smoked at least 5 cigarettes per day found that 53% of pregnant smokers had previously used electronic cigarettes in their lifetimes. These women had more quit attempts, smoked more cigarettes –suggesting those who may find it more difficult to quit tried e-cigs. Prior to pregnancy, 35% had a previous quit attempt, either using e-cigs (15%) or FDA approved medication (gum,

	14% or patch, 7%). During pregnancy, 14% reported using e-cigs, primarily as a way to quit smoking.
Motivation	• One study found that for many focus group participants, the lack of obvious harm while pregnant changed once the baby was born and the effects on the baby were more obvious, eliciting feelings of guilt for continuing smoking. Thus, the "cue to action" was the birth of their child – increased sense of purpose. This may be a relatively unique perception for women with SUD. Research among tobacco using pregnant women without SUD finds they are more likely to attempt to quit smoking during pregnancy than any other point in their lifetime (indicative of understanding risk during pregnancy). • Another study of women receiving outpatient MAT treatment found that Participants reported experiencing a turning point in their lives due to a combination of pregnancy and being in early recovery from opioid use. Participants were starting to care for themselves, be healthier. However, some participants noted that nicotine use was not part of their MAT treatment, nor during their detox process prior to starting MAT (even though smoking was not permitted during detox). When discussing what might help them quit smoking now, participants reported the need for a supportive home environment that was "very calm" or "peaceful environment". Some receptivity to a sponsor role to support quitting, similar to other addiction treatment.

STRATEGIES:

- Women frequently quit, or are willing to try to quit, for the short term while pregnant. Interventions that reframe reasons for quitting from temporary to permanent, that reframe identity from a "smoker taking a break" to a non-smoker. Some practical suggestions: helping women articulate reasons to quit for the long-term; once quit, help women articulate what defines a smoker and a non-smoker and discern which group are they more like.
- Since post-partum tobacco use recidivism is so high, consider developing postpartum interventions that encourage harm reduction, such as not smoking in the house.
- Build on women's self-concept as a provider for the fetus, increase confidence and self-efficacy in this role. Provide specific information on how smoking impedes this role, such as affecting development even though woman is providing nutrition.
- For women with substance use disorder, special strategies are also needed:
    - Consider incorporating tobacco cessation into addiction treatment programs;
    - Acknowledge and account for the additional stressors that make it difficult to quit smoking (legal, medical, child welfare, home environment) – help women find and practice other stress reduction methods.
- Interventions that help women address the fact that partners and other household members smoke; that address the fact that smoking affects social networks – help women engage with family and friends in new ways, build new relationships.

MARIJUANA

Three papers relating to marijuana use during pregnancy were reviewed. One included 26 semi-structured interview with pregnant women, another included a survey analysis of the National Survey on Drug Use and Health (n=8713), and another included a voluntary survey (n=306) regarding pregnant women's patterns of use and views on cannabis.

Understanding how pregnant women obtain and understand this information is important because such information can have a profound influence on individuals' knowledge and attitudes, and can form the basis for behavioral change. Commonly reported sources of information about perinatal marijuana use included Internet searching and anecdotal experiences or advice from family or friends. Few women reported receiving helpful information from a health care provider or social worker specific to marijuana. Women perceived a lack of evidence about harms of perinatal marijuana use, and reported being dissatisfied with the quality of information. Most women said they desired information about the effects of perinatal marijuana use on infant health.

Knowledge	• One study found that the most commonly reported sources of information about perinatal marijuana use included Internet searching and anecdotal experiences observed among family or friends. • Another source of information women described using was the anecdotal experiences of friends, family members, or acquaintances. They described listening to and observing other women's experiences using marijuana during pregnancy. One woman described observing her cousin's near constant marijuana use in pregnancy, noting that: "This is her fifth baby; she smoked through all of her pregnancies. So it ain't going to hurt her." Women reported that internet searching left her with the impression that there is a debate about whether or not perinatal marijuana use was truly harmful. Women similarly reported receiving conflicting anecdotal evidence from friends and family members. • Lack of information from health care providers and social worker: Some women said that the lack of information did not bother them because they had easily stopped using marijuana when they became pregnant. Others assumed that when the obstetric providers or social workers did not address the marijuana or did not provide counseling, this indicated that marijuana did not represent a significant concern for the outcome of their pregnancy. • Women shared that the primary type of information they wanted regarding perinatal marijuana use was the potential health and developmental effects on infants and children. • One study found that seventy percent of respondents reported believing that cannabis could be harmful to a pregnancy. Those who continued to use cannabis during pregnancy were less likely than those who quit to believe that cannabis use could be harmful during pregnancy.
Perceptions	• Women perceived that the quality of the information they did obtain was mixed and they were not sure whether research had shown any ill effects of perinatal marijuana use. One woman related that online information suggested that perinatal marijuana use was harmful, but stated that other women she knew had not experienced negative effects after using marijuana in pregnancy. Womenwho sought information about prenatal marijuana use reported that although they had

