Spring 2022

Perinatal Patient Education on Substance Use Risk Factors in the Age of the Opioid Crisis

Rebecca Ane Leary
University of New Hampshire, Durham

Alyssa O'Brien
University of New Hampshire, Durham

Perinatal Patient Education on Substance Use Risk Factors in the Age of the Opioid Crisis

Rebecca Leary

Honors Thesis

Advisor: Alyssa O'Brien, PhD, RN

Department of Nursing, University of New Hampshire

NURS 797W.01: Honors Thesis

Dr. Kerry Nolte

May 20, 2022

Abstract

From 2014 to 2016, NH ranked first for fentanyl and all opioid-related overdose deaths per capita in the United States (Moore et al., 2021). In 2016 the New Hampshire Department of Health and Human Services (NH DHHS) found that there are many repercussions of this opioid crisis including overdose deaths, child and elder abuse, and newborns experiencing withdrawal. In utero substance exposure places a child at a higher risk for developmental, behavioral, and physical health concerns. To address this gap, a secondary data analysis using NH Pregnancy Risk Assessment Monitoring System (PRAMS) data from 2013 to 2020 was conducted. PRAMS data identifies groups of infants and women at high risk for health problems (CDC, 2021). Variables from three domains were analyzed; what healthcare providers talked about with the patient during pregnancy, reported risk behaviors in pregnancy, and postpartum outcomes. The data analysis revealed that over time, more participants have reported conversations with their care providers regarding the substance use risk factors of smoking and abuse. This finding called for a further investigation as to what happened between 2014 and 2017 in terms of prenatal care and healthcare provider conversations. Perinatal care bundles from the Alliance for Innovation on Maternal Health (AIM) work to best address the leading causes of preventable maternal morbidity and mortality (AIM, 2020). The increase and improvement in risk assessment by perinatal providers continues due to the emergence of care bundles that improve the quality and safety of care provided to pregnant women with substance use disorders.

Keywords: PRAMS, New Hampshire, provider knowledge, care bundles, stigma

Perinatal Patient Education on Substance Use Risk Factors in the Age of the Opioid Crisis

Background and Significance

The opioid crisis has directly affected every region of the United States. The opioid crisis refers to both prescription pain relief medications as well as non-prescription drugs such as heroin. Opioids are highly addictive. In 2016 the New Hampshire Department of Health and Human Services (NH DHHS) found that there are many repercussions of this opioid crisis including overdose deaths, child and elder abuse, and newborns experiencing withdrawal. Approximately 800,000 infants are born annually in the United States to women who used drugs during pregnancy (Joseph, 2020). Neonatal abstinence syndrome (NAS) are postpartum symptoms of drug withdrawal in an infant because of maternal drug use during pregnancy (NH DHHS, 2015). Symptoms of NAS appear in the newborn upon discontinuation of the drug to which they were exposed in utero. A newborn diagnosed with NAS can experience central nervous system excitation, autonomic nervous system dysfunction, and gastrointestinal dysfunction. These withdrawal symptoms will appear within the first 24 to 96 hours of life (Joseph, 2020). Each year it is estimated that 15% of newborns are affected by exposure to alcohol or illicit drugs in utero (Office of the Child Advocate, 2019).

In 2017 New Hampshire (NH) had the 3rd highest rate of overdose deaths in the United States, with only West Virginia and Ohio reporting more overdose deaths per capita (United States Drug Enforcement Administration, 2020). From 2014 to 2016, NH ranked first for fentanyl and all opioid-related overdose deaths per capita in the United States (Moore et al., 2021). An increase in maternal drug use has led to an increase in the number of newborns diagnosed with NAS. In 2015, 2.4% of NH births were diagnosed with NAS (NH DHHS, 2015). From July 2018 to September 2019, 3.52% of infants born in NH were monitored for signs of

opioid withdrawal or NAS. The NH Pregnancy Risk Assessment Monitoring System (PRAMS)

Team found that from 2013 through 2017, 10.9% of women reported smoking during the last

three months of their pregnancy (New Hampshire PRAMS Team, 2018). Smoking and opioid

misuse co-occur at strikingly high rates. Smoking is another risk for poor health outcomes

(Lichenstein et al., 2019). In addition, from 2013 to 2015, 11.2% of expecting mothers consumed

alcohol during the last three months of their pregnancy (New Hampshire PRAMS Team, 2018).

The consumption of alcohol and illegal drugs are associated with the occurrence of intimate

partner violence (Madruga, 2017). In utero substance exposure places a child at a higher risk for

developmental, behavioral, and physical health concerns. Consistent and comprehensive prenatal

care increases the chances of a healthy delivery and can connect mothers to services for

managing a substance use (SU) problem (Office of the Child Advocate, 2019).

      Children born to mothers who experience psychological distress and life event stress

during pregnancy can experience long-term effects from exposure to maternal stress. Maternal

factors during pregnancy and early infancy are important indicators for the long-term health of

their children (Sharp et al., 2018). Maternal anxiety disorders in the perinatal period are the most

common psychiatric disorders. Between 11 to 17 % of expecting mothers experience prenatal

maternal stress which includes psychological distress such as anxiety or depressive symptoms

and life events such as trauma (Arabin et al., 2021). Risk factors for perinatal anxiety and

depressive disorders include familial psychiatric history, substance abuse, pregnancy

complications, lack of social support, intimate partner violence, and recent stressful life events

(Van Damme et al., 2020). Maternal stress, anxiety, and depression can persist or even increase

after birth and be associated with a negative attitude towards parenthood (Arabin et al., 2021).

Both state health insurance and the Affordable Care Act (ACA) have increased access to mental health and substance use treatment among those in need. Yet, the cost of care, lack of insurance, or inadequate insurance are still barriers to care for people who needed mental health care but did not receive it. There also continues to be a stigma surrounding behavioral health care as well as a lack of behavioral health care providers available to racial and ethnic minorities (Creedon & Lê Cook, 2016). Studies have found that psychiatric disorders, including mental disorders and substance use disorders (SUD), occur often as comorbid conditions among young adults (Kelly & Daley, 2013). SUDs also often occur with comorbid with personality, bipolar, psychotic, depression, and anxiety disorders (Kelly & Daley, 2013).

Research related to adverse childhood experience (ACE) scores has demonstrated the link between exposure to childhood trauma and behaviors such as substance use. ACEs include the following experiences during the first 18 years of life: (1) witnessed physical violence between parents, guardians, or caregivers, (2) witnessed non-physical violence between parents, guardians, or caregivers, (3) physically harmed by parents, guardians, or caregivers, (4) experienced unwanted sexual experiences, (5) parental separation or divorce, (6) lived with someone with mental illness, (7) lived with someone with substance use, and (8) lived with someone who went to jail (Gannon, 2021). The more trauma a woman experiences as a child, the higher her ACE score will be (Gannon, 2021). Higher ACE scores increase the likelihood of drug use, thought to be related to seeking relief from trauma symptoms (Nolte et al., 2020).

