BUILDING MAINE'S PERINATAL SYSTEM OF CARE

A ROADMAP FOR THE FUTURE

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Center for Quality Improvement

www.pqc4me.org

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Co-author: Kelley Bowden, MS, RN, Consultant
Co-author: Deborah Deatrick, MPH, Consultant
Director, Center for Quality Improvement: Amy Carter, BSHA-M
Project Manager, Center for Quality Improvement: Ashlee Crowell-Smith, MBA

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About Maine Medical Association's Center for Quality Improvement:

Maine Medical Association, Center for Quality Improvement (MMA-CQI) supports its mission to improve health care in Maine by leading, collaborating, and aligning improvement efforts on initiatives that span the continuum of care, and to serve as a neutral convener dedicated to improving health and health care in Maine while fostering health equity for all. The MMA-CQI team provides quality improvement consulting, project management, evidence-based education, and evaluation services to clinicians, healthcare organizations, and communities.

Executive Summary

From three months before conception to a baby's first birthday, defined as the perinatal period, is one of the most consequential, impacting the health and well-being of birthing people and infants and their transition to early childhood and beyond. A birthing person's health prior to pregnancy is an indicator of how healthy she will be during pregnancy and how healthy her baby will be when they are born. Important measures include prevention as well as reducing risks and access to high quality services and programs along the entire perinatal continuum. Evidence-based preventive oral health practices can improve the oral health status of both babies and birthing people.[1] Periodontal disease is a risk factor for preterm birth and low birthweight births, both risk factors for infant death.[2][3] The American Academy of Pediatrics recommends that pregnant people obtain regular prenatal care as one strategy to reduce infant sleep related deaths.[3] These examples, among many, set the stage for the Perinatal System of Care Roadmap report.

Maine has many high-quality resources to offer new families, including services and programs provided by state and local government, health care systems, and community-based organizations. Access to these resources is often impacted by geography, social, economic, or cultural factors, as revealed before, during, and after the COVID-19 pandemic. To address these challenges, leaders in the public and private sectors joined together to bring over $10M in new funding between 2021 and 2023 to Maine to strengthen and expand Maine's Perinatal System of Care and improve outcomes across the system.

Taken together, these projects and programs represent multi-year investments in the core and cross-cutting components of Maine's Perinatal System of Care and will result in greater access to services and programs, expanded workforce education and training, increased surveillance, data reporting and evaluation, and new quality improvement activities.

The purpose of this report, *Building Maine's Perinatal System of Care – A Roadmap for the Future,* is to raise awareness and understanding of the new initiatives, how they integrate and align with existing programs and activities, highlight early successes, and identify gaps for possible future action.

The narrative report organizes the core and cross-cutting components into a dynamic Perinatal System of Care ecosystem and shows how recently funded projects are addressing one or more of the components, as well as examples of high-level advisory groups like the Perinatal Systems of Care Working Partners Group and the Children's Cabinet. Some areas of focus such as oral health and behavioral health deserve more in-depth descriptions in any updates that are done to the Roadmap.

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[1] https://www.mainecohn.org/

[2] Saini R, Saini S, Saini SR. Periodontitis: A risk for delivery of premature labor and low-birth-weight infants. J Nat Sci Biol Med. 2010 Jul;1(1):40-2. doi: 10.4103/0976-9668.71672. PMID: 22096335; PMCID: PMC3217279.

[3] https://publications.aap.org/pediatrics/article/150/1/e2022057990/188304/Sleep-Related-Infant-Deaths-Updated-2022?autologincheck=redirected&_ga=2.134165195.411644381.1689006085-378153615.1660762991

Due to space limitations, it was not possible to show all advisory groups, projects, and organizations. The interactive, web-based version of this report will link graphics and text to embedded details on projects, lead organizations, and contacts to related websites and other online resources.

Intended Audiences

Audiences for the Roadmap include anyone who wants to understand what makes up Maine's evolving Perinatal System of Care. Increasing awareness and understanding of individual components and how they fit together is the first step toward building, expanding, and sustaining the system so that ALL birthing people, infants, families, and communities reap the benefits.

Scope And Organization of This Report

This report describes four **Core** components of **Maine's Perinatal System of Care** that were consistently identified in interviews conducted and reports, needs assessments and strategic plans reviewed for the Roadmap project:

- **Access** – encompassing access to a wide array of services such as medical care, behavioral health, substance use, domestic violence and related services that include transportation, housing, food, income support, childcare, and others;
- **Workforce, Education and Training** – encompassing professional education for all levels of nursing, obstetrics and gynecology, family medicine, nurse and professional midwives, and paraprofessionals such as community health workers and doulas;
- **Data, Surveillance and Evaluation** – encompassing population databases such as Pregnancy Risk Assessment Monitoring System (PRAMS) and the Behavioral Risk Factor Surveillance System (BRFSS), birth and death certificate data, Maternal Fetal Infant Mortality Review Committee reports, and evaluations of programs such as Eat Sleep Console; and
- **Quality Improvement** – encompassing statewide quality improvement initiatives such as AIM Bundles implemented by PQC4ME, QI initiatives at individual hospitals and health centers, or by community-based organizations.

In addition to these four **Core** components, four **Cross-cutting Components** that exert powerful influences on the components were identified in the process of creating the Roadmap:

- **Patient and Family Engagement** – involving and engaging birthing people and their families at every step of the way, from prevention and well-woman care through the 12-month postnatal period and beyond, with coordinated, whole-person care supported by informed shared decision making.
- **Diversity, Equity, Inclusion and Belonging** – honoring and supporting differences among people and creating a supportive and nurturing culture that advances health equity for all.
- **Communication, Coordination, and Infrastructure** – processes that promote awareness, understanding and multidisciplinary collaboration between the public and private sectors, smooth transitions between and among points on the care continuum, and

organizational capacity and resources needed to support effective functioning of the system.

- **Policy and Environment** – laws, regulatory mechanisms and other actions that improve and promote the health and well-being of birthing people, infants, and families.

Table of Roadmap Findings and Actions Currently Underway or For Future Consideration

The Roadmap report led to the development of a separate *Table of Roadmap Findings and Actions Currently Underway or for Future Consideration.* The Table is organized into sections corresponding to the four core components and the four cross-cutting components of Maine's Perinatal System of Care. Findings included in the Table were based on the research phase of the Roadmap project and content included in the Roadmap report. Actions underway or for future considerations include those made directly by interviewees and/or were drawn from information provided to the authors of the report.

Feedback on the *Table of Roadmap Findings and Actions Currently Underway of for Future Consideration* was solicited via in-person meetings and an anonymous online survey from perinatal advisory committees and groups across the state that include health care providers, advocates, community-based organizations, and others. Comments from in-person meetings and the survey were summarized and incorporated into the Table.

Both the Roadmap Report and the Table are to be considered works in progress and will benefit from periodic updates.

Purpose of the Roadmap

Maine is a special place to be born, live, work, play, and raise a family. Maine communities, health care providers, hospitals, advocates, government agencies and many others are working together to provide a nurturing, supportive environment for those who are experiencing all stages of childbearing, from preconception through the first 12 months of a child's life, early childhood (ages one through five) and beyond.

From free home visits available to all new families provided by programs like Public Health Nursing and Maine Families Home Visiting to longstanding initiatives like the Special Supplemental Nutrition Program for Women Infants and Children (WIC), to special initiatives like the Harold Alfond College Challenge[4] that provides $500 grants to families upon the birth of a baby, to the expansion of MaineCare in 2019, and in 2022, the extension of postpartum care to a full year after birth - these are just a few of the notable resources that make Maine so welcoming.

Supporting all these examples is a strong commitment by many sectors: health care, public health, community-based organizations, and education and early childhood to provide access to seamless, high quality and safe care along the continuum, from primary prevention through acute care, chronic care, and health maintenance, for all birthing people, infants, and families.

