Learning Outcomes

Upon completion of this activity, the learner will be able to:

1. Examine the barriers pregnant people with opioid use disorder may encounter when accessing routine prenatal care.
2. Evaluate the impact of an integrated treatment model for pregnant people with opioid use disorder.
3. Assess the role of nurses in the success of an integrated prenatal opioid use disorder program.

Continuing Nursing Education (CNE) Credit

A total of 1.4 nursing contact hours may be earned for reading "Lessons Learned From the Implementation of an Integrated Prenatal Opioid Use Disorder Program" and for completing an online posttest and participant feedback form. A score of 80% or higher on the posttest is required to receive nursing contact hours.

This learning activity is free for AWHONN members and available for purchase by nonmembers. To access it, visit the AWHONN store at https://www.awhonn.org/awhonn-store/ and type NWH into the search box.

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Disclosures

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Lessons Learned From the Implementation of an Integrated Prenatal Opioid Use Disorder Program CNE

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ABSTRACT

Objective: To evaluate key lessons learned from efforts at increasing engagement in integrated prenatal and opioid use disorder services.

Design: An interdisciplinary team consisting of a board-certified obstetrician and registered nurse led the implementation of this multipronged approach driven by several plan–do–study–act cycles to develop an integrated prenatal and opioid use disorder program.

Setting/Local Problem: An urban community health center in Chicago, Illinois, where mental health issues, including substance use, are the leading cause of death for pregnant people.

Participants: Connections were made with local harm reduction agencies, substance use treatment facilities, and community outreach programs to develop partnerships with organizations providing existing addiction and maternal–child services in the community.

Intervention/Measures:: Partnership building was achieved through organization needs assessments, dissemination of information about integrated services, and sustained communication. Referral workflow guides and patient education cards were created and distributed to community partners. Incoming referrals were tracked at the clinic site. Use of the referral materials was evaluated via online surveys distributed to community partners.

Results: In the 18 weeks of enhanced integration, three patients engaged in services and were initiated on medication for opioid use disorder, two of whom had been referred from agencies targeted in the outreach efforts. Surveys showed that community partners believe the referral guides were easy to use and that the harm reduction information on the patient cards was useful.

Conclusion: An urban community health center was equipped to provide comprehensive, integrated services to pregnant people with opioid use disorder, but barriers such as community unawareness and stigma impeded engagement. Sustained collaboration with community partners serving pregnant people with opioid use disorder supports program development and linkage to care. Integrated prenatal and opioid use disorder care is feasible, is destigmatizing in nature, and can lead to improved maternal and fetal outcomes.

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KEYWORDS: community health, harm reduction, integrated care, opioid use disorder, pregnancy, referral and consultation

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CLINICAL IMPLICATIONS

- Integrating prenatal care with care for individuals with opioid use disorder (OUD) requires coordinated, system-level organization.
- Nurses should play a critical role in coordinating integrated prenatal and OUD treatment services.
- Sustained community outreach with organizations that serve pregnant people and people with OUD is needed.
- Practical, person-centered outcomes should be valued measures of program success.

Opioid use disorder (OUD) in pregnancy is a nationwide problem with potentially serious ramifications for maternal and fetal health outcomes. The most recent data indicate that the rate of OUD in pregnancy has risen significantly in all demographics, with an overall relative increase of 131% from 2010 to 2017 (Hirai et al., 2021). There has been a total relative increase of 82% in rates of neonatal opioid withdrawal syndrome, which is associated with longer hospital stays and greater health care costs (Hirai et al., 2021). The recent Illinois Department of Public Health (IDPH; 2021) maternal morbidity and mortality report indicated that mental health conditions, including substance use, are the leading cause of death in pregnant people in Illinois.

Pregnant people experiencing OUD are at increased risk for many adverse pregnancy and fetal outcomes such as preterm labor, cesarean birth, maternal cardiac arrest, congenital birth defects, fetal death and stillbirth, intrauterine growth restriction, neonatal opioid withdrawal syndrome, and the potential for maternal/neonatal separation because of the loss of parental custody (Zhao et al., 2020).

Medication for OUD (MOUD) is an essential medical treatment option for those experiencing OUD and includes the use of a full opioid agonist (methadone), partial opioid agonist (buprenorphine), or opioid antagonist (naltrexone), along with behavioral counseling and drug toxicology screenings (Substance Abuse and Mental Health Services Administration [SAMHSA], 2021). Methadone has long been the first-line medication for OUD treatment in pregnancy; however, with promising neonatal outcomes, buprenorphine has been added as another first-line option (Towers et al., 2020). Although MOUD therapy is becoming more widely used in managing OUD, it remains underused in the pregnant population (Krans et al., 2019).

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Available Knowledge

Barriers to Care

Pregnancy poses a unique time for those experiencing OUD because their seeking of prenatal care may be the only opportunity for health care providers to diagnose and encourage the treatment of OUD in childbearing people (Reddy et al., 2016). Many individuals see pregnancy as a motivating time to seek help; however, barriers remain (Cleveland et al., 2016). Stigmatization and fear restrict many pregnant people from seeking prenatal care and treatment for OUD; thus, clinicians must be dedicated to providing empathetic, nonjudgmental, and nonpunitive care (Roper & Cox, 2017). Comorbid psychiatric disorders often occur with OUD because individuals afflicted by substance use are more likely to experience a form of mental illness (SAMHSA, 2020). There is a lack of standardized tools to treat individuals with OUD in primary care, indicating the need to develop new, validated tools that include psychological comorbidity outcomes (Langisetty et al., 2017). Women of color and women of lower socioeconomic status, who often face greater risks for poorer pregnancy outcomes, are also disproportionately affected by substance use disorders, and they may face barriers to engaging in care, such as decreased access to care, issues with transportation, and financial burdens (Roper & Cox, 2017).

