U.S. Department of Health and Human Services
Office of the Assistant Secretary for Planning and Evaluation
Office of Behavioral Health, Disability, and Aging Policy

INTEGRATING SUD AND OB/GYN CARE:

POLICY CHALLENGES AND OPPORTUNITIES FINAL REPORT

January 2022

Office of the Assistant Secretary for Planning and Evaluation

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INTEGRATING SUD AND OB/GYN CARE: Policy Challenges and Opportunities Final Report

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ACRONYMS

The following acronyms are mentioned in this report and/or appendices.

ACA	Affordable Care Act
ACOG	American College of Obstetricians and Gynecologists
AHRQ	Agency for Healthcare Research and Quality
ASPE	Office of the Assistant Secretary for Planning and Evaluation
CAPTA	Child Abuse Prevention and Treatment Act
CARA	Comprehensive Addiction and Recovery Act of 2016
CARPP	Center for Addiction Recovery in Pregnancy and Parenting
CDC	Centers for Disease Control and Prevention
CFR	Code of Federal Regulation
CHIP	Children's Health Insurance Program
COE	Centers of Excellence
CPS	Child Protection Services
FFPSA	Family First Prevention Services Act
FPL	Federal Poverty Level
GED	General Equivalency Diploma
HRSA	Health Resources and Services Administration
IOP	Intensive Outpatient
MACPAC	Medicaid and CHIP Payment and Access Commission
MAT	Medication-Assisted Treatment
MCPAP	Massachusetts Child Psychiatry Access Program
MINT	Mothers and Infants Together
MOMS+	Maternal Opiate Medical Supports Plus
NAS	Neonatal Abstinence Syndrome
OB/GYN	Obstetrics and Gynecology
OUD	Opioid Use Disorder
PPW	Pregnant and Postpartum (or parenting) Women
RESPECT	Recovery, Empowerment, Social Services, Prenatal care, Education, Community and Treatment

SAMHSA	Substance Abuse and Mental Health Services Administration
SBIRT	Screening, Brief Intervention, Referral, and Treatment
SOR	State Opioid Response
STR	State Targeted Response
SUD	Substance Use Disorders
TEP	Technical Expert Panel
UNC	University of North Carolina

EXECUTIVE SUMMARY

The United States is experiencing a public health crisis related to substance use disorders (SUD). While many are impacted by this crisis, women--particularly pregnant women--are vulnerable to the adverse outcomes associated with SUD (National Institute on Drug Abuse, 2018). Incidence of SUD among pregnant women can affect quality of life and health care costs for both mother and infant. Maternal SUD are associated with significantly increased hospital costs and length of stay, especially in Medicaid programs (Patrick et al., 2015; Winkelman et al., 2018; Clemens-Cope et al., 2019). Thus, pregnancy is a critical time to address SUD for women.

Women are more likely to have insurance coverage during pregnancy and thus are more likely to interact with health care professionals, such as obstetricians and gynecologists (OB/GYN) (Center for Substance Abuse Treatment, 2009; Jessup & Brindis, 2005; Bishop et al., 2017). These interactions present opportunities to link pregnant women with SUD to much needed treatment services. Integrated OB/GYN and SUD services may be a viable option for providing access to SUD care for women of child-bearing age in order to reduce the impacts of SUD on mother, child, and health care spending.

This report aims to address the treatment opportunities for pregnant and postpartum (or parenting) women (PPW) with SUD by describing opportunities to integrate OB/GYN and SUD care as well as barriers to integrated care delivery. To achieve this goal, we scanned existing integrated OB/GYN and SUD program models, reviewed literature on the effectiveness of integrated OB/GYN and SUD program models, interviewed subject matter experts, and convened a technical expert panel (TEP).

The program scan and literature review identified ten distinct models of care and a variety of methods for integrating OB/GYN and SUD care. This included emerging and existing models of care, standalone and statewide efforts to integrate OB/GYN and SUD care, services addressing social determinants of health, and partnerships supporting integrated OB/GYN and SUD care. Existing literature primarily describes models of care or clinical guidelines. Fewer evaluations of the feasibility and effectiveness, meta-analyses, and review articles were present in the literature.

Technical experts and interviewees recommended expanding the definition of integrated care to include different types of providers, clinical and non-clinical support services, payment information, and family member support. Interviewees stressed that certain models are more successful in some locations than others. Having the financial resources to hire and retain a care coordinator helps programs to address social determinants of health. Reimbursement models that support comprehensive service provision would best facilitate integrated care.

The experts participating in the TEP emphasized that the pregnancy timeline and stages of OB/GYN and SUD care delivery are important factors in integrating and improving care. TEP members recommended expanding care locations to primary care and in-home follow-up. At the same time, TEP members noted that a shortage of health care providers trained in SUD care and an overall shortage of addiction medicine specialists limit access to care.

Stigma remains a barrier to SUD care, despite the fact that the medical model of SUD has gained wide acceptance in the behavioral health community. For example, SUD is viewed less empathetically than mental health disorders experienced in the prenatal and postpartum periods. Legal concerns--particularly related to laws mandating that health care providers must report known or suspected substance use among pregnant patients--also serve as barriers to integrated OB/GYN and SUD treatment.

1. INTRODUCTION AND BACKGROUND

Over the past 20 years, the United States has experienced a public health crisis related to substance use disorders (SUD). This crisis is particularly pronounced with regard to opioid use disorders (OUD), chiefly with respect to opioid morbidity and mortality. Due to biological and cultural factors, women are particularly vulnerable to adverse outcomes associated with SUD and OUD (National Institute on Drug Abuse, 2018). For example, between 1999 and 2016, the rate of deaths from prescription opioid overdoses increased 507% among women, compared with an increase of 321% among men (National Institute on Drug Abuse, 2019). Also, between 1999 and 2015, heroin deaths among women increased at more than twice the rate as among men (CDC, 2017).

Pregnant women have also been impacted by America's SUD crisis. The Centers for Disease Control and Prevention (CDC) found that between 1999 and 2014, the national prevalence of OUD among pregnant women increased 333%, from 1.5 cases per 1,000 delivery hospitalizations to 6.5 cases per 1,000 ($p < 0.05$) (Haight et al., 2018). A rise in the incidence of neonatal abstinence syndrome (NAS) in the United States is correlated with OUD among pregnant women. From 2000 to 2004 NAS increased 433%, from 1.5 to 8.0 per 1,000 hospital births in the United States. National data also reveal that in 2014 a baby was born every 15 minutes with signs of NAS (Winkelman et al., 2018). Another study showed that between 2004 and 2015, there was an increase in amphetamine and opioid-related deliveries, with the highest number of amphetamine -related deliveries in the West (11.2 per 1000 deliveries) and overall higher incidence of amphetamine deliveries in rural versus urban counties (Admon et al., 2018).

Maternal SUD can cause several birth-related complications that can dramatically increase hospital costs and length of stay. A 2012 study demonstrated that mean hospital charges for appropriately treated NAS births were $93,400, while those for non-NAS births were $3,500 (Patrick et al., 2015). Rising rates of opioid use and NAS have particularly affected state Medicaid programs, which pay for 45% of all births nationwide; state Medicaid programs paid nearly $1.2 billion in 2012 for NAS delivery costs, which constituted almost 81% of all NAS delivery costs in that year (Markus et al, 2013; Patrick et al., 2015). A later study shows that Medicaid covered 82% of NAS-related births in 2014 (Winkelman et al., 2018). Moreover, Medicaid-enrolled women of reproductive age are disproportionately likely to have opioid prescription claims compared with women who are privately insured (Ailes et al., 2015). As rates of opioid use and NAS births have risen, so has Medicaid spending on treatment for affected women and children, which has increased budgetary pressure on state Medicaid programs.

