THE OPIOID CRISIS IN AMERICA
Domestic and International Dimensions

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All in the family

A comprehensive approach to maternal and child health in the opioid crisis

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BROOKINGS

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Executive summary

The increasing prevalence of opioid use in the United States has resulted in higher rates of opioid use during pregnancy, and higher rates of a transient pediatric withdrawal condition called neonatal abstinence syndrome (NAS). Fears of NAS have anchored national discourse on the opioid epidemic's impact on children and have driven punitive responses in many jurisdictions. Currently, 24 states have policies that consider opioid use in pregnancy a form of child abuse, and three states have pursued criminal prosecution of women with opioid use disorder (OUD) in pregnancy.

These policy approaches are premised on placing the needs of the newborn against those of the parent: in fact, it is impossible to uncouple the immediate and long-term health of a child from that of the mother. OUD frequently predates pregnancy, and is often exacerbated by structural vulnerabilities such as poverty and lack of access to health care—factors that also undermine child health outcomes. Parents with untreated OUD are more likely to overdose, be incarcerated, or be separated from their children, but access to effective treatment is limited across the country. Methadone and buprenorphine are highly effective medications that reduce the risk of opioid-related harms, but their use is restricted by stigma and tight regulations. Finally, even though parents with OUD may need resources and support to empower effective parenting long after childbirth, child welfare strategies for infants born to women with NAS tend to be focused on relatively short-term planning.

An effective policy approach to addressing the needs of women and children impacted by the opioid crisis needs to confront three intersecting policy challenges: the inconsistent response to the national overdose epidemic, the politicized landscape of women's reproductive health, and public mechanisms designed to protect children from maltreatment. In this paper, we propose that comprehensive policy approaches addressing these intersecting challenges be guided by the following principles:

1. Follow evidence, not ideology.

Scientific evidence describing interventions that promote child and maternal health should guide local, national, and international policy development. There is a clear need to reduce barriers to medication treatment for OUD, to endeavor to keep mothers and their infants together, and to empower parents to address infant needs after birth.

2. Expand attention to women, children, and families beyond NAS.

Effective strategies to promote child and family well-being need to address the structural inequities that intersect with opioid use, such as poverty and lack of access to health care, and build resilience among youth.

3. Provide comprehensive women's health services throughout the reproductive lifespan.

Policy approaches should ensure comprehensive women's health care—both during pregnancy and throughout women's lives. Specifically, effective approaches to treating OUD in pregnancy and within families must integrate a range of medical and social services, including contraception, mental health, and primary medical care, alongside opioid use treatment strategies.

4. Adopt supportive interventions, not punitive ones.

Evidence suggests that supportive strategies that facilitate treatment and engagement with medical and social service systems are associated with better outcomes than punitive approaches that use coercion to discourage substance use.

5. Provide support to preserve family unity.

Programs designed to develop and support good parenting abilities are likely to be more beneficial for the child than breaking up families. Policymakers should consider implementing approaches such as home visits and care coordination to support family needs.

Introduction

The opioid epidemic has indelibly shaped health outcomes in the United States in the past few decades, resulting in over 700,000 deaths[1] and contributing to an historic three-year decline in life expectancy.[2] Recent national surveys demonstrate that at least 2.35 million people in the United States have an opioid use disorder (OUD).[3] In addition to the dangers of overdose, this puts them at greater risk for other grave outcomes like trauma, suicide, and infectious disease.[4,5] The increasing prevalence of OUD has had a devastating impact on individuals and families, and a significant social cost. Accounting for lost productivity, increased use of the criminal justice system for drug-related offenses, and increased health care and substance-use treatment costs, the Centers for Disease Control and Prevention estimated that prescription opioid misuse alone comes at a cost of almost $80 billion every year.[6]

The nationwide increase in opioid use has resulted in greater opioid use during pregnancy, and higher rates of a pediatric withdrawal condition called neonatal abstinence syndrome (NAS). National discourse on the opioid epidemic's impact on children has largely focused on NAS, and it has triggered a number of policy responses. Unfortunately, not all of these responses have been based in evidence, and policies known to have a harmful long-term effect on mothers and children, such as criminalizing mothers who use drugs during pregnancy, are still common. Having a meaningful impact on the health of children affected by the opioid epidemic necessitates a comprehensive approach that values the health of the mother, prioritizes evidence-based treatment for opioid use disorder, and addresses the underlying determinants of substance use. In this paper, we propose a framework for a such a comprehensive approach addressing the complex needs of families impacted by the opioid epidemic.

