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Federally Qualified Health Center Access to Maternity Care for Incarcerated Pregnant Women

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by

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Abstract

Background: There has been an increase in pregnant incarcerated women, which is a growing concern for this high-risk and special population. This specialty group indicates a need for attention to ensure access to timely and proper medical care. Incarcerated pregnant women are a noted vulnerable group and do not have access to standardized clinical guidelines. Imprisonment imposes unique restrictions regarding access to care. A Federally Qualified Health Center (FQHC) in Pennsylvania has been providing ambulatory/obstetrics and gynecology (OBGYN) care to incarcerated pregnant women. Purpose: This research aimed to investigate strategies FQHC leadership can use to improve access to care for incarcerated pregnant women. Methodology: An integrative review of literature was conducted by searching publications between 2018 and 2023 and using the John Hopkins evidence-based practice model. The databases utilized included APA PsycINFO, PubMed, Science Direct, and the Cumulative Index of Nursing and Allied Health Literature. Total quality management was the theory utilized as the framework for this paper. Results: Thematic analysis identified three main themes and corresponding subthemes: (a) continuous quality improvement: access to care, collaboration and community partnerships, open access appointments, and educational resources; (b) quality management: maternal health grants, community health workers, and OBGYN rotations; and (c) patient-focused care: patient-centered medical home and culturally appropriate care. Implications: This study provides strategies for an FQHC to improve access to quality maternal care for pregnant incarcerated women.

Part 1: Practice-Based Problem

Problem of Interest

Appropriate care for pregnant women is challenging across healthcare environments. The appropriate care for women inmates who are pregnant is a specific access issue that compounds routine care needs with the barrier of being incarcerated (Alirezaei et al., 2022; Dzubay et al., 2022). Different sources may provide pregnancy care in other areas of the country (American College of Obstetricians and Gynecologists Committee on Health Care for Underserved Women [ACOG], 2021). Specific to this integrative review, pregnancy care is provided by a Federally Qualified Health Center (FQHC). FQHCs are designed to provide quality primary health services and specialty services, such as OBGYN care to underserved, uninsured, and underinsured populations (Connor et al., 2018).

Pregnant inmates are a vulnerable population. Timely and proper maternal health services are essential to a healthy pregnancy (Lomonaco-Haycraft, 2019). A lack of access to high-quality maternal care can be detrimental to women during pregnancy and childbirth (Baldwin et al., 2020). Premature births, low birth weights, and maternal mortality are growing concerns (Cross, 2020). Access to necessary and proper maternal health services is a fundamental human right.

Healthcare Administration Problem

Background

This research was conducted to investigate how to improve pregnancy care at an FQHC. FQHCs are filling in a gap in healthcare. Throughout the country, there has been

a dramatic increase in labor and delivery unit closures and OBGYN shortages (Cheng et al., 2021; Garcia et al., 2022). An FQHC in Pennsylvania has been providing ambulatory specialty services to address this barrier.

At the Pennsylvania FQHC, two county sheriffs escort only one pregnant inmate at a time to their appointment. These women are shackled on their wrists and feet during transportation and partially during their visit. Present officers will only unshackle them in the bathroom prior to their appointment and escort them to their exam room. When the medical staff are weighing the patient, they must deduct 7 lb. from the scale due to the weight of the shackles. Blood work and blood pressure checks are also done while the patient is shackled. This site only has four exam rooms. Staff will leave one room open until the police bring the pregnant prisoner in for their appointment; this prevents the police and pregnant inmate from having to wait in the waiting room. This process also allows the police to discreetly bring in the patient and leave the site. There are also some pregnant prisoners who do not speak English and require interpreter services. The site has an interpreter pad to communicate with that individual in their language.

Operational Problem

There are problems with healthcare delivery in correctional facilities to pregnant and parenting women (Cross, 2019). Pregnant inmates are a vulnerable population requiring specialized healthcare (Cross, 2020). Timely and proper maternal health services are essential to a healthy pregnancy (Lomonaco-Haycraft, 2019; Nair et al., 2021). If access issues to maternal healthcare services for prisoners can be identified,

recommendations for change can be implemented to improve the quality of care and health outcomes of pregnancies during incarceration (Nair et al., 2021).

The number of incarcerated women in the United States is rising (Friedman et al., 2020; Nair et al., 2021). More than 66% of incarcerated women have children under the age of 18, and 6% of this population are pregnant at the time of their arrest (Nair et al., 2021). Prisoners, especially women, have numerous diverse health problems, such as substance abuse disorders, mental health, and chronic diseases (Friedman et al., 2020; Garcia & Huner, 2022). According to ACOG (2021), reproductive healthcare services should be provided to young people, especially minority groups, because they are at a higher risk. The standards of care in prisons are often substandard, and many incarcerated women complain of a lack of access to medical personnel and essential services (Nair et al., 2021; Usigbe et al., 2023). There is a need to improve healthcare quality and emphasize the need for high standards of care (Usigbe et al., 2023).

There are no set standards for perinatal care in carceral settings. The ACOG, Federal Bureau of Prisons, and National Commission on Correctional Health Care have proposed minimum standards for perinatal care for prisons and jails, but these correctional facilities are not required to follow these standards (Bronson et al., 2019; Friedman et al., 2020). The institutions have made recommendations regarding pregnancy testing, access to pregnancy counseling, and abortion services; assessment and treatment for substance abuse, HIV, and depression; appropriate vitamins and diet; delivery in a licensed hospital with facilities for high-risk pregnancies; and postpartum contraception (Friedman et al., 2020). Regardless of these recommendations, pregnancy

testing is not routine in correctional facilities, the use of shackling or restraints is still controversial, and there are concerns surrounding the nutrition of incarcerated pregnant women (Kramer et al., 2022).

The Pennsylvania FQHC has established care with new mothers who are in the correctional facility after finding out they were pregnant due to a urine pregnancy screening at intake. The county jail also reports providing prenatal vitamins to all pregnant prisoners and an advanced diet, which consists of more calories and evening snacks. However, the prison officers still practice shackling the pregnant prisoners during transportation and during most of their OBGYN appointments.

Prisons and jails usually operate under different policies, jurisdictions, and duration of incarcerations, which allows for healthcare services to be variable and not standardized (Kramer et al., 2022). For example, in July 2022, 39 U.S. states, the District of Columbia, and the federal government passed legislation banning shackling during active labor and delivery, while some have also banned it at points in pregnancy and postpartum (Friedman et al., 2020; Kramer et al., 2022). Exceptions allow for restraints if a safety threat is deemed viable (Kramer et al., 2022). In addition, there are concerns regarding nutrition because the quantity and quality of snacks provided to pregnant inmates are not specified (Kramer et al., 2022). Pregnant women have increased nutritional needs to support a healthy pregnancy; incarcerated women have limited options to access food, which can affect birth outcomes (Friedman et al., 2020; Kramer et al., 2022). Due to prisons and jails not being obligated or mandated to implement recommendations, the variability regarding healthcare provision during pregnancy while

incarcerated reflects the lack of mandatory standards for correctional healthcare (Bronson et al., 2019).

Ideal State of Operations

The ideal and desired state of operations will be when reproductive healthcare services for incarcerated women follow the same guidelines and recommendations as are applied to individuals outside carceral settings (ACOG, 2021). Other health service organizations (HSOs) can use this research to address health disparities related to social justice issues, nontraditional settings, and marginalized populations (Volkov et al., 2023). Healthcare professionals can work with policymakers to ensure that these women receive fair accommodations, treatment, health services, and education programs (Almoayad et al., 2023; Dzubay et al., 2022; Kramer et al., 2022). Implementing prenatal care policies would be a step toward jail and prison reform to ensure that pregnant incarcerated women have equitable standards of care (Kramer et al., 2022).

Other HSOs can learn the importance of community health workers (CHWs) and having OBGYN rotations. By implementing these services, barriers to social determinants of health, equity, and inclusion can be identified to coordinate care and improve health outcomes for incarcerated pregnant women (Cheng et al., 2029; Crespo et al., 2020). It is currently being utilized at an FQHC in Pennsylvania, which services pregnant county prisoners.

Professional Practice Gap Statement

The 1976 Supreme Court case *Estelle v. Gamble* set a precedent that appropriate healthcare services are a constitutional right of incarcerated individuals (ACOG, 2021;

Friedman et al., 2020). All U.S. carceral settings must provide prenatal care under the Eighth Amendment, but no mandatory standards lead to inconsistent access and quality of services (ACOG, 2021; Friedman et al., 2020). Jails and prisons provide reproductive healthcare services to pregnant prisoners through healthcare practitioners, clinics, hospitals, or private contractual agreements (ACOG, 2021). The ideal desired state of operations is for all incarcerated individuals to be provided the same reproductive health guidelines and recommendations as those who are not in carceral settings (ACOG, 2021; Friedman et al., 2020).

Despite recommendations for guidelines and policies, pregnancy and the provision of prenatal care vary across institutions (ACOG, 2021; Friedman et al., 2020). Friedman et al. (2020) stated that the National Women's Law Center completed an analysis of confinement in pregnancy, considering prenatal care, shackling policies, and family-based treatment alternatives. Each state received a grade regarding the analysis. Pennsylvania received an A-, while 21 states received Ds or Fs (Friedman et al., 2020). Only 30 states received passing grades; most lacked prenatal care policies regarding routine medical examinations, nutritional counseling, treatment for women having high-risk pregnancies, HIV screenings, and pregnancy outcome reporting (Friedman et al., 2020).

Summary of Evidence

An FQHC is a healthcare provider for underserved and underinsured populations, including ambulatory/OBGYN care. This research was conducted to investigate strategies that FQHC leadership can use to improve access to care for incarcerated pregnant

women. Under the Eighth Amendment, all inmates are entitled to care for severe medical needs (Friedman et al., 2020). All U.S. correctional facilities must provide prenatal care, but no mandatory standards lead to inconsistencies in access and quality of services, especially for reproductive healthcare (ACOG, 2021). Kramer et al. (2023) conducted a survey of 22 state prisons and six jails, which included five of the largest jails, from 2016–2017. These authors focused on pregnancy policies and practices, including restraint use, prenatal care, delivery and birth, and accommodations for pregnant prisoners (Kramer et al., 2023). Findings showed variations in pregnancy policies and compliance regarding anti-shackling legislation and the use of accredited healthcare services, and nearly one third of facilities did not require a female-identifying officer stationed inside the hospital room during labor and delivery (Kramer et al., 2023).

The 1976 Supreme Court case *Estelle v. Gamble* set a precedent that appropriate healthcare services are a constitutional right of incarcerated individuals in a system initially designed for males (ACOG, 2021; Friedman et al., 2020). The National Commission on Correctional Health Care and the American Correctional Association have published healthcare standards and accredit correctional healthcare systems; however, accreditation is optional (ACOG, 2021). Due to varying systems of care from prisons and jails, healthcare services, specifically reproductive healthcare services to pregnant prisoners, are provided on-site by clinicians or off-site through healthcare practitioners, clinics, hospitals, or private healthcare vendors (ACOG, 2021; Friedman et al., 2020).

While incarcerated, women generally are unable to use private health insurance; Medicaid and Medicare benefits are suspended or terminated as well (ACOG, 2021). Correctional facilities are responsible for the payment for healthcare services rendered, and those facilities' financing depends on local funds or legislative appropriations (ACOG, 2021). Some women have only limited access to prenatal care prior to incarceration due to issues related to social determinants of health (ACOG, 2021; Friedman et al., 2020). FQHCs can provide high-quality healthcare services regardless of an individual's ability to pay (National Association for Community Health Centers, 2023).

Purpose of the Integrative Review

The purpose of this integrative literature review study was to investigate strategies that FQHC leadership can use to improve access to care for incarcerated pregnant women.

Integrative Review Question

What strategies can FQHC leadership incorporate to improve maternal care access issues for incarcerated women?

Theoretical and/or Conceptual Framework

The delivery of maternal health services to pregnant inmates is a sensitive but necessary topic. There is an increase in the number of women within the U.S. prison system, especially because most are of childbearing age (Cross, 2019, 2020). Inadequate access to maternal healthcare services can have long-term negative impacts on the mother

and child (ACOG, 2021). Premature births, low birth weights, and maternal mortality are growing concerns (Cross, 2020).

Research to investigate how maternal health services are delivered to incarcerated women is critical. It is essential to understand the access issues related to maternal care for pregnant women and prison and why pregnant women have trouble accessing maternal care. A more in-depth look at the access issues provides insight into this vulnerable population. Through this integrative review, I sought strategies that FQHC leadership can use to improve access to care for incarcerated pregnant women.

Total quality management (TQM) is a framework that FQHC leadership can use to improve organizational enrichment of the organization's quality and enhancement services for incarcerated pregnant women. TQM focuses on continuous quality improvement, quality management, and total quality control (Deming, 1986). For this purpose, TQM is an organizational management tool that can help organizational leaders understand the needs of expectant inmates and develop strategies that can help scale up maternal health services (Aggarwal et al., 2019; Deming, 1986). The principles of TQM point to increased need for a quality healthcare system. For healthcare to be quality healthcare, it must be accessible, appropriate, available, affordable, effective, efficient, integrated, safe, and patient-related (Aggarwal et al., 2019). TQM is a quality framework that is a healthcare management foundation, leading to effective innovation development and patient risk mitigation (Tonjang et al., 2022).

Part 2: Literature Review, Quality Appraisal, and Analysis

Literature Search Strategy

An integrative review of literature was conducted by searching publications between 2018 and 2023. The databases utilized included APA PsycINFO, PubMed, Science Direct, and the Cumulative Index of Nursing and Allied Health Literature (CINAHL). TQM was the theory utilized as the framework for this paper. Inclusion and exclusion criteria are outlined in Table 1. Themes aligned with TQM are outlined in Table 2.

Table 1

Inclusion and Exclusion Search Criteria

Inclusion search criteria	Exclusion search criteria
• Health and well-being of pregnant women in prison • Social justice in healthcare • Health disparities of incarcerated pregnant women • Care practices for pregnant women in jail facilities • The needs of incarcerated pregnant women in jail facilities • FQHC • Healthcare access in prison • Continuous improvement in prison healthcare	• Studies that do not focus on U.S. prisons or jails or correctional facilities • Studies that do not discuss access to care

- Barriers to maternal health services in prison

Quality Appraisal

A total of 81 articles were found during the integrative review search. However, only 38 articles were included for analysis. Each of the 38 articles was appraised for quality using the Johns Hopkins nursing evidence-based practice model (JHNEBP) and DHA Appraisal Results Log. Many articles were not included due to being redundant, not applicable, in a different language, or not U.S. based.

This tool rated 38 articles on strength evidence and quality. Of 38 articles chosen for review, 21 were appraised as high, and 17 were appraised as good. Overall, this collection of articles provides findings, methods, and recommendations that are valuable resources for improving healthcare access, delivery, and outcomes for underserved populations, particularly pregnant incarcerated individuals. See Appendix C: DHA Appraisal Results Log.

Thematic Analysis of Literature

The thematic analysis of literature includes initial codes, themes, and subthemes. Healthcare access and delivery are vital to underserved populations and vulnerable groups. The main themes are continuous quality improvement, quality management, and patient-focused care. The subthemes relate to the main themes and each other because they correspond with the TQM framework. TQM provides preliminary themes such as

continuous improvement in prison healthcare and evidence-based decision-making for strategies to improve access to health services (Deming, 1984).

The subthemes relate to the main themes and review question. The review question was the following: What strategies can FQHC leadership incorporate to improve maternal care access issues for incarcerated women? There are specific needs of incarcerated pregnant women; care practice analysis in correctional facilities provides insight, and FQHC and underserved populations reveal relationships for strategies to address access to care for this vulnerable population. See Appendix D: DHA Thematic Analysis Matrix.

Part 3: Presentation of Results

Table 2

Table of Themes Aligned With Total Quality Management

Main theme	Subthemes
Continuous quality improvement	• Access to care • Collaboration and community partnerships • Open access appointments • Educational resources
Quality management	• Maternal health grants • Community health workers • OBGYN rotations
Patient-focused care	• Patient-centered medical home (PCMH) • Culturally appropriate care

See Appendix E: Thematic/Concepts Map.

Interpretation of the Findings

Over the past 30 years, incarcerated women in the United States have become the fastest growing prison population, having increased by more than 600%, leading to concerns regarding the quality of maternal care for pregnant women in prison (Usigbe et al., 2023; Volkov et al., 2023). There is a need to address the mass incarceration of women and the implications of social justice, inequality, and social determinants of health (Aljassim et al., 2020; Cross, 2019; Ezzat, 2023). There are diverse access barriers

to healthcare services faced by underserved populations, particularly incarcerated individuals and low-income groups (Aljassim & Ostini, 2020; Ezzat, 2023; Testa & Jackson, 2020). Incarcerated pregnant women face challenges and have needs in accessing adequate reproductive healthcare (ACOG, 2021; Dzubay et al., 2022; Testa & Jackson, 2020).