Pregnancy is a critical time to address SUD for women. Women may be more receptive to cease or reduce substance use or seek treatment for SUD during pregnancy, and are more likely to have insurance coverage for SUD treatment during pregnancy (Center for Substance Abuse Treatment, 2009; Jessup & Brindis, 2005; Bishop et al., 2017). Health insurance coverage increases during pregnancy in several ways. All state Medicaid programs are mandated to cover prenatal care, labor, and delivery for most pregnant women with incomes below 133% of the federal poverty level (FPL) until 60 days postpartum. This is higher than the minimum coverage

at 100% FPL for other eligible adults in non-expansion states. States have the option to exceed those standards, and all but four states provide coverage to pregnant women above the minimum threshold (Kaiser Family Foundation, 2020; MACPAC, 2017). In addition, under the Affordable Care Act (ACA), maternity coverage was deemed one of the ten essential health benefits, and health insurance for pregnancy, labor, delivery, and newborn baby care became mandatory in 2014 for all individual and small group health plans. The increased insurance coverage and increased exposure to health care professionals such as OB/GYNs during prenatal visits presents opportunities to link pregnant women with SUD to appropriate treatment services.

Integrated OB/GYN and SUD services may be a viable option for providing access to SUD care for women of child-bearing age. Models for integrated primary and behavioral health care are well known, and their effectiveness is well established; however, there is little research regarding the availability and effectiveness of SUD treatment in OB/GYN settings. This report provides:

- A scan of integrated OB/GYN and SUD program models.

- A review of the literature on the effectiveness of integrated OB/GYN and SUD program models.

- Selected findings from interviews with subject matter experts and a TEP regarding:
    - incentives and barriers for integrated OB/GYN and SUD models, and
    - state and federal policy levers to encourage expansion of integrated OB/GYN and SUD care.

2. DEFINITION OF INTEGRATED CARE

For the purposes of this report, we build upon a definition of integrated care espoused by the Agency for Healthcare Research and Quality (AHRQ) Integration Academy; the revised definition includes terminology and treatment services specific to OB/GYN and SUD care (AHRQ, n.d.):

> *The care that results from a practice team of **OB/GYN and SUD** clinicians, working together with patients and families, using a systematic and cost-effective approach to provide patient-centered care for a defined population. This care may address **obstetric and gynecological needs, substance use conditions, mental health conditions**, health behaviors (including their contribution to chronic medical illnesses), life stressors and crises, stress-related physical symptoms, and ineffective patterns of health care utilization.*

We also adopt key principles supported by the AHRQ definition. This includes patient-centered care, which is defined as health care that is a partnership between providers, patients, and their families. Integrated care teams and services do not have to be present or delivered in the same physical location to meet the definition of integrated care; integration can occur between providers and organizations that are physically separate but use shared processes, plans, and workflows.

Our working definition of integrated OB/GYN and SUD care is also enhanced by the Substance Abuse and Mental Health Services Administration (SAMHSA) and Health Resources and Services Administration (HRSA) Center for Integrated Health Solutions publication, *A Standard Framework for Levels of Integrated Healthcare* (2013). This framework is adapted to describe the levels of integration in identified OB/GYN and SUD programs. The SAMHSA Integrated Care Framework provides guidelines for levels of integration in primary and behavioral health care that can be applied to OB/GYN and SUD providers. The framework uses the concepts of coordinated, co-located, and integrated care to capture aspects of collaboration between providers and offered services in integrated OB/GYN and SUD care. The levels of integration and associated collaboration for OB/GYN and SUD providers are described in ***Exhibit 1***.

EXHIBIT 1. Levels of Integrated OB/GYN and SUD Care	
Level of Integration	**Collaboration of Providers and Services**
Coordinated	**Level 1** -- Minimal Collaboration OB/GYN and SUD providers work at separate facilities and communicate rarely about cases. The providers make referrals to each other based on past collaboration and communicate based on the provider's need for patient information.
	Level 2 -- Basic Collaboration at a Distance OB/GYN and SUD providers maintain separate facilities and view each other as resources. Providers communicate periodically about shared patients and patient care. These communications are typically driven by specific issues.
Co-Located	**Level 3** -- Basic Collaboration Onsite OB/GYN and SUD providers are co-located in the same facility but may or may not share the same practice space. Providers use separate systems, but communication becomes more regular due to proximity, especially by phone or email, with an occasional meeting to discuss shared patients.
	Level 4 -- Close Collaboration with Some System Integration Collaboration between OB/GYN and SUD providers is closer due to co-location in the same practice space, and there is the beginning of integration of care through some shared systems. A typical model may involve an OB/GYN department in a hospital embedding outpatient SUD care.
Integrated	**Level 5** -- Close Collaboration Approaching an Integrated Practice Collaboration and integration between OB/GYN and SUD providers are higher as the providers begin to function as a true care team, with frequent personal communication. The team actively seeks to integrate a broader range of OB/GYN and SUD services by direct communication of patient care.
	Level 6 -- Full Collaboration in a Transformed/Merged Practice Fuller collaboration between OB/GYN and SUD providers has allowed integrated care to blur into a single program. OB/GYN and SUD providers work closely with patients on SUD treatment planning, and a case manager or social worker maintains the patient records and often coordinates community-based support services as directed by the OB/GYN and SUD provider.

3. IDENTIFIED MODELS OF INTEGRATED CARE

The review of programs identified 50 state, regional, and standalone programs providing integrated OB/GYN and SUD care, representing diverse models of care. We selected 15 programs for an in-depth review because they exemplify unique program models and/or program model elements. This section discusses key themes, elements, and partnerships associated with these models. ***Appendix A*** provides details on the 15 programs selected for an in-depth review, including the program name, location, level of integrated care, and model details. ***Appendix B*** provides details on the methods for conducting the program model scan.

3.1. Models of Care

Collaborative systems of care. Collaborative systems provide partially or fully-integrated services (Collins, Hewson, Munger & Wade, 2010). A combination of program models or model elements that enhance standard OB/GYN or SUD care may be present in this wholistic approach. Collaborative systems are unique in that the primary service provided follows an integrated model. Here the primary focus of care is supported by the added system of services, interconnected with the central, integrated element. By contrast to integrated care models, which bring together health care services, collaborative care systems combine a central focus of care with related services to ensure an intervention or treatment's success. The Center for Addiction Recovery in Pregnancy and Parenting (CARPP) at Dartmouth-Hitchcock serves as an example of the collaborative system of care (CARPP, 2019). Moms in Recovery outpatient and intensive outpatient programs form the central integrated service element with which a constellation of other coordinated and co-located services interface.

Integrated care. Integrated care models are defined by the coalescence of SUD treatment services, OB/GYN care, and other relevant services that address patients' unique psychological, social, and physical needs (SAMHSA-HRSA Center for Integrated Health Solutions, n.d.). Another hallmark of the integrated care model is its one-stop-shop nature. While some programs implementing integrated models may provide connections to co-located services or referrals to external resources, all key services are centralized. The Moms in Recovery program follows an integrated care model by combining prenatal, postpartum, and well-woman care with group and individual SUD treatment specifically designed to address the needs of PPW (CARPP, 2019). These services, along with psychiatric care, pediatric care, and case management, are all provided in one centralized location. Finally, this program offers support in accessing community programs that provide services relevant to program participants. This point serves as the central care focus in the collaborative system of care.

Screening, brief intervention, and referral to treatment (SBIRT). In this approach, trained OB/GYN providers screen patients, quickly evaluating their SUD treatment needs (Harrington, 2014). Before referring a patient to treatment services, OB/GYN clinicians initiate a brief intervention that draws the patient's awareness to the substance use issue and focuses on behavioral change motivation. This approach is commonly implemented by OB/GYN providers

engaged in coordinated models of SUD treatment and OB/GYN care. Under the CARPP collaborative system of care, providers in OB/GYN are trained in and implement the SBIRT approach (CARPP, 2019).

Patient-centered team care. A patient-centered care team incorporates interdisciplinary providers who communicate regularly about treatment planning and collaborate to support their patients in achieving their health care goals (AIMS Center, n.d.). Although elements of this model may be present in a co-located setting, integrated care best facilitates fluid communication and shared decision making. Dedicated recovery-friendly clinic teams referred to as Purple Pods are present in Dartmouth-Hitchcock's Obstetrics and Pediatrics departments (CARPP, 2019). In conjunction with other providers that patients may encounter, these teams support care continuity.

