

Wisconsin Maternal Mortality Review Team Recommendations: 2020 Pregnancy-Associated Deaths

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Wisconsin Department of Health Services
Division of Public Health
Bureau of Community Health Promotion
Maternal Mortality Review Program
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Introduction



About the Wisconsin Maternal Mortality Review Team

The Wisconsin Maternal Mortality Review Team (MMRT) reviews all deaths that occur during or within one year of the end of pregnancy. The team is composed of experts who represent organizations involved in the care of pregnant and postpartum people in Wisconsin.

The MMRT strives to include representation from multiple disciplines, including but not limited to public health, perinatal nursing, midwifery, psychiatry, obstetrics, doula care, and social work. The team composition aims to represent the communities that are most impacted by maternal mortality, and both lived experience and professional expertise are considered when inviting new members to join the team.

Thank you

We want to acknowledge the members of the MMRT for their dedication to this critical work.

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This list includes members who participated in 2020 case review. For a list of current members, please visit the [Wisconsin Maternal Mortality Review Team webpage](#).

The recommendations in this report reflect the views and opinions of the MMRT. They may not reflect the official policy or position of the Wisconsin Department of Health Services.

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[Click here to visit the DHS Maternal Mortality and Morbidity webpage.](#)



WISCONSIN DEPARTMENT
of **HEALTH SERVICES**



About the recommendations

The MMRT makes recommendations for each preventable death.

These recommendations are intended to prevent future similar deaths. In this report, recommendations are organized by cause and manner of death, as well as audience.

Recommendations are reported by underlying cause of death. Top recommendations are identified as those made for the highest number of cases with the same cause of death.

Sometimes it may not immediately be clear how a recommendation relates to the person's cause of death. Oftentimes factors that contributed to a death are complex. While a death may have been caused by a hemorrhage, the person's substance use disorder may have played a role, and there may be a recommendation related to treating that substance use disorder as an upstream way of preventing future similar deaths.

The MMRT does their best to look at all potential contributing factors to the death, which can lead to a broader set of recommendations and more opportunities for prevention.

Key definitions

Preventable death

A death is considered preventable if the MMRT determines that there was at least some chance of the death being averted by one or more reasonable changes to patient, family, provider, facility, system and/or community factors.

Tips for using the Maternal Mortality Review Team recommendations

Look for the level that matches your area of work.

Are you a provider? Look for provider-level recommendations. Are you a community member interested in advocating for change? Look for system and community-level recommendations.

Start with topic areas that you are interested in or work in.

Recommendations are reported by cause of death. See how they are organized in the Table of Contents on the next page.

Please see the [Seven Key Questions to Reduce Maternal Mortality in Wisconsin](#) at the end of this report for suggested next steps. While all recommendations are important, the top recommendations for each cause or manner of death were made the most frequently by the Maternal Mortality Review Team.



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[Pregnancy-Related Deaths](#)

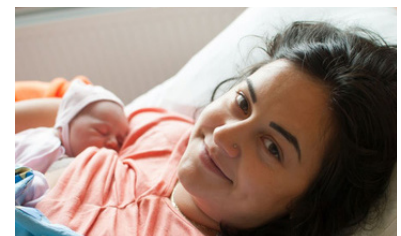
- [Mental health conditions](#)
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- [Embolism](#)
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A note about language: The Maternal Mortality Review Program aims to be both person-centered and responsive to pronoun preferences. The abstractors thoroughly review available records and use the indicated pronouns during case review. However, we recognize medical records may not be accurate, which can result in misgendering. We are currently investigating ways to address this issue and hope to continue to improve.



Honoring life

With this report, we want to acknowledge the families in Wisconsin affected by the loss of a person during or after pregnancy. This work aims to honor these individuals who have died far too soon, as well as their loved ones.

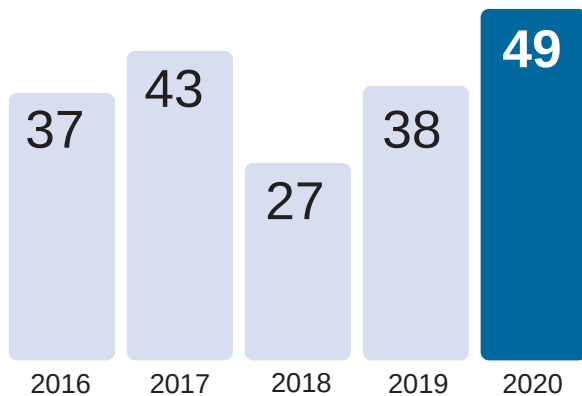
We recognize that these data represent individuals and center this work around the value of each life lost. We give our sincere condolences to the families impacted. We also want to acknowledge the work being done to improve the health of our communities by practitioners, providers, community-based organizations, and all who serve families. Thank you for your commitment to this work.

2020 Wisconsin Maternal Mortality Review Team Recommendations: Executive Summary



The Wisconsin Maternal Mortality Review Team (MMRT) reviews all deaths that occur during or within one year of the end of pregnancy, which are called pregnancy-associated deaths. The MMRT then makes recommendations for each preventable death to prevent future similar deaths.

There was a 30% increase in pregnancy-associated deaths from 2019 to 2020, with a total of 49 deaths in 2020.



Key Definitions



Pregnancy-associated death: a death that occurs within one year of the end of pregnancy, regardless of the cause.



Pregnancy-related death: a death during or within one year of pregnancy, from a pregnancy complication, a chain of events initiated by pregnancy, or the aggravation of an unrelated condition by the physiologic effects of pregnancy.



Pregnancy-associated, but not related death: a death during or within one year of pregnancy, from a cause that is not related to pregnancy.

In 2020, 21 deaths (43%) were pregnancy-related.

38%

38% (8) of all 2020 pregnancy-related deaths were due to mental health conditions, including overdose.

29%

29% (6) of all 2020 pregnancy-related deaths were due to cardiovascular conditions or hypertensive disorders.

What can we do?



Providers should use [Periscope](#) or telehealth consultation services when patients present with mental health concerns to initiate treatment when possible, and refer them to wraparound services for care coordination to help with appointments, medications and navigating systems.



Providers should educate patients with chronic heart disease and obesity about warning signs and symptoms of heart disease and pulmonary embolism (for example, severe chest pain, shortness of breath) and when to call 911 or present to emergency room, in the patient's preferred language and in a culturally relevant manner.



