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# Cross Agency Training to Promote Integrated Care for Substance Exposed Newborns

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## Abstract

Substance using pregnant women who give birth to substance-exposed newborns present multiple challenges for providers and public health. Developing a more integrated, comprehensive, and responsive system of care is critical to address their multiple needs and support multiple provider involvement. Using an implementation science approach, we enlisted input from a multidisciplinary group of professionals, leadership from three state agencies, and focus group discussions with stakeholders and women substance users to create, pilot, and implement a hybrid online and in-person Substance Exposed Newborns (SEN) training program. Goals included providing science-based knowledge, skills, and best practices to meet the needs of substance exposed mothers and children including neurobiology of addiction, stigma reduction, trauma informed care, motivational communication and effective referral and treatment. The ultimate goal was to create a more integrated and collaborative approach among maternal and child care providers that can promote recovery, effective parental bonding and child care, address substance induced child development challenges, and promote family wellbeing. Training of these professionals was successfully piloted and implemented with six regional cohorts from three state agencies. Independent evaluation data indicated high satisfaction ratings, significant pre- to post increases in knowledge and self-efficacy to provide care, and intentions to increase inter-professional collaborations.

# Keywords

*Integrated care; Maternal health; Pregnancy, Substance exposed newborns; Substance use; training*

## Introduction

This project used implementation science approaches to develop and implement an innovative training program for three types of providers from different agencies that offer services to families with substance-exposed newborns [1]. Directors of two state agencies (Maternal, Infant, and Early Childhood Home Visiting [MIECHV], and the Department of Social Services [DSS]) asked training center staff to develop training that would educate staff, address the need for collaboration, and promote integrated and comprehensive care. The goals were to increase knowledge, reduce stigma, promote empathy, create collaborations, and promote best practices. The ultimate goal was to help providers understand, communicate with, and be more sensitive to the needs of these families while promoting comprehensive and collaborative care.

Substance exposed mothers and newborns cross paths with many different medical providers as well as multiple legal, healthcare, and social service systems [2]. Maternal and newborn drug screens necessitate assessment of the safety and security of the infant by child protective services. Families also interact with community agencies that target maternal and child health (e.g., Nurse Family Partnership, Maternal, Infant, and Early Childhood Home Visiting, Early Head Start), child development specialists (Early Intervention Services provided by Maryland Infant and Toddler programs), medical, mental health and substance abuse specialists, and other community programs.

Although the multiple needs and problems of substance using pregnant women necessitate this village of multidisciplinary and comprehensive care, these families often report a care system that is stigmatizing, fragmented, intimidating, and inadequate [3]. Although there are exceptions, the fragmented healthcare and social service systems make providing comprehensive and coordinated care for housing, medical, psychological, and social services difficult [4]. The lack of cohesion in the “care village” for substance-involved families is reflected in provider education, which often does not address inter-agency collaboration, thereby perpetuating the siloed nature of the providers’ work, training, and knowledge. As a result, families are likely to interact with many well-meaning providers who are eager to help but limited in their ability to do so.

The Substance Exposed Newborns (SEN) training program was developed after a review of the literature and an extensive outreach to local providers and programs. The following sections provide a brief review of key areas and training topics to be included, followed by a description of the methods used for developing and implementing the training, and concluding with a brief evaluation of the training. To promote similar initiatives and research, we conclude by discussing key lessons learned.

## Context: Understanding Substance Using Pregnant Women and Exposed Children

Few pregnant women start using substances after they become pregnant. Often women discover they are pregnant 4 to 8 weeks into the pregnancy after some level of substance exposure to the fetus. Once aware of the pregnancy, they often try to stop or significantly modify drug use. However, despite the strong motivator of pregnancy and caring for the baby, many women have difficulty quitting [5]. Moreover, stopping abruptly substances like opioids could be dangerous triggering withdrawal reactions for mother and fetus [6].

Many complicating factors influence continued use during pregnancy [7]. Often substance use fills important coping and self-medication needs. The most severely dependent may experience significant withdrawal effects, cravings, and problematic environments. Other considerations include the presence or absence of a significant other, familial reactions to the pregnancy and drug use, adequate healthcare, housing and financial/employment problems, and other medical complications [8]. Even when there is an attempt to stop using substances, pregnant women are often only partially successful. As one woman in recovery we interviewed described, many feel trapped by the substance, the pregnancy, and their personal demons. It is essential for providers to understand the challenges they face and the journey of recovery during pregnancy and postpartum.

