Me and My Baby

Supporting Pregnant People with Substance Use Disorders

DECEMBER 2024

Editors

Karen Burnett

Neonatal Nurse Practitioner
NASCENT Research Team

Denise Clarke

Neonatal Nurse Practitioner
NASCENT Research Team

Matthew Hicks
(he/him)

Neonatologist and Developmental Pediatrician
Divisional Director of Neonatal-Perinatal Care
Variety, the Children's Charity and the Stollery Children's Hospital Foundation Pediatric Clinical Research Professor
Associate Professor, Department of Pediatrics
Faculty of Medicine and Dentistry
University of Alberta
NASCENT Project Co-Lead

Contributing Authors

Michael Auld (he/him)
MD FRCPC MBA
Anesthesiologist Clinical Professor, Department of Anesthesiology and Pain Medicine
University of Alberta

Karen Burnett
RN MEd PhD
Neonatal Nurse Practitioner

Katharina B. Cardinal (she/her)
MD CCFP
Family Medicine
Millwoods Maternity Care Clinic and Community Perinatal Program

Kimberly Chapman
BSc Pharm
Clinical Pharmacist

Denise Clarke
RN MN
Neonatal Nurse Practitioner

Nathaniel Day
MD CCFP Dip. ABAM
Addiction and Mental Health

Kevin Desmarais (he/him)
MD CCFP
Department of Family Medicine
University of Alberta
Addiction and Mental Health

Sarah Fleck
BScN
Addiction and Mental Health

Kelti Gore (she/her)
RSW
Social Worker, Maternal Newborn Health, Addictions and Mental Health

Stephanie Haire
MSW RSW
Social Worker, Women's & Child Health

Matthew Hicks (he/him)
MD PhD FRCPC
Neonatologist and Developmental Pediatrician
Divisional Director of Neonatal-Perinatal Care
Variety, the Children's Charity and the Stollery Children's Hospital Foundation Pediatric Clinical Research Professor
Associate Professor, Department of Pediatrics
Faculty of Medicine and Dentistry
University of Alberta
NASCENT Project Co-Lead

Ashley Langman (she/her)	RN MPH BScN Maternal Newborn Health
Karen Long	BA MSW RSW Social Worker, Child Health
Denise Malanowich (she/her)	RN Maternal Newborn Health
Ivy Parsons	BA Psych Addiction and Mental Health
Janelle Peterson	RN BScN Maternal Newborn Health
Kathy Pincombe	BSc Pharm Clinical Pharmacist
Linda Pires-Relvas, (she/her)	BScN, RN Community Health Nursing
Amy Shafey	MSc (Clin Epidemiology) MD FRCPC Division of Neonatal-Perinatal Medicine Department of Pediatrics University of Alberta
Samantha Stupak	Registered Midwife Aspen Community Midwives
Jennifer Toye	MD FRCPC MSc Newborn Health Associate Clinical Professor, Department of Pediatrics University of Alberta

Disclaimer

The opinions reflected in this report do not necessarily reflect those of Alberta Innovates, the University of Alberta, or the University of Calgary.

Acknowledgements

The NASCENT Collaboration acknowledges the project funding contributions provided by Alberta Innovates.

Document design and graphic credits: Elle Wilde, Wilde Information Design.

Author Contact

Karen.Burnett@albertahealthservices.ca

Denise.Clarke@albertahealthservices.ca

Neonatal Abstinence Syndrome Mother Baby Care Improvement Project

Foreword

"Not every story has a happy ending, ... but the discoveries of science, the teachings of the heart, and the revelations of the soul all assure us that no human being is ever beyond redemption. The possibility of renewal exists so long as life exists. How to support that possibility in others and in ourselves is the ultimate question."

– Gabor Maté In the Realm of Hungry Ghosts: Close Encounters with Addiction

Combining the knowledge and experience of expert clinicians with western scientific research of how the parent is the medicine for newborns experiencing opioid withdrawal, Me and My Baby helps to answer the question of support that Gabor Mate poses for us.

It is my honour to write a foreword for Me and My Baby. I am Co-lead, along with Dr Matt Hicks, of NASCENT the Neonatal Abstinence Mother Baby Improvement project, an Alberta Innovates PRIHS (Partnership for Research and Innovation in the Health System) funded study. We are supporting implementation of a rooming-in model of care for families experiencing perinatal substance use in 8 post partum units across Alberta with the funding. I can see firsthand how the content of Me and My Baby is crucial information for all staff who are doing the hard work of implementing this model of care as they navigate an inflexible system, support and lift up stigmatized individuals and advocate for them and their infants.

It is a must for all those providing care and support for persons experiencing perinatal substance use as well as for those leading the change in models of care. The information contained in Me and My Baby tackles myths and provides the most recent scientific evidence so needed as we address the challenges of addiction in the twenty first century. We are privileged to have in Alberta a team of dedicated professionals whose experience, expertise, knowledge and passion are evident in the writing and content of Me and My Baby. Reading this book not only provides essential knowledge and understanding it demonstrates the way to walk forward with families on a hopeful path.

Deborah McNeil BSc, MN, PhD, RN
Adjunct Associate Professor, University of Calgary
Scientific Director, Alberta Health Services

Note to Reader

Thank you for taking the time in joining us as we gain an understanding of how to attend to the health and well-being of pregnant people and families impacted by perinatal substance use. This is a revised second edition of a booklet titled Me and My Baby that was originally written in 2017. The authors that came together to support the writing of this revised document represent a variety of health disciplines and different specialty areas, such as Addictions and Mental Health, Women's Health, Child Health, and Pain Management, each carrying a wealth of knowledge and expertise.

"Our work takes place on historical and contemporary Indigenous lands, including the territories of Treaty 6, Treaty 7 & Treaty 8 and the homeland of the Métis Nation within Alberta and 8 Metis Settlements. We also acknowledge the many Indigenous communities that have been forged in urban centres across Alberta."[i]

The overall intent of the booklet is to provide information and increase awareness of the complexities of perinatal substance use. The intended audience is healthcare providers and community partners. This booklet is unique in Alberta, in terms of its compilation of relevant subject matter, and in bringing together experts from across the province to provide a complementary, balanced holistic lens to hope, health and healing.

Language

There are two distinctions of note in this work, both relating to use of language. The first distinction relates to gender inclusivity. The second distinction of note relates to use of language around breastfeeding and chestfeeding. In both instances, we reference the well said work of others to address these matters of diversity, equity and inclusion.

Gender Inclusivity: "This [booklet] is intended to honour and celebrate the strengths of all ... people who experience pregnancy, child birth and motherhood. While the words 'mother', 'women' and 'parent' are used throughout this [booklet], they are used in recognition of the fact that discussion of perinatal health and wellness apply to cisgender females as well as trans women, non-binary people, and those who identify as Two Spirit/[Queer]. It is important to acknowledge that the experience of being a mother is not defined by a person's biology. Although there is currently very limited perinatal data available on the health and wellness of non-binary and transgender populations, these distinctions are important as a person's gender identity can shape their experiences, their social determinants of health, and their access to services".[ii]

i Source: Alberta Health Services. Indigenous Health. No date. Available: https://insite.albertahealthservices.ca/ihp/Page27529.aspx

ii Source: First Nations Health Authority. British Columbia Office of the Provincial Health Officer. Sacred and Strong: Upholding our Matriarchal Roles. The health and wellness journeys of BC First Nations Women and Girls. Author; 2021 Page 11. Retrieved from https://www.fnha.ca/Documents/FNHA-PHO-Sacred-and-Strong.pdf

Breastfeeding and Chestfeeding: "There are many terms used to describe infant feeding, including but not limited to breastfeeding, chestfeeding, nursing, and infant feeding. Throughout this content we'll be using the term 'breastfeeding' but are in no way denoting that this is the 'correct' term to use as everyone's experience and vocabulary varies. We encourage folks to find the words that make them feel safe and comfortable in relating to the topic at hand".[iii]

"Chestfeeding is a term used by some parents who identify as transmasculine and non-binary to describe how they feed and nurture their children from their bodies. A person who uses the term chestfeeding may, or may not, have had any surgery on their breast tissue. Other words that may be used are: 'nursing', 'feeding', 'breastfeeding.' Language changes over time so it is important that we pay attention to these changes. [We express] support for parents of all gender identities and family structures by using a variety of terms in our publications. We also continue to use the words 'mother' and 'breastfeeding' that reflect our history and the majority of people we support. Those words will never be erased. We are adding more chairs to our table, not taking any away".[iv]

iii Source: Gender Confirmation Center. 'Chestfeeding'; Before we start. Author; 2023. Retrieved from https://www.genderconfirmation.com/blog/chestfeeding/

iv Source: La Leche League. What is chestfeeding? Author; October 2023. Retrieved from https://www.lllc.ca/chestfeeding

Table of Contents

Introduction

Welcome to the Second Edition of *Me and My Baby*! This book represents the shared knowledge and expertise of over 25 practitioners with decades of cumulative experience. It builds upon the excellent work and advocacy that has been demonstrated in programs across Canada over the last two decades.

Working with families and pregnant individuals in the area of substance use disorders during pregnancy and caring for parent-infant dyads following delivery requires compassion, dedication, empathy, cultural sensitivity, a commitment to trauma informed care, a comprehensive understanding of substance use disorders and neonatal abstinence syndrome, and a drive to do what is best. This book embraces the overarching theme of fostering hope and provides an overview of how to walk with families in "living in a preferred future in the present."[v]

Key to working with families and individuals impacted by substance use is understanding and implementing an approach to care that embraces diversity, is inclusive, and is seen as culturally safe by our patients. Cultural Safety requires an understanding of the social determinants of health, our colonizing history and intergenerational trauma, and a deep commitment to best practices in equity, diversity and inclusion and the principles of truth and reconciliation.

Perinatal substance use is increasingly common in Canada. Providing care in this area requires an awareness of the lived experience of individual families for whom we provide care and an understanding of the epidemiology of this growing crisis. Currently, illicit opioid use is associated with high rates of death from the toxic drug supply and high rates of apprehension for infants born prenatally exposed. There are evidenced-based practices related to substance use in pregnancy and postnatal supports of parent-infant dyads that can change this paradigm.

Key to addressing this crisis is an approach that embraces the principles of harm reduction, which is evidence-based, client-centred, and strength-focussed. Care is provided in a non-judgemental manner, focused on skill development and minimizing harms associated with substance use. Individuals are supported in making safer and healthier choices. The ideal of walking with families on a hopeful path is in keeping with concepts key to a harm reduction approach.

A commitment to trauma informed care is also key in understanding how we may walk with families and has become central to patient-integrated care in Canada. It encourages care team members to recognize that trauma is common in our communities and influences an individual's engagement and interactions with the health system. We must strive to not re-traumatize the families that we work with in providing their care. Recognizing and understanding intergenerational trauma, adverse child experiences, and their impact on physical and mental health is particularly important in our work with Indigenous partners, families, and communities.

Central to working with pregnant individuals who are substance involved is considering initiation of opioid agonist therapy (OAT) as an evidence-based stabilizing strategy. Abstinence-based care is not recommended

v Tomm, K. Recent developments in therapeutic conversation. Part 2: Reflexive questioning. 2007. Lecture Series. Padua, Italy.

during pregnancy as it carries with it substantial risk to the pregnant person and the fetus. Pregnancy is a time in life in which a person is most likely to consider making health choices for a hopeful future and initiation on OAT is a crucial step in preparing for in-hospital care, intact mother-infant dyads at discharge, and long-term stabilization in the community. An understanding of OAT medications and strategies used during pregnancy is required by all members of the care team so we can use a shared language and understand best practices.

Untreated or undertreated pain is an issue for patients with a history of substance use. This is no different for postpartum patients. Inadequate pain management often relates to dynamics between the patient and care team but can also relate to patient fear and choice. In addition, knowledge gaps, biases, and misconceptions in care team members can lead to under recognition and under treatment of pain in our patients. There are clear guidelines for managing postoperative pain in all patients and care team members must be aware of these. There is no high-quality evidence that post-operative pain medication use triggers a recurrence of a substance use disorder. In fact, undertreating pain is more likely to cause relapse. Clear communication with patients is required to understand their potential concerns related to post-operative opioid use so care team members can provide appropriate information and create a care plan that minimizes pain.

Diagnosis and recognition of Neonatal Abstinence Syndrome (NAS), or Neonatal Opioid Withdrawal Syndrome (NOWS), has been increasing in Canada over the last 15 years. There are tremendous family, health system, and societal costs associated with prolonged Neonatal Intensive Care Unit stays and high rates of child apprehension. In Canada, in the last two decades, several programs have developed a rooming-in approach to care for NAS/NOWS that has seen decreased NICU length of stay and decreased rates of child apprehension. This approach sees the parent as medicine in treating infant withdrawal. Most recently, a rooming-in approach that includes assessment and intervention aspects focused on three key infant functional tasks, Eat, Sleep, Console (ESC), was developed. There is now high-quality evidence from a multi-centre randomized controlled trial demonstrating that rooming-in with ESC is associated with improved outcomes.

The majority of holistic care that a family receives during pregnancy and following delivery is in the community. However, the time in hospital is crucial for working with families to optimize supports for a successful transition home. Care team members in the hospital and community settings must be aware of the programs and pathways for connecting with key individuals in each setting. A multi and interdisciplinary approach is needed to support and meet the holistic needs of the family. Care team members must also be aware of recommendations related to safety and best practice in caring for infants who experienced NAS and their families. A collaborative and transparent approach between families, community agencies, public health, medical, nursing, social work, and Children's Services can optimistically lead to more positive outcomes for mothers and children.

We acknowledge, honour, and have the deepest respect for the families we provide care to and for members of the broad care team who commit to doing what is best for infants, parents, families, and our communities. Thank you for joining us in walking a hopeful path.

SECTION 01

CULTURALLY Safe Care

Health is influenced by people's circumstances, with differences in social determinants resulting in inequalities across multiple health and social indicators.[1 2 3 4 5 6] Globally people from unique and diverse populations, such as social groupings excluded by the dominant majority by ethnicity, gender, age, sexual orientation, disability, geography, income, and education, experience dissimilar health outcomes in their determinants of health, access to care, and receipt of high-quality care.[1 3 4 5 6 7 8 9] These inequities are primarily due to unequal power relationships, unfair distribution of the social determinants of health, marginalization, biases, unexamined privilege, and institutional racism.[7 8 10]

Canadian Indigenous populations experience greater marginalization and have worse perinatal health outcomes than the Canadian general population.[11 12] Health inequities experienced by Indigenous persons in the perinatal period include higher rates of maternal mortality, low birthweight babies, preterm births, perinatal death, infant mortality and lower breastfeeding rates.[3 13 14] Further, pregnant Indigenous persons in Canada are more likely to experience younger maternal age, substance use, weight gain, diabetes, depression, and vitamin deficiencies.[11] By 2021 the Canadian non-Indigenous infant mortality rate was 4.4 deaths per 1,000 births; however, the Indigenous infant mortality rate was more than twice that, at 9.2 deaths per 1,000 births.[15] This gap is likely underreported because there are often deficiencies in quality of the data collected and variation in the way data are collected, which are further complicated by the lack of ethnicity identifiers on birth and death registrations.[12]

A scoping review by Bacciaglia et al. is one of the most recent comprehensive qualitative analyses of Indigenous maternal health and health services in the Canadian context.[11] In their thematic analysis of 89 articles that met inclusion criteria, they identified six key themes: health disparities; provision of services; education, resources and quality of care; spatial context; informal support; and organization of care.

- **Health disparities** included tendency to gain more weight during pregnancy and higher risk for gestational diabetes. The incorporation of Indigenous foods during pregnancy has been associated with improved nutrition and promotion of cultural values, however, gaining access to safe locally harvested foods presented challenges.

- **Provision of services** was experienced positively when there was flexibility, such as in walk-in appointments, and location of services in geographically remote locations, for instance maternal care group chat and community support groups. However, to many the health care system was perceived as rigid and inflexible, and often riddled with shame and blame.

- **Providing education and resources** for Indigenous pregnant persons improved their health and increased engagement in health management when done with their full participation and consultation, and in ways that incorporated language that did not place blame.

- "**Spatial context** is a broad theme that includes the influences and impacts of history, culture, and surrounding physical and spiritual environments on beliefs, behaviours, and ideologies."[11 p.8] Substance use is related to many factors including stress, context, isolation, general health, age, genetics, resilience, cultural discrimination, experiences with violence, access to maternal health care, social policy, and poverty.

- **Informal support**, on one hand, showed the positive impact of social support, and how social networks support resilience, promote feelings of connectedness with the community, and reduce experiences of stress. On the other hand, Indigenous persons who gained beyond the recommended weight during pregnancy shared that while they understood that certain foods should be avoided during pregnancy, it was hard to do so because their social environment (friends and family) continued to engage in unhealthy habits.

- **Organization of care** identified that there were jurisdictions of care, as well as the federal, provincial, and territorial boundaries associated with the delivery of health services. This proved challenging in gaining access to information and funding to provide care.

Impact of Colonization

The effects of colonization, including racism, continue to negatively impact Indigenous persons who find health services unwelcoming, with a lack of education, knowledge and understanding of Indigenous culture and the origins of Indigenous trauma by health providers as barriers to care.[16] [17] Experiences of trauma change the DNA in our bodies and take several generations of wellness to heal.[18] Deep seated history has resulted in transgenerational medical mistrust in seeking support.[19] [20] [21] The very places where support and aid are sought have at times been re-traumatizing, such as a historically grounded fear of biased attention to Indigenous families within the child protective system.[20] Fear of biased consequences not only inhibits Indigenous families from living and raising their children in a way that they see as best, but also is an engagement obstacle for many young Indigenous families who need support with parenting but are afraid to reveal vulnerability in mental health or in parenting.[20] Indigenous men's sense of security through the loss of their roles within the family and their community has also been impacted by colonization: "What's my job now?"; "Who am I in the family to this child?"; "What's my place in looking after you, and in looking after everyone who matters to you?"[20 p.481]

Colonization has impacted Indigenous families in other ways. For example, birthing has moved from home communities to institutions that have eroded traditional knowledge and resources.[5] [11] [22] Postcolonial ideas of individual patient-centred care introduce a possible tension with traditional knowledge and the family/community healing role. For example, clinicians are expected to engage shared decision making that considers their identity and subjectivity, yet they are trained to apply evidence-based knowledge adhering to standardized protocols, implicitly considered as having a universal value, which provokes tensions and distress.[23]

Part of bridging these contrasting knowledges is remaining sensitive and assumption-free by checking with Indigenous persons during each care encounter.[20] In other words, clinicians cannot assume that all will have the same experience and connection to traditional cultural ways.[20] Allyship between patients and providers is based on awareness of the marginalized patient's unique set of circumstances and their ability and concerns for engaging in treatment.[19] Rousseau explains that clinicians must create a space that is 'safe enough', that means having the "capacity to [recognize] and acknowledge discomfort, taking a culturally humble stance and having an open dialogue on what contributes to trust and common engagement, rather than aiming to eliminate distrust and resistance … distrust and resistance should be expected, tolerated and worked with as part of protective strategies in the face of layered histories of oppression and [marginalization]".[23 p. 588]

Cultural Safety

Cultural Safety has been described as a recognized approach to improving the provision of healthcare to ethnic minority groups with the aim of reducing health disparities.[7 9 10] Culturally Safe healthcare focuses on balancing the power between provider and patient.[19] The concept of Cultural Safety becomes a tool to acknowledge the multiple levels of direct, covert and structural oppression that may interfere with care. Such collective construction of entitlement and the subsequent awareness of power imbalances may serve to prevent individualized clinical interpretation of perceived avoidance, anger and distrust that may be resistance strategies to survive ongoing discrimination.[23] When there are entrenched health disparities, discrimination, racisms and healthcare access issues, Cultural Safety looks to how professionals, professions and institutions conduct themselves.[24] Therefore, health system avoidance cannot be seen as merely due to the actions of individuals assumed as 'noncompliant'.[24]

The concept Cultural Safety originated in the 1980s and was further developed by Dr. Irihapeti Ramsden and fellow nursing colleagues in Australia for birthing care of marginalized women,[25 26] stemming from their beliefs that "the health care system is affected by the dominant culture and society of more powerful groups, planned with only their needs in mind".[27] Since then, this construct has been extended to consider how people in underserved groups experience broader forms of healthcare beyond these birthing studies.[19] In Cultural Safety the concept of personal culture "... is used in its broadest sense to apply to any person or group of people who may differ from the [health provider] because of socio-economic status, age, gender, sexual orientation, ethnic origin, migrant/ refugee status, religious belief, or disability".[25 p. 114] Culture is multifaceted; it is the beliefs, values, ways of making sense of the world that people inherit, as well as the daily social practices of individuals and small groups and the enactment of shared life experiences through processes of social interaction.[9]

Culture plays a big part in how patients view certain therapies and is not a one size fits all endeavor.[4] Culture also shapes how a person thinks about notions of illness, suffering and wellbeing as well as how a person makes sense of themselves as the patient, the health provider, and the relationship between the two.[7 9] It provides people with the assumed responses to questions such as "Is what I am experiencing an 'illness'?," "Who, if anyone, should I turn to for help if I think of myself as ill?".[9] Individuals are dependent when they must rely on other individuals for any of their basic needs, such as when accessing healthcare.[28] Along that same thinking, a person has power over another whenever they can provide or withhold any of these needs.[28] Self-awareness calls upon health providers to question their own biases, attitudes, assumptions, stereotypes and prejudices that may be contributing to these power differences and a lower quality of healthcare for some patients.[10]

Provider behaviors have an immediate impact on all patients, especially marginalized patients who may have experienced negative encounters in health and social systems.[19] In this context of chronic mistrust, patients may withhold information due to fear that they will be judged negatively by providers, or they may opt out of care entirely delaying lifesaving treatment.[19] Tangible examples of culturally safe practice include demonstrating commitment to building trust and relationships by spending time with people, relinquishing control, having an awareness of Indigenous history, being humble and honest and ensuring promises are kept, and participating in activities that involve reciprocity.[29]

However, working towards Cultural Safety should not be viewed as an intervention solely at the level of the health provider.[10] Healthcare organizations influence health provider bias through the structure of the healthcare environment, including factors such as governance, accountability for equity, workforce diversity, guidelines and policies, training and workplace stressors.[30] Interconnected, at times dysfunctional, levels of structural, systemic, and service

delivery in the mainstream healthcare system for Indigenous persons in Canada requires transformation that includes these same delivery levels.[11 31] Strengthening traditional healthcare practices at these healthcare delivery levels can lead to better maternal health outcomes for at least three reasons: a better use of local resources owned by communities; healthcare actions consider the culture of people and the environmental characteristics of the area they reside; and an increased level of Cultural Safety in obstetric care.[5] Drawing from examples in Canada and around the world, if maternity services are to improve maternal and neonatal survival rates, perinatal care providers must genuinely partner with local pregnant persons inclusive of their cultural beliefs, and provide locally based primary maternity care.[3 5 6 11 32] Pregnant people will then be more likely to attend maternity care services, and benefit from feeling culturally safe and culturally respected within their spiritual traditions of birth supported by the reduction of risk provided by informed and respectful medicalized care.[32]

Over time, many interchangeable terms have been used, such as cultural awareness, cultural sensitivity, and cultural competence.[10] However, these terms are problematic and confusing for various reasons. For example, cultural competence is often defined within an individually focused framework. This term is limited when it focuses on acquiring knowledge, skills and attitudes through learning the cultural customs of various ethnic groups and is flawed in believing that competence can be gained in another's culture.[10 33 34 35] Competence also suggests a static measurable object, such that once held, it is never lost.[9] Another problem with the term cultural competence is that individual-level focused positionings perpetuate a process of "othering", that identifies those that are thought to be different from oneself or the dominant culture.[10] The consequences for persons who experience othering include alienation, marginalization, decreased opportunities, internalized oppression, and exclusion.[36] Rather, the concept of Cultural Safety actively seeks to unmask other-focused approaches and practices, underscoring the importance that it is an ongoing and reflective process.[10 37] Without internal reflection, the risk for personal biases and assumptions lead to culturally unsafe practices and harmful patient outcomes.[4] Cultural Safety considers how professionals and health systems treat and respond to differences in the ways of thinking that a person uses to make sense of the world and their place in it, defined by ethnicity, age, sexuality, class, ability, gender, gender identity, privilege, status, experience, and context, since culture influences clinical relationships and impacts clinical decision-making.[9 24]

Cultural Safety allows one to feel secure physically, spiritually, socially, and emotionally. It means one's identity and past experiences are considered and involves behaviors that recognize, respect, and foster the unique cultural identity of a person and safely meet their needs.[4] There are 3 core tenets to Cultural Safety:[38]

1. **The first core tenet** is understanding the history and context of Indigenous and minority persons and acknowledging that colonization is the original cause of inequities.

