

# MONTANA OBSTETRICS and MATERNAL Support Program

— Year 4 Report —

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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       |
| CDC      | Centers for Disease Control and Prevention                         |
| DPHHS    | Department of Public Health and Human Services                     |
| DUA      | Data Use Agreement   |
| ECFSD    | Early Childhood & Family Support Division                          |
| EmOC     | Emergency Obstetric Care   |
| EMS      | Emergency Medical Services   |
| ERASE MM | Enhancing Reviews and Surveillance to Eliminate Maternal Mortality |
| FCHB     | Family and Community Health Bureau                                 |
| FMRWM    | Family Medicine Residency of Western Montana                       |
| 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  |
| FCHB     | Family and Community Health Bureau                                 |
| HCUP     | Healthcare Cost and Utilization Project                            |
| HHS      | United States Department of Health and Human Services              |
| HMHB     | Healthy Mothers Healthy Babies                                     |
| HPSA     | Health Professional Shortage Areas                                 |
| HRSA     | Health Resources and Services Administration                       |
| IHI      | Institute for Healthcare Improvement                               |
| IRB      | Institutional Review Board   |
| IUD      | Intrauterine Device  |
| LIFTS    | Linking Infants & Families to Supports                             |

## Acronym Glossary

| Acronym | Full Name   |
|---------|---|
| LOCATe  | Levels of Care Assessment Tool  |
| MADM    | Mother's Autonomy in Decision Making Scale                                  |
| MCH     | Maternal and Child Health   |
| MFM     | Maternal-Fetal Medicine specialist  |
| MHA     | Montana Hospital Association  |
| MHI     | Maternal Health Innovation Program  |
| MHLC    | Maternal Health Leadership Council  |
| MHSP    | Maternal Health Strategic Plan  |
| MMRC    | Maternal Mortality Review Committee   |
| 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                                     |
| NRP     | Neonatal Resuscitation Program  |
| OT      | Occupational Therapist  |
| 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                                   |
| SIM-MT  | Simulation in Motion Montana  |
| SLA     | Simulation Leadership Academy   |
| SMFM    | Society for Maternal-Fetal Medicine   |
| SMM     | Severe Maternal Morbidity   |
| 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 (UM), 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 (RIIC). 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 the MOMS grant.



## Impact of COVID-19

The impacts of the COVID-19 pandemic continued to shift in year 4 of the MOMS grant. In May 2023, the Department of Health and Human Services (HHS) declared they were shifting from the emergency response phase of COVID-19 and ended the federal Public Health Emergency. Opportunities for in-person and hybrid meetings continued, and the MOMS team disseminated MOMS research activities statewide and nationally. While case numbers and hospitalizations declined in the state, the long-term impacts of COVID-19 have persisted in healthcare facilities, including workforce shortages and provider burnout. Hospitals participating in MOMS activities had to cancel or reschedule training and adjust provider attendance based on availability. The MOMS team kept this in mind when developing and implementing activities to ensure hospitals could still participate in a way that fits their current staffing situation.

This report provides an evaluation summary of the fourth 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, 2022, to September 29, 2023.

## 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 16 voting 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 4 MHLC members.

#### Year 4 Council Activities

Three MHLC meetings—two virtual meetings and one hybrid—were held in year 4. The following activities were conducted in year 4:

- **Guest presentations:** Ten guest presentations were held throughout the year 4 MHLC meetings. Table 1 lists key Council meeting guest presentations held during year 4.
- **Council recommendations:** The MHLC endorsed the MOMS Hospital Capacity Grant program, which funded 25 requests for necessary equipment and training in Montana hospitals.
- **Ongoing feedback on MOMS activities:** MOMS year 4 work plan and charter, MMRC, SLA, Capacity grants, and Empaths.

**Table 1.** Guest Presentations Held During Year 4 MHLC Meetings

| Meeting Date | Presentation Title   | Presenter and Affiliation  |
|--------------|--|--|
| 10/18/2022   | 2022 Montana Maternal Health Annual Report                                   | Annie Glover, PhD, MPH, MPA - Senior Research Scientist, UM RIIC   |
| 10/18/2022   | Montana Perinatal Quality Collaborative                                      | Annie Glover, PhD, MPH, MPA - Senior Research Scientist, UM RIIC   |
| 10/18/2022   | Healthy Southwest Montana - RMOMS Program                                    | Sarah Diefendorf, PhD - Intermountain Healthcare Services;<br>Kerry Palakanis, DNP, APRN - Intermountain Healthcare Services |
| 1/17/2023    | Cuddling Cubs Virtual Playgroup for New Moms                                 | Johanna Thompson, OT - Occupational Therapist, Billings Clinic   |
| 1/17/2023    | Montana Provider Perspectives on Contraceptive Care in the Postpartum Period | Alex Buscaglia, MA - Research Assistant and Clinical Psychology PhD Student, UM RIIC   |
| 4/25/2023    | Updates from Healthy Mothers, Healthy Babies, Overview of LIFTS              | Stephanie Morton, MSW - Director of Programs and Impact, Healthy Mothers Healthy Babies Montana                              |

|           |   |   |
|-----------|---|---|
|           |   |   |
| 4/25/2023 | Pregnancy Risk Assessment & Monitoring (PRAMS) Overview and Dashboard Demo      | Kara Hughes, BS, CPH – Montana PRAMS Coordinator, DPHHS |
| 4/25/2023 | Patient Experiences of Respect and Autonomy in Montana’s Maternal Health System | Carly Holman, MS – Program Evaluator, UM RIIC           |

### **Looking Ahead to Year 5**

As the MOMS program moves into its final grant year, DPHHS will convene the MHLC to focus on grant sustainability.

## **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) requires 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.

### **Year 4 Update**

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. See Appendix B for a list of MMRC Members for 2021-2022.

## Activity 1.3

### Montana Membership in Alliance for Innovation on Maternal Health

In year 3, DPHHS and UM partnered with the Montana Perinatal Association (MPA) and Montana Hospitals Association (MHA) to establish the maternal health arm of the MPQC to support the implementation of the AIM 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.

### Year 4 Update

In the fall of 2022, the 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.

Additionally in the fall of year 4 of the MOMS grant, the CDC 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 4, HRSA did not require Montana to submit a new MHSP. Instead, the MOMS Leadership team (UM, Billings Clinic, and DPHHS) met June through August to update and submit a year 5 work plan. The work plan included state program goals and timelines for 2019-2024, focused 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<sup>1</sup>. 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 4 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.

### *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.

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

### *Year 4 Update and Next Steps*

Additional analyses were undertaken with the Montana LOCATe data during year 4. ACOG and SMFM issued a correction to the ACOG Obstetric Care Consensus No. 9: Levels of Maternal Care. The correction impacted the maternal-fetal medicine specialist (MFM) requirements for Level II maternal care. Previously, an MFM would need to be physically present on-site for Level II. Now, to meet Level II requirements, an MFM must be “readily available at all times (24/7) for consultation on-site, by phone, or by telemedicine as needed.” This change impacted the LOCATe-assessed level of maternal care for two birthing facilities in Montana. Both facilities moved from a Level I to a Level II classification. The updated Montana LOCATe maternal levels of care are as follows: <Level I (n=6, 24%), Level I (n=11, 44%), Level II (n=6, 24%), Level III (n=1, 4%), and Level IV (n=1, 4%).

### *Dissemination*

In year 4, UM published a manuscript on the LOCATe study in BMC Health Services Research. The Montana LOCATe study contributes an important rural perspective to the body of literature on risk-appropriate perinatal care.

- Holman, C, Glover, A, Fertaly, K, Nelson, M. Operationalizing risk appropriate perinatal care in a rural US State: Directions for policy and practice. *BMC Health Serv Res.* 2023; 23(1):601. <https://doi.org/10.1186/s12913-023-09552-y>

## **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 4 Update and Next Steps*

UM conducted several dissemination activities focused on the facility accessibility needs assessment module. Nationally, the facility accessibility study has contributed to conversations on improving health equity for pregnant patients with disabilities through presentations at the American Public Health Association Conference and the National Maternal Health Innovation Symposium. In Montana, MOMS has shared these results with healthcare providers and initiated education and training on accessible healthcare settings through presentations at the MOMS Project ECHO Clinic and a Montana Perinatal Quality Collaborative Learning Session.

### *Dissemination*

UM made the following presentations to national and state audiences in year 4:

- Holman, C., Glover, A.L., Fertaly, K., Nelson, M. (2023). Integrating accessibility into a statewide assessment of risk-appropriate care. An opportunity to improve perinatal care environments for patients with disabilities [Oral Presentation]. Maternal Health Learning and Innovation Center (MHLIC) Annual Symposium Virtual Meeting.
- Holman, C. (2023). Facility accessibility for pregnant patients with disabilities: Results from a statewide assessment [Oral Presentation]. MOMS Project ECHO virtual meeting.
- Holman, C., Glover, A.L., Fertaly, K., Nelson, M. (2023). Integrating accessibility into a statewide assessment of risk-appropriate care: An opportunity to improve perinatal care environments for patients with disabilities [Poster Presentation]. Montana Public Health Association and Montana Environmental Health Association Confluence Public Health Alliance Conference, Billings, MT.
- Holman, C., Glover, A.L. (2022). Montana Obstetrics and Maternal Support Program [Oral Presentation]. Rural Institute Consumer Advisory Council.
- Holman, C., Glover, A.L., Fertaly, K., Nelson, M. (2022). Assessing the Capacity of Montana's Maternal and Neonatal Health System to Provide Ability-Equitable Access to Risk Appropriate Care [Oral Presentation]. American Public Health Association (APHA) Conference, Boston, MA.

## **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 4 Update and Next Steps*

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

In fall 2023, HRSA awarded UM a four-year, \$800,000 AIM Capacity Grant to support capacity building in Montana’s non-birthing hospitals through the implementation of the AIM Obstetric Emergency Readiness Resource Kit and similar innovative initiatives. All work related to the Emergency Obstetric Services Study will transition to the AIM grant during year 5 of the MOMS grant.

### *Dissemination*

In year 4, UM submitted draft reports for review to DPHHS on emergency obstetric services in a hospital without an obstetrics unit and summary reports focused on training, transport, and medical products, vaccines, and technologies. These reports will be published in year 5, and additional manuscripts are in production for year 5. UM made the following presentations to national and state audiences in year 4:

- Fertaly, K., Javorka, M., Glover, A.L., Brown, D. (2023). Referral and transport during obstetric emergencies in rural Montana: What makes for successful transport [Poster Presentation]? Montana Public Health Association and Montana Environmental Health Association Confluence Public Health Alliance Conference, Billings, MT.
- Glover, A.L., Holman, C., Brown, D., Nelson, M. (2022). “Hope and pray the flight team has blood on board”: An assessment of blood transfusion capacity in obstetric emergencies at Critical Access Hospitals [Oral Presentation]. Annual American Public Health Association (APHA) Conference, Boston, MA.

## **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.

## *Dissemination*

UM made the following presentations to national and state audiences in year 4:

- Buscaglia, A., Glover, A.L. (2023). Montana provider perspectives on contraceptive care in the postpartum period [Oral Presentation]. Montana Maternal Health Leadership Council meeting via Zoom.
- Buscaglia, A., Glover, A.L., Smith, N., Boutte, S., Etrheim, E. (2023). Assessing the provision of contraception & postpartum care in rural Montana: Barriers, facilitators, and attitudes toward IUD and implants [Poster Presentation]. Montana Public Health Association and Montana Environmental Health Association Confluence Public Health Alliance Conference, Billings, MT.
- Glover, A.L., Buscaglia, A. (2023). MOMS contraception and postpartum care in Montana [Oral Presentation]. American College of Obstetricians and Gynecologists Annual Meeting, Baltimore, MD.
- Glover, A.L., Buscaglia, A., Smith, N. (2023). Provider perspectives on ensuring equitable contraceptive care for individuals living with a disability [Poster Presentation]. Academy Health Annual Research Meeting, Seattle, WA.
- Glover, A.L., Buscaglia, A., Smith, N. (2023). Provider perspectives on ensuring equitable contraceptive care for individuals living with a disability [Poster Presentation]. Maternal Health Learning and Innovation Center Annual Symposium, Minneapolis, MN.
- Buscaglia, A., Glover, A.L., Smith, N., Boutte, S., Etrheim, E. (2022). Assessing the provision of contraception & postpartum care in rural Montana: Barriers, facilitators, and attitudes toward IUD and implants [Poster Presentation]. Annual American Public Health Association (APHA) Conference, Boston, MA.