## Impact of Substance Exposure on the Infant and Child

The effects of using substances during pregnancy include potential short term and long term effects on the child. Exposure to substances during the pregnancy can affect fetal development and create multiple perinatal complications; including placental abruption alcohol related birth defects preterm births [9-11]. And intrauterine growth restriction [12]. Many infants exposed to substances require neonatal intensive care and can suffer withdrawal effects in their first few weeks of life. Some of the effects of substance exposure during pregnancy on the fetus and infant can last for weeks, or become more salient in later development [13]. Newborns exposed to opioids, including methadone and buprenorphine treatment medications, can experience Neonatal Abstinence or Opioid Withdrawal Syndrome (NAS/NOWS), are more vulnerable to Sudden Infant Death Syndrome, and can experience problems with breastfeeding and bonding [12].

In addition to effects that can occur during the first year of life, drug-exposed children often struggle with self-regulation issues that affect their emotional, cognitive, and behavioral development. Though sometimes not visible during early development, these problems can become significant after they enter the school environment where self-regulation is critical for learning and success [6,13]. Providers need accurate information to be able to help the families separate substance effects from normal development.

## Presence of Complicating Trauma, PTSD, and other Mental Health Challenges

Substance use is associated with high rates of traumatic event exposure and Posttraumatic Stress Disorders (PTSD). Individuals with Substance Use Disorders (SUD) are 50% more likely to have PTSD than those without [14]. Over 50% of women with serious substance use disorders suffer from trauma exposure and PTSD [15]. PTSD symptoms include intrusion (e.g., nightmares and memories), avoidance of trauma-related stimuli, maladaptive cognitive and affective changes (e.g., self-blame and dysphoria), and dysregulated arousal (e.g., insomnia and irritability [16]. Substance use temporarily can reduce symptoms but ultimately prolongs symptomatology by undermining adaptive coping [17]. PTSD symptoms tend to be long-lasting [18], predate pregnancy, and indicate poor prognosis when comorbid with substance use problems [19]. Women with substance use problems also commonly suffer from other mental health conditions including severe anxiety disorders, depression, bipolar disorder, and other diagnosable conditions [20].

Substance-using pregnant women with PTSD and mental health comorbidities are less likely to seek treatment. Self-blame and stigma inhibit treatment seeking and disclosure of traumatic experiences, particularly sexual assault or partner violence [21]. Further, substance using pregnant women often fear their children being taken away, resulting in the avoidance of prenatal care and mental health or substance use treatment.

Because of the barriers to accessing PTSD-SUD treatment as well as prenatal care, professionals working with families with substance-exposed newborns often are working with individuals who require intensive care sensitive to the needs of trauma-exposed individuals [22]. Safety, trust, empowerment, peer support, and collaboration, as well as consideration of cultural and historical factors are key principles in trauma-informed care [23, 24]. Developing working alliances with trauma-exposed individuals can be challenging and frustrating and, as a consequence, can create significant distress, making providers susceptible to compassion fatigue and burnout [25]. Both topics were considered core components for the training.

## Motivation and the Process of Recovery from Addiction

Providers also must understand the nature of addiction and the journey of recovery. Substance use disorders represent the end state of a process of change involving neuro-adaptation, impairment in self-regulation, and a narrowing scope of pleasurable behaviors. These factors make addiction a brain and behavior control disorder that impairs decision making [26]. Additionally, the stigmatization of these disorders, often seen as moral failings, deeply complicate the recovery process [27].

Motivation is an important component of recovery. Understanding readiness, the different stages of behavior change, and how individuals negotiate recovery, in addition to using motivational communication strategies, has become a standard of care [28,29] TIP 35. Offering exposure to the principle and practices of these approaches in training can empower caregivers to promote movement toward recovery with substance using pregnant and postpartum women.