2. **The second core tenet** involves health providers having self-awareness toward patients, positionality, and power imbalances.

3. **The third core tenet** establishes that the patient decides whether the care they receive is culturally safe.

In culturally safe environments, health providers are the 'outsiders' that impact patient health, rather than the patient being considered as the 'outsider' that needs an accommodation.[39] Care provision is safe when patients have no feelings of inferiority or alienation and are not being deprived of health care,[26] as defined by the patient and their communities, and as measured through progress towards achieving health equity.[7 9]

10 33

"Its primary goal was to provide the best possible individualized care. Therefore, under Cultural Safety, I understand that no matter what a person is like, in terms of sexual orientation, occupation, and socioeconomic status, is safe in this environment."[8 p.5]

A Way Forward

A baby is an opportunity for new hope and healing and may be a bridge to building culturally safe and respectful engagement, such as with Indigenous persons.[20] The baby has the power to influence intergenerational trauma patterns and plays a potential role in healing families; people may experience connections that were not there before, as well as possibilities for a different future and a belief that change is possible.[20] It is with this understanding of the importance of family that healing can begin and becomes a place for reframing care.

"Even when there's trauma, current or transgenerational, … 'the family might have been part of the problem, but they also hold the solution', … frame our questions to the family in a way that shows they are the resource the baby needs. We resist the idea that 'doing assessments on this little one' is better than helping the family perform their own reflection about the baby's needs, using their forgotten expertise."[20 p. 482]

This understanding reinforces the need to reorientate practices away from a 'problem-based approach' of Indigenous health and wellbeing to one that focuses on strengths, capacity and resilience.[40]

The literature is replete with global examples of how to engage in culturally safe care with Indigenous and ethnic minority families, such as accurate identification and documentation of Indigenous persons,[3] engaging the family as interpreters to close the conversation gap in overcoming perceived communication barriers,[8] group pregnancy care,[41] Women's Circles,[42] and employing community-based cultural support workers for antenatal care.[21 43] Other examples of culturally safe engagement include giving pregnant persons choice about where birthing will occur and how to embed traditional belief systems,[32 44 45] traditional family involvement in birthing even if occurring away from the home,[46] and good communication, sharing, showing love, and holding space in the intensive care environment for improved neonatal outcomes.[47] Together these examples show that culture and tradition are not absolute and static where individuals have no agency and provide insight into what Kaphle refers to as "conciliation by some women between traditional and medical knowledge"[32 p.1177] and opens a space for "negotiation … between the cultural and medical paradigms without compromising local cultural values and spiritual beliefs".[32 p. 1178]

SECTION 02

SUBSTANCE USE DISORDERS in Pregnancy

In Canada, substance use disorders continue to be a global issue. Approximately 21.6% of the population (6 million) will meet the criteria for addiction in their lifetime, with alcohol and cannabis identified as the top two favored substances.[48] Opioid related deaths and other harms have also been increasing in numbers over recent years, rising particularly during the Covid-19 pandemic.[49] In 2019, the average number of opioid toxicity deaths per day was 10, which increased to a peak of 22 in 2021.[49] During the first year of the pandemic, there was a 95% increase in apparent opioid toxicity deaths with a total of 7, 224 deaths (April 2020 – March 2021), compared to the year before with 3, 711 deaths (April 2019 – March 2020).[50] Deaths have continued to rise, with 88% of all accidental apparent opioid toxicity deaths occurring in British Columbia, Alberta, or Ontario.[50] For both males and females, most of the accidental apparent opioid toxicity deaths were among individuals aged 20 to 59 years.[50] Based on current national data from 2023, analyses show there has been no significant decrease in trend and rates remain high.[50]

During this global, growing crisis, the rates of opioid use in pregnancy have paralleled the rapidly growing opioid related morbidity and mortality.[51] Prescription opioid use during pregnancy is reaching concerning levels, in part due to the widespread increase in the number of opioid prescriptions dispensed to all Canadians early in the 21st century.[48 52 53] It also increased significantly during the Covid-19 pandemic with 12.8% of individuals self-reporting prescription opioid use.[54] Lien et al. noted that fentanyl use specifically increased dramatically for pregnant persons.[55] The use of fentanyl in pregnancy is concerning not only because of the well-known risks of variable opiate dosing during pregnancy but, even more so, due to the increasingly toxic supply which often includes stronger opiate analogs, benzodiazepines, stimulants and a variety of other adulterants.[56]

According to Muhuri et al., on behalf of the American Federal Agency: Substance Abuse and Mental Health Services Administration (SAMHSA), the strongest risk factor for use of illicit opiates is pre-existing prescription opioid dependence.[57] Pregnant persons with preexisting opioid use disorder are especially vulnerable. They not only have to access specialized care, but they have additional stressors as well.[54 58 59] Lower level of education or socioeconomic status, trauma, generalized anxiety, or other mental health disorders are also significantly associated with opioid use during pregnancy.[60 61 62] Although the use of prescription opiates has decreased dramatically with public information campaigns, there has been a concomitant increase in the use of illegally produced drugs such as fentanyl.[63]

The social response to substance use during pregnancy varies. In some US states pregnant persons testing positive for drug use are punished through incarceration and have a high chance of having their children removed from their care.[64 65] In Canada, these controversial criminalization laws dictating incarceration have not been explored; a pregnant person cannot be mandated by a court order to attend addiction treatment.[66] Further, tendencies towards apprehension of children of substance-using pregnant patients are changing as substance use disorders are fast becoming recognized as an illness reaching pandemic proportions.[67 68 69 70 71] The care of pregnant persons with substance use benefits from a multidisciplinary approach based in harm reduction, trauma-informed care for the entire family.[72] Focusing more on inclusivity and support is essential to maintain the integrity of the child-parent dyad.[71]

SECTION 03

WHAT IS HARM REDUCTION

in Pregnancy?

"It's an engagement philosophy that helps support a population of individuals that have been impacted by systems."

– Dr. Mishka Terplan[vi]

Harm Reduction is an evidence-based, client-centered approach that seeks to reduce the health and social harms associated with addiction and substance use, without necessarily requiring people who use substances from abstaining or stopping.[73] Included in the harm reduction approach to substance use is a series of programs, services, and practices. It is essential, when using a harm reduction approach, that people who use substances are provided with a choice of how they will minimize harms, through non-judgmental, non-coercive strategies to enhance skills and knowledge to live safer and healthier lives.[74]

Harm Reduction practice in pregnancy includes strategies that will improve the health of pregnant people and subsequently improve the health of their baby. When service providers remove the stigma that abstinence is required to receive care, a welcoming environment that is safe and judgment free is created. Conscious, intentional, and strength-based language conversely results in validation that facilitates autonomy and choice.[75] Meeting the individual where they are at, and prioritizing actions based on the client's identified needs, demonstrates acceptance of the person, as they are. As helping professionals, it is important for service providers to remember that they are not experts of the patient's life, rather patients are experts in their own lives. Pregnant people must be supported and treated as though they are capable of making the best decisions for themselves and their baby.

Abstaining from all recreational substance use during pregnancy and breastfeeding is the safest option. Some people may not be able to, or may not want to, achieve abstinence from substance use during pregnancy.[76] For these individuals, harm reduction strategies can be employed to reduce the risk associated with substance use and promote health, worth, and dignity. Specific strategies include reducing the frequency of substance use, switching to a safer form of use (e.g., oral vs. injection), planning ways to stay safe before using substances (including not using alone, access to naloxone, and use of fentanyl test strips), and reducing the risk of skin bacterial and bloodborne infections if injecting substances by using sterilized injection supplies.[76]

Key components of harm reduction programs should focus on improving nutrition, decreasing smoking, decreasing alcohol and drug use, encouraging breastfeeding, promoting dental health, encouraging physical activity, encouraging early and continuing prenatal care, and promoting social and community support.[77]

vi Mullins K. #13 what to expect: Managing opioid use disorder in pregnancy with Dr. Terplan. The Curbsiders - An Internal Medicine Podcast. 2023 July 13. Retrieved from https://thecurbsiders.com/addiction-medicine-podcast/13-what-to-expect-managing-opioid-use-disorder-in-pregnancy-with-dr-terplan

Harm Reduction Approach and Strategies

"Harm reduction we will take you as you are without judgment, without prejudice and without the label of a disease to define you."
- Dr. Mishka Terplan[vii]

Taking a harm reduction approach means respecting the pregnant person's right to autonomy and providing support based on readiness. It also acknowledges their ability to make changes and assisting them in working towards their goals. When working with equity deserving pregnant people with complex needs, it is difficult to focus on substance use in isolation. Addressing their core needs, including food, stability, safety, and sustainable housing are critical to provide optimal care. Progress made in any key area will ultimately contribute to improved health outcomes for both the individual and their baby.

A key strategy when working with pregnant people who use substances includes being comfortable enough to listen and courageous enough to hold space to allow the individual to explore their hopes, goals, and needs. The pregnant person can do their best when a safe space is provided, and a connection is established to allow them to come as they are. This will help support the development of a greater level of trust, rapport, and engagement.

It is recommended that people who are pregnant with opioid use disorder be initiated on medication to manage their opioid dependency.[78] Medications for Opioid Use Disorders (OUD) during pregnancy are associated with improved pregnancy, birth, and infant outcomes, including reductions in overdose, preterm birth, and low birthweight compared with people with OUD who did not take these medications during pregnancy.[79]

Harm reduction recognizes that relapse is an expected part of the recovery process, and every client needs education and tools for safer substance use. The clients may identify their primary goal as abstinence, safer use, reduced use, or something unrelated to use. The measurement of success is any positive change identified by the individual.[76] (Figure 1)

vii Source: Terplan M. No date.

SAFETY

Seeking pregnancy care shouldn't be dangerous. Talking openly about substance use should be part of everyone's routine care.

AUTONOMY

We should respect each other's ability to make informed healthcare decisions that reflect our priorities and preferences.

SHARED DECISION-MAKING

Providers should work with patients to explore all their options- then they should support their goals.

INFORMED CONSENT

If we're going to give informed consent we need to talk about what we're being asked to do and why. If we don't have the power to say no, it's not consent.

DO NO HARM

Parents and babies need each other. It's unethical to drug test without consent or to collect evidence that can be used to cause harm.
ASK: Is the test medically necessary?

Figure 1. Pregnancy and Substance Use: A Harm Reduction Toolkit. Academy of Perinatal Harm Reduction: October 2022. Retrieved from https://www.perinatalharmreduction.org/_files/ugd/f31cc3_9399e9efc1784311b454492bfd192d04.pdf. Used with permission.

"Harm reduction could be summarized broadly as meeting someone where they are at but not leaving them where you found them."

– Dr. Sarah Wakeman[viii]

The Benefits of Harm Reduction in Pregnancy

Safer and reduced substance use is known to improve the nutrition of both the mother and baby, as well as result in less preterm births and fewer low birth weight babies.[80 81 82] These improved pregnancy outcomes translate to shorter birth hospitalizations and higher rates of babies going home with their mothers.[82 83 84] Harm reduction in pregnancy may also positively impact breastfeeding, maternal attachment, and enhance the early development of the baby.[83 84 85 86]

Ultimately, the goal of health and social support is to have the babies remain in the care of their birth parent or other family if it is safe to do so. Therefore, for improved harm reduction programming to occur, health and social services must interact to create an atmosphere that is both safe and that the mothers are willing to attend. This includes comprehensive and accessible programs addressing violence and sexual assault prevention, addiction services, support for Residential School survivors and sexually transmitted infection prevention and management.[85 87 88 89]

Many women avoid seeking care when pregnant while using substances because they fear that Child Protective Services will apprehend their babies.[90] However, it is suggested that if the mother has health and social supports in place to help her care for her baby and aid in managing her substance use disorder, there is a decreased likelihood of apprehension.[91 92]

viii Dr. Sarah Wakeman, Medical Director for the Mass General Hospital Substance Use Disorder Initiative and an Assistant Professor of Medicine at Harvard Medical School. Twitter.

SECTION 04

TRAUMA

Informed Care

Trauma is an "event," series of events, or a set of circumstances experienced as physically or emotionally harmful or life threatening. These experiences can have lasting adverse effects on functioning and mental, physical, social, emotional, or spiritual well-being.[93] Traumatic events may include sexual assault, physical assault, neglect, significant illness and/or accident.[94] [95] The individual may be the subject of the trauma, a witness to the trauma, or experience the effects of the trauma inflicted on another significant person sometime in the past (defined as intergenerational trauma). Trauma can also occur to groups and communities, such as through colonization or systemic racism.[96] Trauma can have significant impacts on individuals and communities, impacting their physical and mental health, development, relationships, and behaviour.[97]

Being trauma-informed is a not a recipe or set of specific instructions, but an approach that underpins systems and interpersonal interactions.[93] [96] Service providers should be knowledgeable about traumatic experiences their clients may have experienced and recognize the impact trauma can have on their lives, including their choices and behaviours. This knowledge and understanding must inform all aspects of the services provided.[98] [99] A trauma-informed approach supports the understanding that behaviours, such as problematic substance use, are a means of coping with previous distressing events or trauma.[100] Ideally, the mindset and practice of caregivers shift from being negative and/or judgmental (e.g., blaming the victim) to being accepting and supportive. In other words, "Disorders become *responses*, and symptoms become *adaptations*".[101 p.20]

Women with mental health and substance use disorders often report previously having been subject to physical or sexual abuse, demonstrating a relationship between trauma and substance use.[98] Problematic substance use is common in individuals with a trauma history as a coping mechanism to numb and avoid feelings and emotional pain and suffering.[96] Individuals that experience problematic substance use report having co-existing mental health conditions, such as depression, anxiety, panic disorder or Post Traumatic Stress Disorder (PTSD).[102] [103]

Traumatic experiences in childhood, also known as adverse childhood events (ACEs), significantly impact an individual's physical and mental health throughout the remainder of their life.[104] [105] ACEs include different forms of abuse such as psychological, physical, and sexual, as well as emotional and physical neglect.[106] When threatened, individuals who have experienced ACEs prepare to respond through the life-saving fight or flight response. Continuous activation of this mechanism can have a "wear and tear effect".[106 p.13] Also, the number of ACEs an individual experiences is not only associated with risk for premature death,[107] but also is directly correlated with the likelihood of substance abuse later in life: a child who experiences five or more ACEs is seven to ten times more likely to report problematic drug use.[108]

Recognizing that women with substance use disorders have a high likelihood of a history of trauma and responding in trauma informed ways is key, as is supporting healthy parent/child relationships as a means of preventing ACEs in their children.

Research has clearly demonstrated that individuals who have experienced trauma are at an elevated risk of re-traumatization in healthcare and social service settings.[96] This can be the result of a lack of knowledge about trauma, its impacts, and manifestations. When systems respond poorly to people who have experienced trauma, it can lead them to feel further marginalized and unsupported by services aimed at helping them.

Trauma Informed Care involves recognizing the significant impact that trauma has and coming to an understanding of the effects it has on individuals, families and sometimes communities. Practical trauma-informed approaches for service providers include: [93 95]

Emphasizing safety and trustworthiness

- Ensuring the clients served feel physically and psychologically safe in the environment and interactions
- Being non-judgmental and compassionate
- Acknowledging and attending to the immediate needs of their patients/clients to establish a helpful, trusting relationship Promoting the expression of emotions/feeling without fear of judgement
- Creating safe spaces for story-telling and compassionate listening
- Conducting interactions and decision-making with transparency

Being Strength-Based

- Recognizing the strengths and resiliency of their patients/clients
- Providing opportunities to build on skills and set goals

Offering Opportunities for Choice, Collaboration, and Control

- Providing clarity around roles and boundaries
- Explaining confidentiality and ensuring informed consent
- Consistently providing opportunities for choice, collaboration, and connection
- Decreasing power differences and taking partnership-based approaches

Recognizing Cultural, Historical, and Gender Issues

- Acknowledging and moving past stereotypes and biases
- Recognizing and addressing historical traumas and racism
- Offering responsive services that recognize the healing value of culture

SECTION 05

(OAT)

Opioid Agonist Therapy

In Canada it is widely accepted that effective care for pregnant women with opioid use disorder (OUD) includes serious consideration of evidence-based medication therapies including buprenorphine and methadone.[109] [110] In-utero substance exposure is known to cause negative effects on the infant. These include low birth weight, prematurity, and intrauterine growth restriction.[111] [112] [113]

Methadone has traditionally been the first choice for the treatment of OUD. However, in recent years substantial evidence has emerged to support the use of buprenorphine, including buprenorphine-naloxone in pregnancy.[114] [115] Maternal and fetal benefits from structured Opioid Agonist Therapy (OAT) provision are thought to outweigh any potential risks to fetal health from medication use during pregnancy.[115] The objective of OAT is to stabilize the mother in order to limit withdrawal, attenuate the rewarding effects of street drug use, encourage prenatal care, decrease the incidence of illicit drug activity, decrease high risk activities including blood borne illness transmission, decrease the likelihood of overdose and death, and improve neonatal outcomes compared to ongoing street drug use and its negative consequences.[116]

Detoxification with abstinence-based care is not recommended in pregnancy, though in some cases it is the choice of the pregnant person.[117] The reason why detoxification is not recommended includes the increased risk of miscarriage or fetal loss from withdrawal and the increased risk of overdose, anoxic brain injury and death for mother and fetus in the event of a relapse to use.[118] [119] Rapid loss of tolerance happens when mothers stop using street opioids or stop their OAT treatment medications. These situations should be approached with caution and may require consultation with an addiction medicine provider.

Methadone Maintenance Treatment (MMT) is substitution-based therapy meant to allow people to improve their physical and mental functioning.[120] This therapy is a common consideration for people with OUD during pregnancy to decrease their dependency on opioids.[121] Methadone is an opioid agonist that has many benefits during pregnancy, such as enhanced prenatal care, longer gestation, and an increased chance of the mother maintaining custody after being discharged from the birth hospitalization. Other social and harm reduction benefits of MMT include healthier lifestyle and diminished cravings for licit and illicit opiate substances.[122] Although infants whose mothers take methadone during pregnancy tend to have a lower birth weight, length, and head circumference in comparison to non-exposed babies, studies have shown that by twelve months of age exposed babies reach normal size.[123] [124] Furthermore, it is important to recognize that infants born to mothers on methadone have improved neonatal outcomes compared to mothers who continue to use street obtained opioids. In neonates, maternal MMT has been shown to be effective in decreasing the severity of Neonatal Opioid Withdrawal Syndrome (NOWS) as well as length of birth hospitalization.[120]

Buprenorphine is an appropriate option in the treatment of OUD in pregnancy. It is recognized as an appropriate treatment by both the American and Canadian colleges/societies of Obstetricians and Gynecologists. Current research shows improved neonatal outcomes for mothers treated with buprenorphine compared to methadone.[117] [125] These outcomes include longer gestational age, increased birth weight, and larger head circumference compared to methadone. Furthermore, current evidence shows reduced incidence of NOWS, shorter duration of hospitalization after birth, and less morphine treatment required.[115] [116]

In order to start buprenorphine, typically patients must be in withdrawal. Patients already in withdrawal on presentation or patients who are already on buprenorphine can be started and maintained on this medication. However, before describing the use of buprenorphine in pregnancy it is important to understand that opioid withdrawal in pregnancy can increase the risk of miscarriage.[119] Avoidance of withdrawal is the primary barrier for a pregnant person to delay starting buprenorphine in pregnancy. However recent studies have not found a clear relation between a medically supervised withdrawal and miscarriage.[126]

Buprenorphine is available in Alberta in 2 forms, Suboxone (buprenorphine-naloxone) and Sublocade (buprenorphine XR). Historically, women with OUD were encouraged to not take buprenorphine with naloxone due to the potential effect of naloxone induced withdrawal. In practice, this concern is no longer viewed as an absolute contraindication for the use of Suboxone. Naloxone has very poor oral bioavailability, therefore when taken as prescribed the likelihood of naloxone induced withdrawal in pregnancy with subsequent fetal complication is seen as low risk. Suboxone is now commonly used in pregnancy. Sublocade does not have naloxone and is also used in pregnancy, although the product monograph states that clinicians must weigh the risks and benefits of using the product in pregnancy.[127] A benefit to Sublocade use is that it is a once per month injectable that is both convenient and can block the rewarding effects of street obtained opioids.

Buprenorphine is a mu-opioid receptor partial agonist. This means that it activates the mu-receptor with a limited response, though this is not to say that buprenorphine is weak.[128] [129] An opioid naïve person will experience euphoria and substantial impairment from even low dose buprenorphine.[130] The main benefit of this property is that because the receptor is only partially activated, no matter how much buprenorphine enters the system, those receptors cannot be activated to their full capacity. The ability of buprenorphine to activate the receptors only partially is described in some literature as a “ceiling effect”, meaning that an overdose of the medication is unlikely to cause added euphoria or risk of overdose.[115] A second effect of buprenorphine is that it has high affinity for the mu-receptor. This means that when buprenorphine is in a person’s system, it remains in place on the receptor for long periods of time relative to other opioids. High affinity for the mu-receptor has pros and cons.[128] [131] A pro is that if a person uses street opioids while on a treatment dose of buprenorphine, much of the street opioid effect will be blocked because the receptor site will be occupied by the partial agonist buprenorphine.[132] A con to this property is that treatment of acute pain with buprenorphine, such as at time of delivery, may require higher doses of medication to overcome the “blockade” effect of the medication. A second con is that a patient must be in withdrawal to start buprenorphine.[119] [129] This must occur because the buprenorphine will displace full agonist opioids, including fentanyl, off the receptor. This sudden change from full agonism to partial agonism results in an exaggerated, very uncomfortable condition called precipitated withdrawal.

Access to OAT in Alberta

OAT is often administered daily by physicians and pharmacists which provides regular opportunities to interact with the mother and assess how she is doing, known as Daily Witnessed Ingestion (DWI).[133] However, emerging evidence from the recent pandemic indicates that daily OAT dosing may not be needed and that consideration to patient factors should be considered. Patients who are stable on a maintenance dose of OAT are often rotated from DWI to carries, meaning they are dispensed their OAT to self-administer at home. Programs working with pregnant women who use opioids also encourage access to social and health services including prenatal care, other addiction treatment services, and other support services. To receive OAT in Alberta, patients must visit a licensed practitioner for evaluation and decision-making about whether or not OAT is a suitable treatment option.[134] [135] In order to be considered eligible for OAT, patients must have a diagnosis of an OUD. The practitioner will ensure that the patient understands any risks involved and the daily OAT program requirements, such as frequent physician visits and witnessed ingestions daily, as well as discussing all other available treatment options.

Prescribers must have training to initiate or change doses of OAT. In Alberta there is an opioid provider consultation service that can assist practitioners with methadone and buprenorphine related questions. The service is run through Referral, Access, Advice, Placement, Information, and Destination (RAAPID) North and South. Callers to the service must indicate that they are seeking a consultation with the opioid provider service which runs 0800 to 2000h, seven days per week.

There are several public and private clinic options for OAT treatment in Alberta. The College of Physicians and Surgeons of Alberta (CPSA) maintains a list of providers across the province. Patients may also call the Alberta Health Services Virtual Opioid Dependency Program at 1-844-383-7688. This program can facilitate same day addictions consultation with same day treatment start. Once stabilized, the patient can then be transitioned to whichever public or private clinic is most appropriate for their needs and geographic location.

SECTION 06

THE DYNAMICS OF ACUTE

Pain Management

Pain is the most experienced symptom in adults.[136] This condition, also known as nociception, occurs in up to 60% of adults,[136] [137] and is commonly defined as the process of communication between the site of tissue damage/injury and the central nervous system.[138] Two types of pain exist: chronic (does not settle as injury recovers, prevents normal functioning and lasts more than 3 months) and acute (from an injury or surgery that diminishes/disappears as the injury recovers).[136] [139] Common sources of acute pain that occur in intrapartum and postpartum patients include labour pain, post caesarean section or instrumental delivery, while chronic pain may stem from past medical complications, such as trauma, renal colic related to nephrolithiasis (kidney stones) and non-obstetrical surgery.