Despite these many strengths, Maine, like the rest of the country, has experienced its share of challenges in the past several years related to factors that emerged before, during and after the COVID-19 pandemic that made disproportionate impacts on marginalized populations, the healthcare workforce, and deteriorating social conditions. As a result, Black, Indigenous, people of color, those living in poverty and rural regions of the state or lacking food, adequate housing, affected by substance use disorder, or other social drivers are at even greater risk for poor birth outcomes.

These challenges led to increased awareness and collaborations between the public and private sectors to secure new resources to strengthen Maine's Perinatal System of Care. Between 2021 and 2023, more than $10M in new funding was awarded to organizations in Maine from federal and state governments and philanthropy. The new resources augment existing funding from Title V (Maternal and Child Health Block grant), and funds appropriated by the Maine Legislature. Taken together, these projects and programs represent multi-year investments in the core components of Maine's Perinatal System of Care and will impact greater access to services and programs, expanded workforce education and training, increased surveillance, data reporting and evaluation, and new quality improvement activities.

The growth of these initiatives can be traced in part to a 2020 report on *Understanding and Addressing the Drivers of Infant Mortality in Maine.*[5] The report highlighted troubling trends in

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[4] Harold Alfond Foundation College Challenge grant, https://www.myalfondgrant.org/

[5] Qualidigm, 2020, Reports - PQC4ME

infant mortality and proposed more than two dozen actions to address health care access, standardizing screenings, risk assessment, education, health equity, and supportive policies.

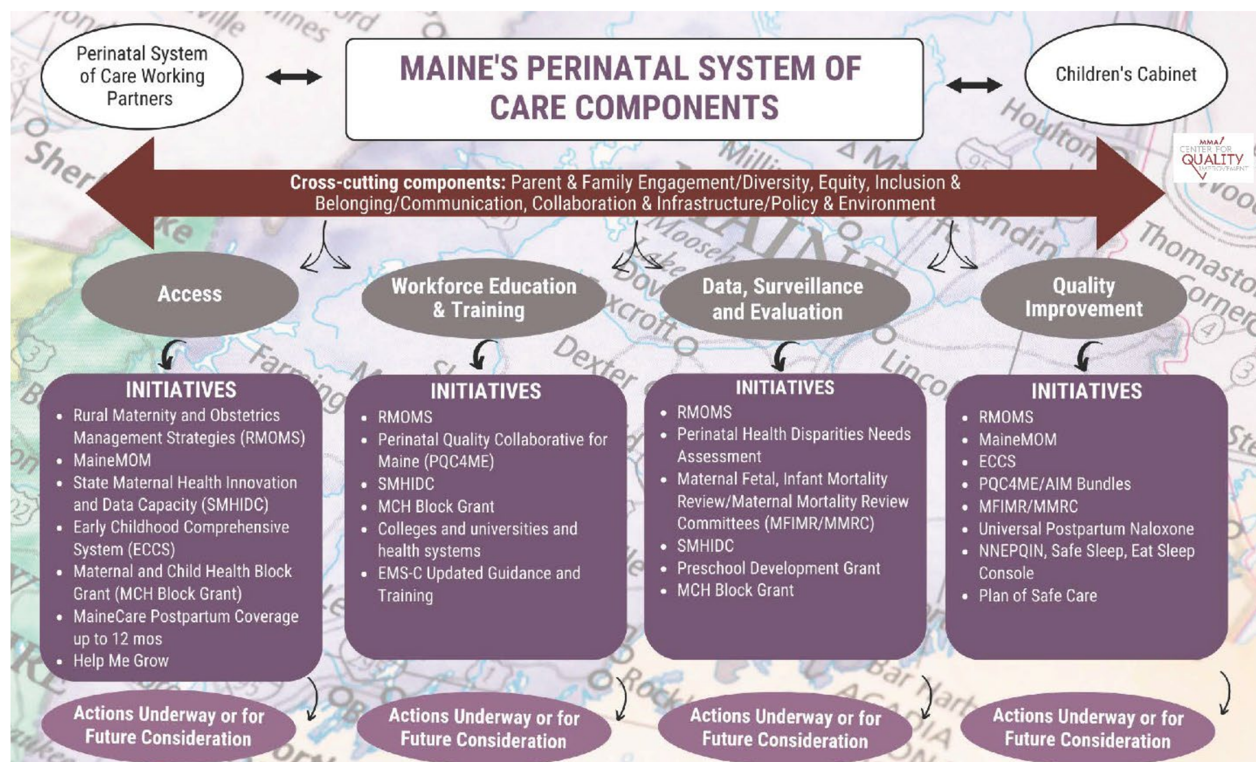
Understanding the new and expanded initiatives launched since 2020 is the focus of this report and an interactive version of the report that will reside on the web: *Building Maine's Perinatal System of Care – A Roadmap for the Future.* Its purpose is to identify, define and organize the growing portfolio of perinatal-related initiatives in the public and private sectors in order to:

1) Increase awareness and understanding of new and expanded initiatives;

2) Illustrate relationships, alignment, and synergy among the initiatives; and

3) Reveal gaps for potential future action.

The following graphic summarizes and depicts the main elements of Maine's Perinatal System of Care, including the four core components and current initiatives that are addressing priorities within each component, related findings and preliminary recommendations based on the research phase of the Roadmap project, four cross-cutting components, and examples of high-level advisory bodies. The interactive website version of this report will provide greater detail about all system components.



Intended Audiences

The audiences for the Roadmap include anyone who wants to understand what makes up Maine's Perinatal System of Care. Increasing awareness and understanding of all components and how they fit together is the first step toward building, expanding, and sustaining the system so that ALL people and communities reap the benefits.

As the largest state east of the Mississippi, Maine has thousands of miles of roads that take travelers through large cities, quaint coastal towns, remote rural villages, and island communities. The old Maine saying "you can't get there from here" has taught us (newcomers and lifelong residents alike) that maps are invaluable – even with today's sophisticated GPS-informed devices. They help us understand the big picture: where we are today and what lies between us and our destinations. This Roadmap will guide Maine toward a Perinatal System of Care that is accessible, equitable, safe, affordable, sustainable, and results in the best outcomes for all involved.

Potential Audiences for The Roadmap Include:

- **Individuals (including birthing people) and families**
- **Healthcare organizations and people who work in them** (health systems, hospitals, community health centers, tribal health centers, birthing centers, home births, behavioral health facilities, professional associations, and others, as well as doctors, nurses, midwives, social workers, doulas, community health workers, therapists, counselors, and others);
- **Community-based organizations** (community action programs, social service organizations, BIPOC, LGBTQ+, faith-based organizations and others);
- **Educational institutions and providers** (colleges, universities, health professions training programs, early childhood education programs, and others);
- **Government** (federal, state, and local);
- **Public health** organizations (public health districts, city and county health departments, the Maine CDC, and others); and
- **Policymakers and advocates**.

Scope And Organization of This Report

This report describes four **Core** components of Maine's Perinatal System of Care that were consistently identified in interviews, reports, needs assessments and strategic plans reviewed for the Roadmap project. The four core components are:

- **Access** – encompassing access to a wide array of high-quality services such as medical care, behavioral health, substance use, domestic violence and related services that include transportation, housing, food, income support, childcare, etc.;
- **Workforce, Education and Training** – encompassing professional education for all levels of nursing, obstetrics and gynecology, pediatrics, family medicine, nurse and professional midwives, and paraprofessionals such as community health workers and doulas;
- **Data, Surveillance and Evaluation** – encompassing population databases such as Pregnancy Risk Assessment Monitoring System (PRAMS) and the Behavioral Risk Factor Surveillance System (BRFSS), birth and death certificate data, Maternal Fetal Infant Mortality Review Committee reports, and evaluations of quality improvement initiatives such as Eat Sleep Console (ESC) and Safe Sleep, and Maternal and Child Health Programs

- **Quality Improvement** – encompassing statewide quality improvement initiatives such as patient safety "bundles" implemented by PQC4ME, QI initiatives at individual hospitals and health centers, and by community-based organizations.