## Materials And Methods

The UMBC Home Visiting Training Center [30]. Used an implementation science approach to develop and launch our Substance Exposed Newborns (SEN) training. The focus of the training development and implementation included the needs of both substance exposed families and providers, as well as the perspective of the agency and provider systems. This process included meetings with stakeholders and agency leaders, focus groups with providers, and videotaped interviews of providers interacting with pregnant and postpartum substance exposed women and children. We examined the scientific literature described above and best practice advisories from professional groups to include important and current information in the training materials [31]. Finally, we created a hybrid online and in-person training program that we piloted, revised, and launched across different regions in the state of Maryland.

### **Providers working with substance exposed women and children in their homes**

This training initiative was initiated and funded by two state agencies (MIECHV and DSS) to train their staff that work with families and visit homes. As we talked with stakeholders, it became clear that we needed to include another group of providers, Maryland Department of Education's early intervention Infants and Toddlers Program (ITP). Thus, three groups of providers described below were offered training.

The Child Abuse Prevention and Treatment Act (CAPTA)<sup>[4]</sup> included referrals to a child protection program for infants exposed to illicit substances or exhibiting signs of fetal alcohol spectrum disorder. Most referrals come from health care providers at hospitals or clinics [32]. Child welfare staff have 48 hours to assess the family and the safety of the newborn in the home. Maryland child welfare workers have to make a disposition on newborns exposed to substances within 30 days and/or refer the family to ongoing services.

Home visitors (HVs) work in multiple settings (e.g., health departments, Early Head Start, non-profit organizations) to promote prenatal and postnatal health and development among at-risk infants and families. HVs typically meet with families who volunteer for services once a week/month until the child is 2-3 years of age or services are no longer needed. Referrals come from agency and community organizations and providers. Visit content varies based on the curriculum and typically includes psychoeducation and support for prenatal/infant/toddler health, child development and school readiness, positive parent-child relationships, and parental health and well-being.

The Individuals with Disabilities Act (IDEA) requires states to provide services to 0-3-year-old children with developmental delays or disabilities. Premature birth, very low birth weight, genetic disorders, illness, drug exposure and NAS make an infant/toddler eligible for evaluation and services that can include help with hearing, speech and language, family counseling/training, occupational therapy, physical therapy, education, and psychological services. Evaluation and re-evaluation of the child determines types of services appropriate for the family as effects differ by substance exposure in utero. In infancy the focus is on infant self-soothing and bonding issues yielding to neurobehavioral motor, speech and behavioral control and social-emotional development in early childhood. Type of service is dictated by the assessment and service plan. Referrals come from hospitals, pediatricians, early education and childcare professionals, child welfare staff, and concerned caregivers. After referral, ITP staff have 45 days to evaluate the child

and, if they qualify, develop an individualized family service plan (IFSP). If the family accepts, they may receive services until the child's third birthday. Early intervention has received significant support for utility to children and families [33].

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<sup>[1]</sup>In the U.S., the Child Abuse Prevention & Treatment Act (CAPTA) requires each state to have an office dedicated to child protection [e.g., a Child Protective Services (CPS) office, Department of Children and Families, Department of Social Services, etc.]. This office is tasked with investigating reports of child maltreatment, providing services to families that need support in providing child safety, and, when necessary, determining alternative placements for children and/or when children can be safely reunited with families.

### **Promoting mutual understanding and collaboration among providers**

This array of early childhood providers offer unique and sometimes overlapping services to this population; however, evidence suggests providers rarely collaborate with one another. The Keeping Children and Families Safe Act (P.L. 108-36) requires child welfare professionals to refer to early intervention services when indicated, although several studies found that the child welfare population is rarely connected to early intervention services [34-36]. This may occur because child welfare professionals are unable to recognize delays or voluntary family participation rates are low [37,36]. A recent project suggests that a “warm handshake” between providers may increase family engagement in home visiting services [2]. Thus, a goal of the training was to increase interagency collaboration by promoting understanding each provider's role and procedures, and developing connections between regional provider groups.

### **Gathering critical information for design and implementation**

**Focus Groups:** Training Center staff conducted 3 separate focus groups with staff from each agency targeted for training to gather perspectives and feedback on training topics. Home visitors (n=10) were surveyed during a home visiting training. Family preservation workers (n=7) were recruited through the Department of Social Services leadership. Early intervention staff from Maryland'sITP (n=10) were organized by the Department of Education leadership. These providers were volunteers who worked with families and children with exposure to a wide range of substances from nicotine and alcohol to heroin and other illegal substances. They were told in the recruitment that the focus would be on substance exposed mothers and children. Since we wanted to highlight and include in the training effects from all substances including teratogenic effects of nicotine, fetal alcohol syndrome disorders, neonatal opiate withdrawal syndrome, and effects of other substances, we asked about all substances in the focus groups.