Studies have demonstrated an association between alcohol consumption and non-prescription drug use with the occurrence of intimate partner violence (IPV). Those who witness parental violence (WPV) are more likely to have been victims of childhood physical violence, become a victim of IPV in adulthood, suffer from depression, use illegal drugs, and have a 12-

month DSM-5 alcohol use disorder compared to the general population (Madruga, 2017). Being a victim of IPV is directly predicted by WPV during childhood (Madruga, 2017). IPV can lead to psychological, physical, social, and financial difficulties. Depression is one of the most reported maladaptive consequences of IPV (Simmons et al., 2018). Women who experience IPV are 3.26 times more likely to develop Major Depressive Disorder (MDD) and are between 1.9 to 4.5 times more likely to experience depressive symptoms (Beydoun et al., 2012).

Women who have experienced IPV are also at risk for problematic alcohol use (Jamison et al., 2021). In their hierarchical linear regression analysis of women aged 22 to 49 years who experienced IPV within the past 6 months, Jamison et al. found that 80.2% of participants reported using substances; specifically, 48.7% reported tobacco use, 66.0% reported alcohol use, and 34.8% reported non-prescription drug use. More frequent IPV and more problematic tobacco use were each associated with more depressive symptoms. Often tobacco is utilized as a coping mechanism for depression (Jamison et al., 2021). In addition, escalating alcohol use in adolescence and young adulthood is associated with an elevated risk of opioid misuse in young adulthood (Thrul et al., 2021).

There are examples across healthcare settings related to addressing the opioid crisis. Healthcare workers can support patients and their families/support systems with education about the risks of opioid abuse as risk reduction. To best serve as patient advocates, healthcare workers need to suspend judgment and avoid assumptions to best connect with patients. Healthcare workers of all disciplines can be involved in having a positive impact within the response to the opioid epidemic response. For example, case managers can work alongside patients and providers to develop and implement a pain management plan during the immediate postoperative period. This early intervention for scheduled surgical patients can help to ensure that the

individual is transitioned from opioids to other analgesic medications according to their individual needs. Case managers who work in disability management and workers' compensation play a key role in assessing a patient's treatment plan and intervening when there are signs that the patient could be struggling with opioid use. However, the best approach to combat the opioid epidemic utilizes the expertise of the interdisciplinary healthcare team. The early transition of patients from opioids to non-opioid analgesics and muscle relaxants by prescribers aids in this effort. Pharmacists can also be included in interdisciplinary teams due to their expansive knowledge of medications, possible side effects, and medication interactions. Behavioral health specialists can be a resource for both the interdisciplinary team and for the individual and family/support system (Sortedahl et al., 2018).

Nurses play an especially important role in identifying and educating patients at risk for problematic opioid abuse. Their initial patient assessment should include an evaluation of the patient's report of pain as well as any factors that increase the patient's risk for problematic drug use (Stauffer & Gibson, 2017). The US DHHS has identified a single-item screening question that nurses can ask during this initial assessment to identify patients at risk for a drug use disorder. This question is, "In the past year, have you used an illegal drug or used a prescription medication for non-medical reasons?" (Stauffer & Gibson, 2017). Another screening and intervention tool for nurses to use for patients at risk for substance use behaviors is the Screening, Brief Intervention, and Referral to Treatment Services (SBIRT). SBIRT is an early intervention screening that engages patients in conversations utilizing feedback, motivation, advice, and goal setting (Stauffer & Gibson, 2017). Nurses can help minimize substance abuse through patient education on the appropriate use of opioids and the risks associated with opioid use. Finally, nurses must also be knowledgeable regarding safe and effective pain management

using opioids and be self-aware of preconceived stereotypes about opiate use (Stauffer &

Gibson, 2017).

Substance use is as common if not more prevalent as many conditions routinely screened

for and assessed during prenatal care. Some of these conditions routinely screened for include

gestational diabetes, preeclampsia, and anemia (Wright et al., 2016). Nationally, 70% of prenatal

patients are screened for drug, tobacco, and alcohol use. Standardized screening plays a key role

in the identification of patients who could benefit from substance use intervention. When the

right resources are available, a positive screen can result in a referral to addiction recovery

services. In addition, the screening process itself allows for healthcare providers to educate

patients on the implications of substance misuse during pregnancy (Grimm, 2020). The

American College of Obstetricians and Gynecologists (ACOG) recommends that screening of

pregnant women for substance use should occur at the first prenatal visit, and regularly

throughout pregnancy for those who screen positive. Screening allows healthcare providers to

stratify patient needs and identify appropriate interventions to benefit them and their families. It

is also important to note that many providers have limited understanding of the actual risks

around the use of specific substances during pregnancy. However, providers could benefit from

further education that a positive screen signals the need for further assessment and does not

necessarily confirm the presence of a SUD (Brown University, 2020). To improve maternal and

neonatal outcomes, treatment for SUD in pregnancy must include a multifaceted, comprehensive

approach through standardized initial screenings followed by behavioral interventions,

psychosocial support, and medication administration if warranted (Critchfield & Hansen, 2018).

In addition to screening for substance use, healthcare providers can also use motivational

interviewing (MI) and SBIRT to improve prenatal health outcomes. MI is designed to strengthen

personal motivation and commitment to individualized goals by eliciting and exploring the

person's reasons for change within an atmosphere of acceptance and compassion (Smith et al.,

2021). The purpose of MI is to partner with the patient to instill a desire to change by framing

current behavior considering future goals (Wright et al., 2016). MI is up to 20 percent more

effective than other strategies for substance misuse (American Addiction Centers, 2021). SBIRT

is another evidence-based approach to managing substance use in pregnancy. Universal

screening for substance use during pregnancy allows for the identification of a women's risk for

substance use given their pattern of use. From there, a pregnant woman's substance use and risk

can guide providers to the most appropriate interventions. For example, those at moderate risk

should receive a brief intervention. Brief interventions are a patient-centered form of counseling

using the principles of MI (Wright et al., 2016). The ACOG recommends the use of SBIRT in

emergency, general primary care, and obstetric settings for alcohol and tobacco. There are online

resources available to support provider implementing SBIRT (Wright et al., 2016).

Perinatal care practices need to be reevaluated amidst the opioid crisis in NH. In addition,

SU risk factors, including childhood trauma, mental health, insurance status, drinking, intimate

partner violence, healthcare access, should be assessed and discussed during the perinatal period

to prevent NAS (Joseph, 2020). SU costs the United States over $600 billion annually (NIDA,

2020). Although risk factors for SU are known, there is minimal knowledge of how patient

education and screening for SU risk factors by healthcare workers during the opioid crisis will

continue to affect health outcomes for mothers and infants. In 2018 the Centers for Disease

Control and Prevention (CDC) reported that opioid use disorder during pregnancy has been

linked to low birth weight, preterm birth, as well as feeding and breathing difficulties. To add to

this growing issue, opioid use disorder has gone up more than four times among pregnant women

from 1999 to 2014 (CDC, 2018). To address this gap, our research questions are: As substance use (SU) has increased in New Hampshire (NH), have rates of SU risk factors (childhood trauma, mental health, insurance status, drinking, intimate partner violence, healthcare access) also increased? And, since SU rates have increased, are perinatal providers talking with their patients more about these risk factors?

