MATERNAL HEALTH IN MONTANA

Montana Maternal Health Annual Report Year 4

September 2023

MOMS
Montana Obstetrics & Maternal Support

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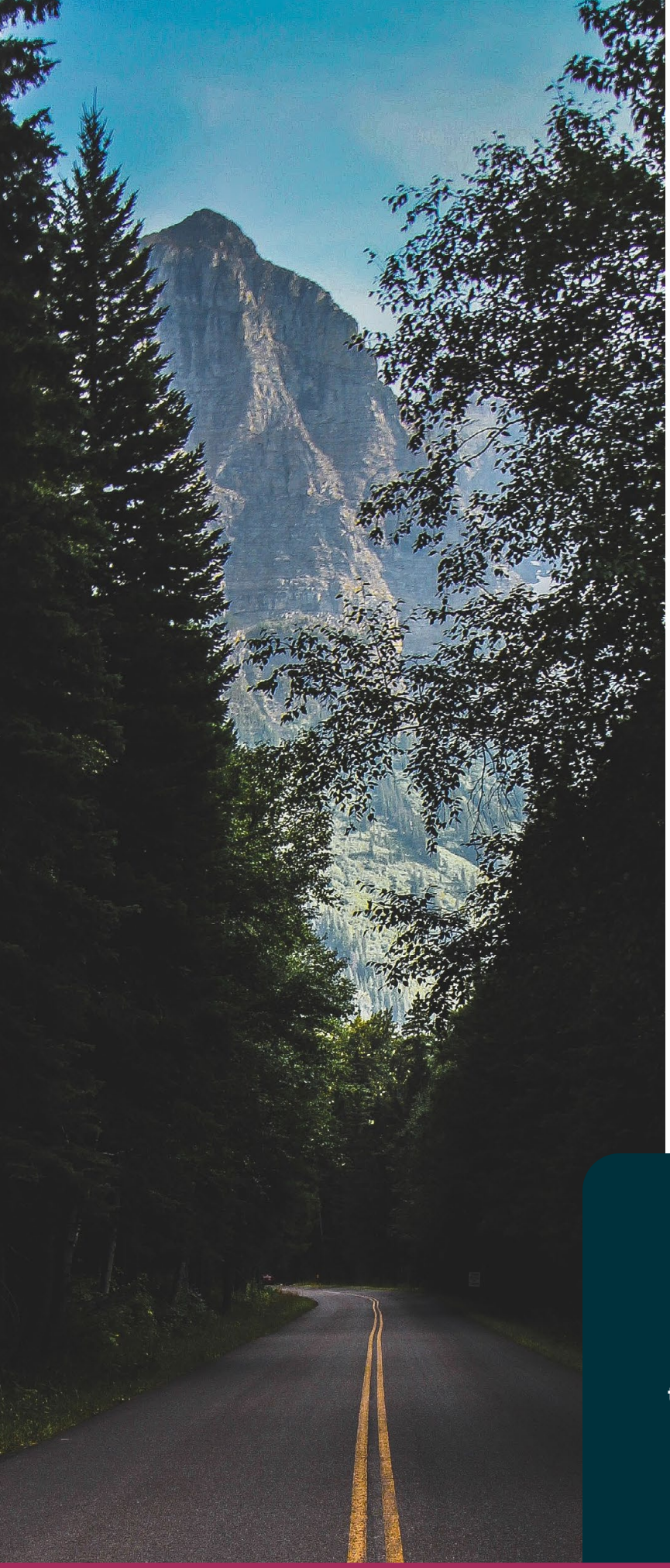
Acronym Glossary

Acronym	Full Name
ACOG	American College of Obstetricians and Gynecologists
AI/AN	American Indian Alaskan Native
AIM	Alliance for Innovation on Maternal Health
API	Asian / Pacific Islander
CAH	Critical Assess Hospital
CDC	Centers for Disease Control and Prevention
CNM	Certified Nurse Midwife
DPHHS	Department of Public Health and Human Services
EmOC	Emergency Obstetric Care
ERASE MM	Enhancing Reviews and Surveillance to Eliminate Maternal Mortality
FCHB	Family and Community Health Bureau
FQHC	Federally Qualified Health Center
ICD-10	International Classification of Diseases- 10
LOCATe	Levels of Care Assessment Tool
MFM	Maternal-Fetal Medicine specialist
MHA	Montana Hospital Association
MHI	Maternal Health Innovation Program
MMRPP	Montana Mortality Review and Prevention Program
MMRC	Maternal Mortality Review Committee
MOMS	Montana Obstetrics and Maternal Support Program
MOUD	Medications for Opioid Use Disorder
MPQC	Montana Perinatal Quality Collaborative
MSU	Montana State University
NPM	National Performance Measure
NRP	Neonatal Resuscitation Program
OBGYN	Obstetrician-Gynecologist
PMAD	Perinatal or Postpartum Mood or Anxiety Disorder
PMSS	Pregnancy Mortality Surveillance System
PQC	Perinatal Quality Collaborative
PRAMS	Pregnancy Risk Assessment Monitoring System
SBT	Simulation Based Training
SMFM	Society for Maternal-Fetal Medicine
SMM	Severe Maternal Morbidity
STABLE	Sugar, Temperature, Airway, Blood pressure, Lab work, and Emotional support
STI	Sexually Transmitted Infection
SUD	Substance Use Disorder
WHO	World Health Organization
WPSI	Women's Preventative Services Initiative



Introduction

Investment in the health and well-being of birthing people reflects the value a community places on some of its most vulnerable members. It represents a commitment to the idea that birthing people deserve to bear and raise children in environments that affirm their full dignity and worth. In pursuit of these ideals, the Montana Obstetrics and Maternal Support (MOMS) team works to compile and analyze diverse sets of data to examine the factors contributing to maternal mortality and morbidity, examine disparities in maternal health outcomes and access to care, and set forth strategies to improve the outcomes and experiences of birthing people in Montana. In this report, we analyze the maternal health landscape, identify barriers to and facilitators of high-quality maternal healthcare, and discuss various policy and programmatic recommendations to remedy disparities in healthcare utilization and access, and improve overall health outcomes across the state of Montana.

We acknowledge that not all people who may become pregnant identify as a woman or a mother. We are committed to using language that is inclusive of two-spirit, transgender, and gender expansive individuals. When describing the research or findings of others, we will use the terms that are reflective of the language used in the publication which we are citing.

Key Findings and Factors

Pregnancy-Related Deaths

Owing to small population sizes, Montana records and reports data concerning pregnancy-related deaths in multi-year increments. In the period from 2013-2019, Montana reported 10 pregnancy-related deaths through the Pregnancy Mortality Surveillance System (PMSS). Further detail on deaths reported by demographic categories are provided in Appendix A. Due to data suppression rules for small sample sizes, further information is not available at this time on leading causes of death and key factors contributing to pregnancy-related deaths in Montana. The Montana Maternal Mortality Review and Prevention Program (MMRPP) will provide detailed information on pregnancy-related deaths, contributing factors, and prevention recommendations starting in 2024 using data generated by the Montana Maternal Mortality Review Committee (MMRC).