## 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 4 Update and Next Steps*

UM has conducted a preliminary analysis of the survey data and finished coding the qualitative interviews. The data analysis will be completed in year 5, and focus will shift to dissemination, including a statewide report and manuscripts.

## Dissemination

UM made the following presentations to national and state audiences in year 4:

- Holman, C., Glover, A.L., Liddell, J., Garnsey, A., Piskolich, E., Nelson, M. (2023). Patient experiences of maternal healthcare in Montana: A mixed methods study [Oral Presentation]. Montana Maternal Health Leadership Council Meeting.
- Glover, A.L., Holman, C. (2023). Patient-centered obstetrics: Exploring factors related to informed choice, patient preference, and identity [Poster Presentation]. CityMatCH Annual Conference, New Orleans, LA.
- Holman, C., Glover, A.L. (2023). “I did not feel as though I was in charge or able to make decisions about my own body”: Patient experiences of respect in Montana’s maternal health system [Poster Presentation]. Association of Maternal & Child Health Programs (AMCHP) Conference, New Orleans, LA.
- Holman, C., Glover, A.L., Liddell, J., Garnsey, A., Piskolich, E. (2023). Engaging patients in practice improvements: Patients’ perspectives on postpartum care in Montana [Poster Presentation]. Academy Health Annual Research Meeting, Seattle, WA.
- Glover, A.L., Holman, C. (2023). Patient-centered obstetrics: Exploring factors related to informed choice, patient preference, and identity [Poster Presentation]. Academy Health Annual Research Meeting, Seattle, WA.

## UM Research Studies in Year 4

The MOMS research team continued several research studies in year 4 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:

### Facilitators and Barriers to Seeking Postpartum Care

PI: Marcy Hanson, PhD, MN, RN

#### *Purpose of the Study*

Identify risk and protective factors associated with seeking care for postpartum depression symptoms among Montana women who use substances or those with mental health concerns.

## Methodology

In partnership with Empaths, pregnant women who qualified for services due to substance use or opt-in to the program due to mental health concerns were invited to participate in a qualitative interview. Participants were interviewed using a qualitative descriptive approach informed by the Behavior Model of Health Services for Vulnerable Populations. These interviews provide understanding regarding knowledge of and barriers to receiving care for postpartum depression. The UM IRB approved the study under Protocol #:163-20.

## Results

Twenty-five women were referred for interviews, 14 accepted and seven completed the interview process. Interviews were conducted via Zoom and lasted between 15 and 30 minutes. Four main themes arose from the interview process regarding barriers and facilitators to receiving care for postpartum depression: Family history of mental health concerns and/or substance use, stigmatization around mental health or substance use, lack of awareness surrounding postpartum depression, and isolation.

## Dissemination

A manuscript was published on the Facilitators and Barriers to Seeking Postpartum Care Study interviews in the American Journal of Maternal Child Nursing in year 4:

- Hanson, M.N., Reese, S., & Newcomer, S.R. Challenges in accessing mental health care during pregnancy and postpartum in rural Montana. *MCN American J of Matern Child Nurs.* 2023;48(5): 252-257. <https://doi.org/10.1097/NMC.0000000000000937>

The following posters were also presented to national audiences in year 4:

- Hanson, M.N., Reese, S., Newcomer, S. (2023). Barriers to postpartum depression care for women with perinatal substance use [Poster Presentation]. Western Institute of Nursing, Tucson, AZ.
- Hanson, M.N., Reese, S., Newcomer, S. (2023). Ask the question. Identifying risk and protective factors to seeking postpartum depression care among women with perinatal substance use or mental health concerns [Poster Presentation]. National Maternal Health Innovation Symposium, Virtual.

## 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.

### *Year 4 Update and Next Steps*

Interview coding is complete, and three manuscripts are in the process of being written.

### *Dissemination*

UM will develop manuscripts on best practices and recommendations for training and implementing recovery doulas in Montana. The MOMS team made the following presentations to national audiences in year 4:

- Liddell, J. L., Glover, A.L. (2023). Developing the doula workforce to improve maternal health outcomes in rural settings [Poster Presentation]. Association of Maternal and Child Health Programs (AMCHP) Conference, New Orleans, LA.
- Liddell, J. L., Glover, A.L., Stiffarm, A., Fitch, S. (2023). A systematic review of the use of doulas in rural settings in the United States [Oral Presentation]. CityMatCH Annual Conference, New Orleans, LA.
- Liddell, J. L., Fitch, S., Glover, A.L. (2023). Developing the doula workforce to improve outcomes for perinatal patients affected by substance use disorders (SUDs) in rural settings [Oral Presentation]. Postpartum Support International (PSI) Conference, Kansas City, MO.

## **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.

### *Dissemination*

UM will write reports noting best practices and recommendations and prepare academic manuscripts. The MOMS team made the following presentation to a national audience in year 4:

- Stiffarm, A., Liddell, J. L., Glover, A.L. (2023). A systematic review of the use of doulas in Indigenous communities [Oral Presentation]. CityMatCH Annual Conference, New Orleans, LA.
- Stiffarm, A., Liddell, J. L., Carlson, T., Glover, A.L. (2022). A systematic review of the use of doulas in Indigenous communities [Oral Presentation]. American Public Health Association (APHA) Conference, Boston, MA.

## **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 will write reports noting best practices and recommendations and prepare academic manuscripts.

## **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 will write reports noting best practices and recommendations and prepare academic manuscripts.



## 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 are utilized.

### *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 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% (3,324) of all Montana deliveries had support from a birth doula given insurance reimbursement, 358 fewer C-sections would have occurred. Even at a high reimbursement rate of \$1,500 per delivery for doula care, the analysis reveals a net savings of \$672,534 between averted C-section charges and added doula charges. This translates to an average of \$202.33 saved per each of the 3,324 covered deliveries, an overall net reduction in costs of medical care through an evidenced based intervention: birth doulas.

### *Year 4 Update and Next Steps*

Final analysis and disaggregation by payor are underway, and renewal of HCUP dataset access for the project will take place.

### *Dissemination*

UM will write reports noting best practices and recommendations and prepare academic manuscripts in year 5. A presentation of findings is anticipated at the Professional Society for Health Economics and Outcomes Research 2024 annual meeting.

## 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 created a patient-education website. Marketing from Windfall will go live with final approval from DPHHS management. 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 4 Update

The community education program, as originally planned, was discontinued in year 4 due to repeated obstacles and 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 (SMM) 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 (PRAMS) survey has been conducted in Montana since 2017. The PRAMS program is housed in the Family and Community Health Bureau in the Early Childhood and Family Support Division. 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 prepares each year for submission to HRSA.

#### **Hospital Discharge Data**

MHA and UM entered a DUA 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 during 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 4 Needs Assessment and UM Research Study activities.

## Activity 2.3

### Maternal Health Report

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 and will be used for internal program planning in year 5.

## 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  |

|              |  |
|--------------|--|
|              |  |
| 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  |
| Activity 4.5 | Provide simulation training opportunities for non-birthing and birthing facilities of all levels in teamwork/communication and a variety of birthing scenarios   |
|              |  |
| 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

Fifteen ECHOs were hosted in year 4; see Table 2 for the list of ECHO topics and number of spoke participants. There were 127 unique spoke participants across the year 4 ECHOs, including 79 clinical spoke participants, 26 non-clinical attendees, 2 students, and 20 attendees who did not report their organization or role. Due to low participation in the summer months, ECHOs were not held in July.

**Table 2.** ECHOs and Clinical Spoke Participants

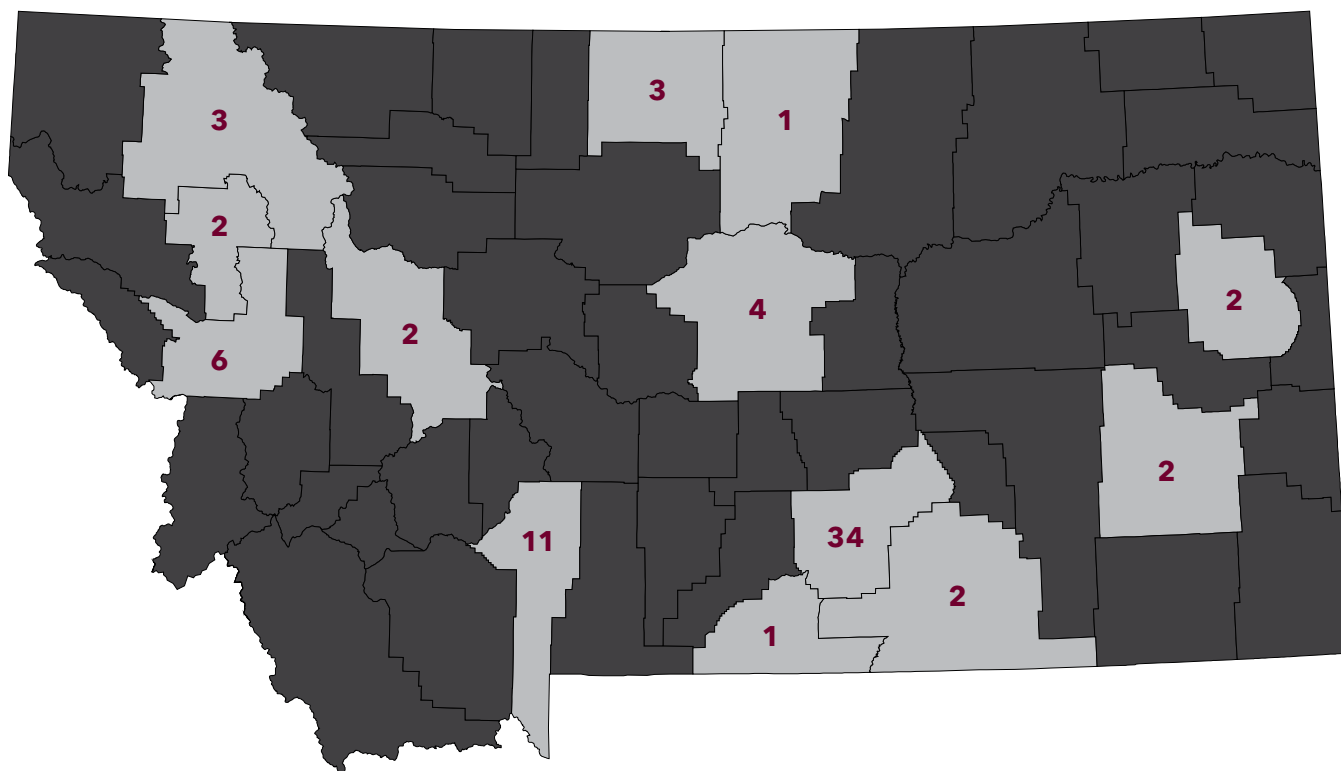
| <b>Date</b> | <b>ECHO Topic</b>  | <b>Clinic or Webinar*</b> | <b>Participants</b> |
|-------------|--|---------------------------|---------------------|
| 11/8/2022   | Inflammatory Bowel Disease in Pregnancy  | Clinic                    | 12                  |
| 12/13/2022  | YoMingo  | Webinar                   | 12                  |
| 1/10/2023   | Instrumental Vaginal Delivery  | Clinic                    | 11                  |
| 1/24/2023   | Syphilis in Pregnancy  | Clinic                    | 15                  |
| 2/14/2023   | Understanding Childbirth-Related Maternal Trauma to Address Systemic Issues                                    | Clinic                    | 13                  |
| 2/28/2023   | AIM Hypertension Bundle Implementation   | Webinar                   | 13                  |
| 3/14/2023   | Push Prep & Birth Pearls from a Pelvic PT  | Clinic                    | 12                  |
| 4/11/2023   | Obsessive Compulsive Disorder in the Perinatal Period  | Clinic                    | 17                  |
| 5/9/2023    | Trauma-Informed Care for LGBTQ+ Patients   | Webinar                   | 12                  |
| 5/23/2023   | The LIFTS Online Resource Guide  | Webinar                   | 12                  |
| 6/13/2023   | Facility Accessibility for Pregnant Patients with Disabilities: Results from a Statewide Assessment            | Clinic                    | 10                  |
| 8/6/2023    | External Cephalic Version  | Clinic                    | 17                  |
| 8/22/2023   | Do Nothing, Do Something, Aspirate: Management of Early Pregnancy Loss in the Outpatient Setting               | Clinic                    | 16                  |
| 9/12/2023   | Opioid Withdrawal Management for Patients in Labor, Delivery, Recovery, and Postpartum Units                   | Clinic                    | 17                  |
| 9/26/2023   | Special Interest Cultural Safety Webinar – Cultural Safety: Improving Perinatal Care for Indigenous Families** | Webinar                   | 68                  |

\*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 17 counties across Montana and three were from healthcare facilities out-of-state (21 participants did not report their facility). Figure 1 shows the number of participants by county in Montana.