	the overall impression that marijuana use posed risks in pregnancy, they perceived a lack of evidence about specific harms to the fetus. • Pregnant and non-pregnant women who used marijuana in the prior 30 days more commonly perceived that regular use had no risk, relative to women who had no such marijuana use. However, perception that regular marijuana use has no risk increased, even among women without marijuana use in the prior 30 days. The average predicted probability of reporting no risk of regular marijuana use among all women aged 18-44 increased from 4.6% in 2005 to 19.0% in 2015 • Overall, 31% of respondents reported believing that cannabis should be made legal without restrictions, 28% that it should be legal only with a prescription, and 41% that it should not be legalized. Overall, 10% of all women and 17% of lifetime users reported that they would smoke cannabis more during pregnancy if it were legal. Sixty-two percent of women who continued use during pregnancy reported that they would increase use during pregnancy if cannabis were legalized.
Experiences	• Even though all women in one were engaged in prenatal care, few reported receiving helpful information from a health care provider or social worker (related to marijuana use during pregnancy). Other reactions were stronger, with women stating that they sought information about the risks of prenatal marijuana use or how to stop marijuana use and did not receive adequate resources in the health care setting. One common experience was that social workers focused on child welfare agencies' potential involvement after delivery, rather than providing resources to help women stop using marijuana during pregnancy. Other women reported receiving only punitive communication rather than information about prenatal marijuana use from their health care providers, stating that health care providers "talked down" to them and made them "feel targeted." • At the time they found out they were pregnant, 35% (106) of women were current cannabis users. Of respondents who were current users at the time of diagnosis of pregnancy, 66% (70) of them quit using cannabis during pregnancy. Thirty-four percent (36) were continuing to use at the time of the survey.
Motivations	• Women identified both improved communication from health care providers, as well as resources specific to the effects on the fetus. Women reported that websites where they could follow fetal development were particularly powerful for them. As such, presenting communications about prenatal marijuana use that included pictures of developing fetuses seemed to be a particularly salient idea for improving information quality. • The most common reasons cited for quitting or cutting back on cannabis use were to avoid being a bad example (74%), to avoid Child Protective Services (CPS) involvement (66%), to save money (63%), to prove to myself that I can quit (63%), and because it could hurt the pregnancy (62%). The least common reason given for quitting or cutting back was to get people to stop nagging them (19%), or because they were told to do so by a doctor (27%) (It is not clear if this was due to the lack of doctor's knowledge about the patients' cannabis use, the lack ofdirect instruction if cannabis use were known, or the lack of effectiveness of direct

	instruction). Women who cut back (rather than quit) were mostly motivated by money; where as women who quit were motivated by their pregnancy and potential harms to the fetus.

OPIOIDS

Three studies were reviewed relating to women's perceptions of opioid use during pregnancy. Two studies conducted in depth interviews with recently pregnant women who used alcohol or other drugs while pregnant (n=30) or had a diagnosis of substance dependence, primarily opioids (n=114) while pregnant. Women face several barriers for seeking treatment for substance use disorders. When reviewing treatment motivations, no rural-urban differences were observed. The most frequent barriers to seeking substance use treatment include accessibility, acceptability, increasing gestational age, and financial barriers. In comparison to urban residents, rural residents are less likely to have health insurance, healthcare providers and services are also in short supply, and individuals travel longer distances to treatment facilities.

Some women did fear detection or discovery of their substance use disorder. Of those women, some were up-front and honest with their doctors about their use as they felt this would protect them from the worst case scenario (legal action). They also felt their doctors and nurses would appreciate their honesty to build trust in the relationship. Of those women who were not up front with their substance use, some hid or denied their pregnancies, isolated themselves away from others, and delayed or avoided prenatal care. Punitive policies do not empower women's help-seeking behavior. Rather, discourage women from accessing prenatal care or withholding medically relevant information about their substance use.

