BEST PRACTICE GUIDELINES

for Mental Health Disorders in the Perinatal Period: Substance Use Disorders

May 2023

BC Reproductive Mental Health Program, the Provincial Perinatal Substance Use Program, & Perinatal Services BC

Perinatal Services BC
Provincial Health Services Authority

BC WOMEN'S HOSPITAL+ HEALTH CENTRE
Provincial Health Services Authority

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Land Acknowledgement

We respectfully acknowledge that the document "Best Practice Guidelines for Mental Health Disorders in the Perinatal Period: Substance Use Disorders" was developed at the BC Women's Hospital + Health Centre (BCWH), on the unceded, traditional and ancestral territories of the Coast Salish People, specifically the xʷməθkʷəy̓əm (Musqueam), Sḵwx̱wú7mesh (Squamish) and səlí l̓ wətaʔɬ (Tsleil-waututh) Nations who have cared for and nurtured the lands and waters around us for all time. We give thanks for the opportunity to live, work and support care here.

This Substance Use Disorders chapter of the *BC Best Practice Guidelines for Mental Health Disorders in the Perinatal Period* is a manual for healthcare professionals who care for birthing individuals in their reproductive years. This guidance describes best practices for the care of birthing individuals with substance use disorders in the perinatal period (preconception through to one year postpartum).

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SUBSTANCE USE DISORDERS in the Perinatal Period

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1. EDUCATION AND PREVENTION

1.1. What is a Substance Use Disorder?

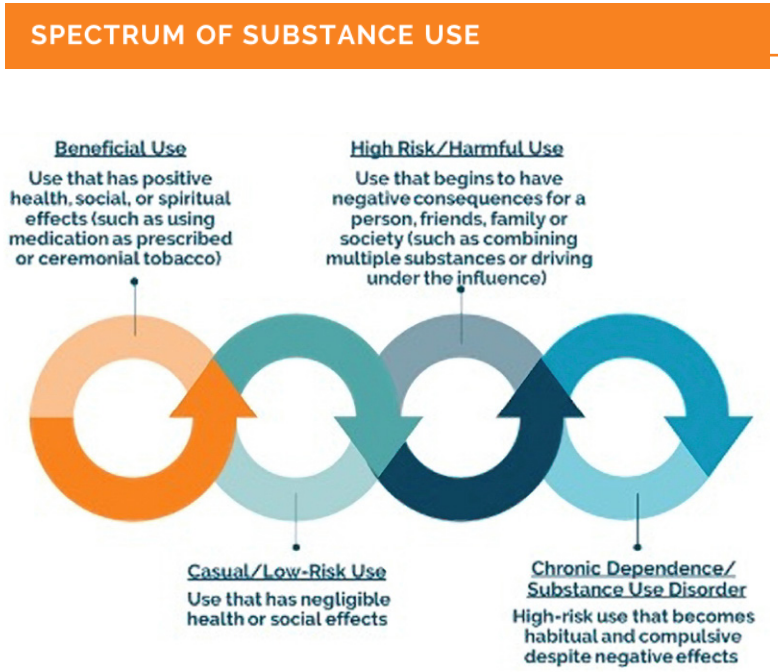
Substance use occurs on a spectrum from beneficial to dependence (Figure 1).

A substance use disorder is a diagnostic term from the DSM-5, referring to the recurrent use of alcohol or other drugs that cause clinically and functionally significant impairment, such as health problems, disability and failure to meet major responsibilities at work, school or home. It is classified as mild, moderate or severe, and qualifiers include 'active', in 'early remission' or 'sustained remission'.

Addiction is a term used to indicate the most severe stage of substance use disorder. It is a primary, chronic disease of brain reward, motivation, memory and the related circuitry[1]. This occurs when the pattern of a substance use becomes regular, resulting in neuroadaptation with increasing tolerance for the drug, withdrawal symptoms and subsequent cravings.

Substance use during pregnancy and postpartum can be co-morbid with, or induce Anxiety Disorders, Depressive Disorders, Bipolar Disorders or Psychotic Disorders.

Figure 1.
Prevalence and effects of substance use during pregnancy



1. Volkow, N. D., Koob, G. F. & McLellan, A. T. Neurobiologic Advances from the Brain Disease Model of Addiction. *N Engl J Med* **374**, 363-371 (2016).

Prevalence measures of substance use in pregnancy rely largely on self-reporting and are likely to be underestimated due to stigma and fear of child removal and other punitive and legal consequences. Among Indigenous women, historical and ongoing mistreatment, violence and harms inflicted by colonial institutions, during and around childbirth, have resulted in deep, complex and intergenerational trauma[2].

The Perinatal Data Registry provides some insight to the different types of substances used among pregnant people **in BC** between 2012 and 2020, including use of substances prior to the person knowing of their pregnancy:

- The data suggest evidence of a decrease in cigarette use (2016: 6.6%; 2020: 4.5%), an increase in other drug use (2016: 4.5%; 2020: 5.7%), and relatively stable levels of binge drinking (2016: 0.3%; 2020: 0.3%) and risky alcohol use over time (2016: 1.1%; 2020: 1.2%)[2,3].
- They estimate a rate of 5.7% for illicit/other drug use during pregnancy in 2019/20.[2].

A recent population-based, retrospective study documented that **the rate of perinatal opioid use disorder (OUD) in BC has tripled over recent decades** from 166 in 2000, to 513 in 2019[4]. For this group of 4574 women, there were 6693 deliveries, and 20% of these cases received their first OUD diagnosis during the perinatal period.

Further data have come from The National Survey on Drug Use and Health **in the USA** from 2020[5], which reports the past-month use of substances in pregnancy (including use of substances prior to the person knowing of their pregnancy) as follows:

- Tobacco products: 8.4%
- Alcohol (having had *any* alcohol to drink in the past month, more than just a sip): 10.6%
- Alcohol (binge drinking – more than four drinks in a single time frame): 5.0%
- Cannabis: 8.0%
- Cocaine: 0.3%
- Opioids: 0.4%

Crucially, the postpartum period represents a time of particular vulnerability for people with a history of substance use, with dramatically higher rates of relapse and fatal opioid overdose, compared to the prenatal period[6].

There is a strong association of cannabis use with other substance use and serious mental illness, including Anxiety Disorders, Depressive Disorders, Bipolar Disorders and Psychotic Disorders.

2. Perinatal Services BC. *Perinatal Health Report: British Columbia 2019/20.* (2021).
3. British Columbia Centre on Substance Use, B.C. Ministry of Health, B.C. Ministry of Mental Health and Addictions & Perinatal Services BC. *A Guideline for the Clinical Management of Opioid Use Disorder – Pregnancy Supplement, accessed from https://www.bccsu.ca/care-guidance-publications/.* (2018).
4. Piske, M. *et al.* Opioid Use Disorder and Perinatal Outcomes. *Pediatrics* **148**, (2021).
5. Center for Behavioral Health Statistics and Quality. *Results from the 2020 National Survey on Drug Use and Health: Detailed tables.* (2021).
6. Schiff, D. M. *et al.* Fatal and Nonfatal Overdose Among Pregnant and Postpartum Women in Massachusetts. *Obstetrics and gynecology* **132**, 466-474 (2018).

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Substance use during pregnancy can be associated with short and long-term negative medical effects for both the birth parent and fetus (Table 1)[7,8]. This is dependent on a number of factors including:

- Frequency of use
- Types of substances used
- Other complex health and medical conditions

Importantly, the negative medical effects listed in Table 1 cannot be attributed entirely to the substance use. Severe substance use often occurs in the context of social determinants of health such as:

- Poverty
- Homelessness
- Exposure to violence

Together, these can compromise adequate nutrition, treatment for concurrent mental illness, and prenatal care. **When managing substance use in pregnancy, addressing these other factors will significantly improve the wellness trajectory of the parent-baby dyad, even if the substance use remains unchanged.**

Substance use during pregnancy can be associated with short and long-term negative medical effects for both the birth parent and fetus.

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7. Banderali, G. *et al.* Short and long term health effects of parental tobacco smoking during pregnancy and lactation: a descriptive review. *J Transl Med* **13**, (2015).
8. Renard, J. & Konefal, S. *Clearing the Smoke on Cannabis: Cannabis Use during Pregnancy and Breastfeeding – An Update; Accessed from https://www.ccsa.ca/clearing-smoke-cannabis-cannabis-use-during-pregnancy-and-breastfeeding, Feb. 24, 2023.* (2022).

Table 1. Potential medical effects of substance use during pregnancy

SUBSTANCE	POTENTIAL EFFECT ON PREGNANCY	POTENTIAL EFFECT ON FETUS/INFANT
Alcohol	• Spontaneous abortion • Preterm birth • Stillbirth	• Intrauterine growth restriction • Fetal alcohol spectrum disorder
Nicotine	• Spontaneous abortion • Preterm birth • Premature rupture of membranes • Placental abruption	• Sudden infant death syndrome • Low birth weight • Airways disease • Intrauterine growth restriction
Cannabis	• Preterm labour	• Low birth weight • Long-term neurocognitive effects
Cocaine	• Spontaneous abortion • Placental abruption • Premature rupture of membranes • Preterm labour	• Intrauterine growth restriction • Lower birth weight, length, and head circumference (dose-dependent) • Congenital malformations • Behavioral problems • Sudden infant death syndrome
Methamphetamine	• Preterm birth • Placental abruption • Pre-eclampsia	• Intrauterine growth restriction • Low birth weight • Increased perinatal mortality
Opioids	• Spontaneous abortion • Preterm birth • Pre-eclampsia • Antepartum and postpartum hemorrhage • Stillbirth	• Intrauterine growth restriction • Low birth weight • Neonatal abstinence syndrome • Sudden infant death syndrome

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1.2. Signs and Symptoms

Substance use disorders are characterized by:

- Loss of control over substance use
- Ongoing use despite consequences (to both self and fetus/newborn/infant)
- Impaired decision-making
- Compulsive behaviours
- Emotional dysregulation

Relationships and work may be impaired and participation in meaningful activities may be reduced. Due to the shame and stigma of substance use and significant risks of self-disclosures in the perinatal period, people may go to great lengths to hide their use and/or avoid accessing prenatal and/or postpartum care.

1.3. Risk Factors for Substance Use in the Perinatal Period:

- Substance use disorder (SUD) or high-risk substance use prior to pregnancy
- Substance-using partner/peers
- History of trauma, including adverse childhood experiences[9]
- Mental health issues, e.g., Post-Traumatic Stress Disorder, Depressive Disorders, Bipolar Disorders, Psychotic Disorders
- Chronic pain
- Barriers to accessing overall care, e.g., experience of racism/discrimination in the healthcare system[10–18], stigma and judgement regarding substance use by healthcare providers
- Interpersonal violence, abuse and exploitation
- Life stressors, lack of social supports and stable housing

9. Galea, S., Nandi, A. & Vlahov, D. The social epidemiology of substance use. *Epidemiol Rev* **26**, 36–52 (2004).
10. *White Benevolence: Racism and colonial violence in the helping professions.* (Fernwood Publishing, 2022).
11. Etowa, J., Wiens, J., Bernard, W. T. & Clow, B. Determinants of Black women's health in rural and remote communities. *Can J Nurs Res* **39**, 56–76 (2007).
12. Smye, V., Browne, A. J., Varcoe, C. & Josewski, V. Harm reduction, methadone maintenance treatment and the root causes of health and social inequities: An intersectional lens in the Canadian context. *Harm Reduct J* **8**, (2011).
13. Varcoe, C., Brown, H., Calam, B., Harvey, T. & Tallio, M. Help bring back the celebration of life: a community-based participatory study of rural Aboriginal women's maternity experiences and outcomes. *BMC Pregnancy Childbirth* **13**, (2013).
14. Denison, J., Varcoe, C. & Browne, A. J. Aboriginal women's experiences of accessing health care when state apprehension of children is being threatened. *J Adv Nurs* **70**, 1105–1116 (2014).
15. Goodman, A. *et al.* 'They treated me like crap and I know it was because I was Native': The healthcare experiences of Aboriginal peoples living in Vancouver's inner city. *Soc Sci Med* **178**, 87–94 (2017).
16. Nelson, S. E. & Wilson, K. Understanding barriers to health care access through cultural safety and ethical space: Indigenous people's experiences in Prince George, Canada. *Soc Sci Med* **218**, 21–27 (2018).
17. Monchalin, R., Smylie, J. & Nowgesic, E. 'I Guess I Shouldn't Come Back Here': Racism and Discrimination as a Barrier to Accessing Health and Social Services for Urban Métis Women in Toronto, Canada. *J Racial Ethn Health Disparities* **7**, 251–261 (2020).
18. Singh, S. Racial biases in healthcare: Examining the contributions of Point of Care tools and unintended practitioner bias to patient treatment and diagnosis. *Health (London)* (2021) doi:10.1177/13634593211061215.

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- Family history (genetic predisposition, shared environment, intergenerational trauma)
- Limitations of available treatments to address high tolerance to substances
- Pregnancy-associated nausea or hyperemesis gravidarum (risk factor for cannabis use in the perinatal period)[19,20]
- Self-medication based on pharmacological properties of the drug
- Access to the substance based on low cost, high availability

1.4. Prevention

The most important thing a healthcare provider can do for prevention is to establish meaningful therapeutic rapport by creating and fostering a welcoming, non-judgemental, trauma-informed and culturally safe care environment (see Resources). Within that safe environment:

- Screen for and address substance use issues prior to pregnancy or as soon as the pregnant person accesses healthcare.
- Incorporate counselling on alcohol, cannabis, smoking/vaping and illicit substance use in routine or follow-up visits with all pregnant and parenting people, especially those with a history of using substances.
- Engage partners of birthing parents in discussions about substance use, its role in the relationship and family dynamic, with treatment support being offered to both parents, if applicable.