Integrated Treatment Model

Achieving an integrated model of health care should be the goal in screening and treating pregnant people with OUD. Integrated prenatal and OUD care consists of an interdisciplinary care team providing routine prenatal care, MOUD therapy, and linkage to psychiatric and behavioral health care, as well as social and familiar support in one clinic visit (Roper & Cox, 2017). Traditional models of care involve referrals to various agencies for services, which can be difficult to access for patients affected by addiction and poverty; moreover, interactions with various sectors of a complex health and social service system allow for increased opportunities for stigmatizing interactions that can deter treatment engagement (Marcellus et al., 2015). Building a strong rapport while increasing adherence to prenatal care and OUD treatment may be more feasible if individuals are able to access integrated care from one trusted location.

The integration of OUD treatment into prenatal care can facilitate improved health and social outcomes for pregnant individuals and their newborns. Researchers who conducted an early retrospective study on substance use in pregnancy showed that individuals who were screened, assessed, and treated for substance use within a large health care system's prenatal program had lower rates of placental abruption, preterm birth, intrauterine fetal demise, and low-birth-weight

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newborns than patients who were only screened (Goler et al., 2008). Other researchers evaluated outcomes for individuals who participated in an integrated program and found improved health outcomes, increased likelihood of attending postpartum visits, and greater initiation of breastfeeding and use of long-acting contraception than among those receiving traditional care (Krans et al., 2019).

Practical outcome measures that reflect person-centered goals must be developed to help foster integrated prenatal and OUD treatment programs. Measuring success by program-driven outcomes such as complete opioid abstinence or treatment adherence is not in line with the harm-reduction care model and may increase stress surrounding the risk of relapse that many pregnant people face (Cleveland et al., 2016; Marcellus et al., 2015). Person-centered outcomes focus on measuring success in qualitative terms, such as voluntary program initiation and engagement, sustained connection to social support services after birth, and individuals reporting feeling empowered, as opposed to quantitative measures such as negative urine drug test results (Cochran et al., 2018; Hodgins et al., 2019; Marcellus et al., 2015).

Rationale

A multipronged effort was undertaken to increase access and engagement to an integrated prenatal and OUD program at a community health center in Chicago, IL. The theoretical framework used to guide this project was Aaron Antonovsky's salutogenic model of health. In his 1987 publication *Unravelling the Mystery of Health*, Antonovsky describes health and wellness as multidimensional, on a continuum of *health ease/dis-ease*, influenced by stressors and tension in the individual's life situation. The individual is better able to manage these tensions in their life by using generalized resistance resources (GRRs; Antonovsky, 1987). In building an integrated prenatal and OUD program, this project intended to focus on strengthening the social support aspect within the GRRs of a pregnant person with OUD, carefully considering the social determinants of health that influence the individual's place on their health continuum. Figure 1 displays a diagram of the salutogenic model of health for pregnant patients with OUD.

Specific Aims

The aim of this quality improvement project was to evaluate key lessons learned from efforts at increasing engagement in integrated prenatal and OUD services. The hope was to see greater numbers of patients receiving referrals to integrated prenatal and OUD services during the intervention period in 2021 than were observed for baseline in 2020 (during which two patients were successfully referred to services). This report will highlight the community outreach process and interventions used to build local awareness around pregnancy and OUD and increase linkage of care to the integrated prenatal and OUD program. Standards for Quality Improvement Reporting Excellence (SQUIRE) 2.0 guidelines were followed when writing this article (Ogrinc et al., 2016).

> Building a strong rapport while increasing adherence to prenatal care and OUD treatment may be more feasible if individuals are able to access integrated care from one trusted location

