

MONTANA OBSTETRICS and MATERNAL SUPPORT PROGRAM

— Year 5 Report —



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DEPARTMENT OF
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HUMAN SERVICES

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Acronym Glossary

Acronym	Full Name
AAP	American Academy of Pediatrics
ACOG	American College of Obstetricians and Gynecologists
AIM	Alliance for Innovation on Maternal Health
AWHONN	Association of Women's Health, Obstetric and Neonatal Nurses
BRFSS	Behavioral Risk Factor Surveillance System
CDC	Centers for Disease Control and Prevention
DPHHS	Department of Public Health and Human Services
ECFSD	Early Childhood & Family Support Division
EmOC	Emergency Obstetric Care
EMS	Emergency Medical Services
EOS	Emergency Obstetric Services
ERASE MM	Enhancing Reviews and Surveillance to Eliminate Maternal Mortality
FCHB	Family and Community Health Bureau
FQHC	Federally Qualified Health Center
HCUP	Healthcare Cost and Utilization Project
HHS	Health and Human Services
HMHB	Healthy Mothers Healthy Babies
HRSA	Health Resources and Services Administration
IRB	Institutional Review Board
IUD	Intrauterine Device
LIFTS	Linking Infants & Families to Supports
LOCATe	Levels of Care Assessment Tool
MADM	Mother's Autonomy in Decision Making Scale
MCH	Maternal and Child Health
MCHBG	Maternal and Child Health Block Grant
MHA	Montana Hospital Association
MHI	Maternal Health Innovation Program
MHLC	Maternal Health Leadership Council
MHSP	Maternal Health Strategic Plan
MMRC	Maternal Mortality Review Committee

Acronym Glossary

Acronym	Full Name
MMRIA	Maternal Mortality Review Information Application
MMRPP	Montana Mortality Review and Prevention Program
MOMS	Montana Obstetrics and Maternal Support Program
MORI	Mothers on Respect Index
MPA	Montana Perinatal Association
MPQC	Montana Perinatal Quality Collaborative
MSU	Montana State University
NRP	Neonatal Resuscitation Program
OT	Occupational Therapist
PDSA	Plan Do Study Act
PMAD	Perinatal Mood and Anxiety Disorder
PMH-C	Perinatal Mental Health Training and Certificate
PMSS	Pregnancy Mortality Surveillance System
PQC	Perinatal Quality Collaborative
PRAMS	Pregnancy Risk Assessment Monitoring System
PSI	Postpartum Support International
RIIC	Rural Institute for Inclusive Communities
SBIRT	Screening, Brief Intervention, and Referral to Treatment
SIM-MT	Simulation in Motion Montana
SLA	Simulation Leadership Academy
SMFM	Society for Maternal-Fetal Medicine
STABLE	Sugar, Temperature, Airway, Blood pressure, Lab work, and Emotional support
UM	University of Montana
WHO	World Health Organization
WIC	Women, Infants, and Children

Background

The Montana Obstetric and Maternal Support program (MOMS) was initiated on September 30, 2019, by a five-year grant awarded to the Montana Department of Public Health and Human Services (DPHHS) by the Health Resource Services Administration (HRSA) through the State Maternal Health Innovation (MHI) Program (HRSA-19-107) to address Montana's concerning rates of maternal morbidity and mortality. MOMS aims to respond to Montana's unique rural healthcare challenges by connecting local providers to obstetric, perinatal, mental health, and substance use specialists who provide expert consultation, training, and support to help providers deliver effective prenatal, delivery, and postpartum care.

MOMS is implemented through the leadership of the primary grantee, the Title V Maternal and Child Health Block Grant program in the Family and Community Health Bureau (FCHB) within the Early Childhood & Family Support Division (ECFSD) at DPHHS. Two subgrantees, Billings Clinic and the University of Montana Rural Institute for Inclusive Communities (UM RIIC), also lead the MOMS project. The grantee and subgrantees implement the MOMS workplan through a team of staff and contractors, as well as through partnerships with statewide entities, such as the Montana Hospital Association, the Montana Primary Care Association, Healthy Mothers Healthy Babies Montana, the Montana Maternal Mortality Review Committee, the Montana Perinatal Quality Collaborative, and local clinics, providers, and other stakeholders.

Partners

Montana Department of Public Health and Human Services

Title V Maternal and Child Health Block Grant provides central leadership for MOMS within DPHHS. The DPHHS MOMS Lead Maternal Health Program Specialist convenes and facilitates the Montana Maternal Health Leadership Council (MHLC), which serves as the advisory council to the MOMS grant. This section also houses the Montana Maternal Mortality Review and Prevention Program (MMRPP), which convenes the Maternal Mortality Review Committee (MMRC), funded by the Centers for Disease Control and Prevention's (CDC) Enhancing Reviews and Surveillance to Eliminate Maternal Mortality (ERASE MM) grant program, a grant awarded to Montana DPHHS in 2021. This section at DPHHS serves as a connecting partner for the various maternal health initiatives underway in Montana.

Billings Clinic

Billings Clinic implements the MOMS Demonstration Project, which consists of training and provider support innovations, such as facility-based simulation training in obstetric care through Simulation in Motion Montana (SIM-MT) and the MOMS Simulation Leadership Academy, which increases facility capacity to conduct their own simulation programs. Billings Clinic also conducts teleconsultation and remote grand rounds via Project ECHO, nursing and medical provider training, and certification courses. Billings Clinic administers Empaths, an addiction treatment health system designed to test service delivery innovations, namely the utilization of telehealth interventions, peer support services, multi-organizational care collaboration, and universal implementation of validated screening tools for substance use and maternal health risks in the OB/GYN setting.

University of Montana Rural Institute for Inclusive Communities

UM engages in the MOMS program through the Rural Institute for Inclusive Communities. UM RIIC provides research and data analysis support, ongoing formative and summative evaluation of the full project, and technical assistance and guidance. UM RIIC also houses the HRSA-funded Montana Alliance for Innovation on Maternal Health (AIM) Initiative, provides support to the department on maternal mortality review, through the ERASE MM grant, and administers the Montana Perinatal Quality Collaborative (MPQC), which is funded by the CDC. MPQC quality improvement initiatives are closely and strategically coordinated with MOMS to ensure that interventions are mutually reinforcing. Finally, UM RIIC supports DPHHS by conducting the Title V Maternal Child Health Block Grant Needs Assessment, a project that is closely aligned with and receives funding from the MOMS grant.

Report Summary

This report provides an evaluation summary of the fifth project year of the MOMS grant and addresses Objectives A through C and the specific strategies that were addressed during the project period from September 30, 2023, to September 29, 2024.

Objective A: Catalyze Multidisciplinary Collaboration in Maternal Health

Strategy 1	Elevate maternal health as a priority issue in Montana
Activity 1.1	Maternal Health Task Force (Maternal Health Leadership Council)
Activity 1.2	Maternal Mortality Review Committee
Activity 1.3	Montana membership in the Alliance for Innovation on Maternal Health (AIM)
Activity 1.4	Maternal Health Strategic Plan
Activity 1.5	Maternal Health System Needs Assessment
Activity 1.6	Conduct community education and screening to have annual well-woman visit, initiate 1st trimester prenatal care, maintain prenatal care, seek insurance coverage, receive postpartum screening and care

Activity 1.1

Maternal Health Task Force (Maternal Health Leadership Council)

The Maternal Health Leadership Council guides and advises the implementation of the MOMS program.

Membership

The Council includes 20 members from a diverse set of organizations, including public and private healthcare, provider and payer organizations, state and local public health professionals, and multidisciplinary local providers. See Appendix A for a list of year 5 MHLC members.

Year 5 Council Activities

The final closeout meeting of the MHLC was held in year 5 on August 20, 2024. The meeting activities are summarized below.

- **MOMS Program Updates**

- o MOMS Demonstration Project and Evaluation Recap – Stephanie Fitch, MHA, MS, PCLC, LAC, PMH-C; Annie Glover, PhD, MPH, MPA
- o Maternal Health Leadership Council Meeting Outline and New MHI Grant Information – Sarah Buchanan, MPH

- **MHLC Feedback on the new MHI grant**

- o General feedback from members included: Creation of MHLC subcommittees; early tribal engagement and involvement in MHI activities; multiple tribal entities membership in the MHLC; and more robust MHLC committee onboarding, expectations, and trainings completed.

Sustainability

All project activities related to the Maternal Health Leadership Council have been completed. If DPHHS is awarded future MHI funding in September 2024, a new committee will be convened.

Activity 1.2

Maternal Mortality Review Committee

In year 2, the MOMS grant program provided funding that enabled Montana to become an AIM state beginning in fall 2021. As part of enrollment in AIM, the American College of Obstetricians and Gynecologists (ACOG), which administers the AIM Technical Assistance Center, required that states establish a Maternal Mortality Review Committee. Through MOMS, Montana conducted necessary prework, including training, data alignment, and systems assessment to set up the state's first-ever MMRC. The MMRC conducts reviews for maternal deaths occurring from the year 2020 forward, utilizing the Pregnancy Mortality Surveillance System (PMSS) to identify pregnancy-associated deaths for further review to determine pregnancy-relatedness. The goal of Montana's MMRC is to abstract deaths into the CDC's Maternal Mortality Review Information Application (MMRIA) and transition primary pregnancy-related death surveillance to this system from PMSS.

Sustainability

In the fall of 2021, the CDC awarded Montana DPHHS with the ERASE MM grant. All work related to the MMRC transitioned to this grant during year 3 of the MOMS grant.

Activity 1.3

Montana Membership in the Alliance for Innovation on Maternal Health

In year 3, DPHHS and UM partnered with the Montana Perinatal Association (MPA) and Montana Hospital Association (MHA) to establish the maternal health arm of the MPQC to support the implementation of the Alliance for Innovation on Maternal Health Patient Safety Bundles in Montana hospitals. The pilot cohort of the MPQC implemented the AIM Obstetric Hemorrhage Patient Safety Bundle from October 2021 to September 2022.

Sustainability

In the fall of 2022, CDC awarded UM a five-year, \$1.375 million grant to support the implementation of AIM Bundles through the same collaborative model as the pilot year with all willing birthing facilities across the state. All work related to the MPQC transitioned to the CDC PQC grant during year 4 of the MOMS grant. Also, in year 4 of the MOMS grant, HRSA awarded UM a four-year, \$800,000 grant to support the Montana AIM Initiative. All work related to MT AIM transitioned to this grant during year 5 of the MOMS grant.

Activity 1.4

Maternal Health Strategic Plan

Previously, each State MHI program was required to submit a new state-specific Maternal Health Strategic Plan (MHSP) to HRSA by the end of each grant year. In year 5, HRSA did not require Montana to submit a new MHSP. Instead, the MOMS Leadership team (UM, Billings Clinic, and DPHHS) continued to build on the work plan from year 4, which included state program goals and timelines for 2019-2024, convening and leading the Maternal Health Leadership Council in sustainability planning for the end of the grant year (see Activity 1.1), partnering and sharing Emergency Obstetric Services Survey data with the Montana Perinatal Quality Collaborative (see Activity 1.5), conducting

the Title V Indigenous Communities Component of the Maternal and Child Health Block Grant Needs Assessment (see Activity 1.5), and re-implementation of the Empaths program after restructuring efforts (see Activity 4.1). All work plan activities continued to focus on the building blocks in the World Health Organization (WHO) Strengthening Health Systems framework.

Activity 1.5

Maternal Health System Needs Assessment

In year 1, Billings Clinic conducted a needs assessment to gather actionable data in three areas: 1) provider/health team needs, 2) health system needs, and 3) patient needs. Starting March 2021, UM built upon this preliminary work and initiated a broader Maternal Health Systems Needs Assessment. This needs assessment gathers information on Montana's maternal health system and services to identify areas of strength and need, focusing on health system capacity, delivery of services, and the experiences of the patient population. The MOMS program and other key stakeholders use the findings to determine maternal health priorities and create an action plan to address them so that every individual in Montana can achieve their maternal health goals.

The assessment utilizes the WHO Strengthening Health Systems to Improve Health Outcomes framework.¹ The framework outlines the essential elements and activities of a strong health system and provides a common language and understanding of what constitutes health system strengthening. The WHO framework includes six building blocks of a health system (service delivery, health workforce, health information system, medical products, vaccines, and technologies, sustainable financing and social protection, and leadership and governance). These building blocks highlight essential functions within the system and help identify strengths, challenges, and where change and investment are needed. Year 5 Needs Assessment Activities are listed below.

Montana Levels of Care Assessment Tool (LOCATe) Initiative

PI: Carly Holman, MS

Purpose of the Study

To assess the level of maternal and neonatal care at Montana birthing facilities to provide a preliminary environmental scan of the status of the risk-appropriate care in the state.