Continuous Quality Improvement

Access to Care

The FQHC leadership in Pennsylvania is dedicated to increasing efforts to make changes that will lead to better patient outcomes and better care for everyone. The fundamental responsibility is to improve systems and make them accessible to everyone regardless of their ability to pay. Unfortunately, incarcerated women face several challenges when accessing quality maternal health services, such as receiving proper prenatal care, postnatal care, and even proper nutrition, which results in poor health outcomes for both the women and infants (Cross, 2020). FQHC leadership has an opportunity to address these issues at the site level because there is significant variability in maternal health services treatment across carceral settings. By utilizing the TQM framework, leaders of other healthcare organizations can find ways to improve their patients' outcomes because there are inconsistent practices due to a lack of prison standardization of care for pregnant women in correctional facilities (Alirezaei & Roudsari, 2022; ACOG, 2021; Cross, 2020).

The nature of healthcare services in the prison system contributes to disparities among pregnant women. Reproductive health services within prisons are inconsistent and

do not cater to women (ACOG, 2021; Friedman et al., 2020). Studies show that the quality of care highly correlates with facility and state policies, which results in substantial variations (Baldwin et al., 2020; Kramer et al., 2023). Kramer et al. (2023) suggested that legislation on the national level should ensure that policies regarding pregnancy care are the same in all correctional facilities to eliminate these disparities. Prenatal and perinatal care can reduce complications and risks and achieve high-quality results for both the mother and infant (ACOG, 2021; Friedman et al., 2020).

Federal legislation must enact systemic reform and reduce variation within correctional facilities across the United States (Cross, 2020). Adopting standards of care practices could alleviate health inequalities because all women are to receive quality maternal health services during pregnancy and childbirth (Nair et al., 2021). Cross (2019) proposed that policy modifications are needed to address such inequality to achieve justice in prison healthcare for female prisoners and to allow them to have the healthcare they deserve. Similarly, Gourevitch and Hatfield (2023) addressed systematic healthcare disparities in prisons and the need for systematic reforms worldwide so everyone can receive proper healthcare. Pregnant incarcerated women are a highly marginalized and forgotten group (Bronson & Sufrin, 2019; Rathke, 2021).

The Pennsylvania FQHC constantly is seeking ways to improve processes and systems to enhance patient outcomes and care. This organization has been collaborating with local healthcare organizations and creating community partnerships to tailor initiatives to address maternal health disparities. Leadership has met with local and state politicians to address the disparities in counties, including maternal health services.

Creating initiatives and committees to find ways to research and collect data on maternal-health-related issues is the key to engaging state and federal change.

Collaboration and Community Partnership

Collaborating with other healthcare organizations and creating community partnerships have contributed to better population health. This organization conducts trainings on racial equity, implicit bias, and respectful care to all people. Initiatives are conducted by collaborating with community partners, postpartum mothers, and nonhealth sectors. The main maternal health focus of the organization is on women at highest risk for poor birth outcomes regardless of their ability to pay.

Open Access Appointments

The Pennsylvania FQHC offers open access appointments. These appointments are for anyone who needs a same-day appointment. There are multiple open access appointments allocated to each provider to address hypertension, diabetes, depression, C-section concerns, behavioral health concerns, and any other pregnancy-related issue. The local jail is also able to contact the site and utilize the available same-day appointments for any patient who is having any concerns or postpartum follow-up issues.

Educational Resources

The FQHC provides open access to health-related education materials on their website and provides county resource packets to patients. On the website, the patients have access to printable materials and educational videos. At the site level, the staff are educated on local resources to provide support or assistance to a new mother and child. The providers have even offered to provide educational instructions at their appointments

to ensure that new mothers know how to care for their child, while making them aware of services available through the organization to support them. These services are offered to all the OBGYN patients, including those who come from the local jail system.

Also, there are several Pennsylvania politicians who have made known their dedication and commitment to achieving better maternal health outcomes. This commitment in active participation can demonstrate the state's dedication to continued quality improvement for maternal health services. Championing quality management initiatives has helped the organization to achieve its mission and core values by delivering quality health services.

By championing quality improvements for maternal health services, leaders can achieve excellence and create their own strategic plans to optimize and improve processes for incarcerated pregnant women in their communities. Currently, there are no mandated standards of care or practices in the federal and state facilities (Cross, 2019; Kramer et al., 2023). The Office of the Surgeon General (2020) outlined measures for improving maternal health due to the need for upgraded maternal care research-backed practices and staff development across healthcare facilities. Proper policies and legislation would then assist in protecting the rights and well-being of pregnant inmates, ensuring that they receive proper prenatal care, nutrition, and medical attention (Cross, 2020). At this time, there are no mandatory standards of care, so there is a need for clear guidelines and procedures to address the specific needs of pregnant incarcerated women so they can have the same level of care as those in the community (ACOG, 2021).

Quality Management

Maternal Health Grants

The Health Resources and Services Administration (HRSA) is a governing body that oversees FQHCs, provides opportunities for health centers to work within their communities, and provides equality in access to healthcare (HRSA, 2023). In 2023, HRSA created the State Maternal Health Innovation Program. The purpose of this program is to reduce maternal mortality and severe maternal morbidity by focusing on improving maternal health and addressing maternal health disparities (HRSA, 2023). To achieve a measurable impact, HRSA seeks to utilize this maternal health innovation program to advance evidence-informed strategies through multidisciplinary collaboration, collecting and analyzing maternal health data, and promoting and executing innovation in maternal health service delivery.

Community Health Workers

Reproductive health and prenatal and perinatal care are vital to any pregnancy. An opportunity to improve access to maternal health services for pregnant incarcerated women is through the implementation of CHWs at FQHCs (Cheng et al., 2019). CHWs and FQHCs are critical healthcare access points for medically underserved areas and provide ongoing support during the healthcare experience (Cheng et al., 2019; Crespo et al., 2020). These individuals aim to identify barriers to social determinants of health, equity, and inclusion and coordinate care to improve health outcomes for incarcerated pregnant women (Cheng et al., 2029; Crespo et al., 2020). These front-line health workers understand the communities and populations they serve (Crespo et al., 2020).

CHWs liaise between the patient, providers, social services, community support, and resources through outreach, advocacy, and education (Cheng et al., 2019). CHWs can also meet with incarcerated pregnant women when they are brought to their OBGYN appointments at the FQHC site and follow them once they are released. They can assist with addressing social determinants of health preventing them from coming to their follow-up appointments or new patient appointments. CHWs have been an asset to the FQHC in Pennsylvania and meet the patients where they are in their lives and ensure equitable care.

OBGYN Rotations

OBGYN resident rotations at an FQHC are another opportunity for providers to gain experience working with different populations (Cheng et al., 2019). Cheng et al. (2019) stated that less than half of OBGYN programs offer community health center rotations. At the FQHC in Pennsylvania, the residents from the local health system have been given the opportunity to gain experiences addressing barriers to care while learning about health center challenges, workforce shortages, social determinants of health, and health equity of incarcerated pregnant women (Cheng et al., 2019; Thomas et al., 2019). This opportunity would allow residents to consider OBGYN as their specialty, especially because there is a need for OBGYN providers due to increased shortages (Cheng et al., 2021; Garcia et al., 2022).

Patient-Focused Care

An individual's health is impacted by a range of nonmedical factors, known as social determinants of health, which can impact reproductive healthcare access and

autonomy (Hall et al., 2022; Reyes et al., 2021). Many underserved populations are affected, including pregnant incarcerated women. Due to the scarcity of resources and staff in prisons, female prisoners are not receiving adequate maternal health services (Paynter et al., 2019; Testa & Jackson, 2020).

Patient-Centered Medical Home

The FQHC in Pennsylvania is a PCMH. The PCMH certification core functions and attributes are to provide patient-centered care, comprehensive care, coordinated care, superb access to care, and a systems-based approach to quality and safety (The Joint Commission, 2023). This organization offers care coordination services, free transportation, a sliding fee scale, and integrated sites that offer medical, behavioral health, dental, chiropractic, podiatry, pediatric, collaborative care, internal medicine, mobile health, women's health, and OBGYN services. This holistic approach is not just providing primary care services, but a whole person approach. Once a patient has established care with the organization, they have access to all these services. Because the pregnant incarcerated women have established care at the OBGYN site, they are able to call for appointments at any of the sites within the organization for any of the services offered once they are released from jail.

Culturally Appropriate Care

The Pennsylvania FQHC has taken appropriate steps to identify and respond to patients' needs to ensure that everyone has equal opportunity regardless of their situation. All staff are trained to recognize and address any patient needs for accommodation. Limited English proficiency, financial constraints, and health literacy can be barriers to a

patient receiving optimal patient care. However, at this organization, accommodations are made to assess and react so the patient can receive timely and appropriate high-quality care.

Language barriers indirectly impact the quality of healthcare a patient receives (Ezzat, 2023; Fernandez & Kline, 2020). Language barriers present challenges to achieving satisfaction levels, healthcare quality, cost, and patient safety (Fernandez & Kline, 2020). Many underserved populations have limited English proficiency (LEP), making it difficult for them to communicate and understand medical terminology and seek medical care (Ezzat, 2023). Incarcerated women with LEP suffer from numerous forms of disadvantage experienced in their attempts to access healthcare (O'Connor et al., 2023). The Pennsylvania FQHC offers interpreter services, so the patient can understand information in their own language and make decisions about their medical care. Incomplete information and misunderstandings are a main concern in healthcare, which is why this service is offered at the site level. Correctional facilities have to offer interpreter services for court hearings or infirmaries; however, on a daily basis, some may not be understood until they come to the site for a prenatal visit and explain to the provider through the interpreter services their issues or concerns.

Many underserved populations struggle with financial constraints and cannot afford healthcare costs (Ezzat, 2023). Financial barriers pose limitations to incarcerated women as they attempt to secure medical necessities and contribute to restricted care access (Lomonaco-Haycraft et al., 2019). Financial barriers are one of the key challenges raised and, therefore, call for the need to come up with solutions that will eradicate these

economic issues that lead to adverse health outcomes for incarcerated women (Ezzat, 2023). Having external support for incarcerated pregnant women and their infants can have a significant impact, specifically financial support (Alirezaei & Roudsari, 2022). The Pennsylvania FQHC provides high-quality services regardless of the individual's ability to pay. This organization offers sliding fee scale, which is based on the patient's household income and size.

In addition to financial barriers, pregnant women lack control over their environment while incarcerated (Friedman et al., 2020). The role of nutrition in promoting health and improving the overall pregnancy of incarcerated female prisoners is an important principle (Alirezaei & Roudsari, 2022). There are well-documented nutritional requirements for pregnancy; however, there are varied results in incarcerated settings for nutritional education to address food insecurities (Alirezaei & Roudsari, 2022; Almoayad et al., 2023). Incarcerated women predominantly come from socioeconomically underserved and disadvantaged populations; many lack food literacy and have a distorted comprehension of appropriate diets during pregnancy (Baldwin et al., 2020). Upon intake, a lack of autonomy among pregnant prisoners showed poor nutritional status (Baldwin et al., 2020). Treating food insecurity and enhancing the quality of diets plays a significant role in enhancing the health status of the woman and her pregnancy (Almoayad et al., 2022).

Health literacy is another significant barrier to healthcare access (Ezzat, 2023; Volkov et al., 2023). Vulnerable populations may struggle to understand medical conditions, medications, and treatment options and manage their overall health (Ezzat,

2023). Incarcerated women are often marginalized and misunderstood in the sphere of the criminal justice system, and there is a need to advocate for increased groundwork and policies to address these health disparities (ACOG, 2021; Volkov et al., 2023). Education intervention is needed for incarcerated women to improve maternal health knowledge (Khosravi et al., 2023; Thomas et al., 2018). The Pennsylvania FQHC ensures that any literature, brochures, or printable materials use simple language and define technical terms. Providers offer teach-back methods to ensure that their patients understand the instructions provided. It is imperative that patients feel that their age, culture, and ethnicity are reflected in the care provided.

Part 4: Recommendation for Professional Practice and Implications for Social Change

Recommendations for Professional Practice

Reproductive healthcare for incarcerated pregnant women is essential. FQHCs play an essential role in supporting this vulnerable population. An FQHC in Pennsylvania is already collaborating with a jail to provide high-quality OBGYN services to its pregnant inmates, allowing OBGYN rotations during residencies for a local healthcare system, and utilizing community health workers. Continuity of care and addressing inequities ensure that these women are receiving high-quality health services even after they are released. Many women who are released need assistance in filing for insurance, housing, food, and primary health services. The organization offers a holistic approach by providing primary health, behavioral health, dental, and OBGYN services. The same provider who saw the inmates will continue to provide postnatal care, ensuring continuity of care.

There is an opportunity to engage the pregnant prisoners to address their complex needs from a quality perspective (Baldwin et al., 2020). Further research is needed to address the necessity of appropriate prenatal and postpartum care to increase positive outcomes (Cross, 2019). By identifying the needs of incarcerated pregnant women, healthcare organizations can develop strategies to address these needs in their area (Alirezaei et al., 2022). FQHCs throughout the United States could partner with correctional facilities to overcome barriers and identify ways to improve pregnant inmates' care during and after pregnancy (Russell et al., 2020). TQM improves quality of care through continuous improvement, customer satisfaction, and patient involvement

(Deming, 1986). TQM can identify gaps in maternal health services for pregnant prisoners and improve access by focusing on structures and processes to improve patient outcomes (Deming, 1986). Maternal health grants, CHWs, educational programs, and OBGYN rotations in FQHCs will provide strategies to address access to maternal health services for incarcerated pregnant women (Baldwin et al., 2020; Cheng et al., 2019; Fernandez & Kline, 2020; HRSA, 2023; National Association of Community Health Centers [NACHC], 2023; Paynter et al., 2019; Reyes et al., 2021; Russell et al., 2020; Thomas et al., 2018).

For over 50 years, community health centers (CHCs) and FQHCs have provided comprehensive, high-quality healthcare services to underserved and uninsured communities (NACHC, 2023). Health centers were introduced to improve the communities they served, enhance access to care, advance health equity, and reduce healthcare costs while making a sustainable impact in their communities (NACHC, 2023). Health centers address barriers to health, fight poverty, and empower communities with health and opportunity (NACHC, 2023).

Grants can enhance the quality of healthcare for pregnant women and significantly impact the health of pregnant prisoners through comprehensive prenatal and postnatal healthcare (HRSA, 2023; Reyes, 2021). HRSA and other funding opportunities are available to assist in providing high-quality healthcare services. The purpose of this program is to reduce maternal mortality and severe maternal morbidity by focusing on improving maternal health and addressing maternal health disparities (HRSA, 2023). To achieve a measurable impact, HRSA (2023) leaders seek to utilize this maternal health

innovation program to advance evidence-informed strategies through multidisciplinary collaboration, collecting and analyzing maternal health data, and promoting and executing innovation in maternal health service delivery.

Community health workers can work with medical providers to provide educational programs to incarcerated pregnant women due to their complex needs (Baldwin et al., 2020; Cheng et al., 2019). Healthcare interventions could include nutrition-based education, maternal health literacy programs, and addressing social needs in perinatal care (Alirezaei et al., 2022; Cheng et al., 2019; Dzubay et al., 2022; Reyes et al., 2021; Thomas et al., 2018). Dzubay et al. (2022) revealed in their findings that nutrition-based education for pregnant incarcerated individuals could be a cost-effective and cost-saving strategy for reducing preterm births, neonatal death, and neurodevelopmental delay. In addition, it would be of value for correctional facilities to consider these programs to reduce disparities in pregnancy outcomes of incarcerated individuals by developing a nutritional support program for vulnerable and disadvantaged groups (Alirezaei et al., 2022; Dzubay et al., 2022). The Academy of Nutrition and Diabetics has provided guidelines for improving the nutritional care of incarcerated pregnant women, and these benefits could go beyond imprisonment (Alirezaei et al., 2022).

FQHCs and CHCs can work with local hospitals, allowing OBGYN resident rotations at their sites if they offer those services (Cheng et al., 2019). At the FQHC in Pennsylvania, the residents from the local health system have been given the opportunity to gain experiences working with different populations and cultures and addressing

barriers to care. This opportunity provides firsthand experience working with underserved, county prisoner, and vulnerable populations.

Implications for Social Change

Positive social change may be found in providing appropriate maternity care for pregnant women who are incarcerated. This study can help guide the development of FQHC-based programs and policies that support access to maternal care for incarcerated pregnant women. This anticipated new knowledge can improve health outcomes, reduce health disparities, and increase equity for this vulnerable population. It can impact the social determinants of health by promoting greater awareness and understanding of the unique challenges that incarcerated pregnant women face. In addition, it can catalyze broader efforts to address the social and structural factors contributing to poor health outcomes among incarcerated individuals. Highlighting the critical importance of access to maternal care for this population will promote equity and justice for all individuals, regardless of their circumstances.