Evidence-based care. Models of care built upon scientific research that supports their implementation with the target population and in the setting of care where they are implemented are considered *evidence-based* (AIMS Center, n.d.). As discussed in ***Section 2***, current research on the comparative effectiveness of models of integrated OB/GYN and SUD is limited, and the topic requires further study. However, some models have demonstrated success, including the Moms in Recovery program, which has significantly reduced premature birth rates. And other programs incorporate existing evidence-based care practices for the treatment of mother and child. For example, CARPP includes neonatal opioid withdrawal syndrome management initiatives that offer an evidence-based eating, sleeping, and consoling approach that reduces the need for pharmacological treatment, as well as longer hospital stay lengths for newborns with NAS (CARPP, 2019). This evidence-based model is implemented in a family-centered care context and is part of the CARPP collaborative system of care.

Trauma-informed care. Trauma-informed care is a systems-focused model that acknowledges the relevance of understanding, recognizing, and responding to the effects of trauma when providing integrated OB/GYN and SUD care (Noll Alvarez, n.d.). For example, The University of North Carolina's (UNC's) residential and outpatient Horizons Program illustrates implementation of trauma-informed care at the coordinated, co-located, and integrated level; the program allows women to flexibly engage in a treatment path that best suits their needs (UNC Horizons Program, 2019). In addition to individual and group SUD treatment services and OB/GYN care (prenatal, coordinated hospital delivery, postpartum, and well-woman), the UNC Horizons Program offers counseling guided by patient concerns and group therapy focused on relationships, family issues, and healing from the effects of trauma.

Co-located community corrections care. In this model of care, pregnant incarcerated women are permitted to leave the prison where they are serving their primary sentence for a predetermined period leading up to and following the birth of their child (Hotelling, 2008). During this window, women reside in community-based corrections facilities that provide a home-like environment. Educational and therapeutic interventions are present, in addition to OB/GYN and SUD treatment. The ultimate goals of these programs are to overcome negative birth outcomes associated with high-risk pregnancies in prison and to promote bonding between mother and baby. The Mothers and Infants Together (MINT) Program is a nationwide network of community corrections sites providing integrated services on behalf of the Federal Bureau of

Prisons. One location, the Greenbrier MINT Program, reports having served 410 women since 1993 (Robertson, n.d.). These programs are co-located by necessity.

Reverse co-located inpatient and intensive outpatient care. Most co-located care models offering inpatient and/or intensive outpatient services begin with the SUD treatment care model and augment care with an OB/GYN component (Collins et al., 2010).

In the case of reverse co-location, the opposite is true. Women experiencing high-risk pregnancies and seeking SUD treatment are either admitted to a hospital setting or regularly monitored on an outpatient basis by OB/GYN providers. These OB/GYN services are augmented with elements of SUD treatment that may be medical (e.g., medication-assisted treatment, or MAT) or behavioral (e.g., therapeutic social work). Project RESPECT (Recovery, Empowerment, Social Services, Prenatal care, Education, Community and Treatment) is an example of a reverse co-located model (Cecilio, 2019). Located within Boston Medical Center and Boston University School of Medicine, Project RESPECT offers comprehensive obstetric and SUD treatment. These include inpatient monitored processes (i.e., acute withdrawal treatment and induction of MAT for OUD) as well as intensive outpatient (IOP) plans that vary based on need. Project RESPECT is also well positioned to make referrals to community-based organizations such as the Department of Children and Families and local methadone clinics.

Hub-and-spoke. Hub-and-spoke models arrange care services into an established full-service care location--the hub--and satellite offshoots that meet geographic needs but may be unable to offer a complete array of care--the spokes (State of Vermont, 2019). This approach is particularly advantageous when establishing a new model of care, such as integrated OB/GYN and SUD treatment services, because the hub site can begin as a standalone proof of concept and later serve as a model to spoke programs. Spoke programs refer patients with complex care needs to the hub, while the hub program refers recovering patients to spoke programs for follow-up in their geographic area. Spoke locations can provide their hub with valuable insights into trends in their local communities.

Ohio’s Maternal Opiate Medical Supports Plus (MOMs+) model is an evidence-supported approach combining MAT, behavioral health therapy, and access to OB/GYN care. The hub provides high-intensity care, tests innovative approaches, and maintains a full staff of treatment specialists. Spoke programs provide maintenance MAT to stable clients in the community. This approach removes barriers to the expeditious application of evidence-based treatment by applying plan-do-study-act cycles. Teams communicate across sites during monthly meetings to review data and communicate about successes and barriers.

Teleconsultation and telehealth. Teleconsultation and telehealth services increase access to SUD treatment and OB/GYN care and related educational information through a combination of direct delivery and referral (World Health Organization, 2010). While education may be a component of this model, the primary goal is to provide support and improve health outcomes by linking patients to relevant health services.

Teleconsultation and telehealth services are known for their value in overcoming geographic barriers. For this reason, the types of communication between providers and the

degree to which clinical decisions are shared may be a better indicator of level of integration than physical location.

The Massachusetts Child Psychiatry Access Program (MCPAP) for Moms program provides coordinated teleconsultation services (MCPAP for Moms, 2014). Perinatal psychiatrists provide consultations by phone to mothers in real time. These calls could include real time psychiatric consultation, diagnostic support, medication treatment guidance, community support needs, treatment planning, and guidance regarding pregnancy and lactation. Psychiatrists produce written assessments with treatment recommendations and are available for in-person follow-up appointments. Resource and referral specialists support patients in reaching OB/GYN and SUD treatment services that are local to them, coordinate care across providers, and update the telemedicine psychiatrist on outcomes.

3.2. Key Themes from Program Model Scan

Methods of Integrating and Delivering OB/GYN and SUD Care Models

- Integrated models offer a variety of clinical and non-clinical services related to OB/GYN and SUD care. For example, the UNC Horizons Perinatal Program has patients meet with a peer support specialist during regular perinatal and postpartum check-ins to help patients develop individual treatment plans.

- Recently, the SBIRT model has been implemented by trained obstetricians. In this example, the level of integrated care depends on whether the OB/GYN provider refers patients to SUD treatment in another location or the program offers SUD treatment onsite.

Partnerships Supporting Integrated Models of OB/GYN and SUD Care

- Programs are involved in several different partnerships to support and collaborate on OB/GYN and SUD models of care. Partnerships include federal, state, and local agencies; universities; and community-based organizations that support additional services, research opportunities, and funding for care.

Emerging and Existing Integrated Models of OB/GYN Care

- Many integrated programs did not name or directly define the model of care utilized. When the model of care was named, or an established model of care was used, these models were most often based on those established to support the integration of behavioral health and primary care services.

- The CenteringPregnancy Group model is one of the most widely used models to provide integrated OB/GYN and SUD care. Patients receive SUD group counseling during their pregnancy with other PPW due around the same time. The frequency of meetings depends on the hospital and health system.

Standalone and Statewide Efforts to Integrate OB/GYN and SUD Care

- Standalone programs represent the majority of integrated OB/GYN and SUD care models because providers work in close proximity as a care team. These program models provide IOP services, partial hospitalization, inpatient/residential services, and medically managed intensive inpatient services in OB/GYN departments or clinics. For example, Moms in Recovery, housed in the Lebanon location of the Dartmouth-Hitchcock academic health care system in New Hampshire, provides a care team for PPW consisting of an OB/GYN provider, a clinical psychologist, and a nurse coordinator.

- A few regional program models provide co-located care in pregnancy and SUD treatment centers across hospitals and health systems. These centers have a team of OB/GYN and SUD providers that collaborate on patients' care, but patients are referred to different locations in the facility to receive services. One regional emerging program model, CARPP, is part of the Dartmouth-Hitchcock system. CARPP offers wraparound services with case management for PPW to receive SUD treatment, psychiatric needs, pediatric resources, and obstetric resources in six locations across the academic health system. Clinic teams (known as "Purple Pods") in obstetrics and pediatrics provide continuity of care, support for psychosocial needs, and care coordination with external community providers.

