

Data Report

Perinatal substance use among
New Hampshire Women
2013 - 2017

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Disclaimer

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Perinatal substance use among New Hampshire women

Pregnancy Risk Assessment Monitoring System (PRAMS) 2013-2017

Executive Summary

The use of substances in the perinatal period can have a devastating effect on mother and child. This report examines the prevalence of perinatal use of tobacco, alcohol, or marijuana by New Hampshire resident women who had a live birth in the years 2013-2017, and various associations between substance use and select health indicators.

It was found that smoking cigarettes decreases during pregnancy, but some women resume smoking shortly after giving birth. Smoking is highest among young women, and the frequency of smoking decreases with age. The women with the lowest educational attainment smoked significantly more frequently than the women with the highest educational attainment. Similarly, smoking was more frequent in the lower income group than the higher income group.

Alcohol consumption was found to be fairly consistent for all age groups before pregnancy, but during pregnancy there was a pattern of increasing use with increasing age. Drinking alcohol also increased with educational attainment as well as income level.

The use of marijuana was assessed beginning in 2016, asking about marijuana use in general without distinction between medicinal (legal) and recreational (illicit) use. It is believed that total use is under-reported, but the degree of under-reporting may be fairly constant year to year, such that reliable trends in use can be ascertained.

As with cigarette smoking, the use of marijuana decreased during pregnancy, with a small percentage resuming use after the birth. Users of marijuana are primarily young, with lesser educational attainment, and lower income. The main reason cited for the use of marijuana was to relieve stress; the relief of nausea or of vomiting were third and fourth, respectively, in the ranking of reasons which also included aiding with appetite, aiding with a chronic condition or pain, and aiding with depression or anxiety.

The use of e-cigarettes was also initially assessed in 2016, and the reported number of users among women who had a live birth in 2016-2017 is relatively small. The collection of this data is continuing on a yearly basis, and associations with various health indicators will become possible to discern as the number of respondents increases over multiple years. National data shows that e-cigarette use is growing each year, especially among the young.

Women who had an unintended pregnancy used cigarettes and marijuana significantly more frequently than did women whose pregnancy was intended, but pregnancy intention had no effect on the frequency of drinking alcohol in the three months before pregnancy.

The role of health care workers and the advice they provide, especially during prenatal care visits, is also examined.

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Perinatal substance use among New Hampshire women

Introduction

The use of substances (tobacco, alcohol, drugs) in the perinatal period can impact a fetus or infant in addition to the mother – during pregnancy, some compounds can pass through the placenta and reach the fetus. Women who desire a pregnancy may alter their behavior before or during pregnancy to reduce or eliminate the use of substances, but women often do not immediately know when they have conceived and may continue with harmful behaviors prior to becoming aware of their pregnancy.

“Drinking alcohol during pregnancy can cause miscarriage, stillbirth, and a range of lifelong physical, behavioral, and intellectual disabilities”¹ known as fetal alcohol spectrum disorders. There is no known safe amount and no safe time to drink alcohol during pregnancy; a baby’s brain is growing throughout gestation and can be affected by alcohol at any time.² Women who desire a pregnancy also should not drink alcohol because they may inadvertently expose their baby to alcohol before they know they are pregnant.

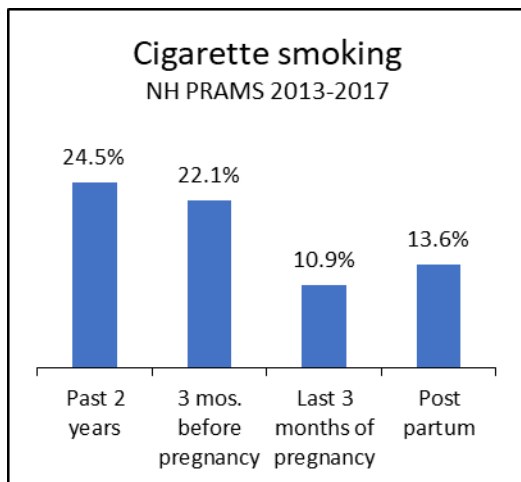
Smoking during pregnancy can increase the likelihood of pregnancy complications such as low birth weight, or prematurity which is a leading cause of illness and death among newborns.³ Smoking may increase the risk of some birth defects, such as cleft lip or palate. Even secondhand smoke exposure is harmful: “babies whose mothers are smokers are about three times more likely to die from SIDS”^{3,5} (Sudden Infant Death Syndrome). E-cigarettes (whose use is sometimes called ‘vaping’) are defined as a tobacco product⁴ and although they have not been as well studied as cigarettes, as nicotine delivery devices they should be considered to carry the same risks as cigarettes until proven otherwise.

Marijuana can affect brain development from the womb through young adulthood, resulting in delayed or impaired cognitive development.⁵ The American College of Obstetricians and Gynecologists (ACOG) recommends that obstetrician-gynecologists counsel women against using marijuana while trying to get pregnant, during pregnancy, and while they are breastfeeding.⁶ The CDC likewise recommends that pregnant women abstain from using marijuana.⁷

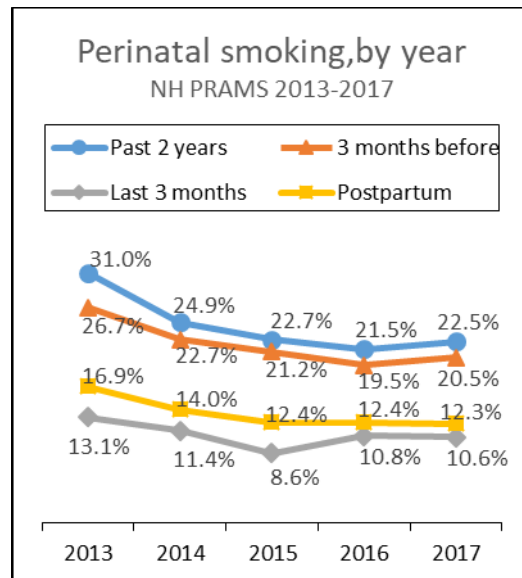
Prevalence of substance use

The use of substances occurs widely throughout New Hampshire (NH). Data was collected on substance use at various times around pregnancy through the Pregnancy Risk Assessment Monitoring System (PRAMS) survey, which was launched in New Hampshire in 2013.

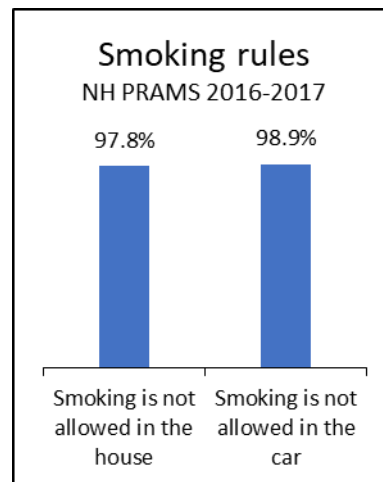
From 2013 through 2017 it was found that 24.5% of women smoked cigarettes at some time in the two years before their pregnancy, with 22.1% smoking in the three months before pregnancy. Smoking decreased during pregnancy, with 10.9% of women reporting smoking at that time. But some quitters relapsed after giving birth, and smoking increased in the postpartum period to 13.6%.



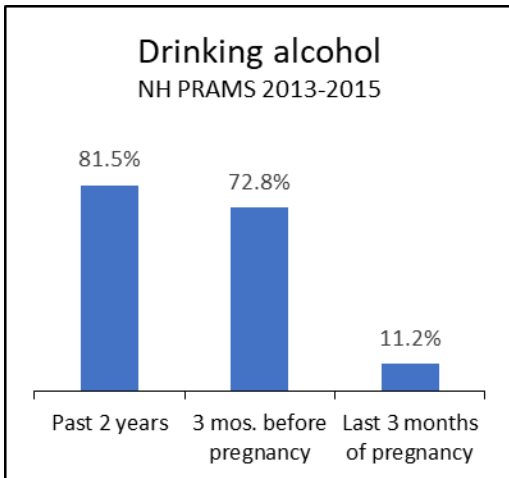
The yearly percentages of smoking in each of the four time periods assessed have been declining, with smoking in the two years before the birth dropping from 31.0% to 22.5%; smoking three months before pregnancy from 26.7% to 20.5%; smoking in the last three months of pregnancy from 13.1% to 10.6%; and smoking postpartum declining from 16.9% to 12.3%.



