

MONTANA OBSTETRICS and MATERNAL SUPPORT PROGRAM

— Year 3 Report —



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Acronym Glossary

Acronym	Full Name
5P's Screener	Prenatal Substance Abuse Screen for Drugs and Alcohol
AAP	American Academy of Pediatrics
ACOG	American College of Obstetricians and Gynecologists
AIM	Alliance for Innovation on Maternal Health
ALSO	Advanced Life Support in Obstetrics Curriculum
APE	Applied Practicum Experience
APHA	American Public Health Association
ASTHO	Association of State and Territorial Health Officials
BHDDD	Behavioral Health and Developmental Disabilities Division
BRFSS	Behavioral Risk Factor Surveillance System
CDC	Centers for Disease Control
CDC ERASE MM	Enhancing Reviews and Surveillance to Eliminate Maternal Mortality
DNP	Doctor of Nursing Practitioner
DPHHS	Department of Health and Human Services
DUA	Data Use Agreement
ECFSD	Early Childhood & Family Support Division
ECO	Emergencies in Clinical Obstetrics
EFM	Electronic Fetal Monitoring
EmOC	Emergency Obstetric Care
EMT	Emergency Medical Technician
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
LCPC	Licensed Clinical Professional Counselor

Acronym Glossary

Acronym	Full Name
LIFTS	Linking Infants & Families to Supports
LOCATe	Montana Levels of Care Assessment Tool
MADM	Mother's Autonomy in Decision Making Scale
MCH	Maternal and Child Health
MHA	Montana Hospital Association
MHI	Maternal Health Innovation
MHLC	Maternal Health Leadership Council
MHSP	Maternal Health Strategic Plan
MMRC	Maternal Mortality Review Committee
MMRP	Maternal Mortality Review Program and Prevention
MMRIA	CDC Maternal Mortality Review Information Application
MOMS	Montana Obstetric and Maternal Support program
MORi	Mothers on Respect Index
MPQC	Montana Perinatal Quality Collaborative
NAS	Neonatal Abstinence Screening
NICU	Neonatal Intensive Care Unit
NRP	Neonatal Resuscitation Program
OB/GYN	Obstetrician/Gynecologist
OBH	Obstetric Hemorrhage
OT	Occupational Therapy
PALS	Pediatric Advanced Life Support
PDSA	Plan-Do-Study-Act
PERT	Preeclampsia Early Recognition Tool
PMADs	Postpartum Mood and Anxiety Disorder
PMSS	Pregnancy Mortality Surveillance System
PQC	Perinatal Quality Collaborative
PRAMS	Pregnancy Risk Assessment Monitoring System
PSAS-RSF-16	Postpartum Specific Anxiety Scale
PSI	Postpartum Support International
PTSD	Post Traumatic Stress Disorder

Acronym Glossary

Acronym	Full Name
QBL	Quantified Blood Loss
RAC	Risk Appropriate Care
RIIC	Rural Institute for Inclusive Communities
RPRED	Peripartum Racial and Ethnic Disparities
SBIRT	Screening, Brief Intervention, and Referral to Treatment Screening Tool
SIC	Special Interest Call
SIM-MT	Simulation in Motion-Montana
SLA	Simulation Leadership Academy
SMA	Spinal Muscular Atrophy
SMFM	Society of Maternal and Fetal Medicine
STABLE	Sugar, Temperature, Airway, Blood pressure, Lab work and Emotional support
SUD	Substance Use Disorder
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 (MHA), 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 Program and Prevention (MMRP) 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 participates in the Montana Perinatal Quality Collaborative (MPQC) by convening the MPQC Steering Committee and 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

UM engages in the MOMS program through the Rural Institute for Inclusive Communities (RIIC). UM provides research and data analysis support, ongoing formative and summative evaluation of the full project, and technical assistance and guidance. UM also houses the Montana Alliance for Innovation on Maternal Health (AIM) Initiative and provides support to the department on maternal mortality review, through the ERASE MM grant. In 2022, UM RIIC was awarded a Perinatal Quality Collaborative (PQC) grant by the CDC and took over administration and leadership of the MPQC. MPQC quality improvement initiatives are closely and strategically coordinated with MOMS to ensure that interventions are mutually reinforcing.

Impact of COVID-19

The impacts of the COVID-19 pandemic shifted in year 3. As vaccines and testing became more readily available, opportunities opened for in-person meetings and events. Across the MOMS grant activities, in-person and hybrid meetings allowed for more connection and collaboration between partners. Additionally, conferences shifted back to in-person, resulting in statewide and national dissemination of MOMS research studies. 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 third project year of the MOMS grant and addresses Objectives A through C and the specific strategies that were addressed during the September 30, 2021 – September 29, 2022 project period.

Objective A: Catalyze Multidisciplinary Collaboration in Maternal Health

Strategy 1	Elevate maternal health as a priority issue in Montana
Activity 1.1	Maternal Mortality Review Committee
Activity 1.2	Maternal Health Strategic Plan
Activity 1.3	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 Mortality Review Committee

In year 2, the MOMS grant program provided funding that enabled Montana to complete necessary prework and establish Montana's first Maternal Mortality Review Committee. In fall 2021, the CDC awarded Montana DPHHS with the ERASE MM grant. All work related to the MMRC transitioned to the ERASE MM grant during year 3 of the MOMS grant. See Activity 2.1 for a description and update of the Montana Maternal Mortality Review Committee.

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 19 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 3 MHLC members.

Council Activities

In year 3, three Council meetings were held, with two virtual meetings and one hybrid meeting. A meeting was held in September 2021; this meeting was reported in the Year 2 Annual Report; the fall 2022 meeting was held in October and will be reported in the Year 4 Annual Report. Table 1 lists key Council meeting topics by date during year 3.

Table 1. Year 3 Maternal Health Leadership Council Meeting Topics

Meeting Date	Key Topics	Participants (N)
1/18/2022	Guest Presentations: Montana LOCATe Results and Next Steps, and Montana Tribal Perspective of Healthcare; Hospital Award Designation, MOMS Grant Updates	20
4/19/2022	Guest Presentation: Montana State University DNP Certified Nurse Midwifery Program, Montana's Emergency Obstetrics Survey, American Indian Historical Trauma and Maternal Health	20
7/19/2022	Guest Presentations: Cultural Safety, Trauma-Informed Care, and Supporting Maternal Health in Primary and Ancillary Care Settings; MOMS Year 4 Workplan Discussion, Summary of projects supported by MOMS Mini-Grants, Updates on MOMS projects and year 4 plans	18

Year 3 Council Activities

- **New membership:** Two new members joined the Council in year 3. Dr. George Mulcaire-Jones, retired family physician and Clinical Advisor for the maternal arm of the Montana Perinatal Quality Collaborative (MPQC-AIM), and Amy Stiffarm, an individual with lived experience and Indigenous Public Health PhD student.
- **Guest presentations:** Seven guest presentations were held throughout the year 3 MHLC meetings. Table 2 shows the presentations given to the MHLC in year 3.
- **Council recommendations:** The Council voted to approve the mini-grant program for year 3.
- **Mini-grant program:** The Council solicited and reviewed 40 applications for the mini-grant program.
- **Ongoing feedback on MOMS activities:** The Council provided ongoing feedback and support regarding MOMS initiatives – the MPQC, MMRC, and the Maternal Health System Needs Assessment.
- **Strategic Planning:** The Council provided input and reviewed the Strategic Plan for year 4. The Council also conducted an internal survey on structure, strengths, and areas for improvement and applied these findings to improve overall functioning.

Table 2. Guest Presentations Held During Year 3 MHLC Meetings

Date	Presentation Title	Presenter and Affiliation
1/18/2022	Montana LOCATe Results and Next Steps	Carla DeSisto, PhD, MPH - CDC; Carly Holman, MS - Program Evaluator at UM RIIC
1/18/2022	Montana Tribal Perspective of Healthcare	LeeAnn Bruised Head, MPH - Crow Tribal Health Director
4/19/2022	Montana State University DNP Certified Nurse Midwifery Program	Sarah Shannon, PhD, RN, FAAN - Dean of the College of Nursing at Montana State University
4/19/2022	Montana's Emergency Obstetrics Survey	Annie Glover, PhD, MPH, MPA - Senior Research Scientist at UM RIIC
4/19/2022	American Indian Historical Trauma and Maternal Health	D'Shane Barnett, PhD, MS - Director & Health Officer at Missoula City-County Health Department; Amy Stiffarm, MPH - Indigenous Public Health PhD Student at North Dakota University
7/19/2022	Cultural Safety	Amy Stiffarm, MPH - Indigenous Public Health PhD Student at North Dakota University
7/19/2022	Trauma-Informed Care	Sarah Reese, PhD - Assistant Professor at UM School of Social Work

Activity 1.2

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 3, HRSA did not require Montana to submit a new MHSP. Instead, the MOMS Leadership team (UM, Billings Clinic, and DPHHS) met to update and submit a year 4 work plan as part of a Non-Competing Continuation Report in June 2022. DPHHS consolidated the content discussed into the year 4 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.

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. In years 2 and 3, UM built upon this preliminary work and initiated a broader Maternal Health Systems Needs Assessment, starting March 2021. This needs assessment gathers information on Montana's maternal health system and services to identify areas of strength and need. The assessment focuses 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 needs assessment utilizes the WHO Strengthening Health Systems to Improve Health Outcomes framework¹. The framework outlines the essential elements and activities that make up 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.

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

Year 3 Needs Assessment Activities

■ Maternal Health Leadership Council Interviews

Methodology

UM conducted 11 semi-structured interviews with MHLC members to gather information on the barriers and strengths of the maternal health system in Montana. The questions addressed each building block within the WHO Strengthening Health Systems framework. The interviews occurred in year 2 from June 2021 to September 2021, with data analysis occurring in year 3.

Key Findings

Service Delivery: Survey participants identified rurality as the biggest barrier to delivering maternal health services in Montana, highlighting workforce shortages, access to care, and geographic distance as compounding factors in delivering care. Participants also brought to light how these barriers are further exacerbated by the lack of communication and collaboration between different levels of care for patients, highlighting the need for enhanced community networks to support patients at all levels of care. **Health Workforce:** Participants listed several workforce needs in Montana, such as medical staff (i.e., OB/GYNS, nurses, midwives, etc.), support staff (i.e., dental providers, mental health professionals, peer support, home-visitors, maternal psychiatrists, doulas, etc.) and provider needs (i.e., screening tools, community supports, cross-training, referral networks, and training). **Health Information System:** Participants agree that Montana does not appear to have an active and functioning public health surveillance system, statewide or in hospitals, and dissemination of any information is poor. **Medical Products, Vaccines, and Technologies:** Respondents agreed that telehealth capacity has increased in Montana, but use is not to the level it could be. Many identify funding and access as barriers to telemedicine use in rural communities. **Sustainable Financing:** Participants agreed that a strength of the health care billing system in Montana is Medicaid and Medicaid expansion, while several barriers exist, including staffing for billing, billing codes, lost flexibility in Medicaid's targeted case management billing system, and patient barriers. **Leadership and Governance:** At the hospital level, several participants stated that maternal health is prioritized by hospital leadership. At the state level, overall, participants agreed that maternal health is not prioritized by state leadership, but many are hopeful that the nature of the work (moms and babies) makes people want to support maternal health if they know it is an issue.

■ 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 American College of Obstetricians and Gynecologists (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 (76%) 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 (48%) 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 the transport of 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.

Next Steps

Montana has put together a multidisciplinary state team to participate in the Association of State and Territorial Health Officials (ASTHO) Risk Appropriate Care (RAC) Learning Community through April 2023. The RAC Learning Community leverages technical assistance and peer-to-peer learning to improve equitable risk-appropriate care practices in participating states by translating LOCATe data into policy and programmatic action.

Dissemination

UM submitted a manuscript to BMC Health Services Research, which is currently under peer review, and made the following presentations to national and state audiences in year 3:

- Holman, C., Glover, A., Fertaly, K., Nelson, M. (2022). Assessing the Capacity of Montana's Maternal and Neonatal Health System to Provide Geographic- and Ability-Equitable Access to Risk Appropriate Care. Presentation at CityMatCH Leadership and Maternal and Child Health Epidemiology Conference, Chicago, IL.
- Holman, C. (2022) Montana LOCATe Results. Presentation to the Montana Risk Appropriate Care Learning Community Team Meeting.

- Holman, C. (2022). Montana Levels of Care Assessment Tool (LOCATe). Presentation at MOMS Project ECHO.
- Holman, C., Fertaly, K. (2022). Risk-Appropriate Care in Montana's Maternal and Neonatal Health System: What it is and Why it Matters. Presentation at the Montana Hospital Association Health Summit, Butte, MT.

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.

Dissemination

During year 4, UM will present findings from the facility accessibility module at the American Public Health Association (APHA) conference in November 2022 and submit a manuscript to the Disability and Health Journal. UM made the following presentations to national and state audiences in year 3:

- Burkholder, S., Holman, C., Eby, A. (2022). Improving Maternal Health Outcomes Starts with Primary Care. Presentation at the Montana Hospital Association Conference, Billings, MT.
- Holman, C., Glover, A., Fertaly, K., Nelson, M. (2022). Assessing the Capacity of Montana's Maternal and Neonatal Health System to Provide Geographic- and Ability-Equitable Access to Risk Appropriate Care. Presentation at CityMatCH Leadership and Maternal and Child Health Epidemiology Conference, Chicago, IL.

Emergency Obstetric Services Survey

PI: Annie Glover, PhD, MPA, MPH

Purpose of the Study

To assess hospital capacity to provide emergency obstetric services in hospitals without an obstetrics unit.

Methodology

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.

Key Findings

Thirty-two hospitals (94%) without an obstetric unit participated in the 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. Results led to three recommendations to improve the provision of emergency obstetric care in Montana, 1) increased clinician and staff training, 2) improved coordination with hospitals that provide obstetric services, and 3) improved coordination with transport teams.

