A Closer Look at Preventable Pregnancy-associated Deaths Due to Opioid Overdose in North Carolina

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Pregnancy-associated deaths due to overdose are a maternal health crisis facing the nation. One of four pregnancy-associated deaths in North Carolina is related to opioid overdose. This commentary is a call to action for health care systems and providers to implement evidence-based strategies for reducing perinatal substance use risk.

Introduction

Overdose use deaths have substantially increased over the past decade, and it is evident that providers can be integral to impacting these outcomes. Furthermore, it is imperative that providers become aware of and implement strategies that can substantially contribute to the reduction of these preventable deaths. The Centers for Disease Control and Prevention (CDC) estimates that 700 individuals in the United States die per year from complications of pregnancy or delivery [1]. The most recent (2017–2019) data indicate that over 80% of maternal deaths were preventable [2]. Black and Indigenous People of Color (BIPOC) were disproportionately represented in the data, which indicates the need to examine and explore the ways in which providers and health care systems prioritize the unique experiences of diverse communities.

Currently, there is no comprehensive, unified national approach to reviewing deaths that occur during the perinatal period (pregnancy and up to one year postpartum); however, there are 39 states and one US territory that receive CDC funding to review these deaths. Reviews occur within the context of a Maternal Mortality Review Committee (MMRC), which is composed of key stakeholders (inclusive of community members, clinicians, and maternal health experts). MMRCs convene regularly to review deaths and identify key opportunities to prevent future deaths [3]. MMRCs are funded through the Enhancing Reviews and Surveillance to Eliminate Maternal Mortality (ERASE MM) Program of the CDC.

In North Carolina, the MMRC is comprised of nurses, obstetricians, nurse-midwives, social workers, emergency medicine clinicians, mental health professionals, substance use treatment professionals, and doulas. Cases for review by the MMRC are identified in several ways (e.g., linkage between maternal death and infant birth certificate records, ICD–10 codes on death certificates, and the pregnancy checkbox on death certificates). Death certificate records include a pregnancy checkbox that indicates whether a decedent was pregnant, within 42 days of pregnancy, or within 43 days to 1 year of pregnancy at the time of the death. After the death has been confirmed to have occurred during the defined period, teams composed of a licensed clinical social worker (LCSW) and a nurse request records from multiple data sources that include the decedent's medical records, autopsy reports, prenatal records, hospital discharge records, and behavioral health care records. Information is then compiled and abstracted to create a de-identified, comprehensive, and contextualized narrative of the decedent's life and care leading up to their death. Once reviewed by the MMRC, discussion focuses on prevention opportunities and recommendations that will improve the quality of maternal health care in North Carolina. These recommendations are directed at the individual, provider, system, and community levels with the goal of quality improvement. The committee findings and recommendations are then disseminated to an array of individuals and organizations including legislators, perinatal health care providers, and the general public.

National Data

A recent CDC report consisting of a compilation of state MMRC data indicates that mental health conditions, including overdoses, are among the leading causes of pregnancy-related deaths in the perinatal period. The CDC defines pregnancy-associated deaths as any death that occurs within the perinatal period; pregnancy-related deaths are deaths that occur as a direct result of pregnancy. An overdose death in the perinatal period is determined to be pregnancy related if the MMRC finds that there was a direct

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DATA & TRENDS – *Swartz* SIDEBAR

correlation between the pregnancy and overdose (e.g., a chain of events initiated by pregnancy or aggravation of an unrelated condition by the physiologic effects of pregnancy).

An overdose is the intentional or unintentional use of one or more licit or illicit substances leading to serious harm or death [4]. Rates of pregnancy-associated deaths due to overdose vary. For example, from 2012 to 2017, unintentional overdoses were the leading cause of pregnancy-associated death in Maryland [5]. Shockingly, the Maryland MMRC report from 2019 indicated a 38% increase in pregnancy-associated deaths from overdose [5]. Nationally, there were 11,782 pregnancy-associated deaths between 2010 and 2019 and 11.4% were related to substance use [6]. Of note, these numbers are based on US death certificate records from this time period. Of those, 34.3% occurred during pregnancy, 19.2% occurred in the first 42 days postpartum, and 46.4% occurred between 43 and 365 days postpartum [6]. Of note, nearly all overdoses during the perinatal period involve opioids and most include more than one substance [7]. The risk of fatal overdose is significantly increased when opioids are combined with alcohol or benzodiazepines [7]. Although data on self-reported opioid use during pregnancy are limited, approximately 7% of individuals reported prescription opioid use during pregnancy [8]. Additionally, one-third of reproductive-age women filled an opioid prescription within a four-year time span [8].

Pregnancy-associated deaths as a result of overdose are more common among White individuals, while Black individuals are at significantly higher risk of pregnancy-associated deaths due to homicide [9]. Since the COVID-19 pandemic, however, overdose death rates have increased 44% for Black people and 39% for Indigenous people compared to 2019 CDC data [10]. The 2020–2021 maternal mortality data have yet to be released as of this writing, but overall rates of overdose have been rising since the start of the COVID-19 pandemic for the general public [11].

Rapid Assessment of Maternal Opioid Use and Overdose

In response to the increase of opioid overdose deaths during the perinatal period, the CDC awarded six MMRCs, including North Carolina's, the Rapid Maternal Overdose Review (RMOR) grant in 2019. This grant supported the close review of opioid overdose deaths that occurred in 2016. State substance use disorder treatment experts were included and their expertise continues to provide critical input regarding determinations of cases and the creation of intervention and policy recommendations.