- Most state and regional program models are a co-located integration of OB/GYN and SUD care with patients receiving OB/GYN services and SUD treatment in the same facility, but at different locations in the facility (i.e., within the same hospital building but in different units, or on the same campus but within different buildings). For example, the Kaiser Permanente Early Start program in northern California requires OB/GYN providers to screen for substance use with PPW patients and refers patients to outpatient services located in the same facility for individual and/or marriage counseling.

- Few state and regional program models provide coordinated care using the hub-and-spoke model of care. Examples include Centers of Excellence (COEs) in Pennsylvania, Colorado, and Vermont, where the COEs ensure PPW receive obstetric care and appropriate gender-specific SUD treatment, as well as the MOMs+ program of Ohio.

- A minority of states have statewide program models for integrated OB/GYN and SUD care. North Carolina supports a statewide family residential treatment program for women with SUD and their children: CASAWORKS for Families Residential Services consists of 28 programs using evidence-based treatment models located in 13 counties across the state. West Virginia is expanding the Drug Free Moms and Babies program, an integrated comprehensive SUD program for PPW, from four to 12 sites across the state.

4. EVIDENCE OF EFFECTIVENESS OF CARE

We identified several peer-reviewed articles related to integrated OB/GYN and SUD care. Most of these articles included descriptions of models of care or clinical guidelines, while the remaining articles consisted of evaluations of the feasibility of integrated treatment, evaluations of the effectiveness of integrated treatments, and meta-analyses or review articles. The literature called for additional research evaluating the effectiveness of integrated care models. Specifically, the unique aspects of integrated OB/GYN and SUD care delivered in rural settings was highlighted as an area requiring additional research. Rural populations may be disproportionately affected by the opioid epidemic and may lack adequate OB/GYN and SUD care. The major findings of selected articles are presented below.

4.1. Feasibility Studies

Three studies focused on the feasibility of integrating SUD components into traditional OB/GYN care. One qualitative study assessed obstetricians' perceptions of aspects of integrated care (Taylor et al., 2007). This study found that providers perceived screening pregnant women for substance use and domestic violence to be an integral and important component of prenatal care. Providers expressed a need for practical, actionable information and materials for themselves and office staff.

Yonkers and colleagues (2016) evaluated the feasibility of including motivational interviews and cognitive therapy in the treatment of substance-using pregnant women; their findings indicate that non-behavioral health clinicians could be trained to provide the SUD therapies concurrent with routine prenatal care at maternal health clinics.

Mittal and Suzuki (2017) evaluated the feasibility of medication-assisted treatment (MAT) in an obstetric setting. Eighty-eight percent of patients continued or resumed MAT postpartum at the time of discharge from the obstetric program, and 81% were referred to a community prescriber, indicating feasibility for a collaborative care approach to MAT during pregnancy.

4.2. Effectiveness Studies

Several studies focused on the effectiveness of specific integrated care models, including SBIRT, integrated care models based in OB/GYN offices and departments, and integrated care models based in SUD treatment programs. Although telemedicine and teleconsultation were well-described as forms of integrated OB/GYN and SUD care, there were no effectiveness studies identified through this review. Studies focusing on the provision of SBIRT in reproductive health settings support this model as a component of integrated care.

One recent study found that SBIRT was effective in reducing the number of days of primary substance use among women (Martino, 2018). A second study found that a computer-

delivered SBIRT intervention for PPW screened effectively for drug use and effectively identified risk but was ineffective as a brief intervention with a postpartum population (Ondersma et al., 2018).

Several studies found support for integrated care models based in OB/GYN settings.

Two studies identified positive results from the Early Start model, which consists of a substance use counselor located in an obstetrics clinic providing one-on-one counseling to pregnant women screened at risk for alcohol, tobacco, or drug use as part of the routine prenatal care package (Golor et al., 2008; Taillac et al., 2007). Both studies suggested that SUD treatment integrated with prenatal visits was associated with a positive effect on maternal and newborn health.

Two studies evaluated whether implementing SUD services in tertiary care settings resulted in positive birth outcomes. Meyer and colleagues (2012) found that integrated treatment for women with OUD in a study based in rural Vermont resulted in improved birthweight and a decrease in infants' requiring pharmacologic therapy for NAS. Wright and colleagues (2012) found that a harm-reduction model for clinical care of substance-using pregnant women in Hawaii resulted in relatively normal birth outcomes.

Sweeny and colleagues (2000) found support for integrated care models based in SUD treatment settings. This study indicated that neonatal outcomes, including birth weight and gestational age, are significantly improved for infants born to substance users who receive IOP SUD treatment concurrent with prenatal care compared with infants born to substance users who enter IOP treatment postpartum.

Four review articles synthesized evidence regarding the effectiveness of integrated OB/GYN and SUD treatment. The reviews provide support for integrated care for maternal substance use outcomes, birth outcomes, psychosocial outcomes, and parenting outcomes. In some meta-analyses, there was mixed support for integrated programs compared with other treatment options; however, each review contained some methodological limitations, and the integrated care models were not clearly specified (Milligan et al., 2010a, 2010b; Niccols, 2012; Sword et al., 2009).

A small but growing body of evidence seems to support integrated OB/GYN and SUD services as an effective model of care for PPW with SUD and their children. Previously conducted meta-analyses and more current research identify positive outcomes including reductions in maternal substance use and improvements in birth outcomes, psychosocial factors, and parenting outcomes.

There is room for additional evaluation in this emerging field. Further research is needed to more effectively describe models of integrated care and to determine the effectiveness of different program models. There is also a need for longer-term studies on integrated care. Most studies included in this review examine short-term outcomes, such as birth outcomes or maternal substance use at the birth of the infant. Little is known about the sustainability of integrated care outcomes postpartum. Additionally, there is a need for future research on effective models of

integrated OB/GYN and SUD care for rural populations who may be disproportionately affected by the opioid epidemic and who may currently lack adequate OB/GYN and SUD care.

5. PROJECT FINDINGS

5.1. Overview

We conducted interviews with eight stakeholders over the phone and convened an in-person TEP that provided information regarding the conceptualization of integrated models. TEP participants consisted of seven experts in the field and eight representatives of federal agencies knowledgeable about integrated OB/GYN and SUD care. TEP participants and stakeholder interviewees included academic researchers, health care providers, state officials, and stakeholders from non-profit organizations.

5.2. Definition and Levels of Integrated Care

TEP participants were presented with the working definition of integrated OB/GYN and SUD care described in ***Section 2*** of this report for discussion and proposed revisions. Several TEP participants recommended expanding the type of providers, because OB/GYN providers were only part of the care team, and primary care providers, family care doctors, and pediatricians are also involved in integrated care. Other missing elements included the absence of non-clinical resources such as transportation, housing, and childcare. Payment information was also identified as a key part of integrated care systems. For women with SUD, supports for other family members can be an important factor in accessing care, however this is a complex issue due to the high occurrence of intimate partner violence for women with SUD. Some participants cautioned against creating a strict definition or model for fear of limiting care access.

TEP participants and interviewees were presented with the framework for levels of integrated care as displayed in ***Exhibit 1*** of this report. All TEP participants and stakeholders interviewed were familiar with the coordinated, co-located, and fully-integrated model definitions, and most supported applying this framework to PPW with SUD. Several TEP participants and stakeholders noted considerable variation in the types of integrated delivery available to PPW with SUD. Most existing models could be described as coordinated, with OB/GYN providers creating referral streams and informal professional relationships with mental health and SUD treatment providers in the community.

Except for one coordinated model in our sample (MCPAP for Moms), all models in this analysis have a case management component. TEP participants and several interviewees expressed the importance of the case manager/care coordinator role, irrespective of model type. Care coordination needs to be flexible to ensure access to needed services and support. In addition, a "warm hand-off" in the transition of care of one setting to the next creates bridges between services and develops trust between the women and their providers. When treating PPW with SUD the concept of "no wrong door," meaning access to both obstetric and SUD treatment, should be facilitated or supported regardless of where women initially accessed care.