The policy challenge: opioid use in pregnancy and families with children

Societal responses to women, children, and families affected by the opioid crisis must confront the intersection of three troubled arenas of policy. First, they must address the profound challenges inherent in mitigating the impact of a national opioid epidemic. Differing approaches to the opioid epidemic have created a patchwork of programs and policies, many of which are not based on sound evidence. Second, policies directed at the impact of opioid use on pregnancy and children must navigate the fraught landscape of childbearing and women's overall reproductive well-being, domains of public policy that have long been complicated by deep ideological divisions and legal controversy. Third, policies concerned with opioid use and the well-being of children and pregnant women directly engage public mechanisms designed to protect children from maltreatment and provide safe alternatives to the family when necessary. This discussion is directed at the intersection of these three policy domains, an intersection that distinguishes pregnancy and childhood issues from other arenas of opioid policy in the United States.[7]

Maternal health

Opioid-related deaths during pregnancy and within a year after childbirth have risen in parallel with the increase in opioid addiction in the general population. Between 2007 and 2016, the rate and percentage of all maternal deaths that were opioid-related more than doubled.[8] Opioid overdose now accounts for approximately one in 10 maternal deaths nationwide, and

is among the leading causes of maternal mortality in many states.[9] While opioid policies concerning pregnancy are largely focused on the well-being of the fetus and infant, it is essential that one first recognize the profound health and social implications of opioid use disorder (OUD) on the mother herself.

Neonatal abstinence syndrome and opioid exposure

Neonatal abstinence syndrome describes a spectrum of withdrawal symptoms that may be experienced by infants after exposure to substances *in utero*. The American Academy of Pediatrics' clinical guide to NAS explains that multiple maternal drugs can cause neonatal withdrawal, including alcohol, benzodiazepines, barbiturates, and anti-depressants.[10] Exposure in the womb to opioids is the most common cause of clinically significant NAS.[10]

NAS commonly presents two to three days after birth. Symptoms include irritability and tremors, gastrointestinal and feeding problems, sleep dysfunction, difficulty maintaining a normal temperature, and in severe cases, respiratory distress and seizures.[11] Notably, not all infants exposed to opioids *in utero* develop NAS. [12] Furthermore, the severity of the condition among infants with NAS can vary greatly. In severe cases, withdrawal symptoms can impair feeding and lead to poor growth in early infancy.[11]

Although the pathophysiology of NAS is not yet entirely clear, potential risk factors for the condition include genetic vulnerability,[13,14] maternal factors such as polysubstance use, psychiatric comorbidity, food insecurity, and conditions of neonatal care.[15] Infants with NAS often have extended hospital stays, and are managed with a combination of nonpharmacologic interventions and medications including methadone and morphine.[15]

The incidence of NAS has increased along with the rise in opioid use in the general population in the United States. Between 2004 and 2014 the incidence of NAS increased more than 400 percent,[16] and the latest available analyses demonstrate that in 2016, the incidence rate of NAS was 6.7 per 1000 hospital births.[17] There are important disparities in NAS among states[18] and different social groups. Rates of NAS among American Indian and Alaska Natives are more than double the national average.[17] National analyses also demonstrate that rates of NAS are higher in rural areas most affected by the opioid epidemic:[17] in West Virginia, for example, the incidence of NAS in 2017 was 51.3 per 1000 live births.[19] Finally, low-income patients bear a disproportionate burden of NAS. In a recent national sample, patients in the lowest income quartile represent 40 percent of all cases of NAS,[20] and Medicaid pays for the vast majority of NAS-related costs.[16]

Neurodevelopmental impact of *in utero* exposure to opioids

While some have assumed that NAS causes or represents permanent harm to newborns, this case is far from proven. The impacts of exposure to opioids *in utero* on neurodevelopment have been difficult to elucidate, in part because opioid exposure is confounded by other factors related to poor developmental outcomes. These include maternal factors like the use of more than one substance, natal factors like prematurity and low birth weight, and external factors including social deprivation and poverty.