Methods

We conducted a secondary data analysis using The Pregnancy Risk Assessment Monitoring System (PRAMS) data between 2013 and 2020. The PRAMS variables of interest were substance use (SU) risk factors of prenatal care, healthcare provider communication, pregnancy behaviors, and birth outcomes identified in the literature. We examined the relationship between prenatal risk factors and birth outcomes and how care provider education and communication were related/associated. The data was cleaned and recoded based on the CDC codebook. Descriptive statistics were then completed using STATA and Excel to describe the sample characteristics and show trends in means within the sample over time. Findings were collectively reviewed by the research team. These findings can be utilized to inform perinatal care practices to address known risk factors to reduce perinatal mortality.

Sample

Before conducting the secondary data analysis, a PRAMS application form was completed and submitted to the CDC, including an indicator list (Appendix A). The CDC created a dataset for our request upon receipt of written permission from the State of NH. The PRAMS study follows mother-infant dyads in NH that are randomly selected from birth records to participate in the survey. Data collection began in 2013 and is ongoing. For this study two PRAMS phases were included in the data analysis.

PRAMS is a surveillance project of the CDC as well as state, territorial, and local health departments. PRAMS was first developed in 1987 to reduce infant morbidity and mortality. Since then, the original PRAMS questionnaire has been revised seven times. Since 2016, PRAMS has been using the eighth version of the PRAMS questionnaire. PRAMS data represents approximately 81% of all live births in the United States. To this day, PRAMS collects jurisdiction-specific, population-based data on maternal attitudes and experiences before, during, and shortly after pregnancy (CDC, 2021). Using population-based surveillance, PRAMS can identify groups of infants and women at high risk for health problems. Once risk groups are identified, changes in health status are monitored and progress towards goals is measured to improve the health of infants and their mothers (CDC, 2021).

In NH, approximately one in every twelve mothers of newborns are randomly selected from birth records to participate in PRAMS. The potential data pool includes NH's entire population of women who delivered a live-born infant. A larger percentage of mothers who deliver a low-birth-weight infant are chosen to participate to ensure there is enough representative data available for this small, yet high-risk population. Women that are selected are contacted by mail between two and six months after they deliver. If there is no response after three mailings, interviews are conducted over the phone with women PRAMS can contact. There are core questions in the PRAMS Survey Booklet that are asked by all forty-six participating states. Additional NH selected topics include breastfeeding, testing for Arsenic and Lead in drinking water, text messaging, oral care, marijuana use, social network information sources, work history and leave-time, Lyme Disease, and discrimination while accessing health care services. The Maternal and Child Health Section of the Division of Public Health Services is

responsible for the PRAMS Project in NH (New Hampshire Department of Health and Human Services, 2016).

Measures

To address our research question, we analyzed variables from three domains. One; what healthcare providers talked about with the patient during pregnancy, two; reported risk behaviors in pregnancy, and three; postpartum outcomes.

Healthcare Provider Discussions. We chose to include variables about discussions participants reported with a doctor, nurse, or other healthcare workers during any of the participant's health care visits in the 12 months before they got pregnant. These variables included whether a healthcare worker: told them to take a vitamin with folic acid, talked to them about how they could improve their health before pregnancy, asked them if they were smoking cigarettes, asked them if someone was hurting them emotionally or physically, and asked them if they were feeling down or depressed. We also included variables regarding discussions during prenatal visits, which included whether health care workers had asked the participants if they were currently smoking cigarettes, drinking alcohol, being emotionally or physically abused, feeling down or depressed, and using drugs such as marijuana, cocaine, crack, or meth.

Risk Behaviors During Pregnancy. We also selected data that encompassed risk behaviors during pregnancy to serve as our mediating variables. We wanted to know how many cigarettes participants smoked and how often they used e-cigarettes or other electronic nicotine products on an average day in the last three months of pregnancy. In addition, we selected variables that asked participants if they experienced abuse by a husband/partner, ex-husband/ex-partner, another family member, or someone else during their most recent pregnancy.

Postpartum Outcomes. We selected SU risk factors as our primary dependent variable. We wanted to explore cigarette smoking 'now' and if mom had a postpartum checkup. We also wanted to know if a healthcare provider asked if she was currently smoking cigarettes, being abused, or feeling down/depressed. Finally, we included the variables about mom feeling down, depressed, or hopeless and about mom having little interest or little pleasure in doing things she usually enjoyed since her new baby was born.

Data Analysis

We calculated descriptive statistics of the PRAMS variables to look at changes in the mean responses over time. By comparing the different PRAMS phases we were able to see how SU risk factors before, during, and after the pregnancy changed. These trends were compared before and after the development of new patient care bundles related to perinatal SU in 2014 and the subsequent adoption by healthcare providers across the country and in NH between 2015 and 2017. In addition, descriptive statistics were calculated to describe the sample. Sample characteristics were selected to best understand the demographics of the participants. Data included in the sample characteristics included the mother's age, annual household income, race, and ethnicity (Table 1).

<div align="center">

Results

</div>

Sample

Overall, 55.8% (n=x) were 30 or older and most respondents had an annual household income of over $60,000 (n=x, 58.3%) (Table 1). In addition, most of the respondents are white and non-Hispanic. The median household income in the United States was $67,521 in 2020 (Shrider et. al, 2021), so many of the respondents had an income above the national average.

Table 1

Sample Characteristics

Age		
	Less than 17	0.7%
	18 to 19	2.2%
	20 to 24	13.7%
	25 to 29	27.5%
	30 to 34	35.8%
	35 to 39	16.3%
	40 and over	3.7%
Annual Household Income (Percent of Participants)		
	Less than $16,000	9.1%
	$16,001 to $24,000	6.9%
	$24,001 to $32,000	6.5%
	$32,001-$48,000	9.6%
	$48,001-$60,000	9.6%
	$60,001-$85,000	14.7%
	More than $85,000	43.6%
Race		
	Asian	3.4%
	Black	1.8%
	White	90.9%
	Other	3.9%
Ethnicity		
	Hispanic or Latinex	4.4%
	Non-Hispanic	95.6%

Findings

The data shows that over time, an increasing number of respondents reported conversations with their care providers regarding the SU risk factors of smoking and abuse from an intimate partner. The largest increase was seen between 2015 and 2016. In 2015, only 71% of all respondents reported having a conversation with a health care professional about smoking. In 2016, this percentage went up to 99%. After this marked increase beginning in 2016, the percentages remained consistently high through 2020 (Table 2). These changes in 2015 followed the 2014 marked increase in opiate-related deaths in NH.

Most respondents who reported smoking before or during their pregnancy had a conversation with their health care provider about smoking (Table 2). In 2014 we saw the lowest percentages with only 85% of respondents who reported smoking before pregnancy and 94% of

respondents who reported smoking during pregnancy having follow-up conversations with a provider. After 2016, the percent of respondents who reported smoking before and during pregnancy and the percent of all respondents who reported conversations happening with a health care professional were virtually the same (Table 2).

The participants reporting the lowest rates of conversations regarding abuse with their providers across time are the subsample of women who are reporting intimate partner abuse before or during pregnancy. In the most recent years (2018-2020) there has been an increase in provider conversations about IPV. However, the number of women reporting IPV before or during pregnancy was low, with decreasing cases over time (Table 2). Over time, the incidence of abuse during pregnancy seems to have decreased based on the respondents' answers to PRAMS questions surrounding the topic (Table 2). We were unable to draw any relationship between risk behaviors, provider communication, and birth outcomes mainly because the rate of poor outcomes was so low.