Methodology

UM implemented version 9.2 of the LOCATe assessment. LOCATe classifies facilities into levels based on equipment, staff, and volume of services. LOCATe aligns with the 2017 guidelines and policy statements from the American Academy of Pediatrics (AAP) and the 2019 ACOG and Society of Maternal and Fetal Medicine (SMFM), matching hospital capabilities with maternal and neonatal medical risk. UM added a needs assessment module to LOCATe to gather additional information. The UM Institutional Review Board (IRB) determined this study Non-Human Subjects Research. The data collection occurred from July 23, 2021, to October 31, 2021. CDC analyzed the LOCATe data to provide each facility with a level of maternal and neonatal care.

¹ World Health Organization. Everybody's business: strengthening health systems to improve health outcomes: WHO's framework for action. Geneva: World Health Organization; 2007.

Key Findings

Twenty-five birthing facilities (96%) in the state participated in LOCATe. LOCATe-assessed levels for maternal care ranged from <Level I to Level IV. Most (68%) of facilities LOCATe-assessed at Level I or lower. Facilities that assessed at <Level I did not meet the requirements for Level I maternal care due to obstetric ultrasound availability. About half (40%) of facilities had discrepancies between their self-assessed and LOCATe-assessed level of care. Of these facilities, all LOCATe-assessed lower by one level. LOCATe-assessed levels for neonatal care ranged from Level I to Level III. Montana does not have any Level IV neonatal care facilities. Most (48%) of facilities LOCATe assessed at Level I, 32% at Level II, and 20% at Level III. Close to half (44%) of facilities do not have a written plan for transporting complicated obstetric patients. Results led to five recommendations for improving risk-appropriate care 1) perinatal regionalization, 2) cultivating formal and informal relationships across the health system, 3) maternal transport plans, 4) enhancing care through evidence-based practice, and 5) measuring the impact of risk-appropriate care.

Year 5 Update and Next Steps

All activities related to this project have been completed.

Needs Assessment Survey – Birthing Facilities

PI: Carly Holman, MS

Purpose of the Study

UM added a module to the LOCATe assessment to gather additional information from birthing facilities.

Methodology

The module included questions on transport, accessibility, screening and referral, training, medical products, and medical equipment and technology. Data collection occurred from July 23, 2021, to October 31, 2021. The UM IRB determined this study Non-Human Subjects Research.

Key Findings

Transport – about half (52%) of facilities have a protocol describing under what circumstances a transport should be arranged. A quarter (28%) of facilities reported having a written transport agreement with another hospital. Of those with a transport agreement, few included details about processes for follow-up communication (12%) and back transport (16%). Accessible Perinatal Care Settings – most (96%) facilities reported having an accessible patient room for obstetric patients with a physical disability. Few (20%) reported having adaptive equipment, including a scale, changing table, and bassinet. A quarter (24%) do not have any resources to support birthing people who are deaf or hard of hearing. Blood Products - half (52%) of respondents stated that they get blood products from American Red Cross to maintain their hospital supply. A quarter (28%) received blood products from Vitalant. Most facility challenges to accessing or maintaining blood supply are multifaceted, including supplier shortages, restocking time, distance, weather, courier availability, and limited access.

Year 5 Update and Next Steps

All activities related to this project have been completed.

Emergency Obstetric Services Survey

PI: Annie Glover, PhD, MPA, MPH; Kaitlin Fertaly, PhD

Purpose of the Study

To assess 1) hospital capacity to provide emergency obstetric services in hospitals without an obstetrics unit and 2) the organization and delivery of care during emergency obstetric events to support the development of specific strategies to integrate those facilities into a regionalized perinatal system of care.

Methodology

UM conducted a mixed methods study, including a statewide survey and interviews. UM adapted questions from a national study on emergency obstetrics services in rural hospitals without an obstetric unit. The survey includes components of the WHO emergency obstetric care (EmOC) indicators and other measures of emergency obstetric capacity in rural hospitals without obstetric units. The WHO's Monitoring Emergency Obstetric Care: A Handbook contains a list of life-saving clinical services concerning hospital capacity to respond to obstetric emergencies. The survey included close-ended (multiple choice or multiple answer) and open-ended questions about hospital characteristics, staffing, training, transport, medical products, equipment, technology, emergency obstetric care indicators, obstetric care services, and emergent events history. All critical access hospitals and Indian Health Service Units in Montana without obstetrics units were invited to participate in the Emergency Obstetrics Services Survey. UM sent the survey invitation to the Director of Nursing at each facility. The data collection occurred from October 18, 2021, to December 10, 2021.

UM also conducted 20 semi-structured interviews with healthcare providers (including transport personnel) that focused on care, referral, and transport of patients with obstetric emergencies. Data collection occurred from November 2022 to February 2023. The UM IRB approved the study under Protocol #: 171-22.

Key Findings

Survey - thirty-two hospitals (94%) without an obstetric unit participated in the survey assessment. Half (50%) of the hospitals had experienced an emergency room birth within the last two years, and 34% had experienced a close call or other unanticipated adverse birth outcome. Nearly half (47%) of hospitals felt concerned because of the infrequency of emergency obstetric events and their lack of experience in responding to them, specifically in training (69%) and skills (72%). When hospitals needed to transfer a patient, 37% had experienced challenges arranging for transport for a pregnant patient, citing weather and other delays. Interviews - twenty semi-structured interviews were conducted with healthcare providers involved in the provision of care during obstetric emergencies. Seven participants worked at non-birthing facilities, three at LOCATe-assessed Maternal Level I facilities, and seven at Maternal Level II and higher facilities. Three interviews were conducted with providers on emergency medical services (EMS) transport teams. Across all levels of care, providers identified communication, distance, weather, and availability of EMS transport teams as challenges. Providers of both lower-level and higher-level facilities also identified the importance of provider-to-provider relationships in facilitating referrals. Finally, providers at non-birthing facilities expressed hesitation to treat pregnant patients among emergency department staff.

The challenges identified by participants in both the survey and interviews indicate the need for greater perinatal regionalization of care in Montana and continued support for rural healthcare providers and EMS through 1) increased clinician and staff training, 2) improved coordination with hospitals that provide obstetric services, and 3) improved coordination with transport teams.

Year 5 Update and Next Steps

All activities related to this project have been completed.

Dissemination

UM published the following manuscript in year 5:

- Fertaly K, Javorka M, Brown D, Holman C, Nelson M, Glover A. Obstetric transport in rural settings: Referral and transport of pregnant patients in a state without a perinatal regionalized system of care. *Health Serv Res*. Published online August 5, 2024. doi:10.1111/1475-6773.14365

UM submitted the following manuscript for consideration in year 5 to a peer-reviewed journal:

- Glover, A.L., Brown, D., Holman, C., Nelson, M. Obstetric care in rural critical access hospitals: A domestic application of the World Health Organization signal function approach to emergency readiness assessment. Manuscript in preparation for *Journal of Rural Health*.

UM made the following presentations to a national audience in year 5:

- Fertaly, K., Javorka, M., Brown, D., Glover, A.L. (2023). Referral and transport in obstetric emergencies: Current challenges to developing a perinatal regionalized system of care. Oral presentation at the American Public Health Association Conference (APHA), Atlanta, GA.

UM produced the following reports and disseminated to MOMS stakeholders in year 5:

- Brown, D., Holman, C., Glover, A.L., Nelson, M. (2024). Emergency obstetric services (EOS) survey report: Medical products, equipment, and technology sub-report.
- Brown, D., Holman, C., Glover, A.L., Nelson, M. (2024). Emergency obstetric services (EOS) survey report: Training sub-report.
- Brown, D., Holman, C., Glover, A.L., Nelson, M. (2024). Emergency obstetric services (EOS) survey report: Transport sub-report.

MOMS Postpartum Care and Contraception Survey

PI: Annie Glover, PhD, MPA, MPH

Purpose of the Study

To improve postpartum access to contraception and provider familiarity and expertise with postpartum contraception provision, and to understand behavioral health screenings provided during postpartum visits.

Methodology

Approximately 842 providers met the inclusion criteria and were invited via email, postcard, and phone call to participate in an online survey. Follow-up qualitative interviews were conducted with nine providers to gather additional information. The UM IRB approved the study under Protocol #: 213-21.

Key Findings

The survey sample (N=90) comprised of providers in Montana with the following two most common license types: physician (48%) and nurse practitioner (20%). Half reported working in a hospital setting, with the other half reporting a primary practice setting of a rural health clinic or federally qualified health center. Results suggest a need for provider education on insurance coverage for contraception, training in intrauterine device (IUD) and implant insertion and removal, and improved consistency of substance use screening. Survey results also point toward more training in the provision of contraception to individuals with disabilities. Nine providers who completed the survey completed an interview to provide further contextualization of findings from the survey.

Year 5 Update and Next Steps

All activities related to this project have been completed.

Dissemination

UM submitted two manuscripts for consideration in year 5 to peer-reviewed journals:

- Buscaglia, A., Glover, A.L., Smith, N., Garnsey, A. Provider perspectives on barriers and facilitators to postpartum contraception following Medicaid unbundling. Manuscript under review at *Contraception and Reproductive Medicine*.
- Glover A.L., Garnsey, A., Buscaglia, A., Smith, N. Contraceptive care for people with disabilities: Provider perspectives on the barriers and facilitators of equitable access. Manuscript under review at *Sexuality and Disability*.

Maternal Health Care Experiences Study

PI: Carly Holman, MS

Purpose of the Study

To gather information on patient experiences of maternal healthcare before, during, and after pregnancy.

Methodology

UM conducted a mixed methods study including a statewide survey and interviews. The Maternal Healthcare Experiences Survey included the Mothers on Respect Index (MORi) and the Mother's Autonomy in Decision Making (MADM) Scale. UM measured respectful care with the 14-item MORi, a valid and reliable tool to assess the nature of patient-provider relationships and person-centered care. UM measured patient autonomy in decision-making with the 7-item MADM scale, a valid and reliable tool to assess the process of decision-making during maternity care. The MORi and MADM scales have been widely implemented to measure maternal health care experiences. Open-ended questions gathered further detail on experiences of respect and autonomy. UM added additional items to collect information on patient sociodemographic attributes (race/ethnicity, education level, income), social risk, pre-pregnancy wellness visits, and birth location (home, hospital, birth center). UM measured social risk with the Health Leads Social Screening Tool. Health Leads includes eight social needs domains impacting patients' health based on findings from the Institute of Medicine, Centers for Medicare & Medicaid Services, and Health Leads. UM measured disability status with the standard set of six disability questions used in the American Community Survey. The interview guide built upon the MORi and MADM scales asking about patient health care experiences before pregnancy, during prenatal care, childbirth, and the postpartum period. Data collection occurred from July 26, 2022 – September 14, 2022. The online survey focused on Montanans who have been pregnant in the last five years. UM used convenience and purposive sampling methods. Recruitment occurred through social media platforms Facebook and Instagram via six custom images. The social media campaign included sponsored posts facilitated by the UM Rural Institute for Inclusive Communities platforms. UM also sent a postcard to all Montana Women, Infants, and Children (WIC) participants, totaling 8,800. Interview participants were recruited through the survey. The UM IRB approved the study under Protocol #: 120-22.

Key Findings

A total of 484 people who experienced pregnancy in Montana in the last five years participated in the survey, and 39 people participated in a phone interview. Participants reported experiencing high (66%) levels of respectful care, with about a third (34%) reporting low-to-moderate levels of respect. Overall, about half (53%) of participants reported high levels of autonomy in decision-making, with the rest experiencing low (16%) and moderate levels (31%) of autonomy in their care. Participants with at least one social risk factor reported lower levels of respectful care and autonomy in decision-making.

Year 5 Update and Next Steps

All activities related to this project have been completed.

Dissemination

UM published the following manuscript in year 5:

- Glover, A.L., Holman, C., Boise, P. Patient-centered respectful maternity care: A factor analysis contextualizing marginalized identities, trust, and informed choice. *BMC Pregnancy Childbirth*. 2024;24(1):267. doi:10.1186/s12884-024-06491-2

UM submitted the following manuscript for consideration in year 5:

- Liddell, J.L., Holman, C., Garnsey, A., Carlson, T., Piskolich, E., Glover, A.L. Barriers and supports for the identification and treatment of perinatal mood and anxiety disorders: A qualitative analysis of patient experience data. Under review at the *International Journal of Childbirth*.
- Holman, C., Glover, A.L., Liddell, J.L., Garnsey, A., Piskolich, E., Adams, M.A., Burkholder, S., Hanson, M., Tonkin, K. A qualitative patient narrative analysis exploring nurses' role as facilitators of respectful maternity care. Under review at the *Journal of Obstetric, Gynecological, & Neonatal Nursing*.