In addition to these four **Core** components, four **Cross-cutting Components** that exert powerful influences on the components were identified in the process of creating the Roadmap:

- **Patient and Family Engagement** – involving and engaging birthing people and their families at every step of the way, from prevention and well-woman care through the 12-month postnatal period and beyond, with coordinated, whole-person care supported by informed shared decision making.
- **Diversity, Equity, Inclusion and Belonging** – honoring and supporting differences among people and creating a supportive and nurturing culture that advances health equity for all.
- **Communication, Coordination and Infrastructure** – processes that promote awareness, understanding and multidisciplinary collaboration between the public and private sectors, smooth transitions between and among points on the care continuum, and organizational capacity and resources needed to support effective functioning of the system.
- **Policy and Environment** – laws, regulatory mechanisms and other actions that improve and promote the health and well-being of birthing people, infants, and families.

Methods

In mid-2022, the Maine Medical Association's Center for Quality Improvement (CQI) convened a series of meetings with the state's Maternal Child Health leaders about a proposal to create a "roadmap" document that would inventory and describe existing perinatal system of care-related projects and activities, as well as raise awareness and understanding of the growing number of projects, people and organizations working within the perinatal system of care. There may be work that has unintentionally been omitted and this report will be updated to make corrections and fill in gaps on the web-based version. CQI's long history of working on maternal and child health initiatives coupled with several new grants focusing on PQC4ME (Maine's statewide perinatal quality collaborative), the Maternal Mortality Review Committee, and American College of Obstetricians and Gynecologists Alliance for Innovation on Maternal Health (ACOG/AIM) Bundles led to its selection as the project's home.

The Maine Department of Health and Human Services' Early Childhood Comprehensive Systems (ECCS)[6] initiative had recently completed a Systems Assessment and Gap Analysis and a Strategic Plan for ages zero to three Similarly, the Maine Children's Cabinet Plan for Young Children [7] calls for building and strengthening linkages between early childhood services and

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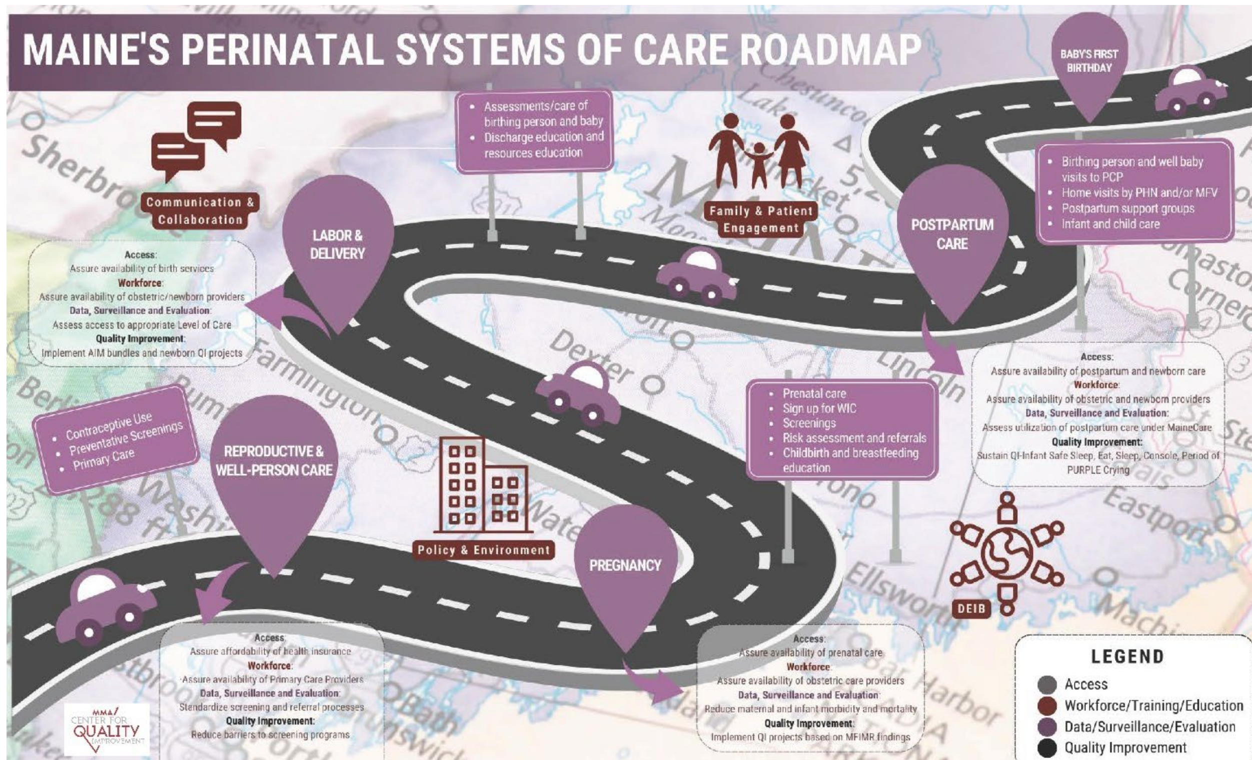
[6] MDHHS ECCS initiative, Program Updates | Department of Health and Human Services (maine.gov)
[7] https://www.maine.gov/future/sites/maine.gov.future/files/inline-files/GOPIF_CC_AnnualReport2021.pdf

health care in perinatal systems of care and early intervention services for children ages 0-5. The Roadmap was conceived as a document that could complement these reports by focusing exclusively on the perinatal continuum (three months prior to conception, pregnancy, pregnancy care, postpartum care, and infant care, up to the infant's first 12 months). A diagram of Perinatal System of Care Assets in Maine's P-3 System in 2022 appears in Appendix I.

Project staff developed a detailed plan and timeline and a comprehensive spreadsheet of individuals, organizations, educational institutions, professional associations, government agencies and others to interview and/or request information from. Approximately twenty interviews over the course of seven months (September 2022 through March 2023) were conducted using a template to assure consistency of information obtained. The template included questions about the organization's strategic plan or similar document(s) that included any aspect of the perinatal period including goals, objectives, outcomes, scope, partners, results time period, funding source(s) and past and current perinatal quality improvement projects. Summaries of current projects appear in Appendix II. In addition, numerous reports, publications, white papers, and other documents were reviewed.

Interviews began with leadership from other state Perinatal Quality Collaboratives including Massachusetts, Rhode Island, and Illinois, as well as a leader from the National Perinatal Information Center. Maine-specific interviews were completed with a variety of governmental agencies, public health, academic programs both college/university based and hospital based, professional organizations, a malpractice insurer, and community-based organizations. All interviews were conducted via Zoom due to ongoing pandemic considerations and to eliminate travel related burdens.

The Roadmap graphic illustrates the dynamic progression along the continuum marked by key milestones: well person and reproductive health care, pregnancy, prenatal care, labor and delivery, birth of the infant, and postpartum and follow-up care through the first twelve months of the infant's life. The intent of the graphic is to depict an ideal seamless and coordinated progression along the road, marked by signposts for critical resources. (See graphic on next page).