A recent review found that studies examining neurodevelopmental outcomes in newborns and infants produced conflicting reports. These studies were of varying quality, often limited by sample size or failing to control for important confounders like poverty.[21] There are mixed results on long-term cognitive outcomes, with some studies showing impacts on behavior and self-control (executive functions) in children with exposure to opioids *in utero*.[21] Specifically, children with a history of prenatal opioid exposure may be more likely to have attention-

deficit/hyperactivity disorder,[22,23] difficulties with information processing,[24] and impaired visual-motor skills.[25]

Postnatal exposure to parental opioid addiction

The focus on *in utero* exposure has at times overshadowed the long-term impact on children of having a parent go without treatment for OUD. During periods of intensive or escalating drug use, the essentials of family functioning can become secondary to the pursuit of drugs. These effects can be particularly troubling for young children as their basic requirements for feeding, bathing, clothing, and supervision can go unmet.[26] Parents with untreated OUD may have difficulty maintaining stable housing and income, and the child's school attendance and performance may suffer. Untreated OUD can also interfere with healthy parent-child relationships and parental OUD has been associated with an elevated risk of a variety of developmental and behavioral problems.[27]

Medications used to treat maternal opioid use disorder—methadone and buprenorphine—can cause NAS but address the risks of untreated addiction. Considering both factors, the American College of Obstetrics and Gynecology[28] and the American Academy of Pediatrics[29] both highly recommend their use as the standard of care, on the grounds that the risks of untreated or poorly treated maternal addiction is substantially greater for both mother and baby than the potential risk of opioid exposure for neonatal development. Certain inpatient strategies can also affect maternal and child outcomes. Efforts to enhance mother-infant bonding, such as rooming mothers and babies together, can strengthen mothers' capacity to manage their babies' withdrawal symptoms and enhance their developmental outcomes.[30] Compared to traditional hospital policies—such as when infants were isolated in the neonatal intensive care unit—these interventions resulted in shorter hospital stays and a decreased need to use pharmacologic therapy to treat withdrawal symptoms.[30]

Essential components of care and policy

It is important to recognize that there are many effective clinical and policy strategies that can address the array of challenges associated with OUD in pregnancy and families. However, challenging political contexts, insufficient funding streams, and medical disciplinary practices have undermined an effective programmatic and policy response. This section reviews the essential elements of comprehensive care, highlighting both the supporting evidence base and the complexities inherent in providing these elements to all those in need.

Medication

The central strategy to mitigate the adverse effects of OUD before, during, and after pregnancy is the sustained provision of efficacious medications. Opioid use disorder is a chronic brain disease that can be addressed by a series of highly effective treatment options. Access to evidence-based treatment during pregnancy is critical, as untreated OUD is associated with a lack of prenatal care and increased risk for adverse fetal outcomes, including fetal growth restriction, placental abruption, fetal death, preterm labor, and the passage of fetal stool in the womb.[31] OUD treatment that is not evidence-based can also lead to overdose and death.[32]

Obstetricians recommend early universal screening and pharmacotherapy for the treatment of pregnant patients with OUD.[28] The mainstays of pharmacotherapy for pregnant patients with OUD are opioid agonists methadone and buprenorphine. Both methadone and buprenorphine

act on opioid receptors in the brain to reduce cravings and withdrawal symptoms.[33] Agonist therapy significantly improves maternal and fetal outcomes by reducing the risk of relapse, increasing engagement in prenatal care,[28] and substantially decreasing the risk of maternal mortality.[32,34] Treatment with methadone or buprenorphine also improves health outcomes by decreasing the risk of injection drug use[35,36] and transmission of infectious diseases like HIV and hepatitis C.[37] These effects can be enhanced when medication is coupled with counseling and social services. Exposure to methadone and buprenorphine will not prevent NAS. However, use of agonist therapy (compared to the use of illicit opioids in the absence of medication treatment) may reduce NAS severity and shorten the length of stay in intensive care. In sum, even though infants exposed to methadone and buprenorphine may still present with NAS, the benefits of medications for opioid use disorder (MOUD) substantially outweigh the risks of untreated or inadequately treated addiction.[38]

Unfortunately, regulatory hurdles related to methadone and buprenorphine prescribing have limited access to this life-saving treatment. Methadone can only be prescribed by physicians in specific programs called opioid treatment programs that are tightly regulated by the Drug Enforcement Administration (DEA). Buprenorphine can be prescribed in a variety of medical settings, but clinicians who wish to prescribe the medication are required to complete a training course and apply for a special waiver from the DEA. Fewer than 10 percent of physicians have a waiver to prescribe buprenorphine, leaving significant gaps in care.[39]

Medically supervised withdrawal is not recommended for pregnant women with OUD. Withdrawal is associated with a high rate of relapse, an outcome that can pose grave risks, including overdose, minimal prenatal care, infectious disease transmission, and obstetrical complications. Also, medically supervised withdrawal generally requires protracted inpatient care and intensive outpatient protocols. For these reasons, medical and public health authorities have stated that treatment using methadone or buprenorphine is the standard of care for pregnant women with OUD.