UM made the following presentations to national and state audiences in year 5:

- Glover, A.L., Holman, C., Nelson, M. (2023). "Sometimes familiarity means a lack of diligence": Experiences with the annual well-woman visit and preventative care. Roundtable presentation at the American Public Health Association Annual Meeting, Atlanta, GA.
- Holman, C., Glover, A.L., Liddell, J., Garnsey, A., Piskolich, E., Nelson, M., Boise, P. (2023). Patient experiences of maternal healthcare in Montana: A mixed methods study. Oral presentation at the MOMS HRSA Site Visit, virtual.
- Holman, C., Glover, A.L., Liddell, J., Boise, P., Garnsey, A., Piskolich, E. (2024). Patient experiences of maternal healthcare in Montana. Oral presentation at the MPQC Sepsis in Obstetric Care Collaborative Learning Session, virtual.

Montana Title V Maternal and Child Health Block Grant Needs Assessment

The Title V Maternal and Child Health Block Grant (MCHBG), administered by DPPHS FCHB, is a federal program focused on improving the health of all women, children, and families through funding provided to state and county health departments. Health departments can use funds to support families through access to care and public health services, adolescent health, bullying prevention, children's special health services, family support and health education, fetal, infant, child and maternal mortality review, infant safe sleep, maternal and child health coordination, medical home, newborn metabolic and hearing screening, oral health, and women's preventative healthcare.

Title V MCHBG legislation requires states to complete a comprehensive statewide needs assessment every five years that collects information on the health needs and strengths of women, children and youth (including those with special health needs), families, and communities. The needs assessment informs the selection of the Title V MCHBG statewide

priorities and determines how to best allocate resources. Montana DPHHS contracted with UM in year 5 to conduct the Title V MCHBG needs assessment.

The Montana Title V MCHBG needs assessment collected and synthesized data from parent and guardian surveys collected through Facebook, Instagram, and at powwows; stakeholder surveys collected via electronic survey from health departments and other stakeholders; in-depth stakeholder interviews with high-level leaders in maternal and child health; and from public data sources, including the Pregnancy Risk Assessment Monitoring System (PRAMS), local needs assessments, the Behavioral Risk Factor Surveillance System (BRFSS), and the National Center for Health Statistics.

Montana Title V MCHBG Needs Assessment - Indigenous Communities Component

Title V MCHBG developed a Montana Indigenous Communities Component of the needs assessment to gather information on the health needs and strengths of American Indian families living on and off reservations in Montana. The Title V MCHBG needs assessment Indigenous Communities Component was funded by the MOMS grant. Figure 1 shows the timeline for the Montana Indigenous Communities Needs Assessment Component.

Figure 1. Montana Title V MCHBG Needs Assessment Indigenous Communities Engagement Timeline



Activities Conducted During the Title V Needs Assessment

- June 2023: UM hosted listening sessions to engage parents and caregivers across the state to support the design of the parent/guardian survey questions and recruitment plan. Learnings sessions lasted 1 hour and were held over Zoom.
 - During the listening sessions, participants reviewed draft survey questions and social media recruitment images and provided feedback.
 - *Changes made to the survey questions:* simplified question wording, started the survey with a strengths-based question, and included open text and multiple choice questions.
 - *Changes made to the social media images:* created additional images with adolescents, fathers, and grandparents.
 - Participants were Montanans of diverse ages, geography, and race/ethnicity.

- August 2023: UM and MOMS staff hosted an exhibitor's table at the Rocky Mountain Tribal Leaders Council annual public health conference that had MOMS maternal health materials and information on the Title V Montana Indigenous Communities Component.
 - Attendees could complete a brief survey to provide input on engaging Tribal communities in the parent/guardian survey.
 - Survey participants shared the importance of including in-person events in the recruitment plan, noting the importance of going into communities to collect information and not relying solely on social media.
 - *Changes made to the recruitment plan:* added hosting vendor tables at powwows.
- September 2023: UM presented the Title V MCHBG Montana Indigenous Communities Component Needs Assessment Plan at the American Indian Health Leaders Meeting, gathered input on the needs assessment plan, answered questions, and shared next steps.
- October 2023 – March 2024: UM, in partnership with Stephanie Iron Shooter, DPHHS Office of American Indian Health Director, sent a letter to Tribal/ Urban Health Officials and requested a meeting.
 - The letter included an overview of the Title V MCHBG program, the needs assessment, and the Montana Indigenous Communities Component of the needs assessment; and requested a meeting to review the needs assessment plan, timeline, and activities.
 - The meetings informed several activities: the development of the Tribal parent/guardian survey and additional questions to be collected (barriers to accessing services at county health departments and experiences accessing services at non-Tribal organizations).
- March – June 2024: UM sought IRB approval from all Tribal IRBs and UM IRB. Four Tribal IRBs were approved (Little Big Horn College, Stone Child College, Chief Dull Knife College, and Little Shell Chippewa).
- March – August 2024: UM collected Tribal parent/guardian survey data at the following powwows:
 - March 29-30, 2024: Montana State University Bozeman Powwow, Bozeman, MT
 - April 5-6, 2024: Montana State University Billings Powwow, Billings, MT
 - April 12-13, 2024: Sweetgrass Society Powwow, Havre, MT
 - April 19-20, 2024: Kyiyo Powwow, Missoula, MT
 - July 4-7, 2024: Northern Cheyenne Chief's Powwow, Lame Deer, MT
 - August 2-3, 2024: Rocky Boy's Powwow, Box Elder, MT
 - August 16-18, 2024: Crow Fair, Crow Agency, MT
 - August 24-25, 2024: Little Shell Powwow, Great Falls, MT

Next Steps

UM is compiling all data from the Title V MCHBG Needs Assessment and will prepare a statewide report that will inform priority setting and program planning across Montana. UM will also prepare an Indigenous Families report for Tribal communities to share data back to Tribes to be used by Tribes and other stakeholders to contribute to internal priority setting.

UM Research Studies in Year 5

The MOMS research team continued and completed several research studies in year 5 to gather further information on maternal health in Montana, which provided additional needs assessment-related information to guide program activities. These studies focus on the experiences of pregnant people and providers within the maternal health system. The results of these studies support the broader Maternal Health Systems Needs Assessment and will inform future MOMS project activities. These studies include:

Exploring the Use of Recovery Doulas to Improve Maternal and Infant Health Outcomes in Montana.

PI: Jessica Liddell, PhD

Purpose of the Study

To develop the evidence base for the use of recovery doulas to improve maternal and infant health outcomes in Montana.

Methodology

UM conducted qualitative interviews. The UM IRB approved the study under Protocol #: 53-22 and received approval from Billings Clinic.

Key Findings

UM conducted 29 qualitative interviews with doulas, people in recovery, people who have used doulas, and maternal and mental health providers.

Dissemination

UM submitted the following manuscript for consideration in year 5:

- Black, E., Liddell, J. L., Garnsey, A., Glover, A., Reese, S., Piskolich, E. Adapting the role of doulas to enhance supports for perinatal people with substance use disorders. Under review at the *Journal of Evidence-Based Social Work*.

Findings from this study were presented at two international conferences and one national conference in 2024. The MOMS team made the following presentations to international and national audiences in year 5:

- Liddell, J.L., Glover, A.L. (2024). Barriers and solutions to integrating recovery doulas into the healthcare system to improve substance use disorder, and related health outcomes in the rural United States. Poster presentation at the Academy Health Annual Research Meeting, Baltimore, MD.

- Liddell, J.L., Glover, A.L. (2024). Exploring the use of recovery doulas to improve substance use disorder, and maternal and infant health outcomes in the rural United States. Poster presentation at the Perinatal Society of Australia and New Zealand (PSANZ) Annual Congress, Christchurch, New Zealand.
- Liddell, J.L., Glover, A.L. (2024). Exploring the use of recovery doulas to improve substance use disorder, and maternal and infant health outcomes in the rural United States. Oral presentation at the Perinatal Society of Australia and New Zealand (PSANZ) Annual Congress, Christchurch, New Zealand.
- Liddell, J. L., Glover, A.L. (2024). Recovery doulas as a way to improve substance use disorder and maternal and infant health outcomes in rural Montana. Oral presentation to the Society for Social Work and Research (SSWR) Annual Conference. Washington, D.C.
- Liddell, J.L., Glover, A.L., Fitch, S. (2023). Developing the doula workforce: Identifying opportunities and obstacles to improve maternal mental health outcomes in rural settings. Oral presentation to the DONA International Conference, Minneapolis, MN.

A Systematic Review of the Use of Doulas in Indigenous Communities

PI: Jessica Liddell, PhD

Purpose of the Study

To explore the current scope of literature on the use of doulas in Indigenous communities and contexts.

Methodology

UM conducted a systematic literature review. UM identified 6,688 articles using the search protocol. After removing duplicates and irrelevant results, 29 articles remained. UM analyzed articles in terms of (a) type of article; (b) study design, measures, and outcomes if a research article; (c) article population; (d) article location; (e) Indigenous context; (f) role/use of doulas; and (g) best practices/lessons learned. The largest number of studies took place in Canada (13), followed by the U.S. (10), Australia (7) and New Zealand (1). Most studies were qualitative (14), followed by quantitative (3), mixed-methods (3), literature or scoping reviews (3), policy briefs (3), conceptual articles (2) and commentaries (1).

Key Findings

The focus of articles included examining the perspective of doulas or of clients, the impact of doulas on health outcomes, what is included in Indigenous trainings and programs, evaluations of trainings and programs, and policy and conceptual articles exploring the use of doulas to improve maternal and child health in Indigenous communities. Several articles specifically position doulas as a radical form of care that can help address the ongoing harm of settler colonialism.

Year 5 Update

All activities related to this project have been completed.

A Systematic Review of the Use of Doulas to Improve Mental Health Outcomes in the United States

PI: Jessica Liddell, PhD

Purpose of the Study

To explore the current scope of literature on the use of doulas to improve perinatal mental health outcomes in the United States.

Methodology

UM conducted a systematic literature review. Over 17,530 articles were identified using the search protocol. After removing duplicates and irrelevant results, 22 articles remained.

Key Findings

Findings demonstrate the highly limited use of doulas to fill existent mental healthcare gaps and improve maternal-child health outcomes in rural settings. However, existing research recommends exploring their use as a potentially promising health intervention that warrants further investment and attention.

Dissemination

UM submitted the following manuscript for consideration in year 5:

- Liddell, J. L., Garnsey, A., Glover, A.L., Carlson, T., Piskolich, E. A systematic review of the use of doulas to support perinatal mental health in the United States. Manuscript under review at the *Mental Health & Prevention Journal*.

A Systematic Review of the Use of Doulas to Address Substance Use and Recovery During the Perinatal Period in the United States

PI: Jessica Liddell, PhD

Purpose of the Study

To explore the current scope of literature on the use of doulas to improve health outcomes related to substance use and recovery in the perinatal period in the United States.

Methodology

UM conducted a systematic literature review and identified 16 articles for inclusion in the full review.

Key Findings

Findings demonstrate relatively limited scholarship exploring the use of doulas to specifically improve health outcomes related to substance use, but what research exists indicates that doulas may be an innovative and important way to address existing health inequalities and gaps and help promote wellbeing for parents and their families. In addition, considering the historical context of exploitation of marginalized groups, and in particular for individuals who have used substances, doulas may also be a more acceptable provider of care compared to traditional healthcare professionals because of the ambivalent relationship some marginalized groups

have with formal healthcare systems. We describe the best practices and innovative ways these approaches are currently being utilized in doula care for pregnant and postpartum people and their families. Findings are currently being used to develop and implement trainings of doulas focused on substance use and recovery in rural Montana.

Dissemination

UM submitted the following manuscript for consideration in year 5:

- Liddell, J.L., Garnsey, A., Glover, A.L., Reese, S., Piskolich, E. A systematic review of the use of doulas to address substance use disorders during the perinatal period in the United States. Manuscript under review at *International Journal of Mental Health and Addiction*.

A Systematic Review of the Use of Doulas to Support Rural Perinatal People in the United States

PI: Jessica Liddell, PhD

Purpose of the Study

To explore the current spoke of literature on the use of doulas to address maternal and child healthcare needs in rural communities and healthcare deserts in the United States.

Methodology

UM conducted a systematic review of existing scholarship using PRISM guidelines. Over 2,104 articles were identified using the search protocol. After removing duplicates and irrelevant results, 5 articles remained. UM analyzed articles in terms of (a) type of article; (b) study design, measures, and outcomes if a research article; (c) article population; (d) role or use of doulas; and (e) article location and if specific to rural settings.

Key Findings

Findings demonstrate highly limited use of doulas to fill existing healthcare gaps and improve MCH outcomes in rural settings. This area of research warrants further attention.

Dissemination

UM submitted the following article for consideration in year 5:

- Liddell, J.L., Garnsey, A., Glover, A.L., Piskolich, E. A systematic review of doulas to support rural perinatal people in the United States. Manuscript under review at *Maternal and Child Health Journal*.