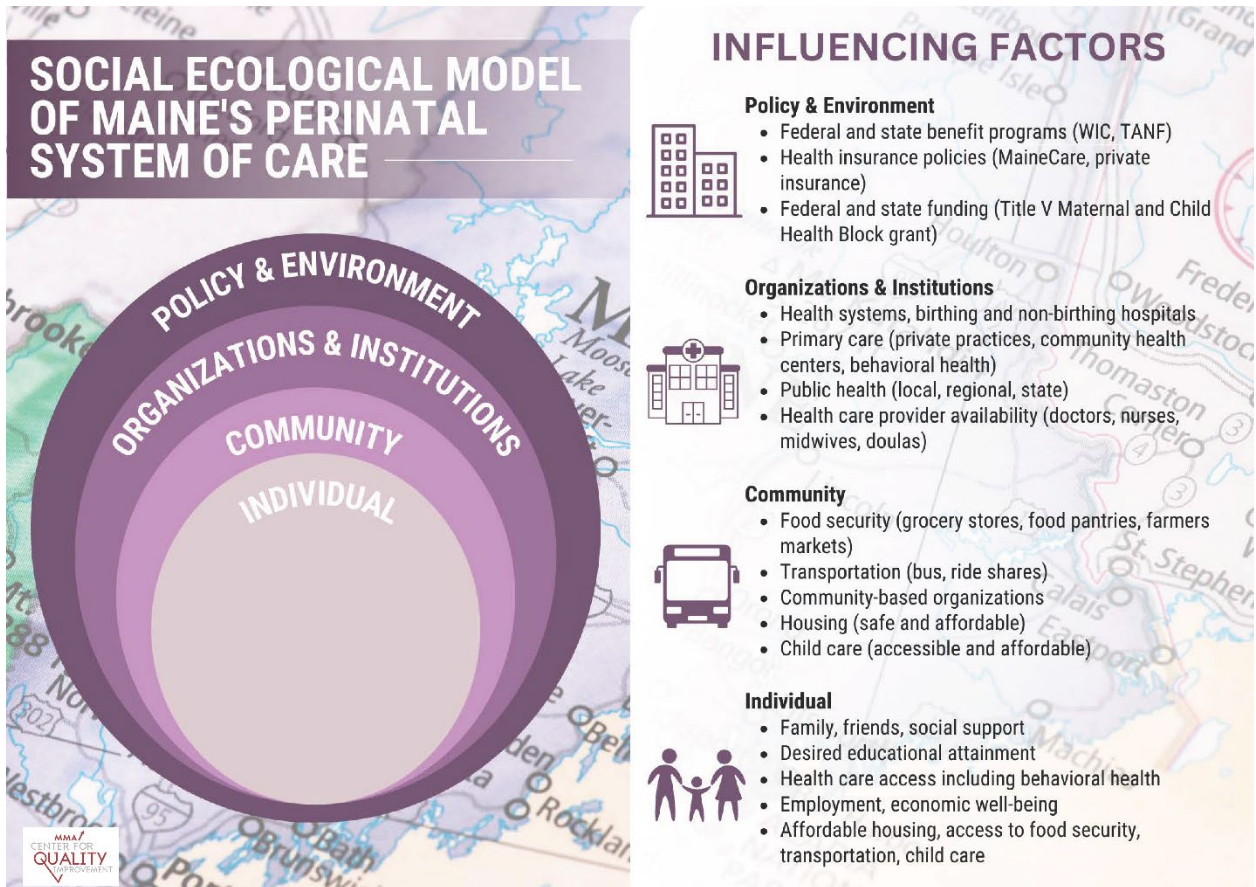


Background

Building Maine's Perinatal System of Care: Roadmap to the Future is not a needs assessment or a strategic plan. In fact, several of these, such as the ECCS SAGA Strategic Plan and the Children's Cabinet Plan, have already been produced and are providing excellent guidance to specific projects as well as general system-building. Other needs assessments and strategic plans, such as the Perinatal Disparities Needs Assessment, Maternal Health Innovations (MHI) Strategic Plan and the updated Preschool Development Grant Needs Assessment, have recently gotten underway and are slated for completion in 2024.

What does Maine's Perinatal System of Care encompass? Generally speaking, it spans three months preconception for birthing people through the first twelve months of infants' lives. The system includes the mother-infant dyad, who are directly and indirectly affected by the community, institutions, organizations, social, political and environmental factors, as depicted in the Social Ecological Model. Components of the model are dynamic and interact continuously, and impact short, intermediate, and long-term outcomes at all levels. Patient and family engagement, a commitment to diversity, equity, inclusion and belonging, supportive policies and environments and communication, coordination and supportive infrastructure are critical to smooth and effective functioning of the System.

In contrast, the intent of the *Roadmap* is to describe the core components of the Perinatal System of Care, the goals, strategies, and activities that make up the components, and how current Perinatal System of Care initiatives are addressing the components. The final section of this document lists key Findings from the research phase of creating the *Roadmap* and related Preliminary Recommendations to be considered to strengthen and sustain the System.



Core Components of the Perinatal System of Care

The following section of the Roadmap provides background on each of the **four core components** derived during the research phase of this project:

- **Access**
- **Workforce Training and Education**
- **Data, Surveillance and Evaluation**
- **Quality Improvement**

Core Component: Access

Access to services can be complex and is impacted by geographic location, insurance status, and social considerations such as transportation. In 2022, 37.3% of births to Maine residents were covered by MaineCare as the primary payer.[8] Not all obstetric care providers accept MaineCare insurance or accept a limited percentage of patients with MaineCare, which limits options available to pregnant people seeking prenatal care.

Birthing people enter prenatal care through a variety of options. Some have a family medicine provider who provides both primary and prenatal care, others access an obstetrician/

[8] Maine Office of Data, Research and Vital Statistics, birth certificate data, 2022.

gynecologist (OB/GYN) or Certified Nurse Midwife (CNM). Still others choose a planned home birth or birth center birth with a CPM, a Certified Professional Midwife. At each entry point, the person is assessed physically for health issues and risk factors that may result in poor pregnancy outcomes. Although people are also assessed for social issues such as housing, transportation, and access to food that impact their overall health and well-being through use of standardized screening tools, documentation is not widespread. Women of childbearing age tend to utilize health care when pregnant and not always between pregnancies. OB/GYNs may, by default, fill the role of primary care provider.

In the past twenty years, the number of hospitals providing birthing services has decreased from 31 to 22, creating a maternity care desert in Southern Aroostook/Northern Penobscot County. Pregnant people in this region have a two-hour drive to access services. In western Maine, one birthing hospital increased their births by fifty percent per year when another area birthing unit closed. In 2019, Maine asked hospitals to self-assess their Level of Maternal and Newborn Care using federal CDC electronic tool called LOCATe. LOCATe is based on Levels of Care guidance created by the American Congress of OB/GYNs and the American Academy of Pediatrics with additional details at CDC LOCATe. Maine has only one hospital, located in southern Maine, that is designated as a Level 4 Maternal and Newborn Care Center. In north central Maine, there is one facility designated as a Level 3 Maternal and Newborn Center. Full details of each birthing facility and their level of maternal and newborn care is found at Maine Maternal and Neonatal Levels of Care Guidance.

Birthing people in the most northern part of the state who have a healthy pregnancy have a one-to-two-hour drive to give birth. If there are pregnancy or newborn complications, they have a two-to-four-hour drive, one way, to access the risk-appropriate care for them and their fetus/infant. Pregnant people who have a pregnancy complication and urgently require a higher level of care than is available in their local hospital often rely on Emergency Medical Services (EMS) for transfer of care. Hospitals report challenges, such as staff time making multiple phone calls needed to find a service available, with delays in accessing an available ambulance provider. There are two dedicated Neonatal Intensive Care Unit Transport services covering the state, with an additional service that offers air transport. Decisions on mode of transport are based on weather, patient status, and distance to a higher level of care.

An additional concern is the recently identified trend in the number of 'field' deliveries that include EMS. In 2018, EMS assisted with 15 births or birth related events out of 12, 001 births occurring in Maine, or 0.12% and in 2022, that number was 79 out of a total of 11, 716 births or 0.67% of all births. While the numbers of these field deliveries are relatively small, ongoing monitoring with additional assessment of details is needed if this trend continues.

The number of planned home births and birth center births have increased in recent years with over 300 births occurring annually in these settings. It is unclear if this trend will continue post-COVID but should be monitored. The ideal candidate for home and birth center birth is a low-risk patient. Referral processes for people who 'risk out' of a planned home or birth center birth needs standardization. Work is underway to consistently apply use of communication tools and patient handoffs during urgent transfers of care.