Supportive and punitive strategies

Policymakers charged with developing effective approaches to OUD in pregnancy face a central dilemma. There is a powerful public impulse to protect the fetus and child from the harms of opioid exposure. However, most of the most effective ways to actually protect the fetus and child from these harms depend upon improving the health and well-being of the mother.[40] Not surprisingly, the resulting set of policies have taken on both punitive and supportive elements, often contradicting one another.

First and foremost, policy approaches to OUD in pregnancy reflect a long history of policies directed at women's reproductive role and the behaviors that are deemed appropriate in fulfilling this role. As women's societal roles evolve, so too do these policies, particularly regarding women's agency, equality, and freedom.[41,42] Second, the way American society values children has undergone extensive change, including their role within families and claims to societal protection.[43] Together, increasing female freedoms—especially their entry into the workforce—and changes in children's social value have helped generate historically low fertility rates in the U.S., alongside an intensely dynamic set of public concerns and policy responses.[44]

Identifying OUD in pregnancy is a recommended part of high-quality obstetric care.[28] As noted earlier, the most effective means of identifying OUD in pregnancy is universal screening for all pregnant women regardless of social circumstances or characteristics. This approach is the best strategy to ensure that OUD in pregnancy is not missed and reduce potential stigma associated with screening procedures.[45] Clinical recommendations regarding screening also

stress the importance of confidentiality, patient autonomy, and the integrity of the patient-health provider relationship. However, state regulations vary substantially regarding the mandatory reporting of screening results and their implications for civil or criminal penalties. (See Table 1).

Until 1974, no state had a policy specifically focused on drug use in pregnancy. That year, Massachusetts implemented policies that required the reporting of drug use in pregnancy to state child protective services and defined it as child abuse or neglect. These largely punitive policies spurred the enactment of a diverse set of policies on drug use in pregnancy in other states around the country.[46] Currently, 23 states and Washington, D.C. have policies that consider OUD in pregnancy a form of child abuse; three states allow for the civil commitment of pregnant women with OUD. Twenty-five states and Washington have requirements that require the reporting of documented or suspected drug use in pregnancy to state authorities. Alabama, South Carolina, and (between 2014 and 2016) Tennessee, have pursued criminal prosecution of women with OUD in pregnancy.[47]

There have also been a variety of state policies designed to facilitate treatment and other services for pregnant women with OUD.[48] The most common policy is the requirement to report drug use during pregnancy for the purposes of data collection and referral for treatment.[49] Seventeen states and Washington also have policies that require preferential provision of treatment services to pregnant women. Although the impact of these different policies remains inadequately assessed, the available evidence suggests that punitive policies are not likely to be effective and can, in fact, prove counterproductive. Qualitative studies have repeatedly suggested that these punitive policies create strong disincentives for pregnant women with OUD to seek prenatal care or treatment.[50] Women in a variety of states report a deep fear of being reported to child protective services and losing custody of their children. The prospect of criminal prosecution is also very real in some settings. Together, these policies can generate an atmosphere of fear and deter women from enrolling in health or social service systems.[51]

Recent quantitative studies have also raised concerns regarding the adverse effects of punitive state policies. Evaluations of state policies toward alcohol use in pregnancy have suggested that punitive policies are associated with reduced use of prenatal care and worse outcomes.[52,53] Feherty et al. examined the impact of punitive policies on the incidence of neonatal abstinence syndrome (NAS) in eight states.[54] They found that punitive state polices, such as those that criminalized OUD use, labeled it grounds for civil commitment, or considered it child abuse or neglect, were associated with higher NAS rates within a year after implementation. However, mandated state reporting to relevant authorities was not found to be associated with any change in NAS rates.

Confronting the fragmentation in women's health policy

There can be little doubt that the prenatal period provides a critical window for constructive intervention. Accordingly, the persistent finding that only a minority of pregnant women with OUD actually receive medication during pregnancy represents a remarkable failure of clinical practice and policy. However, a more fundamental problem helps explain this failure: public strategies directed at improving birth outcomes tend to confine service provision to the duration of pregnancy alone and largely ignore the determinants of birth outcomes that exert their influences before and after pregnancy. This is evident in the historic structure of public programs, like Medicaid, for which women were generally eligible from the moment of conception but lost this coverage upon delivery or soon thereafter.[55]Similarly, many specialized public programs directed at improving birth outcomes confine their enhanced medical and social services exclusively to the prenatal period. It is essential, therefore, that any effective approach to OUD in pregnancy and families broaden this traditional scope and incorporate

other components essential to the health and well-being of women throughout their reproductive years.