Limitations

There is limited research on strategies to improve access to maternal health services for pregnant prisoners. Articles present the complex needs and challenges faced by incarcerated women due to the inconsistencies in care given by U.S. correctional facilities. This research focused on how an FQHC can provide strategies to incarcerated pregnant women.

Conclusion

Pregnant incarcerated women are a vulnerable population. They are looked down upon by many due to their choices or reasons for incarceration. They deserve consistent, high-quality reproductive health services. FQHCs can provide strategies to tackle healthcare access barriers for pregnant incarcerated women. TQM will help organizations better understand the needs of pregnant prisoners and develop plans to improve access to quality health care by analyzing the structure, process, and outcomes of maternal health services (Deming, 1986). FQHCs can provide strategies to address the lack of access to maternal health services for incarcerated pregnant women. Focusing on increasing the quality of services provided by organizations and seeking a culture of continuous improvement is essential to delivering quality health services to pregnant incarcerated women.

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Appendix A: DHA Practice-Based Problem Literature Review Matrix

Author/ date	Theoretical/ conceptual framework	Research question(s)/ Hypotheses	Methodology	Analysis & Results	Conclusions	Implications for future research	Implications for practice	Empirical research? (Yes or No)
Aggarwal, A., Aeran, H., & Rathee, M. (2019). Quality management in healthcare: The pivotal desideratum. *Journal of Oral Biology and Craniofacial Research*, *9*(2), 180–182. https://doi.org/10.1016/j.jobcr.2018.06.006	Total Quality Management	How can healthcare achieve total quality?	This article comprehensively reviews quality management in health care service.	The article defines quality, quality in health care, and total quality management.	The authors found that health care is a sacred and scientific enterprise, not an commercial one.	More research is needed to ensure that high quality standards and quality of care in HSOs are being enforced.	Ensuring training of future healthcare professionals to foster patient satisfaction.	yes
Alirezaei, S., & Latifnejad Roudsari, R. (2022). The needs of incarcerated pregnant women: A systematic review of literature. *International Journal of Community-Based Nursing and Midwifery*, *10*(1), 2–17. https://doi.org/10.30476/IJCBNM.2021.89508.1613	The needs of incarcerated pregnant women	What follow up is needed for incarcerated pregnant women regarding conditions and needs? How can prisons provide healthcare and social services to improve this vulnerable populations health?	In this systematic review, databases including PubMed, Scopus, Web of Science, EMBASE, PsycINFO, and the Cochran Library. 31 eligible studies consisting of 5,435 incarcerated pregnant women addressed their needs and expectations: these included retrospective and cross sectional, and prospective cohorts.	Six broad categories emerged: healthcare needs; educational needs; support needs; the need for psychological counseling services; nutritional needs; and substance abuse management needs.	Accurate/appropriate policies and programs are needed to promote the health status of this vulnerable group.	Further research is needed. Policies and programs can be developed and implemented to promote positive health and outcomes.	By identifying the needs for incarcerated pregnant women, HSOs can develop strategies to address these needs in their area.	yes

Aljassim, N., & Ostini, R. (2020). Health literacy in rural and urban populations: A systematic review. *Patient Education and Counseling*, *103*(10), 2142–2154. https://doi.org/10.1016/j.pec.2020.06.007	Health literacy in rural and urban populations.	Do health literacy differences exist between rural and urban populations?	The authors used eight online databases and utilized peer reviewed research articles. Nineteen articles met inclusion criteria.	Most studies found that urban populations had higher health literacy than rural populations.	Evidence suggests that sociodemographic factors play important roles in health literacy differences.	Further research is needed to outline variances between rural and urban populations.	Evidence-based interventions could assist rural populations in health policies and clinical levels.	yes
Almoayad, F., Benajiba, N., Earle, J., Aboul-Enein, B. H., Sidhu, A., Sajja, A., & Dodge, E. (2023). A scoping review of nutrition education interventions applied in prison settings. *Current Nutrition Reports*. Advance online publication. https://doi.org/10.1007/s13668-023-00497-6	Incarcerated individuals are facing health challenges exacerbated by prison diets.	What available nutrition education interventions currently exist in prison settings?	The authors utilized the PRISMA Extension for scoping reviews. Nineteen data bases were searched on nutrition interventions in prison. The date range was from 2000 to May 2023. Inclusion criteria included articles in five languages from peer-reviewed journals. Rayyan QCRI software was utilized for screening and data extraction. targeting diverse prison populations.	There were a range of interventions, and they had inconsistent outcomes. Some revealed improvements in health whole others revealed challenges. A research gap was indicated due to few utilizing established theoretical frameworks.	According to the authors, implementing recognized theoretical frameworks may improve effectiveness. Nutrition education interventions in incarcerated settings present varied results.	More research is needed to determine future strategies to identify the complex nature of correctional facilities and find holistic approaches to improve the health or individuals in prison.	FQHCs could address food insecurities and nutrition education for pregnant prisoners.	yes

American College of Obstetricians and Gynecologists Committee on Health Care for Underserved Women. (2021). Reproductive health care for incarcerated pregnant, postpartum, and nonpregnant individuals: ACOG Committee Opinion, Number 830. *Obstetrics and Gynecology*, *138*(1), e24–e34. https://doi.org/10.1097/AOG.0000000000004429	Reproductive health to incarcerated individuals	What support efforts can correctional facilities do to improve healthcare for incarcerated pregnant, postpartum, and nonpregnant individuals?	This revision provides extensive recommendations for increased efforts to support reproductive health services to incarcerated individuals.	The author provided three recommendations (1) reproductive and sexual health care in carceral settings (2) Pregnancy and postpartum care in carceral setting and (3) Potential health consequences of restraints	It is vital that incarcerated individuals receive respectful, consistent, high-quality reproductive health, pregnancy, and postpartum care	More research is needed to determine different reproductive healthcare services being offered in jails and prisons since there are inconsisten-cies	Total Quality Management can address this gap in practice since there are inconsistencies in reproductive health services being offered in carceral settings. It can show how an FQHC can provide strategies to address these concerns.	Yes
Baldwin, A., Sobolewska, A., & Capper, T. (2020). Pregnant in prison: An integrative literature review. *Women and Birth*, *33*(1), 41–50. https://doi.org/10.1016/j.wombi.2018.12.004	Needs and services provided to incarcerated pregnant women.	How are correctional institutions meeting the needs of pregnant incarcerated women? Are maternity services available? How are these services provided?	An integrative literature review was conducted. Seven electronic databases resulted in 363 articles, though only 32 peer-reviewed studies met the final selection criteria.	Three main themes were found: (1) risks and vulnerability factors; (2) prison enablers and supports; and (3) prison barriers. There is inconsistent research on risks and vulnerability factors. Also, there is limited research on available	According to the authors, pregnant women in prisons have complex needs and more research is required.	More research is needed on how prisons can improve the pregnancy experience. There is an opportunity to engage the pregnant prisoners as research participants	Alternatives to address these issues from a quality perspective are needed in healthcare. How can other HSOs assist the needs of pregnant prisoners?	yes

				midwife support in prison. Out of the thirty-two peer reviewed studies, only 2 were conducted with incarcerated pregnant women.				
Bronson, J., & Sufrin, C. (2019). Pregnant women in prison and jail don't count: Data gaps on maternal health and incarceration. *Public Health Reports*, *134*(Suppl. 1), 57S–62S. https://doi.org/10.1177/0033354918812088	Data gaps on maternal health and incarceration	What is known about pregnant women in prison or jail?	The article reviews the lack of data on maternal health on incarcerated women.	The article is an integrative review that addresses the unavailability of data on pregnancy related health amongst incarcerated women.	There needs to be a standardized way to collect data on pregnancy among incarcerated women.	More research is needed to address standardized collection of data for incarcerated pregnant women.	Strategies can be used to optimize access to quality care and improve outcomes for incarcerated pregnant women.	Yes
Cheng, A. Y., Erlinger, A. L., Modest, A. M., Chie, L., Scott, J., & Molina, R. L. (2019). Community health center engagement and training during obstetrics and gynecology residency. *Journal of Graduate Medical Education*, *11*(5), 513–517. https://doi.org/10.4300/JGME-D-19-00039.1	OBGYN rotations at CHCs and FQHCs	What are the barriers for resident rotations at CHCs and FQHCs?	CHCs and FQHCs provide OBGYN residents the ability to learn about health systems in underserved communities including staffing shortages, SDOH, and health equity.	The website review revealed that 18% (44 of 241) of programs offered a CHC rotation. Only 78 program administrators out of the 241 programs	According to the reviewed, websites there is only a small percentage of US OB-GYN residency programs offering CHC rotations. The programs	Further research is needed to find out how to address resident rotations at CHC or FQHCs	FQHCs and CHCs can work with local hospitals to allow OBGYN rotations at their sites if they offer those services.	yes

			The study conducted a website review and survey. 241 program websites were identified. The authors surveyed program administrators to find out about types of resident involvement and barriers to resident rotations.	surveyed responded, which is 32%. 43 programs out of the 241 programs surveyed (55%) had at least one association with a CHC. 34 of those programs (44%) allowed CHC resident rotations.	which replied to a survey disclosed that less than 1 in 10 residents were planning to work in CHCs post-graduation.			
Crespo, R., Christiansen, M., Tieman, K., & Wittberg, R. (2020). An emerging model for community health worker–based chronic care management for patients with high health care costs in rural Appalachia. *Preventing Chronic Disease, 17*, Article 190316. https://doi.org/10.5888/pcd17.190316	Community Health Workers (CHW)	How can CHWs improve patient's health while reducing healthcare costs?	The authors used data on enrollment from care coordination and outcome data on patients from community health centers with diabetes.	As of September 2019, 729 high risk patients were enrolled and presented with the care management model with CHW.	The authors found diabetes to be the prevalent chronic diagnosis of the enrolled patients. There was significant improvement of HbA1c, and relationships were built with Medicaid MCOs.	Further research on the importance of CHWs and their ability to reduce healthcare costs is needed.	FQHCs and other HSOs can improve outcomes through quality improvement incentives which increase revenue.	Yes

Cross, J. (2019). Incarcerating pregnant and parenting women, the new witch hunt: A policy analysis. *Maternal and Child Health Journal*, *23*(4), 431–434. https://doi.org/10.1007/s10995-019-02739-y	Problems with healthcare delivery in correctional facilities.	Why is a criminal justice approach being employed rather than a public health approach to address mental health and substance abuse?	The author synthesized peer reviewed articles to address the mass incarceration of women. The study proposes that prisons are not suitable institutions for pregnant and parenting women.	This paper examined the practice, policies, and programs that helps to address the issue of mass incarceration of women and the implications related to inequality, health care and social justice.	A public health approach is needed. Prison policies reinforce concerns for the safety of pregnant women.	Further research is needed to address necessities and appropriate prenatal–postpartum care to increase positive outcomes.	FQHCs can provide support by providing health services and Community Health Workers.	Yes
Cross, J. (2020). Imprisoning pregnant and parenting women: A focus on social justice, equal rights, and equality. *Health & Social Work*, *45*(3), 195–201. https://doi.org/10.1093/hsw/hlaa008	Social Work and public health	Why are women are being incarcerated at shocking rates?	The authors synthesized peer reviewed articles related to the increase in female incarceration. The following categories were addressed: social justice, criminal justice, racial and gender rights, human rights, and reproductive rights.	The incarceration rates revealed disparities in minority women. African American women. Also, inequities related to socioeconomic status for female inmates. Findings also revealed that 37% of female inmates live below the federal poverty line.	The mass incarceration of female prisoners is seen as a social welfare crisis. According to the authors, the criminal justice system is the standard solution to mental health, substance use, trauma, and poverty issues.	Further research is needed. There are opportunities for social workers to develop and implement effective solutions.	HSOs could see how LSW and Community Health Workers could assist in developing effective solutions.	Yes

Deming, W. E. (1986). *Out of the crisis*. MIT Press.	Total Quality Management	The purpose of Total Quality Management (TQM) is to focus on promoting a culture of continuous improvement through the delivery of quality services within an organization.	The key constructs outline the various segments to improve the quality of care.	The author addressed ways to improve quality of care through continuous improvement , customer satisfaction, and patient involvement.			This relates to my study because TQM can help identify gaps in maternal health services for pregnant prisoners and improve access by focusing on structures and processes to improve patient outcomes.	Yes
Dzubay, S. K., Chaiken, S. R., Arora, M., & Caughey, A. (2022). Nutrition based education on intervention in incarcerated pregnant women vs. standard practice of care: a cost-effective analysis. *American Journal of Obstetrics and Gynecology*, *226*(1), 667–668. https://doi.org/10.1016/j.ajog.2021.11.1101	Decreased pregnancy outcomes in incarcerated women.	Why are Incarcerated individuals shown to have decreased pregnancy outcomes than those who are not incarcerated ?	The William & Mary Healthy Beginnings Program (WMHBP) assessed the cost-effectiveness of applying its program against the standard of care for incarcerated pregnant women. The authors built a decision-analytic model which compared the outcomes of the study's theoretical cohort of 16,000 individuals.	In the theoretical cohort, the WMHBP was connected to the reduction in 880 preterm births (2128 vs. 3008), 5 neonatal deaths, and 8 neurodevelopmental delays.	The WMHBP proved to be cost-effective and cost-saving strategy for reducing.	Further research is needed to show how other correctional facilities could implement WMHBP and reduce disparities in the pregnancy outcomes of incarcerated women.	Working with policy makers and carceral settings to implement a nutrition-based education program.	Yes

Ezzat, M. A. (2023). Identifying barriers to healthcare access among underserved populations: A descriptive study. *Journal of Advanced Analytics in Healthcare Management*, *7*(1), 1–17. https://research.tensorgate.org/index.php/JAAHM/article/view/22	Healthcare access barriers that affect underserved populations.	What barriers effect access to healthcare in underserved populations?	The authors created a descriptive study to address individual health and wellbeing, preventing and managing diseases, and reducing the burden of illness on families and communities.	The authors identified several barriers: lack of health insurance, transportation, language and cultural barriers, stigma and discrimination, lack of education and health literacy, and financial constraints.	Many underserved populations face barriers that prevent them from accessing healthcare services resulting in delayed diagnoses, untreated illnesses, and worsening health outcomes.	To overcome these obstacles, initiatives need to be put into place to address affordable health insurance, transportation, language/cultural proficiency, and eradicating social stigmas.	FQHCs can advance health equity and provide access to care regardless of their ability to pay.	yes
Fernandez, A. M., & Kline, N. (2020). Language barriers in healthcare: A systematic review and meta-analysis. *International Journal for Quality in Health Care*, *32*(2), 116–126.	SDOH examine how language barriers can affect access to and utilization of healthcare services.	How can language barriers impede patients' access to and utilization of healthcare, communication between patients and providers, and health outcomes?	A systematic review and a meta-analysis revealed studies published from 2000 to 2019. Databases used were MEDLINE, EMBASE, CINAHL, and PsycINFO.	Language barriers were found to be associated with higher rates of hospitalization and mortality, a decrease in the number of visits to healthcare providers.	The authors concluded that language barriers have a substantial impact on access to health services and outcomes.	Further research could be conducted on various healthcare outcomes. In addition, further research is needed to find potential interventions to address language barriers.	Medical professionals need to be aware of language barriers.	yes
Friedman, S. H., Kaempf, A., & Kauffman, S. (2020). The realities of pregnancy and mothering while incarcerated. *Journal of the American Academy of Psychiatry and the Law*, *52*(2).	Realities of pregnancy and mothering while incarcerated	What do women of reproductive age experience while pregnant or mothering in a correctional	The authors provide an integrative review on pregnancy and	The authors addressed prevalence, prenatal care while incarcerated,	The authors addressed the importance of the need for	More research is needed to address the realities of what	Improve outcomes and realities for pregnant incarcerated women.	yes

https://jaapl.org/content/early/2020/05/13/JAAPL.003924-20		system that was designed for men?	delivery behind bars.	pregnancy testing, access to abortion, childbirth support and education, use of restraints and shackling, pregnancy outcomes, breastfeeding, and mother-baby units.	standardized care for incarcerated women. They also addressed the benefits of Mother-Baby Units, which is not a system in place in the United States.	pregnant and mothering incarcerated women face while in U.S. correctional facilities.		
Garcia, K. K., & Hunter, S. K. (2022). Proposed solutions for improving maternal health care in rural America. *Clinical Obstetrics and Gynecology*, *65*(4), 868–876. https://doi.org/10.1097/GRF.0000000000000754	Maternal Health care in Rural America	What are ways to improve maternal health care in rural America?	This article addresses reasons for Labor & Delivery Unit closers and provides proposed solutions to improving access to maternal health services.	There has been an increase in L&D unit closures across Rural America.	Programs, policies, and funding are needed to make solutions for improving maternal healthcare services for rural America.	More research is needed to address proposed programs, policies, and funding.	FQHCs can find strategies to improve maternal health services for underserved communities.	yes
Gourevitch, R. A., & Hatfield, L. A. (2023). Changes in prenatal care and birth outcomes after federally qualified health center expansion. *Health Services Research*, *58*(2), 489–497. https://doi.org/10.1111/1475-6773.14099	Prenatal care and birth outcomes after FQHC expansion in California.	How did the expansion of FQHCs improve late prenatal care initiation, low birth weight, and preterm birth among Medicaid and uninsured populations?	The authors used a synthetic control with a staggered adoption approach to compare FQHCs from 2011 to 2016. The control calculated non-parametric estimates of the average treatment	The analysis was limited to births covered by Medicaid or uninsured populations. 55 areas in California were reviewed. The study found no statistically significant impact on	The study results from California suggest that access to primary and prenatal care may not be sufficient to improve outcomes.	Future work is needed to evaluate ongoing initiatives between primary and prenatal care at FQHCs in targeted areas.	FQHCs need to have designated OBGYN offices that have a connection with local hospitals for L&D. FQHCs should also provide maternal health services to	yes

			effects on the treated areas.	rates of late prenatal care initiation, low birth weight, or preterm birth.			pregnant women that would not otherwise receive these services, for example incarcerated pregnant women.	
Hall, B., Atrio, J., Moore, S., Lorvick, J., Cropsey, K., & Ramaswamy, M. (2022). Perceived healthcare quality and contraception utilization among persons recently incarcerated. *Journal of Criminal Justice, 83,* Article 101974. https://doi.org/10.1016/j.jcrimjus.2022.101974	Contraception utilization and quality healthcare for incarcerated women	What is the perceived healthcare quality and contraception utilization for incarcerated women?	Contraception, SDOH, and specialized needs of incarcerated women	A secondary analysis was conducted. It consisted of a cross-sectional study of reproductive-aged women with a history of criminal-justice involvement in three cities.	35% of the participants used a method to prevent pregnancy. Participants who were not using a contraceptive method were more likely to lack health insurance and experience food insecurity when compared to contraceptive users.	More studies are needed to explore sexual and reproductive health of previously incarcerated women.	FQHCs can address the SDOH of incarcerated pregnant women, and provide quality maternal health services	yes
Health Resources and Services Administration. (2023). *State Maternal Health Innovation Program.* https://www.hrsa.gov/grants/find-funding/HRSA-23-108	Finding available grant funding for maternal health services	What are available grants for maternal health?	Lists of available grants from HRSA that can address access to maternal health services through an FQHC.	There are 63 available funding opportunities.	There are available grant funding opportunities for an FQHC to apply and provide services at their HSO.	FQHCs and other qualifying HSOs have to apply for these available grant opportunities for maternal health services.	FQHCs can utilize these grants to identify and provide access to maternal health services for incarcerated pregnant women.	yes