Problematic Opioid Use

Opioid medications are natural and synthetic substances that have morphine-like activity at the opioid receptor. There are several types of opioid receptors with various functions, including functions related to respiratory rate.[140] For the purpose of considering pain, opioid medications are generally thought to produce pain relief by action at three locations: higher brain centres (alters the physiological response to pain); spinal cord (reduces neurotransmitter release from nerve fibers); and descending pain modulating pathways (modulation of pain transmission).[141] Opioid agonists activate opioid receptors in a similar way to morphine, i.e. they increase receptor activity. Opioid antagonists bind to the receptor but do not increase receptor activity. Full opioid agonist medications like morphine, heroin, methadone, fentanyl, oxycodone and hydromorphone activate the opioid receptor fully. However, these opioid agonists have different potencies due to other pharmacologic properties. An opioid analgesic with partial agonism effects is buprenorphine, the primary ingredient to Suboxone, Sublocade injectable and Butrans patches. Partial agonists can be quite potent while still not able to activate the receptor maximally like a full opioid agonist.[142] It is thought that this partial agonist effect may protect against respiratory depression.[143] Opioid receptor antagonists are thought to block any activity at the opioid receptor site. Naloxone (Narcan) and Naltrexone are commonly available opioid antagonists.

Opioid misuse is a widespread public health issue and may be "defined as use of an opioid medication without a prescription, or using a prescribed opioid medication in greater amounts, more often, or for longer than directed".[144 p.3] However, understanding the nature and extent of the issue is difficult because of inconsistency in how problematic opioid use is defined.[145] A contributing factor to opioid misuse is a trend to increased prescriptions of opioid medications for both acute and chronic pain management, often accompanied by levels of increased levels of opioid overdose, abuse, addiction, and diversion.[146] For example, findings from studies about prescribing practices involving adolescents and young adults undergoing dental surgery found that there was an increase in persistent ongoing opioid use and subsequent diagnosis of opioid misuse among this population.[147] [148] Even so, taking prescribed opioids is not a sole risk factor for developing opioid use disorders.[149] Other factors associated with increased risk for misuse include history of substance use disorder, younger age, major depression, and use of psychotropic medications.[150]

Opioid Use Disorders and Pain Management

Pain management in the context of substance use disorders is becoming more and more common. Barriers to safe and effective pain management for recovering and current users exist, many of which relate to interactions between patients and care providers.[151] [152] For example, there is stigma associated with the substance dependent identity.[153] These individuals often "live by [their] wits", have a history of difficulty with authority structures and may have "difficulty trusting

anyone".[151 p.26] Internalized stigma, fear of pain and fear of withdrawal means that they are concerned they will be pre-judged and not believed when they are in pain.[152] As a result, their behavior may at times be demanding.[151]

Other barriers that may hinder caregiver-patient relationships and trust often relate to the knowledge and attitudes of care providers.[152 153 154] Knowledge gaps that may impact acute pain management centre on perceived risk of relapse, tolerance, withdrawal, opioid interactions with Opioid Agonist Therapy (OAT) methadone and buprenorphine, multimodal pain therapy and role of neuraxial and other local anesthetics. Guidelines for the management of postoperative pain recommend a plan for pain management individually tailored to the patient that addresses preoperative education, perioperative pain management planning, use of different pharmacological and nonpharmacological modalities, organizational policies, and transition to outpatient care.[155]

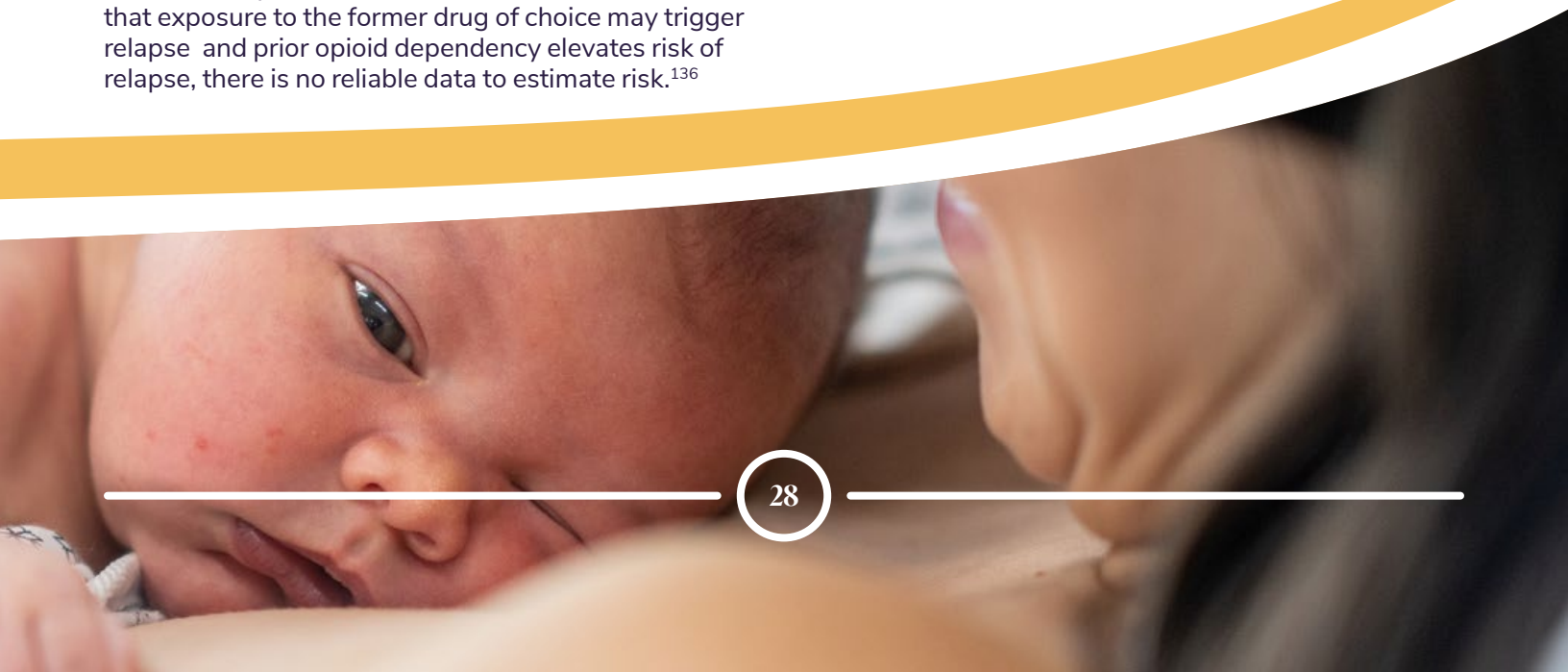
Perceived risk of relapse: In principle and in practice it is important to err on the side of over treating the occasional drug seeker than under treating the patient in pain.[156] The key challenges of pain management within a background of opioid dependency include improving communication, strengthening evidence, and challenging negative stereotypes and attitudes.[156] Common misconceptions about opioid dependency and pain management centre on various competing concerns. One concern from the patient perspective is about opioid analgesia triggering relapse with re-exposure.[136] This concern is compounded by other physical and emotional stressors which may be the triggers for cravings,[138 151] defined as neuroplastic changes that occur that are not fully reversible even after several years of abstinence.[151]While it is surmised that exposure to the former drug of choice may trigger relapse and prior opioid dependency elevates risk of relapse, there is no reliable data to estimate risk.[136]

Second, the patient may have legitimate anxiety about pain being undertreated if adequate analgesia is not provided.[156] As mentioned, misconceptions exist that treating the pain with opioid analgesia will cause relapse.

However, the opposite is true: inadequate pain relief is more likely to trigger relapse.[151 155] In other words, relapse is more likely to occur if pain goes untreated and patients are left to manage their own pain by self-medicating through illicit means.[136]

Tolerance: Staff sometimes struggle to understand a person's individual experience of pain. Particularly in the context of past or current addiction, there can arise the perception that a person is 'medication seeking' rather than reporting a genuine experience of pain. We urge all practitioners to recognize that pain is subjective, is influenced by past experiences and the experience of pain is significantly altered by opioid dependence regardless of if the opioid dependence has been treated or not.

Patients who are treated with OAT are likely to require higher than typical doses of analgesics due to tolerance caused by their medications. One way of thinking about this is that a patient on OAT is 'resistant' to the typical opioid treatments that we use and will therefore require additional dosing. This phenomenon is not 'medication seeking', nor is it an attempt to exaggerate the individual experience of pain. We strongly urge all practitioners to approach the treatment for pain of patients in this situation with compassion and respect.



Withdrawal: While pain assessment remains fundamental in the management of acute pain in intrapartum and postpartum periods, it is equally important to assess for signs of withdrawal.[157] Symptoms and signs of withdrawal include sweating, feeling hot and cold, dilated pupils, anorexia, abdominal cramps, nausea and vomiting, diarrhoea, insomnia, tachycardia and hypertension, and muscular aches and pains.[137] Prevention of withdrawal can be accomplished by dose adjustment, or through opioid rotation since different opioids act to different degrees on various opioid receptors, are metabolized differently and there is incomplete cross-tolerance.[136 158]

Opioid Interactions with OAT: It is our opinion that a person with active opioid addiction is unlikely to be harmed by opioid medication used to treat their pain. This approach may well contribute to better pain control, less illicit opioid use (that the team may otherwise be unaware of), and an increased ability for the person to participate meaningfully in their own care. Indiscriminate reduction in opioid prescription without managing opioid dependency and chronic pain may increase suffering and suicide of pain patients and also may turn patients towards illicit opioids.[149]

Managing opioids for acute pain treatment for patients who are maintained on OAT can be complicated. Practitioners may find it helpful to consult additional expertise (pharmacy team, anesthesiologists, Opioid Use Disorder Telephone Consultation to Referral, Access, Advice, Placement, Information, and Destination (RAAPID) to determine a best plan for patient care).

Principles of opioid management are outlined in the following table:

Sample Acute Pain Regimen for Opioid Tolerant Patients

- Calculate home regimen OME (oral morphine equivalent); continue fentanyl patch or other long-acting meds for baseline control if patient able to tolerate PO intake
- Consider increasing home scheduled opioids by 30%
- Add short acting opioids to cover acute pain (10%–20% of 24 h baseline home dose), dosed PRN Q1-4 h
- If opt for Patient Controlled Analgesia (PCA), may use hydromorphone, fentanyl, or morphine
- Avoid basal infusions unless a pain specialist agrees
- Reduce dose of new opioid by 30%–50% when switching from one opioid to another to account for tolerance

Table 1: Sample Acute Pain Regimen for Opioid Tolerant Patients[ix]

During labor, delivery, and the postpartum period the opioid agonist agent (methadone, buprenorphine) is continued.[156 159 160] If the pregnant person is NPO, methadone should still be administered or replaced with other agents to prevent withdrawal.[138 156 161] Note that because of incomplete cross-tolerance, the starting dose of morphine should be reduced by 30-50% of the calculated equianalgesic dose.[162 163] Buprenorphine patients, on the other hand, will experience minimal withdrawal with short-term interruptions; even so, the trend is to continue to administer it to optimize maintenance of pain control.[156 159 160 164 165]

ix Adapted from Cai Y, Acampora G, Anderson T. Chapter 27: Evaluation and Treatment of Postoperative Pain in Patients with Opioid Use Disorder. Practical management of Pain, Sixth Edition. 2023:374-384. Retrieved from https://www.clinicalkey.com/#!/content/book/3-s2.0-B9780323711012000270

For pain management, significantly higher doses of opioids are likely to be required as tolerance counterbalances and may nullify any analgesic effect.[136] Consensus dictates the use of the pre-existing maintenance OAT and an additional opioid.[156 159 160 164 166] Although the phenomenon of tolerance is incompletely understood, the dosage of analgesics for patients receiving OAT frequently must be titrated to levels higher than usual.[156] Pregnant persons on methadone require near 70% more analgesia following a caesarean section, especially in the first 24 hours post-op in comparison to their opioid naïve counterparts; and a similar increase in analgesia requirements of 50% has been noted for the delivered person on buprenorphine post caesarean section.[138 156 164]

Buprenorphine is a partial opioid agonist that limits the effects of additional illicit or therapeutic opioids.[158 167] It has a high receptor affinity and supplemental opioids given in standard doses may not have the expected analgesic response, making pain management with conventional opioid doses somewhat challenging.[158 164 168] Buprenorphine, due to its high receptor affinity, disassociates from mu-opioid receptors very slowly, reducing access of drugs like morphine to the receptor.[162] Mild to moderate pain in patients on buprenorphine may be managed by increasing the buprenorphine dosage and consider administering the drug in divided doses every six to eight hours.[162] In the case of analgesia interference, it is suggested to maximize non-opioid medications, such as acetaminophen and Nonsteroidal Anti-Inflammatory Drugs (NSAIDs).[156] Another consideration is to use higher than standard doses of other full opioid agonist medications. One suggestion, for example, is to provide an intravenous form of opioid that binds strongly to mu-opioid receptors, such as fentanyl or hydromorphone.[138 168] Particular attention should be given to care transitions for these patients at time of discharge to ensure that appropriate medication management decisions have been made to support community transition.[166]

Multimodal Pain Therapy: Comprehensive history taking of what patients are taking versus what is prescribed should occur because if they are not part of a supervised consumption scheme, they may not have been taking the full prescribed dose. When hospitalized, the patient will get their full prescribed dose which may lead to over-sedation, unconsciousness, and respiratory depression, or the opposite, withdrawal, if the prescribed dose is too low.[136] Other agents that seriously impact patient safety are the concurrent use of benzodiazepines and/or alcohol. It is also important to have developed an individualized care plan as some patients may not want their pain treated by opioids. In these situations, it is important in communicating with the patient to come up with a plan that includes use of non-opioids and/or less reinforcing opioids that are stopped as quickly as possible.[151 158 169]

In the postpartum period, accept that there is 'no right answer' in recommendations for pain management in relation to patients with opioid dependency.[151] Current guidelines recommend oral opioids whenever possible as this route has been shown to be non-inferior to parenteral administration of opioids.[155] It is important to emphasize that complete absence of postpartum pain may not be a realistic goal but decreased pain to optimize day to day functioning is likely attainable.[138 170] If the patient is consistently reporting high pain scores, a good way to assess pain is to look for impaired function,[137] such as limited mobility and difficulty participating in the treatment plan including performing self-care and baby care.

Multimodal pharmacologic and non-pharmacologic pain treatment is the optimal approach for postpartum pain. (See Table 2).

Multimodal Interventions to be Considered

- Oral or parenteral systemic opioids
- Scheduled acetaminophen
- Scheduled Nonsteroidal Anti-inflammatory Drugs
- Alpha 2 Adrenergic Receptor Agonists (eg. Dexmedetomidine)
- Magnesium Sulphate
- Gabapentin
- Ketamine
- Neuraxial Analgesia (epidural or spinal, opioids +/- local anesthetic)
- Non-Neuraxial Regional Analgesic Techniques (eg. Abdominal Fascial Sheath Blocks)
- Topical Local Anesthetics
- Intravenous Lidocaine

Table 2: Multimodal Interventions to be considered[x]

For pain that increases or fails to decline consider intrapartum/postpartum complications or Opioid-Induced Hyperalgesia (OIH).[138 171] High doses of opioids can cause OIH, described as neuroplastic changes in the nervous system leading to increased pain sensitivity from opioid administration, as opposed to tolerance which leads to decreased sensitivity to opioids.[136 137] Management of OIH involves decreasing opioid dose, opioid rotation, and optimizing non-opioid analgesics.[136]

Role of Neuraxial and Other Local Anaesthetics:
In addition to continuing a patient's OAT, the multimodal approach to acute pain management also often involves local or regional anaesthesia, topical analgesics, or intravenous lidocaine if neuraxial or regional techniques are not used.[162 172 173] Post-operative epidural alone, without continuing the OAT, is not advisable as the patient may withdraw due to lack of provision of systematic opioids.[138] Methadone and buprenorphine maintenance alone may be inadequate for pain relief. Doses prescribed are not usually in the range to provide effective analgesia.

Chronic Post-Surgical Pain

Chronic post-surgical pain is defined by the International Association for the Study of Pain as "pain beyond normal tissue healing which is assumed to be 3 months."[174 p.219] Treatment of chronic pain is complex and beyond the scope of this resource. Because of the impact on quality of life and associated medical complications including opioid use disorder, patients on long term opioid therapy, particularly higher dose should be assessed to determine the most appropriate strategy for pain management.[155] Many biological, psychosocial, and environmental factors contribute to the transition from acute postoperative pain to chronic

x Adapted from: Cai Y, Acampora G, Anderson T. Chapter 27: Evaluation and Treatment of Postoperative Pain in Patients with Opioid Use Disorder. Practical management of Pain, Sixth Edition. 2023:374-384. Retrieved from https://www.clinicalkey.com/#!/content/book/3-s2.0-B9780323711012000270; George RB, Carvalho B, Butwick A, Flood P. Chapter 27: Postoperative Analgesia. Chestnut's Obstetric Anesthesia, Sixth Edition. 2020; 627-669. Retrieved from https://www.clinicalkey.com/#!/browse/book/3-s2.0-C20160024920; Gudin JA, Brennan MJ, Harris ED, et al. Reduction of opioid use and improvement in chronic pain in opioid-experienced patients after topical analgesic treatment: an exploratory analysis. Postgraduate Medicine. 2018;130(1):42-51. doi:10.1080/00325481.2018.1414551

post-surgical pain, thought to occur in as many as 10 to 50% of post-surgical patients.[175] Half of patients who stop long term opioids report their pain to be unchanged or better after stopping opioids, but 47% report worse pain after stopping.[176] Multimodal, opioid sparing strategies such as those which make up the ERAS (enhanced recovery after surgery) protocols should reduce the number of patients who transition to chronic pain in this way.[177]

Pain Management After Discharge

Following discharge, multimodal pain therapy should continue. In patients who use opioid agonist therapy, concerns over ongoing opioid use for pain management need to be balanced with an awareness of increased pain sensitivity and opioid tolerance in this population.[178] Pain management practitioners stress the importance of individualized collaborative plans between patients and prescribers that addresses uncertainty around safety and effectiveness while providing reassurance to minimize complications associated with avoidance of pain therapies altogether.[179]

Pain Management and Prevention of Opioid Use Disorder

An estimated 1/3 of reproductive-aged women fill a prescription for opioid medication each year.[180] Number of deaths from prescription opioids increased over 400% for women during the years 1999 to 2010.[181] The rate of cesarean delivery may be as high as 32% making this a time when many patients who have not previously used opioids are exposed during in hospital treatment or by opioid prescription following discharge.[182] The risk of developing opioid use disorder following prescription of opioids after cesarean delivery may be as high as 1/300.[183] In opioid-naïve patients, continuous opioid consumption over 72 hours increases risk of developing long-term opioid addiction.[160] [183] Safer prescribing practices for all postpartum patients represent an opportunity to reduce risk of opioid use disorder in this population.

Risk Mitigation Strategies for Opioid Prescribing at Discharge

Prescribing practices are among the factors leading to opioid overdose, abuse, addiction and diversion.[139] Opioid prescribing practices for women after cesarean delivery have been shown to be variable and may often be more than the number of pills needed for pain relief. The average prescription post cesarean section is 40 tablets of oxycodone.[184] [185] Quality improvement initiatives to educate patients on the risks of opioid use and the benefits of nonopioid analgesia, engage patients in shared decision making, encourage individualized multimodal pain management, reduce quantity of opioids prescribed, and to encourage safe storage and disposal of opioids have been shown to be successful in reducing the number of opioids available for misuse or diversion.[139] [149] [183] [184] [186] If needed, opioid prescriptions should be limited to quantities needed with a focus on safe disposal.[185] Patients who receive restrictive opioid prescription upon discharge report high satisfaction and adequate pain control (89%) with only a minority of patients reporting a wish for stronger pain medication.[183] Reducing variability in opioid prescription, limiting numbers of tablets prescribed, and ensuring safe return of unused tablets are best practices that limit risk of opioid exposure during the postpartum period.[183] [184]

Care Pathways

Patients working on personal recovery may have legitimate concerns about using opioid analgesic agents that are like substances they have been dependent on in the past. It is important for staff and patients to be open about their concerns and seek common ground to plan appropriate pain control. This includes the use of opioid analgesics where indicated, and for which the patient has given consent. Interdisciplinary teams using a multimodal approach are recommended for optimal care in opioid dependent pregnant persons.[187] Pain is a common trigger for opioid use, including non-prescribed opioid use. Explaining that untreated pain is problematic from a 'relapse to use' perspective may reduce the stigma that a patient may feel or enforce on themselves against seeking adequate pain control. It is important for patients to know that their team will explore with them appropriate alternative options for the control of pain that will fit with their objectives.

Given the complexity of managing acute pain in people with a history of addiction, care pathways may help to make sure that each patient has access to best available evidence-based care. A detailed institutional plan for intrapartum and postpartum pain management in women with opioid dependency helps to ensure consistency and improve patient outcomes.[160] An example of a care pathway has been provided in Appendix A. Although care should be individualized to each patient, care pathways and checklists can help to remind caregivers of important evidence-based interventions, as well as a multimodal interdisciplinary team approach to provide optimal care.[187] In addition to standardized care as detailed in the sample care pathway, the data collected can be used for continuous quality improvement.

The Pharmacy team can be an excellent resource regarding management of these patients. The care pathway includes prenatal notification of Pharmacy and possible consultation. Another excellent resource to help deal with acute pain in this patient population is Anesthesiologists and an Acute Pain Team if available. Discussing what support might be available and the logistics of accessing the service with possible Anesthesia consultation is an excellent step to take prior to the expected delivery date. In a facility with access to an Addiction Recovery Team or other addiction services, it may be very helpful to access the providers involved for additional suggestions regarding care.

SECTION 07

(NAS)

Neonatal Abstinence Syndrome

Neonatal Abstinence Syndrome (NAS)[xi] is described as the signs and symptoms displayed by a neonate experiencing withdrawal after in-utero substance exposure.[188] [189] Neonatal withdrawal most commonly occurs when an infant is exposed to opioids, called Neonatal Opioid Withdrawal syndrome (NOWS), but can also occur when an infant is exposed to antidepressants, benzodiazepines, nicotine, caffeine, alcohol, and methamphetamine.[190] [191] Across Canada, the total number of infants with neonatal withdrawal has increased. From 2010 to 2020 there were 16, 920 NAS hospitalizations, which represents a 73% increase from 2010.[192] This can be described as 6.3 hospitalizations per 1000 live births, from 3.5 per 1000 live births, an 80% increase.[192] The average length of hospitalization is between 14-16 days.[191] [193] The increase in hospitalizations translates to an increase in healthcare costs with the total cost rising from $15.7 to $26.9 million CAD from 2010 to 2014.[190]

The symptoms of NAS generally relate to neurological, gastrointestinal, and respiratory disturbances; however, some babies may not exhibit overt signs of withdrawal, which may go unnoticed.[194] [195] [196] [197] [198] [199] [200] [201] The substance and amount used by the pregnant woman determines the severity of the withdrawal effects experienced by the baby, as well as the onset and duration of symptoms (see Appendix B). [202] [203] [204] [205] [206] The varied onset of infant withdrawal symptoms is highly dependent on the half-life of the substance used: a substance with a longer half-life, such as methadone, results in a later onset of withdrawal, whereas a substance with a shorter half-life, such as heroin, results in earlier onset of withdrawal behaviors.[198] [204] [207]

NAS Assessment Tools are utilized to help care providers and families recognize and manage NAS symptoms in infants. Since 1975 mainstream infant management of NAS involves using a modified version of the Finnegan Neonatal Abstinence Scoring Tool (FNAST).[208] [209] [210] The FNAST has been useful in capturing the constellation of symptoms that in-utero opioid-exposed infants exhibit. However, application of FNAST is complex and subjective in nature with varied inter-rater reliability.[211] [212] Further, its behaviour-centred approach often focuses predominantly on pharmacological management of NAS symptoms that are not impacting how an infant is coping functionally.[211]

More recently, in 2018 a group of papers out of Yale New Haven Children's Hospital and Boston Medical Centre were published highlighting an alternative way of assessing NOWS.[213] [214] [215] This alternative assessment tool is called Eat Sleep Console (ESC) and focuses on how in-utero substance exposed infants are doing functionally, emphasizing the most clinically significant symptoms (eating effectively,

xi The term Neonatal Abstinence Syndrome may be considered problematic. Recent literature is migrating away from the term 'abstinence' and its associated negative connotations.

sleeping undisturbed for more than one hour, and settling within 10 minutes). The ESC assessment tool is part of a more simplified, broader holistic approach to managing NOWS that not only highlights the idea that the parent/caregiver is the treatment, but also includes a first-line patient and family-centred nonpharmacological intervention bundle and where applicable, second-line use of morphine on an as needed basis instead of a regular interval schedule.