Providers should complete screening for substance use disorder for all prenatal patients, and patients should be provided assistance and support in treatment of addiction.



Hospitals should have systematic processes in place for acute and aggressive management of severe hypertension during pregnancy (for example, participate in state [Perinatal Quality Collaborative](#) (PQC) initiatives around hypertension).



Health systems should invest more in educating their health care providers on substance use disorder and help decrease that stigma or judgment.

Pregnancy-Related Deaths: Mental Health Recommendations



Mental health conditions: includes the following disorders — anxiety, depressive, bipolar, psychotic, substance use, and other psychiatric conditions. Overdoses are included in this category.

38%

38% of all pregnancy-related deaths were caused by mental health conditions, as defined above in 2020.

88%

88% of pregnancy-related deaths caused by mental health conditions were due to overdose in 2020.

Other related outcomes

10,543

10,543 birthing people had a mental health or substance use disorder diagnosis at the time of delivery in 2020.¹

Case summary



Alex was a 25-year-old non-Hispanic white person living in a rural area with a higher than average rate of overdose and substance use, and a shortage of behavioral health providers. She had a history of substance use that started when she was 16, as well as a history of childhood physical and sexual abuse. Before she became pregnant she used tobacco, heroin, and cocaine regularly and was in and out of treatment for several years. She lived with her partner, who also used heroin and cocaine. After she became pregnant, she expressed a desire to enter treatment and stop all substance use. Alex was referred by her provider to outpatient treatment, but there were no available spots. She abstained from using all substances during the pregnancy, and delivered a healthy male infant at 40 weeks 3 days.

At her postpartum visit she reported symptoms of postpartum depression and a desire for additional mental health and substance use treatment services. Again, she was referred but was unable to access services due to a lack of transportation, as the nearest treatment center with availability was over 30 miles away. At 16 weeks 5 days postpartum she was found unresponsive in her bedroom. She was pronounced dead at the scene, and cause of death was ruled as mixed drug intoxication, with heroin and fentanyl. Her partner admitted to purchasing the heroin for Alex and said he did not believe she had used more than she had in the past and that he did not know it was laced with fentanyl.

Note: This is a fictionalized case narrative. The story is not true, but represents some of the challenges faced by the people whose lives were tragically lost during or after pregnancy.

Pregnancy-Related Deaths: Mental Health Recommendations



Top mental health recommendations for providers

A provider is an individual with training and expertise who provides care, treatment, and/or advice.



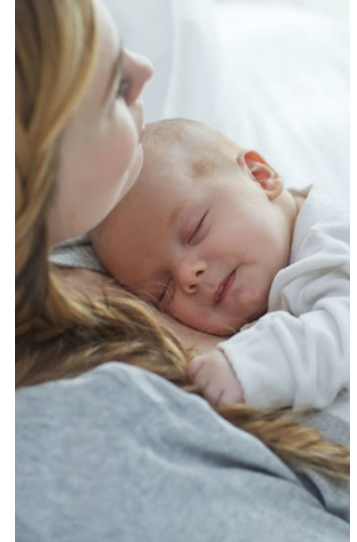
Providers should refer patients with mental health conditions to wraparound services for care coordination to help with appointments, medications, and navigating systems.



Providers should complete screening for substance use disorder for all patients, and patients should be provided assistance and support in treatment of addiction.



Providers should use [Periscope](#) or telehealth consultation services when patients present with mental health concerns to initiate treatment when possible.



Additional mental health recommendations for providers

- Providers should educate patients during pregnancy and the postpartum period on the risks of substance use following decreased use which may lead to decreased tolerance.
- Providers should receive training on motivational interviewing to better understand and address concerns that patients with mental health conditions or substance use disorder may have about treatment options.
- Providers should include overdose prevention planning as part of discharge planning for everyone with a substance use disorder.
- Providers who diagnose pregnancy in someone with severe mental health disorders, substance use history, and/or a history of suicide should refer to or consult with a perinatal psychiatrist before stopping or changing medications.
- Providers should implement group prenatal care to increase social connectivity for women with substance use disorders.
- Providers should screen all patients for intimate partner violence at every visit and offer immediate referrals and resources if necessary.
- Providers should screen for mental health and substance use at all clinic visits, regardless of indication of visit.
- Providers should refer patients with mental health conditions to appropriate psychiatric resources and ensure that the referral is completed.
- Providers should screen all patients for abuse and trauma during regular visits and provide referral to resources and wrap around services when necessary.

Pregnancy-Related Deaths: Mental Health Recommendations



Top mental health recommendations for facilities

A facility is a physical location where direct care is provided and ranges from small clinics and urgent care centers to hospitals with trauma centers.



Facilities need to develop strategies to actively engage patients in need of substance use treatment, provide opportunities for treatment, and implement mechanisms for follow-up if patients do not attend treatment.



Facilities should assign social workers to patients who are high risk and have a history of trauma to help them in navigating care systems.



Primary and obstetric care clinics should implement integrated behavioral health for open access availability for triage within 24 hours of identified mental health concerns.



Additional mental health condition recommendations for facilities

- Facilities for individuals with substance use disorder should screen for substances upon entrance.
- Facilities need to have protocols for tracking down “no shows” and assist in coordinating appointments for all patients.
- Facilities should provide education to obstetric providers regarding substance use in pregnant, and postpartum patients, as well as encourage utilization of teleconsultation services to support obstetric providers in managing substance use disorders.
- Hospital and health care administrators should continue to explore ways to make individuals with substance use disorder comfortable in health care settings even before pregnancy, so that if they do become pregnant there will already be trust established.
- Hospital facilities should follow up with parents of children in the NICU for mental health supports for one year postpartum.
- Hospitals need to invest in relationships with local domestic violence shelters and resources so that patients can receive support immediately following their appointment, before they leave the facility.
- Facilities should offer overdose education and training on use of naloxone to patient and their support persons before discharge.



Pregnancy-Related Deaths: Mental Health Recommendations



Top mental health recommendations for systems

A system is made of interacting entities that support services before, during, or after a pregnancy — it ranges from health care systems and payors to public services and programs.



Health systems need to invest more in educating their health care providers in understanding substance use disorder and helping to decrease that stigma and judgment.