Khosravi, A., Ebrahimidavvasi, S., BasirianJahromi, R., & Seyyed Hosseini, S. (2023). Health information seeking behavior of pregnant women referring to health centers and its relationship with their health literacy level. *International Journal of Information Science and Management (IJISM)*, *21*(2), 197-207. https://doi.org/10.22034/ijism.2023.1977744.0	Improving information recovery skills and encouraging ma ternal health literacy	How can health literacy and health information for pregnant women be addressed by CHCs in Bushehr?	A stratified random sampling method selected 271 pregnant women were referred to health centers in Bushehr. The authors used a questionnaire regarding behavior and health literacy. The data collected was analyzed by SPSS software version 24.	Findings showed that 25% of women had good health i nformation-seeking behavior. 51% of pregnant women had inadequate h ealth literacy. 25% had border health literacy. 24% had adequate hea lth literacy.	The low and unfavorable health literacy in Bushehr municipality pregnant women shows a need to provide appropriate educational resources with comprehensi ble language.	Further research is needed to find strategies for promoting health literacy of pregnant women.	FQHCs can assist in providing education materials in every language.	yes
Kramer, C., Thomas, K., Patil, A., Hayes, C. M., & Sufrin, C. B. (2022). Shackling and pregnancy care policies in US prisons and jails. *Maternal and child health journal*, *27*(1), 186–196. https://doi.org/10.1007/s10995-022-03526-y	Prison and jail pregnancy policies and practices, specifically restraint use and compliance with antishackling legislation.	Is there a need for established standards of care for incarcerated pregnant women?	From 2016-2017, a survey was conducted on 22 state prisons and six jails. Pregnancy policies and practices, restraint use, prenatal care, delivery and birth, and pregnancy accommodations were addressed.	Data revealed that pregnancy policies and services varied, and there were inconsistenci es regarding compliance with antishackling legislation, accredited services, officers in labor & delivery.	There is variability in prisons and jails due to limited oversight and standardized care guidelines for incarcerated women.	More research is required to address the limited oversight and standardized care of incarcerated pregnant women. In additions, more research is needed to address their unique healthcare	FQHCs can find strategies to improve access to care for incarcerated pregnant women.	yes

						needs, accommodations, safety and wellbeing.		
Kuhlik, L., & Sufrin, C. (2020). Pregnancy, systematic disregard and degradation, and carceral institutions. *Harvard Law & Policy Review*, 14(2), 417–466	How prisons and jails address reproductive healthcare.	How does the U.S. correctional facilities control reproduction and reproductive health care?	This article addressed the legal, clinical, and socio-political aspects of reproduction control and reproductive health care while incarcerated.	This article provides demographic of incarcerated women, mass incarceration of women, a review of racialized control of reproduction in the U.S. prisons and jails, and healthcare provisions behind bars.	The authors report that systematic neglect of pregnant people behind bars allows for abuse and reproductive oppression. National standards of pregnancy care are optional and there is no oversight.	More research is needed to address legal, clinical, and socio-political aspects of reproduction in U.S. prison and jail. In addition, there is a need for further research on oversight of national standards for pregnancy care while incarcerated.	Providing strategies to provide consistent reproductive healthcare to incarcerated pregnant women.	yes
Lian, T., Kutzer, K., Gautam, D., Eisenson, H., Crowder, J. C., Esmaili, E., Sandhu, S., Trachtman, L., Prvu Bettger, J., & Drake, C. (2021). Factors associated with patients' connection to referred social needs resources at a federally qualified health center. *Journal of Primary Care & Community Health*, 1–10. https://doi.org/10.1177/21501327211024390	FQHCs have increasingly begun to make an effort to improve health outcomes and promote health equity.	What factors can be identified by an FQHC to address social needs resources?	This study is a retrospective cohort which included 501 patients from an analytic sample from March 2019 to December 2020. Measures included demographics,	32.7% had started services with 1 or more of their referred resources within 4 weeks of the initial referral. 63.3% reached out to one of	The referral pathways can impact patients' connection to social needs resources. It also highlighted opportunities for solutions to address unmet social needs.	Further research is needed to address other opportunities to meet unmet social needs in an FQHC.	FQHCs can develop strategies to promote access by addressing the unmet needs of underserved populations and promoting health equity.	yes

			social needs, and resources needed including area of need, integration relative to the FQHC, and means of accessing services.	their referred resources, even if they did not start that service.				
Lomonaco-Haycraft, K. C., Hyer, J., Tibbits, B., Grote, J., Stainback-Tracy, K., Ulrickson, C., Lieberman, A., van Bekkum, L., & Hoffman, M. C. (2019). Integrated perinatal mental health care: a national model of perinatal primary care in vulnerable populations. *Primary health care research & development*, *20*, e77. https://doi.org/10.1017/S1463423618000348	A common pregnancy complication are Perinatal mood and anxiety disorders (PMADs).	How can Denver Health, an integrated hospital and FQHC help serve these vulnerable populations?	Denver Health, an integrated hospital and FQHC created a universal screen-to-treat process for PMAD's in perinatal clinics and to adapt the existing Integrated Behavioral Health (IBH) model. .	In 2014 Denver Health behavioral health providers and the women's care clinics became integrated. In January 2015, the screenings for PMADs were employed. Screenings improved from 0% of women screened in August 2014 to >75% of women screen in August 2016.	Implementation of the PMADs screening with IBH model in perinatal care improved perinatal mental health in Denver Health.	Further research is needed to address how FQHCs can help serve patients with PMADs.	Other FQHCs can implement universal screenings for PMADs alongside IBH model in prenatal care.	yes
Nair, S., McGreevy, J. E., Hutchinson-Colas, J., Turock, H., Chervenak, F., Bachmann, G., & NJ on Women's Reentry-Health Subcommittee (2021). Pregnancy in incarcerated women: need	Prenatal care provided to incarcerated women	What kind of prenatal care is provided to	The authors examined twenty-one years of data (2000-2021) from	. The authors focused on the need for uniform	Standardized state and federal legislation	More research is needed to address the	FQHCs serve underserved and	yes

for national legislation to standardize care. *Journal of perinatal medicine*, *49*(7), 830–836. https://doi.org/10.1515/jpm-2021-0145		incarcerated women? What areas can be identified to propose a standardized care for incarcerated pregnant women?	PubMed and Google Scholar. The authors used keywords: prison AND prenatal care AND pregnancy.	federal standards by addressing prenatal care: shackling, inadequate prenatal diet, lack of access to comprehensive mental health management, poor availability opioid use disorder management. The authors also addressed the need for mother-baby units.	are recommended to ensure uniform standards and reporting of data for incarcerated pregnant women outcomes.	need for standardized care for incarcerated pregnant women.	vulnerable populations. This HSO can assist in providing access to quality prenatal services for incarcerated pregnant women.	
National Association for Community Health Centers (nd). What is a Community Health Center? Retrieved on March 13, 2024, from www.nach.org	Community Health Centers	What is a Community Health Center?	The National Association for Community Health Center, provides the history of community health centers and its mission.	Describes the history of community health centers and building for the future.			Providing positive social change for the underserved and vulnerable communities.	no
O'Connor, S. K., Vanjani, R., Cannon, R., Dawson, M. B., & Perkins, R. (2023). General and reproductive healthcare experiences of formerly incarcerated women in the United States: A qualitative study. *International Journal of Prisoner Health, 19* (4), 545–564. https://doi.org/10.1108/IJPH-09-2021-0094	Reproductive experiences of formerly incarcerated women.	What were the healthcare experiences of women while they were incarcerated? How was the transition into the community	This qualitative study consisted of 21 semi-structured interviews from English speaking women with a history of being incarcerated	There were six themes identified: feeling stigmatized and insignificant; care as punishment;	The authors were able to obtain barriers and challenges when accessing reproductive healthcare	More research regarding general and reproductive healthcare experiences of formerly and currently	Find ways to effectively reengage women in care upon release and improve access to care.	yes

		healthcare setting from prison?	within the 10 years.	delay in care; exceptions to the rule; fragmentation of care; and obstetric trauma and resilience.	services, described by personal experiences from women while incarcerated.	incarcerated women is needed.		
Office of the Surgeon General (2020). The Surgeon General's Call to Action to Improve Maternal Health [Internet]. Washington (DC): US Department of Health and Human Services; *Strategies* and actions: Improving maternal health and reducing maternal mortality and morbidity https://www.ncbi.nlm.nih.gov/sites/books/NBK568218/	Surgeon General's call to improve maternal health.	What strategies and actions can improve maternal health and reduce maternal mortality and morbidity?	The author used strategies and actions from recommendation and consensus statements regarding specific actions for addressing the conditions and risk factors that impact maternal health.	The document reveals that action is required from women and families; states, tribes, and local communities; healthcare professionals; healthcare systems, hospitals, and birthing facilities; payors; employers; innovators, and researchers	Individuals, organizations, and communities should choose and execute actions that are relevant to their needs.	Further research is needed to find strategies and actions to improve maternal health in U.S.	HSOs can find applicable strategies and actions for their communities to improve maternal health and reduce maternal mortality.	yes
Paynter, MJ, Drake, EK, Cassidy, C, Snelgrove-Clarke, E. (2019). Maternal health outcomes for incarcerated women: A scoping review. *J Clin Nurs*. 28: 2046–2060. https://doi.org/10.1111/jocn.14837	Intersectional feminist theory.	What are maternal health outcomes for incarcerated women?	Key databases and journals were searched. Articles published from 1989–2014 were used. 45 studies met the criteria. 13 studies met inclusion. Participants included	Outcomes of interest consisted of breastfeeding, operative deliveries, gestational complications, depression, stress, experiences,	There is limited research on maternal health outcomes for incarcerated pregnant women. There is an opportunity for the	Further research is needed to examine breast feeding, shackling, solitary confinement, strip searches, and restraint	Healthcare providers need to be aware of how discrimination and trauma impacts maternal health for incarcerated	yes

			incarcerated pregnant women during their perinatal period up to six months postpartum.	bonding and sterilization.	women to address outcomes that matter to them through research.	policies & outcomes for incarcerated women.	women experience. How can an HSO have a positive impact on maternal health for incarcerated women?	
Rathke, C. (2021). The women who don't get counted. *Voices in Bioethics*, 7. https://doi.org/10.52214/vib.v7i.8717	Well-being of women in prison	What are pregnant women the most marginalized and forgotten groups?	A review on the lack of adequate care while incarcerated was conducted.	The article addressed prenatal care in prison; respect for autonomy during incarceration ; prison nursery programs.	Programs need to be established to ensure expecting mothers are receiving adequate care	More research is needed to address adequate care for incarcerated pregnant women.	FQHCs and other HSOs can find strategies to ensure adequate/quality care is provided to these women	yes
Reyes, A. M., Akanyirige, P. W., Wishart, D., Dahdouh, R., Young, M. R., Estrada, A., Ward, C., Cruz Alvarez, C., Beestrum, M., & Simon, M. A. (2021). Interventions addressing social needs in perinatal care: A systematic review. *Health equity*, *5*(1), 100-118. https://doi.org/10.1089/heq.2020.0051	Interventions addressing social needs in perinatal care	How is health impacted by a social determinant of health?	The authors searched 6 databases through May 2020, identifying articles that included pregnant or postpartum women in a clinical setting and described screenings or intervention activities addressing at least one SDOH as defined by Healthy People 2020.	The authors identified 31 publications describing 26 unique studies. Most studies were either randomized-controlled trials or observational studies; study settings were both public and private. The mean age of women	This systematic review identified several ways to support pregnant and postpartum women through interventions of social needs and actions addressing in a clinical environment. The results of this review suggest that	More rigorous research is needed on how the health of a pregnant or post-partum woman is impacted by SDOH.	FQHCs have Community Health Workers that address SDOH. How can an FQHC assist the needs of pregnant prisoners by addressing SDOH?	yes

				ranged from 17.4 to 34.1 years of age. Most studies addressed intimate partner violence, social support, food insecurity and housing.	interventions may alleviate social risk factors and improve some clinical outcomes.			
Russell, H. A., Sanders, M., Moll, L., Murphy, M., Lanigan, A. M., & Carroll, J. K. (2020). Using a group medical visit model to promote healthy behaviour change with an underserved population. *Family practice*, *37*(4), 507-512. https://doi.org/10.1093/fampra/cmaa028	Models of care needed to address physical activity, nutrition promotion and weight loss in primary care settings for underserved populations.	How can Group medical visits (GMVs) help overcome barriers to behavior change in underserved populations?	This study assessed a GMV combining a physical element in underserved populations measuring biometric and motivation outcomes. The study used pre-post intervention study design by an interdisciplinary primary care team and FQHC in Rochester NY. They used patient surveys at baseline and 12 weeks which consisted of six, 2-hour sessions that occurred biweekly at the clinic.	Participants lost a substantial amount of weight. These individuals were able to sustain the weight loss at 6 months. There was also noteworthy improvement in motivation measures.	This initial evidence shows that the GMV model can improve weight loss and autonomous motivation in underserved populations.	More research is needed on how GMV can be utilized in different FQHCs and other institutions such as a correctional facility for pregnant inmates.	FQHCs could partner with correctional facilities to overcome barriers and identify ways to improve pregnant inmates during and after pregnancy.	yes

Testa, A., & Jackson, D. B. (2020). Incarceration exposure and barriers to prenatal care in the united states: Findings from the pregnancy risk assessment monitoring system. *International journal of environmental research and public health*, *17*(19), 7331. https://doi.org/10.3390/ijerph17197331	Incarceration exposure and barriers to prenatal care in the U. S	What specific barriers are related to parental care and associated with incarceration exposure?	Authors utilized 2009-2016 data from The Pregnancy Risk Assessment Monitoring System. The connection between pregnancy during incarceration and barriers to prenatal care. Negative binomial and logistic regression models were used in this study.	The study's findings showed that exposure to incarceration increases barriers to prenatal care such as lack of transportatio n, childcare, too busy, keeping the pregnancy a secret, or a woman not knowing she was pregnant.	The study's finding reiterates the challenges that incarceration women face in obtaining prenatal care. The findings also identified specific barriers that increase due to incarceration .	More research is needed to inform prevention and intervention efforts to provide services to address these barriers to prenatal care in the criminal justice system.	FQHCs could provide clinical initiatives to provide education and OBGYN services/pren atal care to the prisoners to address these barriers.	yes
Thomas, S. D., Mobley, S. C., Hudgins, J. L., Sutherland, D. E., Inglett, S. B., & Ange, B. L. (2018). Conditions and dynamics that impact maternal health literacy among high risk prenatal-interconceptional women. *International journal of environmental research and public health*, *15*(7), 1383. https://doi.org/10.3390/ijerph15071383	Conditions and dynamics of prenatal-interconception al women in Southern U.S. that are high risk/low income.	How can an in-home visiting program promote maternal health literacy development?	The Life Course Health Development Model identified conditions that impacted health such as maternal health literacy A retrospective, mixed methods study located 37 records that met the criteria. Each documented care from prenatal admission to two years post-delivery.	A focus group was conducted with the Registered Nurse Case Managers (RNCM). Findings consisted of severe social conditions including devastating poverty, low educational achievement, transient housing, unstable relationships, incarceration	There are plans to follow up on the 23 out of 37 participants from the study group who came back to ECHS to obtain nursing services for their next pregnancy.	Further research is needed to discover the effects on next pregnancy for these individuals. In addition, more research is needed on the collaboration of The Life Course Health Development Model and RNCM for pregnant	FQHCs can implement a similar plan with their Community Health Workers to address maternal health literacy in the home and promote follow up, and address any barriers to care.	yes