Telemedicine consult services are available in some, but not all areas of the state. For example, Maternal Fetal Medicine (high risk OB/GYNs) are able to view prenatal ultrasounds and consult with patients and their providers virtually in approximately ten locations in Maine. Work is underway through the Rural Maternal Obstetrics Management Strategies (RMOMS) grant, led by MaineHealth, to expand high risk maternity access by expanding telemedicine consults. Pediatric neurologists are currently offering telemedicine consults to assist teams in assessing newborn neurologic status in approximately 8 locations in Maine. A recently acquired grant will expand that with the goal of all nurseries having access to this service.

Inadequate access to treatment for mental health services has been raised by communities during focus groups and by providers during site visits and surveys done through the RMOMS grant and at transport conferences facilitated by Perinatal Outreach Education and Consultation Services. Obstetric care providers and some pediatric practices are screening pregnant and/or postpartum people for perinatal depression but are faced with limited or no options to refer those who screen positive. A prior grant funded the Maine Association of Psychiatric Physicians to be available to consult by phone with obstetric care providers to advise on pharmacologic and therapeutic management, but this service ended when the grant funding ended.

The pandemic has exacerbated workforce issues for both physicians and nurses and at times these deficits have led to the decision to close maternity services in hospitals. This will be discussed in greater detail in the workforce section.

Core Component: Workforce

This section describes current training for physicians, nurses, and midwives who plan to care for pregnant and postpartum people and their newborns. Nursing and medical leadership has been preparing for impending shortages due to the anticipated retirements of the baby boomer generation. The pandemic exacerbated staffing concerns, as some retired sooner than anticipated, moved, or decided to work as traveling contractors. The first section describes foundational education, and the second section describes ongoing professional education, including professional organizations, for new and experienced licensed providers.

Mary is a 26-year-old woman living in Aroostook County. She worked at a local restaurant and had MaineCare for insurance. Mary was able to access prenatal care with a Certified Nurse Midwife in the first trimester. Mary did describe difficulty getting time off from work to go to her appointments. She shares a car with her husband, and this also meant she missed some prenatal appointments, as she didn't have access to a vehicle. Mary experienced preterm labor at approximately 32 weeks gestation and required emergency ambulance transfer to the nearest tertiary care center, approximately three hours from her home. At the tertiary care center, she was admitted for two days and when she had stopped contracting and was determined not to be in labor, she was discharged home. Within 3 hours of arriving home, her contractions began, and she presented to her local community hospital. Her provider arranged for transfer, however there was not an ambulance available to take her to the higher level of care. After approximately 4 hours, an ambulance became available, and Mary headed back to the tertiary care center. Unfortunately, her labor progressed rapidly, and the ambulance proceeded to the nearest hospital, a non-birthing hospital an hour north of the tertiary care center. Mary delivered her baby in the emergency department and the NICU (Newborn Intensive Care Unit) transport team arrived by helicopter shortly after to take her baby to tertiary care. Mary then had to wait several hours for a different ambulance to take her to tertiary care, as the original ambulance returned to the originating community hospital.

Physicians (see table below)

Maine has one OB/GYN residency program in Portland. Over the course of the past 5 years, 40% of these physicians have stayed in Maine. Currently, the residents are not required to complete a rural rotation due to existing requirements for inpatient, outpatient, and surgical rotations, and limited numbers of residents. At the national level, there are models such as a rural track model piloted by the University of Wisconsin and there is interest in replicating this model in Maine. From a national perspective, HRSA (Health Resource Services Administration) requires 50-75% of trainee time to be in a rural location which is not feasible currently. If this percentage were reduced to 25% of time, Maine could have a highly successful rural track and meet ACGME (Accreditation Council for Graduate Medical Education) OB/GYN volume requirements. Engaging residents in the rural rotations provides the opportunity to gain knowledge, experience, and comfort with rural hospitals and lower volume maternity services, compared to urban based, high-volume, high-risk centers.

Pediatric residents train at the Level 4 facility in Maine. This training includes standardized programs from the American Academy of Pediatrics (AAP) such as Neonatal Resuscitation Program (NRP) and Pediatric Advanced Life Support (PALS). Approximately 40% of the residents stay in Maine when they complete their residency. Some pediatric residents continue their education to specialize further and must leave Maine to do that work. Examples of additional specialty training for pediatricians includes child abuse and critical care.

From the family medicine perspective, Maine has four Family Medicine residency programs that also provide obstetrics training, including the Advanced Life Support in Obstetrics (ALSO) course offered by the American Academy of Family Physicians (AAFP). Two facilities responded to our query. To be in compliance with ACGME, family medicine residents must do a minimum of 20 vaginal deliveries in the three years. For residents who state a plan to offer obstetric services upon graduation, the goal is increased to 100 vaginal deliveries in the three-year time period. At one facility, the family medicine residents train and participate as surgical first assistants at C-sections. They are not the primary provider performing C-sections though there is interest in creating a program to facilitate this training. Family residents at the other facility do not receive any specific C-section or first assist surgical training. OB fellowships for family medicine physicians include C-section training and the closest one is in Massachusetts. Medical malpractice insurers typically align with ACGME requirements regarding numbers of deliveries during residency.

With respect to newborn/infant care, family medicine resident experiences vary. At each of the two responding facilities, family medicine residents care for mother/baby dyads. At one facility, when on newborn nursery rotation, residents cover the majority of newborns in the nursery, attend C-sections and deliveries for resuscitation, float to the NICU for time to develop resuscitation and stabilization skills as well as basic procedural skills such as intubation, umbilical lines, decompression of a pneumothorax, etc. On average 60-80% of family medicine graduates each year care for newborns/infants.

Comparison of Maine-based Physician Training Programs (note: only two FM programs responded)

Current Status	OB/GYN	Pediatrics	Family Med #1	Family Med #2
# residents/year	4	8	10	7
# years to complete	4	3	3	3
Rural rotations	none	one	none	none
OB rotation	yes	none	16 weeks	16 weeks
C-section training	yes	none	First Assist	No
Newborn/NICU rotation	no	1 newborn/2 NICU	10 weeks	3 months pediatrics

Midwifery

In 2023, there were approximately 100 Certified Nurse Midwives (CNM) providing care throughout the state. CNMs attend 18% of all births in Maine and 25% of all vaginal births that occur primarily in hospitals (www.mainemidwives.org). CNMs graduate from an accredited master's degree program and pass a national certification exam prior to practicing. CNMs are licensed as both Registered Nurses (RNs) and Advanced Practice Registered Nurses (APRNs). Although there is no CNM program in Maine, the Maine Association of American College of Nurse Midwives (ACNM) has set this is a goal for the future.

In January 2020, Maine Board of Complementary Medicine began licensing Certified Professional Midwives (CPMs): https://www.mainelegislature.org/legis/statutes/32/title32ch113-B.pdf). Currently, there are 25-30 licensed CPMs in Maine providing services in homes and at freestanding birthing centers. There are four freestanding birth centers located in Bangor, Bath, Bridgton, and Topsham. Existing surveys of the freestanding birth centers are completed by the state and the state Fire Marshall's Office, as Maine does not currently require certification through the American Association of Birth Centers (AABC). Cost of certification is the primary barrier to attaining certification from AABC.

Maine previously had a U.S. Department of Education-certified CPM program, but it closed in 2022. Maine continues to act as a clinical CPM residency site per the nationally accredited guidelines of the Midwifery Education Accreditation Council and the North American Registry of Midwives. CPM students complete didactic work elsewhere and have clinical placements in Maine with licensed CPMs.

Approximately 3% of births in Maine are out of hospital births. Approximately 25% of those births occur without a CPM or licensed attendant as Maine's CPM licensing law does have a religious exemption for religious communities with a long-standing history of providing home births to their members. CPMs in Maine meet national and state requirements related to number of births, number of continuing education credits, and regular peer review of cases. CPMs in Maine practice under international standards defined by the International Confederacy of Midwives. A challenge to collaboration and transfers of care to OB/GYN is malpractice insurers concerns of liability when care begins with a CPM.