Table 2

Discussion of Risk Factors (Smoking/ Abuse) with Health Care Professionals by Experienced Risk (2013-2020) (n=4849)

	2013	2014	2015	2016	2017	2018	2019	2020
All Respondents	73%	72%	71%	99%	99%	98%	98%	97%
Respondent Smoked before Pregnancy	91%	85%	91%	99%	99%	98%	99%	98%
Respondent Smoked during Pregnancy	96%	94%	92%	98%	100%	98%	98%	98%
All Respondents	629	617	605	558	574	579	649	638
Respondent Smoked before Pregnancy	173	148	138	115	125	101	124	107
Respondent Smoked during Pregnancy	97	87	66	59	65	54	66	50
	2013	2014	2015	2016	2017	2018	2019	2020
All Respondents	55%	57%	56%	77%	81%	82%	84%	81%
Respondent reported abuse before Pregnancy	60%	75%	57%	67%	67%	78%	75%	67%
Respondent reported abuse during Pregnancy	75%	73%	40%	50%	33%	86%	100%	100%
N								
All Respondents	627	615	602	553	573	577	648	637
Respondent reported abuse before Pregnancy	15	16	14	6	6	9	4	3
Respondent reported abuse during Pregnancy	12	15	10	4	3	7	2	2

Table 3 provides the difference in means for selected years; 2013, 2015, 2016, and 2017. These years were selected due to their association with the perinatal care bundles. There was a notable decrease in smoking before and during pregnancy from 2013 to 2015 with both years having screening rates of 73.4% and 70.9% respectively. There was a significant increase in screening noted from 2015 to 2016, which stayed stable into 2017 and beyond. Similar to the increase in screening for smoking, there was an increase in screening for IPV from 2015 to 2016, with increasing rates of screening from 54.7% in 2013 to 80.8% in 2017. There were also decreases in history of IPV prior to pregnancy (2013: 2.4%; 2017 1.0%) and IPV experienced during pregnancy (2013: 1.9%; 2017 0.5%) (Table 3).

Table 3

Difference in Means for Experience of Risk Factors (Smoking/ Abuse) and Provider Discussion (2013, 2015, 2016, 2017)

	2013	2015	2016	2017	Difference in Means 2013 to 2015	Difference in Means 2015 to 2016	Difference in Means 2016 to 2017
Smoked 3 months before pregnancy	27.2%	23.1%	20.5%	21.9%	-4% (0.024)*	-2.7% (0.024)	1.4% (0.024)
Smoked during pregnancy	15.1%	11.2%	10.6%	11.4%	-4.0% (0.19)**	-0.6% (0.018)	0.8% (0.018)
Healthcare provider talked about smoking	73.4%	70.9%	98.9%	98.6%	-2.5% (0.025)	28.0% (0.019)***	0.3% (0.006)
*p<0.10, ** p<0.05, ***p<0.01, Standard errors in parentheses							

	2013	2015	2016	2017	Difference in Means 2013 to 2015	Difference in Means 2015 to 2016	Difference in Means 2016 to 2017
Partner abuse 12 months before pregnancy	2.4%	2.5%	1.1%	1.0%	0.1% (0.008)	-1.4% (0.007)*	-0.1% (0.006)
Partner abuse during pregnancy	1.9%	1.8%	0.7%	0.5%	-0.1% (0.007)	-1.1% (0.006)*	-0.2% (0.005)
Healthcare provider talked about abuse	54.7%	55.6%	77.2%	80.8%	0.9% (0.028)	21.6% (0.272)***	3.5% (0.024)
*p<0.10, ** p<0.05, ***p<0.01, Standard errors in parentheses							

Discussion

In 2014, opioid-related deaths were the highest ever recorded up until that point. A total of 28,647 opioid-related drug overdose deaths occurred in the United States that year, representing a 1-year increase of 14% from 2013. Since 2000, the rate of deaths from drug overdoses has increased by 137%. In this same time frame, there has been a 200% increase in the rate of overdose deaths involving opioids (CDC, 2016). From our secondary data analysis, we saw that over time, an increasing number of respondents reported conversations with their care providers regarding the SU risk factors of smoking and abuse from an intimate partner. The largest increase was seen between 2015 and 2016 (Table 2) which followed the 2014 marked increase in opiate-related deaths in NH. Statistically significant differences in means took place between 2015 and 2016 for healthcare provider conversations with the respondent about smoking and abuse (Table 3). This shows that between 2015 and 2016 there was a systematic change in how providers went about screening for risk factors of SUD. It is important to remember that the conversation itself is an intervention. We know that MI and SBIRT are effective evidence-based approaches to managing perinatal SU (Smith et al., 2021). Not only did this increase in means take place after the 2014 marked increase in opiate-related deaths in NH, but it also occurred after the adoption of certain perinatal care bundles.

This significant loss of life called for change related to health care practices due to the opioid crisis. As a result of the increased morbidity and mortality in 2014, new patient care bundles were created related to perinatal SU by professional organizations and subsequently adopted by healthcare providers across the country and in NH between 2015 and 2017. These new perinatal bundles focused on non-stigmatizing care so respondents would feel less judged if they reported SU during pregnancy. The Alliance for Innovation on Maternal Health's (AIM)

bundles are supported by specific quality metrics and measures through the AIM Data Center to best address the leading causes of preventable maternal morbidity and mortality in the United States (AIM, 2020).

The opioid use disorder (OUD) bundle from AIM calls for all pregnant women to be assessed for SU disorders, screened, evaluated for commonly occurring co-morbidities (abuse and smoking) if they have an opioid use disorder, and for the treatment response to be matched to each woman's stage of recovery and/or readiness to change (AIM, 2020). This care bundle underwent revision most recently in November of 2020. The *Care for Pregnant and Postpartum People with Substance Use Disorder Bundle* also includes readiness resources for providers to use. These resources are available as the bundle calls for the development and maintenance of a set of referral resources and communication pathways between obstetric providers, community-based organizations, and state and public health agencies to enhance services and supports for pregnant and postpartum families for social determinants of health needs, behavioral health supports, and SUD treatment (AIM, 2020). Knowledge of local resources can motivate providers to improve the quality of screening for perinatal SUD since they have the tools to refer patients for further support. AIM bundles influence screening use and intervention as they establish benchmark goals for promoting discussions on SU while also providing guidelines for subsequent interventions for a positive screen. This could be a likely contributing factor as to why more healthcare providers were discussing these risk factors of smoking and abuse with patients because risk assessment in general increased and improved during this time.