Knowledge	• Women's experiences seeking methadone treatment also highlighted a need for more information about this treatment option, both in general and specifically for pregnant women. • In general, women harbored some misconceptions about methadone and were unclear about the treatment process. Women who did take methadone during their pregnancies felt that there was insufficient information about what they should expect at the hospital and when they brought their infants home. Methadone has been deemed safe for use during pregnancy but can still produce symptoms of withdrawal in exposed infants.
Perceptions	• Acceptability – in one study, women expressed the following in regards to pregnancy and not wanting to deliver: o Stigma of the treatment environment o Fear of losing children o Self-denial o Knowing treatment would be hard, thought they would try to take my baby

	○ Not being ready to or wanting to quit using ○ Being judged, ashamed ○ Being around psychiatric patients. ○ [detox] According to one participant's understanding, "the medical staff did not want to monitor her withdrawal for fear they would be liable if anything happened to her fetus. Instead, they gave her more opioids to stave off the withdrawal and then turned her away. [Name] continued to use heroin while seeking out other treatment possibilities."
Experiences	• **Accessibility** Issues with: transportation, legal troubles, employment, inadequate childcare, mental health, physical health, jail, social support, family responsibilities. Responses include *Distance, Had problems with getting transportation, School obligation, Childcare, Struggled because I had to give up friends—in [city name] you don't got no friends unless you are using or selling.* • **Availability** waiting periods/referrals; not qualifying for treatment entry; no room in the treatment facility and/or put on waiting list; program not accepting women or pregnant women, *Paperwork at the methadone clinic,* waiting *period, Couldn't find a detox to take me, Wouldn't accept pregnant women.* ○ [detox] A problem with detox is that it is rarely a possibility for women who are already pregnant. Though the physical withdrawal symptoms are unpleasant for adults, they can be lethal for the fetus. For substance-dependent women who wanted to continue their pregnancies, withdrawal was a dangerous choice, and few medical professionals would agree to supervise the process. [Name] found out that she was pregnant and didn't want to start taking methadone, so she tried to find a treatment center or a hospital where she could be monitored while she went through withdrawal from heroin. She couldn't find anyone who would help her. As with other treatment options, women encountered barriers to enrolling in methadone programs. Interestingly, the barriers they encountered were the opposite of what one might expect. Women who were pregnant were able to enroll in programs immediately: Women who sought out methadone maintenance treatment when they were pregnant had no difficulty enrolling in a clinic. Women who were not pregnant when seeking treatment were not so successful. • **Affordability --** Insurance and/or money issues: *Couldn't afford it, money, good insurance, Financial worries about paying for treatment, Insurance.*
Motivations	A primary motivating force for pregnant and parenting women to enter substance use treatment is "motherly love," concern for the well-being of the fetus, and the desire to provide care for the new child or existing children. • Pregnancy seen as a window of opportunity (66%) • Needed help (24%)

	• Family/Husband/Kids (18%) • Tired of the lifestyle (17%) • Other: Social services/legal/finances, withdrawals, getting off of methadone

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ATTACHMENT C

Technical Documentation: Provider Key Informant Interview Guide and Pregnant/Parenting Women Patient Survey

June – August 2019

Provider Key Informant Interview Guide

Project Research Questions

- *What is the knowledge, perceptions, experiences, and practices of healthcare providers in Vermont regarding substance use during pregnancy (i.e., alcohol, marijuana, tobacco, opioids)?*

- *What do healthcare providers need to better support them in addressing substance use during pregnancy?*

The Vermont Department of Health is sponsoring a series of interviews with healthcare providers who serve pregnant Vermonters. We are also conducting a survey of pregnant Vermonters, asking similar types of questions. Once all of the data are analyzed and synthesized, it will be used to inform planning and priorities for communication and outreach strategies. Your individual response will be kept confidential, stored securely, and solely used to identify themes and ideas across all providers who are being interviewed.

[Interviewer(s) will take notes, but will also ask the provider to consent to record the interview]

Before we proceed with the interview questions, I need to obtain verbal informed consent from [all of] you on the phone today. I will read a few statements on your participation in this study.