19. First, O. K. *et al.* Patterns of Use and Self-reported Effectiveness of Cannabis for Hyperemesis Gravidarum. *Geburtshilfe Frauenheilkd* **82**, 517–527 (2022).
20. Vanstone, M. *et al.* Pregnant People's Perspectives On Cannabis Use During Pregnancy: A Systematic Review and Integrative Mixed-Methods Research Synthesis. *J Midwifery Womens Health* **67**, 354–372 (2022).

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The most important thing a healthcare provider can do for prevention is to establish meaningful therapeutic rapport by creating and fostering a welcoming, non-judgemental, trauma-informed and culturally safe care environment.

2. SCREENING & DIAGNOSIS

2.1. Screening

Screening for substance use during pregnancy should be universal[21]. It allows stratification of people into levels of risk given their pattern of use.

Screening for substance use (past and present) should be performed as early as possible in pregnancy and at every antenatal visit[22]. Collaborative discussion provides an opportunity for early detection of problematic substance use, helps establish levels of risk associated with substance use, and reduces the risk of progression to more severe disease. As patients may be fearful to disclose substance use (they may feel judged or worry that their parenting ability will be questioned), screening is best done in a welcoming environment and by a healthcare provider who is trusted, non-judgmental, and has good rapport with the patient. Informed consent can help start a process of engagement and create the foundation for a relationship. This process involves focusing on building trusting relationships from the very first interactions, meeting a person where they are at, and not pushing too quickly — risking over-reaching their level of readiness. When asking screening questions, ensure a referral list is available should the person wish to seek care for their substance use.

Screening tools

- Initial questions asking about any tobacco or nicotine products (including vape products), alcohol, cannabis or illicit substance use are indicated in pregnancy. For example, the single alcohol screening question (SASQ) is recommended to identify alcohol use in pregnant people: "Do you sometimes drink beer, wine or other alcoholic drinks?".
- Instruments that have been validated in pregnancy include[23]:
  - 4Ps Plus (also known as 5Ps): Past, present, partner, parents, peers (substances screening)
  - SURP-P: Substance use risk profile
- Alternatively, screening can be performed by asking standardized questions during interview. For further detail and examples, see Appendix 1 and the resource "Talking about substance use during pregnancy" developed by the BC Centre of Excellence for Women's Health (Available from: https://cewh.ca/all-publications/).
- Urine drug testing should NOT be used in place of substance use screening questions[24].

21. Wright, T. E. *et al.* The role of screening, brief intervention, and referral to treatment in the perinatal period. *Am J Obstet Gynecol* **215**, 539–547 (2016).
22. World Health Organization. *Guidelines for the identification and management of substance use and substance use disorders in pregnancy; Available from https://apps.who.int/iris/handle/10665/107130*. (2014).
23. Coleman-Cowger, V. H. *et al.* Accuracy of Three Screening Tools for Prenatal Substance Use. *Obstetrics and Gynecology* **133**, 952 (2019).
24. BC Centre for Substance Use, UBC Continuing Professional Development & UBC School of Nursing. Module 19: Pregnancy and Substance Use. in *Addiction Care and Treatment Online Course* (University of British Columbia Division of Continuing Professional Development, 2019).

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2.2. Diagnosis

At-risk substance use is any nicotine, alcohol, cannabis, non-prescribed prescription meds or illicit substance use during pregnancy that does not meet the criteria for a substance use disorder (SUD). The Diagnostic and Statistical Manual of Mental Disorders (DSM-5) lists 11 criteria (Table 2)[25], for which a minimum of two are required to diagnose mild SUD, and six or more criteria correspond to severe SUD.

Table 2.

DSM-5 CRITERIA FOR SUBSTANCE USE DISORDER DIAGNOSIS
Use of larger amounts/longer use
Repeated attempts to quit/control use
Much time spent using
Craving or a strong desire or urge to use
Neglect of major roles to use (i.e., failed to meet responsibilities in various settings due to substance use)
Social/interpersonal problems related to use (e.g., relationship problems/conflicts with others)
Activities given up to use
Hazardous use (e.g., overdosed, driven while under the influence, or blacked out)
Physical/psychological problems related to use (i.e., substance use has led to, for example, liver damage, lung cancer, depression, anxiety)
Tolerance (greater amount of substance is required for desired effects)
Withdrawal (when substance use is suspended, withdrawal symptoms occur)

25. Hasin, D. S. *et al.* DSM-5 criteria for substance use disorders: Recommendations and rationale. *American Journal of Psychiatry* **170**, 834–851 (2013).

3. TREATMENT AND SELF-MANAGEMENT

3.1. Principles of care[24,26,27]

- Respect for autonomy, self-determination and privacy for the patient, assuring confidentiality and emphasizing there is no duty to report prenatal substance use per se
- Respect for individual and cultural identity
- Anti-racist practice (specifically responses to Indigenous-specific racism)
- Building trust through relationship
- Awareness of the social determinants of health
- Practice trauma- and violence-informed care (TVIC)
- Practice strength- and resilience-based care
- Practice culturally safe and humble care
- Practice equity-oriented care
- Integrated medical management (obstetric, primary care and addiction treatment)
- Harm reduction: ensure access to full range of harm reduction supplies and services
- Assess for, and treat, other comorbid mental health conditions

3.2. Summary of Treatments

For pregnant and parenting women and people using substances, the full range of evidence-informed substance use treatments for opioids, stimulants, nicotine and alcohol available to the general population should be available. These include pharmacological treatments, anti-craving medications, psychosocial treatment interventions, recovery-oriented services and bed-based treatment facilities. Treatment delivery may incorporate the use of eHealth strategies, which have shown promise in treating substance use in pregnancy[28].

After determining the severity of risk, develop a management plan in collaboration with the patient that meets their treatment goals. Clinical management includes a range of psychosocial treatment interventions and pharmacotherapies for some substance use disorders. If your patient identifies as Indigenous, ask if there are any cultural practices or ceremonies that they want to include in their care and ask if they would like to speak to the Indigenous Liaison/Elder or Knowledge Keeper, if available in your clinic.

When **moderate to severe** substance use disorder is diagnosed, referral to specialist services is required. Withdrawal management and stabilization in a medically supervised setting is indicated for moderate to severe alcohol, benzodiazepine and opioid use disorders because of the potential risk to the pregnancy and fetus in the presence of physiological withdrawal symptoms.

Intoxication or withdrawal from substances can induce Anxiety Disorders, Depressive Disorders, Bipolar Disorders or Psychotic Disorders and these disorders will need to be treated, in addition to the substance use disorder.

24. BC Centre for Substance Use, UBC Continuing Professional Development & UBC School of Nursing. Module 19: Pregnancy and Substance Use. in *Addiction Care and Treatment Online Course* (University of British Columbia Division of Continuing Professional Development, 2019).
26. Perinatal Services BC. *Honouring Indigenous women's and families' pregnancy journeys: A practice resource to support improved perinatal care: Created by Aunties, Mothers, Grandmothers, Sisters, and Daughters; Accessed from http://www.perinatalservicesbc.ca/health-professionals/professional-resources/indigenous-resources, Feb. 24, 2023.* (2021).
27. Schmidt, R., Wolfson, L., Stinson, J., Poole, N. & Greaves, L. *Mothering and Opioids: Addressing Stigma and Acting Collaboratively.* (2019).
28. Silang, K. *et al.* eHealth Interventions to Treat Substance Use in Pregnancy: A Systematic Review and Meta-Analysis. *Int J Environ Res Public Health* **18**, (2021).

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3.3. Psychosocial Treatments

Although evidence is limited in pregnant populations, recommendations for psychosocial interventions to manage cravings, support emotional regulation and relapse prevention for all substance use disorders include:

- Motivational Interviewing (see Appendix 2)
- Cognitive Behavioral Therapy (CBT; See *Perinatal Depression* section of these BC Reproductive Mental Health guidelines)
- Acceptance and Commitment Therapy (ACT)
- Dialectical Behaviour Therapy (DBT)
- Relapse prevention skills
- Contingency management: positive reinforcements such as prize vouchers are used to reward desired achievements (e.g., reductions in use, abstinence, initiation/establishment of healthy habits)
- Peer support groups (e.g., Alcoholics Anonymous, Narcotics Anonymous, SMART recovery)

Psychosocial treatments may be delivered in a variety of settings, ranging from least-intensive outpatient programs to bed-based, live-in support recovery or treatment centres (e.g., the FIR unit and the Heartwood Centre for Women in BC Women's Hospital).

Motivational Interviewing is considered the first-line intervention (see Appendix 2). The acronym PACE, used to describe a key interpersonal element of motivational interviewing, can be helpful to remember (Partnership, Acceptance, Compassion and Evocation)[29]. Ask how the patient is feeling about their substance use. Find out what supports (if any) are in place and what they might find most helpful. If someone is not yet ready to make changes, respect this and discuss what supports do exist if they choose to access them in the future.

Brief Interventions:

- Are employed to manage risky substance use and mild substance use disorders
- May be short, structured sessions utilizing Motivational Interviewing techniques to effect behavioural change
- Include exploration of ambivalence regarding substance use, offering advice, and identification of strategies to help eliminate or reduce substance use
- Can be structured using the 5As framework (Ask, Advise, Assess, Assist, Arrange)[30,31]

When moderate to severe substance use disorder is diagnosed, referral to specialist services is required.

29. Miller, W. R. & Rollnick, S. *Motivational interviewing: Helping people change.* (Guilford Press, 2013).
30. Diamanti, A. *et al.* Smoking cessation in pregnancy: An update for maternity care practitioners. *Tob Induc Dis* **17**, (2019).
31. British Columbia Centre on Substance Use (BCCSU), B.C. Ministry of Health & B.C. Ministry of Mental Health and Addictions. *Pregnancy Supplement – Provincial Guideline for the Clinical Management of High-Risk Drinking and Alcohol Use Disorder; Available at: https://www.bccsu.ca/clinical-care-guidance/.* (2020).

3.4. Medications for the Treatment of SUDs

Refer to Appendix 3 for information about the relative safety of medications currently used for the treatment of SUDs in the perinatal period (based on literature available by Dec. 8, 2022).

3.5. Treatment for Specific SUDs

3.5.1. Alcohol Use Disorder

Alcohol is the most frequently used substance in pregnancy, with a rate of approximately 10.6% of pregnant people using any alcohol during pregnancy (including prior to the person knowing of their pregnancy). Alcohol use disorder (associated with ~0.3-5.0% of pregnancies) may be associated with severe consequences, including spontaneous abortion, preterm birth, stillbirth, intrauterine growth restriction and fetal alcohol spectrum disorder. The data for the treatment of alcohol use disorder in pregnancy is very limited, but the known harms of continued drinking need be balanced against the potential harms of medication use. Treatment for alcohol use disorder should be offered, including both non-pharmacological (e.g., motivational interviewing, CBT, DBT and peer support groups such as Alcoholics Anonymous) and pharmacological options (e.g., naltrexone, acamprosate). Additionally, alcohol use disorder is associated with nutritional deficiencies, and so it is particularly important to recommend thiamine and folic acid supplementation for pregnant people with alcohol use disorder. Motivation for decreasing or stopping using alcohol can be much higher during pregnancy; the primary reason being fetal wellbeing.

- Medications can be used for alcohol use disorder in pregnancy in two contexts: 1) to manage withdrawal and 2) to prevent relapse.

Alcohol is the most frequently used substance in pregnancy, with a rate of approximately 10.6% of pregnant people using any alcohol during pregnancy...

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Withdrawal management:

Alcohol withdrawal syndrome includes signs of autonomic hyperactivity (e.g., sweating, accelerated pulse, increased blood pressure, tremor), insomnia, nausea/vomiting, transient hallucinations/illusions, psychomotor agitation, and/or anxiety, which occur following cessation or reduction in alcohol use that has been heavy and prolonged (DSM-5). Serious complications include seizures and delirium tremens. Withdrawal presents similarly when pregnant as when not pregnant, but the consequences of withdrawal can be more serious in the context of pregnancy. Due to the significant risks of **acute withdrawal** to the patient and fetus, all pregnant patients diagnosed with alcohol use disorder should be offered medication for withdrawal management.

- It is recommended that pregnant patients undergo withdrawal management in inpatient settings where possible, so they can receive symptom-triggered treatment with close monitoring of withdrawal symptoms and fetal health[31].
- Benzodiazepines (e.g., lorazepam, diazepam) remain the gold standard, usually given with flexible dosing based on monitoring scores on the Clinical Institute Withdrawal Assessment for Alcohol (revised version) (CIWA-Ar) (See Appendix 3 — Medication Tables).
- Gabapentin may be considered for mild to moderate withdrawal symptoms (in the absence of seizure risk), either as regularly-scheduled doses or symptom-triggered (See Appendix 3 — Medication Tables).

Relapse Prevention:

- Naltrexone and acamprosate are both evidence-based **relapse prevention** medications and may be used as first-line treatments in the perinatal period. If a patient is already being treated with these medications pre-pregnancy, they are encouraged to continue therapy. Although not extensively studied in pregnancy, the benefits in using either agent outweigh the significant risks of returning to alcohol use.
- Gabapentin has evidence of efficacy for relapse prevention in the non-pregnant population, and may be considered as an alternative or adjunctive treatment.