UMBC's IRB approved focus groups and all other training development activities and participants provided written informed consent before each focus group session (protocol 106 Y14CD20215). Questions remained consistent across focus groups, though adapted slightly for different professional roles and specific interactions with families. Participants described roles and responsibilities, current referral processes, interagency collaboration, prevalence of SEN cases and substances encountered. We solicited feedback about the perceived need of the proposed training topics and additional challenges experienced with these families.

Focus groups were audio recorded and reviewed by several team members to identify and summarize common themes through a consensus process. Several key themes were identified and confirmed:

- (a) The need to focus on collaboration and care coordination across varying agencies to avoid duplication of services and manage ambiguous roles.
- (b) The need for motivational communication skills when engaging with families.
- (c) The need to increase knowledge about various substances and their impact on the growth and development of children pre- and post-natal.
- (d) The need to have more resources for workers and mothers about calming infant and child.

Following these focus groups, stakeholders on our statewide Home Visiting Training Center Advisory Board confirmed these findings and additionally highlighted the need for clarification of roles, helping further shape training focus.

**Interviews with Professional Advisory Committee:** In addition to the center advisory board, key professionals and providers across a multitude of disciplines were asked to constitute a substance-exposed newborns professional advisory committee. This group included medical doctors in pediatrics, obstetrics, neonatology, and psychiatry, a family court judge for child custody cases, and directors of treatment and recovery programs. Stakeholders also included specialists, supervisors, and staff from the Maryland Departments of Health, Human Resources, Social Services and Education and several mothers in recovery from substance use.

Advisors participated in phone interviews to outline their roles and experiences working with substance using pregnant women, substance exposed newborns, and their families. They spoke to the many challenges of working with this population, trends of drug use, approaches to treatment and recovery, and best practices in various care settings. Themes that emerged included:

- (a) Challenges of medication management with pregnant women with opioid use disorders.
- (b) Recent increasing use and impact of prenatal cannabis use.
- (c) Critical and challenging nature of collaboration.
- (d) Importance of compassionate and non-judgmental communication and care.
- (e) Prevalence of trauma and comorbid mental health issues among substance using mothers.
- (f) The need to understand, navigate, and manage familial relationships.
- (g) Motivation and access to proper care, treatment, and resources (housing, SUD and MH treatment programs that can accommodate children).



(h) The need to help mothers with parental bonding and developmental expectations.

Themes and key messages from these advisory interviews largely reinforced proposed training topics based on literature review and focus groups but additionally suggested the need to include information on cannabis and pregnancy, bonding, and soothing activities.

**Video development:** Following review of these interviews, 11 consultants shared their expertise in a video interview to be edited and included in the training. Stakeholders and providers were compensated \$200 for these interviews. Videos describe the roles and practices of providers in various disciplines such as obstetrics, child welfare, pediatrics, social services, neonatology, and child development, as well as residential substance use treatment, Early Head Start, and home visiting. Additionally, to insure inclusion of recovery stories, two mothers from different recovery programs who used substances during pregnancy volunteered to be interviewed.

Videos highlighted firsthand knowledge from the array of providers and systems that interact with substance exposed families, providing an overview of the complex and multidisciplinary needs of the population. Video content was used not only to inform and improve the practices of professionals interacting with SEN and family but also to offer information that can be shared with families, including demonstrations of swaddling and other infant care strategies used to soothe substance exposed newborns. The videos of mothers in recovery share experiences with substance use, giving birth to an infant born substance exposed, and how differing systems played a role in their journey through treatment and recovery.

## Results

### **Training structure**

We used a hybrid course model to accommodate disparities in training and education requiring trainees to complete seven 20-30-minute online modules prior to attending the in-person training day. Online modules prepared participants for the training day topics, discussions, and activities and allowed us to devote significant time during in-person training to interactions among attendees.