Methods

Context

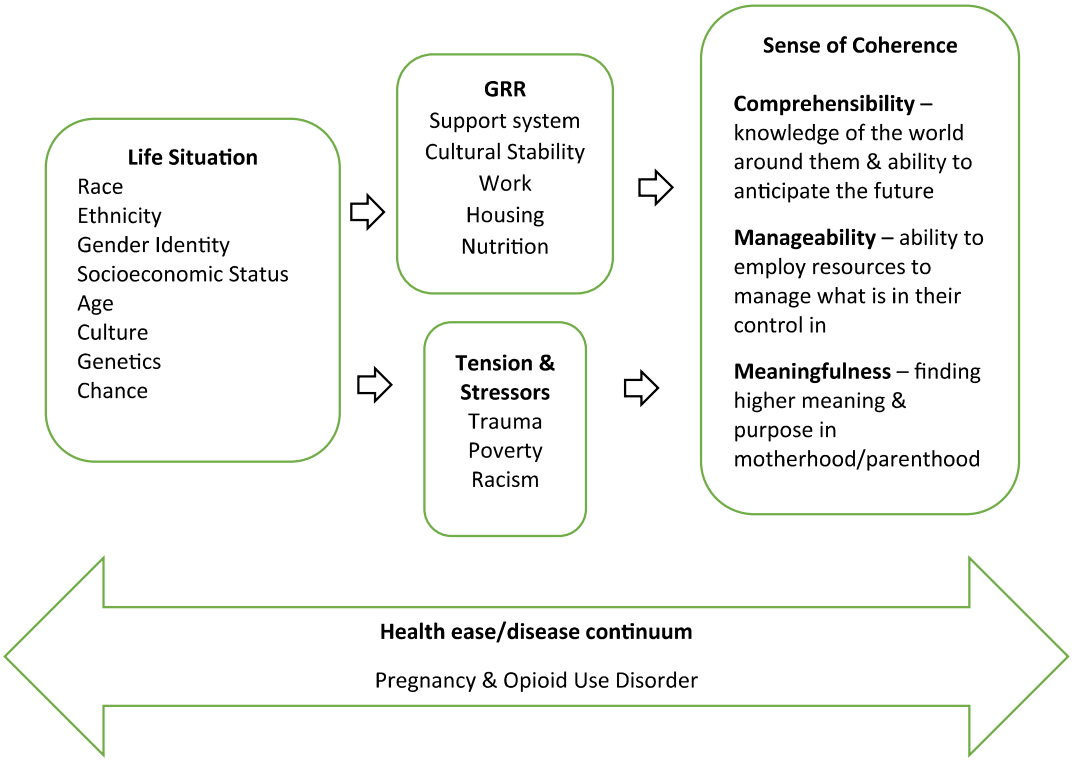
The collaboration between a board-certified obstetrician and a registered nurse initiated the process of building an integrated prenatal and OUD program. A strong culture of MOUD prescribing exists within the family medicine and behavioral health departments of this urban community health center, with a well-established referral process and access to rapid-start MOUD. A certified addiction registered nurse (CARN) acts as the first point of contact for potential patients and outside referring organizations, performing individualized intake assessments and scheduling the patient for the next available appointment for MOUD initiation. These existing efforts increased the feasibility of adopting an integrated model of OUD care within the obstetric department of this clinic.

The outset of this project included consulting with clinic staff and leaders to understand potential barriers impeding patient engagement in prenatal and OUD services at the community health center. Staff postulated that trust in health care professionals, stigma regarding OUD in pregnancy, gaps in referrals from outreach facilities, and potential issues in transportation are all barriers to linkage to treatment. Connections were made with harm reduction agencies, substance use treatment facilities, and grant-funded programs that serve people with OUD as well as pregnant and parenting people with the intention of building organizational relationships and increasing community awareness of the integrated services at the community health center.

Intervention

Potential community partners were engaged via e-mail or phone, and because of the constraints of COVID-19, initial meetings were conducted via the Zoom online video platform (henceforth referred to as *virtual meetings*). A semistructured meeting approach was prepared to allow for fluid conversation surrounding the problem of OUD in pregnancy while assessing the organization's current practices through specific inquiry. Guidance was sought from the SAMHSA-funded Education Development Center's Prevention Solutions for opioid dependence and overdose to help establish common practices and goals between the clinic and community partners (Prevention Solutions, 2016). These various toolkits aim to

FIGURE 1 **SALUTOGENIC MODEL OF HEALTH CARE FOR PREGNANT PEOPLE WITH OPIOID USE DISORDER**



Note. Diagram depicting the Salutogenic theoretical framework model to guide understanding and treatment of the pregnant person with opioid use disorder. GRR = generalized resistance resource.

guide the cross-system development of comprehensive services for organizations supporting those with substance use (Prevention Solutions, 2016). Example questions developed by the study team can be found in Box 1. Inquiring about the types of services each potential community partner provided and potential gaps in services helped guide future collaboration.

Referral workflow guides specific to the integrated prenatal and OUD services offered at the community health center were created and distributed digitally and via hard copy to engaged community partners. Workflow process maps provide a visualization of what occurs within a specific clinic task, clearly defining the unseen intricacy that make up the process (Agency for Healthcare Research and Quality, 2015). Standardized symbols in a process map signify certain steps and decisions within the workflow, with the square shape representing a task and the diamond shape indicating a decision point in the process (International Organization for Standardization, 1985). Process maps can reduce error, increase efficacy, and improve outcomes related to the workflow being designed (Agency for Healthcare Research and Quality, 2015). Guidance from the clinic's CARN was sought to create a workflow guide that adheres to the current MOUD referral process among the family medicine and behavioral health departments while complying with the individual needs of the obstetrics department and provider. This guide is depicted in Supplementary Figure S1.

A program information card was created for intended patient use. The cards were intended to serve as an advertising tool for the clinic's integrated prenatal and OUD program while also doubling as harm reduction education for the reader. The infographic on the back of the card, which is in the public domain, was adopted from the Academy of Perinatal Harm Reduction and National Perinatal Association. It gives the reader four quick tips on how to improve their health while pregnant through seeking prenatal care; reducing their use of substances; initiating MOUD; and maintaining health via good diet, exercise, and emotional support (Academy of Perinatal Harm Reduction, 2020). The goal of the patient cards was to convey positive imagery surrounding pregnancy and encourage autonomy in reducing use and seeking care.

Study of the Intervention

The proposed project was presented to the clinic's quality improvement team as well as the family medicine and behavioral health providers and staff via all staff meetings. Qualitative feedback from project stakeholders was sought before the dissemination and distribution of the program

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> An unexpected benefit of networking was when established partners linked the program to other organizations, which drove new partnerships

materials to community partners. Key stakeholders providing feedback included the obstetrician delivering the integrated services, the CARN managing referrals and intakes, and the project lead's university faculty mentor. Changes to the patient cards were made to support more concise, person-centered language, and the workflow guides were adapted to add a diamond or decision point for methadone treatment. Buprenorphine can be prescribed in any setting by physicians, nurse practitioners, nurse-midwives, and physician assistants who obtain their Drug Assistance Treatment Act 2000 waiver (SAMHSA, 2021). However, methadone can be administered only by an authorized provider via a SAMHSA-certified opioid treatment program (OTP). Thus, for individuals desiring methadone for OUD management, the obstetric provider would deliver the prenatal care, closely collaborating with the OTP physician ordering the patient's methadone (SAMHSA, 2021).