Montana's Maternal Health Innovation Program and Maternal Mortality Review Committee

Montana's Maternal Health Innovation (MHI) Program, known as the MOMS program, provided funding for Montana to qualify as an Alliance for Innovation on Maternal Health (AIM) state in 2021. AIM stipulates that member states implement a state-wide Maternal Mortality Review Committee. After completing comprehensive training and system assessments, the MOMS project was well-situated to establish Montana's first MMRC, which is administered by the MMRPP at the Montana Department of Public Health and Human Services (DPHHS). In 2021, in recognition of this important work, the Centers for Disease Control and Prevention (CDC) awarded Montana with an Enhancing Reviews and Surveillance to Eliminate Maternal Mortality (ERASE MM) grant. The MMRPP sits within the Family and Community Health Bureau (FCHB), which is part of the Early Childhood and Family Support Division at Montana DPHHS. The MMRPP is run by a program coordinator and a nurse abstractor and supports mortality reviews conducted by the MMRC, which is comprised of community members, providers, and other maternal health stakeholders. The MMRC completed necessary training and preparation in fall 2021 and began conducting maternal mortality reviews in summer 2022. The first Montana MMRC report will be completed by the end of calendar year 2023, and future Maternal Health Annual Reports will include findings from this committee.

Key Factors Contributing to Severe Maternal Morbidity

Severe maternal morbidity (SMM) includes "unexpected outcomes of labor and delivery that result in long-term consequences to a woman's health" [1]. The MOMS grant utilizes discharge data collected by the Montana Hospital Association (MHA) to assess and analyze the leading causes of SMM in the state. The University of Montana MOMS team calculates the SMM rate for Montana through a data use partnership between the University and MHA initiated by the MOMS program. Owing to Montana's small population sizes, data is collected over three-year periods to better capture subgroup characteristics and more closely examine demographic trends in health outcomes. The rates reported here only capture those deliveries occurring in hospital settings; data compiled from federally operated health services, such as the Indian Health Service and Veteran Affairs, are not reflected in these data. The reported SMM rate is in keeping with CDC guidelines categorizing cases of SMM per 10,000 hospitalized deliveries using the International Classification of Diseases 10 (ICD-10) codes; indicator definitions and codes used to calculate the SMM rate is provided in Appendix B.

During 2018-2020, Montana hospitals reported 30,224 hospitalized deliveries to the hospital discharge data system. The SMM rate for this period, inclusive of blood transfusion, was 119.4 per 10,000 births. Excluding blood transfusion, the SMM rate was 34.1 per 10,000 births during 2018-2020. These rates are elevated when compared to the period of 2017-2019, which recorded rates of 106.2 per 10,000 births including blood transfusion, and 27.0 per 10,000 births exclusive of blood transfusion. The most prevalent forms of SMM during 2018-2020, excluding blood transfusion, were (in descending order) hysterectomy, renal failure, shock, respiratory distress syndrome, and eclampsia.

Geographic and Demographic Disparities in Maternal Health

In 2021, Montana recorded 11,231 live births to residents. Non-Hispanic White individuals delivered 82.8% of all live births in Montana in 2021; Non-Hispanic American Indian Alaska Native (AI/AN) individuals delivered 9.0% during the same period. Hispanic individuals delivered 5.8% of live births in 2021. Non-Hispanic Asian / Pacific Islander (API) and non-Hispanic Black individuals comprised 1.3% and 1.1% of 2021 live births, respectively. Given the significant racial composition in Montana of non-Hispanic White and non-Hispanic AI/AN communities, racial disparities analysis will focus on these two populations. Additional racial subgroup data are available in Appendix A. The most significant demographic disparities that exist in Montana are racial health disparities between AI/AN populations and White populations. These disparities exist in both the populations' utilization of and access to healthcare services, as well as their overall health outcomes. Racial health disparities exist in Montana owing to a diverse array of factors, including inequitable distribution of resources on reservation land [2], economic inequality [3], institutionalized racism [3], and historical trauma [4].

[1] All SMM rates reported here are exclusive of blood transfusion.

SEVERE MATERNAL MORBIDITY

Racial and geographic disparities in rates of SMM are significant[1]. AI/AN individuals experienced SMM at a rate of 68.8 per 10,000 hospitalized deliveries during 2018-2020, compared to 41.1 for White individuals. Individuals who live in more rural counties also experience higher rates of SMM, with non-core counties reporting a rate of 49.7 and micropolitan counties reporting a rate of 45.5 per 10,000 hospitalized deliveries during 2018-2020. Comparatively, individuals in small metropolitan counties experienced an SMM rate of 34.4 per 10,000 hospitalized deliveries during the same period. SMM increased across all subgroups from the 2017-2019 to the 2018-2020 period, a trend that is likely attributable to increased rates of SMM during the pandemic directly and indirectly associated with COVID-19.

LOW-RISK CESAREAN DELIVERIES

In 2021, 22.1% of all births in Montana were considered low-risk cesarean sections. This rate is below the national average and the national target reduction set forth by Healthy People 2030 [5]. Hispanic groups accounted for the greatest percentage of low-risk cesarean births, at 28.0%, while AI/AN recorded the lowest rates, at 21.2%. There is a negligible difference in rates of cesarean deliveries between rural and urban populations.

POSTPARTUM HEALTHCARE

Two measures of maternal healthcare utilization and access are 1) the proportion of pregnant people who received a postpartum care check-up after they delivered and 2) the proportion of pregnant people who were screened for postpartum depression. The disparities recorded in these are depicted in Appendix A. The Montana Pregnancy Risk Assessment Monitoring System (PRAMS) program collects data related to the experiences and health of individuals before, during, and after pregnancy. Data from the 2021 Montana PRAMS survey are summarized below.

AI/AN individuals were significantly less likely to report receiving postpartum care or having been screened for postpartum depression than were White birthing people in Montana in 2021. While 93.4% of non-Hispanic White people who delivered a baby in 2021 reported that they had a postpartum visit, just 76.6% of non-Hispanic AI/AN individuals reported getting this care. Similarly, 69.1% of non-Hispanic AI/AN individuals reported being screened for postpartum depression, while 89.3% of non-Hispanic White individuals reported receiving this screening. There were no significant differences in accessing postpartum care and postpartum depression screenings between rural and urban populations. As the postpartum period is considered the most dangerous time for birthing people [6], comprehensive and continuous postpartum care—including adequate screening for Perinatal or Postpartum Mood and Anxiety Disorders (PMADs)—are essential to safeguarding the health of birthing people. The racial disparities recorded in access to postpartum care and mental health screening both reflect and reproduce the racial inequalities in maternal health. Improving access to robust postpartum care for AI/AN populations is imperative to remedying the striking racial maternal health disparities in the state.

Due to the rural and remote nature of Montana, healthcare access and utilization, and health outcomes are also dependent on geographic location, with those in rural areas having less overall access to health services and recording greater adverse health outcomes. In a state as large and as sparsely populated as Montana, rurality can present a formidable barrier to healthcare accessibility. Lack of reliable transportation and harsh and unpredictable weather conditions often compound the already significant barriers rural Montanans face in accessing care. However, it is important to note that rural disparities in healthcare utilization and access are less pronounced than are racial health disparities.

Measures Used in Evaluating Montana's Maternal Health Innovation Program

The population-level outcomes data summarized in this report, such as pregnancy-related deaths and severe maternal morbidity, have so far not been used to explicitly evaluate the impact of MOMS. MOMS began in October 2019, and population-level health outcomes data have a two-to-three-year lag in reporting. In light of the limited availability of population-level health outcomes data that could accurately illustrate the impact of MHI activities, the MOMS evaluation team has utilized process-oriented measures to assess achievement toward intermediate goals described in the MOMS logic model. Each year, MOMS produces an evaluation report detailing the measures that are used to evaluate this program [7]. Annual evaluation reports are released six months after the close of the grant year. The most recently available evaluation report covers the grant period of 9/30/21-9/29/22.