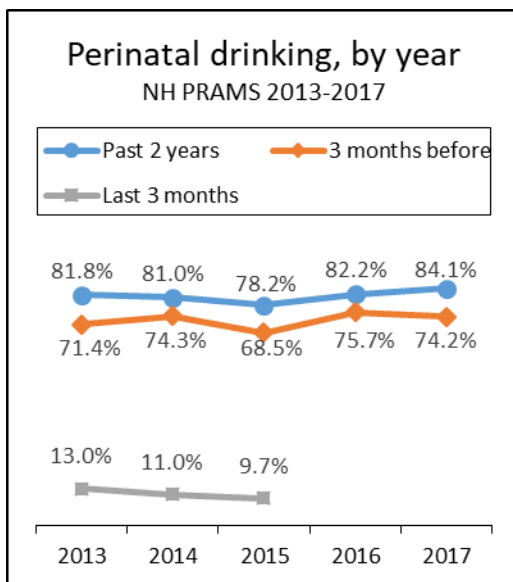
When asked about smoking rules in their home or the car in which their baby most frequently rides, over 97% reported that smoking was not allowed in either.



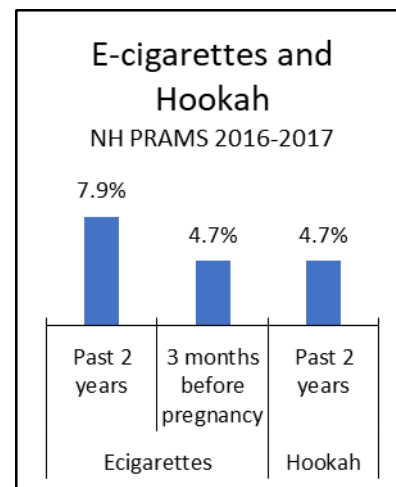
The consumption of alcohol is more prevalent than smoking, with 81.5% of women reporting that they drank alcohol in the two years before their pregnancy, and 72.5% drinking alcohol in the three months before their pregnancy; during the last three months of pregnancy, 11.2% of women reported drinking alcohol (drinking was not assessed after the pregnancy).



The yearly breakdown of drinking alcohol in the three time periods assessed does not show the same pattern of decreasing use over time as is seen in smoking cigarettes. Usage over the three or five years assessed varied between 78.2% and 84.1% for drinking in the previous two years; between 68.5% and 74.3% for drinking in the three months before pregnancy; and between 9.7% and 13.0% in the last three months of pregnancy.



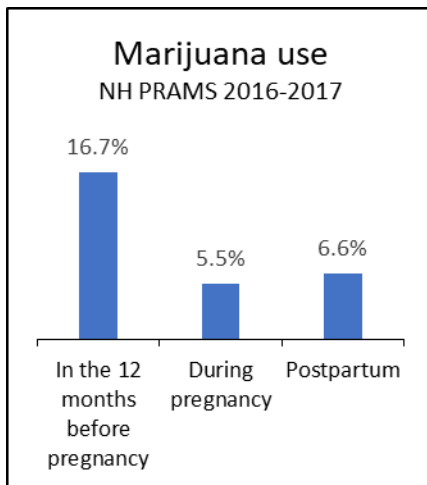
Data on the use of e-cigarettes (handheld electronic nicotine vapor devices; the use of these is widely called ‘vaping’) or hookah (defined in the survey as a water pipe used to smoke tobacco) was collected in 2016-2017. It was found that 7.9% of women used e-cigarettes in the two years before their pregnancy, and 4.7% did so in the three months before their pregnancy. The use of hookah in the two years before their pregnancy was reported by 4.7% of women. The frequency of use in other time periods was too small to report.



The 2016-2017 PRAMS survey asked about the use of marijuana or hash. Both substances come from the *Cannabis sativa* plant. Marijuana is usually thought of as the dried leaves, flowers and stems of the plant, while hash is a paste made from the sap of the cannabis plant. This report will use the term ‘marijuana’ to include both forms of cannabis.

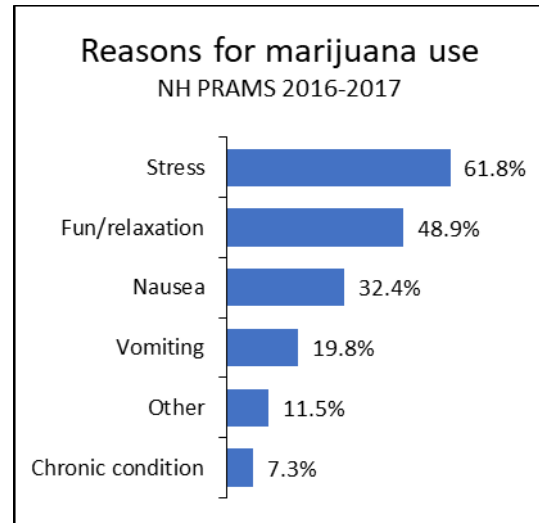
In NH, the use of marijuana is prohibited except when medically prescribed. House Bill 573 (passed and signed in 2013) authorized the use of therapeutic cannabis in the state and established a registry identification card system. The Therapeutic Cannabis Program of the Department of Health and Human Services reported 2,089 qualifying patients in 2016, and 3,493 in 2017.

The survey asked about the use of marijuana in general, without specifying medical or recreational use. Since the use of marijuana is prohibited without a prescription but its use is socially acceptable among many, it is likely that this practice is under-reported. It was found that 16.7% of women reported using marijuana in the 12 months before their pregnancy, 5.5% used it during their pregnancy, and 6.6% in the postpartum period.



Users of marijuana cited the following reasons for use: to relieve stress (61.8%), for fun or relaxation (48.9%), to relieve nausea (32.4%), to relieve vomiting (19.8%), for a chronic condition (7.3%).

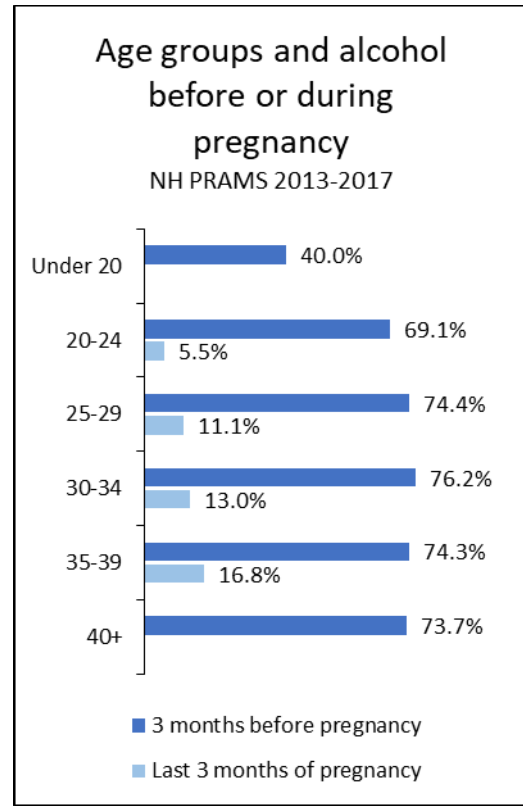
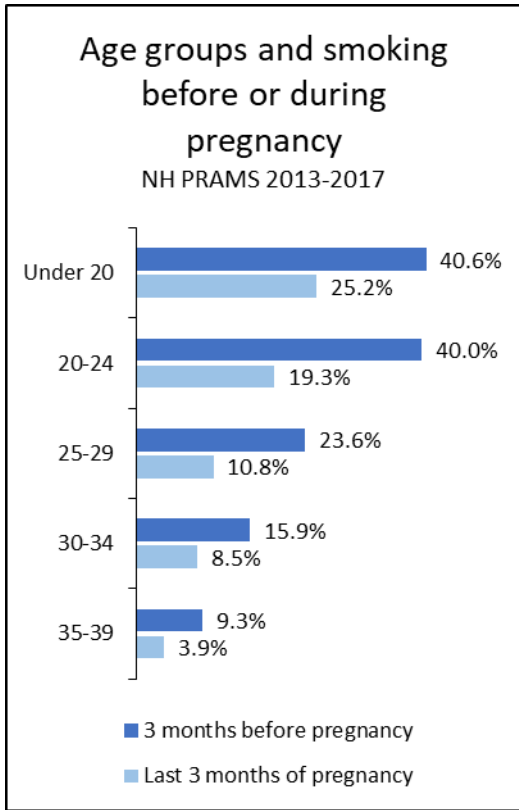
11.5% of users also cited “Other reason,” which included aiding with sleep, aiding with appetite, aiding with various chronic conditions or pain, and aiding with depression or anxiety.