**Figure 1.** Year 4 Unique ECHO Clinical Participants by County (N=76)



### *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. It is evident that ECHO clinics and webinars have created a strong community of practice.
- **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 wide range of topics by diverse presenters, including practitioners from physical health, mental health, public health, and clinical areas.

### Areas for Improvement:

- **Hub Site Attendance:** Throughout year 4, there has been great variability in the number of hub site / "expert team" attendees joining and participating in ECHO sessions. A critical component of the ECHO Clinic Model is multidisciplinary staff available to support the case presentation process.
- **Recruitment of Attendees:** In year 4, there has been a reduction in the number of participants (clinical and non-clinical) attending scheduled ECHO sessions and completing evaluations.
- **Didactic Presentation:** Across the ECHO clinics held this biannual period, there has been great variability in how long presentations last (some approximately 20 minutes, some up to an hour long). The ECHO Clinic Model recommends didactic presentations be no longer than 15 minutes.

## Participant Evaluations

### Participant Evaluations (Quantitative)

After each ECHO, participants received an online evaluation. The program collected 36 participant evaluations for year 4. Evaluations collect information on ECHO content, quality, enhancement of knowledge, relevance to practice, and application. Four ECHOs were webinars only and did not include a formal case presentation. The evaluation team removed case presentation responses from these dates (12/13/22, 2/28/23, 5/9/23, 5/23/23) in the analysis.

Figure 2. Overall Quality of the Presentation

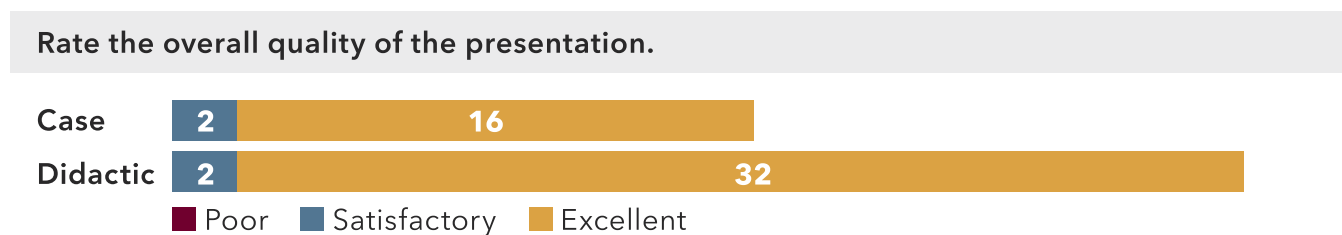


Figure 3. Competencies Identified by Specialty

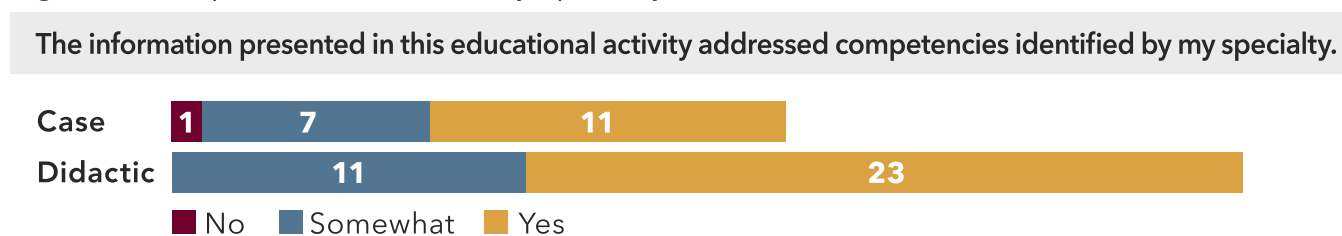
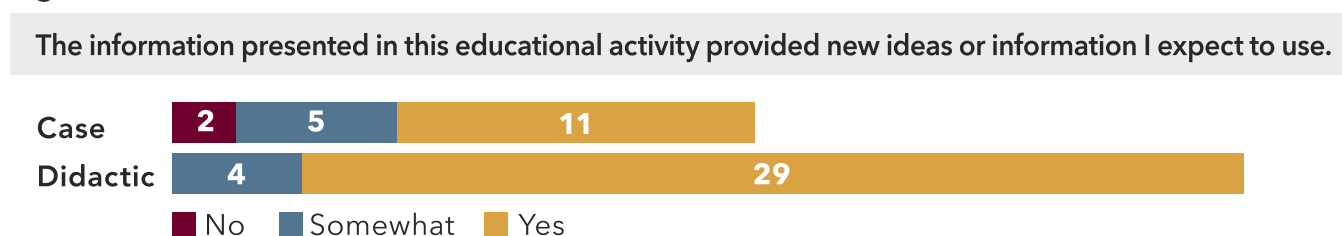


Figure 4. New Ideas





### *Participant Evaluations (Qualitative)*

The evaluation includes a set of open-ended questions. Participants are asked to share feedback on potential changes to their practice based on the ECHO presentation, barriers they face to implementing changes, general comments regarding the activity, and suggestions for future topics. Below are selected comments submitted by ECHO participants in year 4.

- *"I thought this was the best presentation I've gotten to see so far (I've been attending for over a year). Lisa [presenter] did an incredible job, and I'm so glad her knowledge is being shared!"* –ECHO Participant, Understanding Childbirth-Related Maternal Trauma to Address Systemic Issues (2/14/23)
- *"Great opportunity for the state to come together and learn."* –ECHO Participant, Pharmacology Review: Medications for Managing Hypertensive Conditions in Pregnancy and Postpartum (3/28/23)

### *Year 4 Update*

Throughout MOMS year 4, 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 bi-monthly Project ECHOs saw a reduction in the total number of live attendees each session from years prior, ECHO sessions decreased the length of meetings from 1.5 hours to 1 hour, and MOMS program staff had difficulty engaging stakeholders in submitting case presentations for clinics, which are a crucial component of the Project ECHO model. Due to various factors, all ECHOs were canceled for July 2023. Also in July, Brooke Hyman, MD, took over as the MOMS Project ECHO lead and facilitator, and an email campaign was sent out to enroll new subscribers.

Additionally, MOMS program staff have begun planning for the sustainability of Project ECHO beyond year 5 and met with the Family Medicine Residency of Western Montana (FMRWM) and Logan Health to discuss the feasibility of merging Project ECHO, OB grand rounds, and the PQC multidisciplinary case reviews.

### *Looking Ahead to Year 5*

MOMS Project ECHOs will move to one clinic per month starting October 2023, and follow-up meetings are planned with FMRWM to continue sustainability discussions for Project ECHO 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, HMHB 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 4 Update*

In year 4, plans between the MOMS grant staff and HMHB were made to conduct collaborative Indigenous outreach in year 5.

## 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. Four short films and one feature-length film are planned.

#### *Year 4 Update*

In year 4, all four short films were completed. In early 2022, the Siloed film crew created a strategic plan and timeline for the creation of a feature-length film. The feature-length film is currently in production, and focus groups were conducted in August 2023. Recommendations and feedback from the focus groups were summarized and provided to the production team for incorporation into the film. The Siloed film crew also began production on a fifth short on the emotional toll of providing care in rural Montana and the need for providers to engage in self-care.

### *Dissemination*

Billings Clinic staff contracted PG Marketing in Billings to manage dissemination activities for the Siloed project. The four short films will be disseminated via social media, the MOMS website, and distribution lists. One Siloed short film was submitted and accepted to the APHA Film Festival in November 2023. The feature-length film will be premiered in Spring 2024, and a **stand-alone landing page** and landing page on the MOMS website have been created, alongside plans to launch a direct mail and email campaign to promote the film. MOMS will also submit Siloed to Montana PBS for consideration.

### **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.

### *Year 4 Update*

Donald Warne, MD, MPH, and Annie Belcourt, PhD, were contracted to work on the cultural safety curriculum and filmed four training modules on Challenges in American Indian Health Professions Education, Integrating Traditional and Modern Medicine, the Impact of Poverty on Indigenous Health, and Indigenous Health Policy early in year 4. In September 2023, Amy Stiffarm, PhD, MPH, presented a special interest Project ECHO webinar on Cultural Safety: Improving Perinatal Care for Indigenous Families. In addition to the cultural safety presentations, the MOMS team has added special education resources on caring for populations of sexual and gender minorities and will continue to add more materials as they become available. All **training series materials** can be found on the MOMS website.

### *Looking Ahead to Year 5*

Filming of a second Cultural Safety presentation is planned for December 2023, and UM RIIC and MonTECH is working to create a disability-focused presentation for the series. The MOMS team has also partnered with Yarrow, HMHB, and UM to support the development of Immersion Days with Crow and Northern Cheyenne health providers, which will take place in year 5.

### **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, A.D. Creative increased their rates significantly, and in July, the MOMS team at Billings Clinic shifted most marketing projects to be handled by PG Marketing. Below is a summary of PG Marketing activities in year 4. Figure 5 shows examples of the materials created with PG Marketing.

- **Siloed**

- o **Logo:** A logo was created for the Siloed documentary, which will be used to promote the film.
- o **Website:** A stand-alone landing page has been created to promote the film, which includes a link to opt-in to receive updates for the film. A landing page has also been created on the MOMS website.

- o **Direct Mail & Email:** A contact list of 3,000 providers in Montana, which includes both physical and email addresses, has been purchased to use in Siloed marketing efforts. A direct mail postcard directing recipients to the opt-in landing page is currently in progress. As the premiere of the film nears, we will begin a regular email campaign promoting the film.
- o **Social Profiles:** Social media pages on **Facebook** and **Instagram** have been created to promote the film. As the completion of the film nears, MOMS will post regular updates.
- o **Outreach Materials:** MOMS is currently bidding on several apparel and outreach material options to promote the film, including infant & adult apparel, blankets, drinkware, coolers, speakers, and dog gear. The items will be given to the documentary crew, film participants, and individuals promoting the film.
- o **Film Premiere:** MOMS is planning for a premiere of the film in Summer 2024. After the event details are finalized, we will create collateral encouraging providers and Montana leaders involved in women's healthcare to attend. A PR kit will be created and sent to the media to promote the film's premiere.

#### ▪ **Simulation Leadership Academy**

- o **Logo:** MOMS created a new logo to promote their Simulation Leadership Academy (SLA) efforts.
- o **PowerPoint Template:** MOMS created a PowerPoint template to be used for future presentations featuring the SLA.
- o **Outreach Materials:** MOMS ordered apparel for the SLA team to wear at events.
- o **Maps of Montana's Healthcare Facilities:** MOMS created three maps showing the healthcare facilities (birthing facilities, non-birthing facilities, and perinatology/ maternal fetal medicine services) in Montana based on their capacity to deliver maternal care.