The postpartum period can be a vulnerable time for relapse in alcohol use disorder, and ongoing monitoring is indicated.

Intoxication or withdrawal from alcohol can induce symptoms of Anxiety Disorders, Depressive Disorders, Bipolar Disorders or Psychotic Disorders and these symptoms will need to be monitored and treated if they do not resolve with stabilization of the alcohol use disorder.

31. British Columbia Centre on Substance Use (BCCSU), B.C. Ministry of Health & B.C. Ministry of Mental Health and Addictions. *Pregnancy Supplement - Provincial Guideline for the Clinical Management of High-Risk Drinking and Alcohol Use Disorder; Available at: https://www.bccsu.ca/clinical-care-guidance/.* (2020).

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3.5.2. Nicotine Use Disorder

Stopping nicotine use prior to pregnancy is ideal. A number of treatment options are available to support smoking cessation in BC, including both pharmacological (e.g., nicotine replacement therapy and bupropion) and non-pharmacological (e.g., QuitNowBC), which have been shown to be highly effective.

Tobacco cessation early in pregnancy will give the greatest benefit to parent and fetus; stopping smoking at any point during pregnancy (even mid-third trimester) is beneficial.

If cessation is not achievable using non-pharmacological interventions alone, including motivational interviewing or supportive psychotherapy, pharmacotherapies should be offered, weighing the risks associated with nicotine replacement therapy, varenicline or bupropion versus the ongoing harms associated with nicotine use. A recent study documented that people taking varenicline in pregnancy were almost three times more likely to succeed in smoking cessation than people using nicotine patches in pregnancy[32].

Nicotine replacement therapy (NRT)

There is no strong evidence that pregnant smokers who use NRT are at higher risk of adverse perinatal outcomes, including teratogenesis, than pregnant smokers not using this therapy. Overall, NRT, including gum, lozenge, inhaler or patch, does not appear to be harmful and may be associated with lower rates of prematurity and small for gestational age infants. It is safe and appropriate (consistent with harm reduction principles) to continue NRT for patients who continue to smoke.

If NRT is prescribed, particularly for lower intensity use, the clinician should consider choosing delivery systems that yield intermittent, rather than continuous, drug exposure (e.g., gum, lozenge or inhaler rather than patch). If abstinence is not achieved, consider adding nicotine patch with the option to remove patch overnight.

32. Choi, S. K. Y. *et al.* The Comparative Effectiveness of Varenicline and Nicotine Patches for Smoking Abstinence During Pregnancy: Evidence From a Population-based Cohort Study. *Nicotine & Tobacco Research* **23**, 1664–1672 (2021).

Effective dose range: There is some evidence that nicotine and cotinine metabolism is accelerated in pregnancy, which means that the effective dose range may be higher in pregnancy than it is for non-pregnant people. Someone continuing NRT from before pregnancy may find that efficacy is reduced at the pre-pregnancy dose, and may require an increased dose.

Bupropion has been used to aid smoking cessation and has been found to increase abstinence rates of non-pregnant people when compared with a placebo, with similar results from a small number of studies in pregnant people. Although there has been some inconsistent data regarding the association of bupropion with congenital defects in the first trimester, the majority of studies have not shown an increase in teratogenicity.

Varenicline has been extensively studied in the general population, but there have been few studies regarding the safety of varenicline use in pregnancy. However, based on available evidence, varenicline is likely not associated with major congenital anomalies, preterm birth, or other adverse obstetric/neonatal outcomes[33-35].

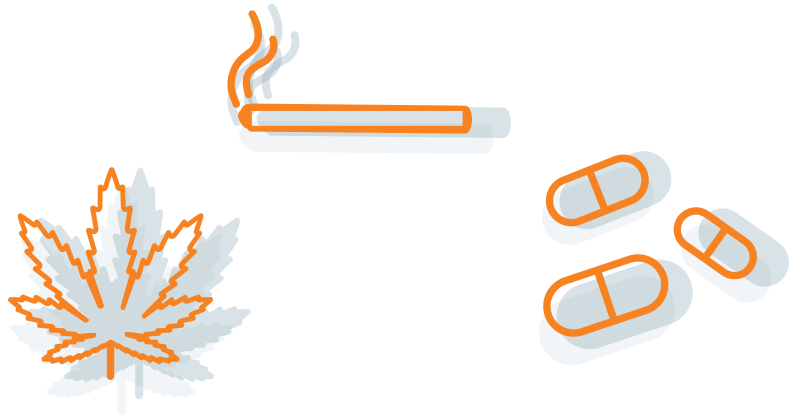
3.5.3. Cannabis Use Disorder

Psychosocial treatments including motivational interviewing, CBT, and contingency management are the mainstays of treatment for cannabis use disorder in pregnancy.

3.5.4. Stimulant Use Disorder (cocaine, methamphetamine)

The prevalence of stimulant use disorder in pregnancy appears to be increasing[5], and often co-exists with opioid use disorder. Treatment is challenging, as there are no well-established, effective pharmacotherapies, and care relies on psychosocial treatments (e.g., contingency management, the Matrix Model, CBT, 12-step facilitation, etc.). Expert opinion suggests considering treatment with naltrexone and bupropion, but treatment modalities are very poorly studied in the perinatal population.

Intoxication with stimulants can induce symptoms of psychosis which may not resolve with stabilization of the stimulant use disorder. Treatment with antipsychotics may be required.



5. Center for Behavioral Health Statistics and Quality. *Results from the 2020 National Survey on Drug Use and Health: Detailed tables*. (2021).
33. Tran, D. T. *et al.* Use of smoking cessation pharmacotherapies during pregnancy is not associated with increased risk of adverse pregnancy outcomes: a population-based cohort study. *BMC Med* **18**, (2020).
34. Richardson, J. L. *et al.* Pregnancy outcomes after maternal varenicline use; analysis of surveillance data collected by the European Network of Teratology Information Services. *Reprod Toxicol* **67**, 26–34 (2017).
35. Turner, E., Jones, M., Vaz, L. R. & Coleman, T. Systematic Review and Meta-Analysis to Assess the Safety of Bupropion and Varenicline in Pregnancy. *Nicotine Tob Res* **21**, 1001–1010 (2019).

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3.5.5. Opioid Use Disorder

Opioid agonist treatment (OAT) is well established as the standard of care for pregnant people with opioid use disorder. It has been shown to eliminate or substantially reduce non-medical opioid use and associated risks, leading to improved neonatal outcomes in comparison to untreated opioid use disorder and/or rapid withdrawal management.

Withdrawal management ("detox") alone is not a recommended approach during pregnancy[3]. This is due to the high rates of relapse, which are similar to those in the general population of patients with opioid use disorder.

Withdrawal from opiates is an obstetric emergency and discontinuing opioid use should only take place under medical supervision. Despite the risks, a patient may expressly wish to discontinue opioid use, including OAT. An informed consent process, including communicating risks of overdose and relapse, should take place. A treatment plan that balances slow withdrawal management relative to gestational period (weeks to months), and provides intensive long-term monitoring and psychosocial interventions is recommended[24].

The full range of OAT (i.e., methadone, buprenorphine and slow release oral morphine) used in non-pregnant patients may be used in the perinatal period.

- It is not recommended to switch between treatments during pregnancy unless clinical stability has not been achieved with initial OAT.
- Doses for methadone and buprenorphine may need to be increased as pregnancy progresses, due to the increased hepatic metabolism of these medications. 'Split' dosing rather than once daily may be considered to avoid subtherapeutic trough levels and associated withdrawal symptoms.
- OAT should be continued through parturition and post-partum, with close monitoring for dosage adjustments for the extended postpartum period.
- Injectable OAT (iOAT) is available in some hospital settings in BC.

Intoxication or withdrawal from opioids can induce symptoms of Anxiety Disorders, Depressive Disorders, Bipolar Disorders or Psychotic Disorders and these symptoms will need to be monitored and treated, if they do not resolve with stabilization of the opioid use disorder.

3. British Columbia Centre on Substance Use, B.C. Ministry of Health, B.C. Ministry of Mental Health and Addictions & Perinatal Services BC. *A Guideline for the Clinical Management of Opioid Use Disorder – Pregnancy Supplement, accessed from https://www.bccsu.ca/care-guidance-publications/.* (2018).
24. BC Centre for Substance Use, UBC Continuing Professional Development & UBC School of Nursing. Module 19: Pregnancy and Substance Use. in *Addiction Care and Treatment Online Course* (University of British Columbia Division of Continuing Professional Development, 2019).

4. POSTPARTUM CONSIDERATIONS

4.1. Rooming-in

The standard of care in BC is **keeping the birth parent and baby together** (i.e., rooming-in), and encompasses support for providing physical space for rooming-in, breastfeeding, safe skin-to-skin contact, safer sleeping, and engaging parents in culturally safe ways. Indigenous Cultural Safety is also a core component of rooming-in[24,36].

Rooming-in is associated with less severe neonatal abstinence syndrome (NAS), less frequent pharmacological treatment **for NAS, decreased length of hospital stay, less frequent NICU admissions, and significant cost savings for the healthcare system[37]. Rooming-in promotes healthy parent-baby bonding**, and has far-reaching effects[38] including:

- Improved long-term developmental outcomes
- Improved breastfeeding outcomes
- Improved access to integrated care and initial childcare education
- Fewer babies removed from their birth parents to be placed in foster care

24. BC Centre for Substance Use, UBC Continuing Professional Development & UBC School of Nursing. Module 19: Pregnancy and Substance Use. in *Addiction Care and Treatment Online Course* (University of British Columbia Division of Continuing Professional Development, 2019).
36. Provincial Perinatal Substance Use Project, B.C. Women's Hospital and Health Centre, B.C. Ministry of Health & B.C. Ministry of Mental Health and Addictions. *Rooming-in guideline for perinatal women using substances; Available from http://www.bcwomens.ca/Professional-Resources-site/Documents/Provincial%20Rooming-in%20Guideline%2022Oct2020%20Final%20-%20updated%20hyperlinks.pdf* . (2020).
37. Whalen, B. L., Holmes, A. V. & Blythe, S. Models of care for neonatal abstinence syndrome: What works? *Semin Fetal Neonatal Med* **24**, 121-132 (2019).
38. Ryan, G., Dooley, J., Gerber Finn, L. & Kelly, L. Nonpharmacological management of neonatal abstinence syndrome: a review of the literature. *J Matern Fetal Neonatal Med* **32**, 1735-1740 (2019).

4.2. Lactation

Box 1. A note on inclusive language: Not every person who is lactating will be comfortable with the term 'breastfeeding.' It is important for healthcare providers to ask people which term they prefer to use when discussing the act of feeding their baby. Other options may include 'chestfeeding' or 'nursing.' We encourage clinicians to be sensitive to patient language preferences, and aware of inclusive language options[68, 69]. In the interests of plain language writing, we use the terms breastfeeding and human milk in this guideline, but the messages are intended to apply to individuals of all genders.

68. Dinour, L. M. Speaking Out on 'Breastfeeding' Terminology: Recommendations for Gender-Inclusive Language in Research and Reporting. *Breastfeed Med* **14**, 523-532 (2019).
69. Rasmussen, K. M., Felice, J. P., O'Sullivan, E. J., Garner, C. D. & Geraghty, S. R. The Meaning of 'Breastfeeding' Is Changing and So Must Our Language About It. *Breastfeed Med* **12**, 510-514 (2017).

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For parents with substance use disorders, breastfeeding is recommended in most instances, unless the risks clearly outweigh the benefits. Collaboratively developing feeding safety plans is recommended.

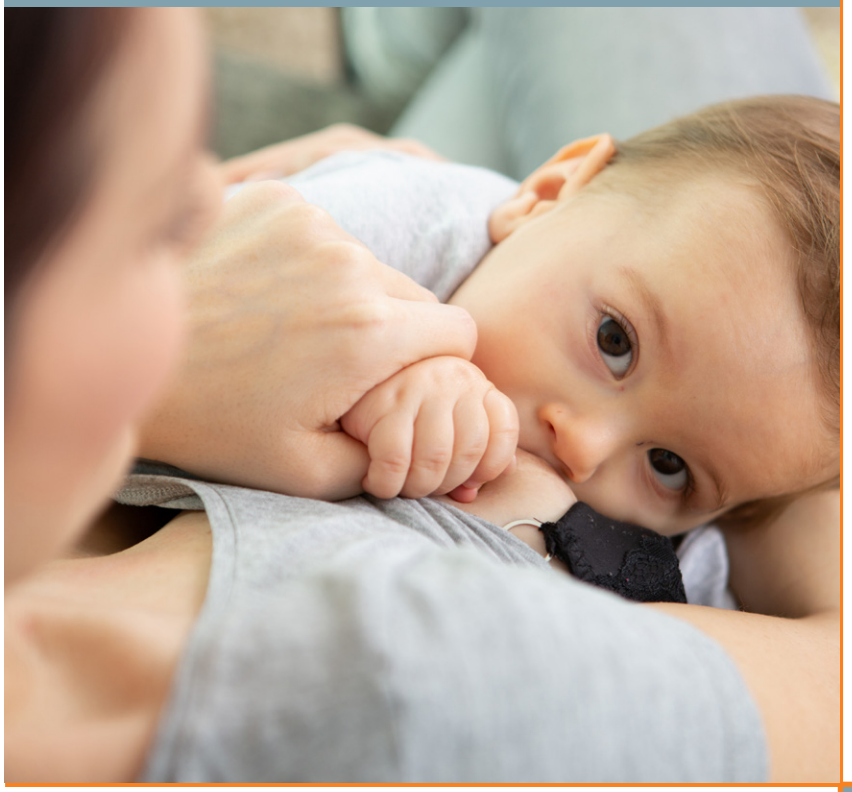
The nursing parent should be counseled about the possible need to suspend breastfeeding in the event of a relapse. Offer lactation support and guidance on safe management of milk supply[39].