Since publication of the original papers in 2018 several more ESC-related research and quality improvement works have been published.[188 216 217 218 219 220 221 222 223 224 225 226] A common thread in the findings of these research and quality publications is decreased NICU length of stay (LOS), need for pharmacological treatment, length of pharmacological treatment, and readmission to hospital within 30 days, as well as increased breast milk feeds. A retrospective cohort study of 437 infants involving 33,115 scoring instances concluded that, in comparison to the FNAST, ESC neither under detected nor under treated NOWS.[227] These findings were further supported in another retrospective cohort study involving 158 infants and 2101 scoring instances.[224] This second study also showed meaningful correlates to the FNAST: ESC assessments indicating that all three criteria are met are associated with lower FNAST scores and ESC assessments indicating that one or more criteria were not met, best predicted a FNAST cut off of 7.5.[224]

Both ESC and FNAST are equally safe. Regardless, no ideal NAS assessment tool exists. For example, neither FNAST nor ESC has been validated for all types of in-utero substance exposures, yet polysubstance use occurs in as many as 30% of pregnancies, if not more.[188 216 217 221 224 225] Even so, recent ESC publications are more likely to report information on maternal characteristics related to NAS impacted by opioid dependency with co-occurring polysubstance in pregnancy which enhances its utility. Other gaps for both NAS assessment tools include lack of well-designed randomized control trials, long term behavioural and neurodevelopmental outcomes, and applicability to preterm infants less than 35 weeks' gestation. The most recent evidence for ESC is a published study by the ACT NOW Collaborative in the New England Journal of Medicine in April 2023.[226] This cluster-randomized controlled trial involved 837 infants born 36 weeks' gestation or greater at 26 hospitals in the United States. The primary outcome was medical readiness to discharge. The group of infants managed using an ESC bundle of care were medically ready for discharge in 8.2 days versus 14.9 days in their usual-care counterparts. Further, only 19.5% of infants required pharmacological treatment for NOWS in the ESC group compared to 52% in the usual care group.

Parents of infants with in-utero substance exposure have positive perceptions of ESC. For example, parents are supportive of less pharmacological interventions to manage NAS, experience an increased sense of control, feel encouraged to lead care, and appreciate fewer interruptions to bonding for assessments.[220 228] There is a willingness from parents to be actively engaged in decision-making around the care of their infant's NAS.[228] The ESC assessment tool and its associated nonpharmacological care bundle supports their desire to be involved. The nonpharmacological interventions include rooming-in, skin-to-skin care and breastfeeding.

Rooming-In is the practice of keeping the mother and her newborn together in the same room directly following the birth and afterwards. It is known that rooming-in promotes continuous skin-to-skin contact between the mother and her baby. Skin-to-skin care has been shown to have positive effects for the parent: reduced parental anxiety, improved maternal-infant bonding and increased confidence for parenting.[229 230 231 232] For the baby, skin-to-skin care results in temperature stabilization, improved sleep patterns, decreased crying, reduced incidence of infection, better weight gain and respiratory stability.[233] In terms of breastfeeding, skin-to-skin care results in increased milk production, longer duration of breastfeeding, and more regular initiation of breastfeeding.[232 234]

Infants at risk for NAS particularly benefit from rooming-in with the mother, as opposed to the traditional care model of admitting in-utero substance exposed babies to the neonatal intensive care unit (NICU) immediately or soon after birth.[212 214 235 236 237 238] In this rooming-in model parents are supported in

recognizing signs of neonatal withdrawal and learning how to care for their babies, such as how to settle them by providing skin-to-skin care as much as possible in a low stimulation environment, and are encouraged to breastfeed.[212 213 214 220 221 235 239 240]

The longest standing Canadian example of rooming-in is the Families in Recovery (FIR) unit at the BC Women's Hospital in Vancouver. In this example, rooming-in care decreased the need for pharmacological treatments, such as morphine administration, for infants experiencing NAS.[235 239 241] Further, babies exhibited less severe and shorter withdrawal symptoms.[241] Overall, there was a decrease in NICU admissions, a decrease in the length of birth hospitalizations for the babies, and an increase in the chance of the parent maintaining custody of their baby after discharge.[241]

Currently, in Alberta, two hospitals provide rooming-in as a standard of care for mother-baby dyads impacted by opioid dependency. Edmonton's Grey Nuns Community Hospital Maternal Medication Use and Neonatal Abstinence (MMUNA) model of care has provided antenatal, postpartum and post discharge wraparound support for pregnant people with opioid dependency since 2015.[240] During the two year MMUNA pilot, wraparound support leading up to postpartum rooming-in, in comparison to a traditional model of care often involving separating babies from their parents to admit them to NICU for NAS management, decreased NICU Length of Stay (LOS) (10.33 days to 0.82 days, $p<0.001$); decreased morphine treatment (67% to 12%, $p<0.005$); increased breastfeeding rates at discharge (22% to 77%, $p<0.01$); and increased discharge of babies in the care of their parents (66% to 100%, $p=0.01$).[242] Since its inception in 2015, MMUNA has observed continued success with over 160 parent-infant dyads participating whereby the average NICU LOS related to NAS is less than one day, the average total hospital LOS is approximately 6 days, in comparison to the Canadian national average of 15 days,[236] and need for morphine treatment occurring rarely. Another Alberta example of rooming-in for NAS management is Red Deer Regional Hospital Centre's Empower Mothers and Families, Mentorship, Building Healthy Relationships, Respect, Actively Listen and Learn, Collaboration and Engagement (EMBRACE) program. This program was launched in 2019[243] and has supported over twenty mother-baby dyads to date. Drawing upon the historical success of rooming-in models of care, a research study entitled Alberta Neonatal Abstinence Syndrome Mother-Baby Care Improvem*ENT* (NASCENT) Program is underway to support implementation of a rooming-in approach in eight Alberta hospitals.[244] This implementation is expected to occur in a stepwise manner over a three-year period commencing early 2023.

Breastfeeding is recommended by the World Health Organization (WHO) for at least 6 months after birth to ensure ideal health and growth of the baby.[245] There is a concern however, with parents with substance use disorder and the perceived consequences breastfeeding will have on their babies.[246] The apprehension is that the contents of the breast milk will cause sedation of the baby and possibly other health diminishing effects.[247] However, this apprehension is unfounded because breast milk concentrations of parent ingested substances are typically low.[238 248 249 250 251 252 253 254 255] Observational studies have found that there are positive effects for substance using mothers who breastfeed their babies, though it has not been determined if there are other factors leading to these effects.[247 256 257] Several studies indicate that symptoms of NAS are less severe and there is less need for pharmacological treatment in the in-utero substance exposed infants who breastfeed.[208 247 258 259 260 261 262 263] In one study, there was a decrease

in incidence of infants with NAS when comparing formula feeding to breastfeeding, 80% and 50% respectively.[262]

The milk of a mother on opioid agonist therapy does not cause adverse effects on the baby.[247] MacIvar and colleagues studied breastfeeding and the substance-exposed mother and baby.[264] Supporting breastfeeding in the immediate postnatal period is ideal to optimize nonpharmacological treatment. Unfortunately, breastfeeding rates in this population are low, thought to be due to low maternal self-confidence, poor socioeconomic status, and/or lack of knowledge and comfort by the clinician. This study aimed to develop a tailored and dedicated breastfeeding support for these mothers and reviewed its effect on the babies' LOS and breastfeeding rates. On postpartum day 5, 100% of the subjects in the intervention group were breastfeeding, compared to 57% in the control group; and the LOS was 11 days for the intervention group versus 19 for the control group. Finally, when comparing breast fed babies to formula fed babies, the LOS was 11 days compared to 30 days. Miller and Willier reviewed whether using the ESC model of care to treat infants with opioid withdrawal resulted in decreased LOS and number of infants receiving morphine when compared with traditional medication management.[221] They examined variables prior to ESC implementation and post roll out. Of note, the LOS was reduced to 6 days from 18 and the breastfeeding rates increased from 41% to 65% post ESC roll out.

Withdrawal symptoms exhibited by the baby may hinder establishment of successful breastfeeding.[265 266] Further, history of childhood trauma commonly results in long-term effects on the parent that may decrease their willingness to breastfeed.[267 268] Women who have experienced abuse as children often result in a decreased likeliness to breastfeed.[267 268] It is imperative that a harm reduction approach be utilized with these mothers and trauma informed care be provided. Being sensitive to their background and working exclusively with them to tailor an approach to breastfeeding that is comfortable for them is key to success.[264 269]

Brocato et al. studied the effect of a prenatal education program for opioid dependent obstetric patients.[269] The program educated the patients on nonpharmacological measures to prevent neonatal abstinence, with a focus on breastfeeding. There were 75 women who underwent prenatal education and 108 who received standard care. Participants who received the prenatal education had 70% breastfeeding rates, compared to 24% in the control group; and the length of stay was reduced to an average of 11 days compared to 21 days from the control group. Obstetric patients with opioid dependence often have poor adherence to prenatal appointments and they often are seen by different medical personnel and disciplines. This study demonstrated that having a counseling team along the continuum of care, providing the same education and focus, is an asset to the parent and baby and improves breastfeeding rates.

Pharmacological approaches are considered a final resort for treatment of infants with NOWS, and instead an attempt should be made to manage withdrawal with nonpharmacological interventions such as rooming-in and skin-to-skin care.[194 235 239] As many as 80% of infants exposed to maternal opioids in-utero require pharmacological intervention.[199 270] Consensus amongst various experts indicates that the medication/s used to treat NAS should match the agent/s causing the withdrawal.[271 272] Neonatal opioid withdrawal secondary to maternal opioid use is often treated with morphine.[194 197 273 274] Methadone is considered less suitable to manage withdrawal in infants because it has a long half-life, increasing risk of overdose and death as per statement by the

CPSA.[275] However, Davis et al. compared morphine versus methadone in treatment of NAS and reported only a single adverse event of hypothermia, lethargy and apnea in the sample size of 59 patients receiving methadone.[276] The results of the comparison showed no difference in days of hospitalization. Surprisingly the methadone group had fewer days of treatment when compared to the morphine group. This finding aligned with the results from Brown et al. in 2015 done three years prior.[277] Though results may look favorable for prescribing methadone for NAS in hospital and for community detoxification, the procurement and prescribing requirements make methadone less accessible in the community than morphine. Intractable withdrawal in newborns that is not well managed with morphine may require adjunct therapy, for example with phenobarbital[238 278] or clonidine.[197 278 279] More recently, single therapy treatment with clonidine has been explored, though its effectiveness in this capacity remains unclear.[280] Poly drug exposures, particularly with benzodiazepines, increase risk for both severity and duration of NAS.[281 282 283 284] Maternal non-opioid poly drug use may be managed with phenobarbital.[285 286] Of note, neonatal withdrawal from parent Selective Serotonin Reuptake Inhibitors (SSRIs), alcohol, cocaine, crystal meth, marijuana and tobacco use is self-limiting and pharmacological treatment of the withdrawal is not recommended.[197 272 281 287]

Mainstream infant management during pharmacotherapy involves using Eat Sleep Console (ESC) or a modified version of the FNAST.[208 209 210] Using FNAST, pharmacological treatment is initiated when an infant receives a total score of 8 or greater on three consecutive scorings, or the average of any three consecutive scores is 8 or greater, and total score of 12 or greater on two consecutive scorings, or the average of any two consecutive scores is 12 or greater on the modified Finnegan tool. An infant qualifies for pharmacological treatment using the ESC tool when at two consecutive 3 hour marks, baby has not breast fed effectively or taken an age appropriate volume by bottle, or slept undisturbed for at least one hour, or if crying, may not be consoled within 10 minutes. A caveat of both these scoring tools is that it has been validated in term neonates with in-utero exposure to opioids and other illicit drugs. It has not been validated for use in preterm neonates or those exposed to other substances, such as tobacco, alcohol and SSRIs. Further, a current limitation of NAS scoring practices in general is that they are not universal. The modified Finnegan scoring tool is quite subjective creating variability between healthcare providers performing the assessments. The variability in these incidences has been shown to be a source of frustration with parents.[288] To standardize treatment initiation and improve parental experience it would be necessary to include parents in the Finnegan scoring process or adopt a more objective monitoring tool such as ESC.[288] Involvement of families in assessment and standardization of care will likely positively affect the experience of both family and the provider. See Appendix C for points to consider during NICU hospitalization.

Once pharmacotherapy has been started, infants are watched carefully for signs of toxicity or central nervous system depression. The signs and symptoms that suggest central nervous system depression include drowsiness, decreased respiratory drive, and decreased tone.[289] If signs of toxicity occur, dose adjustments are required; the goal of treatment is to make the infant as comfortable as possible and to ensure proper feeding and development while minimizing the risk for toxicity.[197] In large urban centres, such as Edmonton and Calgary, stabilized infants requiring pharmacological management to treat NAS may be sent home for continued detoxification in the community. (See Morphine Teaching Sheet Appendix D). The Canadian Pediatric Society supports this practice when adequate medical and social follow up is guaranteed.[236] Benefits of home-based detoxification include decreasing number of days in hospital and health care costs, as well as promoting family centered care which enhances infant-caregiver attachment and increases breastfeeding rates.[290]

SECTION 08

TRANSITION

Home

Prenatal Support in the Community Environment

Pregnancy is often seen as an opportune time for service providers to support women in improving their health.[291] Care must not only focus on the health of the baby, but also on the health of the mother as fetus-centered care only gives women the impression that their health only matters when they are pregnant.[292] A woman's perceptions of her caregiver's concern with her well-being is closely associated with improved engagement and increased length of stay in various treatment settings.[293] [294] [295] [296] [297]

To encourage engagement in community programs, services must be respectful and non-judgmental, and timely in the delivery of care.[291] [295] [298] [299] [300] [301] [302] Likewise, women will be more likely to connect with staff whom they share similar characteristics to, such as language, ethnicity, culture, or age.[291] Together, these practices may motivate women to return for future health care and possibly make positive changes in their lives.

Programs that involve the entire community in finding the underlying cause of why pregnant women use substances have been shown to be the most successful in the creation of solutions for reduction.[303] However, it remains a challenge to implement broad systemic responses and programs in a manner that links prevention, enforcement, harm reduction and treatment strategies.[304] Early engagement in support services for pregnant women with substance use disorder is highly important to ensure optimal outcomes for both the mother and the baby. The more frequent the prenatal visits, the more likely there will be a reduction in the frequency and quantity of substance use.[291] This reduction in drug use, in turn, reduces the substance exposure to the baby. As an example, the Alberta Health Services Community Perinatal Program (CPP) is a trauma informed, multidisciplinary program designed to provide pregnancy health care to those who are experiencing challenges with the social determinants of health (SDOH) and may be unable to access perinatal health services through mainstream channels. SDOH examples may include poverty, isolation, substance use, language and cultural barriers, or complex life issues. The team of Registered Nurses and Family Physicians embrace a harm reduction approach as they strive to connect clients to resources that may help improve their pregnancy and parenting outcome, such as but not limited to stable housing, food security, substance use disorder programs, and dental care. *211 Alberta* is an example of an up-to-date on-line resource where people can learn more about how to access services to help navigate different areas of need, such as mental health support, food, shelter, transportation, and financial support.

Transitioning from Hospital to Home

To date, research regarding substance-exposed infants has focused primarily on in-hospital care, with few studies published on transitions to home and post-discharge care.[305] However, successful strategies used to support infants during withdrawal in the acute care setting can be continued in the home environment. Parents and caregivers should be supported prior to discharge with clear instructions on nonpharmacological interventions. Community based health care providers can reinforce these strategies, with additional support from community agencies that provide services to the infant/birth parent dyad.[305]

The following section will focus on discharge planning, supporting the infant/birth parent dyad in the community, nonpharmacological interventions in the home setting, and home safety.

Discharge Planning: Ideally, discharge planning for substance-exposed newborns starts prenatally with referrals to community agencies to begin building a network of support for the birth parent.[298 305] A comprehensive continuum of support from the prenatal period that extends through the postpartum hospital stay and into the community may facilitate continuity of care for the dyad.[298 306 307] This may include support for medical and social needs, parenting, and mental health and addictions, based on the specific needs of the individual family.[305 307] Families with infants with Neonatal Opioid Withdrawal Syndrome (NOWS) are at a higher risk of being lost to follow up after discharge, with poor attendance to medical appointments and higher rates of emergency department visits, hospital readmissions, and early childhood mortality.[298 308] Strong collaborative relationships amongst service providers in the antepartum to postpartum continuum, amongst community, public health, and hospital settings, are key for more positive long-term outcomes.[298] Discharge planning should include clear connections to community support and health care providers.

Parent and caregiver education at discharge should be tailored to the needs of infants with prenatal substance exposure. Strategies on how to support infants with eating, sleeping, and consoling should be reviewed, as well as acute signs of increased NOWS or illness (see Appendix E). Clear connections and instructions should be provided to parents/caregivers on how and when to follow up with the infant's primary care provider for well-baby visits, or if difficulties are encountered.[305] These messages should remain consistent throughout the prenatal, acute care, and postpartum community setting.

Community Support: Substance-exposed newborns and their families should receive follow-up health support in the community, from primary care providers as well as nursing services such as Public Health or Home Visitation.[305 308] Follow-up evaluations of the infant should include assessing the transition to the home environment, feeding, elimination, growth, and signs of increased NOWS or illness.[305] Collaborative relationships with pediatric care providers can facilitate improved communication amongst service providers and a better transition to the home environment.[309] Education provided at discharge should also be reinforced in community encounters. Addressing accessibility concerns for medical appointments is imperative.[298]

Supporting the mental health and well-being of birth parents is also key. Overall goals should support maintaining the dyad, as the birth parent-infant relationship is essential for NOWS management. Separating the birth parent from the infant can also negatively impact the birth parent's mental health and the infant's neurodevelopment.[298 306] Well parents are better able to recognize and respond to the needs of their infants.[305 307 308] This type of support also appears to positively impact infant regulation.[307] Birth parents should receive routine assessments of perinatal mental health, as well as referrals to support mental health and addictions as required. This may include substance use treatment, counselling or treatment for co-occurring mood disorders or trauma, relapse prevention counselling, and safety planning.[305 308]

Community support, ideally initiated in the prenatal period or early in postpartum, can be reinforced by community providers. This may include supports such as parenting resource networks, home visitation, early intervention and childhood development, and social supports required by the family to address social determinants of health.[305 309] As infants experiencing withdrawal may exhibit signs of irritability and difficulty settling, parents and caregivers should be supported in proactively identifying supportive family members and friends who can assist with infant care and provide respite. Healthy Beginnings Postpartum Program is available for parents of babies less than 2 months old who permanently or temporarily reside in Alberta. Registered Nurses support postpartum and newborn health, infant feeding, and connecting families to appropriate community resources and healthcare services. This program strives to provide patient focused, equitable service to postpartum patients, newborns, and their families according to patient/family identified and clinical need at every encounter. Service is primarily delivered in-person and by phone. In-person assessments may occur in the home or clinic setting as agreed upon between patient/family and nurse. Other community supports are available locally, such as Edmonton's Indigenous Wellness Centre, Health for Two, Healthy Empowered and Resilient (HER), and Woodcroft Community Health Centre; Enhanced Services for Women in Red Deer, Calgary, and Grande Prairie; Bridges Family Programs First Steps in Medicine Hat; Melcor Centre in Lethbridge; and Calgary Urban Project Society (CUPS). Work to develop a more comprehensive list of local perinatal and family community supports across Alberta is underway through the Neonatal Abstinence Syndrome Mother Baby Care Improvem*ENT* (NASCENT) project.

Nonpharmacological Interventions in the Home Environment: The home should be a quiet, low-lit environment.[305 307] Room sharing, where the infant's crib is kept in the same room as the parent/caregiver, is recommended to support attachment, feeding, and infant care.[307 310] This also supports easier access to the infant for the caregiver to provide nonpharmacological care measures that will decrease withdrawal symptoms and promote infant regulation.[305 307]

Multiple strategies can be used to support infant regulation. Parents can support infants through swaddling, supporting non-nutritive sucking, and actions like touch and massage.[305 307] Skin-to-skin contact can support regulation, decrease withdrawal symptoms, and increase the length of infant sleep.[306 307] Additional strategies include supporting the birth parent to read the infant's signs of distress and cues for feeding and soothing, skill-building opportunities to support withdrawal care and general parenting skills, as well as holistic psychosocial support.[306]

Infants with NAS are at risk of disorganized feeding, weight loss, and failure to thrive.[307 311] Breast milk and breastfeeding are generally promoted to reduce withdrawal symptoms, with the supportive guidance of the primary care provider.[307] The birth parent may benefit from community-based lactation support.[305 308] Infants may do best with small, frequent feedings and the caregiver must be comfortable in identifying hunger cues versus a need for soothing.[307 311] Ongoing growth monitoring and follow-up should occur with the primary care provider.