Health systems should incorporate prenatal care coordination (PNCC) providers, community health workers, and others with the ability to establish strong, trusted relationships with patients as part of the care team.



Health care systems should explore alternative models of prenatal care for people with complex social situations, substance use disorder, and mental health disorders.




Additional mental health recommendations for systems

- Organizations providing peer treatment support or sponsorship should explore and prioritize alternative ways to keep people engaged with sponsors despite COVID-19 restrictions.
- Health care systems should consider paraprofessionals or community support systems such as peer-to-peer counseling to support patients as they enter substance use treatment programs.
- Health systems and providers should offer immediate substance use treatment and services, including services specific to perinatal mental health and alcohol and other drug abuse (mother-baby units), to those that are identified as having substance use disorder and not just provide a referral.
- Health care systems should ensure facilities follow most recent American College of Obstetricians and Gynecologists' [Optimizing Postpartum Care](#) recommendations on when to see patients postpartum, which includes the following:
 - “All women should ideally have contact with a maternal care provider within the first three weeks postpartum. This initial assessment should be followed up with ongoing care as needed, concluding with a comprehensive postpartum visit no later than 12 weeks after birth.”
- Health systems need to expand intensive behavioral health outpatient programs for continuity of care after inpatient stabilization.

Pregnancy-Related Deaths: Mental Health Recommendations



Additional mental health recommendations for systems

- Medical and nursing schools and pipeline programs should work to increase diversity in health care workforce as an important factor for eliminating inequities in health care.
 - Policymakers (federal and state) need to support federally subsidized drug treatment that allows for persons to get immediate help if desired.
 - Public health systems should provide ongoing support for families of individuals with substance use and provide resources for family therapy.
 - Research institutions should study how recovery living homes can better prevent overdoses at times when patients are not supposed to be alone.
 - Social services organizations should continue to advocate for mental health support and anger management for partners and perpetrators of violence.
 - State government should work with community programs and other providers to ensure appropriate, quality, and timely placement in substance use treatment, including the availability of placement, for perinatal patients.
 - Governments need to invest in innovative housing solutions for pregnant and postpartum patients.
 - Health systems should pay for and incorporate nurse home visits as a postpartum follow-up program.
 - The federal government should require and support paid family leave for at least 12 weeks postpartum.
- 
- Substance use treatment programs should integrate families into the programs and provide them with skills to recognize misuse and provide assistance.
 - The state correctional system should provide enhanced resources for strong case management for individuals with mental health and substance use disorders when they're back in the community.
 - The Wisconsin Hospital Association and other statewide organizations should require hospitals to have social workers and mental health services available on weekends and holidays.
 - The Wisconsin State Legislature should immediately repeal 1997 Wis. Act 292 and end forced substance use treatment, which deters people with substance use disorder from seeking perinatal care and may contribute to overdoses and maternal deaths.
 - Law enforcement agencies should assist individuals with safety measures to protect them from abusive partners when a safety risk is identified.

Pregnancy-Related Deaths: Mental Health Recommendations



Top mental health recommendations for communities

A community is a grouping based on a shared sense of place or identity — it ranges from physical neighborhoods to a community based on common interests and shared circumstances.



Communities should connect patients with inadequate social support to resources, such as support groups and social services.



Schools should provide curriculum addressing violence prevention alongside other counseling classes and health classes throughout childhood education. This should include healing from adverse childhood experiences (trauma).



Communities should amplify public health campaigns for friends and family to recognize signs of suicide and how to connect with mental health emergency services.



Additional mental health recommendations for communities

- Community organizations and providers working with individuals with substance use disorder and their families should provide education on lacing of drugs with other substances.



Pregnancy-Related Deaths: Cardiovascular Conditions and Hypertensive Disorders Recommendations



Cardiovascular conditions: conditions affecting the heart or blood vessels (excludes cardiomyopathy)

Hypertensive disorders: high blood pressure; includes preeclampsia, eclampsia, and chronic hypertension

29%

29% of all pregnancy-related deaths in 2020 were caused by cardiovascular conditions or hypertensive disorders.

Other related outcomes

48

48 people experienced severe cardiac complications during delivery in 2020. This includes non-fatal cardiac complications.¹

7,113

7,113 people had a hypertensive disorder during pregnancy or at delivery in 2020.²

Case summary

Robin was a 27-year-old non-Hispanic Black person who died 73 days postpartum. Robin lived in an urban area with her partner of 12 years and their children. Her community had a shortage of primary care and OB/GYN providers with a higher percentage of food insecurity, and a high rate of poverty. This was Robin's fourth pregnancy, with three full-term deliveries and three living children. This pregnancy was significant for high blood pressure—she had a 13-year history of high blood pressure and had not been taking her medication as prescribed. She had eight prenatal visits and two OB ultrasounds.

She stated she had difficulty with transportation, paying bills, and finances. During the postpartum period Robin reported frequent episodes of lightheadedness, chest discomfort, upper back pain and becoming sweaty and short of breath, mainly when standing and walking. She attributed her fatigue to having a newborn and lack of sleep. Robin had a blood pressure cuff at home and checked her blood pressure daily (range of 138-176/84-124). On postpartum day 73 she reported to her partner “chest heaviness, shortness of breath and dizziness,” and she went to lie down.



Her partner went to check on her an hour later and found her unresponsive, pulseless, and not breathing, lying in bed on her back. Her lips were purple, and she was cool to touch. He called 911, but the heart monitor showed no heart activity, so lifesaving measures were not started. Her cause of death, as determined via autopsy, was hypertensive cardiovascular disease with other significant cause of class III obesity.

Note: This is a fictionalized case narrative. The story is not true, but represents some of the challenges faced by the people whose lives were tragically lost during or after pregnancy.

Pregnancy-Related Deaths: Cardiovascular Conditions and Hypertensive Disorders Recommendations



Top cardiovascular conditions and hypertensive disorders recommendations for providers

A provider is an individual with training and expertise who provides care, treatment, and/or advice.



Providers should educate patients with chronic heart disease and obesity about warning signs and symptoms of heart disease and pulmonary embolism (for example, severe chest pain, shortness of breath) and when to call 911 or present to emergency room in the patient's preferred language and in a culturally relevant manner.



Health care providers should continue to stress the importance of managing chronic conditions before pregnancy.