It is important to note that parents who have experienced sexual trauma (which may be more common amongst people with substance use disorders) may not feel safe or comfortable breastfeeding. In such cases, parents should be supported to consider alternative feeding options and strategies.

When it is not recommended or preferred to breastfeed directly, or provide a lactating parent's own expressed milk, consider using pasteurized donor human milk if possible.

For further breastfeeding safety plan guidance, see pages 24-25 of the BC Provincial Rooming-In Guideline for Perinatal Women Using Substances[36], and pages 25-28 of the BC Pregnancy Outreach Program Handbook Supplement on Perinatal Substance Use[40].

Breastfeeding should be encouraged in those who are stable on OAT (at any dose), who are not using illicit drugs including opioids, and who have no other contraindications.



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36. Provincial Perinatal Substance Use Project, B.C. Women's Hospital and Health Centre, B.C. Ministry of Health & B.C. Ministry of Mental Health and Addictions. *Rooming-in guideline for perinatal women using substances; Available from http://www.bcwomens.ca/Professional-Resources-site/Documents/Provincial%20Rooming-in%20Guideline%2022Oct2020%20Final%20-%20updated%20hyperlinks.pdf* . (2020).
39. Boersma, S., Beck, J. & Geiger, L. *Breastfeeding protocol: Expressing, collecting, and storing of human milk*. (2019).
40. BC Association of Pregnancy Outreach Programs (BCAPOP). *BC Pregnancy Outreach Program handbook supplement: Perinatal substance use; Accessible at https://www.bcapop.ca/BCAPOP-Handbooks*. (2019).

Breastfeeding is **not recommended** for[41]:

- HIV-positive patients, including those with an undetectable viral load
- Those who are actively and regularly using non-prescribed substances, including alcohol

4.2.1. Alcohol use and lactation[24]:

- Alcohol concentration in human milk is similar to maternal blood levels.
- Alcohol levels in human milk peak 30 – 60 minutes after an alcoholic drink, thus drinking right before breastfeeding/ expressing human milk should be avoided.
- Those who plan to drink alcohol can prevent or limit alcohol from reaching their babies by breastfeeding or expressing human milk before drinking alcohol.[31]

4.2.2. Commercial tobacco use and lactation:

- Nicotine is present in human milk in a dose-dependent fashion.
- Some evidence suggests that exposed infants may have higher rates of colic, sleep disorders and cardiac rhythm disturbances[42].
- Offer strategies to minimize infant exposure to nicotine during lactation (e.g., counseling to smoke after breastfeeding to minimize nicotine transfer in human milk, and to not smoke near the baby)[40].

4.2.3. Cannabis use and lactation:

- Tetrahydrocannabinol (THC) is excreted into human milk and may accumulate to high concentrations. Some evidence suggests that exposed infants may have impaired psychomotor development during infancy and at one year of age[8,43].
- Inform clients that they can reduce harm by checking the concentration of THC and CBD on the label of cannabis products and choose low potency cannabis products that have higher levels of CBD and lower levels of THC[44].

8. Renard, J. & Konefal, S. *Clearing the Smoke on Cannabis: Cannabis Use during Pregnancy and Breastfeeding – An Update; Accessed from https://www.ccsa.ca/clearing-smoke-cannabis-cannabis-use-during-pregnancy-and-breastfeeding, Feb. 24, 2023*. (2022).
24. BC Centre for Substance Use, UBC Continuing Professional Development & UBC School of Nursing. Module 19: Pregnancy and Substance Use. in *Addiction Care and Treatment Online Course* (University of British Columbia Division of Continuing Professional Development, 2019).
31. British Columbia Centre on Substance Use (BCCSU), B.C. Ministry of Health & B.C. Ministry of Mental Health and Addictions. *Pregnancy Supplement – Provincial Guideline for the Clinical Management of High-Risk Drinking and Alcohol Use Disorder; Available at: https://www.bccsu.ca/clinical-care-guidance/*. (2020).
40. BC Association of Pregnancy Outreach Programs (BCAPOP). *BC Pregnancy Outreach Program handbook supplement: Perinatal substance use; Accessible at https://www.bcapop.ca/BCAPOP-Handbooks*. (2019).
41. WHO Department of Child and Adolescent Health and Development *et al. Acceptable medical reasons for use of breast-milk substitutes*. (2009).
42. Napierala, M., Mazela, J., Merritt, T. A. & Florek, E. Tobacco smoking and breastfeeding: Effect on the lactation process, breast milk composition and infant development. A critical review. *Environ Res* **151**, 321–338 (2016).
43. Garry, A. *et al.* Cannabis and breastfeeding. *J Toxicol* **2009**, 1–5 (2009).
44. Perinatal Services BC. *Cannabis Use During Pregnancy & Lactation: Practice Resource for Health Care Providers*. (2020).

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4.2.4. Stimulant use and lactation:

- There is extremely limited data, however cocaine and methamphetamine and their metabolites enter human milk following non-prescribed use. Cocaine and methamphetamine have been detected in human milk for up to 36[45] and 100 hours[46] respectively, post-ingestion.
- Due to the reported serious harms to infants exposed to non-prescribed stimulants during breastfeeding, it has been suggested to withhold breastfeeding for 4 days from last use to minimize infant exposure[47].

4.2.5. Opioid Agonist Treatment (OAT) and lactation:

- Breastfeeding should be encouraged and supported in those who are stable on OAT (at any dose), who are not using illicit drugs including opioids, and who have no other contraindications. This conversation should include education/reassurance about the safety of breastfeeding/feeding expressed human milk and weaning while on OAT[3].
- For people on OAT, breastfeeding is associated with improved NAS outcomes, such as decreased severity of symptoms, decreased need for pharmacologic management, and decreased length of hospital stay[48].

4.3. Monitoring, Education and Support

Continued support is essential from healthcare providers in the postpartum period, as rates of relapse and fatal overdose are markedly increased when compared to the prenatal period[6]. More frequent postpartum visits are encouraged for ongoing management of medical, substance use and psychosocial needs. The postpartum period is a vulnerable time for relapse of mental health conditions, which may increase the risk of relapse of substance use disorders postpartum. Engaging partners in substance use treatment can help create a circle of support for the birthing parent.

Areas to address include:

- Support for breastfeeding
- Discussion of contraception and sexual health advice (See Box 2)
- Discussion of safer sleep plan[49,50]
- Screening for, and treatment of, postpartum depression and other mental illnesses
- Relapse prevention and ongoing safety planning
    - Consider in-home doula/parenting support to reduce the risk of relapse

3. British Columbia Centre on Substance Use, B.C. Ministry of Health, B.C. Ministry of Mental Health and Addictions & Perinatal Services BC. *A Guideline for the Clinical Management of Opioid Use Disorder - Pregnancy Supplement, accessed from https://www.bccsu.ca/care-guidance-publications/.* (2018).
6. Schiff, D. M. *et al.* Fatal and Nonfatal Overdose Among Pregnant and Postpartum Women in Massachusetts. *Obstetrics and gynecology* **132**, 466-474 (2018).
45. Chasnoff, I. J., Lewis, D. E. & Squires, L. Cocaine Intoxication in a Breast-Fed Infant. *Pediatrics* **80**, 836-838 (1987).
46. Chomchai, C., Chomchai, S. & Kitsommart, R. Transfer of Methamphetamine (MA) into Breast Milk and Urine of Postpartum Women who Smoked MA Tablets during Pregnancy: Implications for Initiation of Breastfeeding. *J Hum Lact* **32**, 333-339 (2016).
47. UBC Continuing Professional Development, Perinatal Services BC & BC Women's Hospital + Health Centre. *Perinatal Substance Use eLearning course.* (UBC Continuing Professional Development).
48. Bogen, D. L. & Whalen, B. L. Breastmilk feeding for mothers and infants with opioid exposure: What is best? *Semin Fetal Neonatal Med* **24**, 95-104 (2019).
49. Perinatal Services BC. *Safer Infant Sleep Practice Resource for Health-Care Providers.* (2022).
50. Perinatal Services BC. *Honouring Our Babies Safer Sleep Toolkit.* (2023).

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Specific recommendations for those with OUD:

- Provide overdose prevention education and naloxone
- Management of pain in the peripartum is an issue of particular concern for those with OUD[51], carrying with it risks of inadequate pain management due to hyperalgesia[52,53], fear of relapse,[54] and relapse[55]. Moderate levels of postpartum pain for people who deliver vaginally can be managed using a combination of regularly-scheduled NSAIDS and acetaminophen, as clinically indicated[55,56]. Additional use of short-term opioids may be carefully considered for some patients, with open discussion of risks, benefits and alternative therapies. In cases of caesarean delivery[54,57], further non-opioid options include Transversus Abdominis Plane (TAP) block, epidural analgesia, clonidine and ketamine.

For some patients, it is most important to connect them with supportive housing and/or inpatient treatment facilities that support rooming-in and maintaining the integrity of the parent-baby dyad.

Box 2. It is essential to acknowledge the history and ongoing issue of coerced sterilization that has disproportionately impacted Indigenous women. Conversations about contraception and sexual health must prioritize the rights of the patient to make decisions aligned with their preferences and values. The First Nations Health Authority, in collaboration with Perinatal Services BC, has produced a shared decision-making guide to promote informed consent for contraception. This guide and associated resources can be found here: **https://www.fnha.ca/what-we-do/chief-medical-office/informed-consent-for-contraception.**

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51. Raymond, B. L., Kook, B. T. & Richardson, M. G. The opioid epidemic and pregnancy: implications for anesthetic care. *Curr Opin Anaesthesiol* **31**, 243-250 (2018).
52. Wachholtz, A., Foster, S. & Cheatle, M. Psychophysiology of pain and opioid use: Implications for managing pain in patients with an opioid use disorder. *Drug Alcohol Depend* **146**, 1-6 (2015).
53. Manhapra, A. Complex Persistent Opioid Dependence—an Opioid-induced Chronic Pain Syndrome. *Curr Treat Options Oncol* **23**, 921-935 (2022).
54. Nowakowski, E. *et al.* Obstetric pain management for pregnant women with opioid use disorder: A qualitative and quantitative comparison of patient and provider perspectives (QUEST study). *Addiction (Abingdon, England)* (2023) doi:10.1111/ADD.16134.
55. Lim, G. *et al.* A Systematic Scoping Review of Peridelivery Pain Management for Pregnant People With Opioid Use Disorder: From the Society for Obstetric Anesthesia and Perinatology and Society for Maternal Fetal Medicine. *Anesth Analg* **135**, 912-925 (2022).
56. Soens, M. A., He, J. & Bateman, B. T. Anesthesia considerations and post-operative pain management in pregnant women with chronic opioid use. *Semin Perinatol* **43**, 149-161 (2019).
57. Sen, S. *et al.* New Pain Management Options for the Surgical Patient on Methadone and Buprenorphine. *Curr Pain Headache Rep* **20**, 1-8 (2016).

5. CHILD WELFARE SERVICES

In the United States in 2020, parental substance use was a factor in 35% of child removals[58]. In BC, a survey in 2002 of Ministry of Child and Family Development (MCFD) workers (N=40) reported that ~70% of their caseloads comprised mothers who used substances[59]. However, it is important to recognize that **substance use by a pregnant person is not reason alone** to constitute reporting or engagement with MCFD or the Delegated Aboriginal Agency (DAA), or to require child removal[3,40,60].

Considerations during pregnancy

- For pregnant patients, any reports under the Child, Family and Community Service Act (CFCSA) cannot legally be considered (as the fetus does not constitute a child).

Considerations after pregnancy

- **Section 13 of the CFCSA** contains a comprehensive outline of circumstances under which notifying MCFD is mandatory and there is a duty to report.
- For a birthing parent engaging with MCFD/DAA or where MCFD/DAA are already involved, ensure that the person has consented to having their information shared with MCFD/DAA and continually revisit the consent process.
- For further information about the roles and responsibilities of workers, and available services within the MCFD or DAA, please refer to the Collaborative Practice Protocol for Providing Services for Families with Vulnerabilities: Roles and Responsibilities of the Director (Child, Family and Community Service Act) and the Ministry of Health protocol agreement (available at https://www2.gov.bc.ca/assets/gov/public-safety-and-emergency-services/public-safety/protecting-children/collaborative_practice_relating_to_pregnant_women_protocol_agreement.pdf).
- The practice of "birth alerts", or a practice in which social workers or hospital staff flag an expecting parent without their knowledge to child welfare services, was eliminated as of September 2019 as a stigmatizing and discriminatory practice.