### **Training content**

Both online and in-person training addressed similar topics with differences in content or emphasis and a focus on collaboration and communication during the in-person day. Key content in the seven modules provides an outline of training content and what was addressed in some detail during the in-person training day.

**Module 1 - Substance Using Mothers and their Experiences.** Both online and in-person content included videos of mothers struggling with substance use and how different providers (Obstetricians, Pediatricians, and Social Workers) interacted with them. We focused not only on the substance use but also on disparity of access to prenatal care, maternal avoidance of prenatal care fearing loss of the baby, nutritional deficits, and the mother's safety and environment. The

goal was to offer a comprehensive view of substance use during pregnancy and to promote understanding and empathy, decrease stigma, and offer useful and important information.

**Module 2** - Effects of Maternal Substance Use on Pregnancy, Fetus and Infant. Online training focused on the effects of common drugs of abuse: opioids, cocaine, marijuana, and alcohol, as well as tobacco and other substances especially on the fetus and the infant. The training featured an introduction to NOWS/NAS, breastfeeding issues and soothing strategies. During in-person training drug fact sheets which included information about the specific effects of each substance on pregnant women and their children were distributed [38]. Since there is so much diversity of effects by type of substance, amount of exposure, and other factors, we created fact sheets that included street names of substances, short and long-term effects of each substance on mother, infant, and child, other health related issues, withdrawal effects, and treatment options. Handouts are accessible in the SEN curriculum section at [www.homevisitingtraining@umbc.edu](http://www.homevisitingtraining@umbc.edu).

**Module 3** - Effects of Maternal Substance use on Early and Later Child Development. This section moved from fetus and infant to a focus on early childhood effects on development and learning. It included strategies to address deficits in self-regulation and emotion expression as well as information about relevant resources in early intervention and school systems (i.e. developmental and behavioral evaluations).

**Module 4** - Trauma, Mental Health and Compassion Fatigue. The focus was not only on prevalence and symptom recognition, but also how the presence of these conditions can significantly affect mothers' interactions with care providers and with her baby. Tips and skills for providing trauma-informed care were included to address trauma reactions and foster safe and trusting environments. Additionally, training content focused on the health and wellbeing of providers. In-person training described symptoms of compassion fatigue and burnout, followed by self-care strategies to address the fatigue, frustration, and distress that may stem from working with the complicated needs of these families.

**Module 5** - Addiction, Change and Recovery. This module described the nature of addiction and the physiological, psychological, and social sequelae and focused on the role of addiction in the lives of substance using pregnant women, stages of change in the recovery process, and treatment goals during pregnancy and the postpartum period. Challenges of entering and sustaining recovery, the role of relapse, and the reality of successful recovery were highlighted using personal experiences of successful recovery among clients and family members in the in-person training.

**Module 6** – Treatments for Substance Use Disorders. This section highlighted current pharmacological and psychosocial treatments for different types of substances and specific challenges for pregnant and postpartum women accessing treatment. Several local treatment programs and initiatives specifically focused on substance using women and their children were described, with program directors and women in recovery describing these programs and what was most beneficial to them.

**Module 7** - Motivational Communication. This section described the best practices for motivational communication and highlighted the style and strategies of Motivational Interviewing

(Miller & Rollnick, 2013). We focused on empathy and reflective listening as well as brief motivational interventions that can promote entry into recovery and recovery behaviors.

The in-person training included exercises to explore attitudes and knowledge. However, it was designed to create a space where trainees could engage in intergroup discussions regarding the topics that most affect their work. Additionally, the in-person training incorporated activities to promote interagency collaboration, such as case studies, to encourage trainees from differing groups to describe the different approaches and protocols they would employ for a single SEN case. After the training, providers were encouraged to access our website and mobile application for information and videos ([www.homevisitingtraining.umbc.edu](http://www.homevisitingtraining.umbc.edu)).

## **Launching the training and getting feedback**

**Piloting the Training Experience:** The pilot training cohort (n = 41) included 11 home visitors, 19 DSS staff, and 11 Infants and Toddlers Program staff representing five agencies from four contiguous rural counties. Trainees were recruited through supervisors referred by state agency leadership. The Center offered participating agencies a \$1000 incentive. Participants completed a pre-training survey to provide information about their background and experiences working with SEN's. Access to the pre-training modules was sent approximately three weeks prior to the training day.