Home Safety: The way babies sleep is highly important in ensuring they do not succumb to sudden death, either from Sudden Infant Death Syndrome (SIDS) or Sudden Unexpected Infant Death (SUID). SIDS remains a significant public health concern in Canada and is defined as sudden death, during sleep, of an infant less than one year of age, which remains unexplained after a thorough case investigation.[312] SUID, in comparison, is a broad term that describes all sudden, unexpected infant deaths for which there is no immediate known cause. SUIDs, once investigated, may be explained by specific causes such as an underlying disease, accidental suffocation or strangulation in bed (ASSB), or SIDS.[313] In Canada, data collected between 2007-2011 showed 5.8% of all infant deaths under a year were attributed to SIDS.[313] In the 28 days to 1-year period (postnatal), 19.6% of deaths were attributed to SIDS.[313] SIDS can occur at any time in the first year, with rates peaking at 2-4 months and declining after 6 months.[314] Characteristics placing infants at higher risk of SIDS include being born male, premature, or low birth weight.[314] Prenatal alcohol and substance use are associated with increased SIDS risks; as such, this education topic is paramount for this population.[313]

Significant evidence exists to support understanding the modifiable risk factors to reduce SIDS and other sleep-related infant deaths.[313] Recommendations to reduce the risk of SIDS include[315]:

- Putting infants on their back to sleep, every sleep
- Using a crib, cradle, or bassinet that is free of clutter
- Keeping infants warm, not hot
- Having smoke-free environments, before and after birth
- Breastfeeding
- Room sharing
- Avoid having infants share a sleep surface of any kind

All healthcare providers working with infant populations, particularly those working with NAS/NOWS infants, should familiarize themselves with the most up to date recommendations and resources, such as Safe Infant Sleep | Alberta Health Services. Choosing to bed share when safer options are available is a multifactorial issue, influenced by a combination of parental values, socioeconomic factors, and cultural diversity.[316] If parents/caregivers choose a sleep position or sleep location other than what is recommended, healthcare providers can respond in a trauma informed, family-centered manner, providing harm reduction messaging as appropriate.[310]

SECTION 09

Appendices

A. Sample Perinatal Care Pathway

Sample Care Pathway for Wraparound Support for Perinatal Substance Use (eg. Opioid Dependency)

Antenatal

Referral	• Acknowledge and and follow-up with referral source, notify if problems reaching patient • Contact and appointment made with patient

Patient Contact	• Initial meeting:
	  • Tour offered/provided of LDR and Postpartum
	  • Clarify if transportation needed
	  • Confirmed substances used

Patient Information Package to Prepare for Birth Hospitalization	Coordinator contact information, patient information (eg. general management, tips for in-hospital OAT, skin-to-skin, role of baby helper, NOWS infographic)

Patient Referrals	• Referral to in-hospital supports, where in agreement
	  • Women's Health Social Worker for all
	  • Publicly funded Doulas where available
	  • Indigenous perinatal supports where applicable
	• Advanced notification to pharmacy +/- consult antenatally
	• Advanced notification to anaesthesia service +/- consult antenatally where available
	• Advanced notification to pain service where available
	• Community Perinatal support [locally determined e.g., Health for Two, HER, Enhanced Services for Women][xii]
	• Other relevant community agency
	• OAT provider if not already on OAT (e.g., VODP, local ODP, ARCH)

xii Knight L. Environmental scan of prenatal services for marginalized women in Alberta: Specialized Services. Alberta Health Services; 2017. Available from https://canfasd.ca/wp-content/uploads/2019/09/mwwg-environmental-scan-report-2017.pdf

Birth Hospitalization

Admission

- Women's Health Social Work consult
- Notify Hospital Pharmacy
- Inform Community OAT provider & pharmacy of hospitalization
- Obtain permission to notify antenatally involved local Community Perinatal support/s (eg. ARCH, Health for Two, ESW)

Postnatal Supports

- Teach comfort measures, safe sleep, safe skin-to-skin and who to call for help if feeling overwhelmed
- Lactation support where available
- Volunteer Cuddler support where available, as needed
- If baby transferred to NICU, connect parent/caregiver with NICU Social Worker

Considerations for support person (Baby Helper)

- Resources offered on a case-by-case basis, as applicable and where available (eg. meal vouchers, transportation)
- Status Indigenous resources as applicable

Transitioning to Home

At Discharge

- Arrange follow up appointment with physician/NP/Midwife/Health Centre
- Determine if transportation assistance is needed
- Notify Public Health Postpartum Services or on-reserve Health Centre by phone, NOB or in-person conference that patient was part of rooming-in, discharge weight pattern is increasing, reweighing post discharge instructions, date of follow up appointment and if transportation is needed, and follow up contact number (if concerns)
- Inform OAT provider & OAT Pharmacy of discharge
- Obtain permission to notify applicable antenatally involved Community Perinatal supports
- In Connect Care AVS include: Summary, Signs of NAS, who to call for help/ Back-Up Plan, important information to disclose if you call Health Link
- Review Back-Up Plan with parents/caregivers (who to call in the off hours evenings/nighttime/weekends)

B. Onset and Duration of Withdrawal Symptoms in Substance Exposed Infants

Drug	Onset (Range)	Duration
Alcohol	3-12 hours[xv] 18-24 hours[xiii xiv]	18 months[xv] Not Available[xiii xiv]
Amphetamines	Limited data 3-12 hours to 1 week[xv]	Limited data 2-12 days[xv]
Barbiturates[xv]	1-14 days[xv]	4-6 months with Rx[xv]
Phenobarb/Barbiturates[xiii xiv]	End of first or second week	2-6 weeks
Narcotics/Barbiturates[xiii xiv]	Shortly after birth to 2 weeks (usually 72 hours)	3 months
Narcotics[xiii xiv]	Birth-10 days (peaking at 2 days-6 weeks)	2-3 weeks to 4-6 months (subacute)
Benzodiazepine[xv]	0-21 days	8 months; 10-66 days with Rx
Buprenorphine[xv]	12-48 hours, peak at 72-96 hours	120-168 hours
Caffeine[xv]	0-5 days	1-7 days
Cannabis[xv]	0-7 days	0-6 days up to 30 days
Cocaine	From 0-72 hours to 14 days[xv] About 1 week[xiii xiv]	Some symptoms can persist for 3-6 months[xv] Not Available[xiii xiv]
GHB[xv]	1-6 hours	3-12 days
Heroin	From 0-48 hours to 6 days[xv] 12-96 hours (average 72 hours)[xiii xiv]	4-26 weeks[xv] 8-16 weeks or longer[xiii xiv]
Heroin/Methadone[xiii xiv]	48-96 hours	Not Available
Methadone	From 1-48 hours to 6 days[xv] 12 hours-as late as 12 days (peaking at 6 days)[xiii xiv]	4-26 weeks[xv] 5 days or longer[xiii xiv]
Opiates[xiii xiv]	Birth-14 days (peaking at 3-4 days)	4-6 months (subacute) (peaking at 6 weeks)

xiii D'Apolito, K. (1996). Symptoms of withdrawal in drug-exposed infants. *Mother Baby Journal*, 1(2), 7-14.

xiv Elliott, M. R., Cunliffe, P., Demianczuk, N., & Robertson, C. (2004). Frequency of newborn behaviours associated with neonatal abstinence syndrome: A hospital based study. Journal of Obstetrics and Gynaecology Canada, 26(1), 25-34.

xv Western Australia Centre for Evidence Informed Healthcare Practice. (2007). Guidelines for the management of neonatal abstinence syndrome; Common signs of neonatal withdrawal, intoxication or neonatal exposure. Retrieved from http://speciosum.curtin.edu.au/local/docs/nas/NAS_Guideline.pdf.

C. Sample Bedside Practice Points

Monitoring for Neonatal Opioid Withdrawal Syndrome: Case Information NICU Care Pathway

- Gestational age ≥ 35 weeks
- Fetal exposure to opioid substances

General Principles

Engage Families to Promote Shared Understanding: For many, our relationships with loved ones and family can contribute greatly to our well-being. Newborns are particularly dependent on their parents/guardians. Decisions regarding the treatment and care of the newborn with NOWS will necessarily involve the parents/guardians and family.

Compassion: Parents whose newborns develop NOWS may feel especially distressed and vulnerable, and healthcare providers in these situations may struggle with their own feelings of anger or protective concern for the newborns. It is crucial for the well-being of both newborns and parents that health care providers cultivate self-awareness and role model the calmness and supportive approach they recommend. Maintaining calm and cultivating understanding and empathy can help to promote therapeutic relationships and long-term recovery. A parent's experience of stigma or discrimination may exacerbate existing challenges.

Admission Orders: (in addition to general admission order set)

- ☐ Eat, Sleep, Console assessments
- ☐ Promote skin-to-skin care and holds with parents / caregivers
- ☐ Engage Volunteer Cuddlers, as appropriate
- ☐ Consultation with Social Work (and if appropriate Indigenous Health Team), particular focus on:
  - Help identify barriers to family / caregiver involvement with parent consent
  - Engage with community supports, with parent consent
- ☐ Enteral feeding:
  - Support breast feeding
  - If formula feeding, consider using partially hydrolyzed formulas (eg. Goodstart or Gentlease), or in consultation with NICU dietitian other formulas may be considered (eg. Nutramigen)
- ☐ Consider timely transfer to support rooming-in model of care
- ☐ Additional Consults: (zone/patient specific, eg. HER Program, Health for Two, Child Life Specialist, Peer Support Coordinator, Enhanced Services for Women)

Medication Orders:

Follow local guidelines. For example:

- ☐ Zinc oxide cream, as needed with diaper changes (order empirically to reduce risk of severe diaper dermatitis).
- ☐ Neonatal Analgesia and Sedation Order Panel (Weight–based dosing)
  - ☐ **Starting point:** Morphine 0.05 mg/kg oral every 3 hours, as needed
    - Add Admin Instructions for 'as needed': when YES on ESC criteria despite nonpharmacological interventions
  - ☐ **Escalating to regular interval** Morphine 0.05 mg/kg oral every 3 hours
    - When requires 2 consecutive doses PRN Morphine and continued YES on ESC criteria despite nonpharmacological interventions
    - When continued YES on ESC criteria despite regular interval every 3 hour dosing and optimizing nonpharmacological interventions, prescriber may increase Morphine dose by 20-30% at 12 hour intervals to a maximum 0.2 mg/kg/dose

NOWS Discharge Checklist[xvi]

Role	Responsibility Item
Discharge Coordinator, Charge Nurse, or locally determined provider	• Early identification of family's follow-up Physician/Nurse Practitioner (NP)/Midwife a week prior to discharge and book a follow-up appointment for 1 week from date of NICU/hospital discharge • Notify Public Health Postpartum Services or on-reserve Health Centre by phone, NOB or in-person conference that a newborn with NOWS is being discharged. Provide additional information and documentation if the newborn is being discharged on NOWS medication (dose, weaning plan and follow up appointments). • Consider pre-discharge family conference including sending and receiving Physician/NP/Midwife, Public Health Nurse or on-reserve Health Centre staff, parents, Social Workers, any involved community support worker. • In AVS include: Summary, Signs of NAS, who to call for help/Back-up plan, important information to disclose if you call Health Link, and where applicable medication administration
Patient's Nurse	• On the PNOB, document in consultation/follow-up section: Name of the follow-up physician/NP/Midwife, date and time of follow-up appointment. In comments section, document "Newborn on oral morphine for NOWS." Attach additional information on weaning schedule, education provided to client, medication dosage, and back-up plan • Review Back-Up Plan with parents/caregiver (who to call in the off hours evenings/nighttime/weekends)
Neonatologist/ Pediatrician	• Complete triplicate prescription for oral morphine • Fax completed triplicate prescription to community pharmacy of choice • Provide clinical handover to follow-up physician/provider
Pharmacist	• Verify that parent's community pharmacy of choice has morphine liquid 1mg/mL in stock • Perform teaching on discharge medication(s) with parent(s). • If there is a weaning schedule[xvii]: provide a calendar to parents; send to Public Health Postpartum Services and community pharmacy.
Social Work	• Assess parent's ability to get to follow up appointment. (e.g., transportation) • Obtain permission to notify any involved community support workers that parent and newborn are being discharged, provide brief background history and medication summary/plan.

xvi Adapted from Me and My Baby, First Edition, 2017 and Neonatal Abstinence Syndrome: Non-pharmacological and pharmacological management, assessment and discharge. Infants greater than or equal to 35 weeks gestation. Alberta Health Services; 2023.

xvii Not all babies will have a weaning schedule at discharge. Some practitioners may choose to let the baby outgrow the current dose rather than providing a weaning plan. In other situations, the following provider may prefer to establish a weaning plan at the first outpatient visit.

D. Neonatal Patient Education Sheet

Morphine

What is this medication used for?

- To reduce symptoms of opioid withdrawal in neonatal abstinence syndrome

Discharge Morphine Dose:_____

Your baby's morphine prescription will last until you see your pediatrician, which will be around a week from discharge. At that time the doctor will discuss a weaning plan for the morphine. It is best to fill the prescription prior to discharge so you can pick it up before baby goes home and bring it back to the hospital to be verified by staff.

How is morphine supplied?

- The product is available as a 1mg/mL liquid; not all pharmacies carry this product
- Some pharmacies can compound this medication to specific strengths; make sure you are comfortable with the strength and dose your baby is getting

How to administer morphine:

- Measure dose using an oral 0.5mL syringe
- Medication may be given alone or mixed with a small amount (1-2 teaspoons) of breast milk or formula; give with feeds if baby has an upset stomach
- If you miss a dose, give it as soon as you remember
- If it is close to the time of your child's next dose, skip the missed dose and go back to your child's normal dosing time
- Do NOT give 2 doses at the same time or extra doses
- If your baby has a large vomit within 10 minutes of giving the dose, give another dose immediately. If it's later than 10 minutes after giving dose do NOT give dose again
- Do not change the dose without speaking to your doctor.

Side Effects:

- May cause constipation (hard stools)**,** upset stomach/vomiting – give with food to minimize**,** dry mouth – do NOT feed baby water, or drowsiness

How to store Medication:

- Store liquid at room temperature
- Keep container tightly closed and out of reach of children

Watch for symptoms of withdrawal:

- Baby does not breastfeed effectively or takes less than 30mL from a bottle
- Baby sleeps undisturbed for less than an hour
- Baby is crying and cannot be consoled within 10 minutes

Used with Permission. Covenant Health. May 2019. Neonatal Patient Education Sheet: Morphine. Available from: https://insite.albertahealthservices.ca/main/assets/tms/nicu/tms-nicu-covenant-health-neonatal-program-morphine-teaching-weaning-sheet.pdf

When should you call your baby's doctor?

- If withdrawal symptoms occur or reoccur, baby may go backwards on weaning schedule by a step or two
- If baby has rash or hives

When should you take your baby to the ER?

- If baby has any wheezing, lips or any part of body appears blue, trouble breathing, or swelling of face/lips/tongue

Other things that help with withdrawal symptoms, in addition to morphine:

- Quiet (less stimulation): turn off mobile/music box, minimize visitors
- Reduce lighting
- Minimize handling: rock gently and enjoy skin to skin cuddles
- Mitten use will minimize fist sucking – consider a pacifier (soother)
- Feed frequent but small feeds to allow rest between sucking
- Breastfeeding/breastmilk
- Keep arms and legs near body by wrapping in a light blanket
- Clean skin regularly and ensure baby has dry clothing and bedding
- Apply protective skin barriers to prevent skin breakdown in diaper area – consider a zinc oxide cream like Ihle's Paste or petroleum jelly (Vaseline)s
- Use gentle nasal suction or saline drops if nasal secretions cause obstruction

What can you do to help make sure you baby's medication works properly:

- Make sure that your baby's doctor and pharmacist know all of the medications, including over the counter, herbal, and natural products that your baby takes. Do not give any new medications without checking with the doctor and pharmacist first

Call 811 or Health Link (780-408-LINK) for Medication Information

Notes:_____

_____

_____

References:

- Lexicomp Online [database on the intranet]. Lexi-Comp Inc; c. 1978-present. Available from : http://online.lexi.com – Lexicomp Online: Lexicomp Patient Education – Microsoft Internet Explorer
- Finnegan, L.P. (1990) Neonatal Abstinence. In N.M. Nelson (Ed). Current Therapy in Neonatal-Perinatal Medicine (pp. 262-270). St. Louis: C.V. Mosby
- Cardinal Glennon Children's Hospital. Pilot trial of new treatment guidelines for Neonatal Abstinence Syndrome Stage 1. St. Louis, MO: Cardinal Glennon Children's Hospital

E. NOWS Infographic

For Newborn Withdrawal, your baby's best medicine is

YOU

"EAT, SLEEP, CONSOLE"

Your baby's care team has implemented a new program called **Eat, Sleep, Console (ESC)** to help babies with withdrawal symptoms from Neonatal Opioid Withdrawal Syndrome (NOWS), or Neonatal Abstinence Syndrome (NAS)

What is NOWS/NAS?

When a birth parent takes certain medications or drugs during pregnancy, they are passed on to the baby. NOWS/NAS is a set of withdrawal symptoms that can happen after birth, during the baby's first few days of life.

Symptoms: trouble eating or sleeping, a hard time settling or soothing, fussiness, shaking, high-pitched crying, weight loss, sneezing/stuffy nose, yawning, or vomiting.

Who is affected?

NOWS can happen in any baby whose parent took *opioids* during pregnancy.

NAS can happen from:

- antidepressants
- benzodiazepines
- marijuana/cannabis
- alcohol
- nicotine
- cocaine
- amphetamines

"Eat, Sleep, Console"

- Is Baby **eating** well (bottle/breastfeeding)?
- Can Baby **sleep** quietly for 1 hour?
- Can Baby be **consoled (settled)** within 10 minutes if crying?

Why is ESC better?

New evidence proves that Eat, Sleep, Console treatment improves bonding with caregiver and reduces how many babies need NICU

ESC works best when Parents and Caregivers are present and caring for their babies as much as possible

You will have a longer hospital stay to monitor your baby for symptoms or provide treatment – this is routine

Breastfeeding is almost always safe and recommended

How am I the Medicine?

YOU ARE THE MEDICINE when you:

- Talk and sing songs to your baby in a soft voice
- Swaddle and hold your baby
- Are skin-to-skin with your baby
- Act on early hunger cues and feed your baby
- Keep your room quiet and have low light
- Offer a soother or other for sucking
- Use gentle movements – rocking, swaying, patting

Some babies will still need morphine treatment (for NOWS) and/or transfer to the Neonatal Intensive Care Unit (NICU) for more support; this is normal

Want more information or have questions/concerns?
Please talk to your healthcare provider

H.E.A.R.T. (Holistic Empowering Approach to Recovery & Transition) Edmonton Zone December 2023

YOU are the Best Treatment for your Baby's Withdrawal Symptoms!

Your care team has a new way to help support babies with withdrawals, such as in Neonatal Opioid Withdrawal Syndrome (NOWS) or Neonatal Abstinence Syndrome (NAS). The treatment is called "Eat, Sleep, Console", and **YOU are your baby's best medicine**!

What is NOWS/NAS? Neonatal withdrawals can happen when a birth parent takes certain medications or drugs during pregnancy, these can include: opioids (leading to NOWS), anti-depressants, benzodiazepines, marijuana, alcohol, nicotine, cocaine, or methamphetamine.

During pregnancy, those substances can be passed on to baby, and after baby is born, they may have symptoms of withdrawal. Withdrawal symptoms may be mild or severe and can include: trouble eating or sleeping, a hard time settling or soothing, fussiness, shaking, high-pitched crying, weight loss, sneezing/stuffy nose, yawning, or vomiting.

How do we treat babies with NOWS? In the past, if baby had serious opioid withdrawal symptoms, doctors and nurses would start baby on a morphine treatment to help the withdrawals.

Now, we do things differently. New evidence has proven that more natural "treatments" can help reduce the need for morphine in NOWS and are also very effective in NAS. To see how your baby is doing, your healthcare providers will ask/check if baby is:

- Eating well (breastfeeding/bottle feeding),
- Sleeping quietly for 1 hour, and
- Consoling (settling) within 10 minutes if crying.

Eat, Sleep, Console strategies involve the parent or primary caregivers – this means **you are the medicine.** If your baby develops NOWS/NAS symptoms and is not Eating, Sleeping, and Consoling as expected, your care team will support you to care for your baby in special and loving ways, which help decrease baby's symptoms. These may include:

- Talking/singing to baby in a soft voice
- Holding/swaddling baby
- Skin-to-skin with baby
- Acting on early hunger cues
- Quiet and low light in room
- Sucking/soother use
- Rocking or other gentle movement
- Additional support for you

Breastfeeding is often safe and can also be an effective way to support babies with NOWS/NAS.

Eat, Sleep, Console works best when the parent(s)/caregivers are present and caring for babies as much as possible – tell your care team how they can help support you during this time. It is routine for babies at risk of having NOWS/NAS to have a longer hospital stay.

Even with all these strategies, some babies with serious symptoms will still need morphine treatment and/or transfer to the Neonatal Intensive Care Unit (NICU) for extra support; this is normal.

You are free to ask any questions you have about Eat, Sleep, Console during your pregnancy, hospital stay or once you are home with your baby.

REFERENCES

1 Kim PJ. Social determinants of health inequities in Indigenous Canadians through a life course approach to Colonialism and the Residential School System. Health Equity. 2019 Jul 25;3(1):378-381. doi: 10.1089/heq.2019.0041

2 Marmot M. Social determinants and the health of Indigenous Australians. Medical Journal of Australia. 2011;194(10):512–513. doi.org/10.5694/j.1326-5377.2011.tb03086.x

3 McLardie-Hore FE, McLachlan HL, Newton MS et al. Accurate identification and documentation of First Nations women and babies attending maternity services: How can we 'close the gap' if we can't get this right? Aust N Z J Obstet Gynaecol 2023; 63: 234–240. doi: 10.1111/ajo.13641

4 Roman C. A Personal Reflection on the Concept of Cultural Safety. Holist Nurs Pract 2023;37(3):E51–E52. doi: 10.1097/HNP.0000000000000579

5 Sarmiento I, Paredes-Solís S, Andersson N, et al. Safe birth and Cultural Safety in southern Mexico: Study protocol for a randomised controlled trial. Trials. 2018;19:354. doi.org/10.1186/s13063-018-2712-6

6 Wiradjuri TP, Bwgcolman LG, Tahinga (Tainui) DWN, et al. Cultural Safety: Beyond the rhetoric. Contemporary Nurse. 2022;58:1:1-7. doi: 10.1080/10376178.2022.2087704

7 McGough S, Wynaden D, Gower S, Duggan R & Wilson R. There is no health without Cultural Safety: Why Cultural Safety matters. Contemporary Nurse. 2022;58(1):33-42. doi: 10.1080/10376178.2022.2027254

8 Pirhofer J, Bükki J, Vaismoradi M, Glarcher M, Paal P. A qualitative exploration of Cultural Safety in nursing from the perspectives of Advanced Practice Nurses: meaning, barriers, and prospects. BMC Nursing. 2022;21:178. doi.org/10.1186/s12912-022-00960-9

9 Wilson L, Wilkinson A, Tikao K. Health professional perspectives on translation of Cultural Safety concepts into practice: A scoping study. Front Rehabilitation Science. 2022;3:891571. doi: 10.3389/fresc.2022.891571

10 Curtis E, Jones R, Tipene-Leach D, et al. Why Cultural Safety rather than cultural competency is required to achieve health equity: A literature review and recommended definition. International Journal for Equity in Health. 2019;18:174. doi.org/10.1186/s12939-019-1082-3

11 Bacciaglia, M., Neufeld, H.T., Neiterman, E. et al. Indigenous maternal health and health services within Canada: a scoping review. BMC Pregnancy Childbirth. 2023;23:327. doi.org/10.1186/s12884-023-05645-y

12 Verstraeten BSE, Mijovic-Kondejewski J, Takeda J, Tanaka S, Olson D. FRCOG1 Canada's pregnancy-related mortality rates: Doing well but room for improvement. Clin Invest Med. 2015;38(1):E15-E36. doi/pdf/10.25011/cim.v38i1.22410

13 United Nations, Department of Economic and Social Affairs. State of the world's indigenous peoples. 2nd volume: Indigenous peoples' access to health services. Author; 2013. Retrieved from http://www.un.org/esa/socdev/unpfii/documents/ 2015/sowip2volume-ac.pdf

14 World Health Organization. Trends in maternal mortality 1990 to 2015: Estimates by WHO, UNICEF, UNFPA, World Bank Group and the United Nations Population Division. Author; 2015. Retrieved from https://www.afro.who.int/sites/default/files/2017-05/trends-in-maternal-mortality-1990-to-2015.pdf

15 Brend Y. What Canada's slipping global ranking in infant deaths says about the overall health of society. CBC News. Apr 02, 2023. https://www.cbc.ca/news/canada/infant-mortality-ranking-canada-1.6772351. Accessed April 12, 2024.