Generally, TEP participants and stakeholders did not think that fully-integrated OB/GYN SUD models were readily available to PPW, because a workforce sufficiently trained in both OB/GYN care and SUD treatment is unavailable. There is a lack of OB/GYN providers trained to conduct SBIRT, which indicates a need for SUD training in medical schools, nursing schools, and other training programs. TEP participants and stakeholders noted that fully-integrated models require significant financial resources; as one stakeholder said:

> *If someone waved their magic wand and said that we could have a fully-integrated model that was paid for, institutions and practitioners would love to do that. But it's not practical.*

5.3. Locus of Treatment

TEP participants and stakeholders described the ideal locus of treatment as variable. One interviewee stressed that "all care is local," and certain models may work better in some areas than others. Another interviewee indicated that although fully-integrated models are ideal for most (but not all) locations, expanding access to some level of SUD treatment should be a priority:

> *It's likely that most of this [rural] population are probably not getting any SUD care or treatment at all, and in many instances may only be receiving prenatal care.*

The center of treatment may change over the course of a woman's pregnancy, postpartum period, and recovery. In family-centered care for the mother-infant dyad, the locus of care could differ depending upon the dyad needs. This can expand the integrated care model to include home visits for postpartum women in need of follow-up SUD treatment services, and pediatricians as a long-term point of contact for women in treatment and recovery.

Models should be tailored to targeted area and specific population needs. For example, a fully-integrated model that relies on plentiful primary care, SUD treatment, and mental health providers may not be realistic in a rural area. Additionally, the appropriate setting to serve as the locus of delivery is critically informed by location of patients and consumers. Although it may make intuitive sense to train OB/GYN providers to deliver SUD services in a primary care setting, it may be challenging to continually educate OB/GYNs on the dynamic nature of SUD and its impact on PPW.

TEP participants noted that whereas large health care systems or academic health systems may be equipped to offer outpatient services in-house, others may have to refer patients to SUD treatment facilities in the area. Integrating OB/GYN care into an SUD treatment setting could work well in these instances. In contrast, providing some level of SUD care in an OB/GYN setting could improve access to critical treatment, because women may be more motivated to protect the health of themselves and their baby during their pregnancy.

Overall, OB/GYN practices can be the first step for PPW to initiate SUD treatment, but many women require more intensive SUD treatment plans that typical OB/GYN providers may not be equipped to offer.

5.4. Social Determinants of Health and Coordinated Care

All stakeholders indicated the need to address social determinants of health within integrated care models. According to one stakeholder, a researcher, the ideal model of integration includes payment for services that view and treat SUD as a "bio-psycho-social-spiritual condition."

State officials and providers varied significantly in their opinions about the level of services addressing social determinants of health within their programs.

Within Summa Health's Centering® Group Care Program, case managers and a social worker assist women with a broad range of services such as housing assistance, GED resources, and legal support and representation. A case worker explained "We tried to bring all services available to our program to help these women, so they don't have to find these services on their own." The Dartmouth-Hitchcock Moms in Recovery program similarly has a case manager who assists women with housing, transportation, and community-based income support services. In a residential setting, the State of Colorado provides job training, parenting classes, and an onsite childcare facility in one residential treatment facility.

However, some stakeholders noted that they do not have the financial resources to support non-clinical services and must use their existing resources to prioritize their core mission of getting women needed OB/GYN and SUD care. As one stakeholder provider explained, "We are thinking a lot about social determinants of health, but it's hard, because we are at capacity.… It's something we would like to do, but we would need additional funding."

Even among the programs that offer support navigating social services and meeting non-clinical needs, providers acknowledged the challenges faced when trying to fund these efforts through grants. One noted that their program used to offer childcare through a grant but could no longer afford to do so. Another described "scrambling for funding" every few years when grant funding runs out.

Overall, programs' ability to help address social determinants of health is largely dependent on the availability of financial resources to hire and retain a care coordinator, social worker, or other similar role.

5.5. Payment and Funding

TEP participants and most stakeholder interviewees cited limited reimbursement as a key barrier to implementing and expanding integrated models of SUD and OB/GYN care. This includes lack of reimbursement within a standard maternity payment bundle for SUD-related services (screening, counseling, referring, etc.) that an OB/GYN may provide. As one provider from a stakeholder interview said, "The big problem with OB/GYN is the bundled payment [for maternity care], which doesn't incentivize them to provide mental health care. They do it

because they care--but they need a financial incentive.… Actually, having that incentivized is critically important." A researcher echoed this concern about bundled payments and noted that there is often a great deal of provider confusion around what they can and cannot bill. Providers have encountered difficulties with simultaneous billing for physical health and mental health care for the same visit, double co-pays for patients, lack of coverage for necessary non-clinical services, and limitations in insurance coverage for women after 60 days postpartum. There is a need to fund non-clinical services such as care coordination, childcare, and housing.

Inflexible federal funding streams can also present challenges to implementation, particularly in states where substances other than opioids present the most problems. In states like Colorado and New Hampshire--where methamphetamines, other stimulants, and alcohol are more problematic--opioid-specific funding opportunities such as the State Targeted Response (STR) and State Opioid Response (SOR) grants are less useful than unrestricted SUD funding. One state official explained, "We try to take advantage of opioid-focused funding but use it more broadly in a way that strengthens the whole infrastructure, across the whole population of substance abusers."

Of the three fully-integrated OB/GYN and SUD systems profiled in our sample, two--Summa Health's *CenteringPregnancy* model for opiate-addicted PPW in Ohio and Kaiser Health's Early Start Program in California--do not receive any federal or state funds. The Summa and Kaiser health care systems finance all expenses related to operating these models. Dartmouth's Moms in Recovery program receives some federal funding through the 21st Century Cures Act and state support through New Hampshire's 1115 Delivery System Reform Incentive Payment Program. Similar to other fully-integrated models, the Moms in Recovery program also receives substantial support from the Dartmouth-Hitchcock health care system.

One of the coordinated care models in our sample, MCPAP in Massachusetts, is supported solely through state funding and a surcharge on commercial health plans. New Jersey's Maternal Wraparound Program, another coordinated care model, receives both state and federal funding, specifically monies from the federal block grant women's set-aside. Stakeholders noted that many federal funding sources are directed at serving patients with an OUD only, which makes it challenging to access additional grants for patients struggling with other SUD.

Innovative strategies used by health plans, providers, and states to support integrated care were presented during the TEP. A health plan in the State of Pennsylvania provides integrated care for women through their COE. Centers are permitted to bill a specific G code for $277 a month to provide coordinated care. Providers have used the funding in creative ways to support patients including women with SUD. One provider in a rural area was able to purchase a car to help transport patients to other services. Other providers use the funding for childcare. The State of Colorado uses a prenatal engagement billing code to support integrated services for PPW with SUD, and Special Connections in Colorado offers services through a 1915(b) Medicaid Waiver. Ohio has used SOR and STR funding to support integrated care by covering care coordination, childcare, transportation, and provide gap funding for services postpartum.

Payment strategies to support integrated OB/GYN and SUD care can address challenges with funding. Fully-integrated models require financial incentives to reimburse some of the

essential services necessary for addressing SUD in the OB/GYN setting (i.e., screening, counseling, and case management). This also includes introducing more flexible federal and state funding streams to address the range of SUD conditions outside of the limited scope of federal grant opportunities that predominantly focus on OUD for polysubstance use and methamphetamine abuse--both of which require a unique set of clinical strategies and tools to treat. Notably, since July 1, 2019 New Jersey has been reimbursing for SUD case management and peer recovery support services in its Medicaid program. Expanding the adoption of fully-integrated delivery models that incorporate SUD services will likely require further experimentation around alternative payment models.

Additionally, TEP participants and stakeholder interviewees noted that policymakers should incentivize and encourage the adoption of innovative payment models that compensate OB/GYN providers and the primary care workforce for treating patients with SUD.

On the financial aspects of training, some experts perceived that financial support is currently not available for suitable training and re-training opportunities for providers. Loan forgiveness for behavioral health providers can also be an effective workforce enhancement strategy. Others noted a need for additional ways to incentivize provider participation in integrated care training opportunities.