At the conclusion of each online module, participants completed an online form rating satisfaction on the quality, content, and relevance. At the conclusion of the training day, participants completed a posttest rating satisfaction with the training as a whole and indicating strengths and limitations of both online and in-person components. Feedback was summarized and evaluated.

**Common themes derived from participant feedback included:** (a) technical issues with access to online modules, (b) positive interactions regarding interagency collaborations, (c) high satisfaction with expert videos, and (d) desire for additional training materials. We revised the training accordingly.

The significant technical issues during the online modules related both to restrictions on state-issued computers and the buffering and lag times during videos due to the large file size. The team embedded expert videos via YouTube player to reduce file size and limit buffering issues.

Many trainees commented on the advantages and value of collaborating and learning from other providers regarding their work with families so we implemented multidisciplinary seating chart so providers from each agency were represented at every table to facilitate cross agency conversation. Also we had each group explain scope of work and program admission criteria.

Additionally, participants noted the expert videos being the most helpful content in the training, stating they were "very engaging and brought a realistic aspect." In particular, many commented positively on the video of the mother in recovery sharing her experiences so we filmed another mother in recovery to be included in the revised version of the in-person training.

Lastly, pilot participants wanted additional training topics and supplemental materials. Specifically, participants from the Infants and Toddlers Program requested training materials on intervention strategies to use with the newborns. Materials and handouts were added to the training on infant care strategies, such as infant massage, for providers to share with mothers, and included more information on working with fathers

## **Evaluation**

An independent evaluation of the initial three trainings was funded by a separate contract from the Department of Health (West et al., under review). This qualitative and quantitative evaluation included 104 participants (47 home visitors, 26 child welfare workers, and 31 infant and toddler early intervention staff). Results showed significant shifts in knowledge and confidence related in working with substance using women and newborns with medium to large effect sizes. However, there were no significant changes in attitudes about dealing with substance using families. Participants were very satisfied with the training with average ratings of 4.3 to 4.5 out of 5 on each of 9 satisfaction items. Agency heads also reported very positive feedback from staff about the training and the integrated nature of the interactions.

## **Discussion and Lessons Learned**

In creating and implementing this multidisciplinary training, the development team learned many important lessons about the providers, programs, and protocols of professionals from different agencies and how to develop an effective and meaningful training. The challenges facing substance exposed mothers, newborns, and families, and the extent of the needed resources came into stark contrast with the availability of such services and programs. Below are key lessons learned from this project to inform future training and research.

The literature reviewed, interviews, focus groups, and participant feedback highlighted that integrated and coordinated care is critical in meeting the multidimensional needs of substance using pregnant and postpartum women. However, only one of our groups can provide care in the prenatal period. Providers, like social services and early intervention, are called in only after the child is born. The medical, OB, and pediatric care systems offer services in hospitals and offices and are not well connected to the in-home care providers. Families risk being lost in the transitions between prenatal, neonatal, and postnatal care and services. In addition, although MIECHV home visiting programs can work with pregnant women as part of their mission, substance using pregnant women are not always referred and often avoid voluntary programs and even prenatal care because of stigma and fear.

It truly does take a village. The providers and the program participants highlighted that the needs of these families are numerous including safe and affordable housing, medical and social services, financial and emotional support, meeting children's needs, parent-child bonding, and negotiating father and family attitudes and behavior [39]. Not only is there a significant lack of availability of such comprehensive and integrative services, but some families live in regions where significant disparities limit access to transportation, childcare, medical care, and social services.

Despite the challenges of caring for substance-involved families, the landscape is not completely bleak. We encountered a large number of dedicated professionals and innovative programs that were inspiring and effective in engaging and helping substance exposed families. Social services programs are being relabeled as family “preservation programs” in efforts to remove stigma and the common misconception that these services solely remove children from their homes. We encountered a multidimensional residential program for parents who had lost custody of their children that offers linkage to an array of services that help in recovering sobriety, self-esteem, and their children. Some residential treatment programs allow women (even while pregnant) to bring their children while engaging in treatment stays that can last from 3 to 9 months. Providers are beginning to communicate and collaborate with one another in a several jurisdictions. These efforts are impressive and need to be extended to reach all of the women and children that are affected, as the needs still exceed available resources.