Dissemination

UM will publish a statewide report on emergency obstetric services in a hospital without an obstetrics unit, and summary reports focused on training, transport, and medical products, vaccines, and technologies. UM will present the study findings at the APHA Conference in November 2022 and submit a manuscript to the Journal of Rural Health. UM made the following presentations to national and state audiences in year 3:

- Glover, A.L., Holman, C., Brown, D., Nelson, M. (2022). Handling the "Drive-By" Delivery: An Assessment of Emergency Preparedness in Obstetric Care in a Rural State. Presentation at CityMatCH Leadership and Maternal and Child Health Epidemiology Conference, Chicago, IL.
- Holman, C., Fertaly, K. (2022). Risk-Appropriate Care in Montana's Maternal and Neonatal Health System: What it is and Why it Matters. Presentation at the Montana Hospital Association Health Summit, Butte, MT.

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 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.

Next Steps

The interview coding is underway.

Dissemination

UM will present findings on the Postpartum Care & Contraception Survey at the APHA Conference in November 2022 during year 4. UM will also create summary reports and submit manuscripts on the following topics to a contraception-focused journal: 1) barriers & facilitators to contraception from provider perspective; 2) disability and long-acting reversible contraception; 3) provider attitudes toward IUDs and implants and how often they provide them; 4) reported provider adherence to contraceptive guidelines and contraceptive counseling; and 5) contraceptive care in a rural state.

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

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 targeted 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 427 people who experienced pregnancy in Montana in the last five years participated in the survey, and 39 people participated in a phone interview.

Looking Ahead to Year 4

Data analysis will occur in year 4.

Dissemination

The findings will be presented to the Maternal Health Leadership Council in April 2023 during year 4. UM will prepare several manuscripts for publication in academic journals and submit abstracts to the Association of Maternal & Child Health Programs, Montana Public Health Association, and APHA Conferences in 2023.

LIFTS in Indian Country

PI: Amy Stiffarm, MPH

Purpose of the Study

Healthy Mothers Healthy Babies (HMHB) and Amy Stiffarm had community conversations in each of the seven reservations and the Little Shell Tribe 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 (MCH) community needs. This study was supported by Billings Clinic's MOMS grant funds.

Methodology

HMHB conducted seven listening sessions in year 3 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.

Key Findings

Confederated Salish and Kootenai Tribes of the Flathead Reservation: This listening session had 10 attendees representing eight organizations (CSKT Tribal Health, Lake County Public Health Department, Salish & Kootenai College, St. Joseph's Medical Center, Helping Hand, CSKT Vocational Rehab, Early Head Start, and Snqweylmstn, a non-profit organization dedicated to providing culturally relevant homes for foster children on the Flathead Reservation). *LIFTS resources discussion:* added new services offered by already listed organizations and updates to others. *MCH needs discussion:* needs included childcare, social and physical supports (doulas, house cleaning, in-home services), and mental health supports. **Northern Cheyenne Nation:** Four attendees from three organizations (Boys & Girls Club of Northern Cheyenne Nation, OneHealth, IHS). *LIFTS resources discussion:* added play spaces, lactation resources, car seat installation, and childbirth classes. *MCH needs discussion:* needs included more people-centered care through doulas, trauma-informed care, and revitalization and honoring of traditional birth practices. **Crow Reservation:** Three attendees from three organizations (IHS Lama Deer, Big Horn Public Health Department, OneHealth). *LIFTS resources discussion:* resulted in several updates, additions, and one removal of a service no longer offered. The group also discussed having a separate service category for hospitals, as opposed to "Family Practice," citing concerns that many people may not understand the term. The group discussed the possibility of including resources located in Lama Deer on the Crow Reservation listings despite it being located on the Northern Cheyenne Reservation. *MCH needs discussion:* more WIC and Medicaid Enrollment, providing syphilis and other infectious disease educational opportunities. **Blackfeet Nation:** Five attendees from three organizations (Teen Pregnancy Prevention Project of Blackfeet Man Power, Browning Public Schools, Blackfeet Early Head Start). *LIFTS resources discussion:* added four new listings and updated information for a current listing. Notably, two of the new listings are in very rural communities with few other resources. *MCH needs discussion:* need for more connection to culture and spirituality, including Native languages in childcare settings. **Fort Belknap Indian Community:** Three attendees from two organizations (Fort Belknap Tribal Public Health, WIC). *MCH needs discussion:* resources (funding, people, etc.) to do more of the MCH work already occurring. The group discussed transportation as a barrier for prenatal care access located in Havre, and the need for more breastfeeding and parent education classes. Connection with mothers in the postpartum period was emphasized by attendees. **Fort Peck Reservation:** Two

attendees from one organization (Fort Peck Tribal Health). *LIFTS resource discussion*: added two lactation services and two transportation resources. The group also suggested adding food banks in communities adjacent to the reservation. *MCH needs discussion*: service access, motivation to access supports prior to crisis, transportation, telephone and internet access, and lack of awareness of resources. Specifically, the attendees noted the high number of families who are eligible for WIC but do not enroll. Specific needs identified also included housing, speech therapy services, and access to food and nutrition supports. **Rocky Boy's Reservation**: Three attendees from two organizations (Rocky Boy Health Center, Rocky Boy Head Start). *LIFTS resources discussion*: prompted HMHB to double check a listing of mental health providers and added a SUD treatment resource. *MCH needs discussion*: prenatal care and connections to area hospitals including Northern Montana Hospital in Havre and Benefis in Great Falls, increased information sharing and collaboration with hospitals where most deliveries were happening, mental health resources (children in foster care, social anxiety after COVID isolation, and education and resources regarding SUD in pregnancy).

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.

Looking Ahead to Year 4

HMHB will share notes from the listening session with UM. UM will integrate findings into the MOMS needs assessment activities.

UM Research Studies in Year 3

The MOMS research team continued and initiated several research studies in year 3 to gather further information on maternal health in Montana, which provided further 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:

Provider Survey: Understanding and Improving Barriers to Treatment and Care of Postpartum Depression

PI: Marcy Hanson, PhD, MN, RN

Purpose of the Study

Identify provider bias related to treatment and care of pregnant women with substance use disorder.

Methodology

A survey, informed by the Knowledge, Attitude, and Practice model and based on a survey by Munoz, Suchy and Rutledge, was distributed to obstetric providers (MD, RN, PA, APRN, and

SW). The survey addressed provider knowledge, attitudes, and practice regarding substance use during pregnancy and the care of women who utilize substances during pregnancy to better understand implicit bias among obstetric care providers. The survey was sent to obstetric providers through a listserv housed by Billings Clinic and was open September 4, 2021 to October 11, 2021. The UM IRB approved the study under Protocol #: 100-21.

Results

Ninety-seven providers participated in the survey. The participants included multiple providers/professionals including OB/GYNs, RNs, APRNs, PAs, LCSWs, SW, therapists, and pharmacists, providing maternal care within Montana.

Dissemination

The provider survey data has been analyzed and is being formatted for submission to the Journal Nursing for Women's Health. UM presented findings at the Western Institute of Nursing Conference in April 2022.

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 submitted to the American Journal of Maternal Child Nursing and is undergoing peer review.

Emergency Obstetrics Qualitative Study

PI: Kaitlyn Fertaly, PhD

Purpose of the Study

To assess the organization and delivery of care during emergency obstetric events at non-birthing facilities in Montana and develop specific strategies to integrate those facilities into a regionalized perinatal system of care.

Methodology

UM will conduct semi-structured interviews with healthcare providers (including transport personnel) and case studies that will focus on care, referral, and transport of patients with obstetric emergencies. The UM IRB approved the study under Protocol #: 171-22.

Looking Ahead to Year 4

Eighteen interviews have been conducted so far and recruitment is ongoing. In year 4, the team will start data analysis.

Dissemination

UM will prepare reports for statewide dissemination and academic manuscripts are planned.

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

PI: Jessica Liddell, PhD

Purpose of the Study

The primary objective of the project is to develop the evidence-base for use of recovery doulas to improve maternal and infant health outcomes in Montana.

Methodology

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.

Looking Ahead to Year 4

Interview coding is underway.

Dissemination

UM will develop manuscripts related to best practices and recommendations for training and implementing recovery doulas in Montana. The MOMS team made the following presentation to a national audience in year 3:

- Liddell, J., Glover, A., Fitch, S. (2022). Exploring the use of recovery doulas to improve maternal and infant health outcomes in Montana. National Maternal Health Innovation Symposium. Chicago, IL.

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

The UM study team 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.

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

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 is conducting a systematic literature review. UM identified 16 articles for inclusion in the full review.

Dissemination

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

Cost Effectiveness of Doulas: Montana Medicaid Economics Analysis

PI: Jessica Liddell, PhD

Purpose of the Study

Explore the potential cost savings in Montana if doulas are utilized.

Methodology

The research team completed the training needed to access Healthcare Cost and Utilization Project (HCUP) data.

Looking Ahead to Year 4

Data analysis is currently underway.

Dissemination

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

Activity 1.3

Community Education and Screening

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. Windfall also updated digital advertising messaging samples and a created a patient-education website. Marketing from Windfall will go live with final approval from DPHHS management. The patient-education website will be promoted in year 4. 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. The campaign will be shared with focus groups prior to being launched in year 4.

Siloed

In year 2, Billings Clinic started development of a documentary series, “Siloed,” telling the stories of agricultural and rural mothers, to elevate maternal health as a priority issue and educate patients and providers on warning signs to be aware of and best practices to prevent severe maternal morbidity and mortality. See Activity 3.2 for a description and update of the Siloed Series in year 3.

Objective B: Measure Maternal Health in Montana

Strategy 2	Collect and analyze maternal health data
Activity 2.1	Collect and centralize MMRC
Activity 2.2	Gather maternal health indicators from BRFSS, PRAMS, Vital Stats, Medicaid, Hospital Discharge Data, and other relevant programs
Activity 2.3	Prepare annual report on maternal health

Activity 2.1

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, 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 and 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 3 Update

In fall 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 2.2

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

DPHHS and UM established a DUA for birth records analysis to be conducted at UM, and Institutional Review Board approval was granted for research using this data in September 2020. An additional DUA was established with UM for death records analysis in year 2 to support the MMRC. The Office of Epidemiology and Scientific Support at DPHHS has provided significant support and assistance with ensuring that vital statistics are available to inform MOMS activities. Relevant data points on the Montana birth record include birthrate; site of delivery; pregnancy risk factors; delivery outcomes; cesarean section; and prenatal care utilization.

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. MHA has been an enthusiastic partner of the MOMS project, and this study will facilitate a better understanding of near miss events in hospitals across the state to drive clinical improvements that are targeted to Montana's unique needs. Relevant datapoints 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.

Activity 2.3

Maternal Health Report

The third annual Maternal Health Report was prepared by UM and submitted to HRSA on September 29, 2022. The report was revised based on HRSA feedback and will be available for internal program planning in year 4.

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	Disseminate best practices in screening, assessment, clinical care, and community health initiatives in maternal health
Activity 3.3	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 3.4	Provide simulation training opportunities for non-birthing and birthing facilities of all levels in teamwork/communication and a variety of birthing scenarios

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

Strategy 5	Implement team-based approaches to perinatal care
Activity 5.1	Establish linkages with and among community-based resources, including mental health resources, primary care resources, and support groups
Activity 5.2	Establish and administer a program to support a variety of non-medical, community-based roles that support pregnant and postpartum women, including home visitors, lactation consultants, doulas, peer support specialists, and community health workers

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

Twenty-one ECHOs were hosted in year 3; see Table 3 for the list of ECHO topics and number of spoke participants. There were 215 unique spoke participants across the year 3 ECHOs, including 146 clinical spoke participants, 22 non-clinical attendees, 22 students, and 25 who did not report their organization or role.

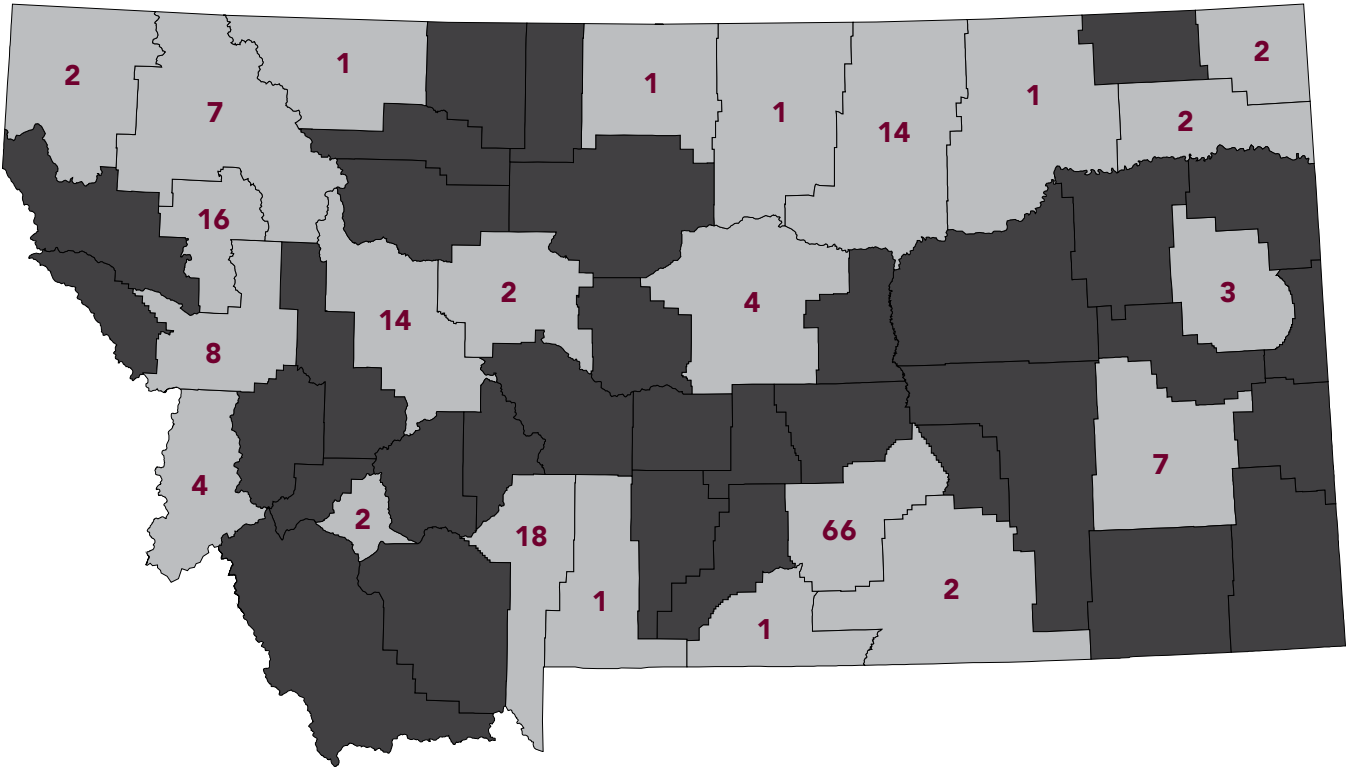
Table 3. ECHOs and Clinical Spoke Participants

