Commentary

Identification of neonatal abstinence syndrome in the community: Infants born into Canada's opioid crisis

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Abstract

Opioid use in Canada continues to rise. Infants exposed to opioids in utero are at high risk for neonatal abstinence syndrome. Signs and symptoms of withdrawal may not develop before the infant is discharged home. Health professionals may be falling short in adequately identifying and supporting opioid-exposed infants and their families. In the absence of universal toxicology screening, nurses in the community play an instrumental role in assessing, referring, and supporting these families.

Keywords: *Infants; Neonatal abstinence syndrome; Nursing; Opioid crisis; Screening.*

Canada is currently in the throes of an unprecedented opioid epidemic and infants are perhaps its most innocent victims. Over the past decade, the use of opioids has steadily and dramatically risen, as have opioid-related morbidities and mortalities (1,2). Infants exposed to opioids in utero are at risk for withdrawal symptoms and neonatal abstinence syndrome (NAS) shortly after birth. In 2016 to 2017, an estimated 1,850 infants were born with NAS in Canada (excluding Quebec) (3). It may take up to 5 to 7 days after birth for signs and symptoms of NAS to develop, by which time the infants have usually been discharged home (4,5). NAS symptoms are drastically under-reported due to the significant stigma associated with drug addiction, leaving many of these families to suffer in secrecy and silence (6). Health care professionals may not be adequately identifying and supporting these infants and their families, thus missing opportunities for intervention.

CANADA'S OPIOID CRISIS

The demographic of drug misuse in Canada is changing. Identifying 'high-risk' families based solely on stereotypical attributes of 'drug addicts' can cause health care professionals to underserve their clientele. Canada's opioid crisis is not exclusive to impoverished, high-risk, or mentally ill communities. This

crisis is affecting individuals across all demographics, regardless of socioeconomic status (1). Different paths may lead to addiction, be it traumatic injury, chronic pain, or recreational use. Without vigilant assessment of the possibility of opioid use in all populations, many individuals will continue to live in secrecy and shame, with no support or assistance.

In 2016, there were 2,861 opioid-related deaths in Canada; 26% of those were women, and over half were of childbearing age (2). One in six Canadians reported opioid use last year, and Canada is the highest ranked country globally in opioid consumption for pain relief (7). These steadily increasing numbers are staggering and have been the focus of many recent media reports and research. Increased awareness has led to improved measures to combat over-prescribing, increase narcotic safety, and advocate for appropriate chronic pain management (8). However, a gap remains in the literature related to universal identification of opioid exposure and withdrawal in infants, and as a result, we are unable to quantify and measure the short- and long-term effects on our most vulnerable clientele.

INFANTS EXPOSED TO OPIOIDS

Infants exposed to opioids in utero are at risk of developing NAS shortly after birth. NAS is typically characterized by poor

feeding, poor sleep, irritability, diarrhea, and tremors (5). NAS typically presents within 24 to 72 hours of life but may take as long as 5 to 7 days (3). The average length-of-stay in hospital for NAS treatment is 16 days, but prolonged stays are common (9). The symptoms of NAS can last from weeks to months, with variations due to timing and duration of exposure in utero, exposure substance(s), and treatment type (10).

In addition, infants of mothers living with addiction and experiencing undiagnosed NAS are at higher risk for child abuse, neglect, and Sudden Infant Death Syndrome (10). The direct cause of these are underexplored in the literature but could be related to the challenges of caring for an infant with NAS, poor maternal coping, and, potentially, parenting while impaired. This is an area requiring further study.

The Canadian Paediatric Society recently published a practice point highlighting recommendations for the care of infants with NAS, supporting families to stay together through treatment (3). Research is underway for best practice treatment strategies for infants and families struggling with NAS. This includes pharmacological treatments such as morphine, buprenorphine, and phenobarbital, as well as nonpharmacological interventions including room-sharing (3). All of these treatment strategies are reliant on the initial identification of fetal opioid exposure and diagnosis of NAS.

OPIOID SCREENING

The American Academy of Pediatrics recommends 4 to 7 days of inpatient monitoring for neonates with known in utero exposure to opioids (4,5). The Canadian Paediatric Society recommends monitoring for a minimum of 72 hours (3). Discharge from postpartum units typically occurs within 24 to 48 hours after birth. Without maternal self-declaration of opioid use, the signs and symptoms of withdrawal may be unrecognized before discharge from the hospital, leaving health care professionals unaware.

Toxicology screening can be completed at or shortly after birth through urine, hair, meconium, or umbilical cord sampling to identify infant exposure to opioids and other drugs (11). Currently, toxicology screens are done by exception in most Canadian centres. Universal toxicology screening is generally not done due to cost as well as ethical and legal issues. Opioid-using mothers may deny or hide opioid usage during pregnancy and, as such, may not have a toxicology screening completed.

Screening recommendations

Early identification of women who use opioids during pregnancy serves to improve outcomes for both mothers and infants. Universal screening should begin prenatally through open dialogue between a woman and her care provider. The American College of Obstetricians and Gynecologists recommends that screening should be applied equally to all women, regardless of their age, race, ethnicity, or socioeconomic status (4).