The initial dissemination of program materials was performed via virtual and in-person meetings with community partners. Community engagement was broken down through two plan–do–study–act (PDSA) cycles over 18 weeks. The PDSA model is a well-established variation of rapid cycle performance improvement that guides the application and modification of interventions within health care institutions (White et al., 2021). The first PDSA cycle included engagement with a local nonprofit serving unhoused individuals and teen parents dealing with homelessness, a grant-funded maternal–child health initiative, a university-driven community outreach program for people who use drugs, and a local substance use treatment facility with specific maternal and parenting programming. Community partners were encouraged to refer pregnant individuals with other substance use disorders aside from OUD and pregnant patients already receiving a form of MOUD who may need prenatal services. Although the goal of the program was to provide integrated MOUD and prenatal care to pregnant people with OUD, the obstetrician at the community health center offered a safe space to provide unbiased care to individuals with substance use disorders.

The second PDSA cycle of the program connected with a local harm reduction not-for-profit organization, a grant-funded doula program for pregnant and postpartum individuals with substance use disorders, and a substance use treatment facility, and the initial engagement began with the county's correctional facility. In total, eight community partners were engaged, and depending on the availability and needs of the partner, communication was sustained weekly, biweekly, or monthly with virtual and phone check-ins to answer any questions regarding the program and help coordinate care for potential patients as needed.

BOX 1 Examples of Organizational Needs Assessment Questions

Describe the patient population you serve.
How many of the parenting and pregnant clients you serve struggle with opioid use?
Who are your current community partners?
How do your clients obtain medication for opioid use disorder and prenatal care?
What are some perceived obstacles in linking clients to substance use services?
What relationship expectations do you have for your partnerships with outside organizations?

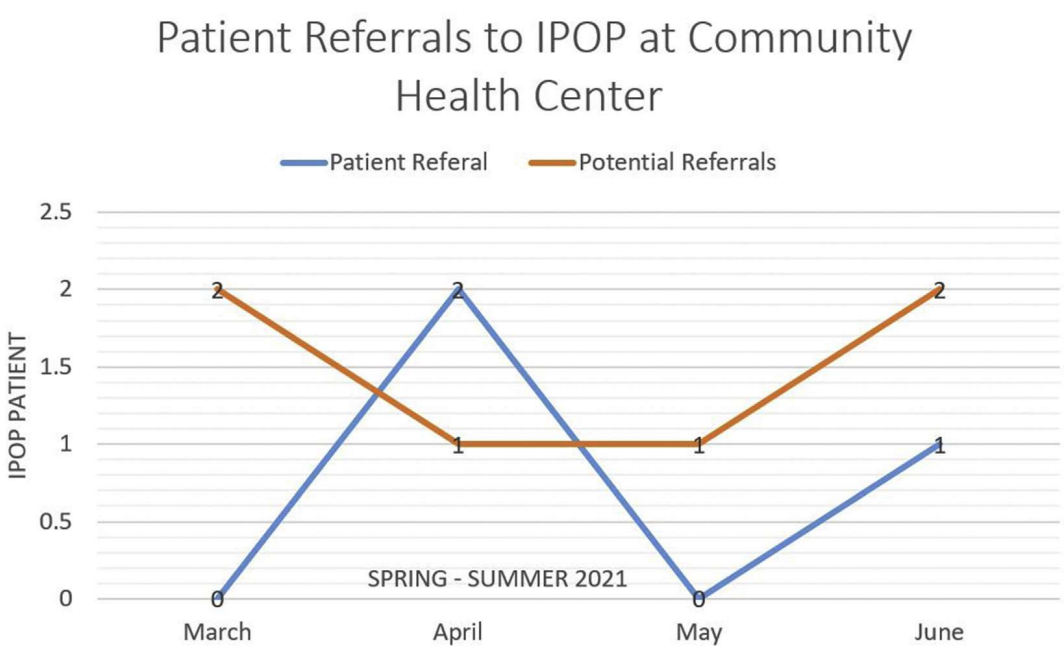
Evaluation of program materials was sought at the end of the second PDSA cycle. Survey questions can be seen in Supplementary Table S1. The anonymous investigator-developed survey was electronically sent to seven of the eight community partners. Outreach with the eighth community partner, the county's correctional facility, remained ongoing without adequate use of the program materials before the end of the PDSA cycle; thus, that facility is not included in this evaluation.

Measures

Primary outcome measures included the total number of patients referred to the health center's integrated prenatal and OUD services from March 2021 through June 2021. Among referred patients, initiation of MOUD was monitored once linked to care. These measures were tracked via biweekly meetings with the program obstetrician to identify new patients who were referred for integrated care. This provider also tracked the initiation of MOUD for linked patients. The community partners were instructed to specifically state that they were seeking integrated prenatal and OUD services when referring individuals. This was to ensure that potential pregnant or postpartum individuals were referred to appropriate services within the clinic. The CARN was informed of each new community partner and provided with the contact information for these partners. Virtual meetings and e-mail check-ins with the CARN were carried out to track the realized referrals and calls or messages left on the intake phone for potential referrals.