Another key finding from our secondary data analysis was that after 2016, the percent of respondents who reported smoking before and during pregnancy and the percent of all respondents who reported conversations happening with a health care professional were virtually

the same (Table 2). This consistent reporting by respondents goes to show the validity of bundles such as AIM's OUD bundle as well as the increase in risk assessment in general during this time. We also saw that the participants reporting the lowest rates of conversations regarding risk factors with their providers across time are the subsample of women who are reporting intimate partner abuse before or during pregnancy (Table 2). This relates to the low number of PRAMS respondents who reported intimate partner abuse before and during pregnancy (Table 2). These statistics may be attributed to the lack of positive communication between perinatal clients and providers. Implications for future practice related to these findings include the importance of consistent screening for SUD by providers as well as the need for non-stigmatizing prenatal care as risk assessment continues to increase.

Positive provider communication can more effectively address pregnant women's psych-social stressors and behaviors. Favorable relationships between health care providers and patients can result in greater patient satisfaction and adherence to provider recommendations (Nicoloro-SantaBarbara et al., 2017). Since the development of the AIM bundles, providers are doing a better job communicating with perinatal patients. A 2017 study sought to determine if specific components of the patient-provider relationship (communication, integration, collaboration, and empowerment) predicted better self-care by the patient. Perinatal patients in the study who perceived better communication, collaboration, and empowerment in these relationships, practiced healthful behaviors more frequently in late pregnancy. Effective communication and collaboration with a health care provider can promote feelings of well-being and a sense of control (Nicoloro-SantaBarbara et al., 2017). Although this study did not focus on SU reporting in the perinatal population, it is plausible that women who feel a greater sense of control in their relationship with their provider would report SU and other risky behaviors.

We also saw that over time, the incidence of abuse during pregnancy seems to have decreased based on the respondents' answers to PRAMS questions surrounding the topic (Table 2). However, this decrease may not be entirely accurate. This begs the question of whether this decrease could be caused by accurate reporting or an instrumentation issue. There also exists the stigma surrounding reporting risky behaviors such as smoking and abuse during pregnancy to a healthcare provider (Stengel, 2014). To combat and address this stigma, additional perinatal care bundles have been developed and implemented across the United States.

There are also other promising perinatal substance bundles for providers that could be implemented. The Drug Free Moms and Babies (DFMB) Project of West Virginia supports positive outcomes by providing prevention, early intervention, addiction treatment, and recovery support services. The program integrates and evaluates treatment and recovery services for pregnant and postpartum women who struggle with SU. The DFMB Manual was published in October of 2017, and like the AIM bundle, gives providers resources to refer perinatal patients who report SU (Lilly et al., 2019). Like NH, West Virginia also has high rates of fentanyl-involved overdose deaths (United States Drug Enforcement Administration, 2020).

More locally, the Northern New England Perinatal Quality Improvement Network (NNEPQIN) put forth *A Toolkit for the Perinatal Care of Women with Substance Use Disorders*. This toolkit was developed by obstetric, pediatric, neonatal, and addiction treatment providers and nurses to assist perinatal care providers to improve the quality and safety of care provided to pregnant women with SUD in northern New England (NNEPQIN, 2018). The content of this toolkit was implemented and tested from January 2017 through December 2018 in Maine, NH, and Vermont with good results. The toolkit was later revised in 2018 to ensure alignment with recommendations put forth by the revised 2017 AIM bundle (NNEPQIN, 2018). National

perinatal SU bundles, such as the opioid use disorder bundle from AIM, set forth well-tested and researched provider guidelines to be adopted on the local level to improve health outcomes for the perinatal population with SUD.

Limitations

There are some limitations of the secondary data analysis that could have implications for our findings. For starters, our sample consisted of mainly higher-income, white non-Hispanic women over the age of 30 (Table 1). Although our sample is representative of NH demographics, other states do have populations with a lower median income and a higher percentage of minority women. These differences in demographics in other states may be a barrier to accessing prenatal care which could ultimately affect patient outcomes. Another limitation was the marked increase in all respondents reporting conversations with a health care professional seen between 2015 and 2016 (Table 2). This marked increase could be a reporting or an implementation issue. The PRAMS questionnaire changes over time. Since the questions were being asked differently in each survey, the response rates may have changed due to participants' understanding of the question being asked.

A final limitation is that the literature points to underreporting of substance use and IPV. Pregnant women who smoke or report abuse are often subjected to stigmatization. Reporting drug use is also known to increase stigmatization and discrimination in the health care setting. This may influence reporting to providers and reporting on the PRAMS survey. We also know that mothers with SU conceal risk-taking behaviors from healthcare providers due to stigmatization and moral scrutiny (Stengel, 2014). These three limitations could present barriers to the applicability of our study both in NH and nationwide. However, the increase of

conversations with health care professionals found in our data analysis goes to show that the conversation itself is an intervention that is on the rise.

Conclusion

From our secondary analysis of federal PRAMS data between 2013 and 2020, we were able to find that over time, more participants have reported conversations with their care providers regarding the SU risk factors of smoking and abuse from an intimate partner. There was a marked increase between 2015 and 2016 in the percentage of respondents reporting conversations with a health care professional on the topics of smoking and abuse from an intimate partner during pregnancy (Table 2). This followed the 2014 marked increase in opiate-related deaths in NH. Following this significant loss of life, new patient care bundles were created related to perinatal SU by professional organizations and subsequently adopted by healthcare providers across the country and in NH between 2015 and 2017. These bundles were created at both the local and national levels. These new perinatal bundles focused on non-stigmatizing care so respondents would feel less judged if they reported SU during pregnancy. This focus on non-stigmatizing care was key as the literature points to underreporting of stigmatizing personal information during pregnancy (Stengel, 2014). Although NH as a state is homogeneous in terms of median household income and racial background, our findings can be applied to more diverse states due to the conversion itself being an intervention. The increase and improvement in risk assessment by perinatal providers continues to this day due to the emergence and revision of care bundles designed to improve the quality and safety of care provided to pregnant women with SUD.

Appendix A

Indicator list:
- Mom's birth—year (Q#003c)
- Health prob – Depression (Q#004c)
- Pre preg--health care visit (Q#006)
- Health care type--checkup with my OB/GYN (Q#007b)
- Health care type--visit for depression or anxiety (Q#007f)
- Pre-preg -- want to have kids (Q#008d)
- Pre-preg --smk during preg (Q#008h)
- Pre-preg --hurt emotional/physical (Q#008i)
- Pre-preg --feeling down/depressed (Q#008j)
- Insurance paid by – job (Q#009a)
- Insurance paid by – parent (Q#009b)
- Insurance paid by -- Health Care Exchange (Q#009c)
- Insurance paid by – Medicaid (Q#009d)
- Insurance paid by -- Community Health Center, local hospital program (Q#009e)
- Insurance paid by -- TRICARE, TRICARE Prime, Martins Point Prime, or other military health care (Q#009f)
- Insurance paid by – other (Q#009g)
- Insurance paid by -- Other specified (Q#009h)
- Insurance paid by -- No insurance (Q#009i)
- Preg – intention (Q#012)
- HCW ask -- if smoking cigs (Q#014c)
- HCW ask -- if drinking alcohol (Q#014d)
- HCW ask -- hurt emotional/physical (Q#014e)
- HCW ask -- if down/depressed (Q#014f)
- HCW ask -- using drugs (Q#014g)
- WIC--dur preg (Q#022)
- Health prob during preg – Depression (Q#023c)
- MH -- dur preg tell depress (Q#024)
- SMK -- >=1 cigs last 2 yrs (Q#026)
- SMK -- 3 mnths bef, # cigs/day (Q#027)
- SMK -- last 3 mnths, # cigs/day (Q#028)
- SMK -- advice/stop during pnc (Q#029)
- SMK advise -- how to quit (Q#030a)
- SMK advise -- date to quit (Q#030b)
- SMK advise -- suggest class (Q#030c)
- SMK advise -- booklets/videos (Q#030d)
- SMK advise – counseling (Q#030e)
- SMK advise -- family support (Q#030f)