Cost Effectiveness of Doulas: Montana Medicaid Economics Analysis

PI: Patrick Boise, MA

Purpose of the Study

Explore the potential cost savings in Montana if doulas were present/reimbursed for care during deliveries.

Methodology

The UM research team completed the training needed to access Healthcare Cost and Utilization Project (HCUP) data and purchased the HCUP National Inpatient Survey data for 2019, which included survey-weighted deliveries in the United States (n=716,683). The study calculated the mean total charges per delivery for C-sections (n=227,883) and vaginal births (n=482,682), stratified by Census Division. The relative risk reduction associated with doula care, established in the literature, is then applied to estimate the net savings for medical care, by payor, if the intervention were covered.

Key Findings

The Mountain Division, which includes Montana, exhibits the second-highest differential cost for C-section deliveries, amounting to \$15,815. Without doula care being covered by any insurance provider in MT, 3,150 of Montana's 2019 deliveries resulted in C-section. We estimate that if just 30% (n=3,324) of all Montana deliveries had support from a birth doula given insurance reimbursement, 358 fewer C-sections would have occurred in Montana alone. The analysis reveals a savings of up to \$372.5 million though averted 2019 C-sections in the Mountain Division when all deliveries are accompanied by a doula, and a per-delivery expected reduction in total charges of \$1,683.10.

Year 5 Update and Next Steps

A manuscript has been drafted and will be submitted for publication to the Health Services Research Journal in 2024. Following publication, dissemination through Montana and other Mountain Division states' health conferences is anticipated, along with dissemination through Maternal and Child Health and Centers for Medicare and Medicaid Services channels and to decisionmakers in healthcare payer reimbursement policy.

Dissemination

UM submitted a manuscript for consideration in year 5 to Health Services Research:

- Boise, P., Glover, A.L., Liddell, J.L., Mullan, K. A cost-outcome analysis of doula care on C-section rates in the Mountain Division. Under review at *Health Services Research*.

UM team made the following presentation to a national audience:

- Boise, P., Glover, A.L., Liddell, J.L., Mullan, K. (2024). A cost-outcome analysis of doula care on c-section rates in the Mountain Division. Poster presentation at the Academy Health Annual Research Meeting (ARM), Baltimore, MD.

Activity 1.6

Conduct community education and screening to have annual well-woman visit, initiate 1st trimester prenatal care, maintain prenatal care, seek insurance coverage, receive postpartum screening and care.

Public Education Campaign

In year 3, DPHHS contracted with Windfall, Inc., a Montana ad agency, to create a 30-second video promoting early prenatal care and maintaining care, digital advertising messaging samples, and a patient-education website. Additionally, draft image and messaging samples were created for a digital media campaign to achieve the following objectives: 1) promote annual well-woman visits, 2) initiate 1st trimester prenatal care, 3) maintain prenatal care, 4) seek insurance coverage, and 5) receive postpartum screening and care.

Year 5 Update

The community education program, as originally planned, was discontinued in year 4 due to delays at DPHHS.

Objective B: Measure Maternal Health in Montana

Strategy 2	Collect and analyze maternal health data
Activity 2.1	Study Montana severe maternal morbidity based on hospital discharge data
Activity 2.2	Maternal Health System Needs Assessment and UM Research Studies (Provider Survey, Patient Survey, and LOCATe)
Activity 2.3	Maternal Health Annual Report

Activity 2.1

Gather maternal health indicators from PRAMS, Vital Stats, Medicaid, Hospital Discharge Data, Perinatal Behavioral Health Initiative, and other relevant programs

DPHHS has contracted with UM to compile and analyze maternal health indicators across available relevant data sources. Progress with these data sources is summarized below.

Pregnancy Risk Assessment Monitoring System

Administered in partnership between the CDC and states, the Pregnancy Risk Assessment Monitoring System survey has been conducted in Montana since 2017. The PRAMS program is housed in the FCHB in the Early Childhood and Family Support Division at DPHHS. PRAMS provides data reports to the MOMS program for the annual Maternal Health Report as well as information that is used in educational and outreach presentations to maternal health stakeholders around the state. Relevant data points available in PRAMS include health status and behaviors prior to and during pregnancy; pregnancy intention; health insurance; prenatal care; family planning; mental health; oral care; substance use; and postpartum care.

Vital Statistics

The Office of Epidemiology and Scientific Support and Vital Statistics Office at DPHHS supports the MOMS grant by providing required data for the Maternal Health Annual Report that UM prepared in years 1-4 for submission to HRSA. HRSA did not request a Maternal Health Annual Report in year 5.

Hospital Discharge Data

MHA and UM entered into a data use agreement in August 2020 to enable the use of hospital discharge data for a study on severe maternal morbidity. These data are also used for the Maternal Health Annual Report. MHA has been an enthusiastic partner of the MOMS project, and this partnership facilitates a better understanding of maternal morbidity in hospitals across the state to drive clinical improvements that are targeted to Montana's unique needs. Relevant data points in the hospital discharge dataset include severe maternal morbidity by type—acute myocardial infarction; aneurysm; acute renal failure; adult respiratory distress syndrome; amniotic fluid embolism; cardiac arrest/ventricular fibrillation; conversion of cardiac rhythm; disseminated intravascular coagulation; eclampsia; heart failure/arrest during surgery or procedure; puerperal cerebrovascular disorders; pulmonary edema/acute heart failure; severe anesthesia complications; sepsis; shock; sickle cell disease with crisis; air and thrombotic embolism; blood products transfusion; hysterectomy; temporary tracheostomy; and ventilation.

Severe Maternal Morbidity Report

The first **Severe Maternal Morbidity in Montana Report** was prepared and finalized by UM in September 2021. An updated report will be prepared and available for dissemination following MOMS grant year 5 under the CDC PQC grant work at UM.

Activity 2.2

Maternal Health System Needs Assessment and UM Research Studies

Please see Activity 1.5 for a description and update of year 5 Needs Assessment and UM Research Study activities.

Activity 2.3

Maternal Health Report

HRSA did not require a Maternal Health Report for year 5. The fourth annual Maternal Health Report was prepared by UM and submitted to HRSA on September 29, 2023. [The Maternal Health in Montana Annual Report Year 4](#) is available on the MOMS website.

Objective C: Promote and Execute Innovation in Maternal Health Service Delivery

Strategy 3	Provide technical assistance to medical and public health providers to improve maternal health interventions
Activity 3.1	Conduct professional development and maternal health grand rounds through Project ECHO
Activity 3.2	Conduct listening sessions and research resources in local communities to inform the Linking Infants and Families to Supports (LIFTS) platform
Activity 3.3	Disseminate best practices in screening, assessment, clinical care, and community health initiatives in maternal health
Activity 3.4	Provide opportunities for healthcare professionals to participate in education, certification, and licensing opportunities to improve maternal health care delivery knowledge and competency across the state
Activity 3.5	Provide simulation training opportunities for non-birthing and birthing facilities of all levels in teamwork/communication and a variety of birthing scenarios

Strategy 4	Conduct demonstration project to test telehealth interventions in maternal health in rural and AI/AN communities
Activity 4.1	Facilitate co-management of high-risk patients with urban-based specialists and rural based generalists
Activity 4.2	Establish access to visiting specialists, via live or telemedicine program in rural communities
Activity 4.3	Enable front-line health care providers to provide or receive real-time psychiatric and substance use disorder (SUD) consultation and care coordination support in treating pregnant and postpartum people
Activity 4.4	Support multidisciplinary networks of providers to expand service access in rural communities

Strategy 5	Implement team-based approaches to perinatal care
Activity 5.1	Establish linkages with and among community-based resources, including mental health resources, primary care resources, and support groups

Activity 3.1

Conduct professional development and maternal health grand rounds through Project ECHO.

Project ECHO was developed at the University of New Mexico Health Sciences Center to help improve access to care for complex chronic health conditions. The ECHO model includes specialists located at a “hub” site that connects with numerous community partner sites, “spokes,” to facilitate virtual case-based learning and short didactic presentations. Project ECHO builds capacity through virtual education and training of local primary care providers seeking to improve their skills in managing and treating complex health conditions. Billings Clinic launched Project ECHO in year 1.

Participants

Five ECHOs and two Special Interest Webinars (a part of the Cultural Safety Series) were hosted in year 5; see Table 1 for the list of topics and number of spoke participants. There were 61 unique spoke participants across the year 5 ECHOs (excluding Special Interest Webinars), including 40 clinical spoke participants, 10 non-clinical attendees, 1 student, and 10 attendees who did not report their organization or role. ECHO sessions were held once per month in year 5 and were discontinued in April 2024 as program staff transitioned to wrapping up the project.

Table 1. ECHOs and Clinical Spoke Participants

Date	ECHO Topic	Clinic or Webinar*	Participants
10/10/2023	Providing Intervention and Support to Patients Experiencing Domestic Violence	Webinar	18
11/14/2023	Oh "G", What Role Does the Blood Bank and Transfusion Service Play in Perinatal Care?	Webinar	7
12/19/2023	Cultural Safety for Indigenous Women and Birthing People Part II**	Webinar	28
1/9/2024	What Am I Supposed to Do with that RPR: Practical, Evidence-Based Syphilis in Pregnancy Management	Clinic	24
2/13/2024	Pelvic Health Sexual Counseling	Webinar	17
3/12/2024	Hypertensive Disorders of Pregnancy	Webinar	19
4/9/2024	Cultural Safety: Allyship vs. Appropriation**	Webinar	13

*ECHO Clinics include both a didactic and case presentation. Webinars had a didactic presentation only.

**This Special Interest Webinar was hosted on the MOMS Project ECHO virtual platform but is not included in any further analysis below.

Participants were from 16 counties across Montana ,and four were from out-of-state healthcare facilities (10 participants did not report their facility). Table 2 shows the number of participants by county in Montana.

Table 2. Year 5 Unique ECHO Participants by County (N=61)

County	# of Total Participants	# of Clinical Participants
Big Horn	2	1
Cascade	1	1
Custer	2	2
Dawson	1	1
Fergus	2	2
Flathead	1	1
Gallatin	8	8
Lake	2	2
Lewis and Clark	1	0
Lincoln	1	1
Missoula	4	4
Ravalli	2	0
Richland	1	1
Roosevelt	3	2
Valley	1	0
Yellowstone	15	13
Out of State	4	1
Not Reported	10	0

Continuous Quality Improvement

The UM evaluation team observed the ECHOs and completed a TeleECHO Session Scorecard adapted from materials created by the University of New Mexico Health Sciences and ECHO Institute. The scorecard evaluates the meeting logistics, connectivity/IT, and the didactic and case presentations. Overall strengths and areas for improvement are summarized below.

Strengths:

- **Attendee engagement:** Demonstrated by participation in discussion, asking questions, and sharing information and resources in the chat.
- **Meeting logistics:** Demonstrated by starting on time, clear audio and video for the hub site, participants connect easily and utilize the chat and video. Resources discussed during the presentation are compiled and sent to participants by the ECHO coordinator.
- **Diverse didactic presentation topics:** The ECHOs held this year covered a range of topics by diverse presenters.

Areas for Improvement:

- **Case Presentation:** Across the ECHOs held this year, there was only one ECHO session that included a case presentation.

Participant Evaluations

Participant Evaluations (Quantitative)

After each ECHO, participants received an invitation to complete an online evaluation. Evaluations collect information on ECHO content, quality, enhancement of knowledge, relevance to practice, and application. The program collected only a handful of participant evaluations for year 5. While responses to the evaluation survey following an ECHO session were low, overall, the respondents rated the didactic sessions quality and relevance to their practice highly and did not have any additional comments.

Year 5 Update and Sustainability

Throughout MOMS year 5, Project ECHO continued to engage a community of inter- and multidisciplinary specialists and community-based partners through a shared goal of improving overall care quality, reducing provider isolation, and creating a united community of practice where rural and urban providers can connect and learn. MOMS Project ECHOs moved to one clinic per month starting in October 2023 and were discontinued in April 2024. MOMS program staff began planning for the sustainability of Project ECHO in year 4 and will seek additional funding to support Project ECHO initiatives beyond the MOMS grant.

Activity 3.2

Conduct listening sessions and research resources in local communities to inform the LIFTS platform.

In year 3, with support of Billings Clinic MOMS grant funds, Healthy Mothers Healthy Babies (HMHB) of Montana conducted seven listening sessions with the Confederated Salish and Kootenai Tribes of the Flathead Reservation, Northern Cheyenne Reservation, Crow Reservation, Blackfeet Reservation, Fort Belknap Reservation, Fort Peck Reservation, and Rocky Boy's Reservation. to gather feedback on the Linking Infants & Families to Supports (LIFTS) Online Resource Guide. HMHB invited members of each community who work with families in pregnancy and early childhood. The listening sessions also included a conversation on maternal and child health community needs. In addition to improving LIFTS, this project increased awareness of currently available community-based supports located on or near reservations that are specifically geared toward pregnant people and families with small children. While in meetings with communities located on Reservations, HMHB shared information about MOMS and promoted the ongoing Needs Assessment survey.