- You will be taking part in a study as a key informant per your experience and practices regarding use of alcohol, tobacco, marijuana, and/or opioids during pregnancy. In addition, we will gauge what you feel you need to better support you in addressing substance use during pregnancy
- This interview is voluntary. You are welcome to decline to respond to questions you prefer not to answer.

Do you understand and agree to proceed with the interview?

- ☐ Yes, I understand and agree to proceed with the interview
- ☐ No, I decline to proceed with the interview

DEMOGRAPHICS

Provider name: _____

I'd like to start by gathering some information about your practice…

1. How would you describe or characterize your provider type? [note: keep open ended – interviewer to note category]
    - Obstetrician or OB/Gyn
    - Midwife
    - Behavioral Health Provider
    - Nurse
    - Physician Assistant

- Family Practice/General Practice
- Other: _____

2. Are you part of a solo or group practice?
   - Prompt: If group, ask # providers
   - Prompt: If group, are you part of community health center? Hospital-based network? Other network? Other? FQHC
   - Prompt: If solo, are you part of a private independent practice? How would you characterize your practice?
3. Roughly, how many pregnant Vermonters does your practice see per calendar year?
   - Approximately how many pregnant Vermonters do you, see per year?
   - Over the past year, did you work part-time or full-time at this practice (note if new hire)?

According to Vermont surveillance data (called PRAMS), in 2017, about 15% of women reported they drank alcohol, and another 8% said they used marijuana during their pregnancies. Tobacco use was also common at 15%. For this interview, we are focusing on tobacco, alcohol, marijuana, and opioid use.

Provider perceptions

4. **Of substances that might be used during pregnancy, which do you find as the most concerning for the mother?**
   - **Prompt:** Why is X substance most concerning?
   - **Prompt** [if not addressed above]: Which substances are most concerning for the baby when used during pregnancy? Why?
   - **Prompt:** What do you see as the predominant substance used among the population you serve?
5. **Have you seen any trends recently with marijuana or other substance use (including opioids) during pregnancy?**

As you know, there are many ways to ascertain patients' use of alcohol, tobacco, marijuana, or other substances, including opioids. Some practices use universal screening, which involves having patients complete a validated questionnaire prior to a visit or at specific visit. The next few questions relate to screening.

SCREENING

6. **Does your PRACTICE employ universal screening for substance use among Vermonters in prenatal care?**
   - **PROBE** for each substance.
     - **i.** YES/NO for alcohol, tobacco, marijuana, opioids.
   - **If YES:** how is this type of universal screening implemented? Do you use validated tools/questions?

i. **Prompt:** How do patients complete the questionnaire, how do you obtain the results?
ii. **Prompt:** Is universal screening implemented consistently with all patients?
iii. **Prompt:** When do you bring it up? (e.g., first visit, subsequent visits, all visits)?
iv. **Prompt:** If there are universal screening results, how do you use them?

- **If NO:** Is there another screening process used?
  i. **Prompt:** Is this screening process implemented consistently with all patients?
  ii. **Prompt:** When do you bring it up? (e.g., first visit, subsequent visits, all visits)?

7. **To what extent are patients responsive to disclosing substance use during pregnancy?**
   - **Prompt**: Are certain substances harder to discuss?
   - **Prompt**: Is it harder to discuss substance use with new patients?

8. **What are some of the barriers you have experienced in discussing substance use during pregnancy?**
   Prompts: Time constraints, relationships and trust, stigma, knowledge and skills; unclear protocols/processes; lack of resources -- e.g., referral to treatment, social supports

INFORMATION and RESOURCES

Our purpose in performing these interviews is helping VT Department of Health understand and inform planning and priorities for communication and outreach strategies to support patients and providers. This last set of questions ask about guidance you provide to patients, and information sources important to you.

9. **What is your approach to advising and counseling your patients about using substances during pregnancy?** (note – all patients, not just those that screen positive)
   a. PROBE for each substance – alcohol, tobacco, marijuana, opioids
   b. Probe: Does your messaging or methods vary by substance?
   c. Probe: Do you use a didactic or interactive approach? [PROBE for each substance]

10. **What is your approach when patients screen positive?**
    - Probe: Does your approach vary by substance?
    d. Probe: Does your messaging or methods vary by amount of use reported?
    - Probe: Are there any other approaches to the advice you give? For example, “cutting back” or harm reduction?