Outreach with community partners led to tracking the secondary outcome of potential referrals with the goal of identifying barriers impeding linkage to care. Stronger partnerships naturally evolved with certain community partners, such as organizations that had an existing working relationship with the community health center and those whose services could complement the integrated prenatal and OUD treatment model, allowing for shared patient management.

FIGURE 2 **RUN CHART OF INTEGRATED PRENATAL AND OUD PROGRAM (IPOP) REFERRALS**



Note. Patient referrals are displayed as blue data points, and potential referrals through engagement with community partners are shown as orange data points.

Community partners available for weekly engagement with the project lead allowed for in-depth discussion of potential patients, individualized barriers impeding linkage to care, and possible solutions to facilitate care coordination. Although the community partners were apt to help guide their pregnant clients to the integrated services, voluntary program engagement remained an important goal, and potential patients were always informed of their options for services available with acceptance of engagement when they were ready.

Analysis

Information from the organizational needs assessments performed with each community partner and subsequent outreach meetings were compiled in an accessible table, allowing for easy visualization of each organization's mission, provided services, strengths, current partners, and goals for partnership with the integrated prenatal and OUD program. The responses from the anonymous surveys aided in the analysis of the program materials distributed to each of the community partner sites. Four of the seven community partners completed the survey in full. Qualitative feedback at the end of the survey was sought to elicit suggestions for the referral process and patient cards, as well as general suggestions for partnership building. The surveys were sent out toward the end of the second PDSA cycle, ensuring that the community partners would have adequate time to use the program material. The four partners who completed the surveys engaged more readily in frequent phone and virtual check-ins throughout the project.

Results

The overall outcome measures showed that from March 2021 through June 2021, a total of three individuals were successfully linked to care, two of whom were referred from the two substance use treatment facility partners. Once in care, these two patients initiated buprenorphine treatment. The third patient was a former patient of the program's obstetrician and was linked to care because of previous knowledge of the provider's ability to prescribe MOUD. This patient received MOUD from the program physician while receiving obstetric care from the high-risk maternal–fetal medicine team. Six additional individuals were identified for integrated prenatal and OUD services from March 2021 through June 2021. These individuals did not fully link to care because of relocation, enrollment in different treatment programs, being lost to follow-up, or simply not feeling ready to engage in treatment. Figure 2 depicts a run chart of actual patient referrals compared to potential patient referrals from March 2021 through June 2021.

A commonality among all community partners included the populations served, which were generally people who use drugs, pregnant and parenting people dealing with homelessness, and pregnant and parenting people with low income, with intersectionality existing among all. Understanding in detail the services provided by each partner helped identify potential gaps in their current services, creating an

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The hesitation several individuals showed when offered services illustrates the need to support autonomy and to meet them where they are

opportunity for the integrated prenatal and OUD program to meet needs while acknowledging potential overlapping services. The prospect of more integrated prenatal and OUD options throughout the city was received with positive regard by community partners; however, several partners had existing collaborations with other health systems, possibly influencing the low level of referrals. An unexpected benefit of networking was when established partners linked the program to other organizations, which drove new partnerships. The close-knit nature of the harm reduction community facilitates local multilateralism, allowing for continuity of services and improved care delivery.

The survey results showed that the community partners, on average, saw 5 to 10 pregnant clients with OUD monthly, and most respondents serve approximately 20 clients of childbearing age with OUD every month. All respondents strongly agreed that referral workflow guides were straightforward, and the majority believed the guides were visually appealing. One of the respondents reported having used the workflow guide to refer a patient to the integrated prenatal and OUD program at the health center and was able to speak with the intake nurse that same day. Most of the respondents strongly believed that the harm reduction information of the back of the patient cards was useful, and respondents reported that the patient cards were being equally given to potential clients, distributed to individuals who may be personally linked to a pregnant person, and displayed and freely taken from the organizational site.

The qualitative feedback elicited from the open-ended survey questions allowed for reflection and helped guide the next steps for collaboration and program development. One community partner indicated that although their organization had not yet referred any clients, they were pleased to have access to the integrated resources. They stated, "As you know, women who inject drugs are wary of divulging [their] children, for fear of losing them. I look forward to having this to offer [to them] if and when they do [divulge]." When asked about suggestions for strengthening the health center and community partner collaboration, one partner recommended increasing community access to integrated services by building mobile service programs. Another partner encouraged exchanging training education between the health center and community partner's unique area of expertise. This partner stated that their staff needs additional education surrounding "pregnancy and parenting in women who inject drugs" and that their program could "offer a variety of harm reduction trainings" to the health center staff.

Discussion

Summary

The increasing incidence of opioid use in women of childbearing age and pregnant people warrants a measured and comprehensive response. In Illinois, pregnancy-associated deaths are defined as deaths of any cause occurring during pregnancy or within the first year postpartum (IDPH, 2021). Overall, 22% of all pregnancy-associated deaths in Illinois from 2016 to 2017 were due to drug overdoses (IDPH, 2021). Most pregnancy-associated deaths occur 6 to 11 months postpartum, denoting the importance of sustained support well into the postpartum period (IDPH, 2021). Integrating mental health and substance use treatments within the primary care setting is becoming more widely accepted, representing one holistic and efficient solution to a complex clinical issue.

Interpretation

To increase community access to available services for the treatment of OUD in pregnancy, health care institutions must foster supportive partnerships with the organizations that are serving those in the community with and at risk for substance use disorders. The stigma and fear of punishment that pregnant individuals struggling with the disease of addiction may encounter is an overwhelming barrier, impeding those from seeking the services that are needed to improve maternal and fetal health outcomes (Cleveland et al., 2016). Building community partnerships that foster the thoughtful coordination of services requires sustained collaboration with partners, marked by open communication surrounding the problem of OUD in pregnancy with an aim to decrease institutionalized stigma and to improve knowledge.