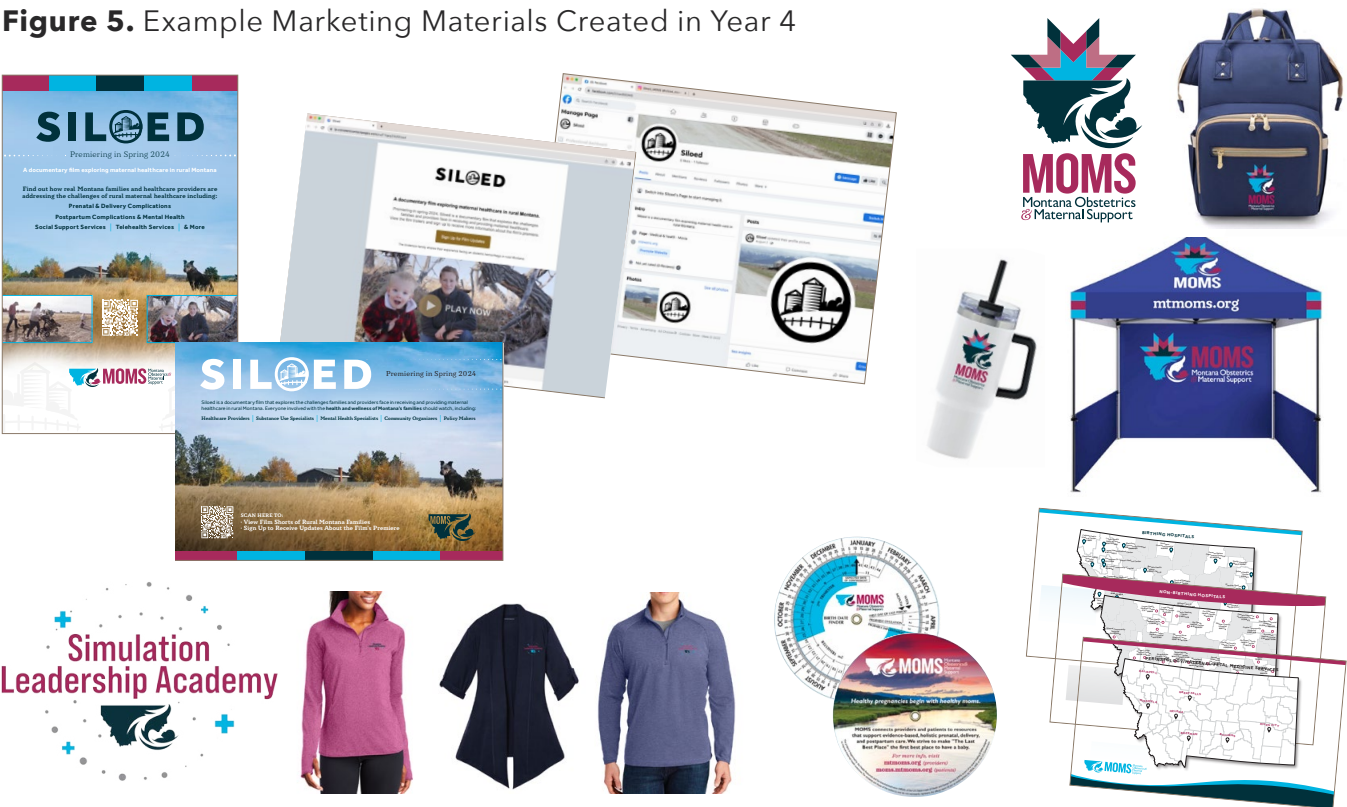
#### ▪ **Project ECHO**

- o MOMS is promoting their Project ECHO clinics via email. Email invitations are sent 1-2 weeks prior to each clinic, with an auto-resend to recipients who do not open the first email as well as a reminder email being sent the day before the clinics.

#### ▪ **Indigenous Outreach**

- o **Logo:** A new version of the MOMS logo was created featuring a star pattern to be used in Indigenous Outreach efforts.
- o **Event Materials:** MOMS ordered custom tent and table runner to be used at events to promote our Indigenous Outreach efforts.
- o **Outreach Materials:** MOMS ordered a variety of items to distribute at our Indigenous Outreach events including diaper bags, blankets, and tumblers.

**Figure 5.** Example Marketing Materials Created in Year 4



### Billings Clinic Outreach Visits

The Billings Clinic MOMS staff made 14 outreach visits in year 4. The purpose of these outreach visits was to share an overview of the MOMS program, promote MOMS activities, connect with facilities in Montana, discuss future partnerships, and gather information on facility needs. Billings Clinic MOMS staff were also able to exhibit at 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 by Billings Clinic Staff in Year 4

| Visit Date          | Location       | Purpose of Visit  |
|---------------------|----------------|---|
| 10/21/22 - 10/22/22 | Whitefish, MT  | Family Medicine Residency of Western Montana Rural Retreat                      |
| 11/4/22 - 11/5/22   | Miles City, MT | Eastern Montana Medicine Conference   |
| 4/19/2023           | Billings, MT   | Diversity, Equity, and Inclusion Leadership Conference                          |
| 4/20/23 - 4/21/23   | Billings, MT   | Organizational Integrity: A Recovery-Based Approach to Inclusive Transformation |
| 7/14/23             | Billings, MT   | Suicide Safe Care – Train the Trainer   |
| 7/15/23             | Billings, MT   | Montana Conference on Suicide Prevention; Presentation on PMADs and Doulas      |
| 8/1/23 - 8/2/23     | Butte, MT      | UM Substance Use Prevention Conference  |
| 9/19/23 - 9/23/23   | Billings, MT   | Montana Healthcare Conference   |

## Presentations, Manuscripts, Reports, and Quality Improvement Products

### Presentations

The MOMS team presented at the following national meetings and conferences in year 4.

- Fitch, S., Robertson, M., Lofgren, V., Glover, A.L. (2023). Implementing a remote perinatal health simulation program: The MOMS simulation leadership academy (SLA) [Oral Presentation]. CityMatCH Annual Conference, New Orleans, LA.
- Glover, A.L., Holman, C., Nelson, M., Boise, P. (2023). Patient-centered obstetrics: Exploring factors related to informed choice, patient preference, and identity [Poster Presentation]. CityMatCH Annual Conference, New Orleans, LA.
- Liddell, J., Glover, A.L., Stiffarm, A., Fitch, S. (2023). A systematic review of the use of doulas in rural settings in the United States [Oral Presentation]. CityMatCH Annual Conference, New Orleans, LA.
- Stiffarm, A., Liddell, J., Glover, A.L. (2023). A systematic review of the use of doulas in Indigenous communities [Oral Presentation]. CityMatCH Annual Conference, New Orleans, LA.
- Fertaly, F., Javorka, M., Glover, A.L., Brown, D. (2023). Referral and transport during obstetric emergencies in rural Montana: What makes for a successful transport [Poster Presentation]? Maternal Health Learning and Innovation Center (MHLIC) Annual Symposium, Virtual.
- Fitch, S., Glover, A.L. (2023). Implementing a remote perinatal health simulation program [Oral Presentation]. Maternal Health Learning and Innovation Center (MHLIC) Annual Symposium, Minneapolis, MN.
- Glover, A.L., Buscaglia, A., Smith, N. (2023). Provider perspectives on ensuring equitable contraceptive care for individuals living with a disability [Poster Presentation]. Maternal Health Learning and Innovation Center (MHLIC) Annual Symposium, Minneapolis, MN.
- Holman, C., Glover, A.L., Fertaly, K., Nelson, M. (2023). Integrating accessibility into a statewide assessment of risk-appropriate care. An opportunity to improve perinatal care environments for patients with disabilities [Oral Presentation]. Maternal Health Learning and Innovation Center (MHLIC) Annual Symposium, Virtual.
- Liddell, J., Glover, A.L. (2023). Exploring the use of doulas to meet the healthcare needs of people experiencing substance use disorders (SUDs) and rural populations [Oral Presentation]. Maternal Health Learning and Innovation Center (MHLIC) Annual Symposium, Minneapolis, MN.
- Lofgren, V., Fitch, S. (2023). Using low cost software and equipment to create quality educational content [Oral Presentation]. Maternal Health Learning and Innovation Center (MHLIC) Annual Symposium, Virtual.
- Fitch, S. (2023). Leveraging community partnerships to improve access to behavioral health and social support for new mothers and families [Oral Presentation]. Regions 8 & 10 Monthly Meeting, Virtual.
- Liddell, J., Fitch, S., Glover, A.L. (2023). Developing the doula workforce to improve outcomes for perinatal patients affected by substance use disorders (SUDs) in rural settings [Oral Presentation]. Postpartum Support International (PSI) Conference, Kansas City, MO.
- Thompson, J., Armstrong, J., Lackey, S., Leidig, M., Tucker, T., and Williams, T. (2023). Occupational therapy's role in addressing maternal health [Poster Presentation]. Postpartum Support International (PSI) Conference, Kansas City, MO.
- Brown, D., Holman, C., Glover, A.L., Nelson, M. (2023). Going the distance: The impact of transport on emergency obstetric care in rural Montana [Poster Presentation]. Academy Health Annual Research Meeting, Seattle, WA.
- Glover, A.L., Buscaglia, A., Smith, N. (2023). Provider perspectives on ensuring equitable contraceptive care for individuals living with a disability [Poster Presentation]. Academy Health Annual Research Meeting, Seattle, WA.
- Glover, A.L., Holman, C. (2023). Patient-centered obstetrics: Exploring factors related to informed choice, patient preference, and identity [Poster Presentation]. Academy Health Annual Research Meeting, Seattle, WA.
- Glover, A.L., Holman, C., Nelson, M. (2023). Emergency-preparedness and obstetric hemorrhage: In-situ simulation's role in maintaining essential health services in rural America [Poster Presentation]. Academy Health Annual Research Meeting, Seattle, WA.
- Holman, C., Glover, A.L., Liddell, J., Garnsey, A., Piskolich, E., Nelson, M. (2023). Engaging patients in practice improvements: Patients' perspectives on postpartum care in Montana [Poster Presentation]. Academy Health Annual Research Meeting, Seattle, WA.



- Echols, A., Fuchs, J., Sharp, N., Reese, S., Fitch, S. (2023). Prioritizing behavioral health in Title V: A sampling of practice-based research projects featured in the AMCHP-sponsored 2023 Maternal and Child Health Journal supplement on perinatal substance use [Panel Presentation]. Association of Maternal Child Health Programs (AMCHP) Annual Meeting, Virtual.
- Fitch, S., Robertson, M., McCracken III, C., Mulcaire-Jones, G., Lofgren, V., Glover, A.L. (2023). MOMS simulation leadership academy (SLA): Development and implementation of a rural train-the-trainer perinatal healthcare simulation program [Poster Presentation]. Association of Maternal & Child Health Programs (AMCHP) Conference, Virtual.
- Glover, A.L., Buscaglia, A. (2023). MOMS contraception and postpartum care in Montana [Oral Presentation]. American College of Obstetricians and Gynecologists Annual Clinical & Scientific Meeting, Baltimore, MD.
- Glover, A.L., Holman, C., Nelson, M., Fertaly, K., Brown, D., McCracken, C. (2023). Adapting obstetric-capacity assessments to a rural context to drive system improvements [Poster Presentation]. American College of Obstetricians and Gynecologists Annual Clinical & Scientific Meeting, Baltimore, MD.
- Holman, C., Glover, A.L. (2023). "I did not feel as though I was in charge or able to make decisions about my own body": Patient experiences of respect in Montana's maternal health system [Poster Presentation]. Association of Maternal & Child Health Programs (AMCHP) Conference, New Orleans, LA.
- Liddell, J. L., Glover, A.L. (2023). Developing the doula workforce to improve maternal health outcomes in rural settings [Poster Presentation]. Association of Maternal & Child Health Programs (AMCHP) Conference. New Orleans, LA.
- Dillner, E., Fitch, S., Hardesty, C. (2023). Maternal health and substance use disorders series: A national priority to advance maternal health [Panel Presentation]. SAMHSA, HRSA & HHS Region 8 (CO, MT, ND, SD, UT, WY) Substance Use Disorder Consultation Team webinar series, Virtual.
- Hanson, M.N., Reese, S., Newcomer, S. (2023). Barriers to postpartum depression care for women with perinatal substance use [Poster Presentation]. Western Institute of Nursing Conference, Tucson, AZ.
- Verbiest, S., Urratia, R., Fitch, S. (2023). Discussion Group: Maternal mental health and substance use [Panel Presentation]. Maternal Learning and Innovation Center (MHLIC) Annual Learning Institute, Chapel Hill, NC.
- Fitch, S., Robertson, M., McCracken III, C., Mulcaire-Jones, G., Lofgren, V., Glover, A.L. (2023). MOMS simulation leadership academy: A rural train-the-trainer simulation program [Panel Presentation]. Simulation in Healthcare (IMSH), Orlando, FL.
- Glover, A.L., Holman, C., Nelson, M., McKay, K. (2022). "Working at a critical access hospital, anything can walk through the door. Being prepared for that 'anything' is so important." Implementation of obstetric simulation training in non-birthing critical access hospitals [Poster Presentation]. Academy Health Science of Dissemination and Implementation Conference, Washington, DC.
- Glover, A.L., Nelson, M., Holman, C., Eby, A., Krane, K., Schmitt, A., Mulcaire-Jones, G., Robertson, M., Birkeland, V. (2022). Quality improvements in obstetric hemorrhage: Measuring progress in the remote implementation of a patient safety bundle [Poster Presentation]. Academy Health Science of Dissemination and Implementation Conference, Washington, DC.
- Buscaglia, A., Glover, A.L., Smith, N., Boutte, S., Etrheim, E. (2022). Assessing the provision of contraception & postpartum care in rural Montana: Barriers, facilitators, and attitudes toward IUD and implants [Poster Presentation]. Annual American Public Health Association (APHA) Conference, Boston, MA.
- Glover, A.L., Holman, C., Brown, D., Nelson, M. (2022). "Hope and pray the flight team has blood on board": An assessment of blood transfusion capacity in obstetric emergencies at Critical Access Hospitals [Oral Presentation]. Annual American Public Health Association (APHA) Conference, Boston, MA.
- Holman, C., Glover, A.L., Fertaly, K., Nelson, M. (2022). Assessing the Capacity of Montana's Maternal and Neonatal Health System to Provide Ability-Equitable Access to Risk Appropriate Care [Oral Presentation]. Annual American Public Health Association (APHA) Conference, Boston, MA.
- Stiffarm, A., Liddell, J. L., Carlson, T., Glover, A.L. (2022). A systematic review of the use of doulas in Indigenous communities [Oral Presentation]. American Public Health Association (APHA) Conference, Boston, MA.
- Becker, M., Karas, A., Larson, S., Medrano, I., Uhler, H., Wilson, A. (2022). An Occupation-Based Virtual Support Group for New Mothers in Rural Areas [Oral Presentation]. Study of Occupation Conference, St. Louis, MO.