Nursing

Nursing workforce shortage has been a concern for many years and in 2003, as part of a statewide initiative Maine began a minimum data set on faculty and students. In Maine there are a total of fifteen nursing programs as follows: 5 private, 4 public, and 6 community college based. Available programs are as follows: there are two Licensed Practical Nurse (LPN) programs; nine RN Associate Degree programs; and seven RN Bachelor's Degree programs The number of nurses graduating from an accredited program increased from 2013 when there were 920 graduates to 2020 when there were 1,487 graduates. Both associates and bachelor's graduates increased during that time, while Registered Nurse (RN) to bachelor's and master's degree graduates decreased. Currently five schools, located geographically from Fort Kent to Portland and in between, are approved for master's degrees.

With respect to clinical experiences for nursing students there have been two recent changes. One was to establish a pool of full-time educators who would go to institutions to support nursing schools. One unintended consequence of this is that it pulled faculty from teaching institutions into this pool. Another change was to establish a system of electronic placement for nursing students in clinical settings. There are anecdotal reports of increased number of requests for Advanced Practice Registered Nurses (APRN) placements/student experiences. Teaching institutions can increase enrollments but lack of required clinical experience opportunities is a major challenge.

From the licensure perspective, Maine nurses are licensed and renew their license every two years before their birthday. Starting in 2015, the Center for Health Affairs, Northeast Ohio Nursing Initiative (NEONI) as part of the Maine Nurse Forecaster began work in Maine to assess existing nursing workforce, demand for nurses, and regional variation in supply and demand. The goals of the work included usage by policy makers to help ensure sufficient work force for the state, assist educators in anticipating the size of the workforce needed as well as curricula on types of nurses needed for various settings, and for employers to shape their policies to ensure a steady flow of prepared nurses. The most recent report encompasses data from 2015 to 2021 and is published on the Maine Hospital Association website found here: http://themha.org/policy-advocacy/Issues/Workforce/2022Nurse-Forecast-Report.aspx The report does include RN specialization by region. Relevant specialties include Maternal Child Health, Pediatrics/Neonatal, and Women's Health. In this time frame, the supply of RNs has increased by 4% and the supply of RNs in these specialty areas has been steady.

Also on the national front, Health Resources and Services Administration (HRSA) has added maternity care to the list of specialties qualifying for a loan reimbursement program. HRSA's plan is to use their new designation of Maternity Care Target Areas 1, located within primary care Health Professional Shortage Areas[9] to distribute maternity care health professionals. Maternity care health professionals are obstetricians/gynecologists, family medicine physicians who practice obstetrics on a regular basis, as well as CNMs. Maternity care health professionals will be placed using either the primary care Heath Professional Shortage Area score or the

[9] https://data.hrsa.gov/tools/shortage-area/hpsa-find

Maternity Care Target Areas, whichever is higher. Maternity care providers participating agree to a 2 or 3-year service commitment.

Professional Education/Professional Organizations in Maine

Each hospital is responsible for orientation of new employees. While physicians receive education and experience in perinatal and neonatal care during residency, new graduate nurses have no specialty experience. It is a common challenge that these new nurses do not have enough opportunity for clinical experiences at low volume hospitals. Hospitals have worked with their tertiary care centers to send nurses to obtain experience in higher volume facilities, but this has been challenged by the pandemic, liability concerns leading to observation only as opposed to hands on clinical experiences while in the tertiary care setting, and the need for nursing student clinical experience. For pediatricians practicing in rural settings, the need to fully resuscitate a newborn is an uncommon situation and both family medicine physicians and pediatricians have reached out to NICUs for additional delivery room and NICU experiences. This section will describe existing educational support for nurses, midwives, and physicians.

Perinatal Outreach Education and Consultation Services (POEC) was established in the 1970's and is funded by the Maine CDC Maternal and Child Health Block Grant. The current contract funds one full-time person to coordinate education and consultation services statewide. As of July 1, 2023, this changed so that one full-time coordinator covers the northern and eastern region of the state, and another full-time coordinator covers the southern and western region of the state. Education and consultation services are intended for health care providers and include maternal and newborn care classes, case reviews, transport conferences, and obstetric and newborn emergencies simulation facilitation, as well as Neonatal Resuscitation Program (NRP).

One tertiary care hospital has piloted virtual newborn resuscitation simulations in their referring facilities and has added a goal of telemedicine consults during actual newborn resuscitations in those facilities. The Perinatal Leadership Coalition of Maine (PLCM) is a volunteer collaborative facilitated by the POEC coordinators and members consist of nurse managers, nurse educators, and midwifery leaders. PLCM meets virtually approximately monthly, and the goals include promote improved perinatal care and outcomes through networking and collaboration. Details of this program including guidelines, course registration, etc. can be found at https://www.mainehealth.org/Barbara-Bush-Childrens-Hospital/Services/Perinatal-Outreach and Perinatal Education - Northern Light Health.

Maine has an active section of American College of Obstetricians and Gynecologists (ACOG). Last year they successfully advocated for Medicaid expansion of postpartum coverage up to one year post pregnancy and a future goal is to advocate for private insurance expansion of postpartum coverage. ACOG ME is planning a meeting to discuss a statewide conference or similar option in the near future. Areas of concern identified by the ACOG ME leadership team include caring for patients with Body Mass Index (BMI) greater than 50, hospitals not offering

Vaginal Birth After Cesarean (VBAC) services, and the decreasing numbers of hospitals and providers offering maternity care services.

American Academy of Pediatrics has an active chapter with an Executive Director and two multi-day conferences per year held in different regions of the state. They also host multiple shorter education opportunities throughout the year both in person and virtually. More information is available on their website, https://www.maineaap.org/.

American College of Certified Nurse Midwives (ACNM) has an active chapter in Maine and their goals include creating a scholarship for a minority student midwife in Maine, exploring models for providing maternity care in rural areas without an OB/GYN, and promote the profession by raising public awareness of midwifery as a safe, available option in health care for people. Maine ACNM periodically hosts a conference for its members. They also participate in regional New England educational opportunities.

The Association of Women's Health, Obstetric, and Neonatal Nurses Maine Section (AWHONN ME) is the professional organization for nurses working with pregnant people, newborns, and women. This is a national organization with a state section that has been inactive for a few years due to leadership turnover and the pandemic. Participation at in person meetings and virtual meetings have been limited. The section chair is working to host virtual monthly meetings to plan a spring conference in 2024. Approximately 150 Maine nurses are members of AWHONN.

The Maine Association of Certified Professional Midwives (MACPM) is the professional organization in Maine for CPMs providing care for planned home or birth center births. MACPM is a state chapter of the National Association of Certified Professional Midwives and hosted Maine's first CPM conference on May 19th, 2023, in Bath. MACPM has been an integral member of the Perinatal Transitions Collaborative, a quality improvement initiative based on national, and Maine created materials to facilitate communication between planned home birth and birth center birth providers and hospitals when patient transfers are needed. Perinatal Transitions has completed their first phase of the program by implementing communication platforms to all hospital facilities and CPMs in Maine. The second phase of formalizing Perinatal Transitions Committees for each facility site is ongoing.

St. Mary's Regional Medical Center, affiliated with Covenant Health System, provided maternity and newborn care services for approximately 500 births per year. The number of births over the past twenty years had been steady. Workforce-related challenges at this facility included nursing, medical leadership, staff turnover, retirement of one OB/GYN and two CNMs, and loss of pediatricians to cover newborn emergencies. Attempts to recruit OB/GYNs, CNMs, and pediatricians were unsuccessful. Due to costs associated with leadership turnover, high nursing staff turnover, the inability to hire obstetric and newborn care providers, the hospital ceased maternity services in 2022. The population served is a community of approximately 61,000 people. While there is another hospital 5 minutes away, not all patients will decide to seek care at the other facility, for a variety of reasons. Beyond the other nearby hospital, the next closest maternity services are a Level 1 facility 40 minutes away, a Level 2 facility 40 minutes away, and a Level 3/4 facility 45 minutes away. There is no public transportation option between these cities and towns, so people must rely on private vehicles to attend appointments. In the event of an emergency, EMS is activated and will transport them to the closest facility, based on EMS protocols and patient stability, which may not be the facility of their choice or needs.