Date	ECHO Topic	Clinic* or Webinar**	Participants
10/12/2021	Cannabis Use in Pregnancy and Lactation	Webinar	27
10/26/2021	Neonatal Abstinence Screening (NAS)	Webinar	16
11/9/2021	Eating for 2 Without Eating for 2	Clinic	33
12/14/2021	Identifying Victims of Human Trafficking	Clinic	40
1/11/2022	Caring for the Critically Ill Obstetric Patient	Clinic	39
1/25/2022	Office-Based Early Pregnancy Loss Management	Clinic	29
2/8/2022	Reducing Maternal Mortality through AIM Cardiac Bundle	Clinic	33
2/22/2022	Choosing NICU Wisely, Reducing NICU Admissions	Webinar	25
3/8/2022	Perinatal PTSD and Trauma Informed Care	Webinar	30
4/12/2022	Birth: A Family Affair	Clinic	25
4/26/2022	Working with Populations of Sexual and Gender Minorities	Webinar	20
5/10/2022	Pregnancy in an Unknown Location	Webinar	21
5/24/2022	Postpartum Hypertension	Webinar	27
6/14/2022	Montana's Implementation of the AIM OBH Bundle	Webinar	17
6/28/2022	Emergency Presentations: Breech Delivery and Shoulder Dystocia	Webinar	30
7/12/2022	Learning to Listen: Trauma-Informed Music Therapy	Webinar	5
7/26/2022	Spinal Muscular Atrophy (SMA) Diagnosis, Natural History, Treatment & Supportive Care	Webinar	14
8/9/2022	Doulas and Midwives as Tools to Combat Maternal Trauma	Webinar	28
8/23/2022	AIM: Caring for Patients with Substance Use Disorder	Webinar	24
9/13/2022	Levels of Care Assessment Tool (LOCATe)	Clinic	16
9/27/2022	Twin Pregnancies and Complications of Monochorionic Twins	Webinar	22

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

Participants were from 23 counties across Montana and nine were from healthcare facilities out-of-state (27 participants did not report their facility). Figure 1 shows the number of participants by county in Montana.

Figure 1. Year 3 Unique ECHO Clinical Participants by County (N=215)



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. Providers have consistent attendance which contributes to building relationships across disciplines and communities. The environment is supportive and collaborative.
- **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:

- **Didactic presentation:** Across the ECHO clinics held during year 3, there has been great variability in how long presentations are (some 30 minutes, some up to an hour long).
- **Recruitment of case presentations:** 14 of the 21 ECHOs did not have a formal case presentation in year 3. The case presentation is an essential component of the ECHO model.
- **Session Flow:** 19 of the 21 ECHOs during year 3 ended early (at least 20 minutes before the scheduled session end time) and left limited time for questions and comments from ECHO participants.

Participant Evaluations

Participant Evaluations (Quantitative)

After each ECHO, participants received an online evaluation. The program collected 118 participant evaluations for year 3. Evaluations collect information on ECHO content, quality, enhancement of knowledge, relevance to practice, and application. Fourteen ECHOs were webinars only and did not include a formal case presentation (Dates: 10/21/21, 10/26/21, 2/22/22, 3/8/22, 4/26/22, 5/10/22, 5/24/22, 6/14/22, 6/28/22, 7/12/22, 7/26/22, 8/9/22, 8/23/22, and 9/27/22). The evaluation team removed case presentation responses from these dates in the analysis.

Figure 2. Enhancement of Knowledge

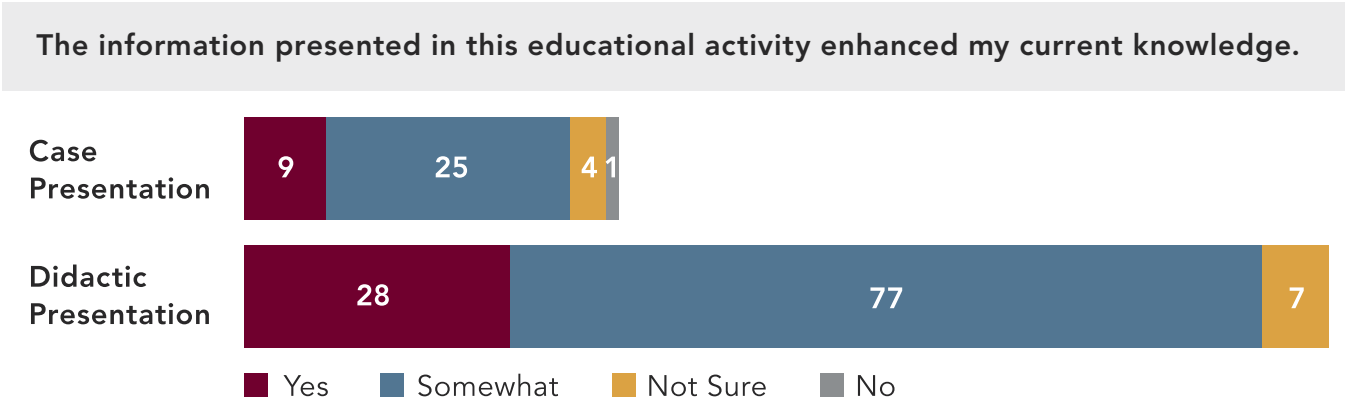
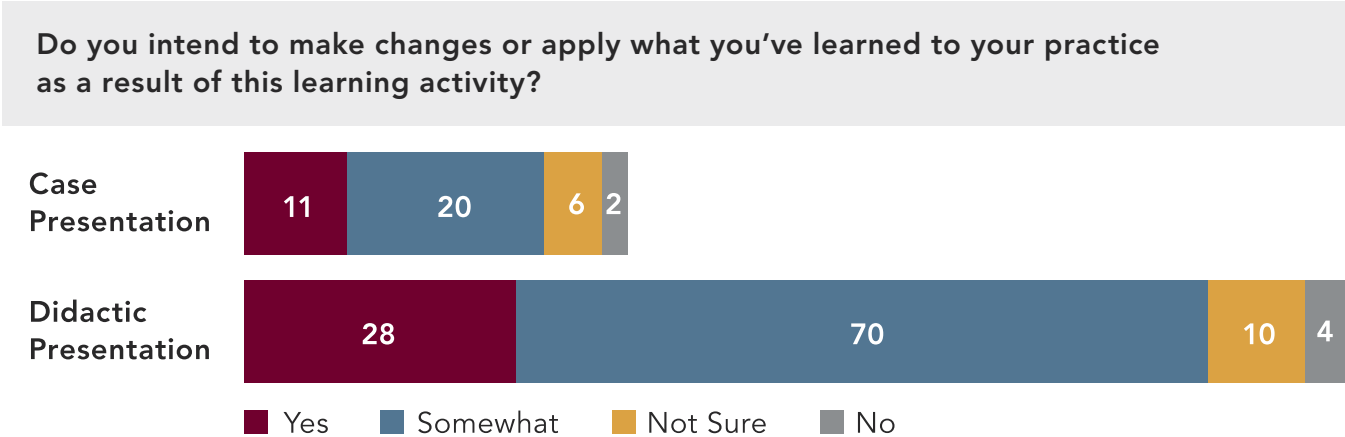


Figure 3. New Ideas



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, and suggestions for future topics. Below are selected comments submitted by ECHO participants in year 3.

- *"Taking the time to provide [patient] education along the way and with every change. Understanding that each patient presents with their own baggage and I must be able and willing to walk with them through it." —ECHO Participant*
- *"I have had a few patients with early miscarriages during my 2-year practice. I am one of a few perinatal providers in this community. Having the knowledge of different options for management will allow my patients to have access to better care." —ECHO Participant*
- *"The presentation reminded me to continue to adjust the ways in which I talk with families to ensure the partner feels included in the conversation and like part of the team. By helping the partner feel included, I feel they are more likely going to be able to support their pregnant partner through pregnancy, delivery and postpartum." —ECHO Participant*

Year 3 Update

The UM evaluation team members submit bi-annual reports to the Billings Clinic staff summarizing ECHO clinic observations and participant evaluations. Information for these reports supports the continuous quality improvement of ECHO clinic delivery. Through Project ECHO, MOMS has developed a community of practice that engages interdisciplinary specialists and community-based partners. The ECHO clinics build knowledge and capacity among community clinicians through case-based learning, knowledge networks, and learning loops. The maternal health grand rounds that Project ECHO facilitates aim to improve overall care quality, reduce provider isolation, and create a united community of practice where rural and urban providers can connect and learn. The third year of Project ECHO continued to make progress on these goals.

In year 4, the Billings Clinic team will work to increase the utility and quantity of case presentations and maintenance of the ECHO model, continue to implement strategies to increase participation among rural providers, and build upon the strong community of practice to connect providers across the state.

Activity 3.2

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

Billings Clinic has contracted with A.D. Creative Group for MOMS marketing and communications.

The MOMS website was launched in February 2020. Below is a summary of A.D. Creative marketing activities in year 3.

- **Print Ads:** A.D. worked with MOMS to create a half page ad featured on the outside back cover of the MHA 2022 Membership Directory. MOMS split the cost of this ad with MAPP-Net to leverage the most economical ad space.
- **LIFTS Pocket Card:** A.D. designed and produced #500 scrub pocket cards for MOMS to distribute featuring information on the Healthy Mothers Healthy Babies LIFTS program.
- **Empaths Referral Rack Card and Landing Page:** A.D. designed and printed #500 Empaths rack cards for distribution to healthcare clinics and created a new landing page on the MOMS website, which can be viewed here: <https://www.mtmoms.org/empaths/>
- **Videos:** A.D. created a shortened, 5-minute-long version of the video presented at the 2021 National Maternal Health Innovation Symposium in Baltimore, Maryland for a presentation to the Billings Rotary Club. The shortened video can be viewed here: <https://youtu.be/n4XmvfoP2ds>
- **Resources:** A.D. designed and printed resources for MOMS to share with Billings Clinic, including 5-minute hot debrief cards and screening tools.
- **Service Map:** A.D. designed a service map of communities and hospitals for MOMS. Highlighting Sites identified as participating MPQC facilities.

- **Outreach Brochure:** A.D. designed and printed Outreach Brochures to help MOMS in their efforts to connect providers and patients to the resources they need.
- **Cuddling Cubs:** A.D. created materials to improve recruitment and exposure to the Cuddling Cubs program, including Cuddling Cubs LIFTS magazine ad creation, Pocket Reference Cards, Sticker Sheet information card design and production.
- **Convention SWAG:** A.D. designed and oversaw the production of several different promotional items for MOMS to use at conventions throughout the year, including clothing, blankets, hand sanitizer, pens, lip balm, first aid kits, tissue packets, manicure sets, waist packs, and more.
- **Ben Cort Community Event:** A.D. assisted in the promotion of the MOMS Community Education event featuring Ben Cort. This event utilized a targeted digital campaign with contextual keyword targeting (i.e., within 25-miles of Billings, pregnancy/expectant mothers, new parents, and interest in breastfeeding supplies) and a social media campaign, through Instagram and Facebook ads with focus on women, ages 18-40 in Yellowstone, Big Horn, Stillwater, and Musselshell counties.

A.D. Creative has also been working with MOMS to film, storyboard, and edit three new long-form films on Empaths, the Demonstration Project, and Data Driven Decision Making: State and University Activities, all of which are still in production. Figure 4 shows examples of the materials created with A.D. Creative Group.

Figure 4. Example Marketing Materials Created in Year 3



Dissemination of Maternal Health Resources

Table 4 shows resources downloaded from the MOMS website in year 3 from A.D. Creative.

Table 4. Resources Downloaded from the MOMS Website in Year 3

Downloaded Resource	# of downloads
Severe Maternal Morbidity in Montana Report	71
Maternal Health in Montana – Full Report – May 2022	54
CMQCC Preeclampsia Early Recognition Tool (PERT)	32
MOMS Year 2 Evaluation	26
Levels of Care Assessment Tool (LOCATe) Statewide Report	22
MOMS Year 1 Highlights	11
Indigenous Health Policy Challenges Opportunities	9
MOMS Training Request Form	9
Queer and Trans Perinatal Mental Health Toolkit	9
Project ECHO Recording & Material Archives	8
LIFTS is Live!	7
Montana Maternal Health: By the Numbers	7
Eastern Montana Perinatal Addiction Treatment Health System (EMPATHS)	6
Maternal Fetal Triage Index	5
Screening, Brief Intervention & Referral to Treatment (SBIRT) for Pregnant & Postpartum Women	5
Simulation in Motion-Montana (SIM-MT)	5
Ben Cort presents Marijuana and Parenthood	4
Rural Telehealth Toolkit	4
Full Spectrum Indigenous Doula Training	3
U.S. Surgeon General: Call to Action to Improve Maternal Health	3
2022 Montana Conference on Suicide Prevention	2
Assessment Participant Coverage Map	2
Cuddling Cubs: Maternal-Infant Attachment Playgroup	2
HHS Announces New Reports and Grant Program Addressing the Health Needs of Pregnant Women and Children Affected by Substance Use	2
Maternal Health Programs and Resources	2
Maternal Health Simulation Innovations in Rural Montana	2
Maternal Sepsis Webinar	2
Alliance for Innovation on Maternal Health (AIM)	1
Assessment Review & Leadership Team Discussion	1
Management of Primary Headaches in Pregnancy	1
Perinatal Hypertension Awareness	1
Standardized Criteria for Review of Perinatal Suicides and Accidental Drug-Related Deaths	1
The American College of Obstetricians and Gynecologists	1
Urgent Maternal Warning Signs	1

Outreach Visits

The Billings Clinic MOMS staff made 21 outreach visits in year 3, including 13 virtual visits. 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 three Montana conferences and promote MOMS program activities. These visits resulted in new partnerships with state and community organizations on programming, such as Empaths, and provided opportunities to support facility training and equipment needs (i.e. simulation, prenatal education, doulas, etc.). Table 5 shows outreach visit dates, locations, and visit purposes.