Additional cardiovascular conditions and hypertensive disorders recommendations for providers

- Primary care and obstetric providers should discuss preconception planning with all patients, including those with a history of chronic medical illness and/or a history of preeclampsia in previous pregnancies.
- Providers should always arrange for in-person postpartum visits for high-risk patients or as soon as possible if abnormal findings (such as high blood pressure) are encountered during televisits.
- Providers should offer telehealth as an option when patients have transportation issues or other barriers that may prevent them from accessing care.
- Primary care, nurse midwives, and other obstetric providers should refer all pregnant patients with history of cardiac disease to maternal fetal medicine immediately.
- Providers should follow ACOG recommendations for treating patients with obesity and cardiac history, including considering an early epidural to avoid pushing for an extended period of time.



Pregnancy-Related Deaths: Cardiovascular Conditions and Hypertensive Disorders Recommendations



Top cardiovascular conditions and hypertensive disorders recommendations for facilities

A facility is a physical location where direct care is provided and ranges from small clinics and urgent care centers to hospitals with trauma centers.



Hospitals should have systematic processes in place for acute and aggressive management of severe hypertension during pregnancy (for example, participate in state [Perinatal Quality Collaborative \(PQC\)](#) around hypertension).



Facilities should use [Hear Her](#) campaign materials to educate providers, patients, and families in their waiting areas and exam rooms.



Additional cardiovascular conditions and hypertensive disorders recommendations for facilities

- Clinics and hospitals should ensure patients and support people understand discharge plans, especially in urgent situations or when directed to return to the emergency department.
- Emergency departments should have additional training in management of cardiac and hypertensive disorders in pregnancy.
- Emergency departments should increase staffing to meet the need of the community.
- Facilities should include instructions for patients to report their pregnancy history if presenting to the emergency department in the next year in discharge planning.
- Hospital and health care administrators should continue to explore ways to make individuals with obesity comfortable in health care settings even before pregnancy so that if they do become pregnant there will already be trust established.
- Facilities should embed maternal early warning signs criteria and alerts in clinical health records to alert providers of early signs and encourage closer monitoring or other actions.



Pregnancy-Related Deaths: Cardiovascular Conditions and Hypertensive Disorders Recommendations



Top cardiovascular conditions and hypertensive disorders recommendations for systems

A system is made of interacting entities that support services before, during, or after a pregnancy — it ranges from health care systems and payors to public services and programs.



Health systems should pay for and incorporate nurse home visits as part of the postpartum follow up program.

Additional cardiovascular conditions and hypertensive disorders recommendations for systems

- Dental school programs should provide ongoing education for dentists on providing care for pregnant women with urgent dental problems.
- Federal government agencies should prioritize funding for universal health care in order to lessen stress on emergency departments, which are currently serving as safety net for those uninsured and increasing wait times in the emergency department.
- Federal policymakers should assure universal access to health care services.
- Health care systems should ensure facilities follow most recent American College of Obstetricians and Gynecologists' [Optimizing Postpartum Care](#) recommendations on when to see patients postpartum, which includes the following:
 - “All women should ideally have contact with a maternal care provider within the first 3 weeks postpartum. This initial assessment should be followed up with ongoing care as needed, concluding with a comprehensive postpartum visit no later than 12 weeks after birth.”
- Health systems should ensure that health education is not only in the primary language of the patient but also is culturally relevant.
- Health systems should include a flag in a patient's electronic medical record for a year after pregnancy that they are less than one year postpartum.
- Health systems should provide patients with chronic disease dedicated case managers to help with patient education and communication with providers regarding complex care.
- Legislators and medical health care systems should incentivize electronic medical record (EMR) companies to develop software for dental providers that communicates well with medical EMRs.
- Policymakers and health systems should ensure that all patients have ongoing access to primary care and should work to ensure ongoing continuity of care.

Pregnancy-Related Deaths: Cardiovascular Conditions and Hypertensive Disorders Recommendations



Additional cardiovascular conditions and hypertensive disorders recommendations for systems

- Policymakers should remove barriers to obtaining healthful food and exercise and ensure an environment free of chemicals that may lead to obesity is available to all people throughout their lifespan.
- Policymakers should urgently increase Medicaid compensation for dental providers and coverage for participants to lower barriers to dental care for Medicaid patients.
- Policymakers, community action coalitions, and funders should support community organizations that work with undocumented populations to build trust in health care systems and reduce fear of accessing health services because of documentation status.



- Researchers should continue to explore the risk of induction via cytotec in obese women, and also conduct this research by stratifying by race.
- State-level programs that support children and youth with special health needs should support navigating to adult self-care by ensuring continued coverage and access to primary providers and caseworkers at the time of transition to adult care.
- The Wisconsin Hospital Association and health systems should require everyone who interacts with patients to have health literacy training and resources to make sure that patients have understanding of conditions and information being provided.
- Governments need to invest in innovative housing solutions for pregnant and postpartum patients.



Pregnancy-Related Deaths: Cardiovascular Conditions and Hypertensive Disorders Recommendations



Top cardiovascular conditions and hypertensive disorders recommendations for communities

A community is a grouping based on a shared sense of place or identity — it ranges from physical neighborhoods to a community based on common interests and shared circumstances.



Communities, providers, and health systems should provide information on maternal early warning signs using the [Hear Her campaign](#) materials.

Additional cardiovascular conditions and hypertensive disorders recommendations for communities

- Communities should connect patients with inadequate social support to resources, such as support groups and social services.
- Communities and local public health departments should continue to promote obesity prevention across the lifespan.



Pregnancy-Related Deaths: Embolism Recommendations



Embolism: a blocked artery caused by a foreign body, such as a blood clot or an air bubble. This grouping includes amniotic fluid embolism.

10%

10% of pregnancy-related deaths were caused by an embolism in 2020.

Other related outcomes

29

29 people experienced an embolism during or after delivery in 2020. This includes non-fatal embolisms.¹

Not all deaths from an embolism were determined to be preventable, meaning the MMRT did not make recommendations for all pregnancy-related deaths due to embolism.

Embolism recommendations for providers



- Providers should include discussion of “safe sex and activities” during pregnancy and instruction on avoiding forced air and fluid in vagina during orogenital sex.

Embolism recommendations for communities



- Community members and organizations, including reproductive health providers, groups focusing on dads and fathers groups, and faith organizations, should advocate for reenacting the Healthy Youth Act for the state.
- School districts should provide K-12 comprehensive sex education, and communities should provide culturally appropriate sex education opportunities outside of the classroom environment as well.