With the funding from the RMOR grant, the North Carolina MMRC completed a focused review of maternal overdose deaths within the state. In 2016, there were 92 pregnancy-associated deaths in North Carolina, according to this review [12]. A quarter of these deaths were related to an overdose involving opioids. Of those overdose deaths, it was confirmed that nearly 50% never completed a validated substance use screening tool during the perinatal period.

Relevant Policy Commentary

Using opioids during pregnancy can lead to adverse maternal and infant outcomes that include preterm labor, stillbirth, neonatal abstinence syndrome (NAS), and maternal death. Approximately one infant is born with NAS every 25 minutes in the United States, or nearly 50 infants per day [13]. Adverse outcomes of opioid use, such as NAS, often lead providers to utilize universal biologic testing, particularly urine drug screens. However, biologic testing is not recommended and should not be used as the sole assessment of the severity of substance use due to potential provider bias in who is selected for testing [14]. There is evidence that racial differences exist in rates of testing for illicit drug use [15]. From a birth and health equity lens, it is important that all verbal or self-reported screenings be conducted universally to avoid provider bias. Often, the goal of a urine drug screen is to protect a fetus from opioid exposure, but the associated legal consequences may serve to further stigmatize certain individuals and communities and hinder

them from engaging in available substance use treatment and care [16, 17]. Delayed prenatal care could lead to worse outcomes for both the fetus and the birthing person [18].

Rather than relying on biologic testing, the American College of Obstetricians and Gynecologists (ACOG) and the Substance Abuse and Mental Health Services Administration (SAMHSA) recommend early universal screening, brief intervention, and referral to treatment (SBIRT) to detect substance use for any pregnant person. SBIRT is an evidence-based early intervention approach that can identify and assist pregnant individuals using substances, including opioids. It is a reimbursable service through commercial insurance Current Procedural Terminology (CPT) codes, Medicare G-codes, and Medicaid Healthcare Common Procedure Coding System (HCPCS) codes, regardless of the setting. All birthing individuals should be routinely asked about their substance use, even if they have an opioid prescription. Selective screening based on risk factors should be avoided as it leads to missing cases and perpetuates stigma and stereotypes in communities. It is also important to note that all providers can receive training in the SBIRT model, including physicians, physician assistants (PA), nurse practitioners (NP), nurses, psychologists, and social workers.

The first step of SBIRT is to utilize a universal validated screening tool so that a provider may determine the severity of the birthing person's substance use. There are six validated screening tools that can be used for pregnant individuals. These tools include the 1) 4Ps Plus/5 Ps; 2) Substance Use Risk Profile–Pregnancy; 3) Substance Use Risk Profile Pregnancy Scale (SURP-P); 4) NIDA Quick Screen; 5) Wayne Indirect Drug Use Screener (WIDUS); and 6) Drug Abuse Screening Test (DAST-10). For those under age 26, the CRAFFT, which stands for car, relax, alone, forget, friends, trouble, may be used. To be successful with SBIRT, it is critical that providers utilize a person-centered approach that is nonjudgmental and respects patient autonomy. Screenings are confidential and need to be completed when the individual is alone. They should also be offered in

the birthing individual's native language. Screening tools are shown to be at least 96%–98% effective in identifying opioid use within the perinatal population [19].

The results of the screening determine the next steps. If someone is determined by the screening to be at a "low" or "risky" use level, the provider should engage in a brief intervention, such as motivational interviewing, to help increase insight and awareness of risky substance use behaviors. If screening indicates "harmful" or "severe" risk, the individual should be referred to outpatient or residential substance use disorder treatment. North Carolina is fortunate to have the North Carolina Perinatal and Maternal Substance Use Disorder Initiative and CASAWORKS for Families Residential Initiatives that include family-centered residential services for women with a substance use disorder and their children. Providers should be knowledgeable about local substance use treatment resources in the community to assist patients with referrals. Interdisciplinary teams that include social workers are helpful when a provider's own self-assessment indicates this type of intervention is outside of their scope.

If a birthing person reports a history of opioid use, even if prescribed, it is essential that the health care provider explains the risk factors and signs of overdose, how to respond, withdrawal risks, and the importance of naloxone. Currently, North Carolina has a standing order for naloxone, meaning any pharmacist practicing in the state of North Carolina and licensed by the North Carolina Board of Pharmacy can dispense naloxone to any person who meets criteria, such as being at a risk for overdosing, or living with someone who is at risk for overdosing. Individuals can also go to their local health departments to access naloxone. Families and friends should be encouraged to also have naloxone available.

There are many benefits to SBIRT, including decreasing substance use severity among pregnant and postpartum people and reducing health care costs [20]. This cost savings is significant for emergency care settings, as SBIRT could reduce emergency department utilization [19]. The most beneficial aspect of using SBIRT is reducing these preventable maternal deaths related to opioid overdoses.

Conclusion

The risk of pregnancy-associated death as a result of overdose is a critically important and pressing maternal health crisis facing individual states and the nation. It is imperative that this crisis is elevated and given the attention that is warranted. The health care community—most importantly providers—need to understand that the situation is dire. Receiving training and using SBIRT are ways that providers can help address this crisis. Additionally, providers can educate patients regarding available resources, treatment options, and referrals. This is the least that providers can do to make an impact on maternal and child health. It is a start and one that must be of paramount priority to advance birth and health equity in North Carolina and in the broader United States. NCMJ

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