A full version of the MOMS Annual Evaluation Report Year 3 is available to view and download on the MOMS website: https://www.mtmoms.org/3rd-annual-maternal-health-in-montana-report/.

Some highlights from this evaluation report include the following:

215 unique participants
engaged in clinical education and technical assistance in maternal health clinical practices through the MOMS Project ECHO;

20 organizations in 16 counties
received funding to purchase simulators, send clinical staff to obstetric care trainings, improve obstetric emergency preparedness, and conduct perinatal patient education and outreach;

58 nurses
received Neonatal Resuscitation Program (NRP) or Sugar, Temperature, Airway, Blood pressure, Lab work, and Emotional support (STABLE) certifications;

249 unique clinicians
participated in in-situ obstetric simulation training exercises in rural hospital settings; and

432 pregnant patients
were screened for substance use disorder (SUD), 179 received brief intervention, and 77 were referred to further assessment to receive care for SUD and other social barriers to care.

Maternal Health Policy & Programmatic Recommendations

Considering the stark disparities that exist in healthcare utilization and health outcomes for AI/AN and rural populations in Montana, policies oriented towards achieving maternal health equity should be conceived with these populations needs, and experiences centered. All policies should be formulated in keeping with the principles of cultural safety and based on the tenets of trauma-informed care.

Recommendations Resulting from the Maternal Health Innovation Program

First, Montana should expand access to doula care for birthing people by taking steps to ensure that their services are reimbursable through Medicaid. Doulas provide high-quality, comprehensive perinatal care, and it is critical that their compensation reflect their important position in the maternal health care continuum [8]. By providing fair reimbursement rates for doulas, Montana would not only guarantee that their work is financially sustainable, but would also ensure that birthing people's access to the care they need and desire is not determined by their class position. The benefits of doula care for birthing people are well documented. Evidence has demonstrated that the presence of a doula during the perinatal period is associated with a 39% reduction in cesarean sections—while overall birth complications, rates of pre-term birth, use of pain medication, and self-identified traumatic birth experiences are lessened [9]. Additionally, rates of breastfeeding and patient satisfaction are heightened [9].

Expansion of racially concordant doula care is particularly important in reducing racial maternal health disparities for Indigenous populations in Montana. Evidence has demonstrated that race-concordant doula care is a powerful intervention "to address racial health disparities and mitigate the effects of structural racism" [10]. Indigenous doulas are attuned to the unique challenges Indigenous people face in navigating

western maternal healthcare systems and are best equipped to provide care that will improve outcomes and disrupt the harmful legacies of colonization that continue to shape Indigenous peoples experiences within medical systems. Examples include the medicalization of birth and its removal from Indigenous communities, attempts to destroy and undermine Indigenous birth traditions, histories of forcible sterilization, the forced removal of Indigenous children from their families, and medical racism [11]. As members of the communities they support, Indigenous doulas are well-situated to "advocate for birthing care that reflects Indigenous knowledge values" and promote self-determination and autonomy in decision making [11]. While doulas are certainly not a panacea for the systemic issues that afflict maternal healthcare systems in the United States, they are an indispensable part of the care continuum. Their work should be valued, invested in, and made accessible to a wider and more diverse array of birthing people in Montana.

Second, Montana should continue to invest in and encourage the growth of certified nurse midwives (CNM) to strengthen maternal healthcare across the state. In Montana, over half (53.6%) of counties are considered maternity care deserts, meaning that they do not have a hospital with an obstetric unit, nor access to any obstetric providers [12]. CNMs play an important role in remedying these alarming gaps in care. CNMs have been shown to improve birth outcomes by reducing rates of premature births, cesarean deliveries, and newborn fatalities, while increasing the likelihood of spontaneous delivery, vaginal birth after cesarean, and breastfeeding [13]. Further, midwives have been shown to promote and foster among patients' a greater sense of control and autonomy over the overall trajectory of their care.

In recognizing the great need for and the integral role of CNMs in the maternal healthcare field, a private donation was gifted to the Montana State University (MSU) College of Nursing by Mark and Robyn Jones to establish a midwifery program at MSU. The program aims to encourage the growth of the profession and address the alarming workforce shortages in rural communities across the state. To further this important work, Montana should implement Medicaid parity for CNMs. Currently, CNMs are reimbursed at 90% of the rate of Obstetrician Gynecologists (OBGYNs). In achieving payment parity for CNMs, Montana would be expanding access to necessary care for rural and frontier communities and taking steps to improve maternal health outcomes for all Montanans.

Third, there is a great need to strengthen aspects of postpartum care for birthing people in Montana. This finding is consistent with broader policy initiatives and recommendations that have been

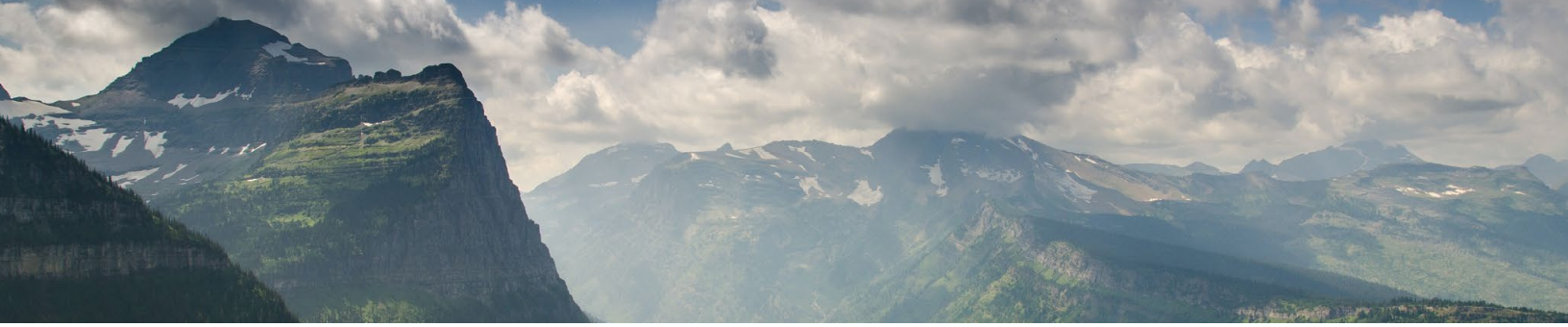
introduced across the country in recent years urging more comprehensive and continuous postpartum support [14]. Preliminary data that emerged from the Maternal Health Care Experiences Study—a mixed-method study conducted by the MOMS research team with thirty-nine interviewees and 427 survey participants across Montana—has illustrated that birthing people require more support in the postpartum period than is often provided. One of the most salient gaps identified by participants was in the screening, identification, and treatment of PMADs. Many participants felt as though the screening tools were insufficient in identifying the full spectrum of PMADs, and sometimes felt as though their genuine concerns and experiences were dismissed as being the "baby blues," as opposed to more serious or acute situations requiring greater attention and support. Participants urged shifting the postpartum care structure from the standard 6-week checkup to an appointment as early as 7 to 14 days after delivery to facilitate quicker identification and treatment of PMADs. Participants also identified a need for more continuous support through the postpartum period—including in-home check-ins or scheduled phone check-ups with providers at a greater frequency than was provided.