Year 5 Update

All activities related to this project are completed.

Dissemination

Billings Clinic contractor Amy Stiffarm, PhD, MPH presented the following to a national audience in year 5:

- Stiffarm, A. (2024). Linking Infants and Families to Support (LIFTS) in Indian Country: a collaborative approach to resource information and data collection. Presentation at an in-person workshop at the Association for Maternal and Child Health Programs (AMCHP) Annual Meeting, Oakland, CA.

Family Care Spaces

In year 5, the MOMS team developed a guide for designing and implementing Family Care Spaces that cater to the unique needs of caregivers and their children during Indigenous cultural events to ensure they feel supported and valued. The guide emphasizes the importance of community engagement, acknowledging the collaborative effort of Indigenous community programs and members to ensure the success and sustainability of Family Care Spaces. In addition to the guide, supplies are purchased for community members (doulas, public health nurses, etc.) who organize Family Care Spaces at their tribal events, which include a tent, table, chairs, changing table, changing pads, cleaning wipes, pack 'n' play, cooler, first aid kit, and battery powered fan. Seven supply kits were distributed and 12 Family Care Spaces events were hosted in year 5.

Family Care Spaces were hosted at the following events by Billings Clinic staff and community members in year 5:

- March 29-30, 2024: MSU Powwow, Bozeman, MT - Billings Clinic staff
- April 5-6: MSUB Powwow, Billings, MT - Billings Clinic staff
- April 19-20: Kyiyo Powwow, Missoula, MT- Billings Clinic staff
- May 28-30: Northern Cheyenne Powwow, Busby, MT - Community member
- July 1-7: Annual Arlee Celebration CSKT Powwow, Arlee, MT - Community member
- July 4-7: Northern Cheyenne Chief's Powwow, Lame Deer, MT - Billings Clinic staff
- July 11-14: North American Indian Days, Browning, MT - Community member
- July 25-28: Annual Milk River Indian Days, Fort Belknap, MT - Community member
- August 2-4: Rocky Boy's Powwow, Box Elder, MT - Billings Clinic staff
- August 16-18: Crow Fair, Crow Agency, MT - Billings Clinic staff
- August 23-24: Little Shell Powwow, Great Falls, MT - Billings Clinic staff
- September 27-29: Last Chance Powwow, Helena, MT - Billings Clinic staff

Figure 2. Family Care Spaces at Montana Powwows



Immersion Day Program

The Immersion Day program is a strengths-based, relationship-centered model designed to drive system-level quality improvements in non-Indigenous health facilities that serve Indigenous communities. The Immersion Day started as a brainchild of Margaret Anne Adams, RN, Yarrow Community, who developed the curriculum and piloted the program during MOMS grant year 4 under the CDC PQC grant. In year 5, the MOMS team partnered with Yarrow and HMHB to provide more of these trainings across Montana.

During an Immersion Day event, staff from non-Indigenous birthing hospitals are invited to Tribal communities to develop relationships with community supports, hear stories of Elders, and visit local referral partners to open a dialogue with their Tribal Nation counterparts.

Year 5 Update and Next Steps

Three Immersion Days were hosted in year 5:

- 5/1/24: Fort Belknap hosted Northern Montana Hospital and Benefis
- 7/10/24: Crow Nation hosted Billings Clinic and St. Vincent Intermountain Health
- 7/26/24: Northern Cheyenne hosted Billings Clinic and St. Vincent Intermountain Health

Reports for each of these events will be prepared and shared on the MOMS website. The MOMS team and partners will seek additional funding opportunities to continue Immersion Days.

Dissemination

The Immersion Day team presented the following presentations to national audiences in year 5:

- Buck, D., Adams, M., Stiffarm, A., Fitch, S., Glover, A., Krane, K. (2024). Design and implementation of Immersion Days to improve collaboration between birthing hospitals and tribal communities in Montana. Oral presentation at the CityMatCH Annual Conference, Seattle, WA.
- Buck, D., Fitch, S., Glover, A., Buchanan, S. (2024). Maternal health innovations supporting Montana's Indigenous women and families. Oral presentation at the Maternal Health Learning Innovation Center (MHLIC) Learning Exchange, Albuquerque, NM.

Activity 3.3

Disseminate best practices in screening, assessment, clinical care, and community health initiatives in maternal health.

Siloed

The Siloed Series grew from discussions between Billings Clinic, HMHB, DPHHS, and UM, to elevate maternal health issues in Montana's agricultural communities. Siloed serves as part of the MOMS needs assessment and includes people with lived experience. The Siloed series follows families and professionals across Montanan to identify barriers to maternal healthcare and provide suggestions for improving access to and quality of care offered in our state. Five short films and one feature-length film were developed.

Year 5 Update

The film will be debuted at the Healthy Mothers Health Babies Perinatal Mental Health Conference in October 2024 and will be available on the MOMS website.

Dissemination

Finalized films are available on the MOMS [website](#).

- Cramer, H., Fitch, S. (2023). Siloed: Motherhood in Montana's Rural Communities [Documentary Film]. Montana Obstetrics & Maternal Support (MOMS) and Billings Clinic production.
- Cramer, H., Fitch, S., McCracken III, C., Lofgren, V. (2023). Siloed: Ellen's Story; Know the signs of obstetric hemorrhage [Short film; online video]. Billings Clinic | Montana Obstetrics and Maternal Support (MOMS).
- Cramer, H., Fitch, S., McCracken III, C., and Lofgren, V. (2023). Siloed: Mindy's Story; Understanding Postpartum Warning Signs [Short film; online video]. Billings Clinic | Montana Obstetrics and Maternal Support (MOMS).
- Cramer, H., Fitch, S., McCracken III, C., and Lofgren, V. (2023). Siloed: Lauren's Story; The Importance of Social Support [Short film; online video]. Billings Clinic | Montana Obstetrics and Maternal Support (MOMS).
- Cramer, H., Fitch, S., McCracken III, C., and Lofgren, V. (2023). Siloed: Erika's Story; Finding Support Through Telehealth Services [Short film; online video]. Billings Clinic | Montana Obstetrics and Maternal Support (MOMS).

The Siloed film crew and Billings Clinic staff presented the following short film to a national audience in year 5:

- Cramer, H., Fitch, S., McCracken III, C., Lofgren, V. (2023). Siloed: Ellen's Story; Know the signs of obstetric hemorrhage. Presented to the American Public Health Association (APHA) Annual Meeting and Film Festival, Atlanta, GA.

Education Campaign for Providers

In year 3, the MOMS team began working on a cultural safety and trauma informed care training series with specific emphasis on Indigenous cultures, with the goal of incorporating the series into a learning management system within healthcare organizations to provide broader access to the materials for provider teams serving perinatal patients and families across the state. Additionally in year 4, the MOMS team at Billings Clinic and UM partnered with Yarrow and HMHB to support the development of Immersion Days between tribal communities and providers at nearby birthing hospitals.

Year 5 Update

Three cultural safety presentations were made in year 5. All training series materials can be found on the [MOMS website](#) and the [MPQC-AIM website](#). Three Immersion Day events were hosted during year 5, Fort Belknap on 5/1/2024, Crow on 7/10/2024, and Northern Cheyenne on 7/26/2024. A final report is being prepared and will be available on the MOMS website.

Dissemination

The MOMS team made the following presentations to national audiences in year 5:

- Buck, D., Fitch, S., Glover, A.L., Buchanan, S. (2024). Maternal health innovations supporting Montana's Indigenous women and families. Oral presentation at the Maternal Health Learning and Innovation Center (MHLIC) Learning Exchange, Albuquerque, NM.
- Buck, D., Adams, M., Stiffarm, A., Fitch, S., Glover, A.L., Krane, K. (2024). Design and implementation of immersion days to improve collaboration between birthing hospitals and tribal communities in Montana. Oral presentation at the CityMatCH Annual Conference, Seattle, WA.

Marketing and Communications

In 2019, Billings Clinic contracted with A.D. Creative Group for MOMS marketing and communications, and the MOMS website was launched in February 2020. In 2023, the MOMS team at Billings Clinic shifted most marketing projects to be handled by PG Marketing. PG Marketing activities in year 5 consisted of updating the MOMS website and Siloed landing page, ordering apparel for staff attending trainings and events, promoting Project ECHO events, and updating the MOMS Indigenous Doula Outreach Logo. Figure 3 shows examples of the materials created with PG Marketing in year 5.

Figure 3. Example Marketing Materials Created in Year 5



Billings Clinic Outreach Visits

The Billings Clinic MOMS staff made eight Indigenous event outreach visits in year 5. The purpose of these outreach visits was to share an overview of the MOMS program, promote MOMS activities, and gather information on needs. Billings Clinic MOMS staff were also able to exhibit at and attend several Montana conferences and promote MOMS program activities. These visits resulted in strengthened partnerships with state and community organizations on programming and provided opportunities to support facility training and equipment needs (i.e. simulation, prenatal education, doulas, etc.). Table 3 shows outreach visit dates, locations, and visit purposes.

Table 3. Outreach Visits Conducted in Year 5**

Visit Date	Location	Purpose of Visit	Staff Attended
11/25/23-11/26/23	Billings, MT	Billings Powwow	Billings Clinic
3/29/24 - 3/30/24	Bozeman, MT	MSU Powwow	Billings Clinic, UM
4/5/24 - 4/6/24	Billings, MT	MSUB Powwow	Billings Clinic
4/12/24 - 4/13/24	Havre, MT	Sweetgrass Society / MSU Northern Powwow	Billings Clinic
4/19/24 - 4/20/24	Missoula, MT	Kyiyo Powwow	Billings Clinic, UM
6/19/24 - 6/23/24	Crow Agency, MT	Crow Native Days	Billings Clinic
7/4/24 - 7/7/24	Lame Deer, MT	Northern Cheyenne Chief's Powwow	Billings Clinic, UM
8/2/24 - 8/4/24	Box Elder, MT	Rocky Boy's Powwow	UM
8/14/24 - 8/15/24	Billings, MT	Rocky Mountain Tribal Leaders Council Health Conference	Billings Clinic, UM
8/16/24 - 8/18/24	Crow Agency, MT	Crow Fair	Billings Clinic
8/23/24 - 8/24/24	Great Falls, MT	Little Shell Powwow	Billings Clinic, UM
9/27/24 - 9/29/24	Helena, MT	Last Chance Community Powwow	Billings Clinic

**Events in pink also collected data for the Title V MCHBG Needs Assessment Tribal Component

Presentations, Manuscripts, Reports, and Quality Improvement Products

Presentations

The MOMS team presented at the following national meetings and conferences in year 5.

- Boise, P., Glover, A.L., Liddell, J.L., Mullan, K. (2024). A cost-outcome analysis of doula care on C-section rates in the Mountain Division. Poster presentation at the Academy Health Annual Research Meeting in Baltimore, MD.
- Buck, D., Adams, M., Stiffarm, A., Fitch, S., Glover, A.L., Krane, K. (2024). Design and implementation of immersion days to improve collaboration between birthing hospitals and Tribal communities in Montana. Oral presentation at the CityMatCH Leadership and MCH Epidemiology Conference in Seattle, WA.
- Buck, D., Fitch, S., Glover, A., Buchanan, S. (2024). Maternal health innovations supporting Montana's Indigenous women and families. Oral presentation at the Maternal Health Learning Innovation Center (MHLIC) Learning Exchange, Albuquerque, NM.
- Cramer, H., Fitch, S., McCracken III, C., Lofgren, V. (2023). Siloed: Ellen's Story; Know the signs of obstetric hemorrhage. Film festival presentation at the American Public Health Association (APHA) Annual Meeting, Atlanta, GA.
- Fertaly, K., Javorka, M., Brown, D., Glover, A.L. (2023). Referral and transport in obstetric emergencies: Current challenges to developing a perinatal regionalized system of care. Oral presentation at the American Public Health Association Conference (APHA), Atlanta, GA.
- Fitch, S. (2024). A convening of early childhood experts and persons with lived expertise to improve systems and outcomes for young children and their families who are affected by parental substance use, substance use disorders and co-occurring mental health disorders in child welfare services. Invited speaker at the National Center on Substance Abuse and Child Welfare (NCSACW), Washington, D.C.
- Fitch, S., Reese, S., Glover, A.L. (2024). Reimplementation of SBIRT in an outpatient obstetric setting. Poster presentation at the Association for Maternal and Child Health Programs (AMCHP) Annual Meeting, Oakland California.
- Fitch, S., Reese, S., Glover, A., Krane, K., Pilch, A., Honaker, K. (2024). Reimplementation of Screening, Brief Intervention, and Referral to Treatment (SBIRT) in the perinatal care setting. Presentation at the CityMatCH Annual Conference, Seattle, WA.
- Glover, A.L., Holman, C., Nelson, M. (2023). "Sometimes familiarity means a lack of diligence": Experiences with the annual well-woman visit and preventative care. Roundtable presentation at the American Public Health Association Annual Meeting, Atlanta, GA.
- Glover, A.L., Holman, C., Nelson, M. (2023). Preparing rural emergency staff for traumas occurring in pregnancy with simulation training. Poster presentation at the American Public Health Association Annual Meeting, Atlanta, GA.