3. British Columbia Centre on Substance Use, B.C. Ministry of Health, B.C. Ministry of Mental Health and Addictions & Perinatal Services BC. *A Guideline for the Clinical Management of Opioid Use Disorder – Pregnancy Supplement, accessed from https://www.bccsu.ca/care-guidance-publications/*. (2018).
40. BC Association of Pregnancy Outreach Programs (BCAPOP). *BC Pregnancy Outreach Program handbook supplement: Perinatal substance use; Accessible at https://www.bcapop.ca/BCAPOP-Handbooks*. (2019).
58. U.S. Department of Health and Human Services, A. for C. and F. A. on C. Y. and F. C. B. *The Adoption and Foster Care Analysis and Reporting System (AFCARS) Report FY 2020; Accessible at https://www.acf.hhs.gov/cb/report/afcars-report-28*. (2021).
59. Turpel-Lafond, M. E. (The R. for C. and Y. *Children at Risk: The Case for a Better Response to Parental Addiction*. (2014).
60. Provincial Perinatal Substance Use Project. *Provincial blueprint for a perinatal substance use continuum of care*. (2021).

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Child Removals

- Child removal is associated with a range of negative long-term social, emotional and health outcomes for the parent and child.
- Documentation and clear communication of social work assessments, child removal causes, and plans for reunification, are essential to supporting birth parents and keeping birth parent and baby together.
- For Indigenous families, Bill C-92: An Act respecting First Nations, Inuit and Métis children, youth and families includes: 1) Prioritizing placing children with birth parents; and 2) where that is not possible, placing children with one of a priority list of adults considered, beginning with family members and Indigenous community members.
- **Child removals are devastating.** If a child is under a supervision order during the postpartum period, parents should be offered appropriate supports including a partner, family members, Indigenous Elders and community members, and safety planning.
- When child removal occurs, women are at very high risk of mortality[61,62]. For women actively using substances, child removal can further entrench a woman into substance use. For a person on an abstinence-based recovery journey, child removal can trigger relapses, and place women at high risk of fatal or near-fatal drug overdoses[63,64].
- Due to ongoing impacts of colonization and intergenerational trauma, Indigenous families are overrepresented with higher numbers of children removed and having child welfare system involvement[3]. Of infants who entered care (by removal or voluntary care agreement) within 12 months of birth in 2020/21, 67% were Indigenous[65]. Thus, the legacy of the residential school system continues within the child welfare system[10,66,67].

Supporting families with MCFD or DAA involvement

- Connect families with a social worker, liaison worker, and Indigenous Elder (as appropriate)
- Within a healthcare setting, work to advocate and support with meetings with MCFD/DAA
- Support the family with their rights, and connect to legal aid, if eligible
- Encourage MCFD/DAA social workers to open a support file to enhance access to community resources, parenting resources, and mental health and substance use supports
- Support consistent access to the birth parent to maintain breastfeeding, maintenance of milk supply and provide guidelines for safe handling and storage of expressed human milk[39]

3. British Columbia Centre on Substance Use, B.C. Ministry of Health, B.C. Ministry of Mental Health and Addictions & Perinatal Services BC. *A Guideline for the Clinical Management of Opioid Use Disorder – Pregnancy Supplement, accessed from https://www.bccsu.ca/care-guidance-publications/.* (2018).
10. *White Benevolence: Racism and colonial violence in the helping professions*. (Fernwood Publishing, 2022).
39. Boersma, S., Beck, J. & Geiger, L. *Breastfeeding protocol: Expressing, collecting, and storing of human milk*. (2019).
61. Thumath, M. *et al.* Overdose among mothers: The association between child removal and unintentional drug overdose in a longitudinal cohort of marginalised women in Canada. *Int J Drug Policy* **91**, 102977 (2021).
62. Wall-Wieler, E., Roos, L. L., Nickel, N. C., Chateau, D. & Brownell, M. Mortality Among Mothers Whose Children Were Taken Into Care by Child Protection Services: A Discordant Sibling Analysis. *Am J Epidemiol* **187**, 1182–1188 (2018).
63. Kruk, E. & Banga, P. Engagement of Substance-Using Pregnant Women in Addiction Recovery. *https://doi.org/10.7870/cjcmh-2011-0006* **30**, 79–91 (2011).
64. West Coast LEAF. *Pathways in a forest: Indigenous guidance on prevention-based child welfare*. (2019).
65. Children in Care. https://mcfd.gov.bc.ca/reporting/services/child-protection/permanency-for-children-and-youth/performance-indicators/children-in-care.
66. National Inquiry into Missing and Murdered Indigenous Women and Girls. *Reclaiming Power and Place: The Final Report of the National Inquiry into Missing and Murdered Indigenous Women and Girls*. (2019).
67. Blackstock, C. Residential Schools: Did they Really Close or Just Morph into Child Welfare? *Indigenous Law Journal* **6**, (2007).

6. KEY POINTS AND RECOMMENDATIONS

Key Points

- Substance use during pregnancy is generally under-reported, and can lead to adverse perinatal and neonatal outcomes.
- There are multiple barriers to accessing care for pregnant people with substance use disorders, with stigma continuing to be a major challenge.
- Screening all patients allows for risk stratification, with brief interventions for mild SUDs, and referral to treatment for moderate to severe SUDs.
- SUDs can occur concurrently with other mental health conditions, including Anxiety Disorders, Depressive Disorders, Bipolar Disorders and Psychotic Disorders. Screen for these disorders and refer for treatment as necessary. Better outcomes for treatment of SUDs are associated with treatment for comorbid mental health disorders.
- As for the general population, treatment of substance use disorders in pregnancy includes both psychosocial and pharmacological interventions.
- For many people, pregnancy can be a major source of internal motivation to make changes in their substance use, sometimes for the first time in their lives. Honouring and creating a safe space for our patients during appointments can really help facilitate the natural processes of change.
- After the birth, rooming-in is associated with healthy parent–baby bonding and is the standard of care.

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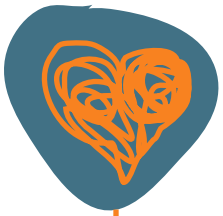
Recommendations

- Healthcare providers are encouraged to integrate a set of overarching principles into care that inform a collaborative, equitable, and effective therapeutic relationship with patients and their relevant family members affected by substance use.
- The first prenatal visit should universally include screening to identify those at low, moderate, or high risk of substance use during pregnancy, and be conducted periodically throughout pregnancy and postpartum where clinically relevant.
- Screen for mental health conditions (often comorbid with SUDs) and treat accordingly.
- For patients who are using substances, a non-judgemental, trauma-informed, and collaborative clinical approach is best. The acronym PACE, used to describe a key interpersonal element of motivational interviewing, can be helpful to remember (Partnership, Acceptance, Compassion and Evocation). Ask how the patient is feeling about their substance use. Find out what supports (if any) are in place and what they might find most helpful. If someone is not yet ready to make changes, respect this and discuss what supports do exist if they choose to access them in the future.
- Patients should be offered the full range of harm reduction interventions in addition to evidence-based treatments for SUDs.
- Breastfeeding/feeding with expressed human milk is recommended generally (excluding HIV positive patients).
- Breastfeeding is not recommended for patients with frequent, ongoing, unstable substance use.
- Contraception options should be discussed with patients during pregnancy or postpartum to reduce the risk of unplanned pregnancy and sexually transmitted infections. Discussions and informed consent for long-term contraceptive options should occur during pregnancy or postpartum (not intrapartum). In particular, decisions about long-term, irreversible contraceptive options such as tubal ligation should ***not*** be made immediately before, during, or after giving birth.
- Provide postpartum supports including substance use-related education and support, partner support, mental health support and infant development support in primary care settings.
- Pursue every option and alternative to child removals, and keep parents and babies together safely.



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RESOURCES

Clinical services

The Rapid Access to Consultative Expertise (RACE) line connects physicians, midwives and nurse practitioners with a perinatal addiction specialist. Phone 604-696-2131. Toll Free 1-877-696-2131. Monday to Friday, 0800-1700 hrs.

The 24/7 Addiction Medicine Clinician Support Line provides telephone consultation to physicians, midwives, nurse practitioners, nurses and pharmacists who are involved in addiction and substance use care and treatment in BC, and is available 24 hours a day, 7 days a week to provide rapid response for time-sensitive clinical inquiries. Phone 778-945-7619.

The Maternity and Babies Advice Line (MaBAL) is a resource for rural and remote First Nations communities: https://www.fnha.ca/what-we-do/ehealth/maternity-and-babies-advice-line

The First Nations Virtual Substance Use and Psychiatry Service (FNvSUPS) can be accessed by health and wellness providers by calling 1-833-456-7655. The ***FNvSUPS Provider Referral Guide*** is a quick reference overview of the service and how to access it: ttps://www.fnha.ca/Documents/FNHA-Virtual-Substance-Use-and-Psychiatry-Service-Referral-Guide.pdf.
Contact FNVSUPS@fnha.ca with any questions.

Practice and education resources

The Provincial Perinatal Substance Use Project has created and compiled practice guidelines and resources on the topic of perinatal substance use, including the *Elders Visioning Perinatal Substance Use Toolkit,* which can be found on the BC Women's Hospital website: http://www.bcwomens.ca/health-professionals/professional-resources/perinatal-substance-use.

The Centre of Excellence for Women's Health has published extensively in the area of maternal health and substance use. Practice resources, including infographics and brief intervention guides, can be found on their website: https://cewh.ca/all-publications/.

Perinatal Services BC has created a variety of practice resources, including support for the provision of culturally safe and sensitive care, which can be found on the Perinatal Services BC website: http://www.perinatalservicesbc.ca/health-professionals/professional-resources/indigenous-resources

SafeCare Learning Hub course: https://learninghub.phsa.ca/Courses/25312/safecare-information-sessions-for-leaders

Locating support groups

Find an Alcoholics Anonymous meeting:
https://bcyukonaa.org/meetings/

Find a Narcotics Anonymous meeting:
https://bcrna.ca/index.php?category=meetings

Find a SMART Recovery meeting:
https://www.smartrecoverytest.org/local/

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Appendix 1.

EXAMPLE QUESTIONS FOR PERINATAL SUBSTANCE USE SCREENING IN THE CLINICAL INTERVIEW

In the history of present illness (HPI) interview for any mental health concern, it is important to ask about any substance use, including tobacco products, alcohol, and other illicit/legal substances. Here are some questions that may help guide you to approach this topic. A non-judgmental attitude and thoughtful approach are essential, as pregnant and postpartum people using substances experience tremendous stigma, judgement and blame. Some may have cut down significantly from their pre-pregnancy use and therefore not feel concerned, and others may desperately be trying to cut down or stop in the peripartum period. Others will have quit successfully, but feel anxious about a potential postpartum return to substance/alcohol use (relapse). For Indigenous women on healing journeys, incorporate RE-CLAIM practices, as outlined on page 17 of the Centre of Excellence for Women's Health's Mothering and Opioids Toolkit[27].

These are suggestions and should not be viewed as the entirety of questions to ask.

Current Substance Use	• Do you sometimes drink alcohol or use substances? • Tell me a little bit about your _____ use • What are the circumstances when you feel most like drinking/using _____ ? • Do you drink or use substances more often alone or with a friend or partner? • (If they do drink more often with friends or a partner): Do you find you drink or use substances most with your friend/partner? • What are the thoughts/feelings that contribute to your decision to drink or use? • How much do you drink or use per day or per week? • How often do you drink or use per day or per week? • If you are using substances other than alcohol, are you ingesting them orally, inhaling/vaping, or injecting them? • When did you last drink or use substances? • Has your pattern of drinking or using substances changed compared to previously (e.g., daily use, every few days, weekly)? • In the month before you knew you were pregnant, how often did you drink alcohol or use substances (daily, every few days, weekly)? • Has/did your alcohol or substance use change in pregnancy and/or the postpartum? • How are you feeling about your substance/alcohol use (e.g., cutting down use or trying to cut down use in peripartum, anxiety about relapse, etc.)?
Previous Substance Use	• When did you first start drinking alcohol or using substances? (i.e., age at first use) • Have you ever tried to cut down on your alcohol or substance use? Was it difficult for you; did you have any withdrawal symptoms? • Have you been abstinent or free of alcohol or substance use for a period of time? If so, how did you make that decision? What helped you to be successful with that? • Have you received treatment before for your alcohol or substance use? • If so, what was your experience? • Have you had any overdoses?
Family History of Substance Use	• Have any of your family members had problems with alcohol or substance use? • Have any of your family members had or sought treatment for alcohol or substance use? • If so, what was their experience?
Impacts of Substance Use	• Do you think there are any downsides to your drinking or substance use? • Has drinking or using substances affected your physical health or safety? • Has drinking or using substances affected your mental health and well-being? • Has drinking or using substances affected your work or work security? • Has drinking or using substances affected your relationships? • Have other people in your life shared any concerns about your drinking or substance use?
Goals and Support	• Have you felt you want to cut down on your drinking or substance use? • How would you like things to be? • [if trying to quit but feeling stuck] What are the things that are getting in your way right now in being able to cut down/quit? • Who could help you be successful? (i.e., who are your support people?) • What could help you be successful? • What community resources might help you succeed?

27. Schmidt, R., Wolfson, L., Stinson, J., Poole, N. & Greaves, L. *Mothering and Opioids: Addressing Stigma and Acting Collaboratively.* (2019).

Appendix 2.

OVERVIEW OF MOTIVATIONAL INTERVIEWING

Motivational Interviewing (MI) is a collaborative, goal-oriented style of communication with particular attention to the language of change. It is designed to strengthen personal motivation for, and commitment to, a specific goal by eliciting and exploring the person's own reasons for change within an atmosphere of acceptance and compassion[29].

MI was originally developed in the field of addictions in the early 1980s by Dr. William Miller. It is now used extensively throughout healthcare as a valuable and evidenced-based communication style to help facilitate and support patients as they approach and make changes in their lives.