Fourth, Montana should work to improve care continuity and coordination for birthing people with SUDs. Substance use is one of the leading causes of death for birthing people during the postpartum period, and pregnant people who use substances face unique challenges navigating maternal healthcare systems [15]. Examples of such difficulties include stigma and discrimination, fear of family separation, structural barriers to accessing SUD treatment, and lack of accessible and affordable treatment programs and providers [16]. Being so, Montana should work to improve access to residential treatment for perinatal populations and access to medications for opioid use disorder (MOUD)—particularly for rural residents and members of socially marginalized communities [17].
Further, a qualitative research study conducted by the MOMS research team explored the efficacy of recovery doulas—paraprofessionals trained to provide emotional, logistical, and physical support to birthing people with SUD—in improving maternal and infant health outcomes. The preliminary results suggest that recovery doulas could play an important role in supporting birthing people during a uniquely challenging and emotionally fraught time. Doulas are thus well situated to fill gaps in care and provide continuous, personalized care to support people while they navigate the dual challenges of parenthood and recovery. While the pregnancy and postpartum period can be a particularly vulnerable time for those with SUD, it is also a period where people possess tremendous motivation for change and healing. Recovery doulas, beyond providing logistical, emotional, and physical support, can promote such healing and change by

encouraging the practices of accountability, self-efficacy, self-advocacy, and resilience on behalf of those they support [18].

Finally, Montana should improve access to simulation training opportunities for obstetric emergencies in rural and frontier settings. Critical access hospitals (CAHs) play an essential role in advancing health equity and reducing barriers to healthcare for residents of rural communities, who tend to have worse maternal health outcomes than those living in more urban areas [19]. These disparities are also racialized; AI/AN populations living in rural areas are twenty times more likely to deliver in a hospital without an obstetric unit and travel further for critical perinatal care than are White residents of rural communities [20]. Importantly, those who deliver at hospitals that lack an obstetric unit face an elevated risk of maternal mortality and morbidity [21].

While births are typically a rare occurrence for CAHs, they can be emergent. The infrequency of these events often leads providers in rural areas feeling ill-equipped to respond to obstetric emergencies when they do occur. Further, CAHs are increasingly facing challenges such as lack of funding, high staff turnover, and staffing shortages. For these reasons, expanding access to simulation-based training (SBT) across Montana is an important strategy to increase preparedness and competency among providers in rural hospitals, and, ultimately, improve maternal health outcomes. SBT gives providers a unique opportunity to prepare to stabilize, treat, or transfer patients in the event of an obstetric emergency, and has demonstrated immediate improvements in provider "knowledge, simulated skills, and confidence" [22]. This training modality offers a low stake, controlled clinical environment where providers can develop their skills, receive immediate feedback and assessments, and review emergency obstetric protocols. CAHs occupy a unique and vital position in the rural maternal healthcare landscape. As such, it is essential providers at rural hospitals are given the support and training they require to effectively handle high-intensity, emergent obstetric events when they arise.



Aligning Recommendations with the Maternal Mortality Review Committee and Title V

The MOMS and Title V programs in Montana have combined their needs assessment efforts to facilitate coordination and alignment between programs. This strategic alignment will serve to optimize resources and set a common vision for health improvement for pregnant and postpartum people in Montana. Specifically, MOMS and Title V have coalesced around National Performance Measure (NPM) 1: the Well-Woman Visit, due to the importance of regular primary care to individuals' reproductive life cycle, from preconception to the perinatal and postpartum periods. To this end, MOMS conducted a study involving individuals in Montana who experienced a pregnancy in the last five years to assess their experiences receiving reproductive health care. This study included a survey module assessing individuals' (N=427) experiences with their annual well-woman visit. Results from this study are preliminary at the time of this report's printing. Most respondents (65.1%) had an annual wellness visit in the year prior to their pregnancy; 54.1% reported having a wellness visit on an annual basis. For those who had a wellness visit (N=278), nearly all (95.7%) included a physical exam. However, other recommended services were not universally provided. Just over half (56.1%) received reproductive life planning services; 67.8% reported being screened for depression and anxiety; 52.5% reported sexually transmitted infection (STI) screening; and 24.5% reported screening for substance use. This study will enrich the Title V Needs Assessment by providing unique information on the quality of care received during the well-woman visit in Montana that can be used to bring the standard of care up to the national guidelines set by the Women's Preventative Services Initiative (WPSI).

As described previously, Montana's MMRPP is a new initiative. MHI provided the seed funding that initiated Montana's maternal mortality review system, so integration between the two programs is built by design. Once the MMRPP has produced a summary report, these findings and recommendations will be disseminated to the MHI stakeholder group and implemented through their networks.

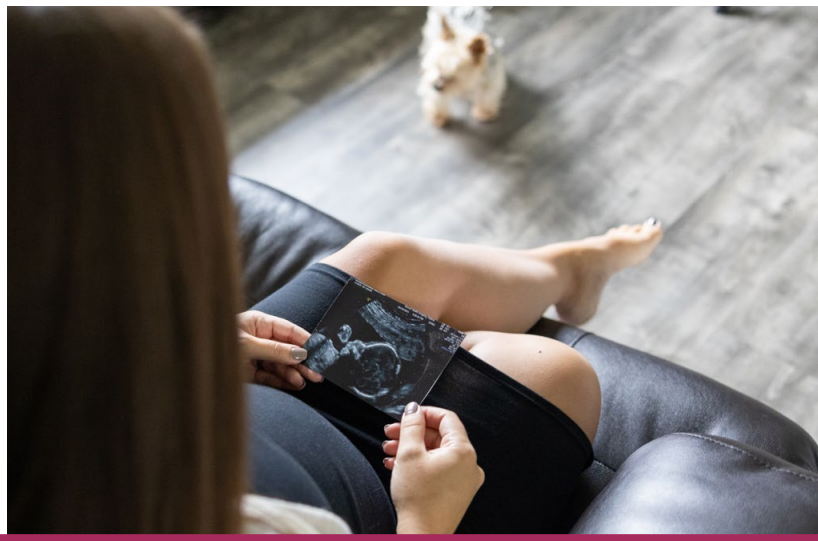
While Montana has not yet produced state-specific maternal mortality review recommendations, the work of national maternal mortality prevention programs has informed policy development via the MHI program at Montana DPHHS. During the 2023 Legislative Session, the Montana Medicaid program secured funding to extend Medicaid coverage from 60 days to 12 months postpartum. This policy was identified as a priority after assessment of national MMRC data indicating that most pregnancy-related deaths are preventable and occur in the later postpartum period. This significant policy achievement in Montana will benefit thousands of individuals and their infants; nearly half of all deliveries are financed by Medicaid. Extended Medicaid coverage in the postpartum year has the potential to improve access to life-saving primary care, mental healthcare, and substance use disorder treatment that can support healing and recovery for families during this vulnerable transition.

The Data Utilization in Maternal Health Innovation Program

One of the most significant systems-level transformations that the MHI program has motivated in Montana is the use of data to drive program and policy decisions at the state, community, facility, and provider levels. This transformation has taken place both within the programs funded by MHI as well as externally across the full maternal healthcare system.

As described in previous reports, PRAMS data provided specific guidance for the design of the Empaths program, the MOMS substance use in pregnancy demonstration project which is administered by Billings Clinic. PRAMS data revealed statistically significant disparities in substance use screening based on race; each year, more AI/AN PRAMS respondents report being asked about their drug and alcohol use in pregnancy than White respondents, and this higher screening rate has not resulted in better access to treatment and services. Empaths has been working to implement universal screening paired with assessment and referral to an expedited treatment pipeline for pregnant patients. Using rapid monitoring protocols, the Empaths program identified weaknesses in the universal screening regime during the most recent grant period. These data have informed a program redesign, where enhanced provider outreach and an integration of a Federally Qualified Health Center (FQHC)-housed peer support doula program that will improve services patients receive in Empaths. This pilot project was designed to incorporate data and ongoing continuous quality improvement that has facilitated a midstream program pivot. The lessons learned from both the administration and design perspective of Empaths, as well as the perspective of patients and providers within the system, will provide tangible and meaningful lessons that can be applied in other settings as this innovation is replicated across Montana and in other states.