				, lack of continuous health insurance, and shortage of health care providers.		incarcerated women.		
Tonjang, S., & Thawesaengskulthai, N. (2022). Total quality and innovation management in healthcare (TQIM-H) for performance and sustainability. *IEEE Transactions on Engineering Management, Engineering Management, IEEE Transactions on, IEEE Trans. Eng. Manage*, (99), 1-19. https://doi.org/10.1109/TEM.2022.3212879	Total Quality Management	The purpose of Total Quality Management is to focus on innovation and quality to allow the best organizational performance.	The authors utilized mixed method methodologies to develop the integrated framework. It consisted of a systematic literature review, interviews with healthcare experts, multiple case studies in the Asia Pacific region hospitals, and triangulation testing with external datasets.	The seven dimensions addressed include the context of the environment (internal and external), leaders, support, planning, operation, tools and analysis method, and continuous improvement .	According to the authors the seven dimensions resulted in positive healthcare performance. It resulted in organizational sustainability which impacts economic, environmental, and social dimensions.	More research is needed to apply TQM to other HSOs.	This relates to my study because Total Quality Management can identify gaps in maternal health services for pregnant prisoners by focusing on barriers to access to care.	Yes
Usigbe, J., Macey, E., Klemme, P., Williams, M., & Turman, J. E., Jr. (2023). Applying a maternal standards of care audit tool and quality improvement process to improve healthcare for pregnant women in prison. *International Journal of Offender Therapy and Comparative Criminology*, 306624X231206518. https://doi.org/10.1177/0306624X231206518	Maternal health standards; Quality Improvement	How could applying maternal standards of care tool and quality improvement processes improve healthcare for incarcerated pregnant women?	The Indiana Department of Corrections developed the maternal standard of care (MSOC) audit tool.	The authors used the MSOC audit tool to audit 52 charts. The authors utilized a PDSA, which is a quality improvement approach,	Quality improvement can assist in identifying areas for improvement and improve maternal healthcare in prisons.	More research is needed to assess the audit tool, current practices, and recommendations for change.	HSOs and correctional facilities can examine quality improvement approaches to improve maternal health for incarcerated women in	yes

				secondary analysis, chart audits, and key informant interviews.			their communities.	
Volkov, B., Pulley, C. & Shlafer, R. (2023). Addressing health disparities in the criminal legal system: Translational benefits, challenges, and facilitators of impactful research with incarcerated pregnant women. *Journal of Clinical and Translational Science*, 7. https://doi.org/10.1017/cts.2023.528	Health disparities incarcerated pregnant women face in prison.	How do social structures and systems contribute to health disparities? How can these issues in research and clinical practice be addressed?	The authors started with secondary data collection and analysis. Next, they examined experiences and perceptions from four original, semi-structured interviews with key informants. They also studied 50 interviews with 30 stakeholders contained in published sources.	Over the past 30 years incarcerated women in the U.S. has increased by more than 600%. By 2009, over 198,000 women were incarcerated in United States. Most were of reproductive age; thousands were either pregnant entering prison or had recently given birth.	This study showed the importance of influencing research by incorporating real-world work to inform systems change.	Further research is needed to improve research processes and outcomes.	HSOs can use this research to address health disparities related to social justice issues, nontraditional settings, and marginalized populations.	yes

Appendix B: DHA Review Question(s) Search Log

Database or location name	Search terms	Results	Notes
Complementary Index (Journal of the American Psychiatric Nurse Association)	Healthcare Access in the United States **AND** prison or jail or incarceration or imprisonment or correctional facilities Limited to 2018-2023	1	I will have to exclude mental health facilities in the search criteria
Academic Search Complete (Harvard Kennedy School Review)	Healthcare Access in the United States **AND** prison or jail or incarceration or imprisonment or correctional facilities Limited to 2018-2023	3	Include lack of access to maternal health in additional searches
Education Source (Journal of Health & Social Work)	Healthcare Access in the United States **AND** prison or jail or incarceration or imprisonment or correctional facilities Limited to 2018-2023	2	Includes articles included incarcerated women living with HIV. Pregnant?
APA PsycINFO	Healthcare Access in the United States **AND** prison or jail or incarceration or imprisonment or correctional facilities Limited to 2018-2023	2	Good articles for review questions.
Supplemental Index (Journal of Academic Pediatrics; Journal of Cardiac Failure)	Healthcare Access in the United States **AND** prison or jail or incarceration or imprisonment or correctional facilities Limited to 2018-2023	2	Exclude ventricular device therapy article. Consider the Journal of Academic Pediatrics because it discusses children and adolescents being exposed to parental incarceration…possible strategies for an FQHC?
Directory of Open Access Journals (Journal of Implementation Science Communications)	Healthcare Access in the United States **AND** prison or jail or incarceration or imprisonment or correctional facilities Limited to 2018-2023	1	
Pub Med	Healthcare Access in the United States	1	

Academic Search Complete (Social Science & Medicine; Journal of Criminal Justice)	Maternal Health or pregnancy or perinatal **AND** prison or jail or incarceration or imprisonment of correction facilities **AND** barriers to healthcare Limited to 2018-2023	2	Good articles. Answers review questions. Addresses pregnancy, prison, and reproductive justice
APA PsycINFO	Maternal Health or pregnancy or perinatal **AND** prison or jail or incarceration or imprisonment of correction facilities **AND** barriers to healthcare Limited to 2018-2023	2	
Directory of Open Access Journals (Voices in Bioethics)	Maternal Health or pregnancy or perinatal **AND** prison or jail or incarceration or imprisonment of correction facilities **AND** barriers to healthcare Limited to 2018-2023	1	Answers review questions
PLoS ONE	Maternal Health or pregnancy or perinatal **AND** prison or jail or incarceration or imprisonment of correction facilities **AND** barriers to healthcare Limited to 2018-2023	1	
Academic Search Complete (Health Services Research; PLoS ONE; Journal of Preventative Medicine; Journal of Pediatric & Adolescent Gynecology)	FQHC or federally qualified health center **AND** access to care or access to healthcare or access to services **AND** maternal health or pregnancy or perinatal or obstetrics or childbirth or maternity Limited to 2018-2023	7	Great insights and strategies to address underserved populations
Directory of Open Access Journals (Rural & Remote Health; BMC Public Health; Health Equity; PLoS ONE)	FQHC of federally qualified health center **AND** access to care or access to healthcare or access to services **AND** maternal health or pregnancy or perinatal or obstetrics or childbirth or maternity	4	Good grouping of articles to answer research question

	Limited to 2018-2023		
Pub Med	FQHC of federally qualified health center **AND** access to care or access to healthcare or access to services **AND** maternal health or pregnancy or perinatal or obstetrics or childbirth or maternity Limited to 2018-2023	3	
CINAHL Plus with Full Text	FQHC of federally qualified health center **AND** access to care or access to healthcare or access to services **AND** maternal health or pregnancy or perinatal or obstetrics or childbirth or maternity Limited to 2018-2023	2	
APA PsycINFO	FQHC of federally qualified health center **AND** access to care or access to healthcare or access to services **AND** maternal health or pregnancy or perinatal or obstetrics or childbirth or maternity Limited to 2018-2023	1	
International Security & Counter Terrorism Reference Center	FQHC of federally qualified health center **AND** access to care or access to healthcare or access to services **AND** maternal health or pregnancy or perinatal or obstetrics or childbirth or maternity Limited to 2018-2023	1	Article addresses changes in prenatal care since FQHCs expansion
PubMed	FQHC or federally qualified health center **AND** vulnerable populations **AND** maternal health Limited to 2018- 2023	1	Relevant to the review question

APA PsycINFO	FQHC or federally qualified health center **AND** vulnerable populations **AND** maternal health Limited to 2018- 2023	1	Relevant to the review questions
Academic Search Complete (Journal of Criminal Justice)	Specific Needs **AND** pregnant women **AND** prison or jail or incarceration or imprisonment or correction facilities **AND** united states or America or usa or U.S. Limited to 2018-2023	2	Good articles addressing different needs.
Directory of Open Access Journals (Iranian Journal of Nursing & Midwifery Research)	Specific Needs **AND** pregnant women **AND** prison or jail or incarceration or imprisonment or correction facilities **AND** united states or America or USA or U.S. Limited to 2018-2023	1	
Complementary Index (Iranian Journal of Nursing & Midwifery Research)	Specific Needs **AND** pregnant women **AND** prison or jail or incarceration or imprisonment or correction facilities **AND** united states or America or USA or U.S. Limited to 2018-2023	1	
PubMed	Specific Needs **AND** pregnant women **AND** prison or jail or incarceration or imprisonment or correction facilities **AND** united states or America or USA or U.S. Limited to 2018-2023	1	
International Security & Counter Terrorism Reference Center	Specific Needs **AND** pregnant women **AND** prison or jail or incarceration or imprisonment or correction facilities **AND** united states or America or USA or U.S. Limited to 2018-2023	1	Addresses social economic factors.

Directory of Open Access Journals (Health & Equity; Frontiers of Public Health; BMC pregnancy & childbirth; Journal of Health & Social Behaviors)	Maternal health **AND** prison or jail or incarceration or imprisonment or correctional facilities **AND** health disparities or health inequities or healthcare disparities **AND** united states or America or USA or U.S. Limited to 2018-2023	4	Good Grouping of articles to address review questions
PubMed	Maternal health **AND** prison or jail or incarceration or imprisonment or correctional facilities **AND** health disparities or health inequities or healthcare disparities **AND** united states or America or USA or U.S. Limited to 2018-2023	4	Good articles!
CINAHL Plus with Full Text	Maternal health **AND** prison or jail or incarceration or imprisonment or correctional facilities **AND** health disparities or health inequities or healthcare disparities **AND** united states or America or USA or U.S. Limited to 2018-2023	3	
CINAHL Plus with Full Text	Maternal health disparities in the United States Limited to 2018-2023	2	
Directory of Open Access Journals (Population Health)	Maternal health disparities in the United States Limited to 2018-2023	1	
PubMed	Maternal health disparities in the United States Limited to 2018-2023	1	
Complementary Index (BMC Public Health; Maternal & Child Health Journals; Women's Health)	Care Practices **AND** Pregnant women or pregnant woman or pregnant or expecting mother. **AND** prison or jail or incarceration or imprisonment or correctional facilities	3	Great grouping of articles. Relevant to review questions.

	Limited 2018-2023		
Directory of Open Access Journals (BMC Public Health; Women's Health)	Care Practices **AND** Pregnant women or pregnant woman or pregnant or expecting mother. **AND** prison or jail or incarceration or imprisonment or correctional facilities Limited 2018-2023	2	
PubMed	Care Practices **AND** Pregnant women or pregnant woman or pregnant or expecting mother. **AND** prison or jail or incarceration or imprisonment or correctional facilities Limited 2018-2023	1	
APA PsycINFO	Care Practices **AND** Pregnant women or pregnant woman or pregnant or expecting mother. **AND** prison or jail or incarceration or imprisonment or correctional facilities Limited 2018-2023	1	
Academic Search Complete (Maternal & Child Health Journal; Social Science & Medicine)	Health and Wellbeing **AND** pregnant women or pregnant woman or pregnant or expecting mother. **AND** prison or jail or incarceration or imprisonment or correctional facilities **AND** united states or America or USA or U.S. Limited 2018-2023	2	
Directory of Open Access Journals (Voices in Bioethics)	Health and Wellbeing **AND** pregnant women or pregnant woman or pregnant or expecting mother. **AND** prison or jail or incarceration or imprisonment or correctional facilities **AND** united states or America or USA or U.S. Limited 2018-2023	1	Great article. Relevant

PubMed	Health and Wellbeing **AND** pregnant women or pregnant woman or pregnant or expecting mother. **AND** prison or jail or incarceration or imprisonment or correctional facilities **AND** united states or America or USA or U.S. Limited 2018-2023	1	
APA PsycINFO	Social Justice **AND** pregnant women or pregnant woman or pregnant or expecting mothers. **AND** prison or jail or incarceration or imprisonment or correctional facilities **AND** united states or America or USA or U.S. Limited 2018-2023	3	Relevant. Articles related to social justice and equality
Complementary Index (Women's Health)	Social Justice **AND** pregnant women or pregnant woman or pregnant or expecting mothers **AND** prison or jail or incarceration or imprisonment or correctional facilities **AND** united states or America or USA or U.S. Limited 2018-2023	1	
Health Resources and Services Administration. (2023). *State Maternal Health Innovation Program*. https://www.hrsa.gov/grants/find-funding/HRSA-23-108	Maternal health and grants for 2022-2023	1	The primary federal agency for improving access to healthcare services for uninsured and vulnerable populations.
Deming, W. E. (1986). *Out of the crisis*. MIT Press.	Total Quality Management, TQM	1	The Father of TQM
National Association for Community Health Centers (nd). What is a Community Health Center? Retrieved on March 13, 2024, from www.nach.org	National Association of Community Health Centers	1	This website and organization provide insight into what a CHC and FQHC stand for

CINAHL Plus with Full Text	Total Quality Management **AND** underserved populations **AND** OBGYN or obstetrics or gynecology	1	Article answers review questions.

Appendix C: DHA Appraisal Results Log

Author, date, and title	Evidence level and quality rating	Focus: HSO type, research domain, and specific problem being addressed	Findings that help answer the review question(s)	Metrics and measures if used	Source limitations
Aggarwal, A., Aeran, H., & Rathee, M. (2019). Quality management in healthcare: The pivotal desideratum. *Journal of Oral Biology and Craniofacial Research*, *9*(2), 180–182. https://doi.org/10.1016/j.jobcr.2018.06.006	This is a review article involving quality management in healthcare. The quality rating is high.	HSO type: Healthcare sector Research Domain: Total quality improvement in healthcare. Specific Problem: Addressing quality management in health care service and achieving total quality.	Defines quality management and quality healthcare services	N/A	N/A. It discussed quality management from different perspectives (Donabedian and Total Quality Management).
Alirezaei, S., & Latifnejad Roudsari, R. (2022). The needs of incarcerated pregnant women: A systematic review of literature. *International Journal of Community-Based Nursing and Midwifery*, *10*(1), 2–17. https://doi.org/10.30476/IJCBNM.2021.89508.1613	This is a systematic review, which typically falls under Level I in the hierarchy of evidence. The quality of the review is high.	HSO type - Prison facilities. Addresses the needs of incarcerated pregnant women. Research Domain - Maternal Health in the context of incarceration.	Likely to provide a comprehensive summary and analysis of the literature on the needs of incarcerated pregnant women.	The authors conducted a systematic review of literature on the needs of incarcerated pregnant women. They assess metrics related to healthcare access, prenatal care quality, and social support were included in the review.	May be subject to selection bias based on the inclusion criteria for the review.

Author, date, and title	Evidence level and quality rating	Focus: HSO type, research domain, and specific problem being addressed	Findings that help answer the review question(s)	Metrics and measures if used	Source limitations
		Specific Problem - Identifying the specific needs of pregnant incarcerated individuals.			
Aljassim, N., & Ostini, R. (2020). Health literacy in rural and urban populations: A systematic review. *Patient Education and Counseling*, *103*(10), 2142–2154. https://doi.org/10.1016/j.pec.2020.06.007	The systematic review was published in Patient Education and Counseling. The level and quality are good.	HSO type: rural and urban communities Research Domain: health literacy in rural and urban populations. Specific problem: The differences in health literacy between rural and urban populations.	Likely discuss health literacy and sociodemographic.	The authors conducted a comprehensive search of eight online databases using keywords related to health literacy, rural, and urban. The review included nineteen articles of sufficient methodological quality.	More research and evidence are needed regarding rural-urban health literacy differences and how sociodemographic factors play important roles.
Almoayad, F., Benajiba, N., Earle, J., Aboul-Enein, B. H., Sidhu, A., Sajja, A., & Dodge, E. (2023). A scoping review of nutrition education interventions applied in prison settings. *Current Nutrition Reports*. Advance online publication. https://doi.org/10.1007/s13668-023-00497-6	This is a scoping review. The evidence level and quality are high.	HSO type: Prison settings Research Domain: nutrition education. Specific problem: the several types of nutrition	Likely discuss food insecurities and the potential complexity of nutrition education interventions within prisons and emphasize the need for well-structured, theoretically grounded, and carefully evaluated programs.	The authors conducted a comprehensive search of nineteen databases for studies on nutrition interventions in prisons from 2000 to May 2023. The review analyzed fifteen international studies, which varied from nutrition	The outcomes were inconsistent, with some showing health improvements and others encountering challenges. Few utilized established theoretical frameworks, indicating a research gap.