5.6. Pregnancy Timeline

The timeline of OB/GYN and SUD care is an important component of integrating care and improving the rate of postpartum women receiving SUD treatment. Access to postpartum SUD treatment is critical--a couple of TEP members discussed that women are least likely to overdose during pregnancy and most likely to overdose using opiates in the postpartum period. In addition, one expert noted that women are most likely to overdose 7-12 months after delivery. Typically, women eligible for Medicaid through the pregnancy eligibility pathway only receive coverage up to 60 days postpartum and may not be able to access SUD treatment services when coverage ends. Further, in some states that have expanded Medicaid, where postpartum women up to 138% FPL remain eligible for coverage, women still face administrative hurdles such having to reapply for coverage. Experts agreed that many commercial payers also do not cover postpartum care during the 6-week critical time point. Expanding coverage to at least 1 year postpartum would allow more time for women to become more stable in their recovery and support women and their families when new mothers are transitioning into their parenting roles.

The panel also linked the concept of timeline to the transitions in care. Within the reproductive health lifespan, transitions in care are critical for the woman's and child's health. There are many transitions for both the woman and the child in which providers can serve crucial roles in meeting the treatment needs of PPW. For example, the point at which a child begins to receive care from a pediatrician is pivotal. Due to limitations in post-pregnancy benefits, many women spend more time with their child's pediatrician than any other health care provider. The pediatrician serves as a *de facto* primary care provider for the woman and her child. The panel recommended consideration of pediatric providers as providers who could screen and refer

postpartum women in need of SUD treatment. A TEP member reported a model for such care currently exists in a Federally Qualified Health Center in the District of Columbia area.

5.7. Workforce and Training

Integrated programs require a sufficient supply of providers trained in SUD services for PPW. In many models, this requires SUD training for OB/GYN providers, which can prove challenging because this is outside the scope of their standard practice. TEP participants and stakeholder interviewees cited a shortage of OB/GYN providers with the necessary training to provide SUD care and an overall shortage of addiction medicine specialists. One state official described experiencing resistance from OB/GYN providers, who were hesitant to take on additional SUD screening and treatment responsibilities in addition to prenatal and postnatal care:

> *I get it, they want to practice at the top of their scope. But the reality is, we need to meet women where they are. What a missed opportunity if you're not engaging them in their behavioral health conditions.*

The rise of polysubstance use and methamphetamine use in some states further complicates integration, as OB/GYNs are asked to treat and manage increasingly complex SUD and behavioral health conditions, with limited training.

In order to build a well-trained workforce that is able to meet the needs of PPW with SUD, educators need to add addiction medicine modules to standard medical and nursing school curriculums. Experts also noted the importance of providing training during a professional's formative years.

Workforce culture can also present a barrier to care, because OB/GYNs and primary care providers often practice within very different contexts than behavioral health providers. These differences include philosophical approaches to health, funding sources, billing practices, and even logistical aspects such as hours of operation. One SUD provider described a team of health care providers in an inpatient setting trying to coordinate care for a patient's methadone treatment, but they were unable to reach the clinic after many days of trying. It turned out that they always called in the afternoon, whereas methadone treatment clinics are typically open only in the morning. As this provider said, "Why would an orthopedic service know anything about methadone programs? These worlds remain so very, very, very separated." TEP participants suggested that hospitals could create mandatory SUD training for all employees, and one TEP member suggested that accreditation or quality ratings could be attached to the required employee training.

To address this gap in training and education, one stakeholder mentioned that referencing the American College of Obstetricians and Gynecologists (ACOG) standards and aligning education activities with ACOG's recommendations was an effective approach for persuading OB/GYNs to educate themselves about treating this population. Another interviewee noted that nurses and primary care physicians--many of whom were originally prejudiced toward treating pregnant women struggling with substance use--became more accepting after the health system

held regular educational sessions that trained providers on the disease model of SUD. During these sessions, counselors relayed stories describing what patients struggling with an SUD experience on a day-to-day basis.

5.8. Stigma and Discrimination

The TEP included a discussion on stigma around SUD and how it creates barriers to implementing integrated models of care. Despite increased training on the disease model of SUD, some providers and other health care professionals do not adhere to the disease model. One state official noted a pervasive stereotype of PPW with SUD as "moms on drugs," whereas women with mental health concerns such a perinatal mood disorder are viewed with more compassion. Another state official said that many OB/GYN providers do not want to treat women with SUD because they see them as "problematic" and high-risk. Several respondents noted that they have seen greater acceptance of SUD as a medical condition in recent years, possibly due to the opioid epidemic, and greater acceptance among OB/GYN providers toward becoming waivered to provide buprenorphine. However, according to one researcher, "even though more people endorse [the biomedical model of SUD], the discrimination continues."

> "There's still a lot of stigma and, frankly, classism around it that keeps the [providers] working in perinatal mood and anxiety disorders wanting to separate themselves from the moms with substance use disorders." -- State official

TEP participants also discussed how SBIRT can serve to inhibit women from seeking treatment because of the fear that OB/GYN providers would report them to child protective services (CPS). It was noted that SBIRT is known to be helpful for "low-end users" but is not as effective for those with serious SUD. A few TEP participants clarified that SBIRT is important to initiate SUD treatment, but certain women may need more SUD services in addition to services offered in SBIRT.

Substance Use Reporting and Pregnancy

- As of June 2019, 25 states and the District of Columbia require health care professionals to report suspected prenatal drug use to child welfare authorities.
- Twenty-three states plus the District of Columbia classify substance use during pregnancy as child abuse under civil child welfare statutes.
- States vary in their requirements for evidence of substance exposure (ranging from a single positive drug test, to proof of infant "addiction" to a substance at birth) as well as in their criteria for which substances are reportable.

Source: https://www.guttmacher.org/state-policy/explore/substance-use-during-pregnancy.

Patient stigma can also be a key barrier to integrated OB/GYN and SUD care. Several providers noted that women may screen positive for SUD but decline to participate in treatment because they do not view their substance use as problematic or do not want to label themselves as someone with a disorder. Patients also may avoid treatment due to real or perceived discrimination and prior negative experiences with physical and behavioral health care providers.

Legal concerns--particularly those around requirements that health care providers report substance use among pregnant patients--can also present barriers to integrated OB/GYN and SUD treatment. Providers shared that these requirements and related fear of disclosure and child

welfare involvement create a major disincentive for pregnant women with SUD to seek health care of any sort. One TEP member elaborated on this by providing a presentation highlighting how state policies have become more punitive over time. This was echoed in one interview where the provider stated, “That will scare women away faster than anything else, not just from this kind of [integrated] intervention but from prenatal care altogether.” Reporting requirements can also create challenges for providers who want to treat their patients without fear of legal consequences. In addition, states with punitive policies appear to have a decrease in women who seek treatment. One stakeholder interviewee credited the success of their program partially to the fact that their state (California) does not require mandatory reporting.

TEP participants also expressed the belief that some federal policies further stigmatize PPW with SUD, citing as an example the implications of the Child Abuse Prevention and Treatment Act (CAPTA) as amended by the Comprehensive Addiction and Recovery Act (CARA) of 2016. CAPTA and CARA require states to have a process in place to assess the safety of the child and establish a services plan for the child and their caregiver, known as “plans of safe care”. However, CAPTA requires also screening for SUD and reporting to CPS if women screen positive. This may put some women in danger of losing custody of their children, depending on the process that each state has established and whether a positive screening triggers reporting and an investigation, or whether the existence of a plan of safe care is sufficient. TEP participants described the implications of removing children from the custody of their biological parents and placing them in foster care rather than treating the family unit. Participants emphasized the need for data to evaluate if child removal is concurrent with other health and behavioral health conditions for the children. It was noted that the Family First Prevention Services Act (FFPSA) was enacted to support family unity. The FFPSA enables states with an approved Title IV-E plan to use these funds for prevention services that would allow children at risk for removal from their homes to stay with their parents or relatives. The FFPSA also supports the establishment of a clearinghouse of approved prevention services that are well-researched and show evidence of clear benefit in prevention of the placement of children and youth into the foster care system.