MI involves both a heartset/mindset (referred to as the spirit) as well as strategic use of skills (open ended questions, affirmations, reflections, summaries and sharing information, among many others) to preferentially listen for, and build upon, change talk. "Change talk" is the patient's own language that supports change, whereas "sustain talk" is the patient's own language that supports maintaining the status quo, or current behaviours. We know that increasing change talk contributes to a greater likelihood of commitment to change.

Sustain talk and change talk are a normal part of the language of ambivalence, which is crucial for understanding the natural processes of change.

It is essential to remember that motivation is dynamic and highly responsive to counseling style and interpersonal dynamics.

It is outside the remit of this guide to elaborate more on motivational interviewing, however for those readers interested in learning more, we highly recommend the key text by Miller and Rollnick[29], and other forms of self-directed learning such as articles, books and workshops.

29. Miller, W. R. & Rollnick, S. *Motivational interviewing: Helping people change*. (Guilford Press, 2013).

Appendix 3.

SUMMARY OF THE EVIDENCE REGARDING THE IMPACT OF MEDICATIONS FOR THE TREATMENT OF SUBSTANCE USE DISORDERS ON THE FETUS/NEONATE, WITH INTERPRETATION AND RECOMMENDATION REGARDING SAFETY OF USE DURING PREGNANCY AND BREASTFEEDING

MAINTENANCE THERAPY FOR THE TREATMENT OF ALCOHOL USE DISORDER (AUD)

MEDICATION	DOSAGE RANGE	FETAL/NEONATAL RISK	HALE LACTATION RISK CATEGORY[11]	BREASTFEEDING	ADDITIONAL CONSIDERATIONS
Acamprosate (Campral®)	Usual dose: 666 mg po TID[1]	As alcohol is a known teratogen, acamprosate use during pregnancy to treat AUD may outweigh any potential risks[15]. Limited published information exists regarding fetal and neonatal outcomes following exposure to acamprosate during pregnancy. **MCM:** A retrospective cohort study found no evidence of increased risk for congenital abnormalities[13]. Animal reproductive studies have shown dose-related defects in offspring that include retinal dysplasia, iris malformation, hydronephrosis, and increased incidence of stillbirth[14]. **Low birth weight:** A retrospective cohort study found no evidence of increased risk for low birth weight[13]. **Long-term outcomes:** No available data	Unassigned	Infants should be monitored for gastrointestinal side effects. There is no published information about acamprosate safety during breastfeeding. Based on its pharmacokinetic profile (low molecular weight, low protein binding, long half-life), transfer into human milk is likely. One reference suggests that if acamprosate is required to reduce exposure of alcohol via human milk, then benefits likely outweigh any potential risks[14].	
Gabapentin (Neurontin®)	Usual starting dose: 100 – 300 mg po TID. Titrate up to a maximum of 1800 mg po per day[1,23].	Gabapentin can be considered in the treatment of mild alcohol withdrawal or as an alternative agent for maintenance therapy for AUD during pregnancy. As alcohol is a known teratogen, the benefits may outweigh the potential risks[1]. There are no specific studies published regarding gabapentin for the treatment of AUD in pregnancy. Limited information regarding the safety of gabapentin use during pregnancy mainly comes from its use for other indications (pain, epilepsy, psychiatric disorders). Please see the mood stabilizer section of these BC Reproductive Mental Health guidelines for information regarding fetal/neonatal risks.	L2	Please see mood stabilizer section for information on gabapentin during breastfeeding.	
Naltrexone (Revia®)	Usual starting dose: 12.5 – 25 mg po daily[1] Titrate up to 50 mg po daily[1-3]	As alcohol is a known teratogen, use of naltrexone during pregnancy to reduce alcohol consumption likely outweighs any potential risks. There are no studies assessing the efficacy and safety of naltrexone in pregnancy specifically for the treatment of AUD, but data from its use in the treatment of OUD suggests no increased risks for obstetric, fetal, or neonatal outcomes[4-10]. **MCM:** Published data on in utero naltrexone exposure for the treatment of OUD does not show an increased risk of MCM[4-10]. **Long-term outcomes:** No available data	L1	Naltrexone is considered compatible with breastfeeding[11]. In one report of a person taking 50 mg po daily while breastfeeding, milk sampling of naltrexone and its active metabolite, 6-beta-naltrexol, revealed an M:P ratio of 1.9 and 3.4, and a calculated RID of 0.06 and 1%, respectively. The infant had undetectable plasma levels and no adverse effects were reported[12]. In a retrospective cohort study evaluating naltrexone and buprenorphine for the treatment of OUD in pregnant persons, 6 parent/infant dyads receiving naltrexone were included. The study reported that 5 of the infants breastfed with no adverse effects noted[8].	Naltrexone is an opioid receptor antagonist and will reduce the efficacy of systemic opioids that may be required for analgesia during labour and delivery and postpartum[3]. There are no evidence-based guidelines published on the use of naltrexone around labour and delivery or caesarean section and recommendations are mostly based on expert opinion derived from the general perioperative population[31]: • Plan ahead • Contact naltrexone prescriber • Consult anaesthesia for non-opioid pain control options and planning • Consider neuraxial anaesthesia • If possible, consider stopping naltrexone 2 - 3 days prior to need of systemic opioids
Topiramate (Topamax®)	Usual starting dose: 25 mg po daily. Titrate slowly up to 100 mg/day divided BID[1].	Topiramate is currently not recommended for the treatment of AUD in pregnant persons[1,2,15]. There is no evidence-based guidance regarding patients who are stable on topiramate prior to becoming pregnant. In these cases, clinicians should carefully consider the risks and benefits of transitioning patients to alternative treatment options in communication with an addiction specialist and the patient[1]. There are no studies assessing the efficacy and safety of topiramate in pregnancy specifically for the treatment of AUD. Please see mood stabilizer section for information regarding fetal/neonatal risks.	L3	Please see mood stabilizer section for information on topiramate during breastfeeding.	

MCM = major congenital malformations
M:P = milk to plasma concentration ratio
RID = relative infant dose

References:

1. BC Centre on Substance Use. Provincial guidelines for the clinical management of high-risk drinking and alcohol use disorder. December 2019. Available at: https://www.bccsu.ca/alcohol-use-disorder/.
2. Reus VI, Fochtmann LJ, Bukstein O, et al. The American Psychiatric Association Practice Guideline for the Pharmacological Treatment of Patients With Alcohol Use Disorder. Am J Psychiat. 2018;175(1):86-90.
3. Revia (naltrexone hydrochloride) Product Monograph; 50mg. Submission Control No: 183131. Revised April 14, 2015. Available at: https://pdf.hres.ca/dpd_pm/00030323.PDF.
4. Hulse G, O'Neil G, Arnold-Reed DE. Methadone maintenance vs. implantable naltrexone treatment in the pregnant heroin user. Int J Gynaecol Obstet 2004;85:170–1.
5. Hulse G, O'Neil G. Using naltrexone implant in the management of the pregnant heroin user. J Obstet Gynaecol 2002;42(5):102 –106.
6. Hulse G, O'Neill G, Pereira C, et al. Obstetric and neonatal outcomes associated with maternal naltrexone exposure. J Obstet Gynaecol 2001;41(4):424 –428.
7. Kelty E, Hulse G. A retrospective cohort study of birth outcomes in neonates exposed to naltrexone in utero: a comparison with methadone-, buprenorphine-, and non-opioid-exposed neonates. Drugs 2017;77:1211–19.
8. Wachman EM, Saia K, Miller M, et al. Naltrexone Treatment for Pregnant Women With Opioid Use Disorder Compared With Matched Buprenorphine Control Subjects. Clin Ther. 2019; 41(9): 1681–1689.
9. Jones CW, Terplan M. Pregnancy and Naltrexone Pharmacotherapy. Obstet Gynecol 2018;132:923–5.
10. Towers CV, Katz E, Weitz B, et al. Use of naltrexone in treating opioid use disorder in pregnancy. Am J Obstet Gynecol 2020;222:83.e1-8.
11. Hale TW. Hale's Medications & Mothers' Milk 2019 : A Manual of Lactational Pharmacology. New York: Springer Publishing Company; 2018.
12. Chan CF, Page-Sharp M, Kristensen JH et al. Transfer of naltrexone and its metabolite 6,beta-naltrexol into human milk. J Hum Lact. 2004;20:322-6.
13. Kelty E, Tran D, Lavin T, et al. Prevalence and safety of acamprosate use in pregnant alcohol-dependent women in New South Wales, Australia. Addiction. 2019;114(2):206–15.
14. Briggs, GG, Freeman, RK, Yaffe, SJ. Drugs in Pregnancy and Lactation: A Reference Guide to Fetal and Neonatal Risk. Lippincott Williams & Wilkins, Philadelphia, PA, 2017.
15. McDonald PLL, Jia L, Vipler S. Alcohol Withdrawal Management and Relapse Prevention in Pregnancy. Can Journal Addict. 2018;9(4):32–41.
23. Neurontin (gabapentin) Product Monograph; 100mg capsules, 300mg capsules, 400mg capsules, 600mg tablets, 800mg tablets. Submission Control No: 214742. Revised April 19, 2018. Available at: https://www.pfizer.ca/sites/default/files/201804/GD-gabapentin_PM_E_214742_19Apr2018.pdf.
24. Fujii H, Goel A, Bernard N, et al. Pregnancy outcomes following gabapentin use: results of a prospective comparative cohort study. Neurology 2013; 80(17): 1565-1570.
25. Carrasco M, Rao SC, Bearer CF, et al. Neonatal gabapentin withdrawal syndrome. Pediatr Neurol 2015; 53: 445–447.
26. Patorno E, Hernandez-Diaz S, Huybrechts KF, et al. Gabapentin in pregnancy and the risk of adverse neonatal and maternal outcomes: A population based cohort study nested in the US Medicaid Analytic eXtract dataset. PLoS Med 2020; 17(9): e1003322. https://doi.org/10.1371/journal. pmed.1003322
27. Guttuso T, Shaman M, Thornburg L. Potential maternal symptomatic benefit of gabapentin and review of its safety in pregnancy. Eur J Obstet Gynecol Reprod Biol 2014; 181: 280-283.
28. Ohman I, Vitols S, Tomson T. Pharmacokinetics of gabapentin during delivery, in the neonatal period, and lactation: Does a fetal accumulation occur during pregnancy? Epilepsia. 2005;46:1621–1624.
29. Kristensen JH, Ilett KF, Hackett LP, et al. Gabapentin and breastfeeding: A case report. J Hum Lact. 2006;22:426–428.
30. Drugs and Lactation Database (LactMed) [Internet]. Bethesda (MD): National Library of Medicine (US); 2006-. Gabapentin. [Updated 2021 Feb 15]. Available from: https://www.ncbi.nlm.nih.gov/books/NBK501224/
31. Ward EN, Quaye AN, Wilens TE. Opioid Use Disorders: Perioperative Management of a Special Population. Anesth Analg. 2018;127(2):539-547

Appendix 3. *(continued)*

MEDICATIONS USED IN THE TREATMENT OF ALCOHOL WITHDRAWAL

MEDICATIONS	DOSAGE RANGE	FETAL/NEONATAL RISKS	HALE LACTATION RISK CATEGORY[7]	BREASTFEEDING	ADDITIONAL CONSIDERATIONS
Benzodiazepines (BDZ)					
Diazepam (Valium®)	10 – 20 mg IV/PO as part of a symptom-triggered or fixed-dose regimen[1].	BDZ are recommended as first line agents as benefits likely outweigh the potential risks[2-4]. Limited information is published on the management of alcohol withdrawal in pregnancy. Please see the anxiolytics (benzodiazepines) section of these BC Reproductive Mental Health guidelines for information on fetal/neonatal risks.	L3	Please see the anxiolytics (benzodiazepines) section for information on breastfeeding.	Some references recommend the use of short or intermediate-acting BDZ over long-acting BDZ near delivery to minimize the risk of hypotonia (floppy infant syndrome), however, no studies indicate whether using one BDZ over the other reduces this risk[4-6].
Lorazepam (Ativan®)	2 – 4 mg IV/PO as part of a symptom-triggered or fixed-dose regimen[8].	BDZ are recommended as first line agents as benefits likely outweigh the potential risks[2-4]. Limited information is published on the management of alcohol withdrawal in pregnancy. Please see the anxiolytics section for information on fetal/neonatal risks.	L3	Please see the anxiolytics (benzodiazepines) section for information on breastfeeding.	Some references recommend the use of short or intermediate-acting BDZ over long-acting BDZ near delivery to minimize the risk of hypotonia (floppy infant syndrome), however, no studies indicate whether using one BDZ over the other reduces this risk[4-6].
Other agents					
Clonidine	Usual starting dose: 0.1 mg po BID – TID[3]	Clonidine could be considered as an adjunct agent in the treatment of alcohol withdrawal following a risk/benefit discussion acknowledging the limited information on safety in pregnancy. Very limited published information indicates that clonidine is likely not associated with adverse pregnancy outcomes[10-15], but there are no studies assessing the efficacy and safety of clonidine in pregnancy specifically for the treatment of alcohol withdrawal. **MCM:** There are studies documenting use of clonidine during pregnancy for the treatment of hypertension or hyperemesis gravidarum, which have found no increased risk for major or minor malformations[10-13, 15]. One case report of clonidine for the treatment of hypertension throughout pregnancy resulted in an infant born with Roberts` syndrome[14]. **Long-term outcomes:** No available data	L3	Little published data are available regarding clonidine use while breastfeeding, but the majority of cases reported were not associated with any adverse effects for the infants[16,18]. However, there is one case report of an infant developing drowsiness, hypotonia, suspected generalized seizures, and episodes of apnea. The infant was exposed to 0.15mg daily during pregnancy and early postpartum. All symptoms resolved with 24 hours of breastfeeding cessation[19]. Clonidine is found in human milk and is also detectable in infant serum following exposure via breastfeeding[7, 16,17]. The M:P ratio has been reported as 2 with a RID up to 7.1%[7]. Infants should be monitored for drowsiness and hypotonia.	
Gabapentin (Neurontin®)	Usual starting dose: 300 mg po TID + 300 mg po QHS + 300 mg po PRN[3,9]	Gabapentin can be considered an option for the treatment of mild to moderate alcohol withdrawal in pregnancy as the benefits may outweigh the potential risks[3,5]. Please see the mood stabilizer section of these BC Reproductive Mental Health guidelines for information regarding fetal/neonatal risks.	L2	Please see the maintenance treatment for AUD section for information on breastfeeding.	Gabapentin should not be used for the management of alcohol withdrawal in patients at risk of seizures or delirium tremens[3].