Table 5. Outreach Visits Conducted by Billings Clinic Staff in Year 3

Visit Date	Location	Facility	Purpose of Visit
10/18/21	Billings	Billings Rotary Club	Presented MOMS program activities to local business leaders, connected with representatives from local colleges, and provided information for students.
10/20/21	Billings	Behavioral Health and Developmental Disabilities Division (BHDDD)	BHDDD staff visited Billings Clinic – received a briefing on all behavioral health programming at Billings Clinic, including Empaths and PMADs training sponsorships.
10/27/21	Virtual	Beartooth Billings Clinic	MOMS discussion and Empaths recruitment.
10/27/21	Virtual	Miles City Billings Clinic	MOMS discussion and Empaths recruitment.
10/29/21	Virtual	Bozeman OB/GYN	MOMS discussion and Empaths recruitment, Motherhood Center prospect.
11/4/21	Virtual	Glendive Medical Center	MOMS discussion and Empaths recruitment.
11/23/21	Virtual	Blackfeet Medical Center	Discussed facility simulation needs.
1/4/22	Virtual	Central Montana Medical Center, Restorative Physio	Discussed rural prenatal education.
1/24/22	Billings	Child and Family Services	Met with community intervention staff to discuss ways Empaths can be utilized as a prevention mechanism prior to removal.
1/26/22	Virtual	Montana SUD Taskforce	Billings Clinic staff presented on Empaths, peer recovery doulas, and perinatal behavioral health training sponsorships.
1/27/22	Virtual	St. James Medical Center	RCORP grant, coordinating efforts discussion.
2/10/22	Virtual	CHAMPS Maternal Health Learning Collaborative	Billings Clinic staff presented on Empaths, peer recovery doulas, and other perinatal behavioral health training sponsorships.
2/23/22	Virtual	Northeast Montana Medical Center	MOMS discussion and Empaths recruitment.
3/22/22	Virtual	Wyoming DPHHS	Discussed Empaths and RMOMS partnership to expand to Wyoming.
3/24/22	In Person	One Health – Multiple locations	Elected to partner on RMOMS to expand perinatal behavioral health case management.

Visit Date	Location	Facility	Purpose of Visit
3/30/22	Lame Deer	Indian Health Center	Presented to all provider staff about MOMS, invited facility to engage in Empaths, and invited providers to present lectures and cases on Project ECHO.
4/6 - 4/8/22	Butte	Multiple agencies	Exhibited at Montana Hospital Association Spring Conference.
4/12 – 4/13/22	Helena	Multiple agencies	Exhibited at Montana Public Health Association Conference*
4/28 – 4/29/22	Fairmont	Multiple agencies	Exhibited at MAPP-Net Annual Symposium.
4/29 – 4/30/22	Chico	Multiple agencies	Exhibited at Montana Perinatal Association Conference*
6/8/22	Helena	Child and Family Services	Discussed Family Plans of Safe Care with CFSD state leads.
7/8/22	Virtual	Park County Health	Discussed MOMS, identified doula programming available to Park County staff, and discussed the process for getting them enrolled.
8/8/22	Virtual	Child Protective Services – Multiple regions	Discussed MOMS, Empaths, and Family Plans of Safe Care.
8/11/22	Billings	South Park	Healthcare for the Homeless – provided information on Empaths and MOMS activities to pregnant and postpartum individuals experiencing homelessness. We also networked with other local health and social service providers such as Riverstone Health, Family Tree Center, Mental Health Center, Rimrock, United Way, and the Rescue Mission. We discussed MOMS program offerings and received information on other local programs available to Empaths patients.
9/20 - 9/23/22	Billings	Multiple agencies	Exhibited at Montana Healthcare Conference.
9/29/22	Billings	Billings OB/GYN	Met with the CEO and Operations Director to discuss remote patient monitoring and Empaths.

*These outreach visits were done by MOMS DPHHS Staff

Siloed

The Siloed Series grew out of 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 inclusion of people with lived experience. The Siloed series follows families and professionals across Montanan to identify barriers to maternal healthcare and provide suggestions for ways to improve access to and quality of care offered in our state. In year 3, three short films were completed and are available for review. In early 2022, the Siloed film crew created a strategic plan and timeline for creation for a feature length film. The feature-length film is currently in production and is anticipated to be completed by late summer 2023.

Dissemination

Upon completion of all four short films, the films will be disseminated via social media, the MOMS website, and distribution lists. Two Siloed films were submitted for consideration to the ACOG Film Festival in May 2023. Filming and editing of the feature-length film will continue through year 4, with plans for dissemination in year 5.

American Indian/Alaska Native Educational Series

The MOMS team is working to develop a cultural safety curriculum with a specific emphasis on Indigenous cultures. This series will be incorporated into a learning management system and made available to healthcare provider teams across the state. In year 3, Dr. Donald Warne and Dr. Annie Belcourt were contracted to begin working on the cultural safety curriculum and consult on additional MOMS activities.

Looking Ahead to Year 4

Dr. Warne and Dr. Belcourt will film four training modules in October and November 2022, and Amy Stiffarm will film modules on cultural safety and Indigenous doulas. Billings Clinic staff are also working with potential contractors to bring an anti-racism training workshop to Montana in Spring 2023.

Additional Webinar Projects Hosted in Year 3

Two additional webinar projects were hosted by MOMS staff in year 3:

- **April 2022:** Eat, Sleep, Console, a training webinar focused on the comfort and care of infants experiencing neonatal opioid withdrawal by maximizing family involvement in treatment and reducing pharmacological interventions when appropriate. The training was offered twice, once to provider teams only and again for patients and provider teams.
- **May 6, 2022:** “Let’s talk pot!”, MOMS partnered with MAPP-Net to host a two-hour webinar about marijuana and maternal-child health by Ben Cort. The presentation highlighted the realities of legalization of marijuana in Montana, talking points for perinatal and pediatric provider teams, and participant questions. 50 participants joined the live presentation and more viewed the recording.

Recordings are available on the MOMS website. Currently, there are no plans for additional webinars in year 4.

Presentations, Posters, and Reports

Presentations

The MOMS team presented at the following national meetings and conferences in year 3.

- Eby, A., Nelson, M. (2022). Funding Opportunities through the Montana Obstetrics and Maternal Support (MOMS) Program. Presentation at the Perinatal Quality Collaborative Regions 8 and 10 Peer Meeting.
- Eby, A., Glover, A. (2022). Where to Start: Planning and Doing. Presentation at the Alliance for Innovation on Maternal Health Annual Meeting, Rockville, MD.
- Fitch, S., Reese, S. (2022). MOMS, Empaths, and Perinatal Substance Use Disorder and Mental Health. Presentation at CHAMPS District 8.
- Glover, A. (2021). Telehealth During COVID-19: Suicide Prevention and American Indian Communities in Montana. Poster presentation at the hybrid American Public Health Association, Denver, CO.
- Glover, A.L., Holman, C., Brown, D., Nelson, M. (2022). Handling the “Drive-By” Delivery: An Assessment of Emergency Preparedness in Obstetric Care in a Rural State. Presentation at CityMatCH Leadership and MCH Epidemiology Conference, Chicago, IL.
- Holman, C., Glover, A., Fertaly, K., Nelson, M. (2022). Assessing the Capacity of Montana’s Maternal and Neonatal Health System to Provide Geographic- and Ability-Equitable Access to Risk Appropriate Care. Presentation at CityMatCH Leadership and MCH Epidemiology Conference, Chicago, IL.
- Liddell, J., Glover, A., Fitch, S. (2022). Exploring the use of recovery doulas to improve maternal and infant health outcomes in Montana. National Maternal Health Innovation Symposium. Chicago, IL.
- McCracken III, C. (2022). Innovations in Workforce Development. Panel presenter at Maternal Health Learning & Innovation Center Learning Institute, Virtual.
- Reese, S., Fitch, S. (2022). The Empaths Study: 18 Months of Lessons Learned. 10-minute pre-recorded SPARK session at the Maternal Health Learning and Innovation Center Annual Symposium, Chicago, IL.

The MOMS team presented at the following state meetings and conferences in year 3.

- Brown, D. (2022). Research and Evaluation in Practice: A look at the Rural Institute's Work with the Montana Obstetrics and Maternal Support (MOMS) Program. Presentation for Applied Practicum Experience (APE) at the University of Montana.
- Burkholder, S., Holman, C., Eby, A. (2022). Improving Maternal Health Outcomes Starts with Primary Care. Presentation at the Montana Hospital Association Conference, Billings, MT.
- Cort, B. (2022). Marijuana and Parenthood: Safety Considerations for Pregnant and Nursing Persons and their Families. Presentation at MOMS-sponsored community event, Billings, MT.
- Eby, A. (2022). MOMS Program Overview and Updates. Presentation to the Montana State Health Improvement Plan's Healthy Mothers, Babies, and Youth Workgroup.
- Eby, A. Schmitt, A., Krane, K. (2022). Montana Perinatal Quality Collaborative. Presentation at Montana Perinatal Association Conference in Chico, MT.
- Ellner, S., Fitch, S., and Lofgren, V. (2022). Billings Clinic Townhall – Addiction Awareness & Available Supports. Virtual All-Employee Townhall, Billings, MT.
- Fitch, S. (2022). MOMS Initiatives on Substance Use and Mental Health. Panel presenter at OneHealth Annual Conference, Billings, MT.
- Fitch, S. and Robertson, M. (2022). MOMS Simulation Leadership Academy: A Rural Train-The-Trainer Simulation Program. Pre-recorded presentation at Great Beginnings, Great Families Conference.
- Fitch, S. and Robertson, M. (2022). MOMS Simulation Leadership Academy: A Rural Train-The-Trainer Simulation Program. Presentation at Montana Healthcare Conference, Billings, MT.
- Fitch, S., Reese, S. (2022). MOMS, Empaths, and Perinatal Substance Use Disorder and Mental Health. Presentation at a Southwest Montana Taskforce Meeting.
- Glover, A.L., Holman, C., Brown, D., Nelson, M. (2022). Emergency Obstetric Care in Montana. Presentation to the Montana Maternal Health Leadership Council.
- Glover, A.L. & Eby, A. (2022). Healthy pregnancies, safe deliveries, supported mothers: How MOMS is improving maternal health through policy, data, and collaboration. Presentation at the Montana Public Health Association/Montana Environmental Health Association Annual Conference in Helena, MT.
- Holman, C. (2022). Montana LOCATe Results. Presentation to the Montana Risk Appropriate Care Learning Community Team Meeting.
- Holman, C. (2022). Montana Levels of Care Assessment Tool (LOCATe). Presentation at MOMS Project ECHO.

- Holman, C., Fertaly, K. (2022). Risk-Appropriate Care in Montana's Maternal and Neonatal Health System: What it is and Why it Matters. Presentation at the Montana Hospital Association Health Summit, Butte, MT.
- Holman, C., Glover, A. (2022). Montana Obstetrics and Maternal Support Program. Presentation to the Rural Institute Consumer Advisory Council.
- Reese, S., Fitch, S. (2022). The Empaths Study: 18 Months of Lessons Learned. Pre-recorded presentation at Great Beginnings, Great Families Conference.
- Warne, D. & Belcourt, A. (2022). Improving health for all: Reducing structural inequities in Indigenous Montana. Presentation at Montana Healthcare Conference, Billings, MT.

Reports

The MOMS team produced the following reports in year 3.

- McKay, K., Holman, C., Nelson, M., Glover, A. (2021). Simulation Training in Obstetric Care for Rural Communities Semi-Final Evaluation Report.
- Buscaglia, A., Nelson, M., & Glover, A. (2022). Maternal Health in Montana [White paper]. University of Montana Rural Institute for Inclusive Communities.
- Glover, A., Buscaglia, A., Holman, C., Katalenich, B., McKay, K., Nelson, M., Smith, N.K., Woo, M. (2022). Maternal Health in Montana Annual Report.
- Glover, A., Holman, C., Nelson, M. (2022). Montana Obstetrics and Maternal Support (MOMS) Program Year 2 Evaluation Report.
- Holman, C & Glover, A. (2022). Maternal Health System Needs Assessment. Update Report June 2022.
- Holman, C., Glover, A., Fertaly, K., Nelson, M. (2022). 25 LOCATe Facility Reports for the following facilities: Barrett Hospital, Benefis Health System, Billings Clinic, Blackfeet Community Hospital, Bozeman Health, Cabinet Peaks Medical Center, Central Montana Medical Center, Clark Fork Valley Hospital, Community Hospital of Anaconda, Community Medical Center, Frances Mahon Deaconess Hospital, Glendive Medical Center, Holy Rosary Healthcare, Livingston Healthcare, Logan Health Medical Center, Logan Health Whitefish, Bitterroot Health, Northern Montana Hospital, Providence St. Joseph Medical Center, Providence St. Patrick Hospital, Sidney Health Center, St. James Healthcare, St. Luke Community Hospital, St. Peter's Health, and St. Vincent Healthcare.
- Holman, C., Glover, A., Fertaly, K., Nelson, M. (2022). Montana Levels of Care Assessment Tool (LOCATe) Report.
- McKay, K., Holman, C., Nelson, M., Glover, A. (2021). Simulation Training in Obstetric Care for Rural Communities Semi-Final Evaluation Report.