The MOMS team presented at the following state meetings and conferences in year 4.

- Holman, C., Glover, A.L. (2023). Title V Maternal and Child Health Block Grant Needs Assessment [Oral Presentation]. American Indian Health Leaders Meeting, Bozeman, MT.
- Stiffarm, A. (2023). Cultural Safety: Improving perinatal care for Indigenous families [Live Webinar]. Montana Obstetrics & Maternal Support (MOMS) Cultural Safety Training Series, Virtual.
- Kirkland, L. (2023). Trauma Informed Care for Perinatal Care Teams [Pre-recorded Webinar]. Montana Obstetrics & Maternal Support (MOMS) Safe & Inclusive Care Series, Virtual.
- Kirkland, L. (2023). A Trauma-Informed Approach: Systemic Change to Support Perinatal Trauma-Informed Care [Pre-recorded Webinar]. Montana Obstetrics & Maternal Support (MOMS) Safe & Inclusive Care Series, Virtual.
- Liddell, J., Glover, A.L. (2023). Exploring the use of doulas to improve perinatal mood and anxiety disorder (PMAD) outcomes in rural settings [Panel Presentation]. Montana Suicide Prevention Conference, Billings, MT.
- Holman, C. (2023). Facility accessibility for pregnant patients with disabilities: Results from a statewide assessment [Oral Presentation]. MOMS Project ECHO virtual meeting.
- Glover, A.L. (2023). Maternal health in Montana: Action-oriented data to improve our systems of care [Invited Conference Speaker]. Meadowlark Initiative Conference, Helena, MT.
- Fitch, S. (2023). MOMS demonstration project update [Oral Presentation]. MOMS Leadership Council Quarterly Meeting, Virtual.
- Fertaly, K., Javorka, M., Glover, A.L., Brown, D. (2023). Referral and transport during obstetric emergencies in rural Montana: What makes for successful transport [Poster Presentation]? Montana Public Health Association and Montana Environmental Health Association Confluence Public Health Alliance Conference, Billings, MT.
- Glover, A.L., Buscaglia, A., Smith, N., Boutte, S., Etrheim, E. (2023). Assessing the provision of contraception & postpartum care in rural Montana: Barriers, facilitators, and attitudes toward IUD and implants [Poster Presentation]. Montana Public Health Association and Montana Environmental Health Association Confluence Public Health Alliance Conference, Billings, MT.
- Hanson, M., Reese, S., Newcomer, S. (2023). Barriers and facilitators to postpartum depression care among women with perinatal substance use or mental health disorders [Poster Presentation]. Montana Public Health Association and Montana Environmental Health Association Confluence Public Health Alliance Conference, Billings, MT.
- Holman, C., Glover, A.L., Fertaly, K., Nelson, M. (2023). Integrating accessibility into a statewide assessment of risk-appropriate care: An opportunity to improve perinatal care environments for patients with disabilities [Poster Presentation]. Montana Public Health Association and Montana Environmental Health Association Confluence Public Health Alliance Conference, Billings, MT.
- Holman, C., Glover, A.L., Liddell, J., Garnsey, A., Piskolich, E. (2023). Patient experiences of maternal healthcare in Montana: A mixed methods study [Oral Presentation]. Montana Maternal Health Leadership Council Meeting, Missoula, MT.
- Fitch, S. (2023). Managing neonatal withdrawal: Eat, sleep, console [Live Webinar]. Peer Recovery Doula Training Series, Virtual.
- Buscaglia, A., Glover, A.L. (2023). Montana provider perspectives on contraceptive care in the postpartum period [Oral Presentation]. Montana Maternal Health Leadership Council meeting, Virtual.
- Fitch, S. (2022). Doula care for foster and adoptive families [Live Webinar]. Peer Recovery Doula Training Series, Virtual.
- Warne, D., Belcourt, A. (2022). Integrating traditional and modern medicine [Live Webinar]. Montana Obstetrics & Maternal Support (MOMS) Cultural Safety Training Series, Virtual.
- Warne, D. (2022). Challenges in American Indian health professions education [Live Webinar]. Montana Obstetrics & Maternal Support (MOMS) Cultural Safety Training Series, Virtual.
- Glover, A.L., Holman, C., Brown, D., Nelson, M. (2022). Emergency obstetric care in Montana [Oral Presentation]. Montana Maternal Health Leadership Council.
- Holman, C., Glover, A.L. (2022). Montana Obstetrics and Maternal Support Program [Oral Presentation]. Rural Institute Consumer Advisory Council.
- Warne, D. (2022). Indigenous health policy [Live Webinar]. Montana Obstetrics & Maternal Support (MOMS) Cultural Safety Training Series, Virtual.



- Warne, D. (2022). The impact of poverty on Indigenous health [Live Webinar]. Montana Obstetrics & Maternal Support (MOMS) Cultural Safety Training Series, Virtual.
- Robertson, M., Fitch, S. (2022). MOMS Simulation Leadership Academy Overview [Oral Presentation]. Family Medicine Residency of Western Montana's Rural Retreat, Whitefish, MT.

### Exhibiting and Tabling

The MOMS team exhibited or tabled at the following conferences in year 4.

- Montana Public Health Association, April 2023, Billings, MT.
- Rocky Mountain Tribal Leaders Health Conference, August 2023, Billings, MT.
- Montana Healthcare Conference, September 2023, Billings, MT.

### Publications

The MOMS team published the following manuscripts in year 4.

- Eby, A., Fitch, S. "Collaboration: The role of multiple sectors in improving maternal health" in Practical Playbook III: Working Together to Improve Maternal Health, ed. By Dorothy Cilenti et al. New York: Oxford University Press, forthcoming 2023.
- Hanson, M.N., Reese, S., & Newcomer, S.R. (2023). Challenges in accessing mental health care during pregnancy and postpartum in rural Montana. *MCN Am J Matern Child Nurs.* 2023;48(5):252-257. <https://doi.org/10.1097/NMC.0000000000000937>
- Holman, C., Glover, A.L., McKay, K., Gerard, C. Telehealth adoption during COVID-19: Lessons learned from obstetric providers in the Rocky Mountain West. *Telemedicine Rep.* 2023;4(1): 1-9. <https://doi.org/10.1089/tmr.2023.0001>
- Holman, C., Glover, A.L., Fertaly, K., Nelson, M. Operationalizing risk appropriate perinatal care in a rural US State: Directions for policy and practice. *BMC Health Serv Res.* 2023;23(1):601. <https://doi.org/10.1186/s12913-023-09552-y>
- Reese, S., Glover, A.L., Fitch, S., Salyer, J., Lofgren, V., McCracken III, C. Early insights into implementation of universal screening, brief intervention, and referral to treatment for perinatal substance use. *Matern Child Health J.* 2023;27(Suppl 1):58-66. <https://doi.org/10.1007/s10995-023-03842-x>

### Reports

The MOMS team produced the following reports and quality improvement products in year 4.

- Glover, A.L., Nelson, M., Holman, C. (2023). Montana Obstetrics and Maternal Support Program Year 3 Evaluation Report.
- Holman, C., Glover, A.L. (2022). Simulation Leadership Academy Evaluation Summary.
- Holman, C., Glover, A.L. (2023). Needs Assessment Update Report.
- Liddell, J., Glover, A.L. (2023). Full Spectrum Indigenous Doula Training Course Summary Report.
- Nelson, M., Holman, C., Glover, A.L. (2023). Alliance for Innovation on Maternal Health: Obstetric Hemorrhage Patient Safety Bundle Montana Perinatal Quality Collaborative Aggregate Report.
- Nelson, M., Glover, A.L. (2023). MOMS Project ECHO Biannual Evaluation QI Report.
- Glover, A.L., Holman, C., Nelson, M. (2022). Montana Obstetrics and Maternal Support (MOMS) Program Year 2 Evaluation Report.
- Glover, A.L., Holman, C., Woo, M., Nelson, M. (2022). Maternal Health in Montana Annual Report Year 3.

## Hospital Capacity Grants

To distribute MOMS carryover funds in year 4, MOMS program staff solicited applications for a one-time-only capacity grant award up to \$4,999 to support the purchase of maternal health care related equipment or obstetric care workforce training/development from Montana hospitals. In total, \$120,300 in funds were distributed to the Anaconda, Billings, Bozeman, Butte, Columbus, Dillon, Glendive, Great Falls, Hamilton, Helena, Kalispell, Lewistown, Libby, Miles City, Missoula, Polson, Ronan, Roundup, Sidney, Superior, Whitefish, and Wolf Point communities. Table 4 shows activities and equipment supported by MOMS capacity grant funds and Figure 6 demonstrates a map of the communities that capacity grants were distributed to in year 4.

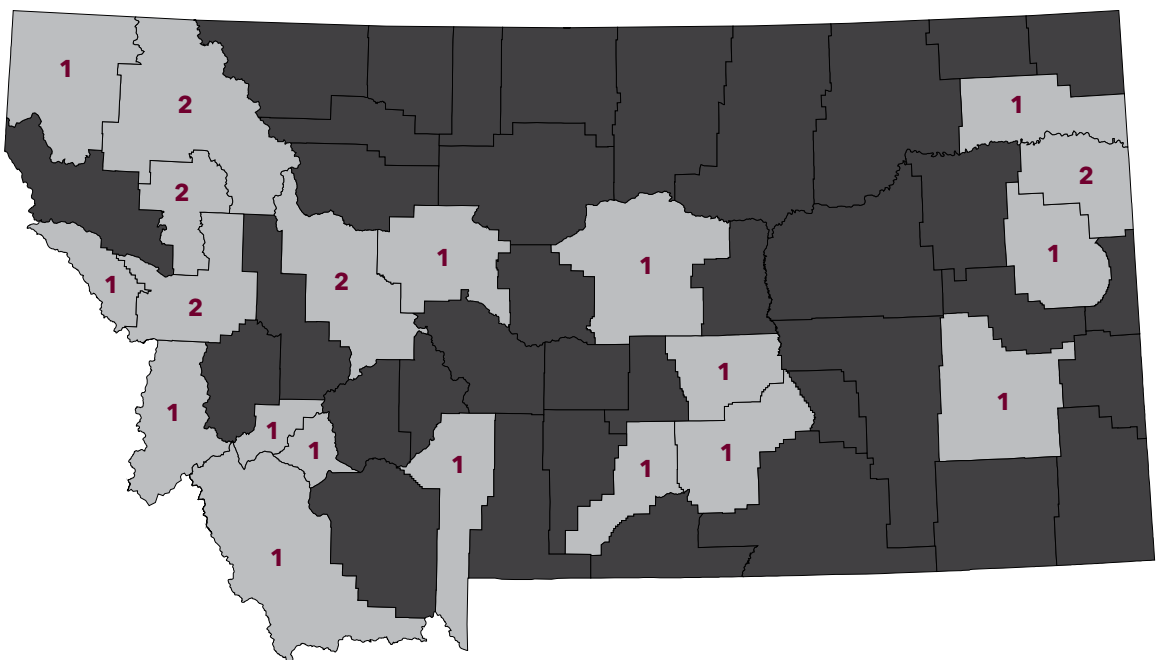
**Table 4.** Capacity Grant Program Awardees