- Holman, C., Glover, A.L., Liddell, J., Garnsey, A., Piskolich, E., Nelson, M., Boise, P. (2023). Patient experiences of maternal healthcare in Montana: A mixed methods study. Oral presentation at the MOMS HRSA Site Visit, virtual.
- Kook, T., Fitch, S., Amin, S., Calveri, L. (2024). Creating supports for families and caregivers of children who experienced prenatal substance exposure. Panel presentation at the Zero to Three Conference, Long Beach, CA.
- Liddell, J. L., Glover, A.L. (2024). Recovery doulas as a way to improve substance use disorder and maternal and infant health outcomes in rural Montana. Oral presentation to the Society for Social Work and Research (SSWR) Annual Conference, Washington, D.C.
- Liddell, J.L., Glover, A.L. (2024). Barriers and solutions to integrating recovery doulas into the healthcare system to improve substance use disorder, and related health outcomes in the rural United States. Poster presentation at the Academy Health Annual Research Meeting, Baltimore, MD.
- Liddell, J.L., Glover, A.L. (2024). Exploring the use of recovery doulas to improve substance use disorder, and maternal and infant health outcomes in the rural United States. Oral presentation at the Perinatal Society of Australia and New Zealand (PSANZ) Annual Congress, Christchurch, New Zealand.
- Liddell, J.L., Glover, A.L. (2024). Exploring the use of recovery doulas to improve substance use disorder, and maternal and infant health outcomes in the rural United States. Poster presentation at the Perinatal Society of Australia and New Zealand (PSANZ) Annual Congress, Christchurch, New Zealand.
- Liddell, J.L., Glover, A.L., Fitch, S. (2023). Developing the doula workforce: Identifying opportunities and obstacles to improve maternal mental health outcomes in rural settings. Oral presentation to the DONA International Conference, Minneapolis, MN.
- Reese, S., Fitch, S., Glover, A.L. (2024). Reimplementation of Screening, Brief Intervention, and Referral to Treatment (SBIRT) in the perinatal care setting. Oral presentation at the CityMatCH Leadership and MCH Epidemiology Conference in Seattle, WA.
- Reese, S.E., Glover, A., Fitch, S., Salyer, J., Lofgren, V., McCracken, C.T. (2023). Early insights into implementation of universal screening, brief intervention, and referral to treatment for perinatal substance use. Oral presentation at the Maternal Child Health Journal Special Edition on Perinatal SUD Unveiling, Virtual.
- Stiffarm, A. (2024). Linking Infants and Families to Support (LIFTS) in Indian Country: a collaborative approach to resource information and data collection. Presentation at an in-person workshop at the Association for Maternal and Child Health Programs (AMCHP) Annual Meeting, Oakland, CA.
- Stiffarm, A., Fitch, S., Liddell, J., Glover, A.L., Buck, D. (2024). Essential partnerships to improve cultural safety for Indigenous families in Montana. In person workshop at the Association for Maternal and Child Health Programs (AMCHP) Annual Meeting, Oakland, California.

- Thompson, J., Armstrong, J., Lackey, S., Leidig, M., Tucker, T., Williams, T. (2024). Occupational therapy's role in addressing maternal health. Oral presentation at the American Occupational Therapy Association (AOTA) Annual Conference, Orlando, FL.

The MOMS team presented at the following state meetings and conferences in year 5.

- Glover, A.L. (2023). Moving Mountains Advocacy. Invited panelist at the Healthy Mothers Health Babies Perinatal Mental Health Conference, virtual.
- Glover, A.L. (2024). Why we do this work. (2024). Invited opening speaker at the Meadowlark Maternal Health Symposium, Bozeman, MT.
- Glover, A.L. (2024). Why we do this work: Maternal health in Montana. (2024). Oral presentation at the Montana Healthcare Conference, Billings, MT.
- Glover, A.L., Buck, D. (2024). Montana Title V Maternal and Child Health Block Grant and Family Care Spaces: Partnering with tribal communities. Oral presentation at the Rocky Mountain Tribal Leaders Council Strengthening Indigenous Wellbeing: A New Era in Public Health Conference, Billings, MT.
- Holman, C., Glover, A.L., Liddell, J., Boise, P., Garnsey, A., Piskolich, E. (2024). Patient experiences of maternal healthcare in Montana. Oral presentation at the MPQC Sepsis in Obstetric Care Collaborative Learning Session, virtual.
- Holman, C., Glover, A.L., Liddell, J., Garnsey, A., Piskolich, E. (2024). Engaging patients in practice improvements: Patients' perspectives on postpartum care in Montana. Poster presentation at the Confluence Annual Conference, Missoula, MT.
- Thompson, J., Armstrong, J., Lackey, S., Leidig, M., Tucker, T., Williams, T. (2023). Occupational therapy's role in addressing maternal health. Poster presentation at the Montana Occupational Therapy Associate (MOTA) Annual Conference, Billings, MT.
- Thompson, J., Lopez-Morales, D., Caldwell, R. (2023). Sharing solutions to improve care for all families in the perinatal period. Panel presentation at the Montana Perinatal Mental Health Conference, virtual.

Publications

The MOMS team published the following manuscripts in year 5.

- Fertaly K, Javorka M, Brown D, Holman C, Nelson M, Glover A. Obstetric transport in rural settings: Referral and transport of pregnant patients in a state without a perinatal regionalized system of care. *Health Serv Res*. Published online August 5, 2024. doi:10.1111/1475-6773.14365
- Glover, A.L., Holman, C., Boise, P. Patient-centered respectful maternity care: A factor analysis contextualizing marginalized identities, trust, and informed choice. *BMC Pregnancy Childbirth*. 2024;24(1):267. doi:10.1186/s12884-024-06491-2

Manuscripts Under Review

The MOMS team submitted the following manuscripts for consideration in year 5.

- Boise, P., Glover, A.L., Liddell, J.L., Mullan, K. A cost-outcome analysis of doula care on C-section rates in the Mountain Division. Under review at Health Services Research.
- Black, E., Liddell, J. L., Garnsey, A., Glover, A., Reese, S., & Piskolich, E. Adapting the role of doulas to enhance supports for perinatal people with substance use disorders. Under review at the Journal of Evidence-Based Social Work.
- Buscaglia, A., Glover, A.L., Smith, N., Garnsey, A. Provider perspectives on barriers and facilitators to postpartum contraception following Medicaid unbundling. Manuscript under review at Contraception and Reproductive Medicine.
- Glover, A.L., Brown, D., Holman, C., Nelson, M. Obstetric care in rural critical access hospitals: A domestic application of the World Health Organization signal function approach to emergency readiness assessment. Manuscript in preparation for Journal of Rural Health.
- Glover A.L., Garnsey, A., Buscaglia, A., Smith, N. Contraceptive care for people with disabilities: Provider perspectives on the barriers and facilitators of equitable access. Manuscript under review at Sexuality and Disability.
- Holman, C., Glover, A.L., Liddell, J.L., Garnsey, A., Piskolich, E., Adams, M.A., Burkholder, S., Hanson, M., Tonkin, K. A qualitative patient narrative analysis exploring nurses' role as facilitators of respectful maternity care. Under review at the Journal of Obstetric, Gynecological, & Neonatal Nursing.
- Liddell, J. L., Garnsey, A., Glover, A.L., Carlson, T., Piskolich, E. A systematic review of the use of doulas to support perinatal mental health in the United States. Manuscript under review at the Mental Health & Prevention Journal.
- Liddell, J.L., Holman, C., Garnsey, A., Carlson, T., Piskolich, E., Glover, A.L. Barriers and supports for the identification and treatment of perinatal mood and anxiety disorders: A qualitative analysis of patient experience data. Under review at the International Journal of Childbirth.
- Liddell, J.L., Garnsey, A., Glover, A.L., Reese, S., Piskolich, E. A systematic review of the use of doulas to address substance use disorders during the perinatal period in the United States. Manuscript under review at International Journal of Mental Health and Addiction.
- Liddell, J.L., Garnsey, A., Glover, A.L., Piskolich, E. A systematic review of doulas to support rural perinatal people in the United States. Manuscript under review at Maternal and Child Health Journal.

Reports

The MOMS team produced the following reports and quality improvement products in year 5.

- Brown, D., Holman, C., Glover, A.L., Nelson, M. (2024). Emergency obstetric services (EOS) survey report: Medical products, equipment, and technology sub-report.
- Brown, D., Holman, C., Glover, A.L., Nelson, M. (2024). Emergency obstetric services (EOS) survey report: Training sub-report.
- Brown, D., Holman, C., Glover, A.L., Nelson, M. (2024). Emergency obstetric services (EOS) survey report: Transport sub-report.]
- Nelson, M., Glover, A.L. (2024). MOMS Project ECHO final summary and evaluation report.

Toolkits

- Buck, D. (2024). Creating accessible family care spaces at Indigenous cultural events.

Other Citations

- Cramer, H., Fitch, S. (2024). Siloed [Film; online video]. Billings Clinic | Montana Obstetrics and Maternal Support (MOMS).
- Cramer, H., Fitch, S., McCracken III, C., Lofgren, V. (2023). Siloed: Ellen's Story; Know the signs of obstetric hemorrhage [Short film; online video]. Billings Clinic | Montana Obstetrics and Maternal Support (MOMS).
- Cramer, H., Fitch, S., McCracken III, C., Lofgren, V. (2023). Siloed: Mindy's Story; Understanding Postpartum Warning Signs [Short film; online video]. Billings Clinic | Montana Obstetrics and Maternal Support (MOMS).
- Cramer, H., Fitch, S., McCracken III, C., Lofgren, V. (2023). Siloed: Lauren's Story; The Importance of Social Support [Short film; online video]. Billings Clinic | Montana Obstetrics and Maternal Support (MOMS).
- Cramer, H., Fitch, S., McCracken III, C., Lofgren, V. (2023). Siloed: Erika's Story; Finding Support Through Telehealth Services [Short film; online video]. Billings Clinic | Montana Obstetrics and Maternal Support (MOMS).

Activity 3.4

Provide opportunities for healthcare professionals to participate in education, certification, and licensing opportunities to improve maternal health care delivery knowledge and competency across the state.

Nurse Certification

At the start of year 2, Billings Clinic contracted with HealthStream to purchase a Neonatal Resuscitation Program (NRP) and Sugar, Temperature, Airway, Blood pressure, Lab work, and Emotional support (STABLE) program to sponsor rural nursing staff. The HealthStream site went live in December 2020. Additionally, at the end of year 3, Postpartum Support International (PSI) approved a Perinatal Mental Health (PMH-C) training and certification membership to MOMS.

Year 5 Update

The MOMS grant did not sponsor any NRP or STABLE course trainings; two PSI Perinatal Mental Health (PMH-C) and 4 Grief and Loss trainings were sponsored in year 5. MOMS is also a gold sponsor for the Healthy Mothers Health Babies Montana Conference in October 2024 and offered 10 complementary registrations.

Indigenous Doula Training

Zaagi'idiwin, a Full Spectrum Indigenous Doula Training certification course, is taught by trainers Michelle Brown and Candace Newmann. The Indigenous Doula Training course is specific to the perspective and traditions of Indigenous communities and is divided into seven sections which include topics pertaining to grief and loss, pregnancy, traditional teaching tools, labor and birth, postpartum, and caring for the caregiver.

Year 5 Update

In year 5, two trainings were sponsored by the MOMS grant:

- **October 2023:** 34 participants attended the training at Aaniiih Nakoda College in Harlem.
- **March 2024:** 26 participants attended the training at Native American Development Corp. in Billings.

Next Steps and Sustainability

A final report has been prepared by the MOMS team and is available on the MOMS website. All other activities for this project have been completed.

Activity 3.5

Provide simulation training opportunities for non-birthing and birthing facilities of all levels in teamwork/communication and a variety of birthing scenarios.