- SMK advise -- refer quit line (Q#030g)
- SMK advise -- use nicotine gum (Q#030h)
- SMK advise -- use nicotine patch (Q#030i)
- SMK advise -- use spray/inhaler (Q#030j)
- SMK advise -- use pill - Zyban (Q#030k)
- SMK advise -- use pill – Chantix (Q#030l)
- SMK -- now, # cigs/day (Q#031)
- Inside smoking rules now (Q#032)
- SMK --used ecigs in last 2 yrs (Q#033a)
- SMK --used hookah in last 2 yrs (Q#033b)
- ECIG -- 3 mnths bef, how often (Q#034)
- ECIG -- last 3 mnths, how often (Q#035)
- DRK -- last 2 years (Q#036)
- DRK -- 3 mnths bef, drinks/wk (Q#037)
- Abuse -- 12 mnths b4 preg, h/p (Q#038a)
- Abuse -- 12 mnths b4 preg, ex-h/p (Q#038b)
- Abuse --during preg, h/p (Q#039a)
- Abuse -- during preg, ex-h/p (Q#039b)
- PPV -- checkup for self (Q#058)
- PPV --HCW ask about smoking cigs (Q#059g)
- PPV--HCW ask about abuse (Q#059h)
- PPV -- ask about depression (Q#059i)
- Use marijuana or hash -- 12 months before pregnancy (Q#067a)
- Use marijuana or hash -- during pregnancy (Q#067b)
- Follow-up care—depression (Q#083c)

Table 1

Sample Characteristics

Age		
Less than 17		0.7%
18 to 19		2.2%
20 to 24		13.7%
25 to 29		27.5%
30 to 34		35.8%
35 to 39		16.3%
40 and over		3.7%
Annual Household Income (Percent of Participants)		
Less than $16,000		9.1%
$16,001 to $24,000		6.9%
$24,001 to $32,000		6.5%
$32,001-$48,000		9.6%
$48,001-$60,000		9.6%
$60,001-$85,000		14.7%
More than $85,000		43.6%
Race		
Asian		3.4%
Black		1.8%
White		90.9%
Other		3.9%
Ethnicity		
Hispanic or Latinex		4.4%
Non-Hispanic		95.6%

Table 2

Discussion of Risk Factors (Smoking/ Abuse) with Health Care Professionals by Experienced Risk (2013-2020) (n=4849)

	2013	2014	2015	2016	2017	2018	2019	2020
All Respondents	73%	72%	71%	99%	99%	98%	98%	97%
Respondent Smoked before Pregnancy	91%	85%	91%	99%	99%	98%	99%	98%
Respondent Smoked during Pregnancy	96%	94%	92%	98%	100%	98%	98%	98%
All Respondents	629	617	605	558	574	579	649	638
Respondent Smoked before Pregnancy	173	148	138	115	125	101	124	107
Respondent Smoked during Pregnancy	97	87	66	59	65	54	66	50
	2013	2014	2015	2016	2017	2018	2019	2020
All Respondents	55%	57%	56%	77%	81%	82%	84%	81%
Respondent reported abuse before Pregnancy	60%	75%	57%	67%	67%	78%	75%	67%
Respondent reported abuse during Pregnancy	75%	73%	40%	50%	33%	86%	100%	100%
	N							
All Respondents	627	615	602	553	573	577	648	637
Respondent reported abuse before Pregnancy	15	16	14	6	6	9	4	3
Respondent reported abuse during Pregnancy	12	15	10	4	3	7	2	2

Table 3

Difference in Means for Experience of Risk Factors (Smoking/ Abuse) and Provider Discussion (2013, 2015, 2016, 2017)

	2013	2015	2016	2017	Difference in Means 2013 to 2015	Difference in Means 2015 to 2016	Difference in Means 2016 to 2017
Smoked 3 months before pregnancy	27.2%	23.1%	20.5%	21.9%	-4% (0.024)*	-2.7% (0.024)	1.4% (0.024)
Smoked during pregnancy	15.1%	11.2%	10.6%	11.4%	-4.0% (0.19)**	-0.6% (0.018)	0.8% (0.018)
Healthcare provider talked about smoking	73.4%	70.9%	98.9%	98.6%	-2.5% (0.025)	28.0% (0.019)***	0.3% (0.006)

*p<0.10, ** p<0.05, ***p<0.01, Standard errors in parentheses

	2013	2015	2016	2017	Difference in Means 2013 to 2015	Difference in Means 2015 to 2016	Difference in Means 2016 to 2017
Partner abuse 12 months before pregnancy	2.4%	2.5%	1.1%	1.0%	0.1% (0.008)	-1.4% (0.007)*	-0.1% (0.006)
Partner abuse during pregnancy	1.9%	1.8%	0.7%	0.5%	-0.1% (0.007)	-1.1% (0.006)*	-0.2% (0.005)
Healthcare provider talked about abuse	54.7%	55.6%	77.2%	80.8%	0.9% (0.028)	21.6% (0.272)***	3.5% (0.024)

*p<0.10, ** p<0.05, ***p<0.01, Standard errors in parentheses

Graphic 1

Percent of healthcare providers who reportedly spoke about smoking

Legend: All Respondents — Respondent Smoked before Pregnancy — Respondent Smoked during Pregnancy