Contraception

Access to contraception and other reproductive health care services remains as much a need for women and men with OUD as it does for most other populations in the United States. However, although between a third and a half of all pregnancies in the U.S. are unintended, the evidence suggests that this figure for women with OUD approaches 85 percent.[56,57] The interval between pregnancies also appears to be shorter for women with OUD. This shortened interpregnancy interval can be associated with a series of poor outcomes for mothers and their children.[58] Efforts to increase access to contraception are important, and in all cases should emphasize patient empowerment and choice.

There are a variety of highly effective and safe forms of contraception. There is strong evidence that long-acting forms are the most effective in preventing unplanned pregnancies. The most frequently used method is tubal ligation, considered a *non-reversible* (sterilization) form of contraception.[57] This procedure is most commonly used soon after birth. Postpartum sterilization occurs after almost one in ten births in the U.S. and accounts for more than half of all sterilization procedures.

There are also a variety of long-acting *reversible* contraceptive techniques (LARCs) that have proven highly effective. These include injectables, intrauterine devices, and implants placed just under the skin, which are particularly effective because they do not require ongoing patient compliance. Access to LARCs, however remains inadequate, with less than half of sexually active women who do not want to become pregnant receiving effective contraception in the postpartum period.[59] The reasons for this poor provision of effective contraception are complex but appear rooted in poorly coordinated clinical programs and unsupportive insurance structures among both public and commercial payers.[60] Oral contraceptives, commonly known as birth control pills, are a safe and effective reversible method of preventing unwanted pregnancy. However, women with OUD may have other medical conditions, such as liver disease, that may preclude the use of oral contraceptives. In addition, women with OUD may find it difficult to maintain the routine of taking pills daily and acquiring new packets every four weeks.[61] Condoms are also a useful contraceptive option as they further provide protection against some important sexually transmitted infections, such as HIV. Again, the requirement for consistent acquisition and use can prove burdensome.

Addressing preexisting risks and comorbidities

Many of the risk factors associated with adverse birth outcomes not only tend to exist prior to conception but also generally require prolonged and continuous interventions. Patients with OUD may have coexisting health challenges, including chronic mental health conditions, such as depression and anxiety disorders. There is evidence, however, that such patients may not receive the psychiatric or counseling that they need.[62] Access to sustained psychiatric care is an essential policy requirement although not all patients may need it. In addition to mental health conditions, other factors—before, during, and after pregnancy—may shape the prognosis for OUD patients and their children. These include chronic medical conditions such as diabetes and hypertension, adverse outcomes in earlier pregnancies, abusive relationships, inadequate nutrition and social conditions, and use of other substances, such as alcohol or tobacco.[63] In one U.S. study tracking births in 580 counties over seven years, a shortage of mental health clinicians and high unemployment rates were associated with higher rates of NAS.[64] Other studies have shown that food insecurity[65] and inadequate access to evidence-

based OUD treatment are associated with NAS.[66] Developing tailored strategies to address the needs of women with layered structural vulnerabilities will not only reduce the incidence of NAS after birth but will help support long-term child health.

Child protection and family-based services

It is clear that improving the long-term outcomes for children born into families affected by OUD requires interventions that extend far beyond the newborn period. A recent report estimated that in 2017, 1.4 million U.S. children lived with a parent with OUD, 240,000 children had a parent die due to opioid overdose, 10,000 have parents in long-term incarceration because of opioids, and 325,000 live in foster care as a result of opioid addiction.[3,67] National data for 2009-2014 suggest that more than 2 million children, or almost three percent of all children aged 17 or younger lived in households with at least one parent who had an illicit drug use disorder in the past year.[68] Over the six-year period, an average of almost 500,000 children under the age of two (4 percent of this age group), 413,000 children aged three to five (3.5 percent of this age group), 718,000 children aged six to 11 (3 percent of this age group), and 500,000 children aged 12 to 17 (2.1 percent of this age group) lived with at least one parent with an illicit drug use disorder. Approximately three-quarters of all affected children 17 or younger lived in a two-parent household, with at least one of them reporting an illicit drug use disorder. Of the more than half-a-million affected children living in single-parent households, approximately 80 percent live with their mothers.[68]