Pregnancy-Related Deaths: Hemorrhage Recommendations



Hemorrhage: a loss of blood from a damaged blood vessel (excludes aneurysm and stroke)

10%

10% of pregnancy-related deaths were caused by hemorrhage.



Other related outcomes

161

161 women experienced hemorrhage complications during or after delivery in 2020. This includes non-fatal hemorrhage complications.¹

Hemorrhage recommendations for facilities



- Level 4 birthing facilities should have blood products available for massive transfusions and processes for rapid lab testing and release of blood products in emergencies.
- Facilities should implement strong protocols and practice them regularly as teams regarding accessing and transporting blood products through their facility when needed.
- Hospitals should prioritize coagulation testing for pregnant and postpartum patients with bleeding and report critical values immediately to the clinical team.
- Facilities should have simulations for management of postpartum hemorrhage at least yearly for all providers.

Hemorrhage recommendations for systems



- High school sex education curriculum should include information on the signs of pregnancy and signs of ectopic pregnancy.
- Health systems need to invest more in educating their health care providers in understanding substance use disorder and helping to decrease that stigma/judgment.
- Public health and health systems should regularly educate all people of reproductive age about the signs of an ectopic pregnancy and the need to urgently seek care.



Pregnancy-Related Deaths: Hemorrhage Recommendations



Hemorrhage recommendations for systems



- The Wisconsin Department of Health Services, professional organizations, such as the Wisconsin Association for Perinatal Care, the American College of Obstetricians and Gynecologists, the Wisconsin Chapter of the American Academy of Pediatrics, and the Wisconsin Hospital Association should work together to establish a strong risk-based care system for Wisconsin, including levels of neonatal and obstetric care and a verification process to confirm levels as reported.
- The Wisconsin Department of Health Services should work with hospitals during a pandemic to implement a triage protocol for blood products to conserve them for the most urgent needs.



Hemorrhage recommendations for communities



- Communities and state government agencies should work together to establish and maintain recovery coach programs to support people exiting inpatient recovery.
- Community agencies and health care systems need to establish resources and ongoing counseling for victims of childhood trauma.



Pregnancy-Related Deaths: Injury Recommendations



Injury: damage to the body that is intentional, unintentional, or of unknown intent

10%

10% of pregnancy-related deaths in 2020 were caused by an injury, including homicide.



Other related outcomes

6%

6% of birthing people reported being physically abused during pregnancy in 2018 and 2019.³

Injury recommendations for providers



- Mental health and primary care provider prescribers should have tracing protocols for patients started on new mental health medications and do not return for follow up.
- Prenatal care providers should screen all patients for depression at prenatal and postpartum visits and educate patients about symptoms for postpartum depression and how and when to seek care.
- Providers should refer patients with mental health conditions to wraparound services for care coordination to help with appointments, medications and navigating the health systems for ongoing care.
- Providers should screen all patients for intimate partner violence at every visit and offer immediate referrals and resources if necessary.
- Providers should use evidence-based prevention strategies when discussing the risks of driving under the influence with patients.
- Health care staff should ask partners to leave the room for intimate partner violence screenings as a routine practice.



Pregnancy-Related Deaths: Injury Recommendations



Injury recommendations for facilities



- Emergency rooms should develop and maintain relationships with intimate partner violence shelters in their communities for immediate referral and contact.
- Facilities should develop policies for active outreach to follow patients on antipsychotic medications with history of suicide attempts.
- Facilities should mandate intimate partner violence and trafficking training for all health care practitioners to identify suspicious situations and safely communicate with the patient to offer support and resources as needed.

Injury recommendations for systems



- Governments should fund expansion of perinatal psychiatric teleconsultation services to best support providers treating mental health conditions in perinatal women during and after pregnancy.
- Policymakers should make funds available to public health departments so they can fund mental health support services for individuals who are the perpetrators of intimate partner violence.
- Professional organizations should educate providers on culturally appropriate ways to screen for intimate partner violence.
- The Department of Transportation, law enforcement, and establishment owners who sell alcohol should continue to campaign and educate the public on safe driving when drinking.
- State government should increase funding to psychiatric inpatient facilities across the state in order to guarantee available beds within a reasonable distance of patients' residences as needed.

Injury recommendations for communities



- Public health and community organizations should create multilingual materials and make them available in hospitals, clinics, and public places so that people know how to seek help for trafficking, abuse and controlling behaviors.



Pregnancy-Related Deaths: Infection Recommendations



Infection: occurs when germs enter the body, increase in number, and cause a reaction of the body

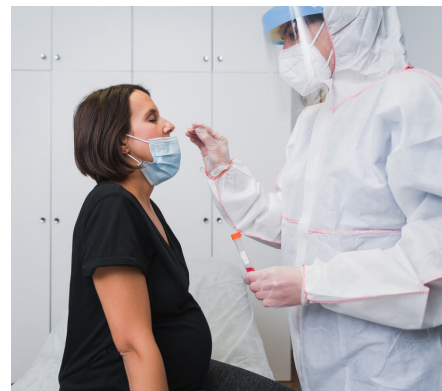
5%

5% of pregnancy-related deaths in 2020 were caused by infection.

Other related outcomes

7,657

7,657 pregnant people had COVID-19 between March 2020 and July 2021.⁴



Infection recommendations for providers



- Health care providers should continue to stress the importance of managing chronic conditions before pregnancy.

Infection recommendations for systems



- State government should provide financial support to perinatal patients to allow patients, regardless of documentation status, to support their families in times of pandemic and other risks beyond their control.
- State government/regulatory agencies should monitor employers of essential and all workers to ensure they are following CDC and other guidelines to protect employees during a pandemic or other emergency, with a focus on workplaces for populations who have been historically marginalized.
- State and local employers should allow as much flexibility as possible for pregnant individuals and their family members who could possibly be an exposure to work from home or take paid time off.
- Policymakers should require employers to provide their employees with high-quality PPE (N95 masks), especially when working in crowded settings such as factories during a pandemic.
- Policymakers should recognize and address systems-level issues that place certain populations at higher risk for COVID-19 or other acute community concerns. For example, ensure that all individuals have the opportunity for supplemental financial assistance during a pandemic.
- Policymakers should ensure workplace protection for immunosuppressed workers including pregnant persons during a pandemic.