A consistent, open and universal approach to screening is the best way to uniformly identify and treat infants experiencing NAS, and support families in Canada's opioid crisis. By consistently initiating open dialogues prenatally, the same approach can be applied postnatally, especially in regions hit hardest by the opioid crisis. In addition to universal toxicology screening for opioid exposure, or instead of, if screening is not an option, changes need to be made to standards of care to facilitate stronger education for nurses and other care providers related to identifying signs and symptoms of opioid exposure and infant withdrawal, and appropriate management of these clients.

Nurses' roles in infant screening

Nurses play a vital role in filling the gaps that currently exist in identifying infant opioid exposure and withdrawal. This is especially true in rural and remote communities where access to services is limited. All nurses, from acute to community settings, must work to provide continuity of care to best serve these families. It begins with education surrounding opioid misuse, and the changing demographics of users.

Education related to NAS is needed for nurses, so they can appropriately assess infants and understand the significance of their findings. Policies and procedures for universal withdrawal assessment need to be in place at all points of contact during the neonatal period (0 to 28 days). Nurses need to feel empowered to address and escalate concerns through appropriate channels regardless of client status, class, or position in the community. This confidence comes only with a consistent approach through set standards of practice, and reliable follow-up from social services, physicians, addiction specialists, and other established team members.

The role of nurses in the community

Symptoms of NAS can be identified using a modified Finnegan's scoring system or other validated assessment tool (11,12). The traditional Finnegan model requires monitoring an infant over the course of a day or more, at 3 to 4-hour intervals (11). Nurses in the community face a unique challenge because they only see a snapshot of the family's circumstance. A modified Finnegan tool can be used to establish the standards of practice community nurses need to guide assessments, decision-making, and clinical judgement in an objective way.

In Table 1, the Finnegan scoring system has been modified to create a screening tool specifically for community nurses. It can identify key characteristics of infants likely experiencing withdrawal symptoms. A community screening tool, as illustrated in Table 1, should include objective characteristics, such as high-pitched crying, increased respiratory rate, increased tone, tremors, or excoriated skin; and subjective characteristics provided by caregivers, such as excessive irritability or short sleep cycles. Projectile vomiting and diarrhea may also be observed or reported. This tool integrated into routine assessments would help nurses identify and refer families potentially experiencing NAS.

Table 1. Haas model

Haas model: Community-based neonatal abstinence syndrome assessment and decision-making				
System	Signs and symptoms	Score	Total score	Suggested actions
CNS Disturbances	Mother Reports:		1–3	Reassessment in 24–48 h
	High-pitched Crying	2 _____	3–5	Refer to PCP; Reassessment in 24–48 h
	Continuous Crying	3 _____		
	Sleeps <2 h after feed	2 _____	6–8	Urgent referral to PCP; Social work to follow up
	Nurse Observes:			
	Hyperactive Moro-reflex	2 _____	9–10	Referral to Emergency Services (advise caregiver to take infant to hospital for immediate assessment); Social Work Consultation
	Tremors (disturbed)	2 _____		
	Tremors (undisturbed)	3 _____		
	Increased Tone	2 _____		
	Excoriation	1 _____		
	Jerks/Convulsions	3 _____	11+	Crisis response (Social Work/ Child Protective Services/Police/ Ambulance as necessary)
Metabolic/Vasomotor/ Respiratory Disturbances	Nurse Observes:			Note: Suggested actions based on score are not appropriate in all scenarios. This model is to be used as a guideline for NAS only. Use clinical judgement in regards to referrals for signs and symptoms indicative of something else, i.e., convulsions, tremors, fever, respiratory distress, etc. Modified from ref. (13)
	Sweating	1 _____		
	Temp 37.5–39.3	1 _____		
	Temp 39.4+	2 _____		
	Mottling	1 _____		
	Nasal Flaring	2 _____		
	Respiratory Rate >60	1 _____		
	Resp Rate >60 with Retractions	2 _____		
Gastrointestinal Disturbances	Mother Reports/Nurse Observes:			
	Excessive sucking	1 _____		
	Poor Feeding	2 _____		
	Regurgitation	2 _____		
	Projectile Vomiting	3 _____		
	Loose Stools	2 _____		
	Watery Stools	3 _____		
	Total Score:			

CNS Central nervous system; NAS Neonatal abstinence syndrome; PCP Primary care provider

In addition to appropriate referrals, community nurses can implement point-of-contact strategies to improve mother and infant circumstances. Nonpharmacological treatment of NAS-associated symptoms may include swaddling, skin-to-skin contact, minimal noise and light stimulation, non-nutritive sucking and frequent smaller feeds (3). These strategies can be taught to parents regardless of diagnosis or referral thereby empowering mothers and potentially improving outcomes.

CONCLUSION

Health care providers need to identify and address gaps in care to better serve their clientele. While universal toxicology screening

for opioid use and exposure is the intuitive first line defence against NAS, this is understandably not always a feasible option. Families need consistent follow-up after discharge to identify signs and symptoms of withdrawal, and community nurses play an instrumental role in this process, especially in rural and remote locations. Community nurses are uniquely positioned in terms of contact and timing to identify the challenges associated with opioid withdrawal. Nurses must be appropriately educated in the vast demographics of opioid use and the signs and symptoms of NAS. They must be supported in their assessments, with established standards of care applied uniformly across diverse populations, to adequately identify and support families experiencing NAS. Every effort needs to be made to connect with

families within the first week of being home. Nurses need to be supported in this effort with appropriate resources.

Conflict Of Interest: The author identifies no conflicts of interest.

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