11. **What resources do you refer patients to for help with reducing or stopping use? OPEN-ENDED, then PROBE:?**
    - Information, like pamphlets, web site links, booklets/homework
    - Quit line, tobacco treatment specialist
    - A co-located behavioral health provider, or behavioral health provider at your practice? (or within your health system)
    - Community resources like substance use providers, self-help groups, or alternative medicine or health groups?
    - Medication assisted treatment (NRT, methadone, buprenorphine)?
    - CHW or case/care manager
    - Are you familiar with Plans of Safe Care?

12. **Have you found these resources to be effective for your patients?**
    - **Prompt:** How do you (or staff) introduce these resources to patients?

13. **What resources do you wish you had access to or had more access to for your patients?**

    Prompts: Info on harms caused by marijuana; Harms caused by tobacco or alcohol; Screening methods, ways to engage/counsel/treat patients; Protocols or advice on screening and treatment

14. **What tips would you offer other providers around talking with patients about substances and pregnancy?**
    - **Probe:** Any advice about works well for you? Or seen in other practices or read/heard about? [NOTE whether tip is personal experience or not]

15. **Who is a trusted source of information for guidelines in addressing substance use during pregnancy?**
    - **Prompt:** How do you stay up to date on clinical guidelines related to substances and pregnancy?
    - **Prompt**: Where do you go for training on skills, competencies or continued education?

16. **If you were to receive continuing medical education on the topic of substance use and misuse during pregnancy, what format would be most useful?** (Lunch seminars/CEU courses/webinars/printed materials/media campaigns)
    - **If you were to receive resources on the topic of substance use and misuse during pregnancy, what format is most useful? (**Digital, hard copy, one-page documents, electronic reminders)

17. **Is there anything else we have not yet discussed that you'd like to share with the health department addressing substance use during pregnancy?**

[Thank provider for their time].

Vermont Pregnancy and Health Survey

Introduction

On behalf of the Vermont Department of Health, John Snow, Inc. is conducting this survey among pregnant and parenting Vermonters.

By participating in this survey, you have an opportunity to share your knowledge, experiences, and motivations around substance use during pregnancy, which will help the Health Department create communications and messaging in this area.

Participation in this survey is completely voluntary. You may stop at any time. The survey is anonymous - no personal information will be stored with your responses.

This survey will take about 15 minutes of your time. As a show of our thanks, after you complete the survey, you will receive a $10 Amazon gift card via email within a few days of survey completion.

If you have questions about this survey, please contact Amanda Baker by email (amanda_baker@jsi.com) or phone (802) 651-7458.

Thank you for taking the time to participate in this important effort.

Eligibility

1. Have you ever been pregnant? *

- Yes
- No

Eligibility

2. How long ago were you last pregnant? *

- Currently pregnant
- Within the last year
- 2-4 years ago
- 5 or more years ago

Eligibility

3. What state do you primarily live in? *

- Vermont
- Massachusetts
- New York
- New Hampshire
- Other place

Demographics

4. What is your zip code?

5. How old are you?

Sources of Information

6. During your most recent pregnancy, who or what were your trusted sources of information? Check all that apply.

- Obstetrician
- Midwife
- Primary care provider
- Counselor
- Social worker
- Home visitor/family support specialist
- Birthing class
- Partner/spouse
- Family
- Friends
- Books or articles
- Social media posts
- Websites or blogs
- Podcasts
- Trainer or yoga instructor
- Other - Write In

Pregnancy Weight Gain and Nutrition

Eating, drinking, tobacco, and marijuana consumption habits often change during pregnancy. The next few questions focus on eating - nutrition advice and weight change.

7. Did you want or need any advice on weight or nutrition (what you should eat) during your most recent pregnancy?

- Yes
- No

8. Did you receive any advice from your obstetrician or midwife or other medical provider on pregnancy weight gain and nutrition?

- No advice provided - I didn't need any
- No advice provided - I could have used some
- Some advice provided, but it was not enough, or not clear enough
- Yes advice was provided and it was satisfactory

Discussions Regarding Substance Use

Most of the rest of this survey focuses on substance use - alcohol, tobacco, and marijuana.