- McKay, K., Holman, C., Nelson, M., Glover, A. (2022). Simulation Training in Obstetric Care for Rural Communities Final Evaluation Report.
- Reese, S., Fitch, S., Salyer, J., Lofgren, V., McCracken III, C., & Glover, A. (2022). Early Insights into Implementation of Universal Screening, Brief Intervention, and Referral to Treatment for Perinatal Substance Use. Submitted to Maternal and Child Health Journal.

Quality Improvement Products

The MOMS team produced the following products to support quality improvement initiatives.

- Fitch S. & Reese, S. (2022). The Empaths Pilot Study. Invited to publish study brief in the Association of Maternal Child Health Programs (AMCHP) Cutting Edge Practice directory.
- Nelson, M., Glover, A. (2022). MOMS Project ECHO Year 3 Quarter 1 Evaluation QI Report.
- Nelson, M., Holman, C., Glover, A. (2022). Montana Perinatal Quality Collaborative AIM Obstetric Hemorrhage Baseline Report.
- Nelson, M., Holman, C., Glover, A. (2022). MPQC AIM Obstetric Hemorrhage Bundle Quarter 1 Reports. 17 quarterly facility reports for the following facilities: Benefis Health System, Billings Clinic, Bitterroot-Health Daly Hospital, Blackfeet Community Hospital, Cabinet Peaks Medical Center, Central Montana Medical Center, Clark Fork Valley Hospital, Community Medical Center, Glendive Medical Center, Logan Health, Logan Health Whitefish, Providence St. Patrick's Hospital, Sidney Health Center, St. James Healthcare, St. Luke Community Healthcare, St. Peter's Hospital, St. Vincent Healthcare.
- Nelson, M., Holman, C., Glover, A. (2022). Montana Perinatal Quality Collaborative AIM Obstetric Hemorrhage Bundle Quarter 1 Report.
- Nelson, M., Holman, C., Glover, A. (2022). MPQC AIM Obstetric Hemorrhage Bundle Quarter 2 Report. 17 quarterly facility reports for the following facilities: Benefis Health System, Billings Clinic, Bitterroot-Health Daly Hospital, Blackfeet Community Hospital, Cabinet Peaks Medical Center, Central Montana Medical Center, Clark Fork Valley Hospital, Community Medical Center, Glendive Medical Center, Logan Health, Logan Health Whitefish, Providence St. Patrick's Hospital, Sidney Health Center, St. James Healthcare, St. Luke Community Healthcare, St. Peter's Hospital, St. Vincent Healthcare.
- Nelson, M., Holman, C., Glover, A. (2022). Montana Perinatal Quality Collaborative AIM Obstetric Hemorrhage Bundle Quarter 2 Report.

Montana Perinatal Quality Collaborative

In year 3, DPHHS and UM partnered with the Montana Perinatal Association (MPA) and MHA to establish the maternal health arm of the MPQC to support the implementation of the AIM patient-safety bundles in Montana hospitals. The MPQC is a network of maternal and infant care providers and public health professionals working to improve health outcomes for birthing people and babies. AIM is a national data-driven maternal safety and quality improvement initiative with the goal to reduce preventable maternal morbidity and mortality in the United States. DPHHS contracted Yarrow, a public health consulting firm, to provide facilitation and quality improvement technical assistance coaching to MPQC hospitals. AIM contracted with UM to serve as fiscal agent for Montana AIM, and UM was responsible for data collection from facilities and submission to AIM.

The AIM Obstetric Hemorrhage (OBH) Patient Safety Bundle Collaborative was launched with 17 of Montana's 26 birthing facilities. Figure 5 shows the location of participating hospitals in the MPQC AIM OBH Patient Safety Bundle initiative.

Figure 5. Map of MPQC Obstetric Hemorrhage Bundle Participating Facilities

MONTANA PERINATAL QUALITY COLLABORATIVE PARTICIPATING FACILITIES



The MPQC utilized a change process modeled after the Institute for Healthcare Improvement (IHI) Model for Improvement, to guide implementation of the OBH Bundle remotely. Starting in August 2021, facilities engaged in a series of orientation webinars that covered supporting materials, collaborative structure, data collection processes and requirements, and basic tenets of quality improvement using Plan-Do-Study-Act (PDSA) cycles. Throughout the OBH collaborative, facilities engaged in (1) three quarterly key project meetings (Learning Sessions) with focused training on bundle content and peer-to-peer sharing; (2) six action periods between Learning Sessions, where hospital teams developed, tested, and implemented evidence-based care practices through PDSA cycles in their facilities and joined monthly All Team Calls to report out and support each other; and (3) one-on-one quality improvement coaching calls at three points during the collaborative.

The MPQC OBH Bundle collaborative offered 11 required learning activities (Learning Sessions and All Calls) and three optional special interest call (SIC) activities to support facilities with the implementation of the OBH Bundle from July 1, 2021, to September 30, 2022. Overall, the collaborative had consistent attendance and involvement from facilities throughout the implementation period. Table 6 shows the quarterly activities facilities participated in throughout the AIM OBH Bundle collaborative and attendance at each call.

Table 6. MPQC Obstetric Hemorrhage Bundle Quarterly Activities

OBH Quarter	Date	Calls	Activities	Number of Facilities Attended (N=17)
Baseline	8/3/2021	Orientation Webinar	Presentations: Supporting materials, collaborative structure, and introduction to PDSA cycles	15
Baseline	9/7/2021	Data Webinar	Presentation: Data collection processes and requirements	15
Quarter 1	10/5 – 10/6/2021	Learning Session 1	Presentations: IHI Model for Improvement, PDSA Basics, and OBH Bundle Change Package. Storyboards. Breakout Sessions.	15
Quarter 1	11/18/2021	All Call 1	Special topic presentation. Hospital updates.	13
Quarter 1	12/15/2021	All Call 2	Hospital updates.	15
Quarter 2	1/25 – 1/26/2022	Learning Session 2	Presentations: Michigan PQC, Simulation Leadership Academy, skilled debriefs, 6 sectors of influence. Deep dives: Multidisciplinary case reviews, QBL training and PDSAs. Storyboards.	13
Quarter 2	3/2/2022	All Call 3	Presentation: Aggregate collaborative data, baseline to quarter 1. Hospital updates.	12
Quarter 3	4/7/2022	All Call 4	Hospital Policy discussion and scenario.	12
Quarter 3	5/4/2022	Learning Session 3	Presentations: Less Trauma Mama, Trauma-informed workplaces, Implementing a clinician and staff peer support program, 4U program: staff supporting staff, Managing risk with compassion: the unique balance in OB trauma, Conducting patient debriefs, LIFTS resources. Activities: Scavenger hunt, breakout sessions.	16

OBH Quarter	Date	Calls	Activities	Number of Facilities Attended (N=17)
Quarter 3	6/9/2022	All Call 5	Presentation: Changes to the CMQCC stage-based management checklist and toolkit. Activity.	12
Quarter 4	7/7/2022	All Call 6	Presentations: Aggregate collaborative data, baseline to quarter 2, sustaining the gains. Breakout activity.	12
Quarter 4	8/24/2022	Optional: SIC – High Risk Discharge	Presentation: High risk discharge. Discussion / Q&A.	6
Quarter 4	8/26/2022	Optional: SIC – Patient Support	Presentation: Patient support. Discussion / Q&A.	4
Quarter 4	8/31/2022	Optional: SIC – Massive Transfusion Protocol	Presentation: Massive transfusion protocol. Discussion / Q&A	5

Key Findings

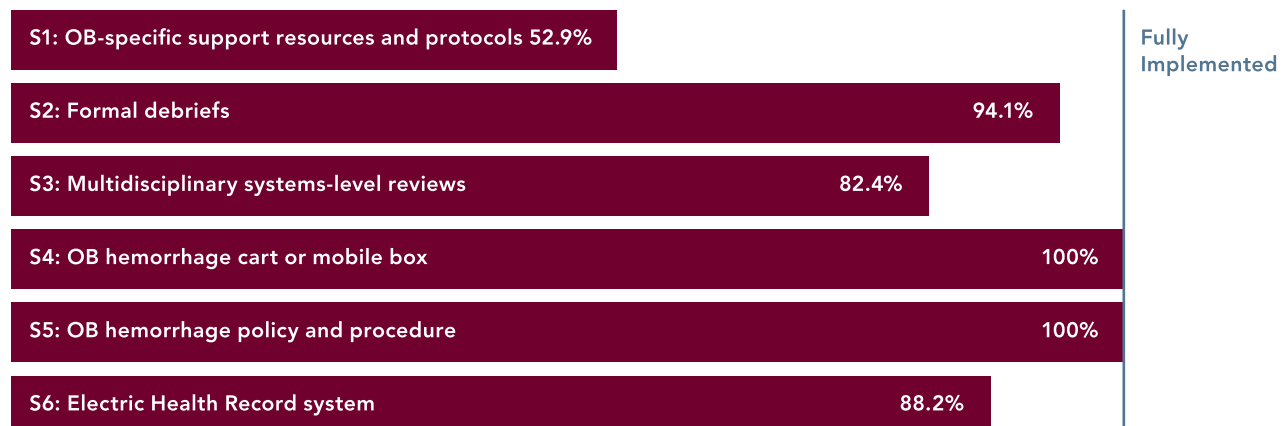
The AIM OBH Bundle includes a family of structure, process, and outcome measures. UM collected structure and process measure data from participating facilities quarterly.

Structure Measures

The AIM OBH Bundle includes six structure metrics to assess organizational capacity to provide high-quality healthcare. Structure measures are implemented once by hospitals. Figure 6 shows the structure measures implemented by all facilities in the collaborative. At the end of year 3, approximately 86% of the AIM required structure measures had been completed by facilities.

Figure 6. Obstetric Hemorrhage Bundle Structure Measures Completed

Structure measures S4 (OB hemorrhage cart) and S5 (OB hemorrhage policy and procedure) were implemented by all facilities in the collaborative.
MPQC-AIM OBH Bundle Structure Measures Implemented.



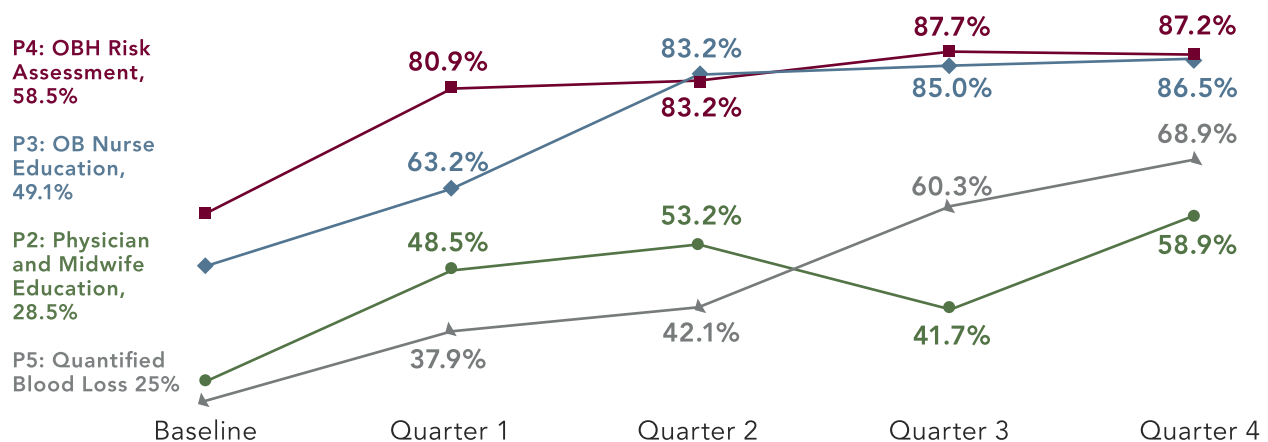
Process Measures

The AIM OBH Bundle includes five process measures, submitted quarterly, which track whether facility teams performed specific, essential interventions during a reporting period. Process measures ask facilities to report an estimated cumulative proportion. As facilities move through the Bundle, the goal is to increase, or maintain, the proportion to most/all (90-100%) cases. Figure 7 shows the cumulative proportion averages across year 3.

Figure 7. Obstetric Hemorrhage Bundle Process Measures from Baseline to Quarter 4

The cumulative proportion of P5 (Quantified Blood Loss) and P3 (OB nurse education) increased the most from baseline to quarter 4.

MPQC-AIM OBH Bundle Process Measures.



Participant Quotes

- "I just want to thank you for all the support! I feel like our OB dept is so much stronger from this collaborative. Without doing this, we wouldn't have our PPC and the tools for it. We are prepared and ready now for this emergency!"
- "Being able to become educated in helping to manage a hemorrhage situation is so valuable. Our team is all hands on deck since it is a rural healthcare facility. We need everyone to be knowledgeable and feel comfortable offering assistance when these situations happen. I thought it was a huge benefit to our team to participate."
- "I really loved the collaboration that took place from learning what works well and not so well at other facilities around the states. Also loved not having to "reinvent the wheel" when other facilities had other policies or procedures that were working well for them to share with one another."
- "We already had an indepth process in management of PPH with a cart in place, medications readily available. The one thing we added due to our involvement in MPQC was identification of hemorrhage risk. This allowed us to change our documentation postpartum and handoff report to the postpartum staff."