Author, date, and title	Evidence level and quality rating	Focus: HSO type, research domain, and specific problem being addressed	Findings that help answer the review question(s)	Metrics and measures if used	Source limitations
		education interventions applied in prison settings.		education to comprehensive health programs.	
American College of Obstetricians and Gynecologists Committee on Health Care for Underserved Women. (2021). Reproductive health care for incarcerated pregnant, postpartum, and nonpregnant individuals: ACOG Committee Opinion, Number 830. *Obstetrics and Gynecology*, *138*(1), e24–e34. https://doi.org/10.1097/AOG.0000000000004429	This article was published in the American College of Obstetricians and Gynecologists. The evidence level and quality are good.	HSO type: Prisons and Jails Research Domain: Reproductive Health for incarcerated individuals. Specific problem: the need for respectful, consistent, high-quality reproductive health, pregnancy, and postpartum care.	Likely discuss recommendations for (1) reproductive and sexual health care in carceral settings (2) Pregnancy and postpartum care in carceral setting and (3) Potential health consequences of restraints	The article provides comprehensive recommendations for pregnant, postpartum, and nonpregnant individuals, addressing the increased risk of infectious diseases and mental health conditions common to incarcerated populations.	It is an opinion paper.
Baldwin, A., Sobolewska, A., & Capper, T. (2020). Pregnant in prison: An integrative literature review. *Women and Birth*, *33*(1), 41–50. https://doi.org/10.1016/j.wombi.2018.12.004	This is an integrative literature review, which typically falls under Level IV in the hierarchy of evidence. The quality of the review is high.	HSO type – Prison Healthcare System. Addresses the healthcare of pregnant women in prison.	This study addresses the risks/vulnerability factors, and prison barriers to appropriate maternal health services. Likely to provide insights into the challenges and gaps in healthcare access for pregnant women in prison.	A comprehensive search strategy using seven electronic databases resulted in the retrieval of 363 articles. Of them, thirty-two peer-reviewed studies met the final selection criteria and were	Existing research on risks and vulnerability factors is inconsistent to research. Limited research on the midwifery support available to the women in prison is available.

Author, date, and title	Evidence level and quality rating	Focus: HSO type, research domain, and specific problem being addressed	Findings that help answer the review question(s)	Metrics and measures if used	Source limitations
		Research Domain - Maternal Health in the context of incarceration. Specific Problem - Access to appropriate healthcare for pregnant incarcerated individuals.		included in this review which utilized the Critical Appraisal Skills Program tools and adhered to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses flowchart. Thematic analysis identified universal themes.	May be subject to publication bias or selection bias based on the inclusion criteria for the review.
Bronson, J., & Sufrin, C. (2019). Pregnant women in prison and jail don't count: Data gaps on maternal health and incarceration. *Public Health Reports, 134*(Suppl. 1), 57S–62S. https://doi.org/10.1177/0033354918812088	This is a journal article in Public Health Reports. It is a research support article. The quality of the article is high.	HSO: Prison healthcare Research Domain: Data Gaps in maternal health for incarcerated women. Specific problem: Data on pregnant and incarcerated women in outdated and inconsistent	Addresses the lack of consistent care and standardized data regarding incarcerated pregnant women.	The authors utilized research from The Pregnancy in Prison Statistics (PIPS)	There is a potential for bias with the research and publication since PIPS is directed by one of the authors (C. Sufrin).

Author, date, and title	Evidence level and quality rating	Focus: HSO type, research domain, and specific problem being addressed	Findings that help answer the review question(s)	Metrics and measures if used	Source limitations
Cheng, A. Y., Erlinger, A. L., Modest, A. M., Chie, L., Scott, J., & Molina, R. L. (2019). Community health center engagement and training during obstetrics and gynecology residency. *Journal of Graduate Medical Education*, *11*(5), 513–517. https://doi.org/10.4300/JGME-D-19-00039.1	This is a journal article in Journal of graduate medical education. The evidence and quality of this article is good.	HSO: Community Health Centers Research Domain: CHC, underserved, OBGYN, prisons and jails. Specific problem: The authors sought to describe the current state of obstetrics and gynecology (OB-GYN) resident engagement and training in community health settings.	Likely to discuss opportunities for OB-GYN residents to engage in community health through clinical rotations.	The study involved a website review and survey to identify the prevalence and types of OB-GYN resident exposure to Community Health Centers (CHCs), including Federally Qualified Health Centers (FQHCs). The website review revealed that 18% (44 of 241) of programs offered a community health rotation. Of the 241 programs surveyed, seventy-eight program had at least one affiliated CHC, and 34 programs (44%) allowed residents to rotate at a CHC. administrators responded (32%). Forty-three programs (55%)	The survey lacked validity evidence and had a low response rate. Information on websites might not be accurate or up to date.
Crespo, R., Christiansen, M., Tieman, K., & Wittberg, R. (2020). An emerging model for community health worker–based chronic care management for patients with high health care costs in rural Appalachia. *Preventing Chronic Disease*, *17*, Article 190316. https://doi.org/10.5888/pcd17.190316	This is an implementation evaluation. The article is found on the CDC website. The quality is high	HSO- Rural Appalachia Research Domain: Community Health Workers Specific Problem:	This article showed how Community Health Workers (CHW) improve health outcomes. It also showed how insurance companies offer their support toward implementing CHWs to improve public health issues.	They used data from care coordination enrollment and focused on hbA1c.	This study was limited to rural Appalachia and diabetic patients.

Author, date, and title	Evidence level and quality rating	Focus: HSO type, research domain, and specific problem being addressed	Findings that help answer the review question(s)	Metrics and measures if used	Source limitations
		Chronic needs and how CHWs improve outcomes	This can help answer the review question because CHWs can address the social, economic, and self-management needs of a patient.		
Cross, J. (2019). Incarcerating pregnant and parenting women, the new witch hunt: A policy analysis. *Maternal and Child Health Journal*, *23*(4), 431–434. https://doi.org/10.1007/s10995-019-02739-y	This a review article in Maternal and Child Health Journal. The quality is high.	HSO: Prison healthcare Research Domain: maternal health services for incarcerated pregnant women. Specific problem: Mass incarceration of women.	It addresses the incarceration of pregnant women and the lack of uniform access to maternal health care.	The author examined varied factors surrounding incarcerated pregnant women, the practices, programs, and policies utilized within correctional facilities.	N/A
Cross, J. (2020). Imprisoning pregnant and parenting women: A focus on social justice, equal rights, and equality. *Health & Social Work*, *45*(3), 195–201. https://doi.org/10.1093/hsw/hlaa008	This article is an opinion or perspective piece rather than a research study, so it may not have a specific evidence level. Quality rating is good.	HSO type – Prison facilities. Advocacy or commentary on the rights of pregnant and parenting women in prison. Research Domain - Social Justice Specific Problem- Rights in the	Likely to provide a socio-political perspective on the rights of pregnant incarcerated women but may not present empirical data.	Not applicable.	Opinion pieces do not provide empirical evidence, but they can offer valuable perspectives on social issues.

Author, date, and title	Evidence level and quality rating	Focus: HSO type, research domain, and specific problem being addressed	Findings that help answer the review question(s)	Metrics and measures if used	Source limitations
		context of incarceration.			
Deming, W. E. (1986). *Out of the crisis*. MIT Press	This is a book written by the father of Total Quality Management. The quality rating is high.	HSO type: Healthcare sector Research Domain TQM Specific problem: Management transformation	This book defines Total Quality Management. It addresses the authors new and innovative way to lead, work on management, utilize problem solving process, and allocate resources.	N/A	It is describing Total Quality Management
Dzubay, S. K., Chaiken, S. R., Arora, M., & Caughey, A. (2022). Nutrition based education on intervention in incarcerated pregnant women vs. standard practice of care: a cost-effective analysis. *American Journal of Obstetrics and Gynecology*, *226*(1), 667–668. https://doi.org/10.1016/j.ajog.2021.11.1101	This theoretical cohort is published in the American Journal of Obstetrics and Gynecology. The evidence level and quality rating information are high	HSO type: U.S. correctional facilities Research Domain: Nutrition based education (food insecurity) Specific problem: The article explores the impact of nutrition-based education interventions on incarcerated pregnant women compared to	Likely to discuss provide insights into potential benefits and cost implications of incorporating nutrition-based education as part of the care protocol for incarcerated pregnant women.	The theoretical cohort contained 16,000 individuals, the approximate number of individuals who are pregnant upon incarceration each year. The outcomes examined were preterm birth, neonatal death, and neurodevelopmental delay.	There is limited research on nutrition-based education interventions in correctional facilities.

Author, date, and title	Evidence level and quality rating	Focus: HSO type, research domain, and specific problem being addressed	Findings that help answer the review question(s)	Metrics and measures if used	Source limitations
		the standard practice of care.			
Ezzat, M. A. (2023). Identifying barriers to healthcare access among underserved populations: A descriptive study. *Journal of Advanced Analytics in Healthcare Management*, *7*(1), 1–17. https://research.tensorgate.org/index.php/JAAHM/article/view/22	This is a journal article published in Journal of Advanced Analytics in Healthcare Management. The level and quality are good.	HSO type: Healthcare institutions Research Domain: barriers; access to healthcare; underserved populations. Specific problem: Access barriers that affect underserved populations from receiving healthcare services.	Likely discuss lack of health insurance, transportation, language & cultural barriers, stigma and discrimination, lack of education and health literacy, and financial constraints.	N/A	More research is needed to address these barriers.
Fernandez, A. M., & Kline, N. (2020). Language barriers in healthcare: A systematic review and meta-analysis. *International Journal for Quality in Health Care*, *32*(2), 116–126	This is a systematic review and meta-analysis, which typically falls under Level I in the hierarchy of evidence. The quality of the review is high.	HSO type – Hospitals Addresses language barriers in healthcare. Research Domain - Language barriers in the context of	Likely to provide a comprehensive synthesis of evidence on the impact of language barriers on healthcare access.	The authors conducted a systematic review and meta-analysis to assess language barriers in healthcare. They measure language proficiency, interpreter availability, and the impact of language	The study's limitation includes potential publication bias, as it relies on published research. Additionally, it may not fully capture the nuances of language barriers in prison healthcare settings.

Author, date, and title	Evidence level and quality rating	Focus: HSO type, research domain, and specific problem being addressed	Findings that help answer the review question(s)	Metrics and measures if used	Source limitations
		healthcare access. Specific Problem - Understanding the impact of language barriers on healthcare.		barriers on healthcare outcomes.	
Friedman, S. H., Kaempf, A., & Kauffman, S. (2020). The realities of pregnancy and mothering while incarcerated. *Journal of the American Academy of Psychiatry and the Law*, *52*(2). https://jaapl.org/content/early/2020/05/13/JAAPL.003924-20	This article is an integrative review on pregnancy and motherhood while incarcerated. The quality rating is good.	HSO: Prison healthcare Research Domain: Incarcerated pregnant women. Specific problem: The realities faced in prison while pregnant in the U.S and other nations.	This article discussed access to care for incarcerated women. It discussed pregnancy and delivery in correctional facilities. It also discussed other nations utilizing Mother-Baby Units.	N/A	There are other nations discussed in this article.
Garcia, K. K., & Hunter, S. K. (2022). Proposed solutions for improving maternal health care in rural America. *Clinical Obstetrics and Gynecology*, *65*(4), 868–876. https://doi.org/10.1097/GRF.0000000000000754	This research article was published in Clinical Obstetrics and Gynecology. Quality rating is good.	HSO: Rural healthcare Research domain: maternal health in rural America. Specific problem: labor and delivery closures and	This article addresses proposed solutions for improving maternal healthcare services. It also addresses the closures of Labor and Delivery Units and lack of access to hospital obstetrics care.	The authors researched problems related to access of quality maternal and obstetrical care; and proposed solutions to improve access to maternal health care for rural America.	The article is only addressing rural America

Author, date, and title	Evidence level and quality rating	Focus: HSO type, research domain, and specific problem being addressed	Findings that help answer the review question(s)	Metrics and measures if used	Source limitations
		lack of access to hospital obstetrics care			
Gourevitch, R. A., & Hatfield, L. A. (2023). Changes in prenatal care and birth outcomes after federally qualified health center expansion. *Health Services Research*, *58*(2), 489–497. https://doi.org/10.1111/1475-6773.14099	This journal article is from Health Services Research. The evidence and quality are high.	HSO type: FQHC Research Domain: FQHC; prenatal care; birth outcomes. Specific problem: This study investigates the impact of the expansion of Federally Qualified Health Centers (FQHCs) between 2011-2016 on prenatal care and birth outcomes among Medicaid-covered individuals in California.	Likely to discuss whether the Medicaid expansion improved early prenatal care initiation, low birth weight, and preterm birth.	The authors measured outcomes in vital records and birth certificate data from the California Department of Public Health. The authors restricted the analysis to births covered by Medicaid and to uninsured individuals.	The authors limited the sample to PCSAs that had at least ten births in every year from 2007 to 2019 to maintain data deidentification

Author, date, and title	Evidence level and quality rating	Focus: HSO type, research domain, and specific problem being addressed	Findings that help answer the review question(s)	Metrics and measures if used	Source limitations
Hall, B., Atrio, J., Moore, S., Lorvick, J., Cropsey, K., & Ramaswamy, M. (2022). Perceived healthcare quality and contraception utilization among persons recently incarcerated. *Journal of Criminal Justice*, *83*, Article 101974. https://doi.org/10.1016/j.jcrimjus.2022.101974	Evidence level and quality level are good	HSO: Prison healthcare Research Domain: Social determinants of health Specific problem: Perceived healthcare quality and contraception for prisoners	This article shows an association between social determinants of health and contraception use post-incarceration. It addresses a link between contraceptive use with lack of health insurance and food insecurities.	The authors conducted a secondary analysis of a cross-sectional study of reproductive-aged women across three cities with a history of criminal-justice involvement. performed. Questions related to demographics, social determinants of health, sexual and reproductive health practices, health services use, and healthcare quality were analyzed. Bivariate analysis and logistic regression examined associations between these variables and contraception utilization among persons recently incarcerated.	More studies are warranted to explore the sexual and reproductive health of previously incarcerated women.
Health Resources and Services Administration. (2023). *State Maternal Health Innovation Program*. https://www.hrsa.gov/grants/find-funding/HRSA-23-108	Evidence level and quality rating are high	HSO type: FQHC Research Domain: Grants Specific Problem: Available	State Maternal Health grants		N/A

Author, date, and title	Evidence level and quality rating	Focus: HSO type, research domain, and specific problem being addressed	Findings that help answer the review question(s)	Metrics and measures if used	Source limitations
		grants to improve maternal health			
Khosravi, A., Ebrahimidavvasi, S., BasirianJahromi, R., & Seyyed Hosseini, S. (2023). Health information seeking behavior of pregnant women referring to health centers and its relationship with their health literacy level. *International Journal of Information Science and Management (IJISM)*, *21*(2), 197-207. https://doi.org/10.22034/ijism.2023.1977744.0	This is a journal article in International Journal of Information Science and Management/ The evidence and quality level is good.	HSO type: Health Centers Research Domain: health literacy; pregnant women; FQHC. Specific Problem: Health information seeking behavior of pregnant women referred to health centers and its relationship with health literacy.	Likely to discuss a meaningful relationship between health information-seeking behavior and pregnant women.	This study investigates the relationship between health literacy and the health information-seeking behavior of pregnant women referring to health centers in Bushehr. Twenty-five percent of women had good health information-seeking behavior. However, 51% of pregnant women had inadequate health literacy, 25% had border health literacy, and 24% had adequate health literacy.	The study was based on a specific health center and population.
Kramer, C., Thomas, K., Patil, A., Hayes, C. M., & Sufrin, C. B. (2022). Shackling and pregnancy care policies in US prisons and jails. *Maternal and child health journal*, *27*(1), 186–196. https://doi.org/10.1007/s10995-022-03526-y	Evidence and quality rating are good	HSO: prison healthcare Research Doman: Shackling and pregnancy care policies.	This study assessed prison and jail pregnancy policies and practices within US prisons and jails. Primarily focusing in on restraint use and compliance with antishackling legislation.	The authors conducted a survey of twenty-two state prisons and six jails. Five of the largest U.S. jails from 2016-17 were included in the surveys which	No individual data from pregnant prisoners was obtained. There were no prior studies assessed concordance with antishackling