Although parental OUD clearly enhances the risk of poor childhood outcomes, the evidence also suggests that the risk varies widely. The literature on these effects spans several decades, drawing upon studies conducted when cocaine or heroin use was more prevalent and in different social and geographic settings. In addition, the impact of associated misuse of other substances, such as alcohol, and a variety of mental health conditions can clearly exacerbate parental OUD effects on children. The presence of other adults in the household who do not misuse substances may also reduce the adverse effects on the child. Accordingly, children living in households in which both parents or other adults misuse substances may exhibit more serious developmental or behavioral effects. Moreover, our understanding of how these influences interact is further complicated by the challenge of disentangling the direct impact of parental opioid use from the social and material disadvantages that often accompany OUD, such as poverty, homelessness, and domestic violence. These conditions can independently undermine child health and development.

When families cannot ensure a safe environment for children, the primary alternative is the state. In 2018, approximately 4.3 million referrals affecting almost 7.8 million children were made to state child protective services (CPS) for alleged maltreatment. This represented one referral for every 39 children in the U.S. and was a 16.4 percent increase in total referrals over 2014. Of these referrals, some 2.4 million were deemed serious enough to prompt a formal investigation.[69]

Although national data on the influence of OUD on CPS referrals are limited, a variety of sources indicate that this contribution has been substantial. Foster care placements were in significant decline between 2006 and 2012; however, this trend subsequently reversed with some 70 percent of states reporting increased numbers of foster care placements between 2014 and 2015. By 2016, the portion of foster care placements reported to be associated with parental substance use had risen to approximately one-third,[70,71] although there remain serious concerns that the reporting of parental substance use has been highly variable.[72] Nevertheless, other sources, including reports from state CPS agencies, suggest that a significant portion of the rise in foster placement rates has been due to parental substance use, particularly opioid and methamphetamine use.[73] Recent analyses have examined the

relationship between rates of substance use and child welfare. County-level data on overdose death rates and drug-related hospitalizations were shown to be significantly associated with county rates of foster care placement.[71,74–76] Similarly analyses of Tennessee and California counties and zip codes revealed a significant relationship between high-dose opioid prescriptions and foster care placements as well as between prescription opioid hospitalizations and hospitalizations for child maltreatment or injuries.[74,77,78] Crowley et al. have extended these estimates to suggest that OUD resulted in substantial increases in the costs of CPS services between 2011 and 2016.[79]

State and local initiatives to craft effective parental OUD and child welfare strategies must navigate a complex patchwork of federal programs and funding streams. In the U.S., the protection of children from neglect or abuse actually grew out of the movement to prevent cruelty to animals: the first substantial child protection organization was the New York Society for the Prevention of Cruelty to Children which was modeled on the American Society for the Prevention of Cruelty to Animals. It was not until the 1960s that responsibility for child protection shifted to public, primarily state, agencies. Amendments to the Social Security Act in 1962 and the passage of the Child Abuse Prevention and Treatment Act (CAPTA) of 1974 ushered in a new period of federal support for state efforts addressing neglect and physical and sexual abuse.

These structures devoted to child protection have been more recently coupled with strategies to keep children within intact families. The Adoption Assistance and Child Welfare Act of 1980 (Public Law 96-972) and, subsequently, the Adoption and Safe Families Act (ASFA) of 1997 (Public Law 105-89) emphasized the need for CPS agencies to make reasonable efforts to reunite children in foster care with their parents. Indeed, the majority of approximately 270,000 children placed in foster care each year are discharged to a biologic parent. However, by 2015, a staccato of critical assessments of state CPS practices around the country underscored the continued shortcomings of the CPS and health systems' ability to ensure a safe environment for infants living in homes affected by parental substance misuse. In response, Congress passed the Comprehensive Addiction and Recovery Act (CARA) in 2016, amending the latest version of CAPTA (2010) to allow states to better relate CPS activities to the challenges of monitoring and supporting infants and mothers affected by OUD. However, this emphasis, while welcomed by child advocates, was not accompanied by any meaningful new funding until 2018. Also in 2018, Congress passed the Substance Use-Disorder Prevention that Promotes Opioid Recovery and Treatment Act, which again amended CAPTA to provide funds for state grants to improve safe infant and mother planning. To date, however, state compliance with the CARA provisions has been mixed.[80,81] The Families First and Prevention Services Act of 2018 strengthened the financial and programmatic bridges between the CPS, drug treatment, and child health infrastructures. It allows federal child welfare funds to be used for mental health and substance use prevention and treatment services. It also strengthened the tools by which CPS agencies can reduce the need for foster placement and enhance reunification for children in foster care.