16 Wynaden D, McGough S, Barr L. The provision of mental health nursing care to Indigenous Australians: How do we rate? International Journal of Mental Health Nursing. 2019;28(1):49–50. Cited by McGough S, Wynaden D, Gower S, Duggan R & Wilson R. There is no health without Cultural Safety: Why Cultural Safety matters. Contemporary Nurse. 2022;58(1):33-42. doi: 10.1080/10376178.2022.2027254

17 Barr L, Wynaden D, Heslop K. Promoting positive and safe care in forensic mental health inpatient settings: Evaluating critical factors that assist nurses to reduce the use of restrictive practices. International Journal of Mental Health Nursing. 2019;28(4):888–898. doi.org/10.1111/inm.12588

18 Yehuda R. How Parents' Trauma Leaves Biological Traces in Children. Adverse experiences can change future generations through epigenetic pathways. Scientific American. 2022 July 1. Retrieved from https://www.scientificamerican.com/article/how-parents-rsquo-trauma-leaves-biological-traces-in-children/

19 Bresnahan M & Zhuang J. Culturally safe healthcare: changing the lens from provider control to patient agency. Journal of Communication in Healthcare. 2024. doi:10.1080/17538068.2024.2323856

20 Elliott A, Slater C, Opie JE & McIntosh JE. First Nations perspectives and approaches to engagement in infant-family work: Attending to Cultural Safety and service engagement. Australian and New Zealand Journal of Family Therapy. 2023;44:477–484. doi.org/10.1002/anzf.1562

21 Kong A, Sousa M, Ramjan L et al. "Got to build that trust": The perspectives and experiences of Aboriginal health staff on maternal oral health Ariana. International Journal for Equity in Health. 2020;19:187. doi.org/10.1186/s12939-020-01301-5

22 Blanc YB, Tilmouth W, Perry C, Haines C, Mentha R, and Dietsch E. Building trust: A cross-cultural narrative process. International Journal of Childbirth. 2021 March;11(1):1-8. doi.org/10.1891/ijcbirth-d-20-00025

23 Rousseau C, Gomez-Carrillo A and Cénat JM. Safe enough? Rethinking the concept of Cultural Safety in healthcare and training. The British Journal of Psychiatry. 2022;221:587–588. doi: 10.1192/bjp.2022.102

24 Cox L, Best O. Clarifying Cultural Safety: Its focus and intent in an Australian context. Contemporary Nurse. 2022:58(1):71-81. doi: 10.1080/10376178.2022.2051572

25 Ramsden I. Cultural safety and nursing education in Aotearoa and Te Waipounamu. Victoria University of Wellington; 2002. Cited in Cox L, Best O. Clarifying Cultural Safety: Its focus and intent in an Australian context. Contemporary Nurse. 2022:58(1):71-81. doi: 10.1080/10376178.2022.2051572

26 Smye V, Josewski V, Kendall E. Cultural Safety: An overview. First Nations, Inuit and Metis Advisory Committee Mental Health ´Commission of Canada; 2010. Retrieved from https://mdsc.ca/documents/Publications/CULTURAL%20SAFETY%20AN%20OVERVIEW%20(draft%20mar%202010).pdf

27 Polaschek N. Cultural safety: a new concept in nursing people of different ethnicities. J Adv Nurs. 1998;27(3):452-457. Cited in Bozorgzad P, Negarandeh R, Raiesifar A, Poortaghi S. Cultural Safety: An evolutionary concept analysis. Holist Nurs Pract. 2016;30(1):33–38. doi: 10.1097/HNP.0000000000000125

28 Atkinson J. Educaring a trauma informed approach to healing generational trauma for Aboriginal Australians. We Al-li Pty. Ltd. 2012. Available http://www.wealli.com.au

29 Wilson AM, Kelly J, Jones M, et al. (2020). Working together in Aboriginal health: A framework to guide health professional practice. BMC Health Services Research. 2020;20(601):1–11. doi.org/10.1186/s12913-020-05462-5

30 van Ryn M, Burgess DJ, Dovidio JF, et al. The impact of racism on clinician cognition, behavior, and clinical decision making. Du Bois Review. 2011;8(1):199–218. doi.org/10.1017%2FS1742058X11000191

31 Greenwood M. Modelling change and Cultural Safety: A case study in northern British Columbia health system transformation. Healthcare Management Forum. 2019;32(1):11-14. doi.org/10.1177/0840470418807948

32 Kaphle S, Hancock H, Newman LA. Childbirth traditions and cultural perceptions of safety in Nepal: Critical spaces to ensure the survival of mothers and newborns in remote mountain villages. Midwifery. 2013 October;29(10):1173-1181. doi.org/10.1016/j.midw.2013.06.002

33 Bozorgzad P, Negarandeh R, Raiesifar A, Poortaghi S. Cultural Safety: An evolutionary concept analysis. Holist Nurs Pract 2016;30(1):33–38. doi: 10.1097/HNP.0000000000000125

34 Doran F, Wrigley B, & Lewis S. Exploring Cultural Safety with Nurse Academics. Research findings suggest time to “step up”. Contemporary Nurse. 2019;55(2-3);156-170. doi: 10.1080/10376178.2019.1640619

35 Ryder C, Yarnold D, Prideux D. Learning and unlearning: Is communication with minority patients about self or others? Medical Teacher. 2011;33(10):781–782. doi.org/10.3109/0142159X.2011.609251

36 Canales MK. Othering: Toward an understanding of difference. Adv Nurs Sci. 2019;22(4):16-31. doi.org/10.1097/00012272-200006000-00003

37 Johnson JL, et al. Othering and being othered in the context of health care services. Health Commun. 2019;16(2):255–71. doi.org/10.1207/s15327027hc1602_7

38 Day D, Tenney E. Module 2: caring in a complex world; an introduction to cultural safety. 2021. Cited in Roman C. A personal reflection on the concept of Cultural Safety. Holist Nurs Pract. 2023;37(3):E51–E52. doi: 10.1097/HNP.0000000000000579

39 Dickson T, Wilkinson T, Dao KD, et al. An opportunity for transformative change in the US Healthcare System—Cultural Safety: A scoping review protocol. Physical Therapy Reviews. 2023;28(3):243-251, doi: 10.1080/10833196.2023.2226364

40 Sweet MA, Dudgeon P, McCallum K, Ricketson MD. (2014). Decolonising practices: Can journalism learn from health care to improve Indigenous health outcomes. Medical Journal of Australia. 2014;200(11):626–627. doi.org/10.5694/mja14.00528

41 Riggs E, Muyeen S, Brown S et al. Cultural Safety and belonging for refugee background women attending group pregnancy care: An Australian qualitative study. Birth. 2017;44:145–152. doi: 10.1111/birt.12272

42 Chomat AM, Menchú AI , Andersson N, et al. Women's circles as a culturally safe psychosocial intervention in Guatemalan indigenous communities: A community-led pilot randomised trial. BMC Women's Health. 2019;19:53. doi.org/10.1186/s12905-019-0744-z

43 Munns A. Community midwifery: a primary health care approach to care during pregnancy for Aboriginal and Torres Strait Islander women. Australian Journal of Primary Health. 2021;27:57–61. doi.org/10.1071/PY20105

44 Marriott R, Reibel T, Barrett T-L, et al. Midwifery knowledge of equitable and culturally safe maternity care for Aboriginal women. Birth. 2021;48:132–138. doi.org/10.1111/birt.12525

45 Marriott R, Strobel NA, Kendall S, et al. Cultural security in the perinatal period for Indigenous women in urban areas: A scoping review. Women and Birth. 2019;32(5);412-426. doi.org/10.1016/j.wombi.2019.06.012

46 Silver H, Tukalak S, Sarmiento I, et al. Giving birth in a good way when it must take place away from home: Participatory research into visions of Inuit families and their Montreal-based medical providers. Birth. 2023;50:781-788. doi:10.1111/birt.12726

47 Adcock A, Cram F, Edmonds L, Lawton B. Culturally safe neonatal care: Talking with health practitioners identified as champions by Indigenous families. Qualitative Health Research. 2023;33(6):531-542. doi:10.1177/10497323231164550

48 Canadian Centre on Substance Abuse. Canadian drug summary. Prescription opioids. Author; 2015. Retrieved from http://www.ccsa.ca/Resource%20Library/CCSA-Canadian-Drug-Summary-Prescription-Opioids-2015-en.pdf

49 Canadian Centre on Substance Use and Addiction. Canadian Drug Summary. Opioids. Author; 2022. Retrieved from https://www.ccsa.ca/sites/default/files/2022-11/CCSA-Canadian-Drug-Summary--Opioids-2022-en.pdf

50 Public Health Agency of Canada. Opioid- and stimulant-related harms in Canada. Author: September 2023. Retrieved from https://health-infobase.canada.ca/substance-related-harms/opioids-stimulants/

51 Piske M, Homayra F, Min JE, et al. Opioid Use Disorder and Perinatal Outcomes. Pediatrics. 2021 Oct;148(4):e2021050279. doi: 10.1542/peds.2021-050279

52 Gomez T, Mamdani M, Paterson J, et al. Trends in high-dose opioid prescribing in Canada. Canadian Family Physician. 2014;60:826-832. PMID:25217680

53 Volkow N, Senate Caucus on International Narcotics Control. America's addiction to opioids: Heroin and prescription drug abuse. National Institute of Drug Abuse; 2014. Retrieved from www.drugabuse.gov/about/nida/legislative-activities/testimony-to-congress/2016/americas-addiction-to-opioids-heroin-prescription-drug-abuse

54 Kar P, Tomfohr-Madsen L, Giesbrecht G, Bagshawe M, Lebel C. Alcohol and substance use in pregnancy during the COVID-19 pandemic. Drug Alcohol Depend. 2021;225:1-8. doi:10.1016/j.drugalcdep.2021.108760

55 Lein J, Hayes T, Liu-Smith F, Rana D. Comparing maternal substance use and perinatal outcomes before and during the COVID-19 pandemic. Journal of Perinatology. 2023;43:664-69. doi.org/10.1038/s41372-023-01613-8

56 Canadian Centre on Substance Use and Addiction. CCENDU Bulletin; Adulterants, contaminants and co-occurring substances in drugs on the illegal market in Canada. Author; 2020. Retrieved from https://www.ccsa.ca/sites/default/files/2020-04/CCSA-CCENDU-Adulterants-Contaminants-Co-occurring-Substances-in-Drugs-Canada-Report-2020-en.pdf

57 Muhuri P, Gfroener J, Davies M. Association of nonmedical pain relievers and initiation of heroin use in the United States. CBHSQ Data Review August 2013. Substance Abuse and Mental Health Services Administration [SAMHSA]; 2013. Retrieved from http://www.samhsa.gov/data/

58 Ahmad M, Vismara L. The psychological impact of COVID-19 pandemic on women's mental health during pregnancy: A rapid evidence review. *Int J Environ Res Public Health*. 2021;18:1–15. doi:10.3390/ijerph18137112

59 Basu A, Kim HH, Basaldua R, et al. A cross-national study of factors associated with women's perinatal mental health and wellbeing during the COVID-19 pandemic. *PLoS ONE*. 2021;16:e0249780. doi:10.1371/journal.pone.0249780

60 Czeisler ME, Lane RI, Petrosky E, et al. Mental health, substance use, and suicidal ideation during the COVID-19 pandemic – United States, June 24-30, 2020. MMWR Morb Mortal Wkly Rep. 2020;69:1049–57. doi:10.15585/mmwr.mm6932a1

61 Lebel C, MacKinnon A, Bagshawe M, Tomfohr-Madsen L, Giesbrecht. Elevated depression and anxiety symptoms among pregnant individuals during the COVID-19 pandemic. J Affect Disord. 2021;377:5–13.doi:10.1016/j.jad.2020.07.126

62 Plouffe R, Grywacheski V, Luo W, Nelson C, Orpana H. (2023). Neonatal abstinence syndrome hospitalizations in Canada: a descriptive study. Canadian Journal of Public Health. 2023;114:277-286. doi:10.17269/s41997-022-00726-5

63 Statistics Canada. Wastewater analysis suggests that the consumption of fentanyl, cannabis and methamphetamine increased in the early pandemic period. Author; 2021. Retrieved from https://www150.statcan.gc.ca/n1/daily-quotidien/210726/dq210726a-eng.htm

64 Hui K, Angelotta C, Fisher CE. Criminalizing substance use in pregnancy: misplaced priorities. Society for the Study of Addiction. 2017;112: 1123-1125. doi:10.1111/add.13776

65 Miller A. Using the "War on Drugs" to arrest pregnant women. Sep 17, 2015. Retrieved from https://politicalresearch.org/2015/09/17/using-the-war-on-drugs-to-arrest-pregnant-women

66 CanFASD Research Network's Action Team on Prevention from a Women's Health Determinants Perspective. Substance use during pregnancy. An overview of key Canadian policy and practice areas. Canada FASD Research Network; 2014. Retrieved from http://bccewh.bc.ca/wpcontent/uploads/2014/09/ Canadian.Policy-on.Subst-Use-+-Preg.Sept-2-2014web.pdf

67 CanFASD Research Network's Action Team on Prevention from a Women's Health Determinants Perspective. *Supporting pregnant and parenting women who use substances. What communities are doing to help*. Canada FASD Research Network; 2013. Retrieved from http://www.canfasd.ca/wp-content/uploads/2013/02/ What_Communities_Are_Doing_to_Help_February_7_2013.pdf

68 Drabble L, Poole N. Collaboration between addiction treatment and child welfare fields: Opportunities in a Canadian context. *Journal of Social Work - Practice in the Addictions*. 2011;11(2):124-149. doi.org/10.1080/1533256X.2011.570657

69 Finnegan L. *Licit and illicit drug use during pregnancy: Maternal, neonatal and early childhood consequences*. Canadian Centre on Substance Abuse; 2013. Retrieved from https://www.ccsa.ca/sites/default/files/2019-04/CCSA-Drug-Use-during-Pregnancy-Report-2013-en.pdf

70 Nathoo T, Poole N, Bryans M, et al. Voices from the community: Developing effective community programs to support pregnant and early parenting women who use alcohol and other substances. *First Peoples Child & Family Review*. 2013;8(1):94-107. Retrieved from https://fpcfr.com/index.php/FPCFR/article/view/203

71 Weber A, Miskle B, Lynch A, Arndt S, Acion L. Substance use in pregnancy: Identifying stigma and improving care. Substance Abuse and Rehabilitation. 2021;12:105-121. doi:10.2147/SAR.S319180

72 Patton E, Saia K, Stein M. Integrated substance use and prenatal care delivery in the era of COVID-19. *J Subst Abuse Treat*. 2021 May;124:108273. doi:10.1016/j.jsat.2020.108273

73 Thomas G. *Harm reduction policies and programs for persons involved in the criminal justice system. Harm Reduction for Special Populations in Canada*. Canadian Centre on Substance Abuse; 2005. Retrieved from https://www.hri.global/files/2011/08/08/1.08_Thomas_-_HR_Policies_Programmes_.pdf

74 Canadian Mental Health Association. *Harm reduction*. Author; 2024. Retrieved April 25, 2024, from https://ontario.cmha.ca/harm-reduction/

75 BC Centre for Disease Control. *BCCDC COVID-19 language guide. Guidelines for inclusive language for written and digital content*. Author; July 2020. Retrieved from http://www.bccdc.ca/Health-Info-Site/Documents/Language-guide.pdf

76 Puccio J, Sladky M, Tsinas G. Harm Reduction. Section 2. *Pregnancy and substance use: A harm reduction toolkit*. National Harm Reduction Coalition; 2020. Retrieved from https://harmreduction.org/issues/pregnancy-and-substance-use-a-harm-reduction-toolkit/

77 Macrory F, Boyd SC. Developing primary and secondary services for drug and alcohol dependent mothers. *Semin Fetal Neonatal Med*. 2007;12:119-126. doi:10.1016/j.siny.2007.01.005.

78 American College of Obstetricians and Gynecologists. *Opioid use and opioid use disorder in pregnancy*. Author; n.d. Retrieved April 25, 2024, from https://www.acog.org/clinical/clinical-guidance/committee-opinion/articles/2017/08/opioid-use-and-opioid-use-disorder-in-pregnancy

79 Krans EE, Kim JY, Chen Q, et al. Outcomes associated with the use of medications for opioid use disorder during pregnancy. Addiction. 2021 Dec;116(12):3504-3514. doi:10.1111/add.15582

80 Goler N, Armstrong M, Taillac C, Osejo V. Substance abuse treatment linked with prenatal visits improves perinatal outcomes: A new standard. Journal of Perinatology. 2008;28(9):597-603. doi.org/10.1038/jp.2008.70

81 Marshall S, Charles G, Hare J, et al. Sheway's services for substance using pregnant and parenting women: Evaluating the outcomes for infants. Canadian Journal of Community Mental Health. 2005;24(1):19-33. doi.org/10.7870/cjcmh-2005-0002

82 Wodinski L, Wanke M, Khan F. Impact evaluation of the H.E.R. pregnancy program – final summary report. Charis Management Consulting for the Alberta Centre for Child, Family and Community Research; 2013. Retrieved from https://www.catie.ca/sites/default/files/her-final-summary-report-2014.pdf

83 Motz M, Leslie M, Pepler D, et al. Breaking the cycle: Measures of progress 1995-2005. Journal of FAS International, Special Supplement. 2006;4:e22. Retrieved from http://www.motherisk.org/JFAS_documents/ BTC_JFAS_ReportFINAL.pdf

84 Poole N. Evaluation report of the Sheway project for high-risk pregnant and parenting women. BC Centre of Excellence for Women's Health; 2000. Retrieved from https://cewh.ca/wp-content/uploads/2012/05/2000_Evaluation-Report-of-the-Sheway-Project.pdf

85 Niccols A, Milligan K, Smith A, et al. Integrated programs for mothers with substance abuse issues and their children: A systematic review of studies reporting on child outcomes. Child Abuse & Neglect. 2012;36(4):308-322. doi.org/10.1016/j.chiabu.2011.10.007

86 Niccols A, Milligan K, Sword W, et al. Integrated programs for mothers with substance abuse issues: A systematic review of studies reporting on parenting outcomes. Harm Reduction Journal. 2012;19(9):14. doi.org/ 10.1186/1477-7517-9-14

87 Poole N, Urquhart C, Talbot C. Women-centered harm reduction. Gendering the National Framework Series (Vol.4). BC Centre of Excellence for Women's Health; 2010. Retrieved from https://cewh.ca/wp-content/uploads/2012/05/2010_GenderingNatFrameworkWomencentredHarmReduction.pdf

88 Government of Canada. Minister for Women and Gender Equality's appearance at the House of Commons Standing Committee on the Status of Women (FEWO). Parliamentary Committee binders. Author; May 18, 2023. Retrieved from https://www.canada.ca/en/women-gender-equality/transparency/parliamentary-committee-binders/minister-appearance-house-commons-standing-committee-status-women-may18-2023.html#toc9

89 National Inquiry into Missing and Murdered Indigenous Women and Girls. Master list of report recommendations. Author; 2019. Retrieved from https://www.mmiwg-ffada.ca/wp-content/uploads/2019/06/National-Inquiry-Master-List-of-Report-Recommendations-Organized-By-Theme-and-Jurisdiction-2018-EN-FINAL.pdf

90 Cormier R, Dell C, Poole N. Women and substance use problems. Women's health surveillance report. BioMedical Central Women's Health. 2004;4(Suppl 1):S1-S8. doi.org/10.1186/1472-6874-4-S1-S8

91 Maternity Centre. Healthy outcomes for you and your baby. Thunder Bay Regional Health Sciences Centre; 2013. Retrieved from http://www.tbdhu.com/sites/default/files/files/ resource/201603/Neonatal% 20Abstinence%20Syndrome%20Pamphlet%20 2013.pdf

92 Poole N, Isaac B. Apprehensions: Barriers to treatment for substance using mothers. BC Centre of Excellence for Women's Health; 2001. Retrieved from https://cewh.ca/wp-content/uploads/2012/05/2001_Apprehensions-Barriers-to-Treatment-for-Substance-Using-Mothers.pdf

93 Substance Abuse and Mental Health Services Administration [SAMHSA]. *Tips for disaster responders.* Author; 2014. Retrieved from Understanding Historical Trauma: https://store.samhsa.gov/sites/default/files/d7/priv/sma14-4866.pdf

94 Center on the Developing Child at Harvard University. *From best practices to breakthrough impacts: A science-based approach to building a more promising future for young children and families.* Author; 2016. Retrieved from http://www.developingchild.harvard.edu

95 Torchallella I, Strehlau V. *Trauma informed care for women who use substances: A training curriculum for service providers.* CHEOs, Centre for Health Evaluation and Outcome Sciences; (n.d.). Retrieved from https://www.advancinghealth.ubc.ca/wp-content/uploads/2016/05/Workshop-Manual-Sheway-Training-Curriculum-2015.pdf

96 Klinic Community Health Centre. *Trauma-informed: The trauma toolkit. Second Edition.* Author; 2013. Retrieved from https://trauma-informed.ca/wp-content/uploads/2023/04/trauma-informed_toolkit_v07-1.pdf

97 Morales B, Sisson C, McGlynn B et al. *Field guide to drug demand reduction program development. Second edition.* United States Department of State; 2020. Retrieved from https://colombo-plan.org/wp-content/uploads/2020/11/INL_Fleld_Guide_II_Final_low.pdf

98 BC Centre of Excellence for Women's Health. Trauma-informed approaches in addictions treatment. *Gendering the National Framework series (Vol. 1).* Author; 2009. Retrieved from https://cewh.ca/wp-content/uploads/2014/02/2010_GenderingNatFrameworkTraumaInformed.pdf

99 Poole N, Urquhart C, Talbot C. Women-centered harm reduction. *Gendering the National Framework Series (Vol.4).* BC Centre of Excellence for Women's Health; 2010. Retrieved from https://cewh.ca/wp-content/uploads/2012/05/2010_GenderingNatFrameworkWomencentredHarmReduction.pdf

100 BC Centre of Excellence for Women's Health. Girl-centered approaches to prevention, harm reduction and treatment. *Gendering the National Framework series (Vol. 2).* Author; 2010.

101 Haskell, L. *First stage trauma treatment: A guide for mental health professionals working with women*. Centre for Addiction and Mental Health; 2003. Cited in BC Centre of Excellence for Women's Health. Trauma-informed approaches in addictions treatment. *Gendering the National Framework series (Vol. 1)*. Author; 2009. Retrieved from https://cewh.ca/wp-content/uploads/2014/02/2010_GenderingNatFrameworkTraumaInformed.pdf

102 Khoury L, Tang YL, Bradley B et al. Substance use, childhood traumatic experience, and Posttraumatic Stress Disorder in an urban civilian population. *Depress Anxiety*. 2010 Dec;27(12):1077-86. doi: 10.1002/da.20751

103 Wolf M, Nochajski T, Farrell M. The effects of childhood sexual abuse and other trauma on drug court participants. *Journal of Social Work Practice in the Addictions*. 2015;15:44-65. doi:10.1080/1533256X.2014.996228.

104 Masterson T. *Trauma informed neonatal care*. Alberta Neonatal Nurses Association (ANNA) Conference. ANNA; 2014.

105 National Scientific Council of the Developing Child. (2015). *Supportive relationships and active skill-building strengthen the foundations of resilience: Working paper no. 13*. Retrieved from http://www.developingchild. harvard.edu

106 Center on the Developing Child at Harvard University. *From best practices to breakthrough impacts: A science-based approach to building a more promising future for young children and families*. Author; 2016. Retrieved from http://www.developingchild.harvard.edu

107 Brown D, Anda R, Tiemeier H, et al. Adverse childhood experiences and the risk of premature mortality. *American Journal of Prevention Medicine*. 2009;37(5):389-396. Retrieved from https://cewh.ca/wp-content/uploads/2012/05/2010_GenderingNatFrameworkGirlCentred.pdf

108 Felitti VJ. The relation between adverse childhood experiences and adult health: Turning gold into lead. *Perm J*. 2002 Winter;6(1):44-47. doi: 10.7812/TPP/02.994

109 CanFASD Research Network's Action Team on Prevention from a Women's Health Determinants Perspective. (2013). *Supporting pregnant and parenting women who use substances. What communities are doing to help*. Vancouver: Canada FASD Research Network. Retrieved from http://www.canfasd.ca/wpcontent/ uploads/2013/02/What_ Communities_Are_Doing_to_ Help_February_7_2013.pdf

110 Debelak K, Morrone WR, O'Grady KE, Jone HE Buprenorphine + naloxone in the treatment of opioid dependence during pregnancy-initial patient care and outcome data. *The American Journal on Addictions*. 2013;22(3):252-4. doi: 10.1111/j.1521-0391.2012.12005.x.