| Facility                          | City        | Amount Awarded | Description  |
|-----------------------------------|-------------|----------------|--|
| Barrett Hospital & HealthCare     | Dillon      | \$8,824.00     | <b>Equipment:</b> Nitrous Oxide Setup.   |
| Benefis Health Center             | Great Falls | \$4,999.00     | <b>Education:</b> Reference Books<br><b>Training Equipment:</b> Anatomical Flexible Pelvis Model Set with Fetus, MamaN Laerdal Birth Simulator.                        |
| Bitterroot Health - Daly Hospital | Hamilton    | \$1,680.00     | <b>Education:</b> AWHONN Maternal Fetal Triage Index for 12 nurses.  |
| Bozeman Health                    | Bozeman     | \$4,666.40     | <b>Equipment:</b> 6 Kaya Birth Stools, 4 Labor CUBs (comfortable upright birth), 2 CanDo Saddle Rolls, 2 Theragun Percussion Devices, and 2 TENs Unit with Electrodes. |
| Cabinet Peaks Medical Center      | Libby       | \$6,025.00     | <b>Equipment:</b> Cervical Dilation and Effacement (CD&E) task trainer for PROMPT Flex Birthing Manikin.<br><b>Training:</b> Simulation training day with SIM-MT.      |
| Central Montana Medical Center    | Lewistown   | \$3,400.00     | <b>Education:</b> Spinning Babies Education Program  |
| Community Hospital of Anaconda    | Anaconda    | \$3,888.83     | <b>Education:</b> periFACTS OB/GYN Academy for all staff that respond to OB emergencies; Spinning Babies Education Program for 14 participants.                        |
| Community Medical Center          | Missoula    | \$10,000.00    | <b>Education:</b> Clinical and Legal Documentation Education with Rebecca Cypher, Maternal-Fetal Solutions, LLC.   |
| Glendive Medical Center           | Glendive    | \$3,588.00     | <b>Education:</b> Bundle Birth Supporting Physiologic Birth for L&D Nurses Course for 12 participants.   |
| Holy Rosary Healthcare            | Miles City  | \$5,300.00     | <b>Equipment:</b> Transvaginal Ultrasound Probe.   |
| Logan Health Kalispell            | Kalispell   | \$4,999.00     | <b>Equipment:</b> 1 Novii Patch Wireless System.   |
| Logan Health Whitefish            | Whitefish   | \$5,500.00     | <b>Equipment:</b> Rapid Infuser and Blood Warmer.  |
| Mineral Community Hospital        | Superior    | \$5,195.00     | <b>Equipment:</b> 1 Midmark Ritter 224 Barrier Free Examination Table.   |
| Northeast Montana Hospital        | Wolf Point  | \$9,075.70     | <b>Equipment:</b> Nitrous Oxide Setup.   |

**Table 4.** Capacity Grant Program Awardees

| Providence St. Patrick Hospital      | Missoula | \$4,999.00  | <b>Equipment:</b> 1 Novii Patch Wireless System.  |
|--------------------------------------|----------|-------------|---|
| Providence St. Joseph Medical Center | Polson   | \$4,999.00  | <b>Equipment:</b> 1 Novii Patch Wireless System.  |
| Roundup Memorial Healthcare          | Roundup  | \$4,704.00  | <b>Education:</b> NRP and STABLE.   |
| Sidney Health Center                 | Sidney   | \$ 8,960.85 | <b>Equipment:</b> 3 Nara Bassinets; 2 Fetal Monitoring Carts.   |
| St. James Hospital                   | Butte    | \$4,910.97  | <b>Education:</b> AWHONN Obstetric Patient Safety (OPS): OB Emergencies Workshop for 28 participants.<br><b>Training Supplies and Materials:</b> Spinning Babies Quick Reference Book (1 copy), Health Edco-Internal Fetal Monitor Trainer, Health Edco-Fetal Monitoring and Labor Progress Model Set, Life/Form Hemorrhage Clot Set, and VEVOR Utility Cart. |
| St. Luke Community Hospital          | Ronan    | \$5,252.35  | <b>Equipment:</b> Mini Fetal Monitoring Telemetry System.   |
| St. Peter's Hospital                 | Helena   | \$4,355.50  | <b>Education:</b> AWHONN Critical Care Obstetrics Education (CCOE) Program for 55 participants; AWHONN Post-Birth Warning Signs Program for 55 participants.  |
| St. Vincent Healthcare               | Billings | \$3,511.54  | <b>Education:</b> Spinning Babies Education Program.  |
| Stillwater Billings Clinic           | Columbus | \$1,466.00  | <b>Equipment:</b> 2 fetal dopplers.   |

**Figure 6.**  
Capacity  
Grant  
Awardees  
Year 4



## 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 4 Update

The MOMS grant no longer pays for the training cost of NRP trainings, and instead pays the travel expenses of the trainer. The NRP trainer made two trips in year 4. A total of 51 participants passed the STABLE course and 9 people received training in PMH-C. Additionally, MOMS sponsored 30 spots at the HMHB Perinatal Mental Health Conference in November 2022.

### Looking Ahead to Year 5

In year 4, NRP and STABLE shifted to an inaccessible platform, and the trainings will now be offered on a limited, as needed basis in year 5. Billings Clinic will continue to sponsor PMH-C through PSI, and Indigenous and Recovery Doula trainings. MOMS is also a platinum sponsor for the Healthy Mothers Healthy Babies Montana conference in November 2023, and offered 30 complementary registrations. Additional information on **training opportunities** offered through MOMS can be accessed on the MOMS website.

## Indigenous and Recovery Doula Training

### 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.

In April 2023, this training was conducted in a hybrid format (in-person attendees, virtual presenters) at the University of Montana Missoula campus over four days (eight-hour sessions). Sixteen people attended the training.

### Participant Evaluation

After the course was completed, participants received an online evaluation. The survey collected information on attendee experience with the quality of the training and the relevance of the content to their work. Evaluation questions were based on the four focus areas of the Kirkpatrick model (reaction, learning, behavior, and results). Of the 16 participants, 13 responded to the survey. Overall, participants reported positive experiences in the training, that they would

recommend it to others, and that it was a valuable resource for them. Participants reported feeling engaged by the presenters and the training and that it provided them with concrete tools to apply to their work with Indigenous clients and communities. The survey included a set of open-ended questions. Below are a few responses submitted by the Indigenous Doula Training participants.

#### **What new ideas do you have about talking with/connecting with Indigenous clients and community members?**

- *"Finding knowledge keepers about traditional ceremonies. Supporting moms in the community, even if they don't want traditional ceremony but need to be empowered. Being more aware of how I empower moms to have a less traumatic birth experience."*
- *"I really appreciated this training and how it valued the work that we already do in our communities. Took away some of the power dynamic between teachers and students and treated us as empowered agents in our communities while giving us new ideas. I think this is a good way to interact with communities and patients to engage with their inherent power and knowledge and sovereignty."*
- *"I see the places where the need is and I'm motivated to go out and find spaces to practice and encourage and pass on the knowledge that was shared with me in this training."*

#### **What was the most beneficial part of the Indigenous Doula Training?**

- *"The healing that comes with understanding more about birth processes and how each birth taught us something and we can pass on that knowledge and collective knowledge can change the course of our people and nurture the new members of our people."*
- *"The shared stories learned from Melissa and Candace [trainers] that they learned from their experience and knowledge keepers they have met over the years."*
- *"Connecting with the spiritual side of birth work. Mind blown."*
- *"Being a strong advocate for our patients."*

#### **Looking Ahead to Year 5**

The Indigenous Doula Training will be hosted again in year 5. Anticipated training locations and number of attendees are listed below.

- University of Montana (Missoula, MT), 25 participants.
- Stone Child College (Box Elder, MT), 18 participants.
- Aaniiih Nakoda College (Harlem, MT), 34 participants.

## Peer Recovery Doula Training

In year 3, the MOMS team at Billings Clinic enrolled and completed the Peer Recovery Doula Training to determine the feasibility of sponsoring these doula trainings to peer and behavioral health specialists in the state. The Peer Recovery Doula Training is offered through Tree of Life Doula Care and One Health and is a 12-month program with weekly, synchronous meetings. The Peer Recovery Doula program is designed to train existing peer support and behavioral health specialists to act as birth and postpartum doulas for pregnant and postpartum people in recovery from substance use. In addition to participating in the primary doula curriculum, participants also read doula-related books and materials, interview providers and other doulas, and participate in virtual doula forums.

### Year 4 Update

Due to a lack of communication and concerns over the legitimacy of the programming, the MOMS team elected not to sponsor future cohorts with the Tree of Life Recovery Doula Program. Also, in year 4, the MOMS team collaborated with One Health to hire a Recovery Doula who serves the Billings area full-time in conjunction with the Empaths program. One Health is working to develop its own recovery doula curriculum to implement in September 2024, which the MOMS program will support and endorse.

## 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.

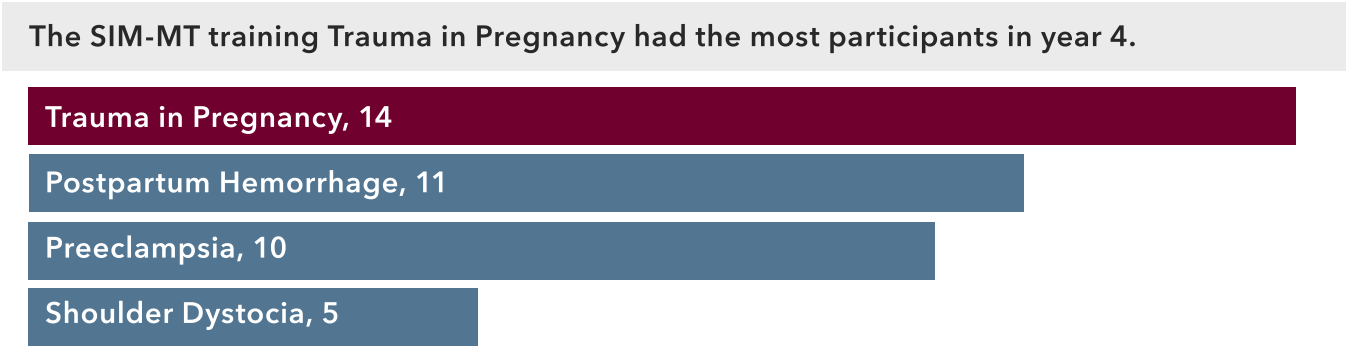
### Year 4 Update

In July 2023, Billings Clinic approved a budget for 15 Critical Access Hospitals to receive simulation training through SIM-MT, and five trainings were completed in quarter 4 of the grant year.

### Participants

In year 4, five SIM-MT events occurred during August and September 2023 across 4 counties (Broadwater, Glacier, Lincoln, and Phillips County). Most participants in year 4 attended the Trauma in Pregnancy simulation. Figure 7 illustrates the number of participants by simulation.

**Figure 7.** Total SIM-MT Participants by Simulation Type in Y4.



SIM-MT events in year 4 trained 40 healthcare professionals in obstetric simulations. Table 5 shows participants by health profession.

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

| Nurse                            | 27 |
|----------------------------------|----|
| EMT/AEMT                         | 4  |
| Certified Medical Assistant      | 2  |
| Certified Nursing Assistant      | 2  |
| Licensed Practical Nurse         | 2  |
| Certified Nurse Midwife          | 1  |
| Physician                        | 1  |
| Registered Respiratory Therapist | 1  |

*Looking Ahead to Year 5*

Additional simulation training events are scheduled to occur in year 5.

**Simulation Leadership Academy**

The MOMS Simulation Leadership Academy 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.<sup>2</sup>

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



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 4 Update

Cohort 2 of SLA was launched with nine facilities from April 2023 – October 2023. The SLA structure was updated to include pre-recorded didactics to better control content and time management, and learner engagement tools were also added in the form of Kahoot! live quizzes. Participants submitted multiple homework assignments (including needs assessments, scenario planning templates, and recorded simulations led by the participating rural sites), which were shared among the cohort so all participants could review each other's work and provide feedback. Participants from five facilities successfully completed the second cohort of SLA.

UM conducted a post-session evaluation and final evaluation of cohort 2 of SLA. A full report will be created and posted to the MOMS website in year 5.