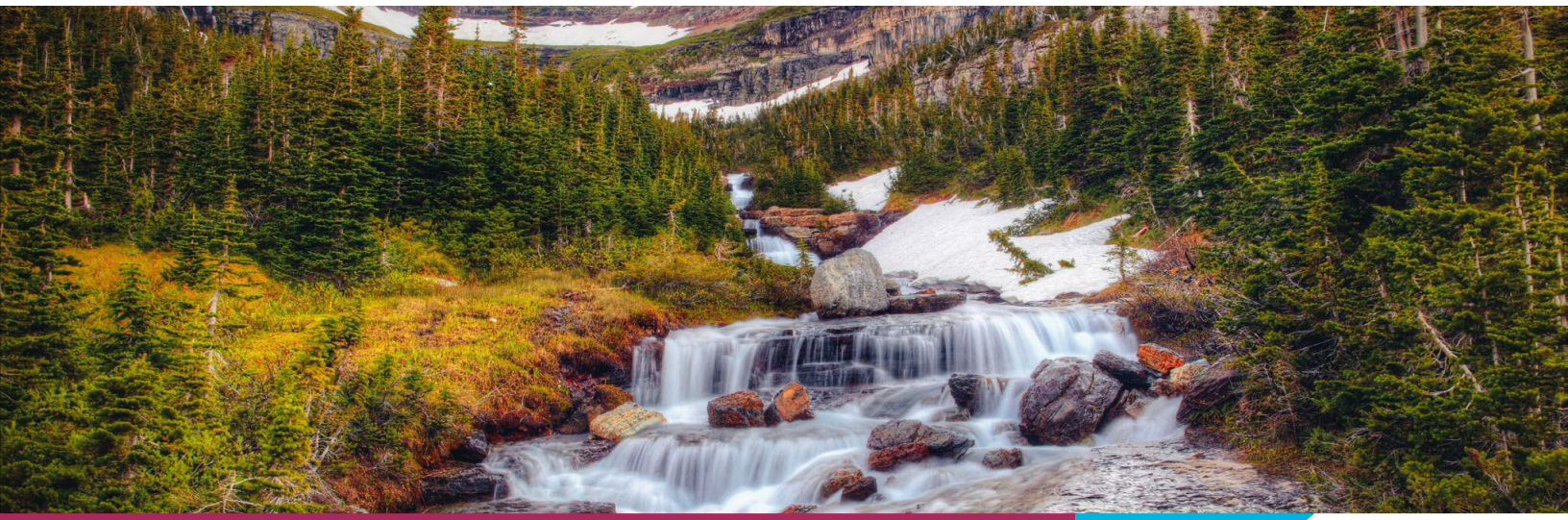
Another specific example of the application of data collected through the MHI program in driving system-wide improvements is the use of facility assessments—the CDC Levels of Care Assessment Tool (LOCATe) assessment of birthing facilities and the Emergency Obstetric Services assessment of non-birthing critical access hospitals. Montana had the opportunity to add additional questions to the LOCATe assessment. MOMS added a module on accessible perinatal care settings for pregnant patients with disabilities. The module included two questions, one



focusing on accessibility for patients with mobility limitations and the second on accessibility for patients who are deaf or hard of hearing. Overall, most facilities reported having an accessible patient room (96.0%), an accessible delivery room (92.0%), and an adjustable delivery bed (92.0%). Fewer facilities reported having an adjustable exam table (72.0%) or adaptive equipment (20.0%). With regards to communication accommodations, about half (52.0%) had assistive equipment and technology, sign language interpreters (60.0%), and oral interpreters (44.0%). A quarter (24.0%) of facilities reported having no services to support pregnant patients who are deaf or hard of hearing. This study demonstrates how leveraging national initiatives, like LOCATe, provides new opportunities to position perinatal care among people with disabilities as a core component of maternal health equity efforts.

MOMS built upon the LOCATe dissemination activities that occurred in year 3, publishing a manuscript in BMC Health Services Research. The Montana LOCATe manuscript contributes an important rural perspective to the body of literature on risk-appropriate perinatal care. The MOMS program also conducted several dissemination activities specifically focused on the accessibility data from LOCATe. Nationally, the facility accessibility study has contributed to conversations on improving health equity for pregnant patients with disabilities through presentations at the American Public Health Association Conference and the National Maternal Health Innovation Symposium. In Montana, MOMS has shared these results with healthcare providers and initiated education and training on accessible healthcare settings through presentations at the MOMS Project ECHO Clinic and a Montana Perinatal Quality Collaborative (MPQC) Learning Session.

MOMS built upon the Emergency Obstetric Services study, conducting a data validation process with the non-birthing hospitals in year 4. As part of this process, facilities reviewed their 2021 responses to the World Health Organization (WHO) emergency obstetric care (EmOC) indicators, confirmed data accuracy, or made updates based on their current capacity. MOMS added two WHO EmOC indicators missing from the 2021 survey, "administer intravenous or injection antibiotics to mothers and infants" and "perform surgery (e.g., cesarean section)". MOMS also contacted the facilities that did not respond to the survey in 2021 and invited them to participate. This additional data work provides an updated assessment of emergency obstetric services in the state, gives insight into how capacity changes over time, and will inform MOMS activities in year 5.



Maternal Health Data Collection & Analysis Improvements

Improvements Made to Data Collection

The MHI program has significantly improved the collection and analysis of maternal health data in Montana. Prior to MOMS, Montana had not engaged in systematic and regular analysis of SMM data, and surveillance on SMM was not disaggregated by race or other subgroups. Now, SMM is not only regularly reported through MHI annual maternal health reports, but it is also used for targeted quality improvement initiatives led by the MPQC, a project started by MOMS that is now funded by a CDC PQC grant. The data partnership set up by MOMS for SMM has informed the implementation of two AIM Patient Safety Bundles: Obstetric Hemorrhage, which was implemented in 17 of Montana's 26 birthing facilities, and Severe Hypertension in Pregnancy, which was implemented in 19 birthing facilities. The MPQC is preparing to launch its third AIM Patient Safety Bundle in fall 2023, Sepsis in Obstetric Care.

As reported previously, MOMS conducted the CDC LOCATe assessment in birthing facilities across the state during the third grant year.

Additional analyses were undertaken with the Montana LOCATe data during year 4, the current reporting period. The American College of Obstetricians and Gynecologists (ACOG) and Society for Maternal-Fetal Medicine (SMFM) issued a correction to the ACOG Obstetric Care Consensus No. 9: Levels of Maternal Care. The correction impacted the maternal-fetal medicine specialist (MFM) requirements for Level II maternal care. Previously, an MFM would need to be physically present on-site for Level II. Now, to meet Level II requirements, an MFM must be "readily available at all times (24/7) for consultation on-site, by phone, or by telemedicine as needed." This change impacted the LOCATe-assessed level of maternal care for two birthing facilities in Montana. Both facilities moved from a Level I to a Level II classification. The updated Montana LOCATe maternal levels of care are as follows: <Level I (n=6, 24.0%), Level I (n=11, 44.0%), Level II (n=6, 24.0%), Level III (n=1, 4.0%), and Level IV (n=1, 4.0%).

Sharing Data

Data compiled and analyzed by MOMS-funded programs have been disseminated through published reports, manuscripts, and presentations during the reporting period of September 30, 2022, to September 29, 2023. A comprehensive list of these disseminations is outlined below.