Summary findings

The sections above have outlined a variety of strategies to address OUD in pregnancy and childhood. Patrick and colleagues have presented cogent directions for policy reform.[81–83] However, crafting an integrated, comprehensive policy strategy will depend on overcoming a series of administrative, disciplinary, financial, and political obstacles that have long plagued parental OUD strategies. Among the most debilitating are those rooted in contradictory

ideological and political impulses that pit the needs of the newborn against those of the mother. We outline four key findings that should guide policy development below.

Children and families affected by opioid use have needs beyond NAS

Neonatal abstinence syndrome is a marker of the spread of the opioid epidemic, and has had an important impact on families across the country. But the medical, social, and emotional needs of children and families affected by opioid use disorder stretch far beyond NAS. Children with parents who use drugs are at risk of losing a guardian due to overdose, family separation, or incarceration. They are also disproportionately likely to experience other structural factors—such as poverty—that propel poor health outcomes. Stigmatizing narratives that blame mothers for a transient set of symptoms in their newborns distract from these important public health concerns.

The health of the mother is essential to the health of the baby

The complex epidemiology of OUD in pregnancy and childhood demands that longstanding policy and disciplinary boundaries be replaced by an integrated, comprehensive commitment to women's health. OUD almost always predates pregnancy. Almost always, the frequent presence of mental health and other chronic conditions during the prenatal period also predates pregnancy. Many women with OUD may not plan to become pregnant, yet contraception use is low. Access to OUD medication treatment falls woefully short during the prenatal period. Postpartum care for OUD, contraception, and chronic health problems is extremely poor. Child welfare strategies for infants born with NAS tend to be relatively short-term even though parental OUD is a chronic, often relapsing condition.

The clinical and policy boundaries that have long separated these domains of care are understandable, but they are no longer acceptable. The fragmentation of services for women with OUD has emerged from distinct public impulses, legislative histories, and arenas of clinical expertise. However, the data strongly suggest that these centrifugal policy forces need to be addressed by a strong commitment to comprehensive women's health and the seamless integration of drug treatment, mental health care, and primary and reproductive health care, regardless of pregnancy status.

Punitive policies do not improve maternal and child health

Punitive policies are less effective in reducing drug use in pregnancy than they are at reducing women's involvement with prenatal care and drug treatment services. Despite a remarkable consensus among medical and public health authorities that emphasize strong, supportive strategies, hundreds of women have been arrested and prosecuted for drug use while pregnant. Thousands more have experienced the stigma and threat of coercive actions in response to their OUD. Pregnant women with OUD can be subject to arrest with the stated purpose of ensuring they enter treatment, even though no relevant treatment programs may be available at the time. In addition, even in states with explicit policies that give preferential treatment to pregnant women with OUD, access to such care can be grievously inadequate.

There is insufficient support for programs that promote family unity

Professional organizations such as the American College of Obstetricians and Gynecologists (ACOG) and the American Academy of Pediatrics, have embraced what is largely a supportive, facilitative model that attempts to improve maternal-infant health through education and improved access to relevant services. While the goal of most child-protective strategies is to

prevent family dissolution if possible, the tools and resources available to achieve this goal are often inadequate. There is strong evidence that women with OUD who receive treatment are more capable of caring for their children. However, access to appropriate treatment services falls off dramatically after childbirth. States are at different stages of developing and funding programs that would support family unity for women and children affected by OUD.[84]

Recommendations

Previous efforts to mitigate the impact of OUD on children have focused on NAS, an approach that has promoted harmful approaches that worsen long-term outcomes for families. Going forward, policymakers should adopt a comprehensive approach that integrates the previously distinct and fragmented fields of opioid policy, reproductive health policy, and child welfare policy. Efforts that address the needs of children and families in an integrated way will not only combat the urgent challenges of the opioid epidemic, but may mitigate the impact of other substance use disorders. This is especially relevant in the context of increasing rates of polysubstance use and methamphetamine-related harms in recent years.[85]

We propose five principles to guide the development of a comprehensive policy vision:

1. Follow evidence, not ideology.

When ideology dominates evidence in policy deliberations, public responses can harm children and families. Permitting ideology to trump evidence is particularly troubling given the considerable and rapidly growing evidence base that can inform effective strategies to address OUD in pregnancy and families. For example, there is a clear need to reduce access barriers to OUD medication treatment, to make all efforts possible to keep mothers and infants together, and to empower mothers to address their infants' needs after birth. Scientific evidence describing interventions that actually improve pregnancy outcomes and protect children in the real world should guide local, national, and international policy development.