All substance use disorders create significant pregnancy and postpartum risks and challenges; however, there is no universal view of these challenges on the part of providers. The literature indicates that the prevalence of Fetal Alcohol Syndrome Disorders is underestimated [40]. Views about marijuana are inconsistent and participants reported that some women are being told to use it for nausea and morning sickness. Research on effects of many different substances on birth complications and both fetal and child development is inadequate to provide clear direction and messaging for parents and providers. Keeping a focus on all substances, including nicotine and cannabis, and helping women understand the impact of use during pregnancy is challenging for providers. This would be possible only with a comprehensive training in screening and brief interventions for all drugs and alcohol among multiple types of medical and social services providers [41]. There are a number of specific and comprehensive screening instruments that can be found on the NIDA, NIAAA, SAMHSA and World Health Organization (WHO) websites. In Maryland providers could use a state Prescription Drug Monitoring Program (PDMP) that could assist in screening but this only works for prescription medication.

The ultimate solution would be prevention activities that can reach adolescents and women of child bearing age to quit psychoactive substance use prior to getting pregnant. This would eliminate the “accidental exposure” that occurs prior to women realizing they are pregnant. More emphasis in school health and medical provider visits on healthy pregnancies and the impact of substance use including legal substances like alcohol and tobacco on fetal and infant health could prevent accidental exposure and promote the health and wellbeing of children and families. Prevention and early detection are universally recommended by state, national and international guidelines (<https://www.cmqcc.org/resources-toolkits/toolkits/mother-baby-substance-exposure-initiative-toolkit>; <https://www.who.int/publications/i/item/9789241548731>; <https://ncsacw.samhsa.gov/files/five-points-family-intervention-infants-with-prenatal-substance-exposure-and-their-families.pdf>).

Conjoint multidisciplinary training is critical for promoting communication and collaboration among providers who interact with substance exposed women and children. Nowhere is the reality of silos of care more problematic than in addressing the problem of substance exposed newborns [42]. There is a lack of knowledge of resources when they exist. There is a lack of communication in sharing medical information and treatment information among professionals and providers. There are treatment programs that will not accept pregnant women for liability reasons. We

encountered some competition among providers offering similar services and “mission creep” with providers trying to offer services that lie outside their primary focus. Lack of understanding about specific program admission criteria creates confusion. The attempt to bring together providers from different state agencies and programs was well received and it is noteworthy that one of the clearest messages from participants was their gratitude for providing the opportunity to meet, talk with, and obtain contact information of providers from other programs.

In summary, implementing such a multidisciplinary training is challenging and demanding. Leadership from agency directors and program managers is critical. We were fortunate to have the guidance and support of leaders in three different state agencies. Making the training regional so that providers working in the same area would be together in the training and able to address the needs of women in the same area required middle level managers and supervisors to see the value of the training and allocate time for staff to attend. The logistics of recruiting programs in a specific region to come together on a specific day and to complete online training modules necessitate very dedicated and persistent center staff and the patience of job. However, the effort was worth the outcome and hope of improving care for substance exposed families.

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## Contribution to the Field Statement

Substance use during pregnancy endangers the health and wellbeing of mother and child. There are multiple substances including alcohol, nicotine, opioids, stimulants, and marijuana that can cause significant harm to the fetus and newborn and affect parenting and child development in the neonatal and early childhood periods of development. Reaching and treating substance using pregnant women and their children is a priority for public health and to decrease infant mortality. A number of different providers and programs have been developed to address the needs of vulnerable women and children and provide in home and center based programs. However, the literature indicates that care for these women is often uncoordinated and fails to engage the most problematic and vulnerable. The need for sensitive, trauma informed, coordinated, and continued care is critical since substance using women and their children have multiple needs and encounter multiple provider types. Interdisciplinary and multidisciplinary training is needed to help providers who interact with these families. We collaborated with several state agencies to develop, pilot, implement and evaluate a collaborative training program designed to provide science-based knowledge, skills, and best practices to meet the needs of substance exposed mothers and children and to create a more integrated and collaborative approach among maternal and child care providers.

## Conflict of Interest

The authors have no conflicts of interest to declare.

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