9. Did your obstetrician or midwife or other medical provider talk to you about...

	Yes	No	Not sure
Not using alcohol during pregnancy			
Not using tobacco during pregnancy			
Not using marijuana during pregnancy			

10. How would you describe the advice about substance use your medical provider gave you?

- No advice provided - didn't need any
- No advice provided - could have used some
- Some advice provided - but not enough, or not clear enough
- Yes advice provided - it was satisfactory

Ideas Regarding Substance Use During Pregnancy

11. Using the scale below, rate the possibility of harming the baby when one uses the following substances while pregnant:

	No possibility	Small possibility	Medium possibility	High possibility	Not sure
Alcohol					
Tobacco					
Marijuana					

12. Using the scale below, rate the possibility of harming yourself when using the following substances while pregnant?

	No possibility	Small possibility	Medium possibility	High possibility	Not sure
Alcohol					
Tobacco					
Marijuana					

Alcohol Use

13. PRIOR TO your most recent pregnancy, did you drink alcohol? *

- Yes
- No

Alcohol Use

14. PRIOR TO your most recent pregnancy, on average, on how many days in a month did you consume alcohol?

15. PRIOR TO your most recent pregnancy, on a typical day you used alcohol, how much would you consume?

- 1 drink
- 2 drinks
- 3 drinks
- 4 or more drinks

---

16. DURING your most recent pregnancy, did you try to change your alcohol consumption?

- Yes
- No

---

17. DURING your most recent pregnancy, were you able to make a change to the amount of alcohol you consumed?

- I did not try to change
- I was not able to make a change
- Yes - I stopped but used on a few occasions while pregnant
- Yes - I cut down while pregnant
- Yes - I stopped for a while but started again while pregnant
- Yes - I stopped completely while pregnant

Tobacco Use

18. PRIOR to your most recent pregnancy, did you use tobacco? *

- Yes
- No

Tobacco Use

19. PRIOR TO your most recent pregnancy, on average on how many days in a month did you use a tobacco product?

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20. PRIOR TO your most recent pregnancy, on a typical day you used tobacco what type and how much did you consume? (Check all that apply)

- [ ] Less than 1 pack of cigarettes
- [ ] 1 pack of cigarettes
- [ ] More than 1 pack of cigarettes
- [ ] Less than 1 pod of an e-cigarette
- [ ] 1 pod of an e-cigarette
- [ ] More than 1 pod of an e-cigarette
- [ ] At least 1 cigar, cigarillo, or waterpipe

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21. DURING your most recent pregnancy, did you try to change your tobacco use?

- ○ Yes
- ○ No

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22. DURING your most recent pregnancy, were you able to make a change to the amount of tobacco you consumed?

- ○ No, I did not try to make a change
- ○ No, I was not able to make a change
- ○ Yes, I stopped, but used on a few occasions while pregnant
- ○ Yes, I cut down while pregnant
- ○ Yes, I stopped for a while, but started up again while pregnant
- ○ Yes, I stopped completely while pregnant

Marijuana Use

23. PRIOR TO your most recent pregnancy, did you use marijuana? *

- ○ Yes
- ○ No

Marijuana Use

24. PRIOR TO your most recent pregnancy, on average, on how many days in a month did you use marijuana?

25. DURING your most recent pregnancy, did you try to change your marijuana use?

- Yes
- No

26. DURING your most recent pregnancy, were you able to make a change to the amount of marijuana you consumed?

- No, I did not try to make a change
- No, I was not able to make a change
- Yes, I stopped but used on a few occasions while pregnant
- Yes, I cut down while pregnant
- Yes, I stopped for a while, but started up again while pregnant
- Yes, I stopped completely while pregnant

Reasons for Change

27. What were some reasons for trying to make a change to your alcohol, tobacco, or marijuana consumption? (Check all that apply)

- [ ] Not applicable - I did not use any alcohol, tobacco, or marijuana prior to current pregnancy
- [ ] The health of my baby
- [ ] Possibility of birth defects
- [ ] What I used affected my baby
- [ ] To carry my baby to term
- [ ] So my baby was born with a healthy weight
- [ ] For my health
- [ ] Feeling judged for using during pregnancy
- [ ] Partner/spouse supportive of the idea
- [ ] Family/friends supportive of the idea
- [ ] My obstetrician/midwife/medical provider told me to/suggested I change
- [ ] Avoid Child Protective Services
- [ ] To save money
- [ ] To set a good example
- [ ] Other - Write In