Some TEP members suggested that terminology referring to SUD specifically is more stigmatizing than terminology referring to behavioral health generally, and therefore using the term “behavioral health” might reduce stigma and behaviors that discriminate against PPW with SUD. In addition, the panel recommended changing state-level policies to enhance services covered by private and public health insurance for behavioral health care. Some TEP members felt that changing the terminology of SUD treatment and enhancing services covered by health insurance would encourage more women to be forthcoming about their substance use and willing to seek treatment.

5.9. Future Research

More research on the effectiveness of different integrated care models for SUD would help providers and states select the model that best fits their local service area. Researchers interviewed for this analysis indicated that there was a dearth of literature on the overall effectiveness of SUD and OB/GYN integration, including the relative cost-effectiveness of

existing models. Although one researcher was happy to note that there was an evaluation component to the MOMs+ model, they also indicated that many federal and state grants supporting integrated care programs do not require evaluation, which hampers the ability to determine best practices and effective approaches. Limited attention has been paid to identifying appropriate outcome measures. "We don't have enough recovery-oriented outcomes. We look at urine testing and adherence to treatment, which are not always the right outcomes," noted one interviewee.

Outcomes to Collect on PPW with SUD

- Percentage of PPW screened for SUD
- Percentage of PPW with a SUD who receive treatment (MAT or other treatment)
- Percentage of PPW engaged in treatment 1 year postpartum
- Overdose rates
- Percentage of PPW receiving evidence-based treatment
- Maternal morbidity and mortality

Several TEP members suggested research topics that would support effective policymaking. Some TEP members recounted the barriers to integrated care posed by federal confidentiality laws under 42 CFR Part 2. Despite the intent of the legislation to encourage individuals with SUD to enter and remain in treatment, this legislation can hinder care coordination by preventing health care and substance abuse professionals from communicating with one another. Ohio's standardized release of information form provides a potential example of how to overcome this barrier. TEP members also recommended identifying states that had implemented policies and processes that meet federal privacy requirements but facilitate providers and agencies in sharing information in order to provide effective treatment. Some TEP members advocated for a cross-state analysis that could serve to evaluate the impact of differential state policies related to integrated OB/GYN and SUD services. Finally, TEP members also recommended conducting qualitative research that would identify effective state policies and practices. TEP members noted that state legislators are typically influenced to implement policies if they know a policy or program has been implemented in another state with a positive outcome.

According to the interviewed experts, there also should be further examination of the types of SUD treatment and care that work best for women during the postpartum period. One stakeholder noted that "the most difficult phase is the postpartum period [because] women have to transition from their OB/GYN to a family medicine doctor, and this is a particularly vulnerable time."

Further suggestions for research to support families affected by SUD included researching strategies to link data sets in order to be able to conduct quantitative research on families. Datasets that linked women and their children would be helpful in identifying services, supports, individual and family characteristics that are associated with positive outcomes for women with SUD and their children.

TEP members indicated that appropriate outcome measures should reflect the goals of integrated OB/GYN and SUD care. They identified several potential outcomes including:

- Family stability.
- Reduction of NAS.
- Reduction in infant/maternal mortality and morbidities.
- Strengthen care coordination by increasing team-based services.
- Cessation of illicit drug use.
- Stabilization of the *in utero* environment.
- Increasing compliance with prenatal care and SUD treatment.
- Managing medical co-morbidities.
- Addressing mental/behavioral health issues.
- Enhancing pregnancy outcomes.
- Lowering risk of Sudden Infant Death Syndrome.

6. CONCLUSION

Integrated OB/GYN and SUD models of care have the potential to provide essential treatment services to women, thereby serving as an important benefit to women and their unborn children. Our literature review, subject matter interviews, and TEP discussions reveal several promising emerging models of integrated care along the SAMHSA continuum of levels of integrated care, including the SBIRT model, the CenteringPregnancy group model, the Maternal/Pregnancy Health Home model, and the Integrated Care model used by the Moms in Recovery program based at Dartmouth-Hitchcock Medical Center. Interviews and discussions with subject matter experts identified common themes in establishing integrated care for PPW with SUD.

1. **Treatment models must allow for flexibility**. Clinical experts have noted that the location of the treatment provider (obstetrics vs. addiction treatment provider) may change over the course of a woman's reproductive health cycle. Although fully merged or integrated models of care are ideal, some women may not require intensive SUD treatment, and access to fully-integrated services may not be realistic for all women, particularly those in rural areas. Telemedicine and hub-and-spoke models may serve to meet this need.

2. **Treatment should include both clinical and non-clinical supports**. All stakeholders indicated the need to address social determinants of health within integrated care models in order to make treatment more successful. However, some stakeholders noted limitations in funding, and providers must use their existing resources to prioritize their core mission of clinical treatment for women needing OB/GYN and SUD care.

3. **Services should be available for up to 1 year postpartum**. Experts emphasized that postpartum SUD treatment is critical--women are least likely to overdose during pregnancy and most likely to overdose using opiates in the postpartum period at 7-12 months postpartum. Provision of integrated care services should continue up to 1 year after a woman gives birth.

4. **Limited reimbursement is a key barrier to implementing and expanding integrated models of SUD and OB/GYN care**. Standard maternity bundles do not include incentives for provision of SUD treatment, and many payment models do not support the essential non-clinical services that are important for PPW and their families.

5. **Additional workforce training is needed**. Experts noted that there is a need for additional training in identifying SUD among women who are pregnant. The addition of addiction medicine modules to standard medical and nursing school curricula would be helpful, as would ongoing training for practicing health care professionals.

Our study sheds light on several areas for additional research. First, although several models of care were identified, little is known about their effectiveness. Research that identified the outcomes of women, their infants, or ideally both would be valuable. Also, there is little

research regarding the feasibility of expanding and implementing existing models on a wider scale. While some standalone projects are found to be promising, additional research is required to determine if expansion is warranted.

Additional research is needed to identify effective policymaking regarding integrated OB/GYN and SUD treatment. Research regarding successful state policies that support effective billing and information sharing would be helpful to other states seeking to enhance integrated care.

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APPENDIX A: LEVELS OF INTEGRATED CARE IN PROGRAM MODELS

Exhibit A-1 provides the level of integration as well as example programs with the model of care and the location and basic description of program.

EXHIBIT A-1. Levels of Integrated Care in Program Models					
Levels of Integrated Care	**Level of Collaboration**	**Program Name**	**Program Model**	**Program Model Location**	**Program Model Description**
Coordinated	**Minimal Collaboration**: OB/GYN and SUD providers work at separate facilities and communicate rarely about cases. The providers make referrals to each other based on past collaboration and communicate based on the provider's need of patient information.	None	---	---	This level of collaboration may exist when formal programs are not in place.
	Basic Collaboration at a Distance: OB/GYN and SUD providers maintain separate facilities and view each other as resources. Providers communicate periodically about shared patients and patient care. These communications are typically driven by specific issues.	None	---	---	This level of collaboration may exist when formal programs are not in place.
Co-located	**Basic Collaboration Onsite**: OB/GYN and SUD providers are co-located in the same facility but may or may not share the same practice space. Providers use separate systems, but communication becomes more regular due to proximity, especially by phone or email, with an occasional meeting to discuss shared patients.	Project Link	SBIRT Model	Standalone at the Women and Infants Hospital, Providence Rhode Island	A hospital-based, IOP SUD treatment program for PPW that trains OB/GYN providers with the SBIRT model to refer patients to the SUD treatment program in the hospital.
	Close Collaboration with Some Integration: Collaboration among OB/GYN and SUD providers is closer due to co-location in the same practice space, and there is the beginning of integration of care through some shared systems. A typical model may involve an OB/GYN department in a hospital embedding outpatient SUD care.	Summa Health System	CenteringPregnancy Group Model	Regional in Ohio	Hospital-based prenatal care, education and support are provided in a group setting facilitated by a care provider, typically a doctor and nurse. Care is provided to groups of 8-12 women whose babies are due during the same month come together for a total of 10 sessions. CenteringPregancy groups specializing in care for women with opioid use disorder focus on how to incorporate MAT into care and how inter-professional teams can address unmet social needs in group visits.