Year 3 Update

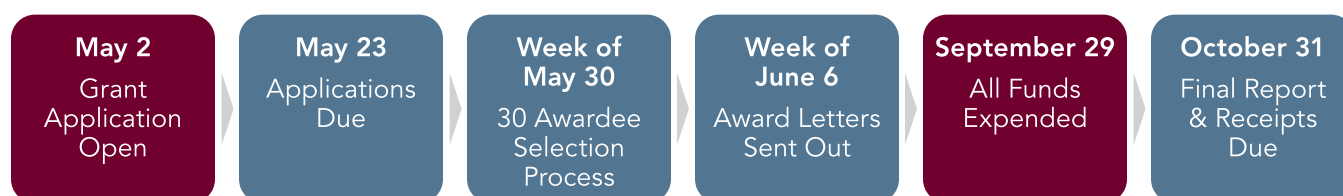
In 2022, the CDC awarded UM a five-year, \$1.375 million grant to support implementation of AIM Bundles through the same collaborative model with all willing facilities across the state. With the award of the CDC grant, the MPQC-AIM arm of the MPQC was created to distinguish between the neonatal and maternal initiatives of the MPQC. MPQC-AIM will implement the AIM Severe Hypertension in Pregnancy Patient Safety Bundle and include the AIM Patient Safety Supporting Bundle Peripartum Racial and Ethnic Disparities (RPRED) during the first year of the grant. MPQC-AIM will also solicit feedback from facilities and begin planning for the implementation of the next AIM Patient Safety Bundle in year 2 of the new grant program.

Rapid Response Mini-Grants

MOMS Mini-Grants

In year 3, in partnership with DPHHS, UM solicited applications to distribute MOMS funds via mini-grants to local hospitals, clinics, health departments, foundations, and non-profits working to achieve MOMS objectives. Preference was given to Primary Care Health Professional Shortage Areas (HPSA), with funding to be spent on training, programming materials, education resources, equipment, and other innovative responses to improve maternal health and well-being. Award amounts could be up to \$20,000 per applicant. Figure 8 demonstrates the mini-grant timeline process and Table # shows activities and equipment supported by UM mini-grant funding.

Figure 8. University of Montana Year 3 Mini-Grant Timeline



Through supporting a variety of programming, the mini-grant activity was able to support innovation in education; provide training opportunities for doulas, lactation counselors, clinical staff, health department staff, and expand community resources. This project allowed for necessary support services to meet postpartum people's needs by providing postpartum resources (such as postpartum kits, gas vouchers to attend appointments, respite care, etc.) and bereavement services. One grantee wrote:

"Over the summer we received an influx of referrals for cases of postpartum bereavement. While this is clearly a postpartum issue and can come with a high risk of PMADs, it is often a group of people left behind and forgotten in the postpartum community. One of our doulas was already trained in bereavement and she took on each client as they dealt with grief, loss, lactation, changes in the home, funeral planning, processing, and mental health check-ins. We realized the great value of this service and made it a priority to raise awareness about PMADs [postpartum mood and anxiety disorder] among the bereaved community, no matter how or when that loss is experienced. At least three mothers, so far, have benefitted from this support and community, which did not previously exist. Now three more of our doulas will be trained in bereavement to expand our services."

Table 7. Activities and Equipment Supported by UM Mini-Grant Funds

Organization	Organization Type	Activities and Equipment
Big Horn County Public Health	County Public Health	Education Programming and Resources: birth education materials (Understanding Birth PPT, yoga mats, birth balls, rebozos, Newborn Care Education Video and Workbooks, class handouts, Positions video, dilation models, Antenatal PPT, etc.)
Blackfeet Early Childhood Center	Daycare Center	Education Programming and Resources: trainer wages, education on importance of prenatal healthcare, smoke and drug use during pregnancy, pregnancy, nutrition, healthcare, and dental care; activity materials. Other Resources: Cultural materials, gas vouchers for prenatal appointments
Community Hospital of Anaconda	Critical Access Hospital	Equipment: 2 Halo Bassinets
Dawson County Best Beginnings Coalition	Coalition	Resources: supplies for new parents (diaper bags, including maxi pads, peri bottle, tucks wipes, nipple cream, nursing pads, breast therapy pads, tea, water bottle, slippers, chocolate), gas vouchers for postpartum follow-ups; Outreach: design and printing for postpartum resources magnets
Florence Crittenton Home and Services	Family Services Organization	Programming & Programming Resources: Trauma workshops by LCPC for 26 people (staff and clients), equine therapy, supplies for workshops, staff time, food and travel costs
Gallatin City-County Health Department	County Health Department	Workforce Development: Spanish-speaking home visitor wage, community health worker wage, behavioral health consultant wage
Mountain Home Montana	Shelter	Workforce Development: Doula training for staff; Resources: birthing supplies, childbirth model and resources, postpartum kits (resources and gifts for postpartum patients), postpartum respite costs, respite meal train, patient travel costs; Equipment: TENS machine.
Postpartum Resource Group	Non-profit	Workforce Development: Network Director wage, doula training; Resources: therapy scholarships for mothers in need, education materials (to increase awareness of PMADS), prenatal vitamins
Richland County Health Department	County Health Department	Resources: postpartum education materials, prenatal vitamins and education, office supplies, testing materials for postpartum Hgb checks; Outreach: postcards
Roosevelt Medical Center	Critical Access Hospital	Resources: Welcome to Motherhood educational books, caring for newborn and parent materials
St. James Healthcare Foundation	Foundation	Workforce Development: project manager wage, lactation support staff training, staff training time reimbursement; Resources: equipment and supplies for lactation clinic, training material supplies
Valley County Health Department	County Health Department	Education Resources: infant and postpartum maternal health, mental health, substance use, heart disease, diabetes, weight control, infectious disease prevention; Outreach: health message media costs (newspaper, radio, snapchat), handouts, magnets and flyers
YWCA Helena	Social Service Organization	Programming and Programming Resources: WINGS, child safety items, gas vouchers, and programmatic costs not reimbursed by Medicaid

In total, \$172,922 in funds were distributed to Anaconda, Bozeman, Browning, Butte, Culbertson, Glasgow, Glendive, Hardin, Helena, Kalispell, Missoula, and Sidney communities.

Mini-grant awardees provided a final report documenting how mini-grant funding was spent, what awardees were able to achieve with the funding, barriers encountered, success stories, and how the mini-grant process could be improved in the future. Additionally, awardees were asked if they identified any additional needs for improving maternal health outcomes during the implementation of their mini-grant. A few grantees wrote:

- *“Yes. Along with bereavement we also noticed a need for increased support for teen parents.”*
- *“Beyond our establishment of a new parent support group that has worked directly to address the isolation many of our new parents were facing, this grant also helped us to address a longstanding issue our doula’s have frequently experienced with clients. So many of our postpartum clients struggle with back and hip pain related to birth and postpartum/bodyfeeding. There are also no accessible ways to relieve hip and back pain considering chiropractic support and massage is something that is often not covered by Medicaid and paying out of pocket for bodywork is not feasible for many of our parents. Some of this grant funding went directly to providing these bodywork cares for our clients who overwhelmingly expressed their pain relief and increased comfort through these services.”*
- *“Working with a population of childbearing years with co-occurring substance use and mental health disorders presents with complexities that yield needs for improving maternal health outcomes. It continues to be our experience as a substance use recovery program for women, we serve are not actively referred to adequate services during pregnancy or newly postpartum. We acknowledge that the barriers and challenges for whom we serve are not unique and that those who are in active use, experiencing extreme poverty, and homelessness are at risk for notable negative maternal health outcomes.”*
- *“We identified a need for better translation services and plan to look into options such as real time translation headphones or the AMN Healthcare Language Services iOS Software in an effort to best serve the non-English speaking families in our community.”*

Billings Clinic Mini-Grants

In collaboration with the MOMS mini-grant program administered by UM, Billings Clinic was able to identify training and equipment needed for communities and health agencies across the state. Billings Clinic provides the technical assistance for the MOMS grant, and in participating in review of the mini-grant requests, the Billings Clinic lead was able to identify and meet the needs of agencies. This granting process allowed Billings Clinic to not only support these identified needs but allowed for additional partnerships to emerge. Table 8 shows Billings Clinic mini-grant awardees and how MOMS mini-grant funds were utilized within their organization.

Table 9. Mini-Grant Program Awardees

Organization	City	County	Amount of Award	UM/BC
Gallatin City-County Health Department	Bozeman	Gallatin	\$20,000	UM
Postpartum Resource Group	Kalispell	Flathead	\$20,000	UM
YWCA Helena	Helena	Lewis and Clark	\$20,000	UM
St. James Healthcare Foundation	Butte	Silver Bow	\$17,658	UM
Dawson County Best Beginnings Coalition	Glendive	Dawson	\$17,500	UM
Mountain Home Montana	Missoula	Missoula	\$16,000	UM
Florence Crittenton Home and Services	Helena	Lewis and Clark	\$14,620	UM
Valley County Health Department	Glasgow	Valley	\$13,000	UM
Blackfeet Early Childhood Center	Browning	Big Horn	\$12,000	UM
Community Hospital of Anaconda	Anaconda	Deer Lodge	\$10,000	UM
Richland County Health Department	Sidney	Richland	\$6,164	UM
Big Horn County Public Health	Hardin	Big Horn	\$5,080	UM
Roosevelt Medical Center	Culbertson	Roosevelt	\$900	UM
Frances Mahon Deaconess Hospital	Glasgow	Valley	\$15,380	BC
Central Montana Medical Center	Lewistown	Fergus	\$10,000	BC
Billings Clinic Family Birth Center	Billings	Yellowstone	\$5,500	BC
Lewis and Clark County Public Health	Helena	Lewis and Clark	\$4,128	BC
Northern Montana Hospital	Havre	Hill	\$4,000	BC
Park City-County Health Department	Livingston	Park	\$2,000	BC
St. Luke Community Healthcare Foundation	Ronan	Lake	\$600	BC

Activity 3.3

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 signed a contract with HealthStream to purchase a Neonatal Resuscitation Program (NRP) and Sugar, Temperature, Airway, Blood pressure, Lab work, and Emotional support (STABLE) program for rural nursing staff. The HealthStream site went live in December 2020. A total of 58 people received training in NRP and/or STABLE during year 3. Training opportunities can be accessed here: <https://www.mtmoms.org/training-sponsorship-opportunities/>.

Looking Ahead to Year 4

Additionally, Postpartum Support International (PSI) approved a training membership to MOMS in September 2022. This new license will allow Billings Clinic staff to register 15-30 participants in PMH-C courses per year at discounted rates.

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. This training was conducted in-person at the University of Montana Missoula campus over four days (eight-hour sessions) in July 2022. The MOMS program sponsored 21 participants.

Participant Evaluation

After the course was completed, participants received an online evaluation. The survey asked about participant experience with the quality of the training and training relevance to their work. Of the 21 participants, 19 responded to the survey. Overall, participants reported positive feedback on the training, plan on immediately offering their doula services, and are interested in getting additional training because of the Indigenous Doula Training course. Participants also described the need for more support in how to get reimbursed for services. 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?

- *"How to reframe colonization and impact when working across organizations and personnel that are non-native. Being more inclusive in support for fathers. Additional engagement tools like the strawberry sewing activity, crochet items, felt layers, cervix dilation props using wood with indigenous art and dream catchers, etc. learning about Anishinaabe, Dine, and Metis practices and similarities and differences from local tribal practices and how to create space for our indigenous mothers and families who may not have a cultural connection or knowledge and meeting them where they are at and what they want/need. Recognizing our own traumas and biases so that we don't bring this into the space of the mother and family we are serving."*
- *"I learned so much about harm reduction and the wheel of oppression. Changed a lot of my perspective - my goal is to have...people come in for care, and not be judgmental. People are healing with the tools that they have."*

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

- *"Making connections with other Indigenous women locally and from afar. Affirming all the knowledge I already carry and relighting my fire to serve life givers."*
- *"Having indigenous trainers. Beginning with unpacking colonization. In person training, tools and resources, having other native women present sharing their insight and thoughts, including a section on fathers."*

Looking Ahead to Year 4

The Indigenous Doula Training will be hosted again in year 4.

Activity 3.4

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

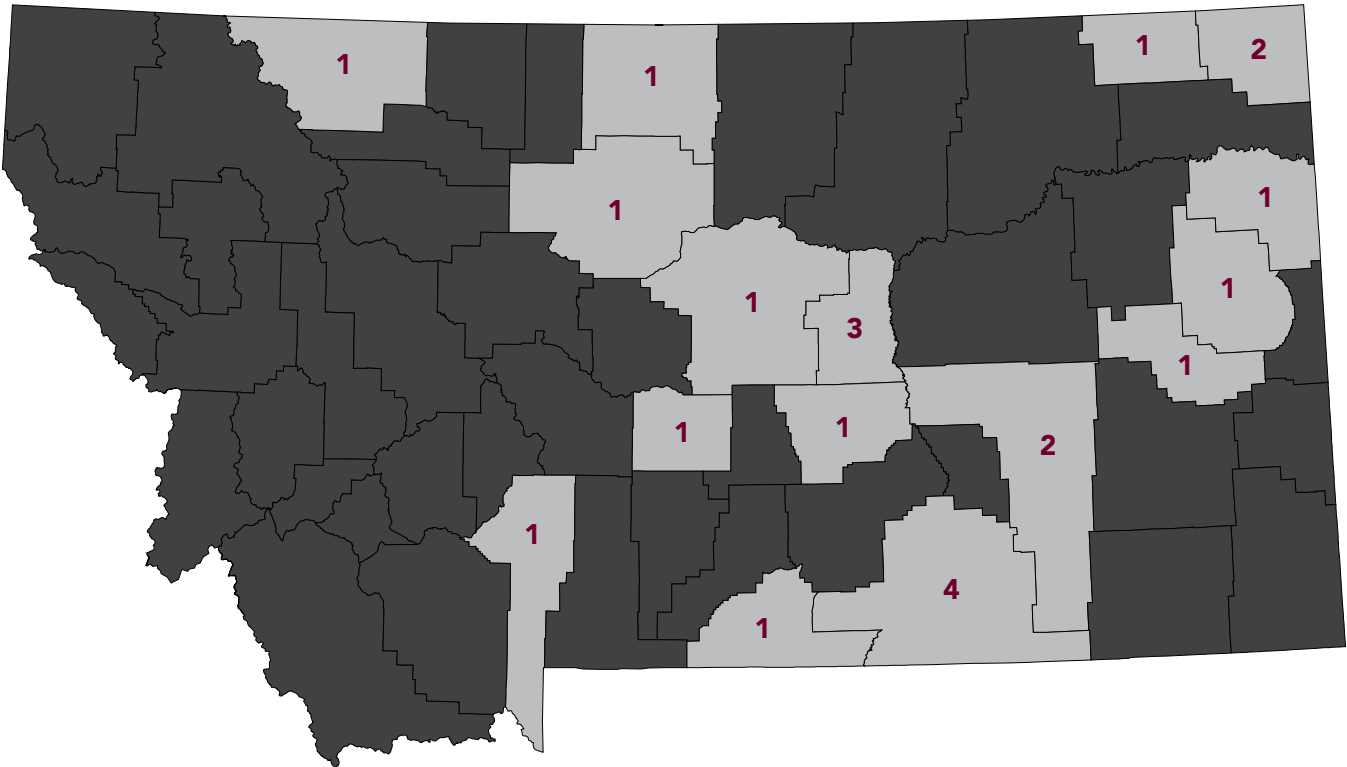
Simulation in Motion-Montana

Simulation in Motion-Montana (SIM-MT) 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 starting in January 2020 (Y1Q2) 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 (starting Y3Q3), and Shoulder Dystocia (starting Y3Q4).