Core Component: Data, Surveillance and Evaluation

Relevant, actionable data is essential to inform every core and cross -cutting component of the Perinatal System of Care – from planning to implementation and evaluation. Unilaterally, interviewees for this

report spoke about many challenges with data. These include lack of timeliness, limited or nonexistent detail (for example, regarding race, ethnicity, rurality, language, insurance status, and other factors that impact processes and outcomes), siloed databases (even those internal to state government), difficulties finding and accessing websites, and the lack of coordinated, cross agency/sector analyses. Users want reports that are easy to access and understand that provide data on the status of leading indicators, trends over time, and comparisons to national benchmarks.

The Data, Surveillance and Evaluation issues and recommendations highlighted in the 2020 report on Understanding and Addressing the Drivers of Infant Mortality in Maine are still relevant today. For example, although preliminary work has been done to create a dashboard of relevant data on maternal and infant outcomes, consensus has not been reached on the indicators to be included, frequency of updates, and how access will be provided and promoted. Progress is being made on several fronts. For example, MCDC MCH epidemiologists are leading efforts to analyze and post data from state and federal sources on the MCDC website, PQ4ME has created a comprehensive spreadsheet of all measures being collected and monitored by newly funded perinatal projects, and the recently launched Perinatal Disparities Needs Assessment is in process of developing a dashboard as part of project deliverables.
The ECCS SAGA report provided a comprehensive listing of early childhood data sources and challenges related to data integration and data sharing. Awareness of perinatal data sources and how to access them is a third challenge. Funding to build and implement a comprehensive Early Childhood Integrated Data System was included in the five-year Preschool Development Grant; perinatal system of care data components (fetal, infant, maternal, etc.) are yet to be determined, along with data integration, analysis and reporting plans and strategies. An important new perinatal data project, the Perinatal Disparities Needs Assessment, recently launched and will be completed in early 2024 (also mentioned in the Diversity, Equity, Inclusion and Belonging section of this report).

Maine has had statutory authority to review Maternal, Fetal, and Infant deaths for over ten years. Currently the coordinator is a half time position (0.5 Full time equivalent (FTE)) with additional funding for two years from the Maternal Mortality Review Committee grant that provides another half time position (0.5 FTE) who is focusing on reviews of maternal deaths. Each year, approximately 50-70 babies are born 'still' having passed away in utero prior to delivery. Another 60-80 infants die each year prior to their first birthday. Chart abstraction, part of the process of reviewing deaths, is time consuming and limited due to staffing. Once abstracted and deidentified, the stories are presented to a panel of expert clinicians, government agency leaders, and community partners to discuss causes and potential prevention efforts including quality improvement initiatives. By statute, MFIMR must review all maternal deaths and the majority of fetal and infant deaths. With current staffing augmented with MMRC funds, all maternal deaths (approximately eight to ten each year) are fully reviewed. Currently there is a superficial review of fetal and infant gestational ages and causes of death and less than ten percent have a full review by the panel. In addition to the case reviews, the panel coordinator facilitated a bereavement training conference ten years ago (approximately 2010) for home visitors and hospital-based clinicians and drafted a list of perinatal bereavement support groups. Workforce turnover and system changes require ongoing education efforts and monitoring of the support groups. The panel coordinator is required to file an annual report to the Maine CDC and the legislature's Health and Human Services Committee. [12]

The Children's Cabinet Plan for Young Children, which was updated in 2022 [10], contains a recommendation to support the participation of Maine's 24 (now 22) birthing hospitals in

[10] https://www.maine.gov/future/sites/maine.gov.future/files/inline-files/CC_Report_2022_1.pdf

implementing the Alliance for Innovation on Maternal Health (AIM) Safety Bundles that are designed to address high risk issues among pregnant patients and provide evidence-based standardized approaches to improve outcomes.

Other information that is critical to planning and implementing programs, services and resources includes data on individual health risks such as tobacco use, obesity, substance use, domestic violence, and environmental and social issues such as housing, food insecurity, poverty, and transportation. Sources of this data include the Pregnancy Risk Assessment Monitoring System (PRAMS), the Behavioral Risk Factor Surveillance System (BRFSS), the Maine Shared Community Health Needs Assessment (MSCHNA), Maine Kids Count and periodic reports from community based and policy organizations. Given the growing diversity of Maine's population, there is a need to report data included in these reports by race, ethnicity, language, income, geography, insurance status and other key differentiating factors.

Much of the surveillance and population-level maternal and child health data is routinely collected and reported by the following sources (all to be linked in the website version of the report).

Maine CDC Vital Records:

- Birth certificates
- Death certificates
- Fetal death certificates (currently not electronic but there is a plan to transition to electronic records as part of the Maternal Health Innovations grant)
- Linked birth-infant death file
- Pregnancy Risk Assessment Monitoring System (PRAMS)
- Behavioral Risk Factor Surveillance System (BRFSS)

Other Maine CDC Sources:

- Maine Integrated Youth Health Survey (MIYHS)
- Maine Families Electronic Records Information System (ERIN)
- Syndromic surveillance
- Women, Infants and Children (WIC)
- Public Health Nursing (PHN)
- CradleME
- Maine Immunization Program
- Newborn Bloodspot Screening (previously known as the PKU test)
- Newborn Hearing Program
- Maine Birth Defects Program
- MMRC/MFIMR 2022 Annual Report
-

Other State Data Systems:

Office of Child and Family Services:
- Child Death and Serious Injury Review Panel
- Plan of Safe Care
- Child Welfare (KATAHDIN)

Office of the State Medical Examiner
Maine Violent Death Reporting System
Office of MaineCare Services:
- MaineCare Claims Data
- MaineMOM

Maine Shared Community Health Needs Assessment (MSCHNA)

Department of Public Safety:
- Maine State Police (rape, homicide, assault data)
- Maine State EMS (EMS response data)

Maine Health Data Organization (an independent state agency):
- Hospital discharge data
- Emergency department data
- All-payer claims database (public and private insurance)

Hospitals:
- Electronic Health Record (EHR) data
- Joint Commission on the Accreditation of Healthcare Organizations (JCAHO)
- Leapfrog

NNEPQIN:
- RedCap QI data

National Data Sources:
- National Survey of Child Health (NSCH)
- National Immunization Survey (includes breastfeeding)
- American Community Survey
- US Census Population Estimates
- mPINC (Maternity Practices in Infant Nutrition and Care)

A team of epidemiologists in the Maine Center for Disease Control and Prevention (MCDC) is dedicated to working on projects using maternal and child health data, related to the Maine Fetal, Infant, and Maternal Mortality and Maternal Mortality Review panels, Alliance for Innovation on maternal Health (AIM) Bundle project, State Maternal Health Innovation project, the ECCS project, Maternal Infant Early Childhood Home Visiting program, the Maternal and Child Health (MCH) Block Grant and other ongoing and special analyses. The development of a Perinatal Data Dashboard is currently under discussion among leaders of several projects. Such a

dashboard would raise awareness about key indicators of perinatal health and trends over time and inform statewide quality improvement priorities, resource allocation and supportive policies.

Core Component: Quality Improvement

Continuous quality improvement is a cornerstone of safe, effective, accessible, and affordable care provided in settings across the health care system. These include primary and specialty care, hospitals of all sizes (including birthing and non-birthing hospitals, birthing centers, community health centers, behavioral health, and substance abuse treatment facilities). These activities may be the result of licensing and certification requirements, driven by payers who want to incentivize certain outcomes, or by external rankings done by national organizations such as JCAHO or Leapfrog. Public health and community-based organizations also implement QI initiatives to improve individual patient, client, community, and system outcomes. When multiple sectors (clinical, public health and community) collaborate and coordinate QI efforts, like the Safe Sleep project, outcomes and impact can be multiplied.