EXHIBIT A-1. Levels of Integrated Care in Program Models					
Levels of Integrated Care	**Level of Collaboration**	**Program Name**	**Program Model**	**Program Model Location**	**Program Model Description**
Integrated	**Close Collaboration Approaching an Integrated Practice**: Collaboration and integration between OB/GYN and SUD providers are higher as the providers begin to function as a true care team, with frequent personal communication. The team actively seeks to integrate a broader range of OB/GYN and SUD services by direct communication of patient care.	Perinatal Assistance and Treatment Home (PATHways)	Maternal/ Pregnancy Health Home Model	Statewide in Kentucky	Integrates treatment for SUD with prenatal care, counseling, and a supportive peer network. The program prepares women for labor, delivery, and infant care through group counseling and peer support.
	Full Collaboration in Transformed/Merged Practice: Fuller collaboration between OB/GYN and SUD providers has allowed to integrate care to blur into a single program. OB/GYN and SUD providers work closely with patients on SUD treatment planning and a case manager or social worker maintains the patient records and often coordinates community-based support services as directed by the OB/GYN and SUD provider.	Moms in Recovery	Integrated Care Model	Standalone at Dartmouth-Hitchcock Lebanon location, New Hampshire	Care team consists of an OB/GYN physician, a clinical psychologist, and a nurse care coordinator. PPW receive prenatal care and education by an OB/GYN within a group setting, as well as participate in group counseling led by a psychologist.

APPENDIX B: METHODS

This section describes the methods for the scan of potential integrated OB/GYN and SUD program models, the literature review of the effectiveness of integrated OB/GYN and SUD program models, and interviews with subject matter experts.

Program Scan Methods

The scan of existing program models began with a review list of programs provided by the Office of the Assistant Secretary for Planning and Evaluation (ASPE) and identified through the work on the State Policy Leavers for Expanding Family-Centered Medication-Assisted Treatment white paper (Seibert et al., 2019). These sources identified programs, services, collaboration of agencies, community-based support services, and funding sources. Online searches were conducted to locate resources related to programs identified in the literature review and a broach search of state, regional, and standalone programs was conducted based on common search terms. ***Exhibit B-1*** provides the list of search terms used to locate online resources for additional grey literature program models.

EXHIBIT B-1. Search Terms		
Terms for Integrated Care	**Terms for OB/GYN Care**	**Terms for SUD Care**
▪ Consulting Care ▪ Integrated Care ▪ Co-Located Care ▪ Coordinated Care ▪ Collaborative Care ▪ Integrated Programs ▪ Evidence-Based Practice ▪ Patient-Centered Care	▪ Obstetric and Gynecological Services (OB/GYN) ▪ Perinatal ▪ Prenatal ▪ OB/GYN Clinicians/Providers ▪ Fetal Alcohol Spectrum Disorder (FASD) ▪ Pregnant and Postpartum (or parenting) Women (PPW) ▪ Neonatal Abstinence Syndrome (NAS)	▪ Substance Use Disorders (SUD) ▪ Opioid Use Disorder (OUD) ▪ Screening, Brief Intervention, Referral, and Treatment (SBIRT) ▪ Medication Assisted Treatment (MAT) ▪ Addiction Treatment ▪ Drug Abuse/Use Treatment ▪ Maternal Substance Use ▪ Drug Dependency ▪ SUD Treatment ▪ Embedded Substance Abuse/Use Care ▪ Mental Health Services ▪ SUD Clinicians/Specialists

Literature Review Methods

RTI conducted a scan of peer-reviewed articles, grey literature, and Internet-based sources on integrated OB/GYN and SUD models published between 2007 and 2019. Searches began with lists of primary search terms as well as defined inclusion and exclusion criteria. Databases and organizational and agency websites were reviewed. The same search terms used for the program scan were used for the literature review. The search yielded an initial list of identified

sources and a database recorded the initial list of sources. An analyst conducted a high-level review to remove duplicates and identify sources for an in-depth review.

Two members of the team reviewed the study abstracts, further refining the list based on the predetermined inclusion/exclusion criteria, eliminating studies that were not appropriate for inclusion. Reasons for excluding publications were documented. The team conducted a full text review of 36 articles; 19 were retained for inclusion in the literature review. The search yielded 13 studies pertaining to the effectiveness and/or implementation of integrated OB/GYN and SUD care, including four meta-analytic reviews. The peer-reviewed integrated care literature selected originated from journals representing a number of disciplines including psychology, public health, OB/GYN/midwifery/perinatology, maternal child health, women's health, and addiction/substance abuse.

Subject Matter Expert Interview Methods

Led by two experienced health services researchers, the team conducted eight telephone interviews with a mix of researchers, providers, state officials, and one professional association. Among the providers included in the interviews were three lead programs embedded in fully-integrated health care systems (Kaiser Health, Summa Health, and Dartmouth-Hitchcock) and one intervention designed to enhance coordination between OB/GYN and mental health and SUD providers (MCPAP for Moms). State officials from Colorado and New Jersey were also interviewed to provide perspectives on state-supported integrated care programs for PPW with SUD. Two provider researchers, nationally known for their research on PPW with SUD, were also interviewed, as were representatives from ACOG, a professional organization.

APPENDIX C: TECHNICAL EXPERT PANEL LOGISTICS AND ATTENDEES

The TEP took place in-person in Rockville, MD on July 30, 2019. The TEP was composed of seven experts representing academic researchers and providers, state officials, and stakeholders from non-profit organizations; eight representatives of federal agencies; and five staff members from ASPE and RTI. The participants demonstrated in-depth expertise in the provision, funding, and support of OB/GYN and SUD services. Exhibit C-1 lists the participants and their organizations.

EXHIBIT C-1. TEP Attendees	
Attendee	**Affiliation**
Academic Researcher and Providers/State Officials	
Lakshmi Reddy, MD	Gateway Health
Lorraine Milio, MD	Johns' Hopkins University, Center for Addiction and Pregnancy, Department of Gynecology and Obstetrics
Mishka Terplan, MD	University of California, San Francisco, Department of Obstetrics, Gynecology and Reproductive Sciences
Susanna Snyder	Colorado Department of Health Care Policy and Financing, Health Programs Office
Rick Massatti, PhD	Ohio Department of Mental Health and Addiction Services
Stakeholders	
Kelly Corredor	American Society of Addiction Medicine (ASAM)
Rick Harwood	National Association of State Alcohol and Drug Abuse Directors (NASADAD)
Federal Officials	
Alice Thompson	Center for Medicaid and Medicare Innovation (CMMI)
Dawn Levison	Health Resources and Services Administration (HRSA), Division of Healthy Start and Perinatal Services, Maternal and Child Health Bureau
Linda White Young	Substance Abuse and Mental Health Services Administration (SAMSHA)
Mindy Morell	Centers for Medicaid & Medicare Services (CMS), Division of Benefits and Coverage Disabled and Elderly Health Programs Group Center for Medicaid and CHIP Services Centers
Neeraj Gandotra	Substance Abuse and Mental Health Services Administration (SAMSHA)
Pamala Trivedi	Office of the Assistant Secretary for Planning and Evaluation (ASPE), Children and Youth Policy Team
Renee Ellen Fox	Centers for Medicaid & Medicare Services (CMS), Division of Quality & Health Outcomes Center for Medicaid and CHIP Services (CMCS)/Children and Adults Health Programs Group (CAHPG)
Shahla Jilani	Office of the Assistant Secretary for Health
Project Team Members	
Kristina West	Office of the Assistant Secretary for Planning and Evaluation (ASPE)
Erin Bagalman	Office of the Assistant Secretary for Planning and Evaluation (ASPE)
Emma Nye	Office of the Assistant Secretary for Planning and Evaluation (ASPE)
Julie Seibert	RTI International
Elysha Theis	RTI International