Graphic 2

Percent of healthcare providers who reportedly spoke about abuse
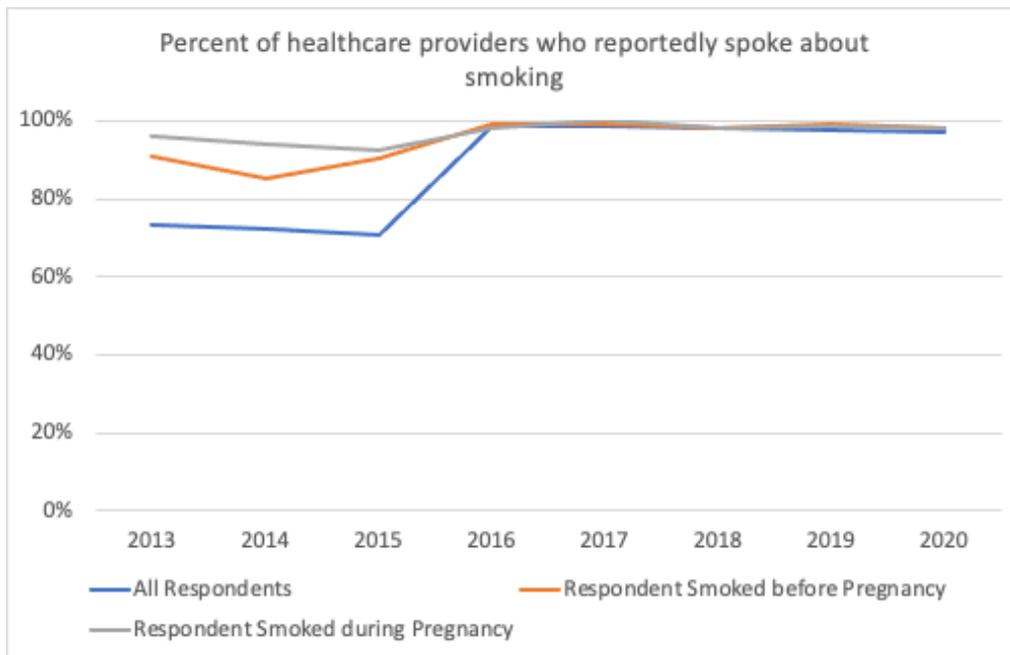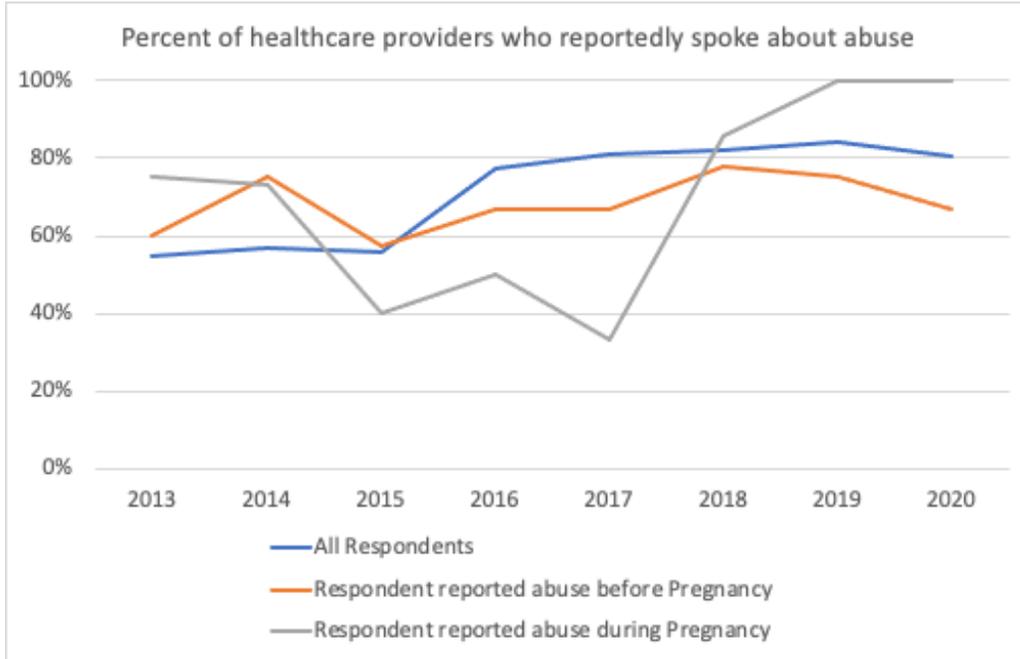
References

Alliance for Innovation on Maternal Health. (2020). *Core aim patient safety bundles*.

Patient safety bundles. https://safehealthcareforeverywoman.org/aim/patient-safety-

bundles/#core

American Addictions Center. (2021, November 17). *What is motivational interviewing (MI)?*.

Motivational interviewing in addiction treatment.

https://americanaddictioncenters.org/therapy-treatment/motivational-interviewing

Arabin, B., Hellmeyer, L., Maul, J., & Metz, G. A. S. (2021). Awareness of maternal stress,

consequences for the offspring and the need for early interventions to increase stress

resilience. *Journal of Perinatal Medicine*, *49*(8), 979–989. https://doi-

org.unh.idm.oclc.org/10.1515/jpm-2021-0323

Beydoun, H. A., Beydoun, M. A., Kaufman, J. S., Lo, B., & Zonderman, A. B. (2012). Intimate

partner violence against adult women and its association with major depressive disorder,

depressive symptoms and postpartum depression: A systematic review and meta-analysis.

Social Science & Medicine, 75(6), 959–975. https://doi-

org.unh.idm.oclc.org/10.1016/j.socscimed.2012.04.025

Brown University. Prenatal care providers stymied over treatment for substance users. (2019).

Brown University Child & Adolescent Psychopharmacology Update, *21*(5), 6. https://doi-

org.unh.idm.oclc.org/10.1002/cpu.30396

Centers for Disease Control and Prevention. (2018, August 9). *The US opioid crisis: Addressing

maternal and infant health.* Reproductive health.

https://www.cdc.gov/reproductivehealth/maternalinfanthealth/substance-abuse/opioid-

use-disorder-pregnancy/index.html

Centers for Disease Control and Prevention. (2016, January 1). *Increases in drug and opioid*

   overdose deaths — United States, 2000–2014. Morbidity and mortality weekly report

   (MMWR). https://www.cdc.gov/mmwr/preview/mmwrhtml/mm6450a3.htm

Centers for Disease Control and Prevention. (2021, November 15). *What is PRAMS?*. PRAMS.

   https://www.cdc.gov/prams/index.htm

Creedon, T. B., & Lê Cook, B. (2016). Access to mental health care increased but not for

   substance use, while disparities remain. *Health Affairs*, *35*(6), 1017–1021. https://doi-

   org.unh.idm.oclc.org/10.1377/hlthaff.2016.0098

Critchfield, A. S., & Hansen, W. F. (2018). The opioid crisis: Prenatal and postnatal care.

   Contemporary OB/GYN, *63*(3), 10–31.

Gannon, M., Short, V., LaNoue, M., & Abatemarco, D. (2021). Prevalence of adverse

   childhood experiences of parenting women in drug treatment for opioid use disorder.

   Community Mental Health Journal, *57*(5), 872–879. https://doi-

   org.unh.idm.oclc.org/10.1007/s10597-020-00661-0

Grimm, D. (2020). Substance use among women: The importance of standardized screening.

   Women's Healthcare: A Clinical Journal for NPs, *8*(6), 53.

Jamison, L. E., Howell, K. H., Decker, K. M., Schwartz, L. E., & Thurston, I. B. (2021).

   Associations between substance use and depressive symptoms among women

   experiencing intimate partner violence. *Journal of Trauma & Dissociation*, *22*(5), 540–

   554. https://doi-org.unh.idm.oclc.org/10.1080/15299732.2020.1869646

Joseph, R. (2020). Perinatal substance exposure and long-term outcomes in children: a

   literature review. *Pediatric Nursing*, *46*(4), 163–173.