Program initiation and MOUD initiation were the chosen outcomes for measurement in this project; however, these measures may not fully illustrate program success, because many complex factors influence the complete linkage of care and retention of pregnant individuals with OUD. Although just three patients met these outcome measures within the 18-week project implementation, six additional pregnant people with OUD were identified and engaged by community partners. A goal of integrated care is to engage individuals early in their pregnancy, allowing for ample transition onto MOUD, which not only reduces the recurrence of opioid use and the complications accompanying it but improves adherence to prenatal care (American College of Obstetricians and Gynecologists, 2017b). However, the hesitation several individuals showed when offered services illustrates the need to support autonomy and to meet them where they are.

Authors of an evaluation of an integrated perinatal program for women with OUD in Massachusetts echoed these

complexities in building a program as they struggled with low numbers of referrals and challenges in measuring program success (Hodgins et al., 2019). The program team postulated that a lack of knowledge surrounding OUD in pregnancy and how to properly screen and intervene was impeding referrals from within the health system (Hodgins et al., 2019). Health systems and health care providers should be prepared to encounter and deliver the best care for people with OUD. The use of patient safety bundles, such as the Obstetric Care of OUD bundle created by the Alliance for Innovation on Maternal Health, allows for convenient and evidence-based guidance on how to recognize, prevent, and respond to OUD in pregnancy (American College of Obstetricians and Gynecologists, 2017a).

Another major barrier for potential patients included the location of services and feasibility of getting to appointments. Providers in a midwife-driven perinatal addiction program in New Hampshire recognized this barrier of transportation, because many of their rural patients had difficulty accessing services (Goodman, 2015). To mitigate this in our program, financial support and transportation coordination were offered to community partner agencies, funded by a university scholarship obtained by the project leader. However, as Goodman (2015) reiterates, grants and donations are finite, and more sustained funding is needed to provide patients with ongoing support. It is also worth noting that there will be patients who choose a traditional model of care with separate prenatal and addiction services. This may be for logistical reasons such as location, already having an established MOUD prescriber, or receiving methadone maintenance at an OTP. Obstetric providers should be equipped to provide unbiased prenatal care to these patients and receive consent for collaboration with their MOUD provider.

Limitations

This project has limitations that warrant discussion. Only three individuals fully enrolled in the program; thus, the results cannot be generalized beyond the sample size. The ongoing COVID-19 pandemic limited the ability of the project leader to engage in frequent in-person outreach, allowing for only online video meetings. Moreover, the rapid nature of the project implementation added constraints to robust partnership building. There is currently no case coordination or specified obstetric intake nurse roles at the community health center, potentially impeding full linkage to care for individuals seeking MOUD and addiction services because some are at risk of being lost to follow-up.

Implications for Practice

The integration of mental health and substance use services into the primary care setting has been a national priority to improve access to and the quality of health care; however, this model remains underused in the field of obstetrics (National Academies of Sciences, 2006; Roper & Cox, 2017). To achieve a more integrated approach to OUD treatment, nurse practitioners, nurse-midwives, and obstetricians should receive their Drug Assistance Treatment Act 2000 waiver to prescribe buprenorphine (Reising et al., 2019). A 24-hour in-person and online training is required for nurse practitioners and nurse midwives to become waivered (SAMHSA, 2021). Registered nurses are equipped to play an integral role in the delivery of integrated prenatal and OUD services. Registered nurses with at least 2,000 recent hours of addiction nursing experience can become experts in the field of substance use by obtaining the CARN certification (Addictions Nursing Certification Board, n.d.). These specially trained nurses coordinate care and act as the individual's trusted point of contact, building a meaningful rapport and reducing stigma through nonjudgmental interactions from the first engagement until after birth, helping maintain a therapeutic relationship and mitigating the very real risk of attrition (Paterno et al., 2019; Reising et al., 2019) To develop sustainability, integrated care teams should focus on implementing universal screening with validated screening tools across health systems while harnessing the capabilities of the electronic medical record systems through best practice alerts and comprehensive electronic referrals. Adopting safety bundles and toolkits to guide the diagnosis, treatment, and prevention of OUD in pregnancy, such as that of the Alliance for Innovation on Maternal Health bundle, may aid in program realization (American College of Obstetricians and Gynecologists, 2017a). Sustained community outreach on a system level is needed to build partnerships with organizations serving pregnant people and people with addiction. Practical, person-centered outcomes such as voluntary patient engagement are needed to measure the success of integrated prenatal and OUD care.

Conclusion

Integrated prenatal and OUD care is feasible, person centered, and destigmatizing in nature, yet it may be resource intensive, requiring the thoughtful coordination of services. Integrated care can allow for the earlier initiation of MOUD in pregnant patients, reducing risks and improving maternal and fetal outcomes. As caseloads increase, a potential opportunity for an obstetric nurse care coordinator to maintain outreach with community partners and support patients throughout pregnancy and postpartum is warranted. Future projects evaluating the pregnant patient's perspective paired with qualitative outcome measures of success are needed.

Supplementary Materials

Note: To access the supplementary materials that accompany this article, visit the online version of *Nursing for Women's Health* at http://nwhjournal.org and at https://doi.org/10.1016/j.nwh.2022.03.007.