Infection recommendations for communities



- Public health information should be provided in both linguistically and culturally appropriate ways with a focus on dissemination to marginalized communities.

Pregnancy-Associated Deaths Not Related to Pregnancy: Recommendations



Pregnancy-associated deaths not related to pregnancy

The Maternal Mortality Review Team (MMRT) determines whether a death is related to pregnancy. While two deaths may have occurred during pregnancy from the same cause, the specific circumstances surrounding each death may make one pregnancy-related while the other is not. Deaths that occurred within one year of pregnancy but that are determined not to be related to pregnancy are included in this section. **Bolded recommendations** were made most often.

Mental health conditions

Mental health conditions include the following disorders: anxiety, depressive, bipolar, psychotic, substance use, and other psychiatric conditions. Overdoses are included in this category.

Provider



- **Providers should refer patients with mental health conditions to wraparound services for care coordination to help with appointments, medications and navigating systems.**
- **Providers should include overdose prevention planning as part of discharge planning for everyone with a substance use disorder.**
- Providers need to have a health literate conversation with all patients about potential drug interactions with other substances and meet them where they are at.
- Providers should complete screening for substance use disorder for all prenatal patients, and patients should be provided assistance and support in treatment of addiction.
- Providers should educate patients during pregnancy and the postpartum period on the risks of substance use following decreased use which may lead to decreased tolerance.
- Providers should follow up with all patients who do not attend the postpartum visit.
- Providers should follow up with patients who do not come to postpartum visit and should refer to case manager to help educate birthing people on the importance of postpartum visits and ongoing follow-up care for chronic conditions.
- Providers should screen all patients for abuse and trauma during regular visits and provide referral to resources and wraparound services when necessary.
- Providers should screen patients who are health care workers for substance use disorder and not assume they already have the necessary knowledge and/or don't have a substance use disorder.
- Providers should use [Periscope](#) or telehealth consultation services when patients present with mental health concerns to initiate treatment when possible.

Pregnancy-Associated Deaths Not Related to Pregnancy: Recommendations



Facility



- **Facilities should offer overdose education and training on use of Naloxone to patients and their support persons before discharge.**
- Emergency departments should have an obstetric consult for any pregnant emergency department patient who does not have established prenatal care, regardless of whether visit was related to pregnancy.
- Emergency departments should include fentanyl in routine drug screens.
- Facilities should develop strategies to actively engage patients in need of substance use treatment, provide opportunities for treatment, and implement mechanisms for follow-up if patients do not attend treatment.
- Facilities should assign social workers to patients who are high risk and have a history of trauma to help them in navigating care systems.
- Facilities should provide education to obstetric providers regarding substance use in prenatal, pregnant, and postpartum patients, as well as encourage utilization of teleconsultation services to support OB providers in managing mental health and substance use disorder.

System



- **Health care systems should consider paraprofessionals or community support systems such as peer-to-peer counseling to support patients as they enter substance use treatment programs.**
- Care coordination and targeted case management should consider recovery coaches and doulas as reimbursable providers.
- Emergency departments need policies for supporting people who are seeking treatment for substance use disorder, and a system for warm hand-offs and immediate connection to treatment and support.
- Governments should expand access to inpatient drug treatment and wraparound community services for people with polysubstance use disorders who are covered by Medicaid insurance.
- Health systems should establish policies for supporting people who are seeking treatment for substance use disorder while receiving obstetric care, and a system for OBs to provide warm handoffs and immediate connection to treatment and support.
- Health systems should invest more in education their health care providers in understanding substance use disorder and helping to decrease that stigma and judgment.
- Health systems should consider resources for addiction essential medical care and should not suspend those services during public health emergencies.
- Health systems should employ specific navigators for pregnant and postpartum patients who are struggling with substance use.
- Health systems should integrate mental health treatment into substance use treatment.
- Health care systems as employers should have confidential and non-retaliatory resources available for employees who have substance use disorders.

Pregnancy-Associated Deaths Not Related to Pregnancy: Recommendations



System



- Health care systems should explore alternative models of prenatal care for people with complex social situations, substance use disorder, and mental health disorders.
- Health care systems should provide treatment options for substance use disorder during pregnancy and the postpartum period that allow children to join or stay with the individual receiving treatment.
- Policymakers should approve purchasing fentanyl testing strips with state dollars to allow distribution of and education on test strips.
- Social workers should continue to advocate for parents with substance use disorders whose children have been removed from the home to be able to find ways to still see them and develop relationships with them during pregnancy and the postpartum period.
- State agencies, Medicaid, and the legislature should explore strengthening funding and resources for recovery coaches and doulas.
- The county correctional systems should provide enhanced resources for strong case management for individuals with mental health and substance use disorders when they're back in the community.
- The state correctional system should provide enhanced resources for strong case management for individuals with mental health and substance use disorders when they're back in the community.
- Wisconsin Division of Medicaid Services should adopt expanded Medicaid policies to prevent interruption in care due to homelessness.

Community



- **Community organizations and providers working with individuals with substance use disorder and their families should provide education on lacing of drugs with other substances.**
- Communities and state government agencies should work together to establish and maintain recovery coach programs to support people exiting inpatient recovery.
- Communities should adopt housing-first policies and invest in innovative housing solutions for pregnant and postpartum patients.
- Communities should connect patients with inadequate social support to resources, such as support groups and social services.
- Communities should provide access to interventions grounded in harm reduction models, for example clean needles, Narcan, and safe use locations.
- Community agencies and health care systems need to establish resources and ongoing counseling for victims of childhood trauma.
- Community leaders should assure the availability of accessible mental health treatment programs in their community, and county Aging and Disability Resource Centers should be connected to those programs.

Pregnancy-Associated Deaths Not Related to Pregnancy: Recommendations



Mental health conditions

Community



- Public health agencies should raise awareness on the risks of recreational substance use.
- Schools should provide curriculum addressing violence prevention alongside other counseling classes and health classes throughout childhood education. This should include healing from Adverse Childhood Experiences and trauma.
- Social service organizations should identify children at increased risk of substance use early and provide intervention services at an early age through school and community organizations.

Injury

Injury is damage to the body that is intentional, unintentional, or of unknown intent.