In addition to personal use of substances, some women are affected by the behaviors of family or friends; 15.7% reported that someone very close to them had a problem with drinking or drugs in the year before the birth of their baby.

Prevalence by age

The use of substances varies substantially by age, according to the substance. Smoking cigarettes before or during pregnancy is more frequent among younger women, with some 40% and 25% of women in their early 20s smoking before or during pregnancy, respectively, to under 10% and under 4% of women in their late 30s, smoking before or during pregnancy, respectively. The number of smokers aged 40 and above was too small to report.

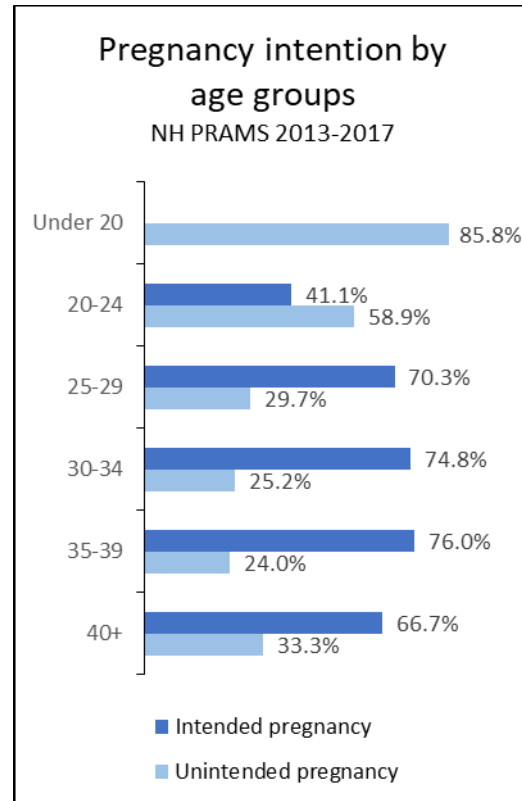
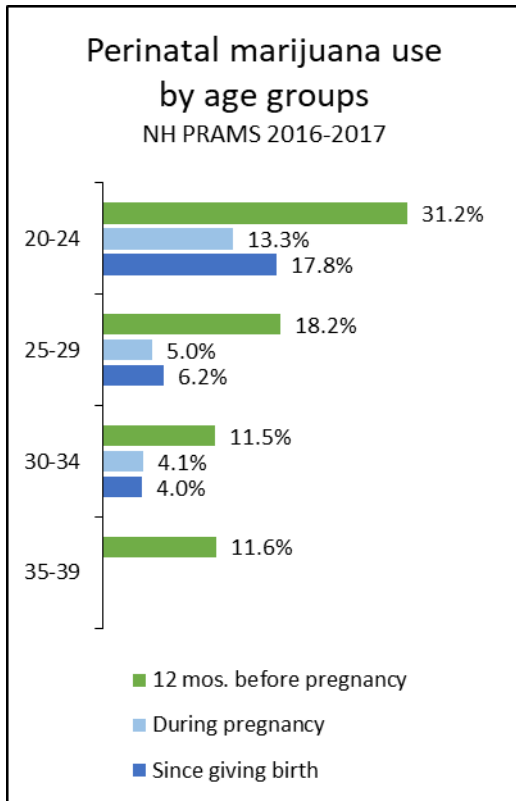


With the exception of the under-20s, all age groups had a statistically significant difference in their rates of smoking before vs. during pregnancy.

The age distribution for the consumption of alcohol is quite different from that of smoking. Drinking alcohol in the three months before pregnancy is fairly stable among those of legal drinking age (21 years of age, in NH), ranging from nearly 70% to slightly over 76%. However, drinking alcohol in the last three months of pregnancy shows an increasing pattern by age, from just over 5% among women in their early 20s, to nearly 17% among women in their late 30s. The number of women aged 40 and above who reported drinking in the last three months of pregnancy was too small to report.

The perinatal use of marijuana decreases with age, and the younger age groups have an increase in use after pregnancy, although levels of use after giving birth do not attain the same levels as are reported 12 months before pregnancy. There is insufficient data to report on women under 20 years of age or women 40 years of age and above.

Women in their early 20s are the highest consumers of marijuana in all three time periods, before, during and after pregnancy, reporting approximately two to three times more use than the other age groups.



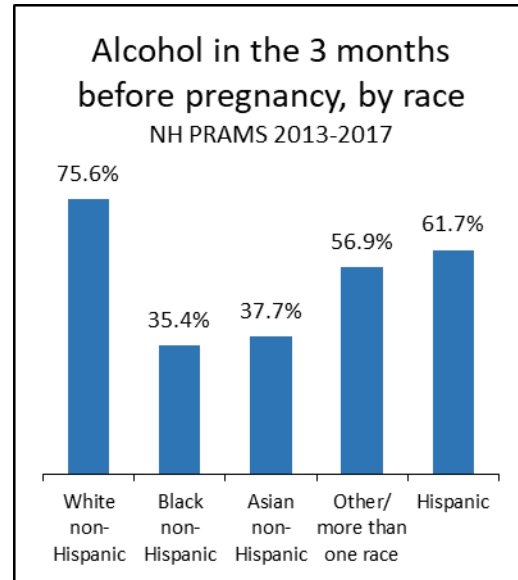
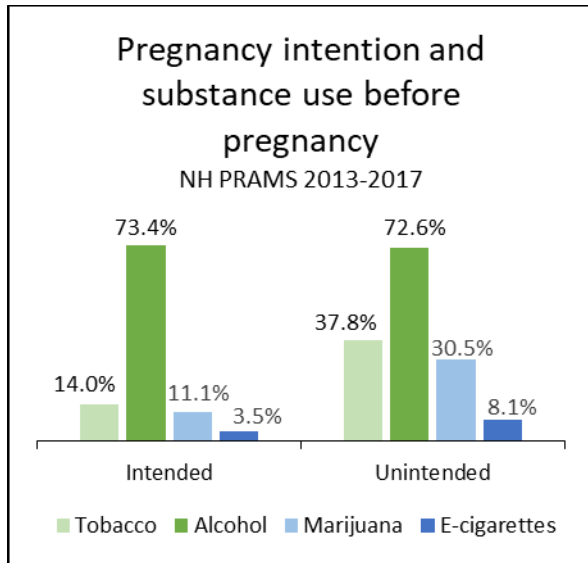
Prevalence by pregnancy intention

NH's pregnancy intention rate is 65.5%, with 34.5% of pregnancies unintended; this represents over 20,000 unintended pregnancies in the period 2013-2017.

When broken down by age it can be seen that unintended pregnancies are more frequent among young mothers, under 25 years of age, with nearly 60% of women in their early 20s having an unintended pregnancy, and over 85% of those under 20 years of age. For the older age groups, the rate varies from approximately 24%-33%. These differences are statistically significant.

As discussed above, younger women use cigarettes and marijuana at a higher rate than the older age groups. They are also having unintended pregnancies at a higher rate, and they may be using substances before becoming aware of their pregnancy. Over 37% of women with unintended pregnancies used tobacco 3 months before pregnancy (vs. 14% in intended pregnancies), over 72% drank alcohol 3 months before pregnancy (vs. 73% in intended pregnancies), over 30% used marijuana 12 months before pregnancy (vs. 11% in intended pregnancies), and over 8% used e-cigarettes 3 months before pregnancy (vs. 3.5% in intended pregnancies).

It is noteworthy that the frequency of alcohol use in the three months before pregnancy is essentially the same (73.4% and 72.6%) regardless of pregnancy intention, whereas the use of cigarettes or marijuana is significantly less when the pregnancy was intended.