Author Disclosures

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Check for updates

References

Academy of Perinatal Harm Reduction. (2020). *Your pregnancy and substance use*. https://www.perinatalharmreduction.org/infographics

Addictions Nursing Certification Board. (n.d.). *Examination*. https://ancbonline.org/Examination

Agency for Healthcare Research and Quality. (2015). *AHRQ publication no. 15-0060-EF*. https://www.ahrq.gov/sites/default/files/wysiwyg/ncepcr/tools/PCMH/pcpf-module-10-workflow-mapping.pdf

American College of Obstetricians and Gynecologists. (2017a). *Obstetric care for women with opioid use disorder (+AIM)*. https://safehealthcareforeverywoman.org/council/patient-safety-bundles/maternal-safety-bundles/obstetric-care-for-women-with-opioid-use-disorder-aim/

American College of Obstetricians and Gynecologists. (2017b). *Opioid use and opioid use disorder in pregnancy. Committee opinion number 711*. https://www.acog.org/clinical/clinical-guidance/committee-opinion/articles/2017/08/opioid-use-and-opioid-use-disorder-in-pregnancy

Antonovsky, A. (1987). *Unravelling the mystery of health*. Jossey-Bass.

Cleveland, L., Bonugli, R., & McGlothen, K. (2016). The mothering experiences of women with substance abuse disorders. *Advances in Nursing Sciences, 39*(2), 119–129. https://doi.org/10.1097/ANS.0000000000000118

Cochran, G. T., Hruschak, V., Abdulla, W., Krans, E., Douaihy, A. B., Bobby, S., … Tarter, R. (2018). Optimizing pregnancy treatment intervention for moms (OPTI-Mom): A pilot study. *Journal of Addiction Medicine, 12*(1), 72–79. https://doi.org/10.1097/ADM.0000000000000370

Goler, N. C., Armstrong, M. A., Taillac, C. J., & Osejo, V. M. (2008). Substance abuse treatment linked with prenatal visits improves perinatal outcomes: A new standard. *Journal of Perinatology, 28*(90), 597–603. https://doi.org/10.1038/jp.2008.70

Goodman, D. (2015). Improving access to maternity care for women with opioid use disorder: Colocation of midwifery services at an addiction treatment program. *Journal of Midwifery and Women's Health, 60*, 706–712. https://doi.org/10.1111/jmwh.12340

Hirai, A. H., Ko, J. Y., Owens, P. L., Stocks, C., & Patrick, S. W. (2021). Neonatal abstinence syndrome and maternal opioid-related diagnosis in the US, 2010–2017. *JAMA, 325*(2), 146–155. https://doi.org/10.1001/jama.2020.24991

Hodgins, F. E., Lang, J. M., Malseptic, G. G., Melby, L. H., & Connolly, K. A. (2019). Coordinating outpatient care for pregnant and postpartum women with opioid use disorder: Implications from the COACHH program. *Maternal and Child Health Journal, 23*, 585–591. https://doi.org/10.1007/s10995-018-2683-y

Illinois Department of Public Health. (2021). *Illinois maternal morbidity and mortality report 2016-2017*. https://dph.illinois.gov/content/dam/soi/en/web/idph/files/maternalmorbiditymortalityreport0421.pdf

International Organization for Standardization. (1985). *Information processing—Documentation symbols and conventions for data, program and system flowcharts, program network charts and system resources charts (ISO 5807-1985)*.

Krans, E., Kim, J., James, A., III, Kelley, D., & Jarlenski, M. (2019). Medication-assisted treatment use among pregnant women with opioid use disorder. *Obstetrics & Gynecology, 133*(5), 943–951. https://doi.org/10.1097/AOG.0000000000003231

Langisetty, P., Klasa, K., Bush, C., Heisler, M., Chopra, V., & Bohnert, A. (2017). Primary care models for treating opioid use disorder: What actually works? A systematic review. *PLOS ONE, 2*(10), Article e0186315. https://doi.org/10.1371/journal.pone.0186315

Marcellus, L., Mackinnon, K., Benoit, C., Phillips, R., & Stengel, C. (2015). Reenvisioning success for programs supporting pregnant women with problematic substance use. *Qualitative Health Research, 24*(4), 500–512. https://doi.org/10.1177/1049732314551058

National Academies of Sciences. (2006). *Committee on crossing the quality chasm: Adaptation to mental health and addictive disorders improving the quality of health care for mental and substance-use conditions*. Quality Chasm Series.

Ogrinc, G., Davies, L., Goodman, D., Batalden, P., Davidoff, F., & Stevens, D. (2016). SQUIRE 2.0 (Standards for Quality Improvement Reporting Excellence): Revised publication guidelines from a detailed consensus process. *BMJ Quality and Safety, 25*, 986–992. https://doi.org/10.1136/bmjqs-2015-004411

Paterno, M. T., Jablonski, L., Klepacki, A., & Friedmann, P. D. (2019). Evaluation of a nurse-led program for rural pregnant women with opioid use disorder to improve maternal-neonatal outcomes. *Journal of Obstetric, Gynecologic, & Neonatal Nursing, 48*, 495–506. https://doi.org/10.1016/j.jogn.2019.07.002

Prevention Solutions at Education Development Center. (2016). *Prevention collaboration in action: Stories of success and tools to help get you there*. https://pscollaboration.edc.org/collaboration-tools