Montana Conferences and Statewide Presentations

Glover, A.L. (2023, Jun). Maternal health in Montana: Action-oriented data to improve our systems of care. Invited conference speaker at The Meadowlark Initiative Conference in Helena, MT.

Holman, C. (2023, Jun). Facility accessibility for pregnant patients with disabilities: Results from a statewide assessment. Oral presentation at MOMS Project ECHO virtual meeting.

Fertaly, K., Javorka, M., Glover, A.L., Brown, D. (2023, Apr). Referral and transport during obstetric emergencies in rural Montana: What makes for successful transport? Poster presentation at the Montana Public Health Association and Montana Environmental Health Association Confluence Public Health Alliance Conference, Billings, MT.

Glover, A.L., Buscaglia, A., Smith, N., Boutte, S., & Etrheim, E. (2023, Apr). Assessing the provision of contraception & postpartum care in rural Montana: Barriers, facilitators, and attitudes toward IUD and implants. Poster presentation at the Montana Public Health Association and Montana Environmental Health Association Confluence Public Health Alliance Conference, Billings, MT.

Hanson, M., Reese, S., Newcomer, S. (2023, Apr). Barriers and facilitators to postpartum depression care among women with perinatal substance use or mental health disorders. Poster presentation at the Montana Public Health Association and Montana Environmental Health Association Confluence Public Health Alliance Conference, Billings, MT.

Fitch, S. (2023, Mar). Managing neonatal withdrawal: Eat, sleep, console [Live Webinar]. Peer Recovery Doula Training Series, Virtual.

Fitch, S. (2022, Dec). Doula care for foster and adoptive families [Live Webinar]. Peer Recovery Doula Training Series, Virtual.

Holman, C., Glover, A.L., Fertaly, K., Nelson, M. (2023, Apr). Integrating accessibility into a statewide assessment of risk-appropriate care: An opportunity to improve perinatal care environments for patients with disabilities. Poster presentation at the Montana Public Health Association and Montana Environmental Health Association Confluence Public Health Alliance Conference, Billings, MT.

Holman, C., Glover, A.L. (2022, Nov). Montana Obstetrics and Maternal Support Program. Oral presentation to the Rural Institute Consumer Advisory Council.

Warne, D. (2022, Nov). Challenges in American Indian health professions education [Live Webinar]. Montana Obstetrics & Maternal Support (MOMS) Cultural Safety Training Series, Virtual.

Warne, D., Belcourt, A. (2022, Nov). Integrating traditional and modern medicine [Live Webinar]. Montana Obstetrics & Maternal Support (MOMS) Cultural Safety Training Series, Virtual.

Warne, D. (2022, Oct). Indigenous health policy [Live Webinar]. Montana Obstetrics & Maternal Support (MOMS) Cultural Safety Training Series, Virtual.

Warne, D. (2022, Oct). The impact of poverty on Indigenous health [Live Webinar]. Montana Obstetrics & Maternal Support (MOMS) Cultural Safety Training Series, Virtual.

Robertson, M., Fitch, S. (2022, Oct). MOMS Simulation Leadership Academy overview. Oral Presentation to the Family Medicine Residency of Western Montana's Rural Retreat, Whitefish, MT.

Maternal Health Task Force Meeting Presentations

APRIL 25, 2023

MOMS demonstration project update. Presenter: Stephanie Fitch, Billings Clinic MOMS Grant Manager.

MOMS, MMRC, and MPQC-AIM updates. Presenter: DPHHS program staff.

Patient experiences of respect and autonomy in Montana's maternal health system. Presenter: Carly Holman, University of Montana.

Pregnancy Risk Assessment & Monitoring (PRAMS) overview and dashboard demo. Presenter: Kara Hughes, PRAMS Coordinator for DPHHS.

Updates from Healthy Mothers, Healthy Babies (HMHB), including overview of LIFTS. Presenter: Stephanie Morton, HMHB Director of Programs and Impact.

Update on maternal health issues in the Montana state legislature. Presenter: Jennifer Wagner, Montana Hospital Association (MHA).

JANUARY 17, 2023

Cuddling Cubs virtual playgroup for new moms. Presenter: Johanna Thompson, Billings Clinic.

Montana provider perspectives on contraceptive care in the postpartum period. Presenter: Alex Buscaglia, University of Montana.

OCTOBER 18, 2022

2022 Montana Maternal Health Annual Report. Presenter: Annie Glover, University of Montana.

Emergency Obstetric Care in Montana. Presenter: Annie Glover, University of Montana.

Healthy Southwest Montana – Rural Maternity and Obstetrics Management Strategies (RMOMS) Program. Presenters: Sarah Diefendorf and Kerry Palakanis of Intermountain Health Care Services.

Montana Perinatal Quality Collaborative – New grant and new cohort/bundle! Presenter: Annie Glover, University of Montana.

National Conferences and Presentations

Fitch, S., Robertson, M., Lofgren, V., Glover, A.L. (2023, Sept). Implementing a remote perinatal health simulation program: The MOMS simulation leadership academy (SLA). Oral Presentation to the CityMatCH Maternal and Child Health Leadership Conference, New Orleans, LA.

Liddell, J. & Glover, A.L. (2023, Sept). A systematic review of the use of doulas in rural settings in the United States. Oral presentation to the CityMatCH Maternal and Child Health Leadership Conference, New Orleans, LA.

Stiffarm, A., Liddell, J. & Glover, A.L. (2023, Sept). A systematic review of the use of doulas in Indigenous communities. Oral presentation to the CityMatCH Maternal and Child Health Leadership Conference, New Orleans, LA.

Fertaly, F., Javorka, M., Glover, A.L., Brown, D. (2023, Aug). Referral and transport during obstetric emergencies in rural Montana: What makes for a successful transport? Maternal Health Learning and Innovation Symposium Virtual Meeting.

Fitch, S., Glover, A.L. (2023, Aug). Implementing a remote perinatal health simulation program. Oral presentation to the Maternal Health Learning and Innovation Center (MHLIC) Annual Symposium, Minneapolis, MN.

Holman, C., Glover, A.L., Fertaly, K., Nelson, M. (2023, Aug). Integrating accessibility into a statewide assessment of risk-appropriate care. An opportunity to improve perinatal care environments for patients with disabilities. Maternal Health Learning and Innovation Center (MHLIC) Annual Symposium Virtual Meeting.

Liddell, J., Glover, A.L. (2023, Aug). Exploring the use of doulas to meet the healthcare needs of people experiencing substance use disorders (SUDs) and rural populations. Maternal Health Learning and Innovation Center (MHLIC) Annual Symposium, Minneapolis, MN.

Lofgren, V., Fitch, S. (2023, Aug). Using low-cost software and equipment to create quality educational content. Oral presentation to the Maternal Health Learning and Innovation Center (MHLIC) Annual Symposium Virtual Meeting.

Fitch, S. (2023, Jul). Leveraging community partnerships to improve access to behavioral health and social support for new mothers and families. Oral Presentation at the Regions 8 & 10 Monthly Meeting, Virtual.

Brown, D., Holman, C., Glover, A.L., Nelson, M. (2023, Jun). Going the distance: The impact of transport on emergency obstetric care in rural Montana. Poster presentation at the Academy Health Annual Research Meeting, Seattle, WA.

Glover, A.L., Buscaglia, A.L., Smith, N. (2023, Jun). Provider perspectives on ensuring equitable contraceptive care for individuals living with a disability. Poster presentation at the Academy Health Annual Research Meeting, Seattle, WA.