Prevalence by race/ethnicity

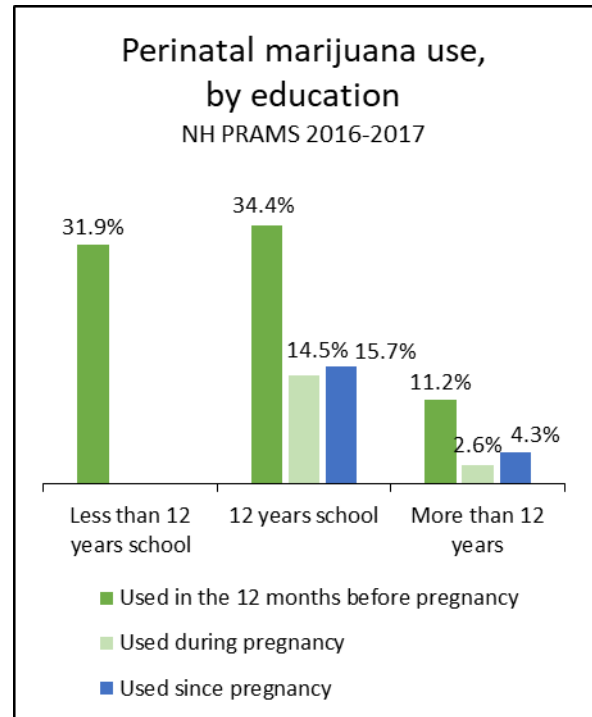
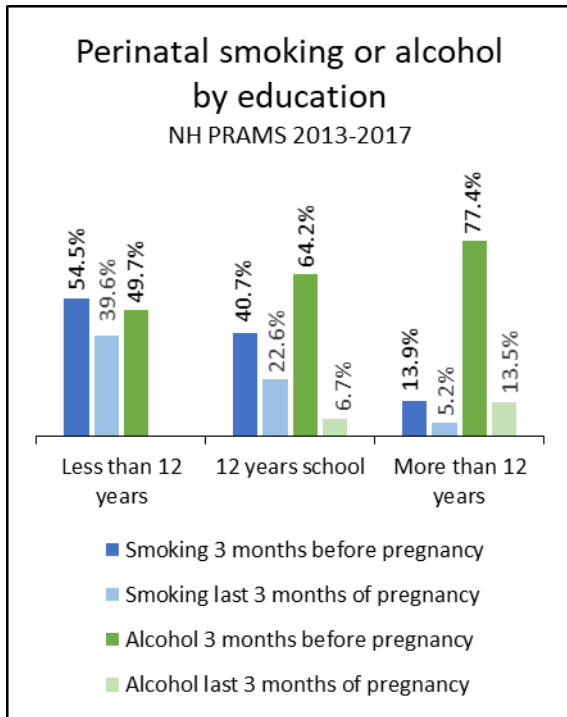
Analysis of substance use stratified by race/ethnicity was implemented, but with the exception of the Non-Hispanic White sub-group, results for the other sub-groups (Black non-Hispanic, Asian non-Hispanic, Hispanic, or more than one race/ethnicity) are not reportable for all indicators but one, due to the small numbers within each sub-group when stratified, and the instability of such small numbers.

The single indicator that had large enough numbers in the various race/ethnic groups was drinking alcohol in the three months before pregnancy. White non-Hispanic women reported the greatest frequency of pre-pregnancy drinking (75.6%), followed by Hispanics (61.7%), those of more than one race (56.9%), Asian non-Hispanics (37.7%) and Black non-Hispanics (35.4%).

Prevalence by education

The use of substances was stratified by education, showing that women with the least education (less than 12 years of schooling) had the highest rates of smoking in both the three months before pregnancy (54.5%) and the last three months of pregnancy (39.6%). And they had the lowest rates of alcohol consumption in both periods (49.7%, and a small non-reportable frequency).

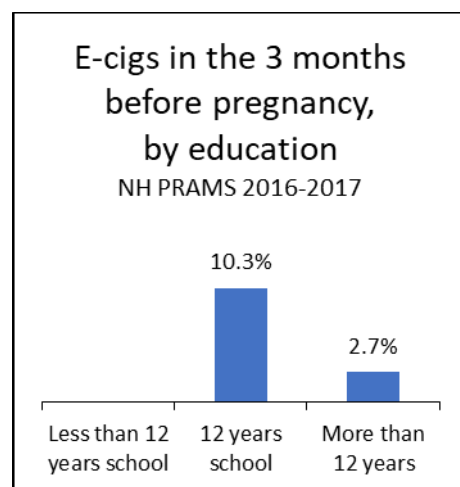
Women with the highest educational attainment (more than 12 years of schooling) had the lowest rates of smoking (13.9% before and 5.2% during pregnancy), but the highest rates of drinking alcohol (77.4% before and 13.5% during pregnancy). These differences are statistically significant.



The frequency of marijuana use was greatest in the 12 months before pregnancy for all three educational groups. The number of women with less than 12 years of schooling was very small especially in the latter two time periods, rendering them unstable and therefore not reported.

Women with 12 years of schooling (high school diploma or GED) had significantly higher rates of marijuana use in all three time periods, before, during, and after pregnancy (34.4%, 14.5%, 15.7% respectively), than women with more than 12 years of schooling (11.2%, 2.6%, 4.3%, respectively).

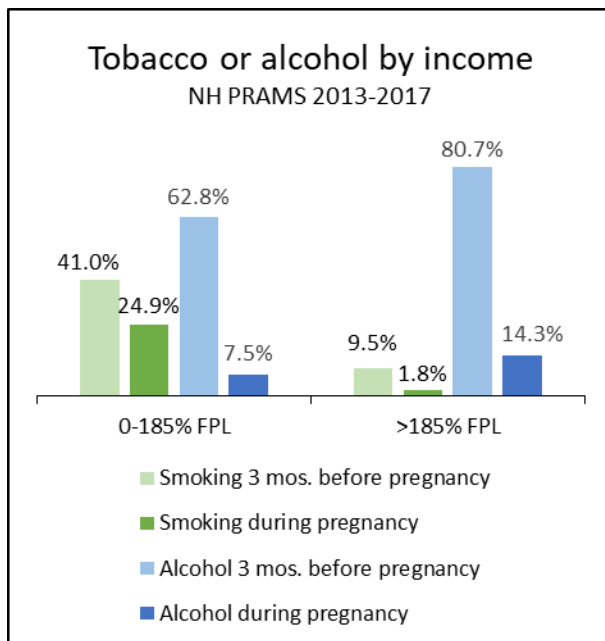
The number of e-cigarette users was small, and when stratified by education, only the pre-pregnancy time period is reportable, and only for the upper two educational groups, with 10.3% of women with a high school degree or GED using e-cigarettes in the three months before pregnancy, and 2.7% of those with more than 12 years of schooling reporting use in this time period.



Prevalence by income

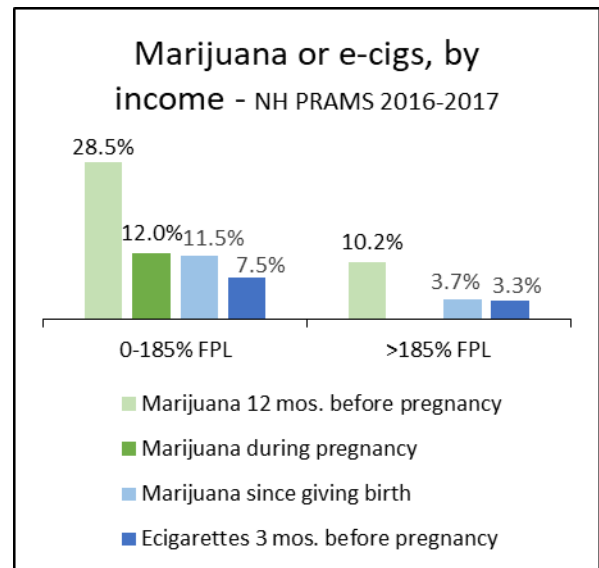
Perinatal use of tobacco or alcohol was stratified by income, using the levels below or above 185% of the Federal Poverty Level (FPL). It was found that the lower FPL group more frequently smoked cigarettes than the higher FPL group, both before and during pregnancy, with 41% smoking before and 25% smoking during pregnancy, compared to under 10% and under 2%, respectively, among the higher FPL group. These differences are statistically significant.