Participants

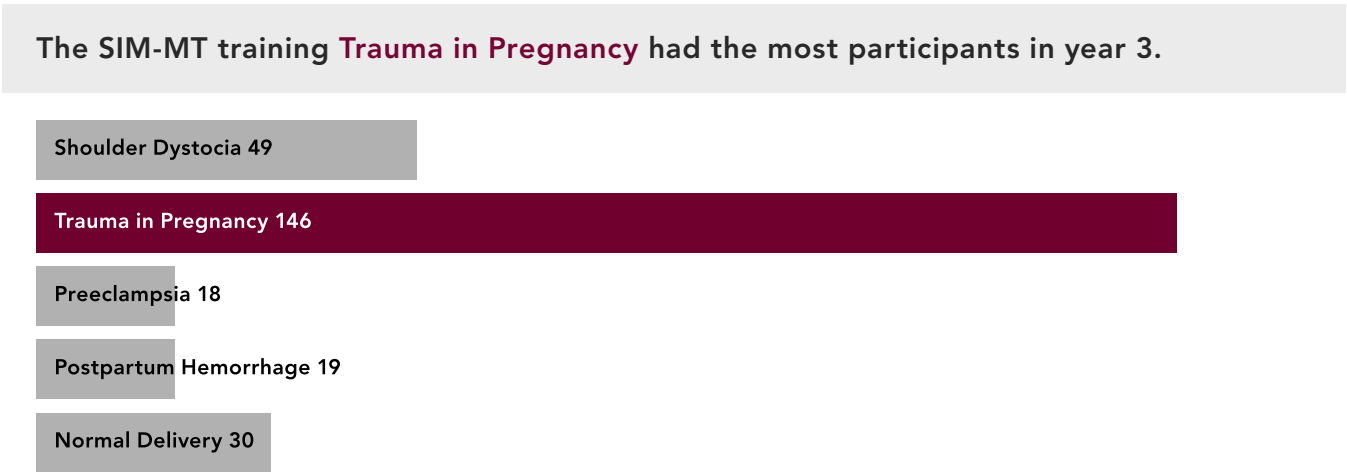
During year 3, SIM-MT held 23 Events in 16 different counties. See Figure 9 for a map of where SIM Events were held in Montana in year 3.

Figure 10. Year 3 SIM-MT Training Locations



Most participants in year 3 attended the Trauma in Pregnancy simulation. Figure 10 illustrates the number of participants by simulation.

Figure 11. Total SIM-MT Participants by Simulation Type



SIM Events in year 3 trained 249 healthcare providers in obstetric simulations. Table 10 shows participants by healthcare profession.

Table 10. Year 3 SIM-MT Participants by Healthcare Profession

Role	Participants (N=249)
Nurse	112
EMT/AEMT	26
Certified Nursing Assistant	16
Licensed Practical Nurse	12
Physician	12
Tech	10
Nurse Practitioner	6
Physician Assistant	6
Student Nurse	3
Paramedic	2
Certified Medical Assistant	1
Medical Student	1
Nurse Practitioner Student	1
Not Reported	41

Year 3 Update

The COVID-19 pandemic continued to contribute to significant scheduling difficulties for the SIM-MT team throughout the course of the contract, but all scheduled simulations have been completed. In Y3Q4, three Simulation Events were held at low-volume birthing critical access hospitals (2 Trauma in Pregnancy, and 1 Shoulder Dystocia training).

Simulation Leadership Academy

In year 2, ACOG discontinued their ACOG ECO training opportunities. As a result, MOMS convened a team that included George Mulcaire-Jones, Tersh McCracken, Mary Robertson, Stephanie Fitch, Kimber McKay, and Annie Glover to develop the next simulation project for the MOMS program. The MOMS Simulation Leadership Academy (SLA) is a cohort-model educational offering designed to provide physicians, midlevel providers, nurses, and other clinical leaders at rural health centers the opportunity to learn the science of obstetric simulation, practice design, and implementation of various types of simulation. SLA is also designed to train specific management skills and maneuvers for a variety of obstetric complications. Participating facilities receive a PROMPT Flex birthing manikin with a postpartum hemorrhage module to be used throughout the course if a simulator of equal or greater fidelity is unavailable. The goal of the SLA is to ensure that every maternal health center has the resources and equipment necessary to conduct drills for obstetric care scenarios, with the goal of improving provider competency and confidence in providing safe and effective maternal healthcare that ultimately improves patient health outcomes.¹

¹ 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, composed of six 90-minute virtual sessions hosted over Zoom, on-site simulation assessment, and ongoing consultation and coaching sessions.

Year 3 Update

The first cohort of SLA concluded in September 2022. Twenty providers attended the SLA from seven facilities and one simulation organization. Most participants held nursing degrees (n=17), followed by MDs (n=2), and EMT (n=1). Participants from four facilities successfully completed all six training sessions. Table 11 shows the participating facilities of the first cohort of SLA.

Table 11. SLA Cohort 1 Participating Facilities

Facility	# of Sessions Attended	Training Completion
Glendive Medical Center	6	Completed
Northern Montana Hospital	6	Completed
Central Montana Medical Center	6	Completed
Sidney Health Center	6	Completed
Blackfeet Community Hospital	3	Incomplete
Big Horn Hospital	2	Incomplete
St. Luke Community Healthcare	2	Incomplete
Simulation in Motion Montana	2	Incomplete

UM conducted an evaluation of the cohort 1 of SLA. The full report can be found on the MOMS website.

Pre-Post Survey

Participants completed a pre-survey at the start of the training and a post-survey following completion of the Simulation Leadership Academy. The survey assessed participants' level of knowledge and confidence in developing and performing simulation training. Survey respondents rated statements on a 5-point Likert scale from strongly disagree to strongly agree. The post-survey also included questions on the content, delivery, and structure of the Simulation Leadership Academy.

Eighteen participants completed a pre-survey, and seven completed a post-survey. UM assigned a score to each item from 1=strongly disagree to 5=strongly agree and generated a mean Likert score for each question. The overall mean Likert score increased from a pre-score of 4.0 to a post-score of 4.8.

Participant Experiences

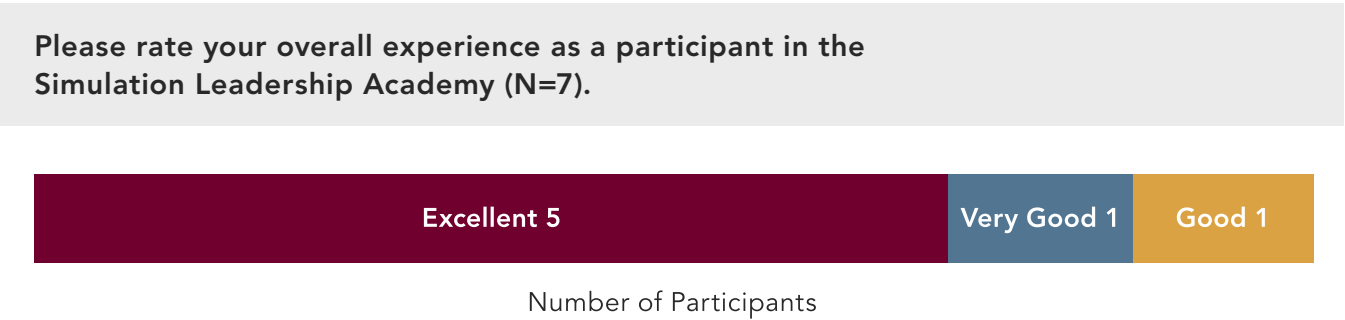
Participants of the Simulation Leadership Academy had very positive experiences. Table 12 shows the proportion of participants who strongly agreed with the statements below about the Simulation Leadership Academy content.

Table 12. Evaluation of the Simulation Leadership Academy

The proportion of participants who strongly agreed that.... (N=7)	n (%)
The material covered in the Simulation Academy is relevant to my work.	6 (85.7)
I will be able to apply what I learned in the Simulation Academy to my work.	6 (85.7)
The Simulation Academy instructor(s) were knowledgeable on the topics covered.	7 (100.0)
The Simulation Academy instructor(s) delivered the materials in an engaging manner.	6 (85.7)
I would recommend the Simulation Academy to others.	6 (85.7)

As noted in Figure 11, participants rated their overall experience as a participant in the Simulation Leadership Academy highly.

Figure 12. Overall Experience as a Participant in the Simulation Leadership Academy



Participant comments about their experience as a participant in the Simulation Leadership Academy Sessions.

- *"I feel so much more confident with giving simulations and education to the staff. I have been doing them on our unit, but didn't have any education on giving them. I now feel I have the tools I need to continue the simulations and education. And I will be more confident in them as well."*
- *"Very knowledgeable and great communicating with other people and their experiences."*
- *"I enjoyed this experience. Not only was the content useful, I also liked to be engaged with the other participants and learn more about their working environment and their processes."*

Looking Ahead to Year 4

The MOMS Leadership team noted the intended audience of SLA was not well-communicated initially and several components of the training will be reevaluated for future cohorts, including attendance expectations, curriculum, and program structure. The second cohort of the Simulation Leadership Academy will begin in early 2023.

Participant comments about their experience as a participant in the Simulation Leadership Academy Sessions.

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Looking Ahead to Year 4

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Activity 4.1

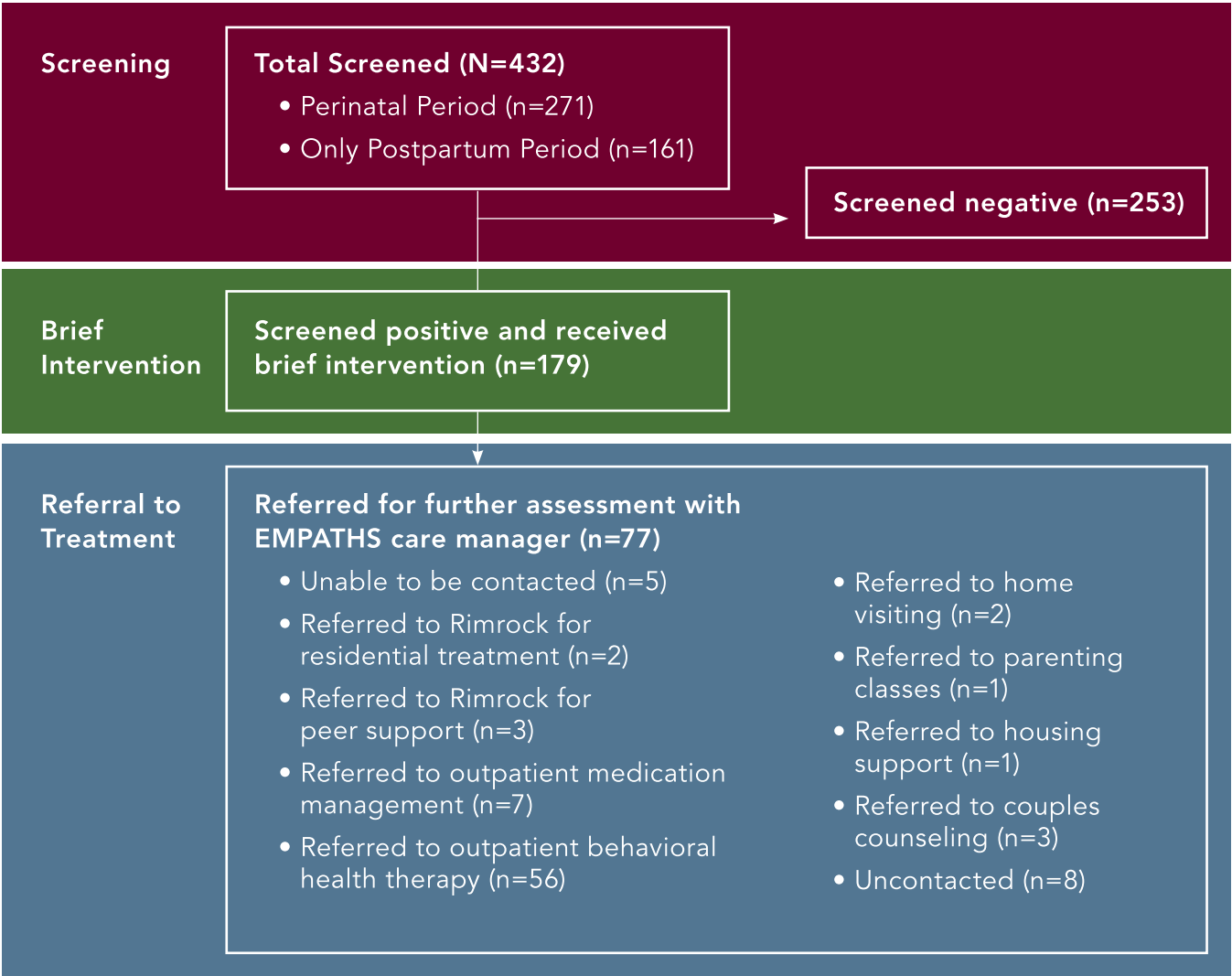
Facilitate co-management of high-risk patients with urban-based specialists and rural-based generalists.