Reddy, U., Davis, J., Ren, Z., & Greene, M. (2016). Opioid use in pregnancy, neonatal abstinence syndrome, and childhood outcomes. Executive summary of a joint workshop by the Eunice Kennedy Shriver National Institute of Child Health and Human Development, American College of Obstetricians and Gynecologists, American Academy of Pediatrics, Society for Maternal-Fetal Medicine, Centers for Disease Control and Prevention, and the March of Dimes Foundation. *Obstetrics & Gynecology, 130*(1), 10–28. https://doi.org/10.1097/AOG.0000000000002054

Reising, V., Bergren, M. D., & Bennett, A. (2019). Care and treatment recommendations for pregnant women with opioid use disorder. *MCN. The American Journal of Maternal/Child Nursing, 44*(4), 212–218. https://doi.org/10.1097/NMC.0000000000000538

Roper, V., & Cox, K. J. (2017). Opioid use disorder in pregnancy. *Journal of Midwifery & Women's Health, 62*(3), 329–340. https://doi.org/10.1111/jmwh.12619

Substance Abuse and Mental Health Services Administration. (2020). *Co-occurring disorders and other health conditions*. https://www.samhsa.gov/medication-assisted-treatment/medications-counseling-related-conditions/co-occurring-disorders

Substance Abuse and Mental Health Services Administration. (2021). *Treatment improvement protocol 63: Medication for opioid use disorder (Publication ID: PEP21-02-01-002)*.

Towers, C. V., Katz, E., Weitz, B., & Visconti, K. (2020). Use of naltrexone in treating opioid use disorder in pregnancy. *Obstetrics, 222*(83), 83.e1–83.e8. https://doi.org/10.1016/j.ajog.2019.07.037

White, K. M., Dudley-Brown, S., & Terhaar, M. F. (2021). *Translation of evidence into nursing and healthcare* (3rd ed.). Springer Publishing Company.

Zhao, L., Cheng, C., & Bouchard, L. (2020). Medication-assisted treatment for opioid use disorder in pregnancy: Practical implications and clinical impacts. *Obstetrical and Gynecological Survey, 75*(3), 175–189. https://doi.org/10.1097/OGX.0000000000000744

Posttest Questions

Instructions: This learning activity is free for AWHONN members and available for purchase by nonmembers. To access it, visit the AWHONN store at https://www.awhonn.org/awhonn-store/ and type NWH into the search box.

1. How can pregnancy impact the desire for treatment in individuals with opioid use disorder (OUD)?

   a. Pregnancy may elicit feelings of trauma and stigmatization.
   b. Pregnancy may make individuals more susceptible to addictive behaviors.
   c. Pregnancy may motivate individuals to seek care for their OUD.

2. Which of the following are highlighted by the authors as potential barriers to care for pregnant individuals with opioid use disorder? Select all that apply.

   a. Access to transportation
   b. Financial burdens
   c. Physical comorbidities
   d. State-based insurance programs

3. Which of the following are components of an integrated model of care for pregnant people with OUD? Select all that apply.

   a. Collaborating with an interdisciplinary care team
   b. Ensuring prenatal care occurs before behavioral health care
   c. Prescribing medical therapy for OUD
   d. Referring to a social services agency

4. Which of the following have been identified by previous researchers as potential benefits of an integrated care model for pregnant individuals with OUD? Select all that apply.

   a. Greater initiation of breastfeeding
   b. Higher patient satisfaction scores
   c. Increased likelihood of individuals attending postpartum visits
   d. Lower rates of preterm birth
   e. Reductions in poverty

5. Which of the following is a person-centered outcome of an integrated treatment model?

   a. Individuals adherence to treatment
   b. Individuals feeling empowered
   c. Individual have negative urine drug tests

6. For health care teams developing an integrated treatment program, what are some questions the authors recommend they ask of potential community partners? Select all that apply.

   a. How do your clients obtain medication for opioid use disorder and prenatal care?
   b. What are some perceived obstacles in linking clients to substance use services?
   c. What are your feelings toward individuals with opioid use disorder?
   d. What percentage of your clients are privately insured?
   e. Who are your current community partners?

7. Ideally, who should be the first point of contact for potential patients referred from outside organizations?

   a. Administrative coordinator
   b. Behavioral health specialist
   c. Certified addiction registered nurse

8. Although all of the following may impact referrals, which had the most impact during the implementation period for this organization's project?

   a. Competition from privately funded organizations
   b. Existing collaborations with other health systems
   c. Lack of funding for advertising

9. What were some suggestions found in the qualitative feedback from community partners that may help to strengthen the collaboration with the health center? Select all that apply.

   a. Additional education for staff on opioid use disorder among pregnant and parenting individuals
   b. A dedicated hotline for clinic services
   c. Establishment of mobile health programs
   d. Regular virtual meetings among administrators at the health center and the partner organizations

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10. What is one action specific to advanced practice nurses can complete to help improve care for people with OUD during pregnancy? Select all that apply

    a. Apply to receive the DATA 2000 Waiver
    b. Be non-judgmental in all interactions with clients
    c. Complete 1,000 hours of addiction nursing experience
    d. Develop a safety bundle focused on addiction medicine
    e. Obtain the Certified Addictions Registered Nurse (CARN) certification

11. Medication for opioid use disorder is an essential medical treatment option for those experiencing OUD and includes prescribing:

    a. A full opioid agonist (methadone)
    b. A partial opioid agonist (buprenorphine)
    c. An opioid antagonist (naltrexone)
    d. All of the above

12. Which component of this quality improvement initiative helps clinicians deliver improvements in patient care through a structured experimental approach to learning including testing the change and revising the implementation as needed?

    a. An organizational needs assessment
    b. Developing a workflow
    c. Using the PDSA cycle
    d. Using an interdisciplinary team