Alcohol consumption had the reverse pattern, with the lower FPL group drinking less frequently during both time periods: under 63% and under 8% compared to over 80% and over 14% among the higher FPL group. These differences also are statistically significant.



Perinatal use of both marijuana and e-cigarettes was more frequently reported in the lower FPL group than the higher FPL group, in all time periods. Over 28% of women in the lower FPL group used marijuana before pregnancy, compared to

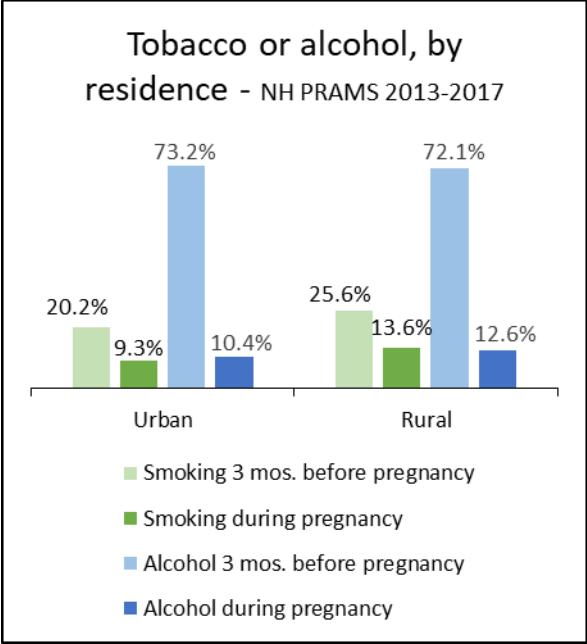
just over 10% of those in the higher FPL group. Nearly 12% in the lower FPL group used marijuana since giving birth, compared to nearly 4% in the higher FPL group. With e-cigarettes, over 7% of women in the lower FPL group were reported use, compared to just over 3% among the higher FPL group. The differences in marijuana use by income are statistically significant.



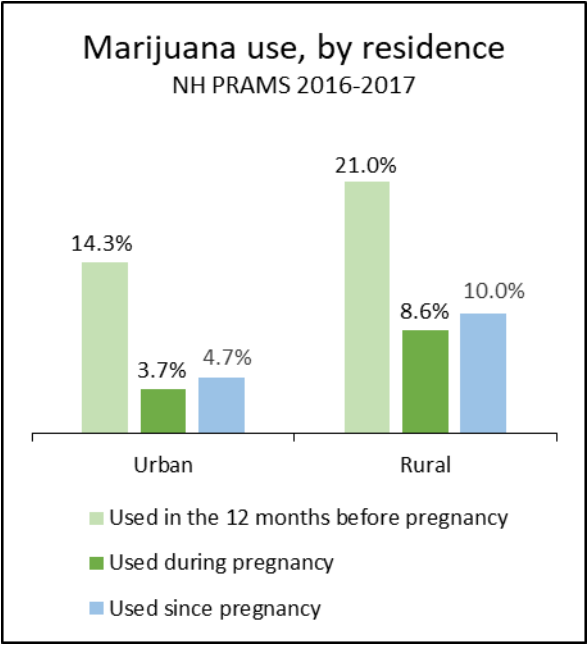
Prevalence by residence (urban/rural)

Analysis by residence showed that 63.7% of births in 2013-2017 were to women living in urban areas and 36.3% in rural areas. Area of residence is the basis of many key social determinants of health.

It was found that smoking both before and during pregnancy was significantly more frequent among rural dwellers, with 25.6% smoking before and 13.6% smoking during pregnancy, compared to 20.2% and 9.3%, respectively, among urban women. The smoking frequencies, but not the alcohol consumption frequencies, were significantly different.



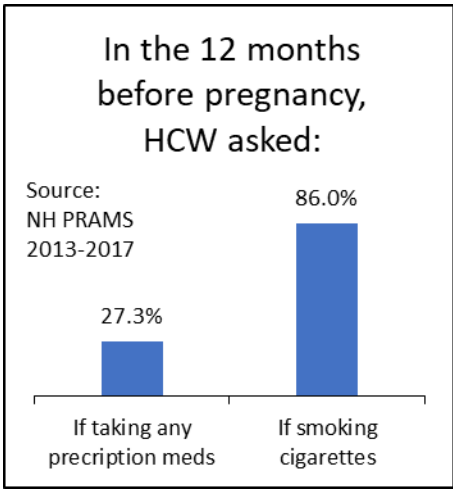
The use of marijuana (before, during, and since pregnancy) was slightly lower among urban than rural women, but the differences are not statistically significant.



Health care providers and substance use in NH

The PRAMS survey includes several questions on the roles and influence of health care workers (HCW) before, during and after pregnancy, including services provided and advice offered.

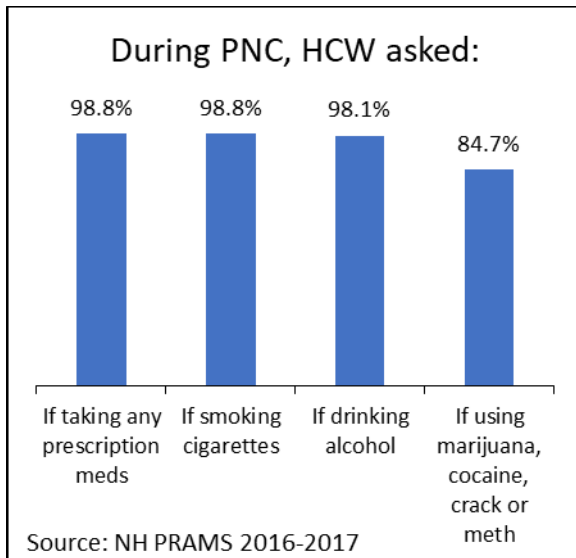
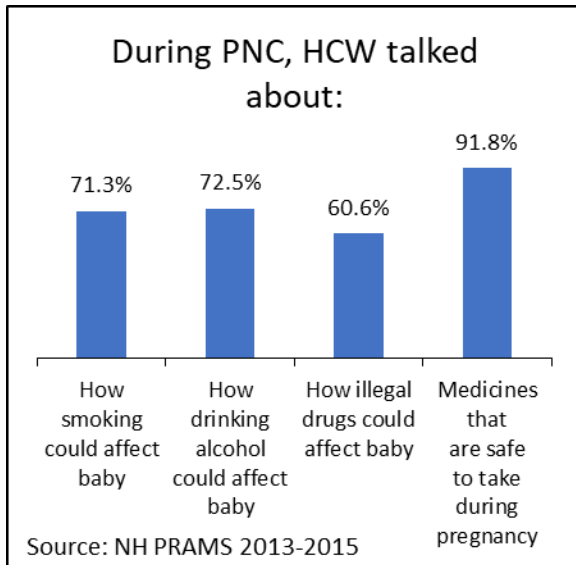
In the 12 months before pregnancy, 86% of women reported that their HCW asked if she was smoking cigarettes, but only 27% reported being asked if she was taking any prescription medications.



Prenatal consultations (PNC) typically cover a wide range of topics, and the questions asked on the PRAMS survey changed from one version of the survey (2013-2015) to the later version (2016-2017).

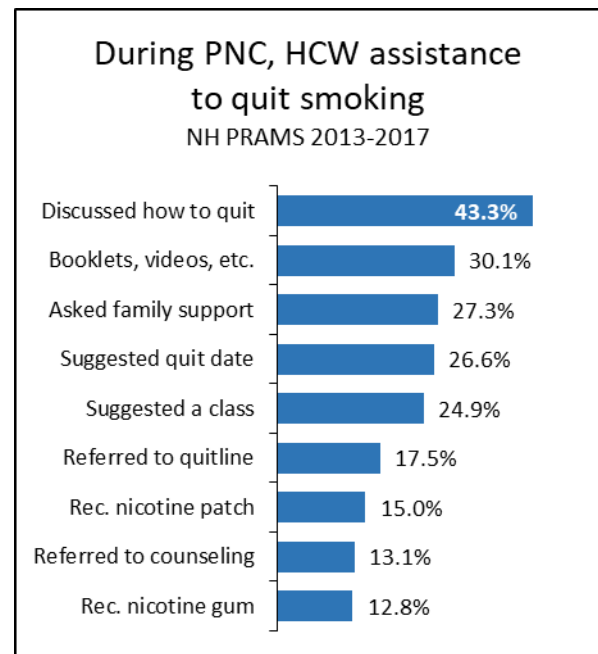
In the earlier version, some of the topics covered by HCWs during PNC visits that were asked about are shown on the graphic below; results indicate that over 90% of women were informed about medicine that is safe to take during pregnancy, slightly over 70% were advised about how smoking cigarettes or drinking alcohol could affect their baby, and 60% about how illegal drugs could affect the baby.