Author, date, and title	Evidence level and quality rating	Focus: HSO type, research domain, and specific problem being addressed	Findings that help answer the review question(s)	Metrics and measures if used	Source limitations
		Specific problem: No consistencies in care provided		focused on pregnancy policies and practices including restraint use, prenatal care, delivery and birth, and other pregnancy accommodations.	legislation and compliance. Policies were not collected to confirm the results from the surveys. Desirability bias. No tests were performed due to the small sample size.
Kuhlik, L., & Sufrin, C. (2020). Pregnancy, systematic disregard and degradation, and carceral institutions. *Harvard Law & Policy Review*, 14(2), 417–466	Evidence and quality rating are good	HSO type: Prison healthcare Research Domain: Care practices. Specific problem: Disregarding and degradation in carceral institutions	This article addresses reproduction behind bars and its legacies of racialized reproductive oppressions within U.S. correctional facilities. It provides insight into legal, clinical, and socio-political dimensions of carceral control of reproduction and reproductive health care in U.S. prisons and jails, including abortion access, prenatal and postpartum care, childbirth, and parenting.		More studies are warranted to address reproduction in U.S. correctional facilities.
Lian, T., Kutzer, K., Gautam, D., Eisenson, H., Crowder, J. C., Esmaili, E., Sandhu, S., Trachtman, L., Prvu Bettger, J., & Drake, C. (2021). Factors associated with patients' connection to referred social needs resources at a federally qualified health center. *Journal of Primary Care & Community Health*, 1–10. https://doi.org/10.1177/21501327211024390	This resource is a journal article, but specific evidence level and quality rating information is good.	HSO type – FQHC. Addresses factors associated with patients' connection to referred social needs resources.	Likely to discuss factors influencing patients' connection to referred social needs resources	The authors investigated factors associated with patients' connection to referred social needs resources. They assess metrics related to patient engagement, resource utilization, and the effectiveness of referrals	According to Lian et al. (2021), this study has several limitations: First, connection outcome data were based on patient self-report in a conversation with a community resource navigator. Second, community resource navigators

Author, date, and title	Evidence level and quality rating	Focus: HSO type, research domain, and specific problem being addressed	Findings that help answer the review question(s)	Metrics and measures if used	Source limitations
		Research Domain - Social determinants of health and healthcare access. Specific Problem: Factors associated with the successful connection to social needs resources, as well as factors associated with an attempt to connect as a secondary, intermediate outcome.			were not always in contact with the patient long enough to see the referral through to connection. This is a limitation of the retrospective nature of this study and the program's protocols, which were designed to ensure continued case management capacity with limited staffing. Third, the external validity of our findings is limited by the single-site study design. Additional studies should be conducted in different community and clinical contexts, with larger sample sizes, and among programs with and without navigator programs.
Lomonaco-Haycraft, K. C., Hyer, J., Tibbits, B., Grote, J., Stainback-Tracy, K., Ulrickson, C., Lieberman, A., van Bekkum, L., & Hoffman, M. C. (2019). Integrated perinatal mental health care: a national model of perinatal primary care in vulnerable populations. *Primary health care research & development*, *20*, e77. https://doi.org/10.1017/S1463423618000348	This resource appears to be a journal article, but specific evidence level and quality rating is good.	HSO type – BH and OBGYN sites. Addresses integrated perinatal mental health care in vulnerable populations.	Likely to discuss a national model of integrated perinatal mental health care and its application in vulnerable populations	The authors focused on perinatal mental health care. They measure the integration of mental health services with perinatal care, assessing metrics such as the availability of mental health screenings and support services	The study's limitation is that it primarily focuses on vulnerable populations but does not specifically address the unique challenges faced by incarcerated pregnant women.

Author, date, and title	Evidence level and quality rating	Focus: HSO type, research domain, and specific problem being addressed	Findings that help answer the review question(s)	Metrics and measures if used	Source limitations
		Research Domain - Perinatal Mental Health in the context of vulnerable populations. Specific Problem- lack of perinatal mental health care			
Nair, S., McGreevy, J. E., Hutchinson-Colas, J., Turock, H., Chervenak, F., Bachmann, G., & NJ on Women's Reentry-Health Subcommittee (2021). Pregnancy in incarcerated women: need for national legislation to standardize care. *Journal of perinatal medicine*, *49*(7), 830–836. https://doi.org/10.1515/jpm-2021-0145	This review was published in Journal of Perinatal Medicine. The quality rating is high.	HSO type: Prison healthcare Research Domain: pregnancy in incarcerated women. Specific problem: The need for national legislation for standardized care	The findings revealed that prenatal care of incarcerated women is variable and need uniform federal standards.	The authors used data from 2000-2021. They also used the following databases: PubMed and Google Scholar.	According to Nair et al. (2021), "The main limitation imposed on this study was the scarcity of similar literature and supporting data. As there is a lack of existing literature examining pregnancy outcomes in incarceration, analysis of current measures of prenatal care and the resulting health outcomes is limited."
National Association for Community Health Centers (nd). What is a Community Health Center? Retrieved on March 13, 2024, from www.nach.org	Evidence and quality are high	HSO type: CHC/FQHC Research domain: FQHC, underserved.	Provides insight into the services a CHC/FQHC. Also provides insight into what is a Community Health Center.		N/A

Author, date, and title	Evidence level and quality rating	Focus: HSO type, research domain, and specific problem being addressed	Findings that help answer the review question(s)	Metrics and measures if used	Source limitations
		Specific problem: underserved populations			
O'Connor, S. K., Vanjani, R., Cannon, R., Dawson, M. B., & Perkins, R. (2023). General and reproductive healthcare experiences of formerly incarcerated women in the United States: A qualitative study. *International Journal of Prisoner Health, 19* (4), 545–564. https://doi.org/10.1108/IJPH-09-2021-0094	Published in the Journal of Prisoner Health. Evidence level and quality level are high.	HSO type: Prison healthcare Research domain: Prison healthcare for pregnant women Specific problem: Experiences from pregnant women in prison	This qualitative study produced six themes. Pregnant prisoners had 'feeling stigmatized and insignificant,' 'care as punishment,' 'delay in care,' 'exceptions to the rule,' 'fragmentation of care' and 'obstetric trauma and resilience.'	The authors completed twenty-one full interviews with English speaking only women who were pregnant in prison within the past 10 years. Their experiences to understand incarceration healthcare.	Only interviewed English speaking women who were pregnant within the past 10 years.
Office of the Surgeon General (2020). The Surgeon General's Call to Action to Improve Maternal Health [Internet]. Washington (DC): US Department of Health and Human Services; *Strategies* and actions: Improving maternal health and reducing maternal mortality and morbidity https://www.ncbi.nlm.nih.gov/sites/books/NBK568218/	Recommendations from the Office of the Surgeon General. Quality rating is good.	HSO type: U.S. health Research domain: Maternal health. Specific problem: maternal mortality and morbidity	The Surgeon General provides strategies and actions to address health before and after pregnancy.	The article outlined specific actions for addressing the conditions and risk factors that impact maternal health. Specifically, the article addressed women and families; states, tribes, and local communities; healthcare professionals; healthcare systems, hospitals and birthing facilities; payors;	Limited data and potential for bias.

Author, date, and title	Evidence level and quality rating	Focus: HSO type, research domain, and specific problem being addressed	Findings that help answer the review question(s)	Metrics and measures if used	Source limitations
				employers; innovators, and researchers.	
Paynter, MJ, Drake, EK, Cassidy, C, Snelgrove-Clarke, E. (2019). Maternal health outcomes for incarcerated women: A scoping review. *J Clin Nurs*. 28: 2046–2060. https://doi.org/10.1111/jocn.14837	This is a scoping review, which typically falls under Level IV in the hierarchy of evidence. The quality rating is high.	HSO type – Prison facilities. Addresses the maternal health outcomes of incarcerated women. Research Domain - Maternal Health in the context of incarceration. Specific Problem - Understanding the health outcomes of incarcerated pregnant women.	Likely to summarize and map out the existing literature on maternal health outcomes for incarcerated women.	The study focuses on maternal health outcomes for incarcerated women. They employ a scoping review methodology to assess various outcomes, including maternal mortality, preterm birth rates, access to prenatal care, and neonatal outcomes.	The research on maternal health outcomes pertaining to incarcerated women is limited. The limitation of this study lies in the reliance on existing literature, which may have biases and limited data sources. Additionally, the study does not provide primary data, which might affect the comprehensiveness of the metrics.
Rathke, C. (2021). The women who don't get counted. *Voices in Bioethics*, 7. https://doi.org/10.52214/vib.v7i.8717	Evidence level and quality level are good	HSO type: Prison healthcare Research domain: Unequal care	This article discussed real events regarding lack of pregnancy and postnatal care (ex. Diana Sanchez). It also provided ways to improve quality of the criminal justice system for these women both physically and mentally.	The authors utilized real events and current peer reviewed articles to address prenatal care in prison, respect for autonomy during incarceration, prison nursey programs, &	Authors focused more on prison nursery programs

Author, date, and title	Evidence level and quality rating	Focus: HSO type, research domain, and specific problem being addressed	Findings that help answer the review question(s)	Metrics and measures if used	Source limitations
		Specific problem: Lack of pregnancy and postnatal care		counter arguments regarding the nursery programs	
Reyes, A. M., Akanyirige, P. W., Wishart, D., Dahdouh, R., Young, M. R., Estrada, A., Ward, C., Cruz Alvarez, C., Beestrum, M., & Simon, M. A. (2021). Interventions addressing social needs in perinatal care: A systematic review. *Health equity*, *5*(1), 100-118. https://doi.org/10.1089/heq.2020.0051	This systematic review's evidence level and rating are high.	HSO type: healthcare industry Research Domain: prenatal care, antepartum, postpartum care, social needs. Specific problem: clinic-based interventions addressing patients' social needs in perinatal care, including prenatal, antepartum, and postpartum care	Likely address the following social needs: intimate partner violence, social support, food insecurity, and housing.	The authors conducted a comprehensive search of six databases through May 2020, focusing on articles describing screening or intervention activities addressing social needs in at least one Social Determinants of Health (SDoH) domain as defined by Healthy People 2020.	According to Reyes et al (2021) First, the scope was broad and captured a range of studies describing heterogenous interventions and outcomes, which prevented comparisons across studies. In addition, very few Native American/Indigenous women were included in the studies. The review also does not account for nontraditional care settings or alternative models of prenatal care. Finally, the authors limited the review to peer-reviewed publications and health care settings in high-income countries. They also may have excluded gray literature that could have implications for this

Author, date, and title	Evidence level and quality rating	Focus: HSO type, research domain, and specific problem being addressed	Findings that help answer the review question(s)	Metrics and measures if used	Source limitations
					rapidly growing area of research.
Russell, H. A., Sanders, M., Moll, L., Murphy, M., Lanigan, A. M., & Carroll, J. K. (2020). Using a group medical visit model to promote healthy behaviour change with an underserved population. *Family practice*, *37*(4), 507-512. https://doi.org/10.1093/fampra/cmaa028	This study is a journal article in family practice. The evidence level and quality are high.	HSO type: FQHC Research Domain: underserved populations; medical visit model. Specific problem: health disparities and using a group medical visit model	Likely to discuss ongoing needs and innovative strategies to improve health outcomes in marginalized/underserved communities	This project used a pre–post intervention study design through patient surveys at baseline and 12 weeks.	The authors included validated motivational measures along with self-reported demographic information.
Testa, A., & Jackson, D. B. (2020). Incarceration exposure and barriers to prenatal care in the united states: Findings from the pregnancy risk assessment monitoring system. *International journal of environmental research and public health*, *17*(19), 7331. https://doi.org/10.3390/ijerph17197331	This article was published in International Journal of Environmental Research and Public Health. The evidence level and quality are high.	HSO type: Correctional facilities Research Domain: barriers; prenatal care. Specific problem: The relationship between exposure to incarceration during	Likely discuss barriers to prenatal care in prison	The study uses data from the Pregnancy Risk Assessment Monitoring System from 2009 to 2016 and employs negative binomial and logistic regression models to assess the association between the recent incarceration of a woman or her partner and several barriers to prenatal care.	According to Testa et al. (2020) The authors could not determine whether the incarceration was experienced by the recent mother or her partner. Second, the PRAMS survey asks about incarceration in jail. However, this measure is used as a proxy for incarceration in any facility given that jail

Author, date, and title	Evidence level and quality rating	Focus: HSO type, research domain, and specific problem being addressed	Findings that help answer the review question(s)	Metrics and measures if used	Source limitations
		pregnancy and barriers to prenatal care in the U.S.			and prison are both used interchangeably among the general public. Third, the question asks about whether incarceration was experienced at some point in the 12 months prior to the current birth. Accordingly, the authors cannot ascertain when during the pregnancy (i.e., shortly before, 1st, 2nd, 3rd trimester) the incarceration event occurred.
Thomas, S. D., Mobley, S. C., Hudgins, J. L., Sutherland, D. E., Inglett, S. B., & Ange, B. L. (2018). Conditions and dynamics that impact maternal health literacy among high risk prenatal-interconceptional women. *International journal of environmental research and public health*, *15*(7), 1383. https://doi.org/10.3390/ijerph15071383	This is a journal article in International Journal of Environmental Research and Public Health. The evidence and quality are high.	HSO type: The Enterprise Community Healthy Start (ECHS) program. Research Domain: Specific problem: Conditions and dynamics impact maternal health literacy.	Likely to discuss promoting maternal health literacy to address conditions and dynamics.	This research examined 106 low-income, high-risk, rural perinatal African American and White women who received home visits by Registered Nurse Case Managers through the Enterprise Community Healthy Start Program. The study used the Life Skills Progression Instrument (LSP) to measure changes in behaviors that impact birth outcomes.	A small study group with a nonrandomized study design cannot yield prescriptive information that can be generalized to a broader population.

Author, date, and title	Evidence level and quality rating	Focus: HSO type, research domain, and specific problem being addressed	Findings that help answer the review question(s)	Metrics and measures if used	Source limitations
Tonjang, S., & Thawesaengskulthai, N. (2022). Total quality and innovation management in healthcare (TQIM-H) for performance and sustainability. *IEEE Transactions on Engineering Management, Engineering Management, IEEE Transactions on, IEEE Trans. Eng. Manage*, (99), 1-19. https://doi.org/10.1109/TEM.2022.3212879	The systematic literature review has evidence level and quality rating of high	HSO type: Any HSO Domain research: TQM Specific problem: Performance and sustainability in healthcare industry	Likely discuss TQM and TQIM-H seven dimensions, which are Context of the Environment (Internal and External), Leader, Support, Planning, Operation, Tools and Analysis method, and Improvement,	This article used mixed method methodologies to develop the integrated framework, which consisted of a systematic literature review, interviews with healthcare experts, multiple case studies in the Asia Pacific region hospitals, and triangulation testing with external datasets.	However, this article has a limitation. TQIM-H was developed from key management retrieved from reviewing healthcare management papers and by healthcare experts.
Usigbe, J., Macey, E., Klemme, P., Williams, M., & Turman, J. E., Jr. (2023). Applying a maternal standards of care audit tool and quality improvement process to improve healthcare for pregnant women in prison. *International Journal of Offender Therapy and Comparative Criminology*, 306624X231206518. https://doi.org/10.1177/0306624X231206518	This articles evidence level and quality level are good.	HSO type: Prison healthcare Research Domain: Quality Improvement Specific Problem: No standards of care for pregnant women in prison	This article provides accountability and quality improvement processes to address maternal care in Indiana Dept. of Corrections (IDOC). This article provided ways to bridge the gap between the care provided and professional recommended standards of care. Quality improvement can assist in identifying areas of improvement that require interventions to enhance maternal health care in prisons.	The authors used a quality improvement approach that combined secondary data analysis, chart audits, and key informant interviews to assess current practices of, and recommend changes for, the Indiana Dept. of Corrections Transitional Healthcare Department.	The project was limited in accessing complete demographic data about pregnant women incarcerated at IDOC, and to get feedback from IDOC staff.