MCM = major congenital malformations
M:P = milk to plasma concentration ratio
RID = relative infant dose

References:

1. Diazepam. In: Lexi-drugs online [database on the Internet]. Hudson (OH): Lexicomp Inc.; 2020 [cited 23 Jan. 2021]. Available from: http://online.lexi.com. Subscription required to view.
2. WHO Guidelines Approved by the Guidelines Review Committee. In: Guidelines for the Identification and Management of Substance Use and Substance Use Disorders in Pregnancy. Geneva: World Health Organization; 2014.
3. BC Centre on Substance Use. Provincial guidelines for the clinical management of high-risk drinking and alcohol use disorder. December 2019. Available at: https://www.bccsu.ca/alcohol-use-disorder/.
4. Bhat A, Hadley A. The management of alcohol withdrawal in pregnancy—case report, literature review and preliminary recommendations. Gen Hosp Psychiatry 2015. http://dx.doi.org/10.1016/j.genhosppsych.2015.02.001
5. McDonald PLL, Jia L, Vipler S. Alcohol Withdrawal Management and Relapse Prevention in Pregnancy. Can Journal Addict. 2018;9(4):32-41.
6. DeVido J, Bogunovic O, Weiss RD. Alcohol use disorders in pregnancy. Harv Rev Psychiatry. 2015; 23(2): 112-121.
7. Hale TW. Hale's Medications & Mothers' Milk 2019 : A Manual of Lactational Pharmacology. New York: Springer Publishing Company; 2018.
8. Lorazepam. In: Lexi-drugs online [database on the Internet]. Hudson (OH): Lexicomp Inc.; 2020 [cited 23 Jan. 2021]. Available from: http://online.lexi.com. Subscription required to view.
9. Gabapentin. In: Lexi-drugs online [database on the Internet]. Hudson (OH): Lexicomp Inc.; 2020 [cited 27 Jan. 2021]. Available from: http://online.lexi.com. Subscription required to view.
10. Horvath JS et al: Clonidine hydrochloride a safe and effective antihypertensive agent in pregnancy. Obstet Gynecol 1985; 66:634-8
11. 10. Johnson CI and Aickin DR: The control of high blood pressure during labor with clonidine. Med J Aust 1971;2:132.
12. Tuimala et al: Clonidine in the treatment of hypertension during pregnancy. Ann Chir Gynaecol 1985;74 (Suppl. 197):47-50.
13. LeMoine PM and Coggins G: The use of clonidine, Catapres, in hypertensive and toxemic syndromes of pregnancy. Aust N Z J Med 1973;3:432.
14. Stoll C et al: Roberts`s syndrome and clonidine. J Med Genet 1979;16:486-8.
15. Maina A, Arrotta M, Cicogna L, et al. Transdermal clonidine in the treatment of severe hyperemesis. A pilot randomized control trial: CLONEMESI. BJOG 2014;121:1556-62
16. Hartikainen-Sorri AL, Heikkinen JE, Koivisto M. Pharmacokinetics of clonidine during pregnancy and nursing. Obstet Gynecol. 1987;69:598-600
17. Drugs and Lactation Database (LactMed) [Internet]. Bethesda (MD): National Library of Medicine (US); 2006-. Clonidine. [Updated 2018 Oct 31]. Available from: https://www.ncbi.nlm.nih.gov/books/NBK501628/
18. Bunjes R, Schaefer C, Holzinger D. Clonidine and breast-feeding. Clin Pharm. 1993;12:178-9
19. Sevrez C, Lavocat MP, Mounier G et al. Transplacental or breast milk intoxication to clonidine: A case of neonatal hypotonia and drowsiness. Arch Pediatr 2014;21:198-200.

Appendix 3. *(continued)*

MEDICATIONS USED IN THE TREATMENT OF NICOTINE USE DISORDER

MEDICATION	DOSAGE RANGE	FETAL/NEONATAL RISKS	HALE LACTATION RISK CATEGORY[7]	BREASTFEEDING	MONITORING
Bupropion SR (Zyban®)	Usual starting dose: 150 mg po daily x 3 days followed by 150 mg po BID[1].	Clinicians should facilitate a risk/benefit discussion with their patients about options for smoking cessation in pregnancy, which may include bupropion[3]. A recent Cochrane review reported no difference in smoking abstinence rates in later pregnancy in persons using bupropion when compared to placebo control[2]. Limited information exists on the safety of bupropion use during pregnancy for the treatment of nicotine use disorder. Please see the antidepressant section of these BC Reproductive Mental Health guidelines for information on fetal/neonatal risks.	L3	Please see the antidepressant section for information on breastfeeding.	
Nicotine replacement therapy (NRT) **Patch, gum, lozenge, inhaler (e.g., Nicotrol®)**	Varies depending on formulation	Clinicians should facilitate a risk/benefit discussion with their patients about options for smoking cessation in pregnancy, which may include NRT[3,5]. Studies have not clearly demonstrated that NRT is effective during pregnancy[2]. Low adherence rates and the increased metabolism of nicotine in pregnancy may contribute to these findings[3,6]. **MCM:** The use of NRT is likely not associated with MCM[2,4]. **Preterm birth:** Evidence is mixed regarding risk of preterm birth with NRT relative to no NRT and no smoking[2,4], but evidence is clear that NRT use is not associated with greater risk of preterm birth relative to smoking. **Obstetric/neonatal outcomes:** There is no evidence of increased risk with NRT use for miscarriage, stillbirth, low birth weight, admissions to NICU, caesarean section or neonatal death[2,4]. **Long-term outcomes:** No available data	L3	Overall, infant exposure to nicotine via NRT is likely less than that via cigarette smoking and avoids the reported harms of infant second hand smoke exposure[9]. Nicotine and its active metabolite cotinine transfer into human milk with a reported M:P ratio of 2.9[7].	
Varenicline (Champix®)		Clinicians should facilitate a risk/benefit discussion with their patients about options for smoking cessation in pregnancy, which may include varenicline[3]. Limited published information exists for the use of varenicline for nicotine use disorder in pregnancy. **MCM:** Varenicline is likely not associated with MCM.[10-12] **Preterm birth:** Varenicline is likely not associated with preterm birth.[10] **Obstetric/neonatal outcomes:** Varenicline is likely not associated with adverse pregnancy outcomes[10-12]. In a recent cohort study, varenicline-exposed patients were less likely than NRT-exposed patients to have an adverse perinatal event (38.7% vs 51.4%, HR = 0.58, 95% CI = 0.33 - 1.05)[10]. **Long-term outcomes:** No available data	L4	There are no published data on the use of varenicline in breastfeeding.	

MCM = major congenital malformations
M:P = milk to plasma concentration ratio
HR = hazard ratio
CI = confidence interval

References:

1. Zyban (bupropion) Product Monograph; 150 mg sustained release tablets. Submission Control No: 194844. Revised August 10, 2016. Available at: https://pdf.hres.ca/dpd_pm/00036009.PDF
2. Claire R, Chamberlain C, Davey MA, et al. Pharmacological interventions for promoting smoking cessation during pregnancy. Cochrane Database of Systematic Reviews 2020, Issue 3. Art. No.: CD010078. DOI:10.1002/14651858.CD010078.pub3.
3. Tobacco and nicotine cessation during pregnancy. ACOG Committee Opinion No. 807. American College of Obstetricians and Gynecologists. Obstet Gynecol 2020;135:e221–9.
4. Taylor L, Claire R, Campbell K, et al. Fetal safety of nicotine replacement therapy in pregnancy: systematic review and meta-analysis. Addiction. 2021;116(2):239-277.
5. US Preventive Services Task Force. Interventions for Tobacco Smoking Cessation in Adults, Including Pregnant Persons: US Preventive Services Task Force Recommendation Statement. JAMA. 2021;325(3):265.
6. Diamanti A, Papadakis S, Schoretsaniti S, et al. Smoking cessation in pregnancy: an update for maternity care practitioners. Tob Induc Dis 2019;17:57.
7. Hale TW. Hale's Medications & Mothers' Milk 2019 : A Manual of Lactational Pharmacology. New York: Springer Publishing Company; 2018.
9. Drugs and Lactation Database (LactMed) [Internet]. Bethesda (MD): National Library of Medicine (US); 2006-. Nicotine. [Updated 2020 Aug 17]. Available from: https://www.ncbi.nlm.nih.gov/books/NBK501586/
10. Tran DT, Preen DB, Einarsdottir K, et al. Use of smoking cessation pharmacotherapies during pregnancy is not associated with increased risk of adverse pregnancy outcomes: a population-based cohort study. BMC medicine. 2020;18(1):15.
11. Richardson JL, Stephens S, Yates LM et al. Pregnancy outcomes after maternal varenicline use; analysis of surveillance data collected by the European Network of Teratology Information Services. Reproductive Toxicology. 2017;67:26-34.
12. Turner E, Jones M, Vaz LR et al. Systematic review and meta-analysis to assess the safety of bupropion and varenicline in pregnancy. Nicotine Tob Res 2019;21:1001–10

Appendix 3. *(continued)*

OPIOID AGONIST THERAPY (OAT) FOR THE TREATMENT OF OPIOID USE DISORDER (OUD)

MEDICATION	DOSAGE RANGE	FETAL/NEONATAL RISK	HALE LACTATION RISK CATEGORY[12]	BREASTFEEDING	ADDITIONAL CONSIDERATIONS
Buprenorphine/ naloxone (Suboxone®)	Usual starting dose for standard induction (based on buprenorphine component): 2 - 4 mg SL[1] Usual starting dose for microinduction: 0.25 - 0.5 mg SL[14] Doses are increased according to induction method to prevent precipitated withdrawal and until withdrawal symptoms are eliminated or sufficiently reduced[1,2].	The benefits of buprenorphine/naloxone for the treatment of OUD outweigh any of the potential risks below. **Buprenorphine (+/- naloxone):** **NAS:** Buprenorphine can cause NAS, however, may result in a lower rate of NAS compared to methadone[15,16]. No differences observed in a study comparing rates of NAS for buprenorphine/naloxone to the buprenorphine monoproduct[42]. **MCM:** Buprenorphine (+/- naloxone) is unlikely associated with any MCM[3, 4]. **Preterm birth:** In a systematic review and meta-analysis, compared to methadone, buprenorphine was associated with a lower risk of preterm birth [RCT RR = 0.40, 95% CI = 0.18, 0.91][3]. No differences observed in studies comparing rates of preterm birth for buprenorphine/naloxone to the buprenorphine monoproduct[42], and to no opioid exposure[43]. **Long-term outcomes:** Studies evaluating long-term outcomes, such as cognitive development, of in utero buprenorphine (+/- naloxone) exposure are limited, inconsistent, and potentially impacted by confounding factors[5,17-19]. **Naloxone only:** There are no published data on the safety of naloxone as a single product in human pregnancy except at the time of delivery, in which no adverse fetal or newborn outcomes were reported[38-41]. Naloxone administered by the SL route is minimally absorbed into the systemic circulation, therefore, would result in minimal fetal exposure[36]. Injectable naloxone for the treatment of opioid overdose during pregnancy should never be withheld[37].	L3	Monitor infant for signs of sedation and respiratory depression. Buprenorphine is considered safe to use during breastfeeding regardless of parental dose[2]. Transfer of buprenorphine into human milk is low with a reported relative infant dose (RID) of 0.09-1.9%[12, 21-2]. There is no information on the transfer of naloxone into human milk, however, the oral absorption of naloxone is negligible and is unlikely to result in infant exposure[12].	Buprenorphine/naloxone should be continued through labour and delivery[2]. Subcutaneous extended release buprenorphine (Sublocade®): • Use of subcutaneous extended release buprenorphine in pregnancy is currently limited to a couple of case reports[44,45]. • Concern has been raised regarding an excipient in the product delivery system, N-methyl-2-pyrrolidone (NMP), which has been shown to be potentially teratogenic in animal studies[46,47]. • Until human safety information is available, the use of subcutaneous extended release buprenorphine during pregnancy is not recommended.
Methadone	Usual starting dose is 30 mg.[1] Gradual dose increases in 5 – 10 mg increments until withdrawal symptoms are eliminated or sufficiently reduced.[2] Due to increased metabolism during pregnancy, split dosing can be considered.[2]	The benefits of methadone for the treatment of OUD outweigh any of the potential risks below. **NAS:** Methadone causes NAS that usually presents approximately 48 hours after birth and does not appear to be related to dose.[6,7] **MCM:** Methadone is not likely associated with any MCM[3]. Methadone may be associated with a small increased risk of Pierre Robin sequence (PRS) (OR = 15.5, 95% CI = 6.1 - 33.3)[4]. The prevalence of PRS is low, so the absolute risk is low. In a 2019 systematic review, ~50% of infants born with in utero exposure to methadone had strabismus or nystagmus[5]. **Preterm birth:** While methadone exposure in utero has been associated with preterm birth, small for gestational age (SGA) infants, and low birth weight[8,9], methadone improves these outcomes compared to untreated OUD in pregnancy[10]. **Long-term outcomes:** Studies evaluating long-term outcomes, such as cognitive development, are limited, inconsistent, and potentially impacted by confounding factors[5,18,19].	L2	Monitor infant for signs of sedation and respiratory depression. Methadone is considered safe to use during breastfeeding regardless of parental dose[2]. Overall, the transfer of methadone into human milk is less than 2.8% of the parenteral dose with an M:P ratio of 0.68[11,12].	
Slow release oral morphine (SROM) (Kadian®)	Dosing varies widely based on individual opioid requirement to sufficiently suppress withdrawal. Provincial guidance recommends starting doses of 50 - 200 mg po daily[1]. Doses are increased in increments of 100 mg every one or two days until withdrawal symptoms are eliminated or sufficiently reduced[2].	The benefits of SROM for the treatment of OUD likely outweigh any unknown risks. Limited published information exists regarding fetal and neonatal outcomes following exposure to SROM during pregnancy, but what is available suggests similar outcomes to methadone. **NAS:** Some studies found no difference in risk or duration of NAS for SROM compared to methadone[25,26], but one study identified a lower risk and duration of NAS for buprenorphine compared to methadone or SROM[27]. **MCM:** Data from general morphine exposure during the first trimester of pregnancy does not suggest a significantly increased risk of MCM[28,29]. **Preterm birth:** In one study, compared to methadone, there was no significant difference in risk of preterm delivery or birth weight[25,26]. **Long-term outcomes:** No available data	L3 (note this relates to morphine in general and not specifically to SROM)	Monitor infant for signs of sedation and respiratory depression. The impact of SROM on infants exposed via human milk has not yet been adequately studied. Most data on the safety of morphine during breastfeeding come from studies of short term therapeutic morphine administration for pain following delivery via epidural, parenteral and oral routes in persons without opioid use disorder[30-34]. Morphine RID has been reported as high as 35% with an M:P ratio of 1.1 – 3.6[12]. Only one study has published information on use of SROM during breastfeeding[35].	