Provider



- **Providers should complete screening for substance use disorder for all prenatal patients, and patients should be provided assistance and support in treatment of addiction**
- **Providers should consistently screen patients for mental health conditions and when identified, should refer to mental health providers and other resources to collaborate and manage care.**
- **Providers should screen for mental health and substance use at all clinic visits, regardless of indication of visit.**
- Leaders of Alcoholics Anonymous and Narcotics Anonymous meetings should continue to partner with evaluation and research partners annually to continually improve the quality of their meetings.
- Providers should refer patients with a history of substance use disorder to treatment programs when they present for prenatal care.
- Providers should refer patients with mental health conditions to wraparound services for care coordination to help with appointments, medications, and navigating the health systems for ongoing care.
- Providers should screen all patients for intimate partner violence at every visit and offer immediate referrals and resources if necessary.
- Providers should use validated tools to screen for both depression and anxiety during the postpartum period.

Facility



- Facilities should develop strategies to actively engage patients in need of substance use treatment, provide opportunities for treatment, and implement mechanisms for follow-up if patients do not attend treatment.
- Facilities should ensure discharge and follow-up plans are created and implemented prior to discharge; community-based providers should also be included in that follow-up plan.

Pregnancy-Associated Deaths Not Related to Pregnancy: Recommendations



Injury

Facility



- Facilities should provide education to OB providers regarding substance use in prenatal, pregnant, and postpartum patients, as well as encourage utilization of teleconsultation services to support OB providers in managing substance use disorders.
- Facilities should require documentation of mental health and substance use disorder screening, as well as documentation of the patient's screening result and action taken based on result.
- Hospital facilities should follow up with parents of children in NICU for mental health supports for one year postpartum.
- Providers and facilities should screen pregnant or recently pregnant people for domestic violence at all visits.

System



- Both US Congress and the State of Wisconsin should act to reform gun laws to reduce the number of firearm-related deaths.
- Federal lawmakers should pass legislation requiring coverage for room and board for residential treatment to reduce out-of-pocket cost to patients.
- Governments should expand access to inpatient drug treatment and wraparound community services for people with polysubstance use disorders who are covered by Medicaid insurance.
- Governments should fund and develop substance use disorder treatment units for pregnant and postpartum patients.
- Health systems and clinical care coordinators should encourage all providers who encounter perinatal patients to take trainings on how to engage patients in difficult conversations, including those on mental health, substance use disorder, and intimate partner violence.
- Health systems should employ specific navigators for pregnant and postpartum patients who are struggling with substance use.
- Health systems should incorporate prenatal care coordination (PNCC) providers, community health workers, and others with the ability to establish strong, trusted relationships with patients as part of the care team.
- Health systems should integrate mental health treatment into substance use treatment
- Health systems should pay for and incorporate nurse home visits as part of the postpartum follow-up program.
- Health systems should require providers to assess all families with a newborn for social needs and connect families with community resources to meet those social needs.
- Hospital and health care administrators should continue to explore ways to make individuals with substance use disorder comfortable in health care settings even before pregnancy so that if they do become pregnant there will already be trust established.

Pregnancy-Associated Deaths Not Related to Pregnancy: Recommendations



Injury

System



- Legislators should enact stricter gun safety laws including background checks, licensing, gun safety training requirements, and community education.
- Public health agencies should raise awareness on the risks of recreational substance use.
- State lawmakers should require that pregnant persons are prioritized for all types of substance use treatment (not just methadone).
- State legislators should pass Extreme Risk laws or Red Flag laws that allow loved ones or law enforcement to petition for a court order to temporarily prevent someone in crisis from accessing guns.
- The Wisconsin Hospital Association should document and report the costs of insufficient insurance coverage.
- Treatment programs should offer people with substance use disorder who want one-on-one support connection with peer support specialists or peer counselors, regardless of pregnancy status.
- The Wisconsin legislature should expand insurance access through Medicaid.

Community



- **Communities, systems, and policymakers should increase supports and mental health treatment for persons with substance use disorder at any age.**
- **Public health, health systems, and community leaders should support primary prevention of gun misuse and violence in communities through youth education and other evidence-based programs.**
- Automobile manufacturers should invest in the development and accessibility of self-stopping vehicles.
- Communities and law enforcement should continue to work together to explore collaborative and innovative models to promote neighborhood safety.
- Communities should actively support primary prevention of gun misuse and violence through youth education and other evidence-based programs.
- Communities should amplify public health campaigns for friends and family to recognize signs of suicide and how to connect with mental health emergency services.
- Communities should empower people to recognize and intervene when those who are intoxicated are in dangerous situations.
- Communities should support conflict resolution trainings and increased funding for programs to help families address interpersonal conflicts.
- Community leaders should assure the availability of accessible mental health treatment programs in their community.
- Community leaders should develop plans to prevent and reduce community violence, and the plans should use local data, include young people with lived experience in the process, and address social, economic, structural, and physical conditions that contribute to violence.

Pregnancy-Associated Deaths Not Related to Pregnancy: Recommendations



Injury

Community



- Community leaders should ensure the availability of accessible substance use disorder treatment programs in their communities.
- Community organizations and providers working with individuals with substance use disorder and their families should provide education on lacing of drugs with other substances.
- Local governments should continue to enforce safety standards for commercial motor vehicles.
- Policymakers should expand training requirements for obtaining a license to own a firearm to include a practical test demonstrating an understanding of the functionality of firearms and a proficiency in shooting those firearms. These must be conducted prior to the issuance of the permit and annually thereafter. Training requirements should also include a written test in which applicants demonstrate an understanding of the nature and limits of self-defense; state firearm laws; the risk of firearm suicide, homicide, and unintentional shootings associated with gun ownership; and the benefits of safe firearms storage.
- Public health agencies and community leaders should support primary prevention of violence in communities through youth education and other programs.
- Urban planners should follow recommendations in the American Association of State Highway and Transportation Officials (AASHTO) [Guide for the Planning, Design, and Operation of Pedestrian Facilities](#) in order to make urban spaces safer for pedestrians.

Infection

An infection occurs when germs enter the body, increase in number, and cause a reaction of the body.

Provider



- Providers should counsel postpartum women with obesity on nutrition, refer to weight management, and provide education on risks of obesity as well as risks in future pregnancies.
- Provider should consider ordering chest x-rays in cases of patient presentation of viral illness with vague complaints.
- Providers should offer telehealth as an option when patients have transportation issues or other barriers that may prevent them from accessing care.