Empaths (formerly known as the Eastern Montana Perinatal Substance Use Treatment Health System)

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.

In year 3, a total of 432 patients completed the 5P's (Prenatal Substance Abuse Screen for Drugs and Alcohol) screener at least once during their pregnancy, or up to 14 weeks postpartum. Most (85.2%) of the screens were completed at the Downtown Billings Clinic location. Figure 13 demonstrates a breakdown of the SBIRT screening, intervention, and referral to treatment process for the Empaths program.

Figure 13. Empaths Referral to Treatment Process for Year 3



Of the patients that completed the 5P's, 172 screened positively (responded 'yes' to at least one question) and received brief intervention from their obstetric provider or the Empaths care manager. Seventy-seven patients were referred to the care manager for further assessment and referral to treatment. Patients were referred to outpatient behavioral therapy (n=56), outpatient medication management (n=7), couples counselling (n=3), Rimrock residential treatment (n=2), Rimrock peer support (n=2), home visiting (n=2), parenting classes (n=1), and housing support (n=1). Five patients were unable to be contacted and the care manager did not contact eight patients who were referred. Overall, the care manager provided 145 care management visits, and was able to confirm 59 patients connected with the referred resource and engaged in services.

Programmatic Challenges

Challenges have arisen during implementation. Analysis from the first 18 months of implementation indicates 48.5% of patients who received care at the downtown Billings Clinic location completed a 5P's screener during the perinatal period. Staff shortages and high turnover rates have contributed to challenges with staff education, training, and utilization of the screener.

Looking Ahead to Year 4

In year 4, Empaths will continue implementation efforts and focus on further integrating universal screening into the clinic procedures and workflows. Program staff plan to host lunch and learns to gather information from medical providers on their perceptions of feasibility and acceptability of SBIRT, as well as their perspectives on the barriers and facilitators of SBIRT. In addition to in-person engagement with providers, the Billings Clinic team has developed training videos, which will be a part of onboarding for all staff and continuous training of staff. In addition to online training, SBIRT has been included in the Simulation Leadership Academy, which will provide hands-on experiential training to medical assistants, nurses, and providers. Billings Clinic will work closely with nursing leadership to consider how to better integrate screening into the workflow.

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.

Key Findings

Five participants joined in the groups and were interviewed. Due to the small sample size, quantitative data was not significant. The qualitative data gathered demonstrated that the areas of significance for the participants were occupational identity, pride, routine, mental health, and support. Participants were supportive, able to resonate with other members about mental health issues, and able to take a more active role in guiding the group process. This is an ongoing virtual group that just recruited its 78th participant. A total of 12 virtual groups have been completed.

Dissemination

A poster will be presented to the Society for the Study of Occupation in October 2022 and at the American Occupational Therapy Association in April 2023. The study team plans to publish a manuscript with a national journal.

Prenatal Education Program

The MOMS team will develop and promote a self-paced, online prenatal education program for all Montana families on the following topics: mental health, physiological birth, physical therapy, standard childbirth education, and family dynamics. The prenatal education program is in development and will launch in year 4.

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

Year 3 Update

In year 1, in anticipation of future expansion of telemedicine through the MOMS grant, UM conducted a research project aimed at learning from the emergency deployment of telemedicine in the rural Rocky Mountain West during the COVID-19 pandemic. Data for this qualitative study was gathered through 20 semi-structured interviews with practicing OB/GYNs over Zoom between July and September 2020. In year 2, the recorded interviews were transcribed and coded by themes, including enabling health policy for telemedicine, population characteristics, special needs, and provider/patient satisfaction.

In year 3, the research team submitted a manuscript to the Telemedicine Reports Journal. The manuscript was accepted and published in Telemedicine Reports on February 24, 2023.

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

Activity 5.1

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

See Activity 3.2 for the description of the American Indian/Alaska Native Educational Series.

Activity 5.2

Establish and administer a program to support a variety of non-medical, community-based roles that support pregnant and postpartum women, including home visitors, lactation consultants, doulas, peer support specialists, and community health workers.

The MOMS team will utilize Needs Assessment activities to inform program planning in year 4.

MOMS Program – Stories of Impact

Roundup Memorial Healthcare

Roundup Memorial is a non-birthing critical access hospital in Roundup, Montana. If a pregnant person presents to the emergency room in labor, the hospital transfers the patient to the appropriate birthing facility to deliver. In emergencies, a transfer is not always possible. In these circumstances, staff at Roundup Memorial must provide emergency obstetric services. Roundup has participated in the MOMS simulation training through SIM-MT and the neonatal resuscitation program (NRP). This training was put to good use in November 2022 when Roundup Memorial delivered its first baby in eight years. After a safe delivery, the mom and baby were transferred by ambulance to Billings Clinic. Cynthia Moore, the Director of Nursing at Roundup shared, “the staff were happy to have had the MOMS training and NRP training! Thanks for all your support!”

Sidney Health Center

Sidney Health Center is a critical access hospital with an obstetric unit in Sidney, Montana. In 2022, Sidney Health Center staff participated in the first cohort of the Simulation Leadership Academy through MOMS. This training proved to be valuable in September 2022. Shortly after participation in the sixth class of SLA, an unexpected breech delivery occurred at their facility. SLA prepared hospital staff to provide the care necessary to safely deliver a breech birth.

Indigenous Doula Training

In July 2022, MOMS hosted a free, four-day, Indigenous Doula Training at the University of Montana campus. Individuals from across the state attended the training. The Missoulian, a local newspaper, covered the training and interviewed several participants about their stories and experiences in the Montana healthcare system. Misty Peyketewa, who is Blackfeet and Karuk, shared, “I appreciate how they talked about our Indigenous ways of knowing prior to colonization,” Peyketewa said. “I think this training will fit in perfectly with my community and family.” The full article is available online for review.

Mabie, N. (2022, July 26). ‘Lower the death rate’: Native doula training comes to Missoula. Missoulian. https://missoulian.com/news/local/lower-the-death-rate-native-doula-training-comes-to-missoula/article_ef5bb06f-1eaf-5bb3-97be-bc5152de19cb.html.

Conclusion

Throughout the first three years of MOMS, grant partners have responded and adapted programming to changing external circumstances, such as COVID-19. Additionally, MOMS has transformed in response to feedback that has been collected through the ongoing needs assessment process as well as continuous quality improvement efforts. The Maternal Health Leadership Council has taken an active role in steering the course for this dynamic project, setting the stage for continued strategic focus on maternal health in Montana both through this grant and through other initiatives working on behalf of mothers and children around the state.

During its midpoint year, the MOMS grant made significant progress in expanding its reach across the state with marked increases in the numbers of organizational partners engaged through several of its program highlights detailed below:

- The pilot of the first statewide implementation of AIM Patient Safety Bundles in 17 hospitals with a successful first cohort that focused on Obstetric Hemorrhage. This pilot effort earned additional funding from the national CDC Perinatal Quality Collaborative grant program that will sustain this clinical quality improvement project through 2027;
- The establishment of the Simulation Leadership Academy in response to feedback from staff at rural health facilities who wished to establish their own simulation training programs housed within their hospitals—a model that has proven to be both more economically sustainable as well as more feasible for facilities facing high staff turnover;
- The award of over \$200,000 in local grants to healthcare and community organizations around the state focused on improving services for Montana mothers and families;
- The recruitment and training of Indigenous doulas who can provide culturally appropriate support and community-based care to Indigenous pregnant people;
- The dissemination of MOMS innovations, findings, and best practices to numerous state and national audiences which have helped to drive policy proposals and shape program design.

As MOMS moves into the latter half of its project period, the grant team should reorient its thinking around how to successfully off-ramp the innovations that have proven success onto other sustainable funding models. This can happen through expanded partnerships with state and national partners, engagement with organizations empowered to conduct policy advocacy on behalf of mothers and families in Montana, and investigations into strategic financing models that can sustain supports, such as doula care and healthcare workforce development, that serve to make pregnancy, birth, and the postpartum period safe and healthy for all Montanans.

Appendix A

Table 13: 2021-2022 Maternal Health Leadership Council Members

Name	Organization	Role	Status
Tersh McCracken, MD; Chair	Billings Clinic	MOMS Medical Director & OBGYN	Active
Amy Stiffarm, MPH (Aaniiih, Cree, Blackfeet)	MOMS, University of North Dakota	Individual with Lived Experience, Indigenous Public Health PhD Student	Active
Bardett Fausett, MFM	Origin Health	Maternal-Fetal Medicine Specialist, President/Medical Director	Active
Brie MacLaurin	Healthy Mothers Healthy Babies	Executive Director	Active
George Mulcaire-Jones, MD	MOMS and the MPQC-AIM Initiative	Retired Family Medicine, Clinical Advisor	Active
Jackie Muri, MSL, FACHE	Intermountain Peaks Region I Montana & Wyoming	Regional Sr. Director, Strategy & Business Development Women's & Children's Service Line	Active
Janie Quilici, LCSW, LAC	Community Physicians Group	Perinatal Behavioral Health Counselor	Active
Jean-Pierre Pujol, MD	Blue Cross Blue Shield of Montana	Medical Director	Active
Jen Verhasselt	Rimrock / Pathway to Parenting Program	Senior Residential Services	Active
Jennifer Wagner, CPHQ	Montana Hospital Association	Rural Hospital Improvement Coordinator	Active
Lisa Troyer	Pacific Source Health Plans	Wellness Consultant	Active
Mary LeMieux	Medicaid Meadowlark Initiative	Member Health Services Bureau Chief Project Director	Active
Olivia Riutta	MPCA	Outreach and Engagement Manager	Active
Steve Williamson, MD	Billings Area Office of Indian Health Service	Medical Director	Active
Tami Schoen	Hill County WIC Department	Nurse, WIC Aide	Active
Tressie White	Montana Healthcare Foundation	Program Director	Active

Table 13: 2021-2022 Maternal Health Leadership Council Members

Name	Organization	Role	Status
Christina Marchion, MD	Central Montana Medical Center	Family Medicine OB	Retired
Dina Kuchynka	SCL Health-Holy Rosary	Maternal and Newborn Health Manager	Retired
Drew Malany, MD	Women's Healthcare Center, PLLC; Chair of Montana ACOG	OBGYN	Retired
Mary Jane Knisely, JD		13th District Court Judge	Retired
Vicki Birkeland	SCL-St. Vincent Healthcare; MPQC	(Retired) Nursing Director	Retired

Table 14: Maternal Health Leadership Council Program Staff and Non-Voting Members

Name	Organization	Discipline / 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 15: 2021-2022 Maternal Mortality Review Committee Members

Name	Organization	Discipline / Role	Location
Rachel Arthur	Indian Family Health	Title X Family Planning Program	State
Katie Boggs, RN	Blackfeet Community Hospital	Community Health Nurse	Browning
Kayla Bragg	Department of Justice Division of Criminal Investigation Special Services Bureau – Sexual Assault Kit Initiative (SAKI)	Law Enforcement	State
Ann Buss	MT DPHHS	Title V Maternal & Child Health Block Grant Programs	State
April Charlo	Snq̓wey̓lmistn (Indigenous Doula Course) and Families First Learning Lab in Missoula	Vice President	St. Ignatius
Melinda Cline, LCSW, PMH-C, CLC	Private Practice	Social Work/ Behavioral Health	Missoula
Drew Colling	Montana Coalition Against Domestic and Sexual Violence	Violence Prevention Agency	State
Annie Glover, PhD, MPH, MPA	Rural Institute, University of Montana	Academic Institution	State
Adriane Haragan, MD, MFM	Bozeman Health	Maternal Fetal Medicine / Perinatology	Bozeman
Frances Hayes, RN	Roosevelt County Public Health Department	Public Health Nurse	Wolf Point
Mary LeMieux	MT DPHHS Medicaid	Payer	State
Christina Marchion, MD	Central Montana Medical Center	Family Medicine – Obstetrics	Lewistown
Clayton “Tersh” McCracken, MD	Billings Clinic	Obstetrics/ Gynecology	Billings
Pam Ponich, LCPC	One Health	Community Birth Workers	Miles City, Hardin, Lewistown
Janie Quilici, LAC, LCSW	Western Montana Mental Health Center / Community Medical Center	Perinatal Behavioral Health	Missoula

Table 15: 2021-2022 Maternal Mortality Review Committee Members

Name	Organization	Discipline/Role	Location
Kassie Runsabove	Aaniiih Nakoda Community Foundation	Executive Director	Fort Belknap Indian Community
Kate Seaton, JD	Montana Legal Services Association	Legal Support Services	State
Dennis Four Bear	Fort Peck Tribal Health Department	Director	Poplar
Jennifer Show, FNP	Fort Belknap Tribal Health Department	Chief Medical Officer	Wolf Point
Kristen Srna, MSN, RN	Benefis Hospital and Association of Women's Health, Obstetrics, and Neonatal Nurses (AWHONN)	Perinatal Nursing	Great Falls
Lee Stiffarm, RN	Blackfeet Community Hospital	Public Health Nurse	Browning
Jana Sund, CNM	Postpartum Resource Group	Midwives and Community-Based Doula Program	Kalispell
Helen Tesfai	Rocky Mountain Tribal Epidemiology	Director	Regional
Vicki Thuesen, APRN, WHNP, FNP	Ag Worker Health & Services	Migrant health care	Lolo
Kari Tutwiler	MT DPHHS	Fetal, Infant, Child, & Maternal Mortality Review & Prevention	State
Jennifer Verhasselt, MS, LAC	Rimrock Addiction Treatment Center	Addiction Counseling	Billings
Mariya Waldenberg, DNP	VezaHealth	Nursing Consultant	Lame Deer
Aaron Wernham, MD, MS	Montana Healthcare Foundation	Non-profit	Statewide
Steve Williamson, MD	Billings Area Office of Indian Health Services	Chief Medical Officer	Regional