NAS = neonatal abstinence syndrome
MCM = major congenital malformations
RCT RR = randomized controlled trial risk ratio
CI = confidence interval
OR = odds ratio
M:P = milk to plasma concentration ratio

References:

1. BC Centre on Substance Use. A guideline for the clinical management of opioid use disorder. June 2017. Available at: https://www.bccsu.ca/opioid-use-disorder/
2. BC Centre on Substance Use. A guideline for the clinical management of opioid use disorder – Pregnancy supplement. June 2018. Available at: https://www.bccsu.ca/opioid-use-disorder/.
3. Zedler BK, Mann AL, Kim MM, et al. Buprenorphine compared with methadone to treat pregnant women with opioid use disorder: A systematic review and meta-analysis of safety in the mother, fetus and child. Addiction. 2016;111(12):2115–28.
4. Cleary B, Loane M, Addor MC, et al. Methadone, Pierre Robin sequence and other congenital anomalies: case-control study. Arch Dis Child Fetal Neonatal Ed. 2020;105(2):151.
5. Monnelly VJ, Hamilton R, Chappell FM, et al. Childhood neurodevelopment after prescription of maintenance methadone for opioid dependency in pregnancy: a systematic review and meta-analysis. Dev Med Child Neurol. 2019;61(7):750.
6. Cleary BJ, Donnelly J, Strawbridge J, et al. Methadone dose and neonatal abstinence syndrome-systematic review and meta-analysis. Addiction. 2010 Dec;105(12):2071-84.
7. Lacaze-Masmonteil T, O'Flaherty P. Managing infants born to mothers who have used opioids during pregnancy. Paediatr Child Health 2020 23(3): 220–226.
8. Cleary BJ, Donnelly JM, Strawbridge JD, et al. Methadone and perinatal outcomes: a retrospective cohort study. Am J Obstet Gynecol 2011; 204:139.e1.
9. Cleary BJ, Eogan M, O'Connell MP, et al. Methadone and perinatal outcomes: a prospective cohort study. Addiction 107(8):1482-1492, 2012.
10. Wong S, Ordean A, Kahan M. SOGC clinical practice guidelines: Substance use in pregnancy: no. 256, April 2011. International journal of gynaecology and obstetrics: the official organ of the International Federation of Gynaecology and Obstetrics. 2011;114(2):190-202
11. Begg EJ, Malpas TJ, Hackett LP, et al. Distribution of R- and S-methadone into human milk during multiple, medium to high oral dosing. Br J Clin Pharmacol. 2001;52(6):681-685.
12. Hale TW. Hale's Medications & Mothers' Milk 2019 : A Manual of Lactational Pharmacology. New York: Springer Publishing Company; 2018.
13. Dryden C, Young D, Hepburn M, et al. Maternal methadone use in pregnancy: factors associated with the development of neonatal abstinence syndrome and implications for healthcare resources. BJOG. 2009 Apr;116(5):665-671
14. Ghosh, SM, Klaire, S, Tanguay, R, et al. A review of novel methods to support the transition from methadone and other full agonist opioids to buprenorphine/naloxone sublingual in both community and acute care settings. Can J Addict December. 2019; 10 (4): 41-50.
15. Jones HE, Kaltenbach K, Heil SH, et al. Neonatal abstinence syndrome after methadone or buprenorphine exposure. N Engl J Med. 2010;363(24):2320.
16. Brogly SB, Saia KA, Walley AY, Du HM, et al. Prenatal buprenorphine versus methadone exposure and neonatal outcomes: systematic review and meta-analysis. Am J Epidemiol. 2014 Oct;180(7):673-86.
17. Salo S, Politi J, Tupola S, et al. Early development of opioid-exposed infants born to mothers in buprenorphine replacement therapy. J Reprod Infant Psychol. 2010;28(2):161-179.
18. Whitham JN. Prenatal Exposure to Buprenorphine or Methadone: Effects on Physical Growth, Neurological Development and Temperament in Early Childhood [thesis]. University of Adelaide; 2012. Accessed January 17, 2021. https://digital.library.adelaide.edu.au/dspace/handle/2440/72184
19. Nelson LF, Yocum VK, Patel KD, et al. Cognitive Outcomes of Young Children After Prenatal Exposure to Medications for Opioid Use Disorder A Systematic Review and Meta-analysis. JAMA Network Open. 2020;3(3):e201195. doi:10.1001/jamanetworkopen.2020.1195
21. Grimm D, Pauly E, Poschl J, et al. Buprenorphine and norbuprenorphine concentrations in human breast milk samples determined by liquid chromatography-tandem mass spectrometry. Ther Drug Monit. 2005;27:526–30.
22. Lindemalm S, Nydert P, Svensson JO, et al. Transfer of buprenorphine into breast milk and calculation of infant drug dose. J Hum Lact. 2009;25:199–205.
23. Ilett KF, Hackett LP, Gower S, et al. Estimated dose exposure of the neonate to buprenorphine and its metabolite norbuprenorphine via breastmilk during maternal buprenorphine substitution treatment. Breastfeed Med. 2012;7:269–74.
24. Socias ME, Wood E, Dong H, et al. Slow release oral morphine versus methadone for opioid use disorder in the fentanyl era (pRESTO): Protocol for a non-inferiority randomized clinical trial. Contemporary Clinical Trials. 2020;91(105993)
25. Fischer G, Jagsch R, Eder H, et al. Comparison of methadone and slow-release morphine maintenance in pregnant addicts. Addiction. 1999;94(2):231–9.
26. Minozzi S, Amato L, Jahanfar S, et al. Maintenance agonist treatments for opiate-dependent pregnant women. Cochrane Database of Systematic Reviews 2020, Issue 11. Art. No.: CD006318. DOI: 10.1002/14651858.CD006318.pub4.
27. Rohrmeister K, Bernert G, Langer M, et al. Opiate addiction in gravidity - consequences for the newborn: results of an interdisciplinary treatment concept. Z Obstetrics Neonatol 2001; 205 (6): 224-230.
28. Heinonen OP, Slone D, Shapiro S. Birth Defects and Drugs in Pregnancy. Littleton, MA: Publishing Sciences Group, 1977.
29. Broussard CS, Rasmussen SA, Reefhuis J, Friedman JM, Jann MW, Riehle-Colarusso T, Honein MA; for the National Birth Defects Prevention Study. Maternal treatment with opioid analgesics and risk for birth defects. Am J Obstet Gynecol 2011;204:314-7.
30. Feilberg VL, Rosenborg D, Broen Christensen C, et al. Excretion of morphine in human breast milk. Acta Anaesthesiol Scand. 1989;33:426-8.
31. Robieux I, Koren G, Vandenbergh H, et al. Morphine excretion in breast milk and resultant exposure of a nursing infant. J Toxicol Clin Toxicol. 1990;28:365–70
32. Oberlander TF, Robeson P, Ward V, et al. Prenatal and breast milk morphine exposure following maternal intrathecal morphine treatment. J Hum Lact. 2000;16:137–42.
33. Baka NE, Bayoumeu F, Boutroy MJ, et al. Colostrum morphine concentrations during post cesarean intravenous patient-controlled analgesia. Anesth Analg. 2002;94:184–7.
34. Wittels B, Glosten B, Faure EA, et al. Postcesarean analgesia with both epidural morphine and intravenous patient-controlled analgesia: neurobehavioral outcomes among nursing neonates. Anesth Analg. 1997;85:600–6
35. Metz VE, Comer SD, Pribasnig A, et al. Observational study in an outpatient clinic specializing in treating opioid-dependent pregnant women: Neonatal abstinence syndrome in infants exposed to methadone-, buprenorphine- and slow-release oral morphine. Heroin Addict Relat Clin Probl. 2015;17:5–15.
36. Briggs, GG, Towers, CV, Forinash, AB (2022). Briggs Drugs in Pregnancy and Lactation: A Reference Guide to Fetal and Neonatal Risk (12th ed.). Lippincott Williams & Wilkins.
37. Opioid use and opioid use disorder in pregnancy. Committee Opinion No. 711. American College of Obstetricians and Gynecologists. Obstet Gynecol 2017;130:e81–94.
38. Clark RB, Beard AG, Greifenstein FE, Barclay DL. Naloxone in the parturient and her infant. South Med J 1976;69:570-5.
39. Hodgkinson R, Bhatt M, Grewal G, Marx GF. Neonatal neurobehavior in the first 48 hours of life: effect of the administration of meperidine with and without naloxone in the mother. Pediatrics 1978;62:294-8.
40. Brookshire GL, Shnider SM, Abboud TK, Kotelko DM, Nouiehed R, Thigpen JW, Khoo SS, Raya JA, Foutz SE, Brizgys RV. Effects of naloxone on the mother and neonate after intrathecal morphine for labor analgesia. Anesthesiology 1983;59:A417.
41. Evans JM, Hogg MIJ, Rosen M. Reversal of narcotic depression in the neonate by naloxone. Br Med J 1976;2:1098-100.
42. Link HM, Jones HE, Miller LA, et al. Buprenorphine-naloxone use in pregnancy: a subgroup analysis of medication to treat opioid use disorder. Am J Obstet Gynecol MFM 2021;3:100369
43. Jumah NA, Edwards C, Balfour-Boehm J, et al. Observational study of the safety of buprenorphine and naloxone in pregnancy in a rural and remote population. BMJ Open 2016; 6(10): e011774.
44. Towers CV, Deisher H. Subcutaneous extended release buprenorphine use in pregnancy. Case Rep Obstet Gynecol 2020; https://doi.org/10.1155/2020/3127676
45. Cleary EM, Byron RK, Hinely KA, Talley AW, Costantine MM, Rood KM. Subcutaneous buprenorphine extended-release use among pregnant and postpartum women. Obstet Gynecol 2020;136:902–3.
46. Saillenfait AM, Gallissot F, Morel G. Developmental toxicity of N-methyl-2-pyrrolidone in rats following inhalation exposure. Food and Chemical Toxicology 2003; 41 (4): 583–588
47. Saillenfait AM, Gallissot F, Langonne I, Sabate JP. Developmental toxicity of N-methyl-2-pyrrolidone administered orally to rats. Food and Chemical Toxicology 2002; 40 (11): 1705–1712.

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The purpose of these guidelines is to support healthcare professionals in the detection and coordinated treatment of pregnant and postpartum individuals with substance use disorders. Every attempt has been made to ensure that the information contained herein is clinically accurate and current, but some issues may be subject to practice interpretation. Decision-making in a specific context is the responsibility of attending healthcare professionals. Nothing contained in these guidelines should in any way be construed as being either official or unofficial policy of Children's and Women's Health Centre of British Columbia Branch, Perinatal Services BC, or the BC Provincial Health Services Authority (together, the 'Societies'). The Societies assume no responsibility or liability arising from any error in or omission of information or from any use of any information, link, contact, opinion, or advice provided in these guidelines.

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