Simulation in Motion-Montana

Simulation in Motion-Montana designs and runs life-like simulations for trauma care and dangerous patient events, using high-fidelity mannequins and a mobile bus/mock birthing room. Billings Clinic contracted with SIM-MT in January 2020 to provide obstetric simulation training for non-birthing, critical access hospitals in rural and frontier Montana communities, where births are rare but can be emergent. Simulations included Normal Delivery, Normal Delivery with Sick Baby (requiring resuscitation), Postpartum Hemorrhage, Preeclampsia, Trauma in Pregnancy, and Shoulder Dystocia.

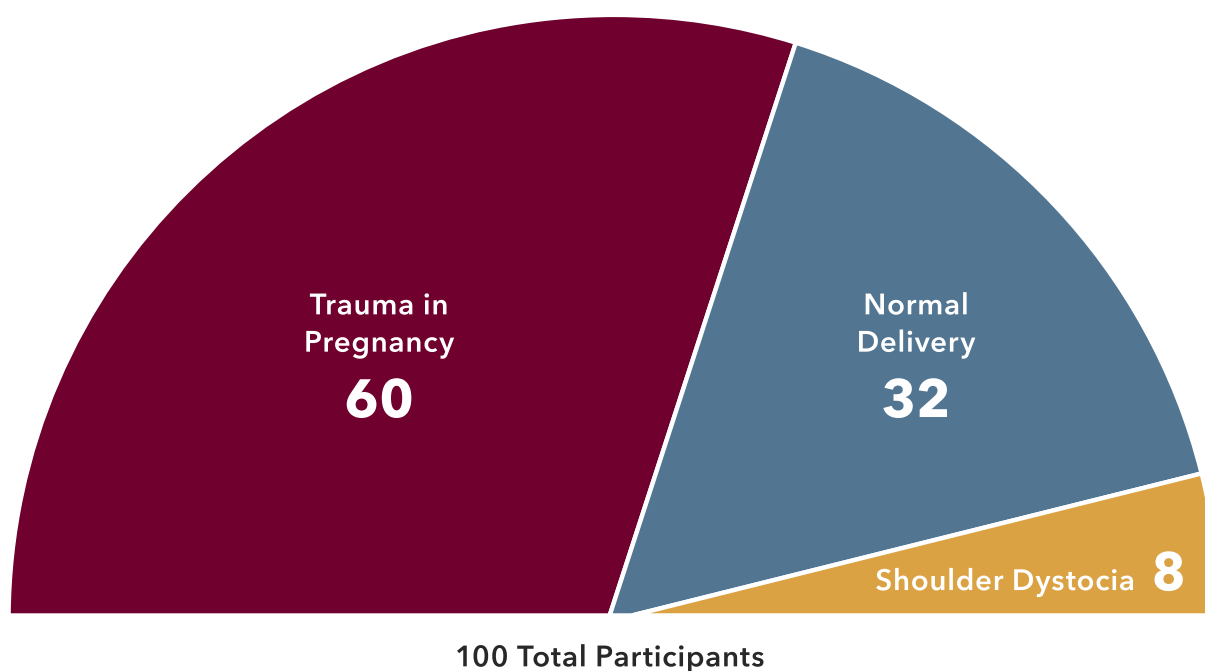
Year 5 Update

12 total trainings were conducted in year 5 and SIM-MT's contract ended at the end of June 2024. UM collected participant information through April 15, 2024.

Participants

In year 5, UM collected data on eight SIM-MT events that occurred from November 2023 to June 2024 across 7 counties (Beaverhead, Carbon, Granite, Madison, Meagher, Prairie, and Yellowstone County). Most participants in year 5 attended the Trauma in Pregnancy simulation. Figure 4 illustrates the number of participants by simulation.

Figure 4. Total SIM-MT Participants by Simulation Type



SIM-MT events in year 5 trained 100 healthcare professionals in obstetric simulations. Table 4 shows participants by health profession.

Table 4. Year 5 Unique SIM-MT Participants by Healthcare Profession.

Nurse	49
EMT/AEMT	11
Nurse Practitioner	6
Other	6
Physician	5
Physician Assistant	5
Certified Nursing Assistant	3
Licensed Practical Nurse	2
Student Nurse	1
Not reported	1

Sustainability

All activities related to this project have been completed. The MOMS team at Billings Clinic and SIM-MT are pursuing additional funding opportunities to continue offering simulation trainings at Montana hospitals.

Simulation Leadership Academy

The MOMS Simulation Leadership Academy (SLA) is a cohort-model educational offering designed to provide physicians, midlevel providers, nurses, and other clinical leaders at rural health centers the opportunity to learn the science of obstetric simulation, practice design, and implementation of various types of simulation. SLA is also designed to train specific management skills and maneuvers for a variety of obstetric complications. Participating facilities receive a PROMPT Flex birthing manikin with a postpartum hemorrhage module to be used throughout the course if a simulator of equal or greater fidelity is unavailable. The goal of the SLA is to ensure that every maternal health center has the resources and equipment necessary to conduct drills for obstetric care scenarios, with the goal of improving provider competency and confidence in providing safe and effective maternal healthcare that ultimately improves patient health outcomes.²

SLA is a hybrid training course, comprised of six 90-minute virtual sessions hosted over Zoom, on-site simulation assessment, and ongoing consultation and coaching sessions.

Year 5 Update and Sustainability

A strategic planning session was completed in January 2024 to discuss the SLA curriculum to create ideas for new asynchronous content, including short instructional maneuver videos in addition to simulation content. The team at Billings Clinic is pursuing additional funding opportunities for this project.

² Fitch, S., Robertson, M., McCracken, C.H., Mulcaire-Jones, G., McKay, K., Lofgren, V. (2022). MOMS Simulation Leadership Academy Manual.

Activity 4.1

Facilitate co-management of high-risk patients with urban-based specialists and rural-based generalists.

Empaths

In year 2, Billings Clinic partnered with the Rimrock Foundation and implemented Empaths, a pilot project aimed to inform best practices in substance use disorder treatment for women who are pregnant and living in rural areas. Empaths consists of a system-level treatment model which includes universal screening and brief intervention for substance use in pregnancy and a system to refer patients to substance use disorder treatment and other services. In Year 4, Empaths underwent program revisions. The program pivoted to establish a contract with One Health, a Federally Qualified Health Center (FQHC), to bring in a peer support specialist/doula to enhance provider outreach and improve care Empaths patients receive. Leadership from Billings Clinic, UM, and One Health began meeting in July 2023 to discuss integration of the peer support specialist into the Empaths workflow.

Yarrow, a public health consulting firm, was contracted to provide quality improvement coaching, with specific focus on improving processes surrounding screening and data coordination of Empaths. Through process mapping meetings with Yarrow, gaps in connecting patients to community resources were identified, including lack of access to services for patients without Medicaid and prerequisites through Montana Medicaid that patients must receive a diagnosis and treatment plan from a behavioral health specialist prior to receiving services from a peer support specialist.

Year 5 Update and Sustainability

In year 5, the Empaths team continued to engage in re-implementation of universal screening, brief intervention, and referral to treatment (SBIRT) for pregnant and postpartum people receiving care at two Billings Clinic locations. The Empaths team and clinic staff engaged in 11 formal plan-do-study-act (PDSA) cycles guided by the Institute for Health Care Improvement Model for Improvement to increase rates of SBIRT. An implementation team of 19 people was formed that included leadership and front-line staff from both Billings Clinic and One Health. The makeup of the team provided a holistic understanding of the clinic, the SBIRT process, and challenges faced. This engagement also improved buy-in from team members and other clinic staff. The team clarified roles and responsibilities and finalized a process map that details the step-by-step process of SBIRT in the clinic. The evaluation team streamlined data collection to provide accurate and timely feedback to the implementation team and clinic staff. The implementation team also planned and conducted additional training for clinic staff to support the implementation process.

The Empaths team also created a sustainability plan. Billings Clinic and One Health have implemented policies and procedures that have built a system of care that is more resilient to staff turnover. The clinic has adopted onboarding procedures to support the implementation of SBIRT in the clinic. These efforts will continue through a partnership with the Montana Healthcare Foundation's Meadowlark Initiative.

Dissemination

In year 5, the research team developed a manuscript on reimplementation efforts undergone between June 2023 and June 2024 and is under consideration with the Obstetrics & Gynecology Journal. The Empaths team presented the following presentations to national audiences in year 5:

- Kook, T., Fitch, S., Amin, S., Calveri, L. (2024). Creating supports for families and caregivers of children who experienced prenatal substance exposure. Panel presentation at the Zero to Three Conference, Long Beach, CA.
- Fitch, S., Reese, S., Glover, A., Krane, K., Pilch, A., Honaker, K. (2024). Reimplementation of Screening, Brief Intervention, and Referral to Treatment (SBIRT) in the perinatal care setting. Presentation at the CityMatCH Annual Conference, Seattle, WA.

Cuddling Cubs Study: Maternal-Infant Attachment through a Virtual Playgroup

PI: Johanna Thompson, OTR/L

Purpose of the Study

The purpose of this study is to explore the impact of a virtual support group on maternal postpartum experiences, including postpartum anxiety, in a rural state.

Methodology

This was a mixed methods study with pre and post PSAS-RSF-16 questionnaires. Participants were recruited with convenience sampling and through social media and were enrolled in a seven-week virtual support group. Groups were led by Occupational Therapy (OT) students under the supervision of a licensed OT (with extensive postpartum and infant experience), and consisted of an educational component (i.e., infant massage, mindfulness, gross motor movement, recovery, etc.), and time for participants to reflect and ask questions. Field notes were gathered and coded by individual researchers. The Rocky Mountain College IRB approved the study under Protocol #: SP22-004

Year 5 Update and Sustainability

The Rocky Mountain College held two final classes in year 5 and supported 15 families. The team at Billings Clinic will absorb the Cuddling Cubs program into the NICU and PEDS occupational therapy programming.

Dissemination

The study team made the following presentations to state audiences in year 5:

- Thompson, J., Armstrong, J., Lackey, S., Leidig, M., Tucker, T., Williams, T. (2023). Occupational therapy's role in addressing maternal health. Poster presentation at the Montana Occupational Therapy Associate (MOTA) Annual Conference, Billings, MT.
- Thompson, J., Lopez-Morales, D., and Caldwell, R. (2023). Sharing solutions to improve care for all families in the perinatal period. Panel presentation at the Montana Perinatal Mental Health Conference, virtual.

New Baby & Me Perinatal Education Resource

In year 3, the MOMS team at Billings Clinic worked to develop a free, self-paced, online perinatal education app and resource for all Montana families. The New Baby & Me app, powered by YoMingo, includes frequently updated content, tools, and supports for parents throughout the perinatal and postpartum period. All information contained in the app is pulled directly from recommendations and standards from the Association of Women’s Health, Obstetric and Neonatal Nurses (AWHONN).

Learners and Learning Topics

At the end of year 5, there were 212 total learners registered with the app, with 72 active learners. The New Baby & Me app provides articles, videos, and tools for learners to engage with. Figures 5, 6, and 7 demonstrate the most engaged with categories and tools accessed by learners in year 5.