Glover, A.L., Holman, C., Nelson, M. (2023, Jun). Emergency-preparedness and Obstetric Hemorrhage: In-situ Simulation's Role in Maintaining Essential Health Services in Rural America. Poster presentation at the Academy Health Annual Research Meeting, Seattle, WA.

Glover, A.L., Holman, C. (2023, Jun). Patient-centered Obstetrics: Exploring Factors Related to Informed Choice, Patient Preference, and Identity. Poster presentation at the Academy Health Annual Research Meeting, Seattle, WA.

Holman, C., Glover, A.L., Liddell, J., Garnsey, A., Piskolich, E., Nelson, M. (2023, Jun). Engaging patients in practice improvements: Patients' perspectives on postpartum care in Montana. Poster presentation at the Academy Health Annual Research Meeting, Seattle, WA.

Liddell, J., Fitch, S., Glover, A.L. (2023, Jun). Developing the doula workforce to improve outcomes for perinatal patients affected by substance use disorder (SUDs) in rural settings. Oral Presentation at the Postpartum Support International (PSI) Conference, Kansas City, MO.

Glover, A.L., Buscaglia, A. (2023, May). MOMS contraception and postpartum care in Montana. Oral presentation at the American College of Obstetricians and Gynecologists Annual Clinical & Scientific Meeting, Baltimore, MD.

Glover, A.L., Holman, C., Nelson, M., Fertaly, K., Brown, D., McCracken, C. (2023, May). Adapting Obstetric-capacity Assessments to a Rural Context to Drive System Improvements. Poster presentation at the American College of Obstetricians and Gynecologists Annual Clinical & Scientific Meeting, Baltimore, MD.

Echols, A., Fuchs, J., Sharp, N., Reese, S., Fitch, S. (2023, May). Prioritizing behavioral health in Title V: A sampling of practice-based research projects featured in the AMCHP-sponsored 2023 Maternal and Child Health Journal supplement on perinatal substance use. Panel presentation at the Association of Maternal Child Health Programs (AMCHP) Annual Meeting, Virtual.

Fitch, S., Robertson, M., McCracken III, C., Mulcaire-Jones, G., Lofgren, V., Glover, A.L. (2023, May). MOMS simulation leadership academy (SLA): Development and implementation of a rural train-the-trainer perinatal healthcare simulation program. Virtual poster presentation at the Association of Maternal & Child Health Programs (AMCHP) Conference, Virtual.

Holman, C., Glover, A.L. (2023, May). "I did not feel as though I was in charge or able to make decisions about my own body": Patient experiences of respect in Montana's maternal health system. Poster presentation at the Association of Maternal & Child Health Programs (AMCHP) Conference, New Orleans, LA.

Liddell, J. L., Glover, A.L. (2023, May). Developing the doula workforce to improve maternal health outcomes in rural settings. Poster presentation at the Association of Maternal and Child Health Programs (AMCHP) Conference. New Orleans, LA.

Dillner, E., Fitch, S., and Hardesty, C. (2023, Apr). Maternal health and substance use disorders series: A national priority to advance maternal health. Panel presentation at the SAMHSA, HRSA & HHS Region 8 (CO, MT, ND, SD, UT, WY) Substance Use Disorder Consultation Team webinar series, Virtual.

Verbiest, S., Urratia, R., Fitch, S. (2023, Apr). Discussion Group: Maternal mental health and substance use. Panel presentation at the Maternal Learning and Innovation Center (MHLIC) Annual Learning Institute, Chapel Hill, NC.

Fitch, S., Robertson, M., McCracken III, C., Mulcaire-Jones, G., Lofgren, V., Glover, A.L. (2023, Jan). MOMS simulation leadership academy: A rural train-the-trainer simulation program. Panel presentation at the 23rd International Meeting on Simulation in Healthcare (IMSH), Orlando, FL.

Glover, A.L., Holman, C., Nelson, M., McKay, K. (2022, Dec). "Working at a critical access hospital, anything can walk through the door. Being prepared for that 'anything' is so important." Implementation of obstetric simulation training in non-birthing critical access hospitals. Poster presentation at the Academy Health Science of Dissemination and Implementation Conference, Washington, DC.

Glover, A.L., Nelson, M., Holman, C., Eby, A., Krane, K., Schmitt, A., Mulcaire-Jones, G., Robertson, M., Birkeland, V. (2022, Dec). Quality improvements in obstetric hemorrhage: Measuring progress in the remote implementation of a patient safety bundle. Poster presentation at the Academy Health Science of Dissemination and Implementation Conference, Washington, DC.

Buscaglia, A., Glover, A.L., Smith, N., Boutte, S., & Etrheim, E. (2022, Nov). Assessing the provision of contraception & postpartum care in rural Montana: Barriers, facilitators, and attitudes toward IUD and implants. Poster presentation at the Annual American Public Health Association (APHA) Conference, Boston, MA.

Glover, A.L., Holman, C., Brown, D., Nelson, M. (2022, Nov). "Hope and pray the flight team has blood on board": An assessment of blood transfusion capacity in obstetric emergencies at Critical Access Hospitals. Oral presentation at the Annual American Public Health Association (APHA) Conference, Boston, MA.

Holman, C., Glover, A.L., Fertaly, K., Nelson, M. (2022, Nov). Assessing the Capacity of Montana's Maternal and Neonatal Health System to Provide Ability-Equitable Access to Risk Appropriate Care. Oral presentation at the Annual American Public Health Association (APHA) Conference, Boston, MA.

Manuscripts

Holman, C., Glover, A.L, Fertaly, K., Nelson, M. (2023). Operationalizing risk appropriate perinatal care in a rural US State: Directions for policy and practice. BMC Health Serv Res 23, 601, DOI: 10.1186/s12913-023-09552-y.

Holman, C., Glover, A.L., McKay, K., Gerard, C. (2023). Telehealth adoption during COVID-19: lessons learned from Obstetric Providers in the Rocky Mountain West, Telemedicine Reports 4:1, 1–9, DOI: 10.1089/tmr.2023.0001.

Reese, S., Fitch, S., Salyer, J., Lofgren, V., and McCracken III, C. (2022). Early Insights into Implementation of Universal Screening, Brief Intervention, and Referral to Treatment for Perinatal Substance Use. Under review at Maternal and Child Health Journal.

Reports

Glover, A.L., Nelson, M., Holman, C. (2023, May). Montana Obstetrics and Maternal Support Program Year 3 Evaluation Report.

Nelson, M., Glover, A.L. (2023, Apr). MOMS Project ECHO Biannual Evaluation QI Report.

Liddell, J., Glover, A.L. (2023, Feb). Full Spectrum Indigenous Doula Training Course Summary Report.

Holman, C. Glover, A.L. (2023, Jan). Needs Assessment Update Report.

Alliance for Innovation on Maternal Health: Obstetric Hemorrhage Patient Safety Bundle Montana Perinatal Quality Collaborative Aggregate Report.

Glover, A.L., Holman, C., Nelson, M. (2022, Dec). Montana Obstetrics and Maternal Support (MOMS) Program Year 2 Evaluation Report.

Holman, C., Glover, A.L. (2022, Oct). Simulation Leadership Academy Evaluation Summary.

Exhibiting & Tabling

Montana Healthcare Conference, September 2023, Billings, MT.

Rocky Mountain Tribal Leaders Health Conference, August 2023, Billings, MT.

Montana Public Health Association (MPHA), April 2023, Billings, MT.

Montana Perinatal Association Conference, April 2023, Pray, MT.