The questions asked on the later version of the survey are shown on the second graphic, below. Over 98% of women reported being asked during PNC visits if they were taking any prescription medications, in contrast to the 27% reporting this for a medical visit prior to pregnancy. And while over 98% reported being asked during a PNC visit about their use of prescription medications, cigarettes, or alcohol, the number who reported being asked about marijuana was lower, at approximately 85%.



During prenatal care visits, HCW advised 79.0% of smokers to quit, resulting in a missed opportunity to influence the other 21.0% of smokers.

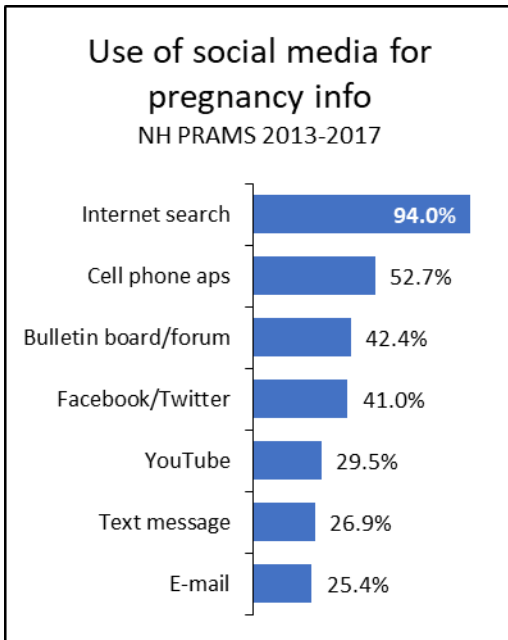
With smokers, HCW can use the PNC visit to provide important counseling regarding smoking and smoking cessation. It was found that some 43% of HCW spent time with their patient discussing how to quit, 30% provided booklets on videos on how to quit, 27% asked about support from family or friends to help with quitting, 26% suggested setting a quit date, 25% suggested joining program or class to quit, 17% provided a referral to a quitline, 15% recommended a nicotine patch, 13% referred to counseling, and nearly 13% recommended nicotine gum.



During a postpartum checkup, 65% of women were asked if they were smoking cigarettes, and 35% were not asked.

Social media

The PRAMS survey included questions about the use of social media to find information on pregnancy issues. It was learned that some 94% of women reported using internet searches for this purpose, and over 50% used cell phone applications. Facebook or Twitter was used by over 48%, a bulletin board by over 42%, You Tube by nearly 30%, and approximately 25% used text messages or email. Social media is widely used and may perhaps be further tapped to reach young women of child-bearing age who are using substances from which they should abstain especially in the perinatal period.



Recommendations

1. All women of child-bearing age should be screened for substance use, due to under-reporting of substance use (particularly if/when use is illegal) and due to the substantial number of unintended pregnancies.
2. All medical visits should be used as an opportunity to inform women that there is no known safe amount and no safe time to drink alcohol during pregnancy; a baby's brain is growing throughout pregnancy and can be affected by alcohol (or other substances) at any time.
3. Women who desire a pregnancy also should not drink alcohol because they may inadvertently expose their baby before they know they are pregnant. They should abstain from smoking cigarettes or using cannabis in any form.
4. Referrals should be made to local, state and national resources such as quitlines or support groups, such as those listed in the Resources section below.
5. Social media may be utilized to reach and inform women of child-bearing age, the majority of whom are already using various forms of social media on a regular basis.

* * * * *

PRAMS Survey Methodology

The Pregnancy Risk Assessment Monitoring System (PRAMS) is a surveillance project of the CDC, conducted through cooperative agreements with state health departments. PRAMS collects self-reported data on maternal behaviors and experiences shortly before, during and after pregnancy. In New Hampshire (NH), PRAMS-eligible women are all NH residents who have a live birth in one calendar year. Approximately one in 12 women are randomly selected and asked to participate between two and six months after giving birth. Out-of-state births to NH residents are included in the sampling plan due to the high proportion of births occurring out-of-state (approximately 10% annually).

Data collected through PRAMS are linked to birth certificate data, allowing the survey data to be weighted to reflect the total population of resident women who have a live birth. Sampling, non-response and non-coverage weights are applied. Population estimates are obtained using the analysis weights and survey design variables. See the [NH PRAMS 2016 Data Book](#) [external link] for more information.

The PRAMS survey assessed the use of cigarettes and alcohol in the Phase 7 version of the survey, fielded in 2013-2015. Phase 8 of the survey, implemented in 2016-2017 continued the assessment of cigarettes and alcohol and added e-cigarettes or other nicotine devices (hookah), as well as marijuana or hash.

Data analysis

Analysis for this report was done using SAS survey analysis procedures for complex survey design (version 9.4). Associations between substance use and other characteristics, as well as some demographic variables from the birth certificate were examined.

NB: when the number of respondents is less than 10, or the relative standard error is greater than 0.30, estimates are statistically unreliable and therefore not reported. Differences characterized as ‘significant’ have a 95% probability of being truly different, and not the result of random chance.

The frequencies cited in this report, along with their 95% confidence intervals, are listed in the data table located in the Appendix; the number of responses and the annual population estimate for each indicator are also provided. The 95% confidence interval denotes the range within which the true population value falls, with a 95% degree of certainty.

Limitations

PRAMS data are self-reported and may be subject to social desirability bias or inaccuracies leading to reporting bias. The use of these substances is generally considered harmful to health, and in some circumstances illegal, and so their use is likely under-reported. For example, a study of pregnant women 24 years or age and under in California has found that approximately twice as many women were likely to test positive for marijuana use as indicated in self-reports.⁸

The survey is typically administered two to four months after the birth occurs, and early responders may not yet have experienced postpartum depression. The survey is available only in English, so mothers with limited English proficiency may not participate. Also, this report presents unadjusted associations between various factors and perinatal depression, and thus causal relationships cannot be determined.

The teen birth rate in NH is very low: 9.3 per 1000 females aged 15-19 in 2016, compared to 20.3 per 1000 nationally (<https://www.cdc.gov/nchs/pressroom/states/newhampshire/newhampshire.htm>). Consequently, data specific to women under 20 years of age frequently cannot be reported due to small numbers and their inherent instability.

Resources

NH Bureau of Drug and Alcohol Services

1-800-804-0909 or 603-271-6738

<http://www.dhhs.nh.gov/dcbcs/bdas/documents/guide.pdf>

QuitNow-NH

1-800-QUIT-NOW (784-8669)

<http://www.QuitNowNH.org>

Drug-Free NH

1-800-804-0909 [or] 603-271-6738

<http://www.drugfreenh.org>

Text4Baby - Free weekly texts with health information for pregnant women and new moms
Text BABY to 511411

NH Treatment Locator

<https://nhtreatment.org/>

Statewide Addiction Crisis Line

Call toll-free 1-844-711-HELP (4357) or via email: hope@keystonehall.org.

The New Hampshire Center for Excellence

<https://nhcenterforexcellence.org/>

Provides technical assistance, disseminates data and information, and promotes knowledge transfer to support the effectiveness of communities, practitioners, policymakers, and other stakeholders working to reduce alcohol and other drug misuse and related consequences.

Alcohol Use in Pregnancy

Centers for Disease Control and Prevention

<https://www.cdc.gov/ncbddd/fasd/alcohol-use.html>

Smoking During Pregnancy

Centers for Disease Control and Prevention

https://www.cdc.gov/tobacco/basic_information/health_effects/pregnancy/index.htm

Marijuana Use and Pregnancy

Centers for Disease Control and Prevention

<https://www.cdc.gov/marijuana/factsheets/pregnancy.htm>

Can marijuana use during and after pregnancy harm the baby?