### Post-Session Survey

Participants completed a post-session evaluation survey after each of the six training sessions, where participants rated the overall content of the training session, the speaker's knowledge of the topic, the speaker's presentation skills, technological aspects, and the overall session. UM summarized participant responses after each session and shared an aggregate report-out with SLA staff to support continuous quality improvement.

As sessions continued throughout the year, fewer participants submitted post-session evaluations. However, all sessions were rated highly ("excellent" or "good") throughout SLA. Below are participants' comments about their experience as a participant in the Simulation Leadership Academy Sessions.

- *"...it was so great to be able to brainstorm alongside the differing hospitals so I look forward to continuing to get ideas on how to run simulations here at [hospital]."*
- *"It was nice that the core presentations were recorded - it helped, so that information was accurately relayed - we know how it can go off key when it's live."*
- *"We enjoyed reviewing this session, watching the other facilities demonstrate the Domain 3 session, for our review. It was also nice to have the recorded portions within the session, so that we could make sure it worked well. I liked being able to view the videos on Vimeo through the chat - that seemed to work nicely and we can watch them again afterwards."*
- *"I think scenario building can seem daunting at times. It was nice to learn that it doesn't need to be "big." I love the idea of doing them during shift changes, etc. Thank you!"*
- *"These sessions have all been nicely done. I am so thankful for the opportunity to participate and learn more, so we can continue to improve our simulation learning within our organization."*

### Cohort 2 Evaluation Survey

Three participants completed a final evaluation of cohort 2 of SLA. Participants of SLA had very positive experiences. Table 6 shows the proportion of participants who strongly agreed with the statements below.



**Table 6.** Participant Understanding

| The purpose and science of simulation.  | 3 (100%) |
|---|----------|
| How to do a needs assessment prior to beginning a simulation exercise.  | 3 (100%) |
| How to develop simulation objectives.   | 2 (100%) |
| How to select a simulation modality.  | 3 (100%) |
| How simulation can be a learning tool to improve care for non-emergent physical and mental health conditions. | 3 (100%) |
| How to execute a simulation training.   | 3 (100%) |
| How to use and maintain a manikin.  | 3 (100%) |

Table 7 shows the proportion of participants who somewhat or strongly agreed with the statements below.

**Table 7.** Participant Confidence

| Develop a new clinical scenario for simulation.                   | 3 (100%) |
|---|----------|
| Conduct effective simulation trainings for obstetric emergencies. | 3 (100%) |
| Correctly use medium fidelity birthing simulators.                | 3 (100%) |
| Identify key components of an effective debriefing.               | 3 (100%) |
| Evaluate the effectiveness of simulation trainings.               | 3 (100%) |
| Facilitate team communication.                                    | 3 (100%) |
| Utilize simulation in healthcare.                                 | 3 (100%) |

Below are participant comments about the usefulness of SLA and ideas for improvement.

**What did you find most useful about the Simulation Leadership Academy?**

- *"All of the resources. The additional information about debriefing was really helpful too."*
- *"There was real life experiences, and lots of focus on keeping the mental integrity intact for the team, allowing it to be a safe place for learners. Prior to the Academy, I felt that most of the focus should be on the simulation, but now I know it's the pre work & debrief that is the most critical."*
- *"Breaking it down with adult learning, incorporating different methods, how to focus on objectives without creating too much focus on objectives..."*

## What recommendations do you have to improve the Simulation Leadership Academy?

- *"I loved my experiences with this Academy. I would love to continue to network & participate with others that are doing simulation. I think a second level Simulation Academy would be so helpful in continuing our growth and development as Simulation leaders within our facilities."*

### Looking Ahead to Year 5

A strategic planning session is scheduled in January 2024 to rework the SLA curriculum to create new asynchronous content, including short instructional maneuver videos in addition to simulation content.

## 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 for substance use in pregnancy and a system to refer patients to telehealth substance use disorder treatment.

#### Year 4 Update

At the start of year 4, the Empaths team worked to improve rates of universal screening and data collection efforts and identified weakness in the universal screening regime. Due to perceived program insufficiencies, 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. Billings Clinic also onboarded Billings Clinic midwifery staff to serve as clinical directors for Empaths.

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.

#### Dissemination

In year 4, the research team submitted a manuscript to the Maternal and Child Health Journal. The manuscript was accepted and published December 2023.

- Reese, S.E., Glover, A.L., Fitch, S., Salyer, J., Lofgren, V., McCracken, C. Early insights into implementation of universal screening, brief intervention, and referral to treatment for perinatal substance use. *Matern Child Health J*, 2023;27 (Suppl 1), 58-66. <https://doi.org/10.1007/s10995-023-03842-x>

### *Looking Ahead to Year 5*

Billings Clinic is evaluating opportunities to mitigate the disparities identified with Yarrow, including funding to maintain the essential role of Empaths Care Coordinator. Continued work toward creating a sustainable Empaths program through One Health will continue through year 5.

## **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 4 Update and Next Steps*

Program is ongoing with active courses running.

### *Dissemination*

The study team plans to publish a manuscript with a national journal, and made the following presentations to national and state audiences in year 4:

- Thompson, J., Armstrong, J., Lackey, S., Leidig, M., Tucker, T., Williams, T. (2023). Occupational Therapy's Role in Addressing Maternal Health [Poster Presentation]. Postpartum Support International (PSI) Conference, Kansas City, MO.
- Becker, M., Karas, A., Larson, S., Medrano, I., Uhler, H., Wilson, A. (2022). An Occupation-Based Virtual Support Group for New Mothers in Rural Areas [Oral Presentation]. Study of Occupation Conference, St. Louis, MO.

## **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).

### Year 4 Update

The New Baby & Me app was finalized and launched in January 2023. Four organizations in the MOMS network agreed to pilot and promote the app to patients, and were provided wall signs, desktop displays, and referral cards with app information. **Registration information** and app download instructions are available on the MOMS website.

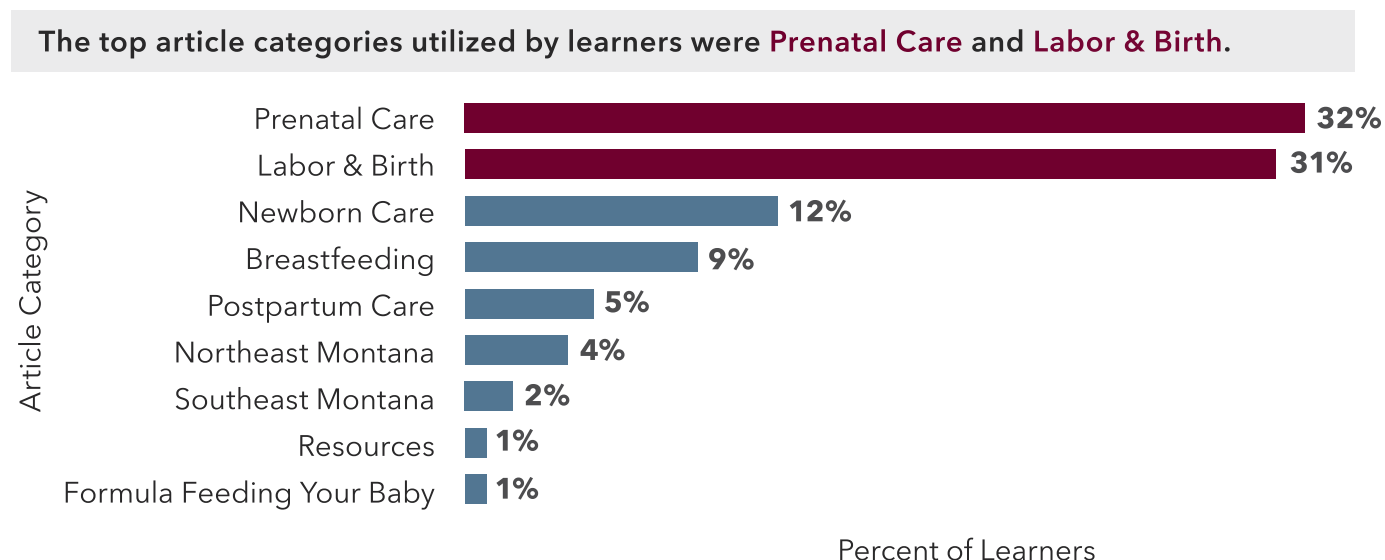
### Learners

At the end of year 4, there were 124 total learners registered with the app, with 96 active learners. Most learners engaged with the app via smartphone (N=88).

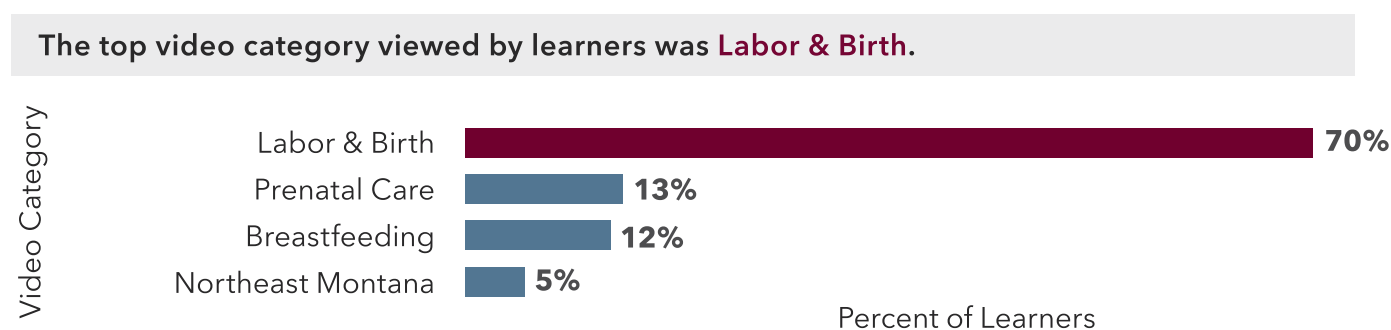
### Learning Topics

The New Baby & Me app provides articles, videos, and tools for learners to engage with. Figure 8, 9, and 10, demonstrate the most commonly engaged with categories and tools accessed by learners in year 4.

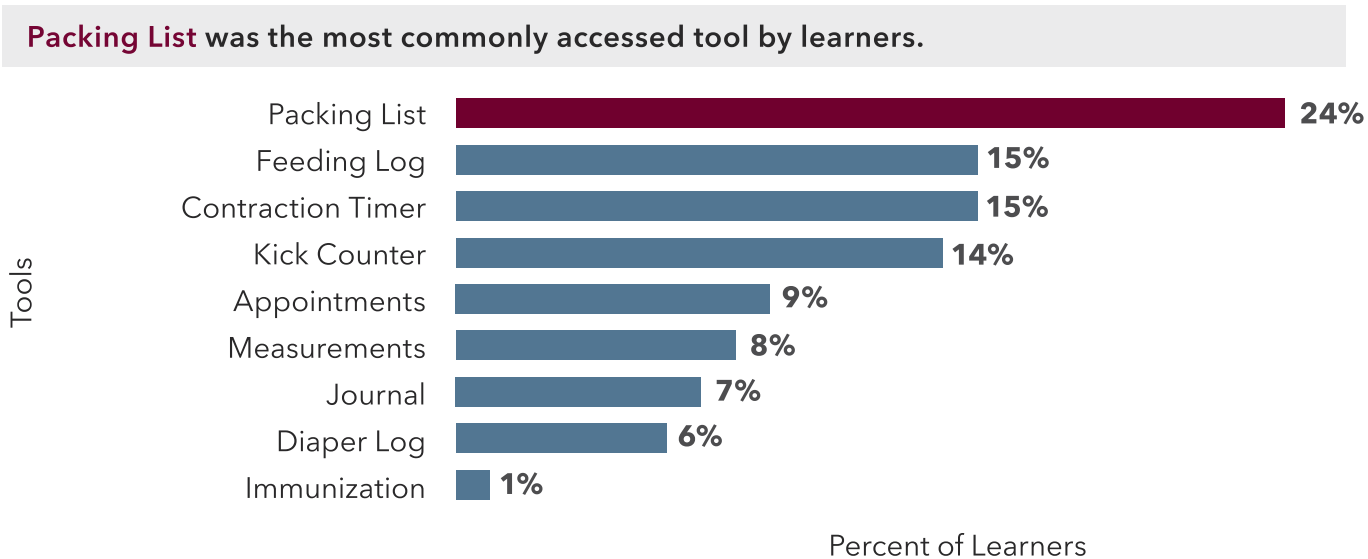
**Figure 8.** Top Article Categories Viewed by Learners in Year 4



**Figure 9.** Top Video Categories Viewed by Learners in Year 4



**Figure 10.** Top Tools Viewed by Learners in Year 4



*Looking Ahead to Year 5*

The Billings Clinic team will continue to offer support to pilot sites and expand outreach efforts to providers and patients in year 5.