Figure 5. Top Article Categories Viewed by Learners in Year 5

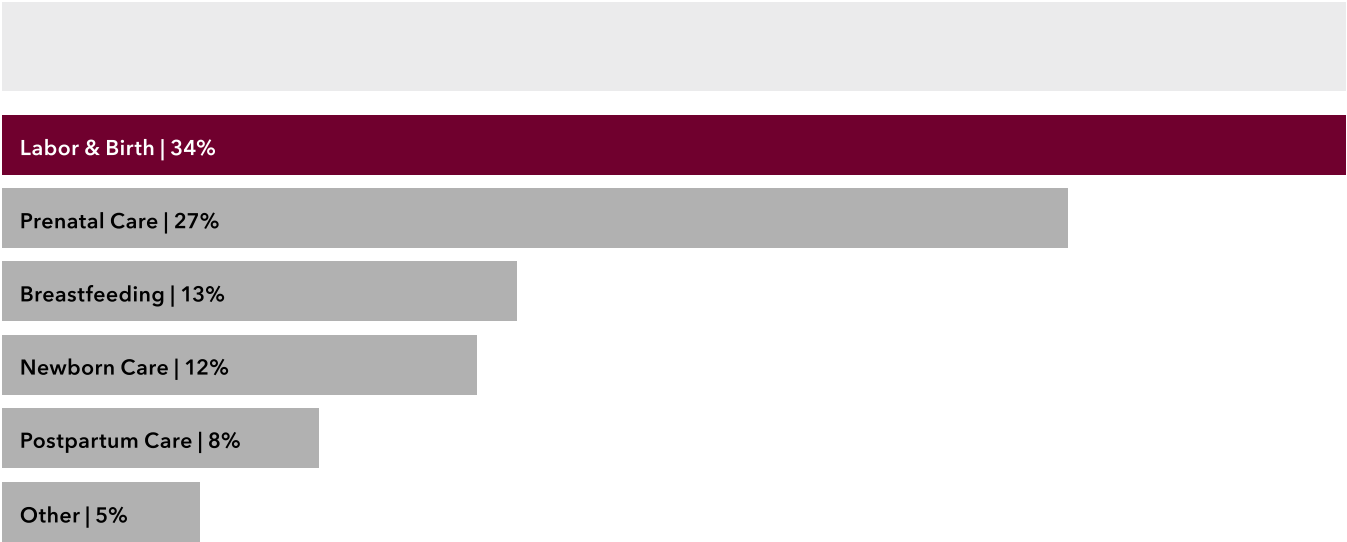


Figure 6. Top Video Categories Viewed by Learners in Year 5

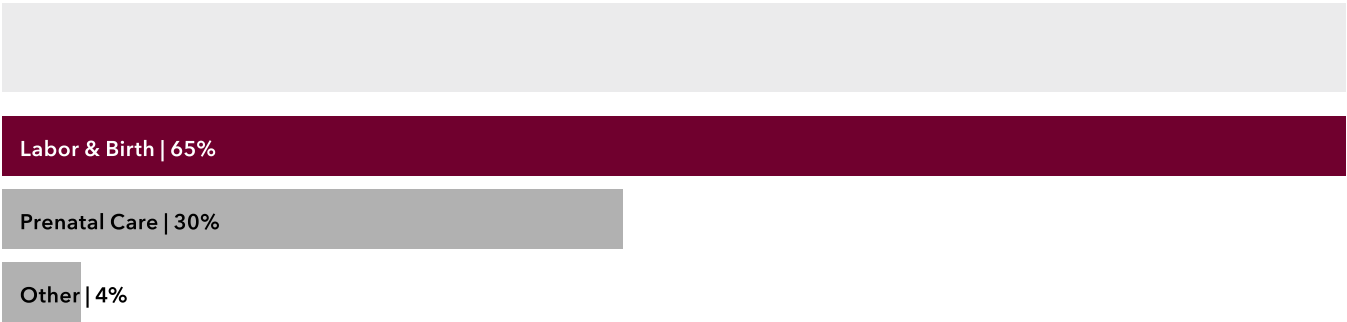
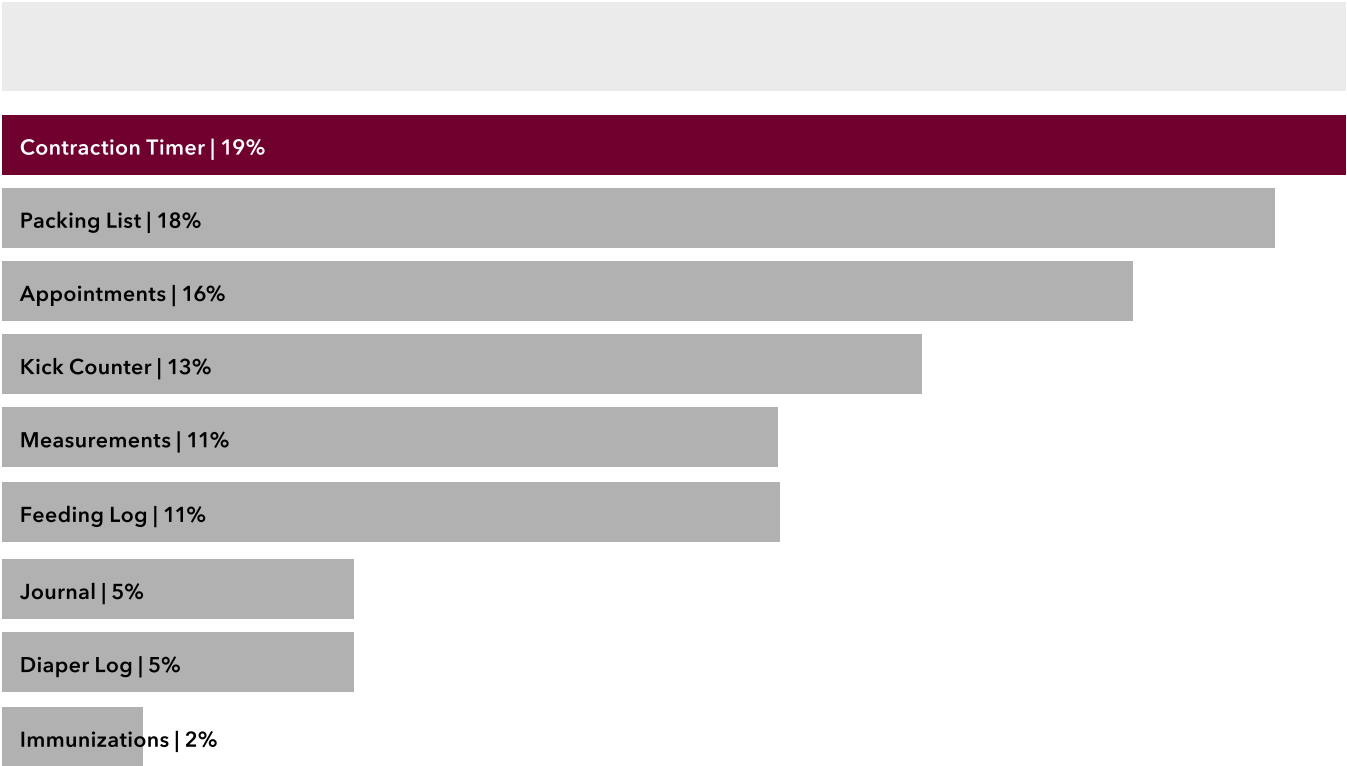


Figure 7. Top Tools Viewed by Learners in Year 5



Year 5 Update

The New Baby & Me educational resource is set to sunset at the conclusion of the MOMS grant.

Birth in Motion Education Course

In year 4, the MOMS team at Billings Clinic supported and sponsored a program developed by Central Montana Medical Center, Restorative Physio, and doulas working in the Lewistown area. This two-day, free educational course is designed for pregnant people and their support people to learn about the labor and delivery process, breathing techniques, birthing positions, and pain management options. The class is taught by a pelvic physical therapist and is assisted by doulas, who all have specialized training in labor and delivery.

Year 5 Update

The MOMS team at Billings Clinic co-sponsored eight two-day Birth in Motion classes in year 5. The Birth in Motion team plans to apply for other grant funding to sustain the program beyond the MOMS grant.

Activity 4.2

Establish access to multidisciplinary specialists, via live or telemedicine program in rural communities.

See Activity 3.1 for the description of Project ECHO and Activity 4.1 for the description of the Empaths program.

Activity 4.3

Enable front-line health care providers to provide or receive real-time psychiatric and substance use disorder (SUD) consultation and care coordination support in treating pregnant and postpartum people.

See Activity 3.1 for the description of Project ECHO and Activity 4.1 for the description of the Empaths program.

Activity 4.4

Support multidisciplinary networks of providers to expand service accessibility in rural communities.

See Activity 3.1 for the description of Project ECHO and Activity 4.1 for the description of the Empaths program.

Activity 5.1

Establish linkages with and among community-based resources, including mental health resources, primary care resources, and support groups.

See Activity 4.1 for the description of Empaths.

MOMS Program - Stories of Impact

"I think the hemorrhage cart has been our biggest win for the MPQC"

Sidney Health Center is a critical access hospital with an obstetrics unit in Sidney, Montana. In 2021 - 2022, Sidney Health Center staff participated in the Alliance for Innovation on Maternal Health Obstetric Hemorrhage Patient Safety Bundle pilot initiative of the Montana Perinatal Quality Collaborative. In a recent interview with MPQC staff, Tami Larson, RNC-OB, Labor and Delivery Director at Sidney Health Center, shared a success story related to her team's work with the Obstetric Hemorrhage Bundle and their work preparing a hemorrhage cart.

"She [the patient] retained her placenta and like we weren't even getting a response from her at that point but... because we had that [hemorrhage] cart loaded with instruments that the doctor needed everything and - you know, it's 2 o'clock in the morning so we don't have any ancillary staff at all so we were able to use what we had in that room to save her life **so we did, we saved her life.** The only thing we don't have on that cart is blood, but you know we have everything else, and we used everything on that cart. Nobody had to run out of the room to get anything, you know, we were able to just stay together.... so, it literally was two nurses, a CNA, and a doctor saving this gal's life and she's doing fine. Her baby are doing great."

"Now we set it [the hemorrhage cart] outside every delivery, we can take it to surgery if we need to and it has all the instruments, it has all the meds, it's fast access and it's been utilized so many times."

Sidney Health Center staff have participated in all MPQC Patient Safety Bundle offerings and many other MOMS funded opportunities and continue to improve the standard of care for all patients within their facility.

It takes a village to raise a parent, awareness helps all mothers

Perinatal mood and anxiety disorders (PMADs) can impact all members of a family. Normalizing discussions around mental health to combat feelings of guilt and shame that prevent parents from seeking help, especially with primary care providers, is important for resolving these feelings and improving family health. Community support is vital for both parents and children, and asking for help is essential for overall family health and well-being.

The Billings Gazette, a local newspaper, highlighted Stephanie Fitch, Billings Clinic MOMS Grant Manager, and her experience with PMADs as a young mother with good family support. Stephanie said, "they say it takes a village to raise a child, but I think it also takes a village to raise a parent. We are growing up right alongside our kids, and it's important to know that it is okay to ask for help." The full article is available online for review.

- Palmer, L. (June 17, 2024). It takes a village to raise a parent, awareness helps all mothers. The Billings Gazette.

Effort to improve Indigenous maternal health in Montana starts with doulas

Throughout the since 2022, the MOMS grant has sponsored four Full Spectrum Indigenous Doula Trainings with Zaagi'diwin. Over 100 trainees have completed the program, filling a crucial role in providing support and advocating for culturally safe practices, which can improve health outcomes for Indigenous communities. The Billings Gazette interviewed several staff about the trainings. Diona Buck, MOMS Indigenous Engagement Coordinator, stated, "Pregnancy is not a medical condition, it's a sacred ceremony. It's important to make doctors aware of Indigenous cultural birthing practices, because it's something that was taken away from us through colonization. Being in a time where we have the ability to bring back those traditional practices into our birthing experience is just so meaningful." The full article is available online for review.

- Palmer, L. (April 1, 2024). Effort to improve Indigenous maternal health in Montana starts with doulas. The Billings Gazette.

Conclusion

In its final project year of this five-year funding cycle, MOMS continued several core activities, including provider education through Project ECHO, simulation trainings and expanded access to perinatal behavioral health through the Empaths program, and data system capacity and dissemination. In this final year, MOMS also dramatically expanded efforts to engage with Montana's Tribal Nations and Indigenous leaders. These efforts included the first-ever Title V Maternal Child Health Block Grant Needs Assessment Tribal Component with focused efforts to collect data from Indigenous families on health needs and priorities. MOMS also focused significant resources on strengthening perinatal supports through the Indigenous Doula Training Program. Tribal community resources and strengths-based programming were supported through the Immersion Days as well as Family Care Spaces. Each of these initiatives were led and initiated by individuals from the communities the programs were designed to serve and represent new and innovative approaches to supporting pregnancy and postpartum people and their families across Montana. As maternal health continues to be a priority area for resources and energy in this state, programs and interventions that are designed and implemented by local communities should take center stage to ensure relevancy, effectiveness, and inclusion for all impacted families.

Appendix A

Table A1. 2023-2024 Maternal Health Leadership Council Members

Name	Organization
Annie Glover	Montana Perinatal Quality Collaborative (MPQC-AIM); University of Montana Rural Institute for Inclusive Communities
Elenor Gunshows	Rocky Mountain Tribal Leaders Council
Stephanie Iron Shooter	DPHHS Office of American Indian Health
Lisa James	Montana Consortium of Urban Indian Health Centers
Mary LeMieux	Medicaid, Montana Screening and Treatment for Maternal Mental Health and Substance Use Disorders (MMHSUD) Program
Caroline McConville	Montana Perinatal Association
Brook McDonald	Rocky Mountain Tribal Leaders Council
Pharah Morgan	Rocky Mountain Tribal Leaders Council
Stephanie Morton	Healthy Mothers Healthy Babies Montana
Jackie Muri	Intermountain Health
Pam Ponich	One Health
Shani Rich	Montana Hospital Association
Olivia Riutta	Montana Primary Care Association
Kayla Sanders	Montana Rural Maternity and Obstetrics Management Strategies (RMOMS) Program
William Snell	Rocky Mountain Tribal Leaders Council
Michele Stanton	Meadowlark Initiative
William Stevenson, MD	Indian Health Services
Amy Stiffarm	Healthy Mothers Healthy Babies Montana
Jana Sund	Logan Health Midwifery
Tressie White	Meadowlark Initiative



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