111 Ashraf H. *Neonatal abstinence syndrome*. 2014. Retrieved from http://emedicine.medscape. com/article/978763-overview#a6

112 Maeda A, Bateman BT, Clancy CR, Creanga AA. Opioid abuse and dependence during pregnancy: Temporal trends and obstetrical outcomes. *Anesthesiology*. 2014;121:1158–1165. doi:10.1097/ALN.0000000000000472

113 Schempf, A. Illicit drug use and neonatal outcomes: A critical review. *Obstetrical & Gynecological Survey*.2007;62(11):749–757. doi.org/10.1097/01.ogx.0000286562.31774.76

114 Morrone DK, O'Grady KE, Jones HE. Buprenorphine and naloxone compared with methadone treatment: Obstetrics & gynecology. *The American Journal on Addictions*. 2013;22(3):252-254. doi:10.1097/AOG.0000000000000640

115 Jones HE, Fisher G, Heil SH, et al. Maternal opioid treatment: Human experimental research (MOTHER)—approach, issues and lessons learned. *Addiction*. 2012;107(S1):28-35. doi:10.1111/j.1360-0443.2012.04036.x

116 Suarez EA, Huybrechts KF, Straub L, et al. Buprenorphine versus Methadone for opioid use disorder in pregnancy. *N Engl J Med*. 2022;387:2033-2044. doi:10.1056/NEJMoa2203318

117 No author. Committee Opinion No. 711: Opioid use and opioid use disorder in pregnancy. *Obstetrics & Gynecology*. 2017;130(2):e81-e94. doi:10.1097/AOG.0000000000002235

118 Kraft W, van den Anker J. Pharmacologic management of the opioid neonatal abstinence syndrome. *Pediatric Clinics of North America*.2012;59(5):1147-1165. doi.org/10.1016%2Fj.pcl.2012.07.006

119 Ordean A, Wong S, Graves L. No. 349-Substance Use in Pregnancy. *Journal of Obstetrics and Gynecology Canada*. 2017;39(10):922-937. doi:10.1016/j.jogc.2017.04.028

120 Murphy-Oikonen J, Montelpare W, Bertoldo L, et al. The impact of a clinical practice guideline on infants with neonatal abstinence syndrome. *British Journal of Midwifery*. 2012;20(7):493-501. doi:10.12968/bjom.2012.20.7.493

121 Wong S, Ordean A, Kahan M. Substance use in pregnancy. SOGC Clinical Practice Guideline. *Journal of Obstetrics & Gynaecology of Canada*. 2011;33(4):367-384. doi:10.1016/j.ijgo.2011.06.001

122 Winklbaur B, Kopf N, Ebner N, et al. Treating pregnant women dependent on opioids is not the same as treating pregnancy and opioid dependence: A knowledge synthesis for better treatment for women and neonates. *Addiction*. 2008;103:1429–1440. doi:10.1111/j.1360-0443.2008.02283.x

123 Hunt R, Tzioumi D, Collins E, Jeffery H. Adverse neurodevelopmental outcome of infants exposed to opiate in-utero. *Early Human Development*. 2008;84:29–35. doi:10.1016/j.earlhumdev.2007.01.013

124 Vance J, Chant D, Tudehope D, et al. Infants born to narcotic dependent mothers: Physical growth patterns in the first 12 months of life. *Journal of Paediatrics and Child Health*. 1997;33:504–508. doi.org/10.1111/j.1440-1754.1997.tb01659.x

125 Jones H, Kaltenbach K, Heil S, et al. (2010). Neonatal abstinence syndrome after methadone or buprenorphine exposure. *New England Journal of Medicine*. 2010;363:2320-2331. doi.org/10.1056/nejmoa1005359

126 Bell J, Towers CV, Hennessy MD, Heitzman C, et al. Detoxification from opiate drugs during pregnancy. *Am J Obstet Gynecol*. 2016 Sep;215(3):374.e1-6. doi: 10.1016/j.ajog.2016.03.015

127 Government of Canada. *Drug product database*. Author; 2015. Retrieved from https://www.canada.ca/en/health-canada/services/drugs-health-products/drug-products/drug-product-database.html

128 Hilton T. Breastfeeding considerations of opioid dependent mothers and infants. *MCN: The American Journal of Maternal Child Nursing*. 2012;37(4):236-240. doi.org/10.1097/nmc.0b013e318251056c

129 Shulman M, Wai JM, Vunes EV. Buprenorphine treatment for opioid use disorder: An overview. *CNS Drugs*. 2019;33(6):567-580. doi.org/10.1007/s40263-019-00637-z

130 Hall E, Wexelblatt S, Crowley M, et al. Implementation of a neonatal abstinence syndrome weaning protocol: A multicenter cohort study. *Pediatrics*. 2015;136(4):e803-e810. doi.org/10.1542/peds.2015-1141

131 Mattick R, Kimber J, Breen C, Davoli M. (2008/2014). Buprenorphine maintenance versus placebo or methadone maintenance for opioid dependence (Review). *Cochrane Database of Systematic Reviews*. 2008/2014;Issue 2, Art. No.: CD002207. doi.org/10.1002/14651858.CD002207

132 Kumar R, Visuanath O, Saadabadi A. Buprenorphine. *Stat Pearls [Internet]*. Nov 2023. Retrieved from https://europepmc.org/article/NBK/nbk459126

133 Dow K, Ordean A, Murphy-Oikonen J, et al. Neonatal abstinence syndrome clinical practice guidelines for Ontario. *Journal of Population Therapeutics and Clinical Pharmacology*. 2012;19(3):e488-e506. PMID:23241498

134 College of Physicians & Surgeons of Alberta. *Safe prescribing for opioid use disorder*. Author; 2019/2024. Retrieved from https://cpsa.ca/wp-content/uploads/2020/06/AP_Safe-Prescribing.pdf

135 College of Physicians & Surgeons of Alberta. *Standards of practice. Prescribing: Drugs associated with substance use disorders or substance-related harm*. Author; 2018. Retrieved from https://cpsa.ca/wp-content/uploads/2020/05/Prescribing-Drugs-Associated-with-Substance-Use-Disorders.pdf

136 Parsons G. Pain management in patients with a substance use disorder. Pharmaceutical Journal. Oct 15 2015. Retrieved from https://pharmaceutical-journal.com/article/ld/pain-management-in-patients-with-a-substance-use-disorder

137 Marshall S, Jackson M. Acute pain management for opioid tolerant patients. Updates in Anaesthesia. 2011;35:35-39. doi:10.3390/healthcare11010034

138 Prince V. Pain management in patients with substance-use disorders. In Chronic Illnesses I, II, and III – PSAP-VII, Book 5. American College of Clinical Pharmacology; 2011. Retrieved from https://www.accp.com/docs/bookstore/psap/p7b05.sample03.pdf

139 Chou R Turner J Devine E et al. The effectiveness and risks of long-term opioid therapy for chronic pain: A systematic review for a national institutes of health pathways to prevention workshop. Annals of Internal Medicine. 2015;162(4):276-286. doi:10.7326/M14-2559

140 Dhaliwal A, Gupta M. Physiology, Opioid receptor. StatPearls Publishing; 2023 Jan. Retrieved from https://www.ncbi.nlm.nih.gov/books/NBK546642/

141 Ossipov MH, Morimura K, Porreca F. Descending pain modulation and chronification of pain. Curr Opin Support Palliat Care. 2014 Jun;8(2):143-51. doi:10.1097/SPC.0000000000000055

142 World Health Organization. WHO Guidelines for the Pharmacological and Radiotherapeutic Management of Cancer Pain in Adults and Adolescents. Table A6.2, Approximate potency of opioids relative to morphine; PO and immediate-release formulations unless stated otherwise. Author; 2018. Retrieved from https://www.ncbi.nlm.nih.gov/books/NBK537482/table/appannex6.tab2/

143 Merel B, Niesters Marieke, Sarton Elise, et al. Non-analgesic effects of opioids: Opioid-induced respiratory depression. Current Pharmaceutical Design. 2012;18(37):5994-6004. doi.org/10.2174/138161212803582469

144 St Marie B, Coleman L, Vignato J, et al. Use and misuse of opioid pain medications by pregnant and non-pregnant women. Pain Manag Nurs. 2020;21(1):90-93. doi:10.1016/j.pmn.2019.05.002

145 Campbell G Bruno R Lintzeris N et al. Defining problematic pharmaceutical opioid use among people prescribed opioids for chronic noncancer pain: Do different measures identify the same patients? PAIN. 2016;157:1489-98. doi:10.1097/j.pain.0000000000000548

146 Volkow N, McLellan T. Curtailing diversion and abuse of opioid analgesics without jeopardizing pain treatment. JAMA. 2011;305:1346-7. doi:10.1001/jama.2011.369

147 Meich R Johnston L O'Malley P et al. Prescription opioids in adolescence and future opioid misuse. Pediatrics. 2015;136(5):e1169-77. doi:10.1542/peds.2015-1364

148 Schroeder A, Dehghan M, Newman T, et al. Association of opioid prescriptions from dental clinicians for US adolescents and young adults with subsequent opioid use and abuse. JAMA Internal Medicine. 2019;179(2):142-52. doi:10.1001/jamainternalmed.2018.5419

149 Henningfield JE, Ashworth JB, Gerlach KK, Simone B, Schnoll SH. The nexus of opioids, pain, and addiction: Challenges and solutions. Preventive Medicine. 2019;128:105852. doi:10.1016/j.ypmed.2019.105852

150 Boscarino J Rukstalis M Hoffman S et al. Risk factors for drug dependence among outpatients on opioid therapy in a large US health-care system. Addiction. 2010;105:1776-82. doi:10.1111/j.1360-0443.2010.03052.x

151 Action on Addiction. The management of pain in people with a past or current history of addiction. Author; 2013. Retrieved from https://www.sldtraining.co.uk/media/i4clx50t/pain-management-in-those-with-addiction.pdf

152 Renbarger K, Draucker, C. Nurses' approaches to pain management for women with opioid use disorder in the perinatal period. Journal of Obstetric, Gynecologic, & Neonatal Nursing. 2021;50(4):412-423. doi:10.1016/j.jogn.2021.03.001

153 Oliver J, Coggins C, Compton P, et al. American Society for Pain Management nursing position statement: Pain management in patients with substance abuse disorders. Pain Management Nursing. 2012;13(3):169-183. doi:10.1016/j.pmn.2012.07.001

154 Clarke D, Foss K, Lifeso N, Hicks M. Fostering Hope: Comprehensive accessible mother-infant dyad care for neonatal abstinence (CAIN). Children. 2022;9:1517. doi.org/10.3390/children9101517

155 Chou R. et al. Management of postoperative pain: A clinical practice guideline from the American Pain Society, the American Society of Regional Anesthesia and Pain Medicine, and the American Society of Anesthesiologists' Committee on Regional Anesthesia, Executive Committee, and Administrative Council. Journal of Pain. 2016;17(2):131-157. Retrieved from https://pubmed.ncbi.nlm.nih.gov/26827847/

156 Buckley N, Ibrahim M. Brief review: Obstetric care and perioperative analgesic management of the addicted patient. Canadian Journal of Anesthesia. 2014;61:154-163. Retrieved from https://pubmed.ncbi.nlm.nih.gov/24338064/

157 Neil M. Peri-operative management of patients on strong opioids. Anaesthesia Tutorial of the Week 260. 2012. Retrieved from https://resources.wfsahq.org/wp-content/uploads/260_english.pdf

158 Mehta V, Langford R. Acute pain management for opioid dependent patients. Anaesthesia. 2006;61: 269-276. doi:10.1111/j.1365-2044.2005.04503.x

159 Park EM, Meltzer-Brody S, Suzuki J. Evaluation and management of opioid dependence in pregnancy. Psychosomatics. 2012;53(5):424-32. doi:10.1016/j.psym.2012.04.003

160 Shah JR, Ramseyer A, Coker J. Peripartum management for women with opioid dependence. Current Opinion in Anaesthesiology. 2021;34(3):226-32. doi:10.1097/ACO.0000000000000996

161 Roberts L. Managing acute pain in patients with an opioid abuse or dependence disorder. Australian Prescriber. 2008;31(5): 133-135. doi.org/10.18773/austprescr.2008.075

162 Cai Y, Acampora G, Anderson T. Chapter 27: Evaluation and Treatment of Postoperative Pain in Patients with Opioid Use Disorder. Practical management of Pain, Sixth Edition. 2023:374-384. Retrieved from https://www.clinicalkey.com/#!/content/book/3-s2.0-B9780323711012000270

163 Simpson GK, Jackson M. Perioperative management of opioid-tolerant patients. BJA Education. 2017;17(4):124-128. doi.org/10.1093/bjaed/mkw049

164 Jones H, Martin P, Heil S, et al. Treatment of opioid dependent pregnant women: Clinical and research issues. Journal of Substance Abuse & Treatment. 2008;35(3):245-250. doi:10.1016/j.jsat.2007.10.007

165 Kohan L, Potru S, Barreveld AM, et al. Buprenorphine management in the perioperative period: educational review and recommendations from a multisociety expert panel. Regional Anesthesia & Pain Medicine. 2021;46:840-859. doi:10.1136/rapm-2021-103007

166 Hickey T, Abelleira A, Acampora G, et al. Perioperative buprenorphine management. A multidisciplinary approach. Medical Clinics. Jan 2022;106:169-185. doi.org/10.1016/j.mcna.2021.09.001

167 Shainker S, Saia K, Lee-Parritz. Opioid addiction in pregnancy. Obstetrical and Gynecological Survey. 2012;67(12):817-25. doi:10.1097/OGX.0b013e3182788e8c

168 Jonan AB, Kaye AD, Urman RD. Buprenorphine formulations: Clinical best practice

strategies recommendations for perioperative management of patients undergoing surgical or interventional pain procedures. Pain Physician. 2018;21:E1-E12. PMID:29357325

169 Best Practice Advocacy Centre New Zealand. Identifying and managing addiction to opioids. Best Practice Journal. 2014;64:16-25. Retrieved from https://bpac.org.nz/bpj/2014/october/opioid-addiction.aspx

170 Nassif G, Miller T. Evolving the management of acute perioperative pain towards opioid free protocols: a narrative review. Current Medical Research and Opinion. 2019;35(12):2129-36. doi:10.1080/03007995.2019.1646001

171 Huxtable C, Roberts L, Somogyi A, Macintyre P. Acute pain management in opioid-tolerant patients: A growing challenge. Anaesthesia and Intensive Care. 2011;39(5):804-823. doi:10.1177/0310057X1103900505

172 George RB, Carvalho B, Butwick A, Flood P. Chapter 27: Postoperative Analgesia. Chestnut's Obstetric Anesthesia, Sixth Edition. 2020; 627-669. Retrieved from https://www.clinicalkey.com/#!/browse/book/3-s2.0-C20160024920

173 Gudin JA, Brennan MJ, Harris ED, et al. Reduction of opioid use and improvement in chronic pain in opioid-experienced patients after topical analgesic treatment: an exploratory analysis. Postgraduate Medicine. 2018;130(1):42-51. doi:10.1080/00325481.2018.1414551

174 International Association for the Study of Pain. Cited in Echeverria-Villalobos M, Stoicea N, Todeschini AB, et al. Enhanced recovery after surgery (ERAS): A perspective review of postoperative pain management under ERAS pathways and its role on opioid crisis in the United States. Clin J Pain. 2020 Mar;36(3):219-226. doi: 10.1097/AJP.0000000000000792. Cited in Echeverria-Villalobos M, Stoicea N, Todeschini AB, et al. Enhanced recovery after surgery (ERAS): A perspective review of postoperative pain management under ERAS pathways and its role on opioid crisis in the United States. Clinical Journal of Pain. 2020;36(3):219-26. doi:10.1097/AJP.0000000000000792

175 Kehlet H, Jensen T, Woolf C. Persistent postsurgical pain: risk factors and prevention. Lancet. 2006;367(9522):1618-1625. doi.org/10.1016/S0140-6736(06)68700-X

176 Goesling J, DeJonckheere M, Pierce J, et al. Opioid cessation and chronic pain: perspectives of former opioid users. PAIN. 2019;160(5):1131-45. doi:10.1097/j.pain.0000000000001493

177 Echeverria-Villalobos M, Stoicea N, Todeschini AB, et al. Enhanced recovery after surgery (ERAS): A perspective review of postoperative pain management under ERAS pathways and its role on opioid crisis in the United States. Clinical Journal of Pain. 2020;36(3):219-26. doi:10.1097/AJP.0000000000000792

178 Hoflich AS, Langer M, Jagsch R. Peripartum pian management in opioid dependent women. European Journal of Pain. 2012;16(4):574-84. doi: 10.1016/j.ejpain.2011.08.008

179 Matthias M Krebs E Collins L et al. "I'm not abusing or anything": Patient-physician communication about opioid treatment in chronic pain. Patient Educ Couns. 2013;93:197-202. doi:10.1016/jpec.2013.06.021

180 St Marie B, Coleman L, Vignato JA, Arndt S, Segre LS. Use and misuse of opioid pain medications by pregnant and nonpregnant women. Pain Manag Nurs. 2020 Feb;21(1):90-93. doi: 10.1016/j.pmn.2019.05.002

181 Centers for Disease Control and Prevention. Prescription painkiller overdoses.A growing epidemic, especially among women. Author: Sep 2018. Retrieved from https://www.cdc.gov/vitalsigns/prescriptionpainkilleroverdoses/index.html

182 Osmundson SS, Min JY, Grijalva CG. Opioid prescribing after childbirth: overprescribing and chronic use. Curr Opin Obstet Gynecol. 2019 Apr;31(2):83-89. doi: 10.1097/GCO.0000000000000527

183 Lakhi N, Tricorico, G, Kanninen T, et al. Post cesarean delivery outpatient opioid consumption and perception of pain control following implementation of a restrictive opioid prescription protocol. Am J Obstet Gynecol MFM. 2019 Nov;1(4):100049. doi:10.1016/j.ajogmf.2019.100049.2019 1:100049

184 Loomis E, McNaughton D, Genord C. A quality improvement initiative addressing safe opioid prescribing and disposal postcesarean delivery. Pain Management Nursing. 2022;23:174-179. doi:10.1016/j.pmn.2021.02.002

185 Mackeen AD, Vigh RS, Davis LB, et al. Obstetricians' prescribing practices for pain management after delivery. Pain Management. 2022;12(5):645-52. doi:10.2217/pmt-2021-0101

186 Prabhu, M Dubois, H James K, et al. (2018) Implementation of a quality improvement initiative to decrease opioid prescribing after cesarean delivery. Obstet Gynecol. 2018 Sept;132(3):631-636. doi:10.1097/AOG0000000000002789

187 Safley RR, Swietlikowski J. Pain Management in the Opioid-Dependent Pregnant Woman. Journal of Perinatal & Neonatal Nursing. 2017;31(2):118-25. doi:10.1097/JPN.0000000000000244

188 Wachman EM, Houghton M, Melvin P et al. A quality improvement initiative to implement the eat, sleep, console neonatal opioid withdrawal syndrome care took in Massachusetts' PNQIN collaborative. *Journal of Perinatology*. 2020;40:1560-69. doi.org/10.1038/s41372-020-0733-y

189 Jansson L, Patrick S. Neonatal Abstinence Syndrome. *Pediatric Clinics of North America*. 2019;66:353-367. doi.org/10.1016/j.pcl.2018.12.006

190 Filteau J, Coo H, Dow K. Trends in incidence of neonatal abstinence syndrome in Canada and associated healthcare resource utilization. *Drug and Alcohol Dependence*. 2018;185:313-321. doi.org/10.1016/j.drugalcdep.2017.12.019

191 Haas A. Identification of neonatal abstinence syndrome in the community: Infants born into Canada's opioid crisis. *Paediatrics and Child Health*. 2019;24(2):81-4. doi.org/10.1093/pch/pxy098

192 Canadian Institute of Health Information. *Acute Care*. 2021. Accessed from https://www.cihi.ca/en/topics/acute-care

193 Public Health Agency of Canada. Canadian Perinatal Surveillance System. *Perinatal health indicators for Canada 2017*. Author; 2021. Retrieved from https://www.canada.ca/en/public-health/services/injury-prevention/health-surveillance-epidemiology-division/maternal-infant-health/perinatal-health-indicators-2017.html

194 Dow K, Ordean A, Murphy-Oikonen J, et al. Neonatal abstinence syndrome clinical practice guidelines for Ontario. *Journal of Population Therapeutics and Clinical Pharmacology*. 2012;19(3):e488-e506. PMID:3241498

195 Elliott M, Cunliffe P, Demianczuk N, Robertson C. Frequency of newborn behaviours associated with neonatal abstinence syndrome: A hospital-based study. *Journal of Obstetrics & Gynaecology of Canada*. 2004;26(1):25-34. doi.org/10.1016/s1701-2163(16)30693-4

196 Jansson L, Velez M. Neonatal abstinence syndrome. *Current Opinion in Pediatrics*. 2012;24(2):252-258. doi.org/10.1097/mop.0b013e32834fdc3a

197 Kraft W, van den Anker J. Pharmacologic management of the opioid neonatal abstinence syndrome. *Pediatric Clinics of North America*. 2012;59(5):1147-1165. doi.org/10.1016%2Fj.pcl.2012.07.006

198 Lall A. Neonatal abstinence syndrome. *British Journal of Midwifery*. 2008;16(4):220-223. doi.org/10.12968/bjom.2008.16.4.29044

199 Logan B, Brown M, Hayes M. Neonatal abstinence syndrome: Treatment and pediatric outcomes. *Clinical Obstetrics and Gynecology*. 2013;56(1):186-192. doi.org/10.1097/grf.0b013e31827feea4

200 Orlando, S. An overview of clinical tools used to assess neonatal abstinence syndrome. *Journal of Perinatal & Neonatal Nursing*. 2014;28(3):212-219. doi.org/10.1097/jpn.0000000000000043

201 Seligman N, Salva N, Hayes E, et al. Predicting length of treatment for neonatal abstinence syndrome in methadone-exposed neonates. *American Journal of Obstetrics & Gynecology*. 2008;199: 396.e1-396.e7. doi.org/10.1016/j.ajog.2008.06.088

202 Dryden C, Young D, Hepburn M, Mactier H. Maternal methadone use in pregnancy: Factors associated with the development of neonatal abstinence syndrome and implications for healthcare resources. *BJOG: An International Journal of Obstetrics and Gynaecology*. 2009;116(5):665-671. doi.org/10.1111/j.1471-0528.2008.02073.x

203 Dysart K, Hsieh H, Kaltenbach K, Greenspan J. Sequela of preterm versus term infants born to mothers on a methadone maintenance program: Differential course of neonatal abstinence syndrome. *Journal of Perinatal Medicine*. 2007;35(4):344-346. doi.org/10.1515/jpm.2007.063

204 Jansson L, Velez M, Harrow C. The opioid exposed newborn: Assessment and pharmacologic management. *Journal of Opioid Management*. 2009;5(1):47-55. PMCID:PMC2729086

205 Lim S, Prasad M, Samuels P, et al. High-dose methadone in pregnant women and its effect on duration of neonatal abstinence syndrome. *American Journal of Obstetrics & Gynecolology*. 2009;200(1):70.e1-5. doi.org/10.1016/j.ajog.2008.08.041

206 Tierney S. *Identifying neonatal abstinence syndrome (NAS) and treatment guidelines*. University of Iowa Children's Hospital;2013. Retrieved from https://www.healthcare.uiowa.edu/marcom/uichildrens/neonatology-handbook/neonatal_abstinence_syndrome_treatment_guidelines_feb2013_revision-1.pdf

207 Johnson K, Greenough A, Gerada C. Maternal drug use and length of neonatal unit stay. *Addiction*. 2003;98(6):785–789. doi.org/10.1046/j.1360-0443.2003.00391.x

208 Bagley S, Wachman E, Brogly S. Review of the assessment and management of neonatal abstinence syndrome. *Addiction Science & Clinical Practice*. 2014;9:19. doi.org/10.1186%2F1940-0640-9-19

209 O'Grady M, Hopewell J, White M. Management of neonatal abstinence syndrome: A national survey and review of practice. *Archives of Disease in Childhood. Fetal and Neonatal Edition*. 2009;94(4): F249-F252. doi.org/ 10.1136/adc.2008.152769

210 Sarkar S, Donn S. Management of neonatal abstinence syndrome in neonatal intensive care units: A national survey. *Journal of Perinatology*. 2006;26(1):15-17. doi.org/10.1038/sj.jp.7211427

211 Schiff D, Grossman M. Beyond the Finnegan scoring system: Novel assessment and diagnostic techniques for the opioid-exposed infant. *Seminars in Fetal and Neonatal Medicine*. 2019;24:115-120. doi.org/10.1016%2Fj.siny.2019.01.003

212 Whalen BL, Holmes AV, Blythe S. Models of care for neonatal abstinence syndrome: What works? *Semin Fetal Neonatal Med*. 2019;24:121–32. doi.org/10.1016/j.siny.2019.01.004

213 Grossman MR, Lipshaw MJ, Osborn RR, Berkwitt AK. A novel approach to assessing infants with neonatal abstinence syndrome. *Hosp Pediatrics*. 2018;8:1–6. doi.org/10.1542/hpeds.2017-0128

214 Wachman EM, Grossman M, Schiff DM, et al. Quality improvement initiative to improve inpatient outcomes for Neonatal Abstinence Syndrome. *Journal of Perinatology*. 2018;38:1114–22. doi.org/10.1038/s41372-018-0109-8

215 Wachman E, Schiff D, Silverstein M. Neonatal Abstinence Syndrome: Advances in Diagnosis and Treatment. *JAMA*. 2018;319(13):1362-1374. doi.org/10.1001/jama.2018.2640

216 Achilles J, Castaneda-Lovato J. A quality improvement initiative to improve the care of infants born exposed to opioids by implementing the eat, sleep, console assessment tool. *Hospital Pediatrics*. 2019;9:624-31. doi.org/10.1542/hpeds.2019-0144

217 Blount T, Painter A, Freeman E, Grossman M, Sutton A. Reduction in length of stay and morphine use for NAS with the "eat, sleep, console" method. *Hospital Pediatrics*. 2019;9(8):615-23. doi.org/10.1542/hpeds.2018-0238