Facility



- Facilities should educate outpatient providers on diagnostic criteria of sepsis.
- Clinics and hospitals should ensure patients and support people understand discharge plans, especially in urgent situations or when directed to return to the emergency department, including patients and support people with language barriers.

System



- The health system and care coordinators should work together to ensure appropriate monitoring and follow-up, including educating patients and families on expected symptoms.
- Hospitals and insurance agencies should allow children to accompany parents on cab rides (when using vouchers) or otherwise help address child care needs.

Pregnancy-Associated Deaths Not Related to Pregnancy: Recommendations



Cancer

Any one of a large number of diseases characterized by the development of abnormal cells that divide uncontrollably and have the ability to infiltrate and destroy normal body tissue.

Provider



- Providers should promptly schedule follow-up care and testing for any abnormalities prior to discharge and should thoroughly discuss rationale and findings, including risks, with the patient.
- Providers should discuss options for payment with patients up front and provide them with financial support resources.
- Providers should screen all patients for intimate partner violence at every visit and offer immediate referrals and resources if necessary.

System



- Ensure facilities follow most recent [ACOG's Optimizing Postpartum Care](#) recommendations on when to see patients postpartum, which includes the following: “All women should ideally have contact with a maternal care provider within the first three weeks postpartum. This initial assessment should be followed up with ongoing care as needed, concluding with a comprehensive postpartum visit no later than 12 weeks after birth.”
- Health systems should incorporate prenatal care coordination (PNCC) providers, community health workers, and others with the ability to establish strong, trusted relationships with patients as part of the care team.
- The health system and care coordinators should work together to ensure appropriate monitoring and follow-up, including educating patients and families on expected symptoms.
- Federal policymakers should assure universal access to health care services.
- Legislators should pass regulations requiring transparency in costs and billing, including all associated costs, and providing patients clarity around how much they will have to pay.

Other causes of death

Other causes of death that do not fit into the existing categories are included here.

Provider



- Non-OB professional organizations and training programs (family medicine, internal medicine, and pediatrics) should emphasize how to create strong connections from OB care back to primary care and how to provide quality care in the postpartum period.
- Providers should refer patients with high-risk pregnancies to primary care for wraparound services for care coordination to help with appointments, medication and navigating systems for continued care.

Pregnancy-Associated Deaths Not Related to Pregnancy: Recommendations



Other causes of death

Provider



- Providers should educate patients with chronic heart disease and obesity (because of risk of heart disease and pulmonary embolism) about warning signs and symptoms (for example, severe chest pain, shortness of breath) and when to call 911 or present to the emergency room in the patient's preferred language and in a culturally relevant manner.
- Providers should refer patients with mental health conditions to wraparound services for care coordination to help with appointments, medication and navigating systems for continued care.
- Providers should screen patients for substance use disorder at every medical interaction and make appropriate, timely referrals for treatment options as needed.

Facility



- Clinics and hospitals should ensure patients and support people understand discharge plans, especially in urgent situations or when directed to return to the emergency department, including patients and support people with language barriers.
- Emergency departments should increase staffing to meet the need of the community.
- Facilities should use [Hear Her campaign](#) materials to educate providers, patients, and families in their waiting areas, exam rooms, and other areas.

System



- Medical and nursing schools and pipeline programs should work to increase diversity in the health care workforce as an important factor for eliminating inequities in health care.
- Insurance companies should encourage and pay for increased use of telemedicine for prenatal visits, behavioral health therapy, and Narcotics Anonymous and Alcoholics Anonymous support groups.
- Health care systems should continue to explore best practices to make patients with substance use disorders feel comfortable seeking care in their facilities, and provide training to their providers on implementing those best practices.
- Community organizations should have home health checks in cases of domestic violence, substance use and mental health disorders, and isolation with no transportation.
- Local public health systems and community partners that work with patients with substance use disorders should continue to prioritize friend and family support groups to help give friends and family tools they need to best support patients with substance use disorders.

Next Steps: Seven Key Questions to Reduce Maternal Mortality in Wisconsin



Thank you for taking the time to read this report. We are sincerely committed to protecting the lives of all Wisconsin birthing people and preventing future deaths. Now that you have the recommendations, it's time to put them into action. We have created the following discussion questions to support organizations and communities engaging in meaningful dialogue about how to translate this information into action in their own spheres of influence.

We encourage you to reflect on these questions independently or with a larger group. After you complete the questions, please consider emailing us your answers. We would love to hear from you at DHSMMR@dhs.wisconsin.gov.

Additionally, if you are interested in having one of our MMRT executive team members join your group or organization for a live, facilitated discussion related to these questions and ways to move this information to action please complete a [speaker request](#). We are all in this together. Thank you for your continued commitment to reducing maternal mortality in Wisconsin.

For review and reflection: Seven key questions to reduce maternal mortality

1. After reviewing this report, what are some of the trends that stood out to you?
2. After reviewing the recommendations included in this report, what are the top two that are feasible for your organization to implement in the next 90 days? What are the top two that are feasible for your organization to implement in the next year?
3. We know racism can play a role in pregnancy-related deaths. In what ways have you seen this in your own community or organization? What are tangible steps you can take to help combat this?
4. Mental health conditions was the leading cause of pregnancy-related death in 2020. In what ways have you seen this in your own community or organization? What are tangible steps you can take to help promote optimal mental health for birthing people in Wisconsin?
5. After reviewing this report, which community-based organizations or systems can you commit to developing or strengthening a relationship with in order to implement some of the key recommendations?
6. What barriers do you anticipate encountering as you work to accomplish the action steps you have committed to above? What strategies will you utilize to overcome them?
7. What are areas of promise or hope you see happening in your organization or surrounding community related to maternal mortality prevention? What is working well that you can support and/or bring more awareness to?



Report references

1. Wisconsin Department of Health Services, Office of Health Informatics. Hospital discharge records, 2020.
2. Wisconsin Department of Health Services, Office of Health Informatics, Vital Records Office, birth certificate, 2020.
3. [Wisconsin PRAMS 2018-2019 Surveillance Report](#). Wisconsin Department of Health Services, 2022.
4. [COVID-19 and Pregnancy in Wisconsin](#). Wisconsin Department of Health Services, 2023.



Contact

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