National Institutes of Health/ National Institute on Drug Abuse

<https://www.drugabuse.gov/publications/research-reports/marijuana/can-marijuana-use-during-pregnancy-harm-baby>

Substance Use While Pregnant and Breastfeeding

National Institutes of Health/ National Institute on Drug Abuse

<https://www.drugabuse.gov/publications/research-reports/substance-use-in-women/substance-use-while-pregnant-breastfeeding>

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Indicators cited in this report

	Percent Yes	95% CI		Total Responses	Annual Population Estimate
		Lower	Upper		
⑤ = 5 years of data, 2013-2017 ③ = 3 years of data, 2013-2015 ② = 2 years of data, 2016-2017					
Cigarette smoking ⑤					
Past 2 years	24.5	22.7	26.5	781	2,930
3 months before pregnancy	22.1	20.3	24.1	700	2,646
Last 3 months of pregnancy	10.9	9.5	12.4	378	1,303
Smoking now	13.6	12.1	15.2	468	1,627
Perinatal smoking, by year ⑤					
Past 2 years					
2013	31.0	26.8	35.7	200	3,745
2014	24.9	21.0	29.2	168	2,965
2015	22.7	18.9	27.0	155	2,710
2016	21.5	17.6	26.0	129	2,573
2017	22.5	18.3	27.3	129	2,657
3 months before pregnancy					
2013	26.7	22.7	31.2	174	3,223
2014	22.7	19.0	27.0	152	2,709
2015	21.2	17.5	25.4	142	2,530
2016	19.5	15.7	24.0	114	2,350
2017	20.5	16.5	25.2	118	2,419
Last 3 months of pregnancy					
2013	13.1	10.1	16.8	97	1,578
2014	11.4	8.7	14.7	91	1,356
2015	8.6	6.2	11.7	69	1,022
2016	10.8	7.9	14.6	58	1,295
2017	10.6	7.7	14.6	63	1,263
Postpartum					
2013	16.9	13.5	20.9	121	2,038
2014	14.0	11.0	17.6	110	1,669
2015	12.4	9.5	15.9	91	1,477
2016	12.4	9.2	16.4	70	1,488
2017	12.3	9.2	16.4	76	1,463
Smoking rules ②					
Is not allowed in the house	97.8	96.3	98.7	1,110	11,609
Is not allowed in the car	98.9	97.8	99.5	1,122	11,728
Drinking alcohol ⑤					
Past 2 years	81.5	79.7	83.1	2,453	9,755
3 months before pregnancy	72.8	70.8	74.7	2,148	8,693
Last 3 months of pregnancy	11.2	9.6	13.1	188	1,345

	Percent	95% CI		Total Responses	Annual Population Estimate
	Yes	Lower	Upper		
Drinking alcohol, by year^⑤					
Past 2 years					
2013	81.8	77.8	85.2	522	9,871
2014	81.0	77.0	84.5	507	9,695
2015	78.2	74.1	81.9	477	9,422
2016	82.2	78.1	85.7	472	9,822
2017	84.1	79.9	87.6	475	9,967
3 months before pregnancy					
2013	71.4	66.9	75.5	448	8,588
2014	74.3	70.0	78.2	456	8,888
2015	68.5	64.0	72.8	408	8,176
2016	75.7	71.2	79.7	419	9,065
2017	74.2	69.4	78.4	417	8,750
Last 3 months of pregnancy					
2013	13.0	10.1	16.5	73	1,562
2014	11.0	8.3	14.3	60	1,311
2015	9.7	7.2	12.8	55	1,161
E-cigarettes^②					
Past 2 years	7.9	6.1	10.3	88	936
3 months before pregnancy	4.7	3.3	6.7	46	556
Hookah^②					
Past 2 years	4.7	3.3	6.5	48	546
Marijuana use^②					
In the 12 months before pregnancy	16.7	14.1	19.7	186	1,991
During pregnancy	5.5	4.0	7.5	68	644
Postpartum	6.6	4.9	8.8	73	778
Reasons for marijuana use^②					
Stress	61.8	53.0	69.8	123	1,320
Fun/relaxation	48.9	40.2	57.8	90	1,046
Nausea	32.4	24.6	41.3	67	693
Vomiting	19.8	13.6	27.9	47	423
Other	11.5	7.0	18.3	32	245
Chronic condition	7.3	3.9	13.3	19	157
Someone very close had a problem with drinking or drugs^③	15.7	13.8	17.8	300	1,878

	Percent	95% CI		Total Responses	Annual Population Estimate
	Yes	Lower	Upper		
Age groups and smoking^⑤					
3 months before pregnancy					
Under 20	40.6	29.3	53.0	51	170
20-24	40.0	34.8	45.5	210	824
25-29	23.6	20.2	27.4	208	824
30-34	15.9	13.2	18.9	169	620
35-39	9.3	6.5	13.2	46	159
40+	(*)	(*)	(*)	(*)	(*)
Last 3 months of pregnancy					
Under 20	25.2	16.2	37.0	31	105
20-24	19.3	15.3	24.0	112	397
25-29	10.8	8.4	13.7	112	378
30-34	8.5	6.5	11.0	94	333
35-39	3.9	2.2	6.8	22	67
40+	(*)	(*)	(*)	(*)	(*)
Age groups and alcohol use^⑤					
3 months before pregnancy					
Under 20	40.0	28.6	52.5	43	167
20-24	69.1	63.8	74.0	335	1,413
25-29	74.4	70.7	77.8	613	2,616
30-34	76.2	72.9	79.1	759	2,978
35-39	74.3	69.1	78.8	329	1,260
40+	73.7	61.3	83.2	69	258
Last 3 months of pregnancy					
Under 20	(*)	(*)	(*)	(*)	(*)
20-24	5.5	3.2	9.5	16	74
25-29	11.1	8.2	14.9	52	229
30-34	13.0	10.1	16.5	68	295
35-39	16.8	12.0	22.9	39	156
40+	(*)	(*)	(*)	(*)	(*)
Age groups and marijuana^②					
3 months before pregnancy					
Under 20	(*)	(*)	(*)	(*)	(*)
20-24	31.2	22.7	41.2	53	531
25-29	18.2	13.6	24.1	62	666
30-34	11.5	8.1	16.0	44	472
35-39	11.6	6.8	19.1	16	226
40+	(*)	(*)	(*)	(*)	(*)

	Percent	95% CI		Total Responses	Annual Population Estimate
	Yes	Lower	Upper		
During pregnancy					
Under 20	(*)	(*)	(*)	(*)	(*)
20-24	13.3	7.8	21.8	25	226
25-29	5.0	2.7	8.9	20	179
30-34	4.1	2.1	7.6	16	165
35-39	(*)	(*)	(*)	(*)	(*)
40+	(*)	(*)	(*)	(*)	(*)
Since giving birth					
Under 20	(*)	(*)	(*)	(*)	(*)
20-24	17.8	11.2	27.3	24	301
25-29	6.2	3.7	10.4	22	224
30-34	4.0	2.2	7.3	18	165
35-39	(*)	(*)	(*)	(*)	(*)
40+	(*)	(*)	(*)	(*)	(*)
Unintended pregnancies^⑤	34.5	32.4	36.6	998	4,078
Age and pregnancy intention^⑤					
Under 20 : intended	(*)	(*)	(*)	(*)	(*)
Under 20 : unintended	85.8	74.2	92.7	84	344
20-24 : intended	41.1	35.8	46.6	196	843
20-24 : unintended	58.9	53.4	64.2	283	1,207
25-29 : intended	70.3	66.4	73.9	586	2,446
25-29 : unintended	29.7	26.1	33.6	248	1,032
30-34 : intended	74.8	71.5	77.9	771	2,893
30-34 : unintended	25.2	22.1	28.5	242	972
35-39 : intended	76.0	70.9	80.4	347	1,285
35-39 : unintended	24.0	19.6	29.1	111	406
40+ : intended	66.7	54.2	77.2	70	232
40+ : unintended	33.3	22.8	45.8	30	116
Pregnancy intention and substance use in the 3 months before pregnancy					
Intended pregnancy					
Tobacco ^⑤	14.0	12.2	16.0	289	1,080
Alcohol ^⑤	73.4	70.9	75.7	1,425	5,638
Marijuana ^②	11.1	8.7	14.1	88	934
E-cigarettes ^②	3.5	2.1	5.8	22	290
Unintended pregnancy					
Tobacco ^⑤	37.8	34.2	41.6	403	1,530
Alcohol ^⑤	72.6	69.1	75.9	697	2,946
Marijuana ^②	30.5	24.3	37.6	94	997
E-cigarettes ^②	8.1	4.9	13.1	23	264