Reasons for Not Changing

28. What were some reasons for not making a change, or reasons it was hard to change, your alcohol, tobacco, or marijuana consumption? (Check all that apply)

- [ ] Not applicable - I did not use any alcohol, tobacco, or marijuana prior to my most recent pregnancy
- [ ] I did not use enough alcohol, tobacco, or marijuana to require a change
- [ ] I didn't think alcohol, tobacco, or marijuana was harmful to the baby
- [ ] I didn't think alcohol, tobacco, or marijuana was harmful to me
- [ ] My partner/spouse was not supportive of me quitting or cutting down
- [ ] My family/friends were not supportive of me quitting or cutting down
- [ ] My obstetrician or midwive did not mention it
- [ ] It was really hard to cut down or quit
- [ ] Nothing I tried worked
- [ ] Stress
- [ ] Habit or addiction
- [ ] I was around other people who used substances, making it difficult to quit or cut down
- [ ] I know other people who used substances while pregnant
- [ ] I had morning sickness/nausea - marijuana seemed to help
- [ ] I didn't know how to quit
- [ ] I couldn't afford resources to help me quit
- [ ] Other - Write In

What Helps Make a Change (1 of 3)

29. Which of the following helped, or could have helped, you make a change to your alcohol, tobacco, or marijuana use?

By "could have helped" we mean something you did not try, or did not have access to, but you think could have helped you make a change.

	Actually Helped	Could Have Helped	No Opinion
Talking with my obstetrician, midwife, or other medical provider	○	○	○
Pregnancy class	○	○	○
Parent education	○	○	○
Home visitor or family support specialist	○	○	○
Support from partner/spouse	○	○	○
Support from family/friends	○	○	○
Quitting "cold turkey"	○	○	○
Adopting healthier habits (diet, exercise, yoga, meditation, sleep, etc.)	○	○	○
Focusing on self-care	○	○	○

What Helps Make a Change (2 of 3)

30. Which of the following helped, or could have helped, you make a change to your alcohol, tobacco, or marijuana use?

By "could have helped" we means something you did not try, or did not have access to, but you think could have helped you make a change.

	Actually Helped	Could Have Helped	No Opinion
Changing social activities	○	○	○
Books, articles	○	○	○
Websites, blogs, podcasts	○	○	○
Social media	○	○	○
Counselor or case manager	○	○	○
Support group	○	○	○
Text messaging or phone support	○	○	○
A smoker's quitline	○	○	○
Nicotine gum	○	○	○

What Helps Make a Change (3 of 3)

31. Which of the following helped, or could have helped, you make a change to your alcohol, tobacco, or marijuana use?

By "could have helped" we means something you did not try, or did not have access to, but you think could have helped you make a change.

	Actually Helped	Could Have Helped	No Opinion
Group therapy or family therapy	○	○	○
Help with housing, food, or transportation	○	○	○
Addiction treatment program	○	○	○
12-step program	○	○	○
Financial Incentives	○	○	○

Advice for Others

32. What advice would you give another woman trying to change their substance use - alcohol, tobacco, or marijuana - while pregnant? Does your advice differ for different substances, or if someone is trying to change their use of more than one substance?

Getting Close to the End of the Survey - Just a Few More Questions

33. Are you of Hispanic, Latina, or Spanish origin?

- Yes
- No

34. How would you describe yourself?

- [ ] American Indian or Alaska Native
- [ ] Asian
- [ ] Black or African-American
- [ ] Native Hawaiian or other Pacific Islander
- [ ] White

35. What is your household income (from all sources)?

- Less than $25,000
- $25,000 to $49,999
- $50,000 to $74,999
- $75,000 or more

End of Survey - Last Two Questions

36. Is there anything you wish you would have known when you were pregnant?

37. Is there anything else that you want to share with us to help inform future communications around substance use during pregnancy?

Reward

As a token of our thanks for taking our survey, we would like to offer you a $10 Amazon gift card. Please click yes to the question below, and enter your email address. Your email address will not be stored permenantly - it will be deleted immediately after we send you the gift card. If you prefer not to get a gift card, just click no to the question below.

38. Do you want a gift card? *

- Yes
- No

39. What is your email address?

40. Just to double check - please re-enter your email address:

Thank You!

Thanks again for taking our survey. Your response is very important to us.