218 Dodds R, Kock K, Buitrago-Mogollon T, Horstman S. Successful implementation of the eat sleep console model of care for infants with NAS in a community hospital. *Hospital Pediatrics*. 2019;9:632-38. doi.org/10.1542/hpeds.2019-0086

219 Grisham L, Stephan M, Coykendall M et al. Eat, sleep, console approach. *Advances in Neonatal Care*. 2019;19(2):138-144. doi.org/10.1097/anc.0000000000000581

220 Hein S, Clouser B, Tamim MM, et al. Eat, Sleep, Console and Adjunctive Buprenorphine Improved Outcomes in Neonatal Opioid Withdrawal Syndrome. *Advances in Neonatal Care*. 2021;21:41–8. doi.org/10.1097/anc.0000000000000824

221 Miller PA, Willier T. Baby STRENGTH: Eat, Sleep, Console for infants with neonatal abstinence syndrome. *Advances in Neonatal Care*. 2021;21:99–106. doi.org/10.1097/anc.0000000000000840

222 Minear A, Wachman EM. Management of newborns with prenatal opioid exposure: One institution's journey. *Clinical Therapeutics*. 2019;41(9):1663-68. doi.org/10.1016/j.clinthera.2019.07.001

223 Parlman J, Deodhar P, Sanders V, Jerome J, McDaniel C. Improving care of infants with neonatal abstinence syndrome: A multicenter, community hospital-based study. *Hospital Pediatrics*. 2019;9:608-14. doi.org/10.1542/hpeds.2019-0083

224 Ryan K, Moyer A, Glait M, et al. Correlating scores but contrasting outcome for eat sleep console versus modified Finnegan. *Hospital Pediatrics*. 2021;11:350-57. doi.org/10.1038/sj.jp.7211427

225 Townsend S, Hodapp C, Weikel B, Hwang S. Shifting the care paradigm for opioid-exposed newborns in Southern Colorado. *Journal of Perinatology*. 2021 Jun;41(6):1372-1380. doi:10.1038/s41372-020-00900-y

226 Young LW, Ounpraseuth ST, Merhar SL, et al. Eat, Sleep, Console approach or usual care

for neonatal opioid withdrawal. *N Engl J Med*. 2023;388:2326-37. doi: 10.1056/NEJMoa2214470

227 Curran M, Holt C, Arciero M et al. Proxy Finnegan complement scores for eat, sleep, console in a cohort of opioid-exposed neonates. *Hospital Pediatrics*. 2020;10(12):1053-58. doi.org/10.1542/hpeds.2020-0190

228 . McRae K, Sebastian T, Grossman M, Loyal J. Parent perspectives on the Eat, Sleep, Console approach for the care of opioid-exposed infants. *Hospital Pediatrics*. 2021;11(4):358-65. doi.org/10.1542/hpeds.2020-002139

229 Cattaneo A, Davanzo R, Worku B, et al. Kangaroo mother care for low birthweight infants: A randomized controlled trial in different settings. *Acta Paediatrica*. 1998;87:976–985. doi.org/10.1080/080352598750031653

230 Hiles M. Conference Abstracts: An Evidence based intervention for promoting sleep in infants experiencing neonatal abstinence syndrome (NAS) due to maternal methadone use [Abstract]. *Clinical Nurse Specialist*. 2011;25(3):153–158. doi.org/10.1055/s-0035-1549218

231 Ibe O, Austin T, Sullivan K, et al. A comparison of kangaroo mother care and conventional incubator care for thermal regulation of infants < 2000 g in Nigeria using continuous ambulatory temperature monitoring. *Annals of Tropical Paediatrics*. 2004;24(3):245–251. doi.org/10.1179/027249304225019082

232 Phillips R. Uninterrupted skin-to-skin contact immediately after birth. *Newborn and Infant Nursing Reviews (NAINR)*. 2013;13(2):67-72. doi.org/10.1053/j.nainr.2013.04.001

233 Conde-Agudelo A, Díaz-Rossello J. Kangaroo mother care to reduce morbidity and mortality in low birthweight infants. *Cochrane Database Systematic Reviews*. 2014;4(4):CD002771. doi.org/10.1002/14651858.CD002771.pub4

234 Hake-Brooks S, Anderson G. Kangaroo care and breastfeeding of mother-preterm infant dyads 0-18 months: A randomized, controlled trial. *Neonatal Network*. 2008;27(3):151–159. doi.org/10.1891/0730-0832.27.3.151

235 Abrahams RR, Kelly SA, Payne S, et al. Rooming-in compared with standard care for newborns of mothers using methadone or heroin. *Canadian Family Physician*. 2007;53:1722-1730. PMID:17934036

236 Lacaze-Masmonteil T. Managing infants born to mothers who have used opioids during pregnancy. Practice Point. Canadian Pediatric Society, Fetus & Newborn Committee. *Pediatr Child Health*. 2019;23(3):220-226. Retrieved from https://cps.ca/en/documents/position/opioids-during-pregnancy

237 MacMillan KDL, Rendon CP, Verma K, et al. Association of rooming-in with outcomes for neonatal abstinence syndrome: A systematic review and meta-analysis. *JAMA Pediatr*. 2018 Apr;172(4):345-51. doi.org/10.1001/jamapediatrics.2017.5195

238 Sublett, J. Neonatal abstinence syndrome: Therapeutic interventions. *MCN, The American Journal of Maternal/Child Nursing*. 2013;38(2):102-107. doi.org/10.1097/nmc.0b013e31826e978e

239 Abrahams R, MacKay-Dunn M, Nevmerjitskaia V, et al. An evaluation of rooming-in among substance-exposed newborns in British Columbia. *Journal of Obstetrics & Gynaecololgy of Canada*. 2010;32(9):866-871. doi:10.1016/S1701-2163(16)34659-X

240 Byrne PJ, Foss K, Clarke D, Wismark J, Cardinal K. Whole-family treatment of neonatal abstinence syndrome. *Can Med Assoc J*. 2018;190:E477–E478. doi.org/10.1503/cmaj.69170

241 Hodgson ZG, Abrahams RR. A Rooming-in Program to Mitigate the Need to Treat for Opiate Withdrawal in the Newborn. Journal of Obstetrics and Gynaecology Canada. 2012;34:475-81. doi.org/10.1016/s1701-2163(16)35245-8

242 Foss K, Clarke D, Sired T, Cheung PY, et al. *Reducing neonatal abstinence syndrome in babies born to mothers enrolled in opioid replacement therapy programs*. In Proceedings of the 5th Annual Canadian National Perinatal Research Meeting, Banff, Canada, 14–17 February 2018; Available online: https://www.cnprm.ca/past-meeting

243 Kennedy T. *EMBRACE helps newborns ease into life after opioids*. Alberta Health Services Newsletter. May 7 2019. Retrieved from https://www.albertahealthservices.ca/news/page15025.aspx

244 Wine O, McNeil D, Kromm SK et al. The Alberta Neonatal Abstinence Syndrome Mother-Baby Care ImprovEmeNT (NASCENT) program: Protocol for a stepped wedge cluster randomized trial of a hospital-level Neonatal Abstinence Syndrome rooming-in intervention. *BMC Health Serv Res*. 2023;23:448. doi.org/10.1186/s12913-023-09440-5

245 World Health Organization (WHO). *Exclusive breastfeeding for six months best for babies everywhere. Statement*. Author; 2011. Retrieved from http://www.who.int/mediacentre/news/statements/ 2011/breastfeeding_20110115/en/

246 Jansson L, Choo R, Harrow C, et al. Concentrations of methadone in breast milk and plasma in the immediate perinatal period. *Journal of Human Lactation*. 2007;23(2):184–190. doi.org/10.1177%2F0890334407300336

247 Lefevere J, Allegaert K. Question: Is breastfeeding useful in the management of neonatal abstinence syndrome? *Archives of Diseases in Childhood*. 2015;100(4):414-415. doi.org/10.1136/archdischild-2015-308275

248 Academy of Breastfeeding Medicine Protocol Committee. ABM clinical protocol #21: Guidelines for breastfeeding and the drug-dependent woman. *Breastfeeding Medicine*. 2009;4(4):225-228. doi.org/10.1089%2Fbfm.2009.9987

249 Bogen D, Perel J, Helsel J, et al. Estimated infant exposure to enantiomer-specific methadone levels in breastmilk. *Breastfeeding Medicine*. 2011;6(6):377-385. doi.org/10.1089/bfm.2010.0060

250 Ilett K, Hackett L, Gower S, et al. Estimated dose exposure of the neonate to buprenorphine and its metabolite norbuprenorphine via breastmilk during maternal buprenorphine substitution treatment. *Breastfeeding Medicine*. 2012;7:269-274. doi.org/10.1089/bfm.2011.0096

251 Jansson L, Choo R. Velez M, et al. Methadone maintenance and breastfeeding in the neonatal period. *Pediatrics*. 2008;121:106–114. doi.org/10.1542/peds.2007-1182

252 Lindemalm S, Nydert P, Svensson J, et al. Transfer of buprenorphine into breast milk and calculation of infant drug dose. *Journal of Human Lactation*. 2009;25(2):199–205. doi.org/10.1177/0890334408328295

253 McCarthy J, Leamon M, Parr M, et al. High-dose methadone maintenance in pregnancy: Maternal and neonatal outcomes. *American Journal of Obstetrics & Gynecology*. 2005;193:606–610. doi.org/10.1016/j.ajog.2005.03.072

254 Pritham U. Breastfeeding promotion for management of neonatal abstinence syndrome. *Journal of Obstetric, Gynecologic & Neonatal Nursing*. 2013;42(5):517-526. doi.org/10.1111/1552-6909.12242

255 Reece-Stremtan S, Marinelli K, Academy of Breastfeeding Medicine. (2015). ABM Clinical Protocol #21: Guidelines for breastfeeding and substance use or substance use disorder, revised 2015. *Breastfeeding Medicine*. 2015;10(3):135-141. doi.org/10.1089%2Fbfm.2015.9992

256 Abdel-Latif M, Pinner J, Clews S, et al. Effects of breast milk on the severity and outcome of neonatal abstinence syndrome among infants of drug-dependent mothers. *Pediatrics*. 2006;117(6):e1163-e1169. doi.org/ 10.1542/peds.2005-1561

257 Oei J, Lui K. Management of the newborn infant affected by maternal opiates and other drugs of dependency. *Journal of Paediatric Child Health*. 2007;43:9-18. doi.org/10.1111/j.1440-1754.2007.00994.x

258 Balain M, Johnson K. Neonatal abstinence syndrome: The role of breastfeeding. *Infant*. 2014;10(1):9-13. Retrieved from https://www.infantjournal.co.uk/pdf/inf_055_nen.pdf

259 Kocherlakota P. Neonatal abstinence syndrome. *Pediatrics*. 2014;134:e547-e561. doi.org/10.1542/peds.2013-3524

260 Mozurkewich E, Rayburn W. Buprenorphine and methadone for opioid addiction during pregnancy. *Obstetrics & Gynecology Clinics of North America*. 2014;41:241-253. doi.org/10.1016/j.ogc.2014.02.005

261 Sutter M, Leeman L, His A. Neonatal opioid withdrawal syndrome. *Obstetrics & Gynecology Clinics of North America*. 2014;41:317-334. doi.org/10.1016/j.ogc.2014.02.010

262 Welle-Strand G, Skurtveit S, Jansson L, et al. Breastfeeding reduces the need for withdrawal treatment in opioid-exposed infants. *Acta Paediatrica*. 2013;102:1060-1066. doi.org/10.1111/apa.12378

263 Chu L, McGrath JM, Qiao J, et al. A Meta-Analysis of Breastfeeding Effects for Infants with Neonatal Abstinence Syndrome. *Nursing Research*. 2022;71(1):54-65. doi.org/10.1097%2FNNR.0000000000000555

264 MacVicar S, Humphrey T, Forbes-McKay KE. Breastfeeding and the substance-exposed mother and baby. *Birth*. 2018;45(4):450-458. doi.org/10.1111/birt.12338

265 Hilton T. Breastfeeding considerations of opioid dependent mothers and infants. *MCN: The American Journal of Maternal Child Nursing*. 2012;37(4):236-240. doi.org/10.1097/nmc.0b013e318251056c

266 Bogen DL, Whalen BL. Breastmilk feeding for mothers and infants with opioid exposure: What is best? *Seminars in Fetal and Neonatal Medicine*. 2019;24(2):95-104. doi.org/10.1016/j.siny.2019.01.001

267 Prentice J, Lu M, Lange L, Halfon N. The association between reported childhood sexual abuse and breastfeeding initiation. *Journal of Human Lactation*. 2002;18(3):219-226. doi.org/10.1177%2F089033440201800303

268 Ades V, Goddard B, Pearson Ayala S, et al. Committee on Health Care for Underserved Women, American College of Obstetricians and Gynecologists. Committee opinion no. 729: Importance of social determinants of health and cultural awareness in the delivery of reproductive health care. *American Journal of Obstetrics and Gynecology*. 2018;131(6):e.43-80. doi:10.1097/AOG.0000000000002660 2

269 Brocato B, Lewis D, Eyal F, et al. The impact of a prenatal education program for opioid-dependent mothers on breastfeeding rates of infants at risk for Neonatal Abstinence Syndrome. *Advances in Therapy*. 2021;39:3104-3111. doi.org/10.1007/s12325-022-02146-w

270 Greenough A, Kassim Z. (2005). Effects of substance abuse during pregnancy.

The Journal of the Royal Society for the Promotion of Health. 2005;125(5):212-214. doi.org/10.1177/146642400512500510

271 American Academy of Pediatrics Committee on Drugs. Neonatal drug withdrawal. *Pediatrics*. 1998;101(6):1079-1088. doi.org/10.1542/peds.101.6.1079

272 Hudak M, Tan R. Neonatal drug withdrawal. *Pediatrics*. 2012;129(2):e540-e560. doi.org/10.1542/2012-3212

273 Osborn D, Jeffery H, Cole M. (2010). Opiate treatment for opiate withdrawal in newborn infants. *Cochrane Database of Systematic Reviews*. 2010;Issue 10 Article No. CD002059. doi.org/10.1002/14651858.CD002059.pub3

274 Tolia V, Patrick S, Bennett M, et al. Increasing incidence of the neonatal abstinence syndrome in US neonatal units. *NEJM*. 2015;372(22):2118-2126. doi:10.1056/NEJMsa1500439

275 College of Physicians & Surgeons of Alberta. *Alberta methadone maintenance treatment. Standards and guidelines for dependence*. College of Physicians & Surgeons of Alberta; 2014.

276 Davis J, Shenberger J, Terrin N, et al. Comparison of the safety and efficacy of methadone vs morphine for treatment of neonatal abstinence syndrome. *JAMA Pediatr*. 2018;172(8):741-748. doi:10.1001/jamapediatrics.2018.1307

277 Brown MS, Hayes MJ, Thornton LM. Methadone versus morphine for treatment of neonatal abstinence syndrome: a prospective randomized clinical trial. *Journal of Perinatology*. 2015;35(4):278-83. doi:10.1038/jp.2014.194

278 Bio L, Siu A, Poon C. Update on the pharmacologic management of neonatal abstinence syndrome. *Journal of Perinatology*. 2011;31:692–701. doi.org/10.1038/jp.2011.116

279 Esmaeili A, Keinhorst A, Schuster T, et al. Treatment of neonatal abstinence syndrome with clonidine and chloral hydrate. *Acta Paediatrica*. 2010;99:209-214. doi.org/10.1111/j.1651-2227.2009.01547.x

280 Bada H, Sithisarn T, Gibson J, et al. Morphine versus clonidine for neonatal abstinence syndrome. *Pediatrics*. 2015;135(2):e383-e391. doi.org/10.1542/peds.2014-2377

281 Bass P. *Neonatal abstinence syndrome. Special report*. Modern Medicine Network; 2015. Retrieved from www.modernmedicine.com/taxonomy/term/5519

282 Kaltenbach K, Holbrook A, Coyle M, et al. Predicting treatment for neonatal abstinence syndrome in infants born to women maintained on opioid agonist medication. *Addiction*. 2012;107(Suppl 1):45–52. doi.org/10.1111/j.1360-0443.2012.04038.x

283 Ordean A, Kahan M, Graves L, et al. (2015). Obstetrical and neonatal outcomes of methadone-maintained pregnant women: A Canadian multisite cohort study. *Journal of Obstetrics and Gynecology Canada*. 2015;37(3):252-257. doi.org/10.1016/s1701-2163(15)30311-x

284 Wachman E, Newby P, Vreeland J, et al. The relationship between maternal opioid agonists and psychiatric medications on length of hospitalization for neonatal abstinence syndrome. *Journal of Addiction Medicine*. 2011;5(4):293–299. doi.org/10.1097/adm.0b013e3182266a3a

285 Agthe A, Kim G, Mathias K, et al. Clonidine as an adjunct therapy to opioids for neonatal abstinence syndrome: A randomized, controlled trial. *Pediatrics*. 2009;123: e849-e856. doi.org/10.1542/peds.2008-0978

286 Finnegan L. *Licit and illicit drug use during pregnancy: Maternal, neonatal and early childhood consequences*. Canadian Centre on Substance Abuse; 2013. Retrieved from https://www.ccsa.ca/sites/default/files/2019-04/CCSA-Drug-Use-during-Pregnancy-Report-2013-en.pdf

287 Ashraf H. *Neonatal abstinence syndrome*. 2014. Retrieved from http://emedicine.medscape.com/ article/978763-overview#a6

288 Zimmermann-Baer U, Notzli U, Rentsch K, et al. Finnegan neonatal abstinence scoring system: Normal values for first 3 days and weeks 5-6 in non-addicted infants. *Addiction*. 2010;105:524-528. doi.org/10.1111/j.1360-0443.2009.02802.x

289 Chow C, Gideon K. Sedating drugs and breastfeeding. *Canadian Family Physician*. 2015;61(3):241-243. PMCID:PMC4369625

290 Marcellus L, Loutit T, Cross S. A national survey of the nursing care of infants with prenatal substance exposure in Canadian NICUs. *Advances in Neonatal Care*. 2015;15(5):336-44. doi.org/10.1097/anc.0000000000000165

291 Canada Northwest FASD Research Network Action Team on Prevention from a Women's Health Determinants Perspective. Taking a relational approach: The importance of timely and supportive connections for women. Author; 2010. Retrieved from http://www.canfasd.ca/wpcontent/uploads/2013/02/RelationalApproach_March_2010.pdf

292 Armstrong E. Conceiving risk, bearing responsibility. Fetal alcohol syndrome and the diagnosis of moral disorder. John Hopkins University Press; 2003.

293 Comfort M, Loverro J, Kaltenbach, K. A search for strategies to engage women in substance abuse treatment. Social Work and Health Care. 2000;31(4):59-70. doi.org/10.1300/j010v31n04_04

294 Grella C, Joshi V, Hser Y. Program variation in treatment outcomes among women in residential drug treatment. Evaluation Review. 2000;24(4):364-383. doi.org/10.1177/0193841x0002400402

295 O'Connor M, Whaley S. Brief intervention for alcohol use by pregnant women. American Journal of Public Health. 2007;97(2), 252-258. doi.org/10.2105/ajph.2005.077222

296 Payne, S. In-hospital stabilization of pregnant women who use drugs. In N. Poole and L. Greaves (Eds.) Highs and Lows: Canadian Perspectives on Women and Substance Use. Centre for Addiction and Mental Health;2007:249-255.

297 Wisdom J, Hoffman K, Rechberger E, et al. Women-focused treatment agencies and process improvement: Strategies to increase client engagement. Women & Therapy. 2009;32(1):69-87. doi.org/10.1080%2F02703140802384693

298 Clarke D, Foss K, Lifeso N, Hicks M. Fostering hope: Comprehensive accessible mother-infant dyad care for neonatal abstinence (CAIN). Children. 2022;9:1517. doi:10.3390/children9101517

299 Kasarabada N, Hser Y, Boles S, Huang Y. Do patients' perceptions of their counselors influence outcomes of drug treatment? Journal of Substance Abuse Treatment. 2002;23(4):327-334. doi.org/10.1016/s0740-5472(02)00276-3

300 Parkes T, Poole N, Salmon A, et al. Double exposure: A better practices review on alcohol interventions during pregnancy. BC Centre of Excellence for Women's Health; 2008. Retrieved from https://cewh.ca/wp-content/uploads/2014/08/Double-Exposure.pdf

301 Poole N, Isaac B. Apprehensions: Barriers to treatment for substance using mothers. Centre of Excellence for Women's Health; 2001. Retrieved from https://cewh.ca/wp-content/uploads/2012/05/2001_Apprehensions-Barriers-to-Treatment-for-Substance-Using-Mothers.pdf

302 Tait C. Fetal alcohol syndrome among Canadian aboriginal people in Canada: Review and analysis of the intergenerational links to residential schools. Aboriginal Healing Foundation; 2003. Retrieved from https://www.publicsafety.gc.ca/lbrr/archives/cn76093876-eng.pdf

303 CanFASD Research Network's Action Team on Prevention from a Women's Health Determinants Perspective. Supporting pregnant and parenting women who use substances. What communities are doing to help. Author; 2013. Retrieved from http://www.canfasd.ca/wpcontent/uploads/ 2013/02/What_ Communities_Are_Doing_to_Help_February_7_2013.pdf

304 Cormier R, Dell C, Poole N. Women and substance use problems. Women's health surveillance report. BioMedical Central Women's Health. 2004;4(Suppl 1):S1-S8. doi.org/10.1186/1472-6874-4-S1-S8

305 Whalen BL, Holmes AV, Blythe S. Models of care for neonatal abstinence syndrome: What works? Seminars in Fetal and Neonatal Medicine. 2019;24(2):121-132. doi:10.1016/j.siny.2019.01.004

306 Kondili E, Duryea DG. The role of mother-infant bond in neonatal abstinence syndrome (NAS) management. Archives of Psychiatric Nursing. 2019;33(3):267–274. doi:10.1016/j.apnu.2019.02.003

307 Pahl A, Young L, Buus-Frank ME, Marcellus L, Soll R. Non-pharmacological care for opioid withdrawal in newborns. The Cochrane Database of Systematic Reviews. 2020;12:12. doi:10.1002/14651858.CD013217.pub2

308 Shreshta S, Roberts MH, Maxwell JR, et al. Post-discharge healthcare utilization in infants with neonatal opioid withdrawal syndrome. Neurotoxicology and Teratology. 2021 Jul-Aug;86:106975. doi:10.1016/j.ntt.2021.106975

309 Gopman S. Prenatal and postpartum care of women with substance use disorders. Obstetrics and Gynecology Clinics of North America. 2014;41(2):213-228. doi:10.1016/j.ogc.2014.02.004

310 Alberta Health Services. *Safe Infant Sleep policy PS-27* (ahsnet.ca). Author; 2022.

311 MacMillan KD. Neonatal abstinence syndrome: Review of epidemiology, care models, and current understanding of outcomes. Clinics in Perinatology. 2019;46(4):817- 832. doi:10.1016/j.apnu.2019.02.003

312 Willinger M, James L, Catz C. (1991). Defining the sudden infant death syndrome (SIDS): Deliberations of an expert panel convened by the National Institute of Child Health and Human Development. Pediatric Pathology. 1991;11(5):677-684. doi:10.3109/15513819109065465

313 Joint Statement (Public Health Agency of Canada, Health Canada, the Canadian Pediatric Society, & Baby's Breath). joint-statement-on-safe-sleep-eng.pdf (canada.ca). Author: 2023. Retrieved from https://www.canada.ca/content/dam/phac-aspc/migration/phac-aspc/hp-ps/dca-dea/stages-etapes/childhood-enfance_0-2/sids/pdf/jsss-ecss2011-eng.pdf

314 American Academy of Pediatrics Task Force on Sudden Infant Death Syndrome. (2011). SIDS and other sleep-related infant deaths: Expansion of recommendations for a safe infant sleeping environment. Technical Report. Pediatrics. 2011;128(5):e1341-e1367. http://dx.doi.org/10.1542/peds.2011-2285

315 Alberta Health Services. *Safe Infant Sleep*. Author; (n.d.).

316 Trifunov, W. *The practice of bed sharing: A systematic literature and policy review*. Public Health Agency of Canada; 2009. Retrieved from https://www.albertahealthservices.ca/ps-1029951-safe-sleep-bed-sharing.pdf