Kelly, T. M., & Daley, D. C. (2013). Integrated treatment of substance use and psychiatric

disorders. *Social work in public health*, *28*(3-4), 388–406.

https://doi.org/10.1080/19371918.2013.774673

Lichenstein, S. D., Zakiniaeiz, Y., Yip, S. W., & Garrison, K. A. (2019). Mechanisms and

clinical features of co-occurring opioid and nicotine use. *Current addiction reports*, *6*(2),

114–125. https://doi.org/10.1007/s40429-019-00245-3

Lilly, C. L., Ruhnke, A. M., Breyel, J., Umer, A., & Leonard, C. E. (2019). Drug free moms and

babies: qualitative and quantitative program evaluation results from a rural Appalachian

state. *Preventive medicine reports*, *15*, 100919.

https://doi.org/10.1016/j.pmedr.2019.100919

Madruga, C. S., Viana, M. C., Abdalla, R. R., Caetano, R., & Laranjeira, R. (2017). Pathways

from witnessing parental violence during childhood to involvement in intimate partner

violence in adult life: The roles of depression and substance use. *Drug & Alcohol Review*,

36(1), 107–114. https://doi-org.unh.idm.oclc.org/10.1111/dar.12514

Moore, S. K., Saunders, E. C., McLeman, B., Metcalf, S. A., Walsh, O., Bell, K., Meier, A., &

Marsch, L. A. (2021). Implementation of a New Hampshire community-initiated

response to the opioid crisis: A mixed-methods process evaluation of safe station.

International Journal of Drug Policy, 95, N.PAG. https://doi-

org.unh.idm.oclc.org/10.1016/j.drugpo.2021.103259

New Hampshire Department of Health and Human Services. (2016). *Opioid misuse prevention,*

treatment, and recovery. Bureau of Drug and Alcohol Services.

https://www.dhhs.nh.gov/dcbcs/bdas/opioids.htm

New Hampshire Department of Health and Human Services. (2015, June 11).

Neonatal abstinence syndrome. Maternal and child health.

https://www.dhhs.nh.gov/dphs/bchs/mch/documents/nas-data-brief.pdf

New Hampshire Department of Health and Human Services. (2016). *Pregnancy risk assessment*

monitoring system (PRAMS). Maternal and child health.

https://www.dhhs.nh.gov/dphs/bchs/mch/prams.htm

New Hampshire PRAMS Team. (2018, December). *Perinatal substance use among New*

Hampshire women 2013 - 2017. Pregnancy risk assessment monitoring system.

https://www.dhhs.nh.gov/dphs/bchs/mch/prams/documents/perinatal-substance-use.pdf

National Institute on Drug Abuse. (2018, January). *Is drug addiction treatment worth its cost?*.

Principles of drug addiction treatment: A research-based guide.

https://nida.nih.gov/publications/principles-drug-addiction-treatment-research-based-

guide-third-edition/frequently-asked-questions/drug-addiction-treatment-worth-its-cost

Nicoloro-SantaBarbara, J., Rosenthal, L., Auerbach, M. V., Kocis, C., Busso, C., & Lobel, M.

(2017). Patient-provider communication, maternal anxiety, and self-care in pregnancy.

Social Science & Medicine, *190*, 133–140.

https://doi-org.unh.idm.oclc.org/10.1016/j.socscimed.2017.08.011

Nolte, K., Drew, A. L., Friedmann, P. D., Romo, E., Kinney, L. M., & Stopka, T. J. (2020).

Opioid initiation and injection transition in rural northern New England: A mixed-

methods approach. *Drug and alcohol dependence*, *217*, 108256.

https://doi.org/10.1016/j.drugalcdep.2020.108256

Northern New England Perinatal Quality Improvement Network. (2018). *A toolkit for the*

perinatal care of women with substance use disorders. Clinical Guidelines.

https://www.nnepqin.org/a-toolkit-for-the-perinatal-care-of-women-with-opioid-use-

disorders/

Office of the Child Advocate. (2019, November 21). *System Review Report - New Hampshire.*

      Division for children, youth and families enhanced response to substance exposed

      infants.

      https://childadvocate.nh.gov/documents/reports/OCA-SR-Subs-Exp-Infants-11-22-19.pdf

Sharp, G. C., Lawlor, D. A., & Richardson, S. S. (2018). It's the mother!: How assumptions

      about the causal primacy of maternal effects influence research on the developmental

      origins of health and disease. *Social Science & Medicine*, *213*, 20–27. https://doi-

      org.unh.idm.oclc.org/10.1016/j.socscimed.2018.07.035

Shrider, E. A., Kollar, M., Chen, F., & Semega, J. (2021, September 14). *Income and poverty in*

      the United States: 2020. United States census bureau.

      https://www.census.gov/library/publications/2021/demo/p60-

      273.html#:~:text=Median%20household%20income%20was%20%2467%2C521,and%2

      0Table%20A%2D1

Simmons, S. B., Knight, K. E., & Menard, S. (2018). Long-term consequences of intimate

      partner abuse on physical health, emotional well-being, and problem behaviors. *Journal*

      of Interpersonal Violence, *33*(4), 539–570. https://doi-

      org.unh.idm.oclc.org/10.1177/0886260515609582

Smith, R., Ridout, A., Livingstone, A., Wango, N., Kenworthy, Y., Barlett, K., Coburn, H., Reid,

      H., Jones, N., & Mackillop, L. (2021). Motivational interviewing to increase physical

      activity in women with gestational diabetes. *British Journal of Midwifery, 29*(10), 550–

      556. https://doi.org/10.12968/bjom.2021.29.10.550

Sortedahl, C., Krsnak, J., Crook, M. M., & Scotton, L. (2018). Case managers on the front lines

of opioid epidemic response: Advocacy, education, and empowerment for users of

medical and nonmedical opioids. *Professional Case Management*, *23*(5), 256–263.

https://doi-org.unh.idm.oclc.org/10.1097/NCM.0000000000000309

Stauffer, L., & Gibson, S. (2017). The nurse's role in identifying and educating patients at

risk for opioid abuse. *AAACN Viewpoint, 39*(6), 1–14.

Stengel, C. (2014). The risk of being 'too honest': drug use, stigma and pregnancy. *Health, Risk

& Society*, *16*(1), 36–50. https://doi-

org.unh.idm.oclc.org/10.1080/13698575.2013.868408

Thrul, J., Reboussin, B. A., Rabinowitz, J. A., Maher, B. S., & Ialongo, N. S. (2021). Alcohol

trajectories and subsequent risk for opioid misuse in a cohort of urban adolescents.

Substance Abuse, *42*(4), 873–879. https://doi-

org.unh.idm.oclc.org/10.1080/08897077.2021.1890675

United States Drug Enforcement Administration. (2020, January 30). *2019 national drug threat

assessment*. DEA. https://www.dea.gov/documents/2020/2020-01/2020-01-30/2019-

national-drug-threat-assessment

Van Damme, R., Van Parys, A.-S., Vogels, C., Roelens, K., & Lemmens, G. M. D. (2020). A

mental health care protocol for the screening, detection and treatment of perinatal anxiety

and depressive disorders in Flanders. *Journal of Psychosomatic Research*, *128*, N.PAG.

https://doi-org.unh.idm.oclc.org/10.1016/j.jpsychores.2019.109865

Wright, T. E., Terplan, M., Ondersma, S. J., Boyce, C., Yonkers, K., Chang, G., & Creanga, A.

(2016). The role of screening, brief intervention, and referral to treatment in the perinatal

period. *American Journal of Obstetrics & Gynecology*, *215*(5), 539–547.

https://doi.org/10.1016/j.ajog.2016.06.038