**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 4 Update*

The MOMS team at Billings Clinic co-sponsored four two-day Birth in Motion classes in year 4.

*Looking Ahead to Year 5*

MOMS plans to continue to support quarterly Birth in Motion classes in year 5.

## 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.

## Telehealth implementation in OB/GYN practices in the Rocky Mountain West in response to COVID-19

In year 1, in anticipation of the future expansion of telemedicine through the MOMS grant, UM conducted a research project to learn from the emergency deployment of telemedicine in the rural Rocky Mountain West during the COVID-19 pandemic. In year 4, UM's manuscript on this study was published in *Telemedicine Reports Journal*.

- Holman, C., Glover A.L., McKay, K., Gerard, C. Telehealth Adoption During COVID-19: Lessons Learned from Obstetric Providers in the Rocky Mountain West. *Telemed Rep.* 2023;4(1):1-9. doi:10.1089/tmr.2023.0001

## 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

### Community Medical Center Bereavement Bear Program

Community Medical Center is a hospital with an obstetric unit in Missoula, Montana. Community Medical Center developed a perinatal bereavement program that provides a small, plush bear filled with weighted glass beads to patients who experience a fetal or neonatal loss. The parent(s) are given a bear equivalent to the weight of the deceased infant or fetus.

In 2023, the MOMS program provided mini-grant funding to support Community Medical Center in creating and providing a starter kit to all 26 Montana hospitals (and one in Salmon, Idaho) that intentionally deliver to provide consistent support across Montana for bereaved patients and spread the program across the state.



### Maternal Healthcare Experiences Study

The Maternal Healthcare Experiences Study (MES) gathered information from 484 people in Montana who had recently experienced pregnancy, including 39 in-depth interviews on pre-pregnancy, prenatal, childbirth, and postpartum experiences. Participants described what mattered most to them throughout their care experience, highlighting the importance of feeling heard, valued, informed, and valued as partners in their care. The MES study has led to the development of clinical practice recommendations that are responsive to participants' feedback and center patient experiences in efforts to improve perinatal care.

"It was positive even though it was traumatic and not how I was expecting it to go. But I would say, overall, it was positive because I felt like I was given the information to make the choice, and I ultimately made the choice to move forward with the cesarean. And that they gave me the information and the support I needed to make that decision."

"I never felt rushed. I never felt like I couldn't ask a question. He always explained everything in a way that I could understand. It just made me feel more comfortable just knowing that he took the time to listen. It just made me feel heard. I felt like I was also in control of my care."

"With my first pregnancy, just postpartum, I developed really bad postpartum anxiety. It would just be nice if there was just better screening for that. I had tried to get help. It was just very hard to get help for anxiety. Everyone just brushed it off and said, "Oh, what you're feeling is normal." It turned out that it was actually not normal. Fortunately, with this time around, I haven't experienced any of those feelings. So, it would just be nice if there was just easier ways to access healthcare postpartum, or just maybe resources or stuff like that. For example, my last checkup, I think it was at six weeks postpartum. When I had developed my anxiety, it wasn't until after that. It just made it hard for me to seek help afterwards. They do that screening where they ask if at any point ... They ask you how you feel, but I didn't fit any of those questions because my feelings were different based off of the little questionnaire that they asked for you there. So just better screening, I think, would be helpful. It would've helped me at the time."

## Conclusion

In its penultimate year, MOMS continued its successful efforts to build and strengthen the maternal health system across the state of Montana. This grant year was notable for expanded dissemination of research and education both within Montana as well as to national audiences. Two programs that MOMS initiated, the Montana Perinatal Quality Collaborative and the Montana Maternal Mortality Review Committee, achieved greater institutionalization by off-ramping to external funding sources. Successful programs started in the third year, such as the Indigenous Doula Trainings and the Simulation Leadership Academy, continued to expand to larger audiences. The Empaths program also underwent significant redesign and enhancement, with program improvements drawing from lessons learned in the first years of this demonstration pilot program. As MOMS moves into its final year of this first five-year funding cycle, it will be important to leverage the significant data that has been gathered for future program planning and resource allocation decisions—at the patient, facility, and systems-levels—especially the firsthand accounts of patient experiences with the healthcare system during and after their pregnancies gathered through the MOMS Maternal Healthcare Experiences Study. Innovations aiming to improve the health of pregnant and postpartum people in Montana will benefit from expanded and direct engagement from patients, local community stakeholders, and Indigenous communities.



## Appendix A

**Table A1:** 2022-2023 Maternal Health Leadership Council Members

| Name                          | Organization                                  | Role   |
|-------------------------------|---|--|
| Tersh McCracken, MD;<br>Chair | Billings Clinic                               | OBGYN, MOMS Medical Director (retired July 2023)                           |
| Olivia Riutta; Co-Chair       | Montana Primary Care Association              | Director of Special Populations  |
| Bardett Fausett, MFM          | Origin Health                                 | Maternal Fetal Medicine Specialist   |
| Stephanie Iron Shooter        | MT DPHHS                                      | American Indian Health Director  |
| Brie MacLaurin                | Healthy Mothers Healthy Babies Montana        | Executive Director   |
| Jackie Muri, MSL, FACHE       | Intermountain St. Vincent Healthcare          | W&C Services, Regional Senior Director                                     |
| Jean-Pierre Pujol, MD         | Blue Cross Blue Shield of Montana             | Medical Director   |
| Janie Quillici, LAC, LCSW     | Community Physicians Group                    | Perinatal Behavioral Health Counselor                                      |
| Tami Schoen, RN, BAN          | Hill County Public Health Department          | Local Public Health, WIC Aide  |
| Amy Stiffarm, PhD, MPH        | Healthy Mothers Healthy Babies of Montana     | Program Manager for Native American Initiatives, MOMS affiliate researcher |
| Lisa Troyer                   | Pacific Source Health Plans                   | Wellness Consultant  |
| Jennifer Verhasselt, MS, LAC  | Rimrock / Pathway to Parenting Program        | Senior Residential Services  |
| Jennifer Wagner, CPHQ         | Montana Hospital Association                  | Rural Hospital Improvement Coordinator                                     |
| Steve Williamson, MD          | Billings Area Office of Indian Health Service | Medical Director   |
| Tressie White                 | Montana Healthcare Foundation                 | Program Director   |

**Table A2:** Maternal Health Leadership Council Program Staff and Non-Voting Members

| Name                          | Organization  | Role                        |
|-------------------------------|---|-----------------------------|
| Amanda Eby                    | MT DPHHS  | MOMS Project Coordinator    |
| Ann Buss                      | Title V Director / Maternal & Child Health Supervisor | DPHHS                       |
| Annie Glover, PhD, MPH, MPA   | UM, Rural Institute for Inclusive Communities         | Lead Evaluator; PI for MOMS |
| Stephanie Fitch, MHA, MS, LAC | Billings Clinic                                       | MOMS Grant Manager          |

## Appendix B

**Table B1:** 2022-2023 Maternal Mortality Review Committee Members

| Name                           | Organization  | Discipline / Role                                      | Location     |
|--------------------------------|---|--|--------------|
| Rachel Arthur                  | Indian Family Health Center   | Senior Care Coordinator                                | Great Falls  |
| Cheryl Bighorn-Savior          | Ft. Peck Tribal Health  | Public Health Nurse                                    | Fort Peck    |
| Kayla Bragg                    | Department of Justice<br>Division of Criminal<br>Investigation Special<br>Services Bureau | Sexual Assault Kit<br>Initiative (SAKI)<br>Coordinator | state        |
| Ann Buss                       | MT DPHHS  | State Title V Program<br>Director                      | state        |
| April Charlo                   | Snqweylmistn  | Vice President   | St. Ignatius |
| Families First Learning<br>Lab | Co-Founder  | Social Work/<br>Behavioral Health                      | Missoula     |
| Parent Educator                | St. Ignatius  | Violence Prevention<br>Agency                          | State        |
| Melinda Cline                  | Community Medical Center  | Private Practitioner                                   | Missoula     |
| Drew Colling                   | Montana Coalition Against<br>Domestic and Sexual<br>Violence                              | Director of Social<br>Change and<br>Resilience         | state        |
| Jacy Crowley                   | Rocky Boy Tribal Health<br>Department   | Director of Nursing                                    | Box Elder    |
| Elaine Cummins                 | Rocky Mountain Tribal<br>Epidemiology Center  |  | state        |
| Dennis Four Bear               | Ft. Peck Tribal Health Director   | Director   | Poplar       |
| Annie Glover                   | University of Montana<br>Rural Institute for Inclusive<br>Communities                     | Research Scientist                                     | state        |
| Adriane Haragan                | Bozeman Health  | MFM  | Bozeman      |
| Frances Hayes                  | Roosevelt County Public<br>Health Department  | Public Health Nurse                                    | Wolf Point   |
| Deidhra Hill                   | Rocky Mountain Tribal<br>Epidemiology Center  | CHM Project Manager<br>and TEC Coordinator             | state        |
| Stephanie Iron Shooter         | DPHHS Office of American<br>Indian Health   | Director   | statewide    |
| Willy Kemp                     | DPHHS   | Medical Examiner                                       | statewide    |
| Mary LeMieux                   | Medicaid  | Member Health<br>Service Bureau Chief                  | state        |

**Table B1:** 2022-2023 Maternal Mortality Review Committee Members

| Name               | Organization   | Discipline / Role   | Location                      |
|--------------------|--|---|-------------------------------|
| Christina Marchion | Central Montana Medical Center   | OBGYN   | Lewistown                     |
| Tersh McCracken    | Retired  | OBGYN   | Billings                      |
| Katy Osterloth     | Bozeman Health   | Women's & Children's Nurse Coordinator  | Bozeman                       |
| Cynthia Pease      | Crow Tribal Health Department  | Care Coordinator, Crow T-HIP  | Crow Agency                   |
| Pam Ponich         | OneHealth  | Peer Support Specialist Supervisor and Perinatal Training Hub Coordinator for OneHealth | Miles City, Hardin, Lewistown |
| Janie Quilici      | Western Montana Mental Health Center/Community Medical Center                              | Perinatal Behavioral Health Director  | Missoula                      |
| Sarah Reese        | University of Montana  | Assistant Professor   | state                         |
| Kassie Runsabove   | Montana Healthcare Foundation  | Program Officer   | state                         |
| Kathryn Seaton     | Montana Legal Services Association   | Indian Law Attorney   | state                         |
| Jennifer Show      | Ft. Belknap Tribal Health Department   | Chief Medical Officer   | Wolf Point                    |
| Kirsten Srna       | Benefis Hospital<br>Association of Women's Health, Obstetrics and Neonatal Nurses (AWHONN) | Obstetrics Manager<br>AWHONN Montana Chapter Chair                                      | Great Falls                   |
| Lee Stiffarm       | Blackfeet Community Hospital   | Public Health Nurse   | Browning                      |
| Jana Sund          | Postpartum Resource Group - Postpartum Doula   | Certified Nurse Midwife   | Kalispell                     |
| Helen Tesfai       | Rocky Mountain Tribal Epidemiology Center  | Executive Director  | Regional                      |
| Vickie Thuesen     | Ag Worker Health & Services (FQHC)   | Clinical Director   | Lolo                          |
| Raymond Tierney    | Billings Area Office of Indian Health Services   | Director of Nursing   | Regional                      |
| Kari Tutwiler      | MT DPHHS   | FICMMR Coordinator  | state                         |

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| Name                | Organization                                   | Discipline / Role                       | Location  |
|---------------------|--|---|-----------|
| Jennifer Verhasselt | Rimrock  | Senior Director of Residential Services | Billings  |
| Katie Wagner        | Blackfeet Community Hospital                   | Community Health Nurse                  | Browning  |
| Mariya Waldenberg   | VezaHealth                                     | Chief Clinical Officer                  | Lame Deer |
| Aaron Wernham       | Montana Healthcare Foundation                  | Chief Executive Officer                 | statewide |
| Katie Williams      | Central Montana Medical Center                 | FP-OB                                   | Lewistown |
| Steve Williamson    | Billings Area Office of Indian Health Services | Chief Medical Officer                   | Regional  |



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