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Appendix A

Maternal Health Indicators	Live births	Pregnancy-related deaths	Live births with a source of payment at the time of delivery that is not self-pay	Live births where the mother had health insurance[a]	Cesarean deliveries among term, singleton, vertex births to nulliparous women	Number of term, singleton, vertex births to nulliparous women[b]	Rate of low-risk cesarean delivery[b]	Women with a recent live birth who received a postpartum visit	Women with a recent live birth screened for postpartum depression
	(n)	(n)	(n)	(%)	(n)	(n)	(%)	(%)	(%)
Data Source	Live birth certificate	PMSS	Live birth certificate	Live birth certificate	Live birth certificate	Live birth certificate	Live birth certificate	PRAMS	PRAMS
Calendar Year(s)	2021	2013-2019	2021	2021	2021	2021	2021	2021	2021
Total									
	11,231	10	10,464	93.2%	826	3,742	22.1%	91.1%	86.4%
Data by age									
≤24	2,492	*	2,372	95.2%	218	1,350	16.1%	87.7%	84.4%
25-39	8,421	8	7,819	92.9%	586	2,344	25.0%	92.5%	87.5%
40+	314	*	271	86.3%	22	48	45.8%	**	**
Missing/Unknown	*	0	**	**	0	0	**	**	**
Data by race/ethnicity									
Non-Hispanic American Indian or Alaska Native	1,016	*	1,003	98.7%	58	273	21.2%	76.6%	69.1%
Non-Hispanic Asian or Pacific Islander	143	0	136	95.1%	15	50	**	**	**
Non-Hispanic Black	127	*	121	95.3%	12	33	**	**	**
Non-Hispanic White	9,298	5	8,623	92.7%	672	3,140	21.4%	93.4%	89.3%
Hispanic	647	0	581	89.8%	69	246	28.0%	**	**
Other	0	0	0	**	0	0	**	87.3%	**
Missing/Unknown	0	0	0	**	0	0	**	**	**
Data by education									
Less than a High School graduate	1,032	*	944	91.5%	53	331	16.0%	79.9%	74.4%
High School graduate or GED completed	2,931	*	2,712	92.5%	188	935	20.1%	89.8%	85.1%
Some college or Associate's degree	3,343	5	3,117	93.2%	239	1,031	23.2%	91.7%	88.7%
Bachelor's or advanced degree	3,910	*	3,680	94.1%	346	1,443	24.0%	94.2%	88.7%
Missing/Unknown	15	0	11	**	0	**	**	**	**
Data by geography (based on county of residence, using NCHS urban-rural classification scheme)									
Urban	3,968	*	3,793	95.6%	312	1,373	22.7%	90.7%	87.2%
Rural	7,263	6	6,671	91.8%	514	2,369	21.7%	91.3%	83.3%
Missing/Unknown	0	0	0	**	0	0	**	**	**

NOTES: *Value Suppressed (1-4 observations). **Percentage Suppressed (Numerator < 20). NSD = Not Sufficient Data (estimate suppressed because it is not statistically stable).

[a] Numerator: Live births with a source of payment at the time of delivery that is not self-pay. Denominator: Total number of live births.

[b] Numerator: Number of cesarean deliveries among term, singleton, vertex births to nulliparous women. Denominator: Number of term, singleton, vertex births to nulliparous women.

Appendix B

Severe Maternal Morbidity Indicator Definitions and ICD-10 Codes

Severe Maternal Mortality Indicator	ICD-9 / ICD-10 Diagnosis & Procedure Codes
Acute myocardial infarction	I21, I22, 410
Aneurysm	I71, 441
Acute renal failure	O904, N17, 5845, 5846, 5847, 5848, 5849, 6693
Adult respiratory distress syndrome	J80, J951, J952, J953, J9582, J960, J962, R092, 5185, 51881, 51882, 51884, 7991
Amniotic fluid embolism	6731, O811
Cardiac arrest / ventricular fibrillation or Conversion of cardiac rhythm	I46, I490, 5A2204Z, 5A12012, 42741, 42742, 4275, 996
Disseminated intravascular coagulation	D65, D688, D689, O723, 2866, 2869, 6663
Eclampsia	O15, 6426
Eclampsia HELLP	O15, 6426, O1422, O1423
Heart failure / arrest during surgery or procedure	I9712, I9713, I97710, I97711, 9971
Puerperal cerebrovascular disorders	I60, I61, I62, I63, I64, I65, I66, I67, I68, 430, 431, 432, 433, 434, 436, 437, 6715, 6740, 99702, O2251, O2252, O2253, I9781, I9782, O873
Pulmonary edema / Acute heart failure	4281, 4280, 42821, 42823, 42831, 42833, 42841, 42843, I501, I5020, I5021, I5023, I5030, I5031, I5033, I5040, I5041, I509, 5184, J810
Severe anesthesia complications	6680, 6681, 6682, O740, O741, O742, O743, O890, O8909, O891, O892
Sepsis	038, 99591, 99592, 6702, A40, A41, A327
Shock	6691, 7855, 9950, 9954, 9980, O751, R57, R6521, T782XXA, T882ZZA, T886XXA, T8110XA, T8111XA, T8119XA
Sickle cell disease with crisis	28242, 28262, 28264, 28269, D570, D5721, D5741, D5781
Air and thrombotic embolism	4151, 6730, 6732, 6733, 6738, I26, O880, O882, O883, O888
Blood products transfusion	990, 30233H1, 30233L1, 30233K1, 30233M1, 30233N1, 30233P1, 30233R1, 30233T1, 30233H0, 30233L0, 30233K0, 30233M0, 30233N0, 30233P0, 30233R0, 30233T0, 30230H1, 30230L1, 30230K1, 30230M1, 30230N1, 30230P1, 30230R1, 30230T1, 30230H0, 30230L0, 30230K0, 30230M0, 30230N0, 30230P0, 30230R0, 30230T0, 30240H1, 30240L1, 30240K1, 30240M1, 30240N1, 30240P1, 30240R1, 30240T1, 30240H0, 30240L0, 30240K0, 30240M0, 30240N0, 30240P0, 30240R0, 30240T0, 30243H1, 30243L1, 30243K1, 30243M1, 30243N1, 30243P1, 30243R1, 30243T1, 30243H0, 30243L0, 30243K0, 30243M0, 30243N0, 30243P0, 30243R0, 30243T0, 30250H1, 30250L1, 30250K1, 30250M1, 30250N1, 30250P1, 30250R1, 30250T1, 30250H0, 30250L0, 30250K0, 30250M0, 30250N0, 30250P0, 30250R0, 30250T0, 30253H1, 30253L1, 30253K1, 30253M1, 30253N1, 30253P1, 30253R1, 30253T1, 30253H0, 30253L0, 30253K0, 30253M0, 30253N0, 30253P0, 30253R0, 30253T0, 30260H1, 30260L1, 30260K1, 30260M1, 30260N1, 30260P1, 30260R1, 30260T1, 30260H0, 30260L0, 30260K0, 30260M0, 30260N0, 30260P0, 30260R0, 30260T0, 30263H1, 30263L1, 30263K1, 30263M1, 30263N1, 30263P1, 30263R1, 30263T1, 30263H0, 30263L0, 30263K0, 30263M0, 30263N0, 30263P0, 30263R0, 30263T0
Hysterectomy	683, 684, 685, 686, 687, 688, 689, 0UT90ZZ, 0UT94ZZ, 0UT97ZZ, 0UT98ZZ, 0UT9FZZ, 0UT90ZL
Temporary tracheostomy	311, 0B110Z, 0B110F, 0B113, 0B114
Ventilation	9390, 9601, 9602, 9603, 9605, 5A1935Z, 5A1945Z, 5A1955Z


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