Author, date, and title	Evidence level and quality rating	Focus: HSO type, research domain, and specific problem being addressed	Findings that help answer the review question(s)	Metrics and measures if used	Source limitations
Volkov, B., Pulley, C. & Shlafer, R. (2023). Addressing health disparities in the criminal legal system: Translational benefits, challenges, and facilitators of impactful research with incarcerated pregnant women. *Journal of Clinical and Translational Science*, 7. https://doi.org/10.1017/cts.2023.528	This resource is a case study that utilizes mixed method approach. It is published in Journal of Clinical and Translation Science The quality rating is high.	HSO type – Prison facilities. Addresses health disparities in the context of the criminal legal system and incarcerated pregnant women. Research Domain - Health Disparities in the context of incarceration. Problem being addressed- Examining health disparities for incarcerated pregnant women.	Likely to discuss translational benefits, challenges, and facilitators related to research with incarcerated pregnant women.	To explore health disparities in the criminal legal system, including those affecting pregnant women. They assess metrics related to healthcare access, disparities in care, and challenges in research.	The study's limitation may lie in its focus on challenges and facilitators of research, which might not provide comprehensive metrics for assessing the health of pregnant inmates

Appendix D: DHA Thematic Analysis Results

Author(s) and date	Data extracted	Initial codes	Preliminary themes
Aggarwal, A., Aeran, H., & Rathee, M. (2019). Quality management in healthcare: The pivotal desideratum. *Journal of Oral Biology and Craniofacial Research*, *9*(2), 180–182. https://doi.org/10.1016/j.jobcr.2018.06.006	Addressed quality management in health care service and achieving total quality.	Quality improvement Quality Management	Continuous Improvement in prison and jail healthcare services. Strategies to improve access to maternal health services in US prisons and jails. Process Management to improve wellbeing of incarcerated pregnant women. Social Justice in prison healthcare Equality in Access to Healthcare for pregnant prisoners. Health Disparities in Incarcerated Women Social determinants of health for incarcerated women Specific Needs of Incarcerated Pregnant Women Care Practices Analysis of incarcerated women. FQHC and underserved populations
Alirezaei, S., & Latifnejad Roudsari, R. (2022). The needs of incarcerated pregnant women: A systematic review of literature. *International Journal of Community-Based Nursing and Midwifery*, *10*(1), 2–17. https://doi.org/10.30476/IJCBNM.2021.89508.1613	The systematic review emphasizes the needs of incarcerated pregnant women.	Needs of pregnant prisoners. Need Assessment Pregnant Prisoners	
Aljassim, N., & Ostini, R. (2020). Health literacy in rural and urban populations: A systematic review. *Patient Education and Counseling*, *103*(10), 2142–2154. https://doi.org/10.1016/j.pec.2020.06.007	Addressed health literacy barriers	Health Disparities Health literacy Social determinants of health Barriers and access to care	
Almoayad, F., Benajiba, N., Earle, J., Aboul-Enein, B. H., Sidhu, A., Sajja, A., & Dodge, E. (2023). A scoping review of nutrition education interventions applied in prison settings. *Current Nutrition Reports*. Advance online publication. https://doi.org/10.1007/s13668-023-00497-6	Addressed nutrition education interventions in prison settings	Prison nutrition Education Food insecurity Incarceration	
American College of Obstetricians and Gynecologists Committee on Health Care for Underserved Women. (2021). Reproductive health care for incarcerated pregnant, postpartum, and nonpregnant individuals: ACOG Committee Opinion, Number 830. *Obstetrics and Gynecology*, *138*(1), e24–e34. https://doi.org/10.1097/AOG.0000000000004429	Addresses the challenges and needs of incarcerated women accessing adequate reproductive health care.	Reproductive healthcare Access to care Pregnant incarcerated women	

Author(s) and date	Data extracted	Initial codes	Preliminary themes
Baldwin, A., Sobolewska, A., & Capper, T. (2020). Pregnant in prison: An integrative literature review. *Women and Birth*, *33*(1), 41–50. https://doi.org/10.1016/j.wombi.2018.12.004	The health and well-being of pregnant women in prison is a pressing concern.	Health of pregnant women in prison. Continuous Improvement. Birthing Incarcerated Pregnant Prison	
Bronson, J., & Sufrin, C. (2019). Pregnant women in prison and jail don't count: Data gaps on maternal health and incarceration. *Public Health Reports*, *134*(Suppl. 1), 57S–62S. https://doi.org/10.1177/0033354918812088	Data gaps regarding maternal health and incarceration	Pregnant women Access to care Maternal health Incarceration Reproductive health	
Cheng, A. Y., Erlinger, A. L., Modest, A. M., Chie, L., Scott, J., & Molina, R. L. (2019). Community health center engagement and training during obstetrics and gynecology residency. *Journal of Graduate Medical Education*, *11*(5), 513–517. https://doi.org/10.4300/JGME-D-19-00039.1	Investigate interventions aimed at improving health outcomes	CHC/FQHC Maternal health Access to care Underserved populations Workforce shortages Social determinants of health Health equity	
Crespo, R., Christiansen, M., Tieman, K., & Wittberg, R. (2020). An emerging model for community health worker–based chronic care management for patients with high health care costs in rural Appalachia. *Preventing Chronic Disease*, *17*, Article 190316. https://doi.org/10.5888/pcd17.190316	Addresses how Community Health Workers (CHW) can improve patient health outcomes	Community Health Workers CHW Positive health outcomes Care Management	

Author(s) and date	Data extracted	Initial codes	Preliminary themes
		Improving access to care	
Cross, J. (2019). Incarcerating pregnant and parenting women, the new witch hunt: A policy analysis. *Maternal and Child Health Journal*, *23*(4), 431–434. https://doi.org/10.1007/s10995-019-02739-y	Addresses the issue of mass incarceration of women and the implications related to inequality, health care and social justice.	Inequality Prison policy Maternal healthcare Social justice Incarcerated pregnant prisoners	
Cross, J. (2020). Imprisoning pregnant and parenting women: A focus on social justice, equal rights, and equality. *Health & Social Work*, *45*(3), 195–201. https://doi.org/10.1093/hsw/hlaa008	Social justice and equality are crucial in providing healthcare to pregnant and parenting women in prison	Social justice Equality Healthcare for pregnant women in prison Prison Policy Pregnancy	
Deming, W. E. (1986). *Out of the crisis*. MIT Press.	Total Quality Management	TQM Total Quality Management	
Dzubay, S. K., Chaiken, S. R., Arora, M., & Caughey, A. (2022). Nutrition based education on intervention in incarcerated pregnant women vs. standard practice of care: a cost-effective analysis. *American Journal of Obstetrics and Gynecology*, *226*(1), 667–668. https://doi.org/10.1016/j.ajog.2021.11.1101	Addresses the challenges and needs of incarcerated individuals, particularly women, in accessing adequate reproductive health care.	Reproductive healthcare Access to care Prison standards of care Nutrition	
Ezzat, M. A. (2023). Identifying barriers to healthcare access among underserved populations: A descriptive study. *Journal of Advanced Analytics in Healthcare Management*, *7*(1), 1–17. https://research.tensorgate.org/index.php/JAAHM/article/view/22	Barriers to healthcare access: health insurance, transportation, language & cultural barriers, stigma and discrimination, lack of education and health literacy, and financial constraints.	Access to care Healthcare barriers Underserved populations	

Author(s) and date	Data extracted	Initial codes	Preliminary themes
		Health literacy Financial barriers Vulnerable populations Negative healthcare stigmas	
Fernandez, A. M., & Kline, N. (2020). Language barriers in healthcare: A systematic review and meta-analysis. *International Journal for Quality in Health Care*, *32*(2), 116–126.	Understanding the impact of language barriers on healthcare	Language barriers in healthcare Limited English Proficiency Interpreter availability in healthcare Communication barriers Quality healthcare services	
Friedman, S. H., Kaempf, A., & Kauffman, S. (2020). The realities of pregnancy and mothering while incarcerated. *Journal of the American Academy of Psychiatry and the Law*, *52*(2). https://jaapl.org/content/early/2020/05/13/JAAPL.003924-20	Addresses being pregnant and/or mother in prison	Incarcerated pregnant women. Prison Reproductive health Access to care Prenatal care	
Garcia, K. K., & Hunter, S. K. (2022). Proposed solutions for improving maternal health care in rural America. *Clinical Obstetrics and Gynecology*, *65*(4), 868–876. https://doi.org/10.1097/GRF.0000000000000754	Addresses lack of maternal health services in rural America and proposed solutions	Lack of maternal health care Access to care Maternal health services	

Author(s) and date	Data extracted	Initial codes	Preliminary themes
Gourevitch, R. A., & Hatfield, L. A. (2023). Changes in prenatal care and birth outcomes after federally qualified health center expansion. *Health Services Research*, *58*(2), 489–497. https://doi.org/10.1111/1475-6773.14099	Assess the impact of Federally Qualified Health Centers on prenatal care and birth outcomes	FQHC Birth outcomes. Prenatal care Access to care Obstetrics/gynecology Uninsured	
Hall, B., Atrio, J., Moore, S., Lorvick, J., Cropsey, K., & Ramaswamy, M. (2022). Perceived healthcare quality and contraception utilization among persons recently incarcerated. *Journal of Criminal Justice*, *83*, Article 101974. https://doi.org/10.1016/j.jcrimjus.2022.101974/	Addresses an association between SDOH and contraception use post incarceration. It addresses a link between contraceptive use with lack of health insurance and food insecurities.	Women Incarceration Social Determinants of Health Sexual and reproductive health	
Health Resources and Services Administration. (2023). *State Maternal Health Innovation Program*. https://www.hrsa.gov/grants/find-funding/HRSA-23-108	Available funding under FY 2023 State Maternal Health Innovation Program to reduce maternal mortality and severe maternal morbidity.	Maternal health grants Reducing maternal mortality Access to care	
Khosravi, A., Ebrahimidavvasi, S., BasirianJahromi, R., & Seyyed Hosseini, S. (2023). Health information seeking behavior of pregnant women referring to health centers and its relationship with their health literacy level. *International Journal of Information Science and Management (IJISM)*, *21*(2), 197-207. https://doi.org/10.22034/ijism.2023.1977744.0	Examines the relationship between health literacy and information-seeking behavior among pregnant women.	Health literacy pregnant women Access to care	

Author(s) and date	Data extracted	Initial codes	Preliminary themes
Kramer, C., Thomas, K., Patil, A., Hayes, C. M., & Sufrin, C. B. (2022). Shackling and pregnancy care policies in US prisons and jails. *Maternal and child health journal*, *27*(1), 186–196. https://doi.org/10.1007/s10995-022-03526-y	Addresses prison and jail pregnancy policies and practices.	Pregnancy Care practices of incarcerated women	
Kuhlik, L., & Sufrin, C. (2020). Pregnancy, systematic disregard and degradation, and carceral institutions. *Harvard Law & Policy Review*, 14(2), 417–466	Addresses insight into U.S correctional facilities legal, clinical, and socio-political dimensions of carceral health care.	Pregnancy Prisons Pregnant women	
Lian, T., Kutzer, K., Gautam, D., Eisenson, H., Crowder, J. C., Esmaili, E., Sandhu, S., Trachtman, L., Prvu Bettger, J., & Drake, C. (2021). Factors associated with patients' connection to referred social needs resources at a federally qualified health center. *Journal of Primary Care & Community Health*, 1–10. https://doi.org/10.1177/21501327211024390	Addresses factors associated with patients' connection to referred social needs resources.	FQHC/CHC Needs Assessment Social needs resources Access to care Social determinants of health Underserved communities Vulnerable populations	
Lomonaco-Haycraft, K. C., Hyer, J., Tibbits, B., Grote, J., Stainback-Tracy, K., Ulrickson, C., Lieberman, A., van Bekkum, L., & Hoffman, M. C. (2019). Integrated perinatal mental health care: a national model of perinatal primary care in vulnerable populations. *Primary health care research & development*, *20*, e77. https://doi.org/10.1017/S1463423618000348	Lack of perinatal mental health care in vulnerable populations.	Health screenings and support services. Perinatal health care Vulnerable populations Integrated care	
Nair, S., McGreevy, J. E., Hutchinson-Colas, J., Turock, H., Chervenak, F., Bachmann, G., & NJ on Women's Reentry-Health Subcommittee (2021). Pregnancy in incarcerated women: need for national legislation to standardize care. *Journal of perinatal medicine*, *49*(7), 830–836. https://doi.org/10.1515/jpm-2021-0145	Addresses the need for standardized prenatal care for incarcerated women.	Incarceration Policies and legislation Pregnancy Prenatal care	

Author(s) and date	Data extracted	Initial codes	Preliminary themes
		Prison Access to care	
National Association for Community Health Centers (nd). What is a Community Health Center? Retrieved on March 13, 2024, from www.nach.org	Provides insight into a Community Health Center or Federally Qualified Health Center history and services.	FQHC Underserved	
O'Connor, S. K., Vanjani, R., Cannon, R., Dawson, M. B., & Perkins, R. (2023). General and reproductive healthcare experiences of formerly incarcerated women in the United States: A qualitative study. *International Journal of Prisoner Health, 19* (4), 545–564. https://doi.org/10.1108/IJPH-09-2021-0094	Addresses experiences for incarceration healthcare from formerly incarcerated pregnant women.	Incarceration Women's health Reproductive health Pregnancy Prisoners	
Office of the Surgeon General (2020). The Surgeon General's Call to Action to Improve Maternal Health [Internet]. Washington (DC): US Department of Health and Human Services; *Strategies* and actions: Improving maternal health and reducing maternal mortality and morbidity https://www.ncbi.nlm.nih.gov/sites/books/NBK568218/	Addresses ways to improve maternal health, maternal mortality, and morbidity	Access to care Improving maternal health Pregnancy Quality improvement	
Paynter, MJ, Drake, EK, Cassidy, C, Snelgrove-Clarke, E. (2019). Maternal health outcomes for incarcerated women: A scoping review. *J Clin Nurs*. 28: 2046–2060. https://doi.org/10.1111/jocn.14837	Scoping review on maternal health outcomes for incarcerated women reveals disparities.	Maternal health outcomes Disparities of Incarcerated women Childbirth experience Perinatal care Prison nursing Reproductive health in prison	

Author(s) and date	Data extracted	Initial codes	Preliminary themes
Rathke, C. (2021). The women who don't get counted. *Voices in Bioethics*, 7. https://doi.org/10.52214/vib.v7i.8717	Addresses real events regarding lack of pregnancy and postnatal care. It also provides ways to improve quality of the criminal justice system for these individuals.	Pregnancy Incarcerated individuals Unequal care	
Reyes, A. M., Akanyirige, P. W., Wishart, D., Dahdouh, R., Young, M. R., Estrada, A., Ward, C., Cruz Alvarez, C., Beestrum, M., & Simon, M. A. (2021). Interventions addressing social needs in perinatal care: A systematic review. *Health equity*, *5*(1), 100-118. https://doi.org/10.1089/heq.2020.0051	Addressed interventions addressing social needs in perinatal care	Social needs Underserved Vulnerable populations Maternal health in prison Social determinants of health	
Russell, H. A., Sanders, M., Moll, L., Murphy, M., Lanigan, A. M., & Carroll, J. K. (2020). Using a group medical visit model to promote healthy behaviour change with an underserved population. *Family practice*, *37*(4), 507-512. https://doi.org/10.1093/fampra/cmaa028	Investigates interventions aimed at improving health outcomes	Underserved populations Access to care Improving health outcomes	
Testa, A., & Jackson, D. B. (2020). Incarceration exposure and barriers to prenatal care in the united states: Findings from the pregnancy risk assessment monitoring system. *International journal of environmental research and public health*, *17*(19), 7331. https://doi.org/10.3390/ijerph17197331	Addressed barriers to prenatal care in correctional facilities	Incarceration Prenatal care Maternal health Pregnant Prisoners	
Thomas, S. D., Mobley, S. C., Hudgins, J. L., Sutherland, D. E., Inglett, S. B., & Ange, B. L. (2018). Conditions and dynamics that impact maternal health literacy among high risk prenatal-interconceptional women. *International journal of environmental research and public health*, *15*(7), 1383. https://doi.org/10.3390/ijerph15071383	Investigates interventions aimed at improving health outcomes involving health literacy	Health literacy Access to care Maternal health Social determinants of health Health education	

Author(s) and date	Data extracted	Initial codes	Preliminary themes
Tonjang, S., & Thawesaengskulthai, N. (2022). Total quality and innovation management in healthcare (TQIM-H) for performance and sustainability. *IEEE Transactions on Engineering Management, Engineering Management, IEEE Transactions on, IEEE Trans. Eng. Manage*, (99), 1-19. https://doi.org/10.1109/TEM.2022.3212879	Discusses Total Quality and Innovation Management in Healthcare.	TQM Quality Management Healthcare innovation	
Usigbe, J., Macey, E., Klemme, P., Williams, M., & Turman, J. E., Jr. (2023). Applying a maternal standards of care audit tool and quality improvement process to improve healthcare for pregnant women in prison. *International Journal of Offender Therapy and Comparative Criminology*, 306624X231206518. https://doi.org/10.1177/0306624X231206518	Addresses ways to bridge the gap between the care provided and professional recommended standards of care. It also identifies areas of improvement to enhance maternal health care in prisons.	Maternal health Quality Improvement Pregnant Women Prison	
Volkov, B., Pulley, C. & Shlafer, R. (2023). Addressing health disparities in the criminal legal system: Translational benefits, challenges, and facilitators of impactful research with incarcerated pregnant women. *Journal of Clinical and Translational Science*, 7. https://doi.org/10.1017/cts.2023.528	Examining health disparities for incarcerated pregnant women.	Health disparities in criminal legal system pregnant incarcerated women vulnerable populations healthcare access in prison	

Appendix E: Final Concept/Thematic Map