	Percent	95% CI		Total Responses	Annual Population Estimate
	Yes	Lower	Upper		
Drinking alcohol, by race^⑤					
White non-Hispanic	75.6	73.6	77.6	1,960	7,895
Black non-Hispanic	35.4	19.9	54.8	21	58
Asian non-Hispanic	37.7	27.7	48.8	39	164
Other/more than one race	56.9	41.0	71.5	27	150
Hispanic	61.7	50.1	72.1	69	273
Education and smoking or alcohol^⑤					
Less than 12 years schooling					
Smoking 3 months before	54.5	44.8	63.8	110	393
Smoking last 3 months	39.6	30.6	49.3	87	286
Alcohol 3 months before	49.7	40.2	59.2	87	363
Alcohol last 3 months	(*)	(*)	(*)	(*)	(*)
12 years schooling					
Smoking 3 months before	40.7	35.7	45.8	247	1,020
Smoking last 3 months	22.6	18.5	27.2	148	568
Alcohol 3 months before	64.2	59.2	69.0	351	1,620
Alcohol last 3 months	6.7	4.1	10.6	19	175
More than 12 years schooling					
Smoking 3 months before	13.9	12.3	15.7	334	1,202
Smoking last 3 months	5.2	4.2	6.4	140	447
Alcohol 3 months before	77.4	75.3	79.4	1700	6,661
Alcohol last 3 months	13.5	11.5	15.8	163	1141
Education and marijuana use^②					
Less than 12 years schooling					
Used in the 12 months before pregnancy	31.9	17.7	50.5	18	189
Used during pregnancy	(*)	(*)	(*)	(*)	(*)
Used since pregnancy	(*)	(*)	(*)	(*)	(*)
12 years schooling					
Used in the 12 months before pregnancy	34.4	26.2	43.7	60	801
Used during pregnancy	14.5	9.1	22.4	28	334
Used since pregnancy	15.7	10.0	23.9	25	360
More than 12 years schooling					
Used in the 12 months before pregnancy	11.2	9.0	13.9	107	998
Used during pregnancy	2.6	1.6	4.0	31	226
Used since pregnancy	4.3	3.0	6.3	43	385
Education and e-cigarettes in the 3 months before pregnancy^⑤					
12 years of school	10.3	5.8	17.6	20	238
More than 12 years of school	2.7	1.6	4.4	20	237

	Percent	95% CI		Total Responses	Annual Population Estimate
	Yes	Lower	Upper		
Income and tobacco or alcohol ^⑤					
0-185% FPL					
Smoking 3 months before	41.0	37.4	44.7	493	1,837
Smoking last 3 months	24.9	21.8	29.3	322	1,114
Alcohol 3 months before	62.8	59.2	66.3	670	2,809
Alcohol last 3 months	7.5	5.4	10.3	50	351
>185% FPL					
Smoking 3 months before	9.5	8.0	11.3	165	664
Smoking last 3 months	1.8	1.2	2.7	32	123
Alcohol 3 months before	80.7	78.5	82.8	1,416	5,625
Alcohol last 3 months	14.3	12.0	17.0	135	962
Income and marijuana or e-cigs ^②					
0-185% FPL					
Marijuana 12 months before pregnancy	28.5	22.9	34.8	106	1,182
Marijuana during pregnancy	12.0	8.2	17.0	51	489
Marijuana since giving birth	11.5	7.8	16.6	43	467
E-cigs 3 months before pregnancy	7.5	4.6	12.1	25	310
>185% FPL					
Marijuana 12 months before pregnancy	10.2	7.9	13.1	74	749
Marijuana during pregnancy	(*)	(*)	(*)	(*)	(*)
Marijuana since giving birth	3.7	2.3	5.7	27	267
E-cigs 3 months before pregnancy	3.3	2.0	5.5	19	242
Residence ^⑤					
Urban	63.7	61.6	65.7	1,913	7,681
Rural	36.3	34.3	38.4	1,119	4,376
Residence and tobacco or alcohol ^⑤					
Urban					
Smoking 3 months before	20.2	18.2	22.5	407	1,533
Smoking last 3 months	9.3	7.8	11.1	205	711
Alcohol 3 months before	73.2	70.7	75.6	1,373	5,562
Alcohol last 3 months	10.4	8.5	12.7	113	793
Rural					
Smoking 3 months before	25.6	22.5	29.0	293	1,113
Smoking last 3 months	13.6	11.2	16.4	173	592
Alcohol 3 months before	72.1	68.8	75.2	775	3,131
Alcohol last 3 months	12.6	9.9	15.8	75	552

	Percent	95% CI		Total Responses	Annual Population Estimate
	Yes	Lower	Upper		
Residence and marijuana before pregnancy ^②					
Urban					
Marijuana 12 months before pregnancy	14.3	11.4	17.8	111	1,091
Marijuana during pregnancy	3.7	2.3	5.8	33	279
Marijuana since giving birth	4.7	3.1	7.0	37	353
Rural					
Marijuana 12 months before pregnancy	21.0	16.3	26.7	75	900
Marijuana during pregnancy	8.6	5.6	13.1	35	365
Marijuana since giving birth	10.0	6.7	14.7	36	425
In 12 mos. before pregnancy, HCW asked: ^⑤					
If taking any prescription meds	27.3	24.9	29.7	551	3,284
If smoking cigarettes	86.0	83.0	88.5	781	8,028
During PNC, HCW talked about: ^③					
How smoking could affect baby	71.3	68.8	73.7	1,334	8,451
How alcohol could affect baby	72.5	70.0	74.9	1,348	8,571
How illegal drugs could affect baby	60.6	57.9	63.3	1,146	7,161
Medicines safe during pregnancy	91.8	90.2	93.2	1,678	10,868
During PNC, HCW advised smokers to quit ^②	79.0	71.2	85.2	173	1,787
During PNC, HCW asked: ^②					
If taking any prescription meds	98.8	97.4	99.4	1,118	11,693
If smoking cigarettes	98.8	97.5	99.4	1,118	11,693
If drinking alcohol	98.1	96.7	98.8	1,107	11,593
If using marijuana, cocaine, crack, meth	84.7	82.0	87.0	961	9,971
During PNC, HCW assistance to quit smoking ^⑤					
Spent time discussing how to quit	43.3	38.3	48.4	301	999
Provided booklets, videos, etc.	30.1	25.5	35.0	215	693
Asked about family support	27.3	22.9	32.1	184	625
Suggested setting quit date	26.6	22.3	31.3	183	609
Suggested a class or program	24.9	20.7	29.7	163	572
Referred to a quitline	17.5	13.9	21.9	118	397
Recommended nicotine patch	15.0	11.7	19.1	117	341
Referred to counseling	13.1	10.0	17.0	93	301
Recommended nicotine gum	12.8	9.8	16.6	98	291
During a postpartum check, HCW asked if she was smoking cigarettes ^②	65.3	61.9	68.7	709	7,336

	Percent	95%		Total Responses	Annual Population Estimate
	Yes	Lower	Upper		
Use of social media for pregnancy info ⑤					
Internet search	94.0	92.8	94.9	2840	11,324
Cell phone apps	52.7	49.2	56.2	610	2,525
Facebook/Twitter	41.0	38.9	43.1	1,239	4,945
Bulletin board/forum	42.4	40.3	44.5	1,296	5,111
YouTube	29.5	26.4	32.8	347	1,413
Text message	26.9	25.1	28.8	808	3,243
Email	25.4	23.6	27.3	778	3,067

② data years 2016-2017

③ data years 2013-2015

⑤ data years 2013-2017

The population estimates have been adjusted to represent the annual frequency for each indicator, regardless of the number of data years.

Data is suppressed and represented with an asterisk (*) when the sampled number of responses is less than ten or when the relative standard error of the estimate is large ($\geq 30\%$ of the estimate) which indicates that the estimate has high variability and is not reliable.