2. Expand attention to women, children, and families beyond NAS.

The needs of children affected by the opioid epidemic reach far beyond the neonatal period. Effective strategies to promote child and family well-being must address the long-term health and structural inequities that intersect with opioid use, such as poverty and lack of access to health care. We also need to better understand the needs of children and adolescents whose family members use drugs, and to implement strategies known to build youth resilience. The scope of research and public health interventions should expand to address these needs.

3. Provide comprehensive women's health services throughout the reproductive lifespan.

There is no way to uncouple the health of a fetus from the health of its mother, so policy approaches should endeavor to ensure comprehensive women's health—both during pregnancy and throughout womens' lives. Not only will such an approach decrease the number of infants with severe NAS, evidence suggests that the well-being of mothers with OUD is also important, as providing appropriate treatment and support services can prevent family break-up and facilitate a healthy family environment in which children can grow and develop. Specifically, effective approaches to OUD in pregnancy and within families must integrate a range of medical and social services, including contraception, mental health care, primary medical care, and opioid use treatment strategies. Greater flexibility in service coordination

covered by the Medicaid program may provide new opportunities for integrating service domains.[86]

4. Adopt supportive interventions, not punitive ones.

Evidence suggests that supportive strategies that facilitate treatment and engagement with medical and social service systems produce better outcomes than using coercion and punishment to discourage substance use. Local, state, and international policymakers should promote evidence-based supportive interventions, and discontinue punitive approaches like criminalization.

5. Provide support to preserve family unity.

Child protective services play an essential role in ensuring a safe and nurturing environment for the child. Evidence suggests that efforts to support good parenting skills are likely to be more beneficial for the child than family dissolution. Evidence-based approaches to support families include home visits (such as provided by Nurse-Family Partnership),[87] care coordination for families (as provided in Virginia's Medicaid program), and training healthcare providers to provide services that avoid re-traumatization.[88] There is growing interest in using peers with lived experience of addiction to provide guidance and support to affected families. There is a great need for comprehensive programs that offer medical care and social supports for parents as well as enrichment activities for children. Early intervention programs can also offer a variety of services that can foster optimal parenting and early child development.

While local variations in epidemiology, resources, and politics will inform specific policy initiatives in the United States and other countries, the principles articulated above provide a strong foundation for local, state, and regional strategies to address OUD in pregnancy and families with children.

Table 1. State policies on substance use during pregnancy[1]

State	Substance use during pregnancy considered		When drug use diagnosed or suspected, state requires:		Drug treatment for pregnant women		
	Child abuse	Grounds for civil commit ment	Reporting	Testing	Targeted program created	Pregnant women given priority access in general programs	Pregnant women protected from discrimination in publicly funded programs
Alabama	X					X	X
Alaska			X				
Arizona	X		X			X	
Arkansas	X		X		X	X	
California			X		X		
Colorado	X				X		
Connecticut					X		
Delaware						X	
District of Columbia	X		X			X	
Florida	X				X		X
Georgia						X	
Illinois	X		X		X	X	X
Indiana	X			X	X		
Iowa	X		X	X		X	X
Kansas						X	X
Kentucky	X		X	X	X	X	X
Louisiana	X		X	X			
Maine			X			X	
Maryland					X		
Massachusetts			X				
Michigan			X				
Minnesota	X	X	X	X	X		
Missouri	X				X	X	X
Montana			X				
Nebraska							
Nevada	X		X				
New York					X		

[1] This table is a version of the resource found at the Guttmacher Institute, modified by the authors' knowledge of other sources.

North Carolina					X		
North Dakota	X		X	X			
Ohio	X		X		X	X	X
Oklahoma			X			X	X
Oregon					X		
Pennsylvania			X		X		
Rhode Island	X		X	X			
South Carolina	X				X		
South Dakota	X	X	X	X			
Tennessee					X	X	X
Texas	X						
Utah	X		X			X	
Virginia	X		X		X		
Washington	X				X		
West Virginia	X		X	X	X	X	
Wisconsin	X	X	X		X	X	
TOTAL	24+DC	3	26+DC	9	20	17+DC	10

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