Four key aims drive Quality Improvement in health care:

1) improving the health of a population;

2) enhancing patient experience and outcomes;

3) reducing per capita costs; and

4) improving provider experience (AHRQ, 2022).

Quality Improvement (QI) initiatives to improve perinatal outcomes are implemented in clinical settings (health systems, hospitals, community and tribal health centers, and birthing centers), in public health settings, like public health nursing or home visiting programs, and in community-based organizations such as social service, mental health, or domestic violence agencies. All have ongoing activities, such as data analyses and reporting done under the Title V Block Grant and newly-funded projects, such as the Maternal Mortality Review Committee (MMRC) that expanded the existing Maternal, Fetal and Infant Mortality Review Panel. These projects provide potential priorities for QI. Other initiatives that are sources of quality improvement priorities and projects include the State Maternal Innovation grant, the Perinatal Needs Assessment, the Rural Maternal Obstetrics Management Strategies initiative, Maine MOMS, as well as internal QI initiatives that are identified by birthing hospitals. See Appendix I for descriptions of current statewide Perinatal System of Care projects.

One of the most effective perinatal QI initiatives in recent history is the Safe Sleep project, developed through a multidisciplinary partnership among the Department of Health and Human Services, Maine CDC, Maine birthing hospitals, MMA-QCI, and many others. Activities included development and statewide dissemination of a screening and assessment tool, a social marketing campaign, educational and promotional products, Cribs for Kids (C4K) certification for hospitals, a reimbursement program for safe sleep kits and hospital-based QI. This work was identified as a contributor to the reduction in Sudden Infant Death Syndrome (SIDS) and Sudden Unexpected Infant Death (SUID) between 2018 and 2020.

PQC4ME Early History

The Maine CDC was part of the National Infant Mortality Collaboration Improvement and Innovation Networks (CoIIN) to reduce infant mortality and led meetings on safe sleep and reducing maternal smoking between 2014 and 2017. After the CoIIN was complete, the Perinatal Quality Collaborative for Maine (PQC4ME), Maine's statewide quality improvement collaborative, was developed by several leaders and located within Maine Quality Counts, which became Qualidigm in 2018 (and subsequently became the MMA Center for Quality Improvement). PQC4ME developed a state membership and encouraged birth hospitals to join the Northern New England Perinatal Quality Improvement Network (NNEPQIN) which is located at Dartmouth. The first project for the PQC4ME was training all the birth hospitals on improving care for substance-exposed infants through the Eat, Sleep, Console project.

A formal kick-off of the PQC4ME was held in October 2019 with work on a Safe Sleep QI project which aligned with the DHHS focus on safe sleep. By August 2020, 15 of 26 birth hospitals become part of NNEPQIN; 5 of the 11 remaining sites were working towards joining. Since then, the growth of Maine's in-state quality collaborative, PQC4ME, the cost of joining NNEPQIN, the closure of OB services, and pandemic-related workforce issues have limited Maine birthing hospitals' involvement with NNEPQIN, although Maine is well-represented on its Steering Committee. Qualidigm led an Infant Mortality (IM) needs assessment funded by five Maine foundations in 2019-2020 to study the rise in IM rate in the state between 2013 and 2015. The cause of the higher infant mortality rate was found to be multifactorial, and one result of the project was to create a visual framework of an ideal Perinatal System of Care (see Appendix III).

The Perinatal Quality Collaborative for Maine (PQC4ME) was recently awarded a five-year grant from the U.S. CDC to build strong relationships with birthing hospitals, clinical, community organizations, State of Maine programs and a diverse and committed network of partners. With these new resources and a multi-year timeframe, PQC4ME has the potential to substantially increase engagement in perinatal QI, drive statewide improvements in outcomes, and build sustainable, long-term infrastructure.

PQC4ME is currently housed at Maine Medical Association's Center for Quality Improvement (MMA-CQI) in Manchester. The Collaborative's mission is to optimize perinatal health outcomes and experiences for all Maine families through collaboration, education, and continuous quality improvement. Its vision is that all babies, birthing people, and families will have safe, high-quality, equitable and respectful care in their chosen setting. PQC4ME works closely with the Maine CDC, Maine's birthing hospitals, primary care, community-based organizations, advocates, researchers, and others. Communications are through email, website, and quarterly meetings.

PQC4ME's experience over the past year with the AIM Severe Maternal Hypertension Bundle has revealed the need to develop core quality improvement methods and skills among birthing

hospital teams, support for internal data collection and analysis (including use of electronic health records to generate reports) and using feedback to improve processes and outcomes of care. Staff turnover and the lingering impact of COVID-related burnout and vacancies has impacted clinician time and energy to participate in QI-related activities. This situation should improve over time as PQC4ME builds capacity and its reputation as a supportive statewide perinatal QI hub.

Dissemination of QI findings and projects occurs in a variety of ways and the following is one example. In 2022, PQC4ME asked hospitals to volunteer to pilot a Preterm Labor (PTL) algorithm, designed to standardized assessment and care of people presenting with possible preterm labor. A consultant for PQC4ME presented to the PLCM group and several hospitals volunteered to be part of the pilot. At the conclusion of the pilot, the PQC4ME consultant presented data and findings to the original workgroup who created the algorithm, to the PLCM as well as to the Perinatal Systems of Care workgroup. The PQC4ME consultant and project manager gathered feedback and edits which were made. The final PTL algorithm was presented to a statewide group of physicians, nurses, midwives, and public health professionals. The algorithm was added to the existing Maternal Fetal Medicine Preterm Labor Guidelines and posted on their website. POEC will discuss during transport case reviews, lectures, and other relevant activities.

A more formal system to facilitate dissemination and adoption of effective QI strategies and programs is needed, to assure that these initiatives are consistently maintained, outcomes are continuously monitored, needed resources are secured, or if warranted, discontinued if outcome goals have been achieved and sustained.

Cross-Cutting Components of the Perinatal System of Care

C*ross-cutting Components* highlighted in this section have a dynamic, synergistic, and continuous impact on all other components of the Perinatal System of Care and are essential to building and sustaining a complex ecosystem that is dynamic, person and family-oriented and is designed to advance health equity and improve outcomes for all involved.

- **Patient and Family Engagement**
- **Diversity, Equity, Inclusion and Belonging**
- **Communication, Coordination, and Infrastructure**
- **Policy and Environment**

Cross-cutting Component: Parent and Family Engagement

Engaging and involving parents and family members is critical at all points along the continuum of infant and child growth and development. Building trust, listening, demonstrating cultural sensitivity, and building shared decision making into all aspects of the continuum of care are essential for authentic parent and family engagement.

Both the Maine Children's Cabinet Plan for Young Children and the ECCS Asset and Gap Analysis and Strategic Plan emphasize the importance of assuring meaningful involvement of parents and family members in the development of policies, programs, resources, and providing needed supports, such as training, financial and other incentives, which include transportation and child care. Innovative strategies to raise awareness, recruit and engage parents and families are being implemented in a coordinated fashion by three project partners: the Maternal Health Innovation, Maternal Mortality Review Committee and PQC4ME. PQC4ME is committed to including patients and families in quality improvement work.

Recruitment efforts are underway to recruit for PQC4ME, Maternal Health Task Force, and Maine Maternal, Fetal, and Infant Mortality Review Panel (MFIMR). As of April 2023, PQC4ME, with support from Maine CDC, has been encouraging participation by individuals from groups such as religious groups and child care providers, previously missing from conversations about perinatal quality improvement. Outreach has been done via email, presentations at meetings, and social media. Recruitment is ongoing using multiple outreach methods.

ECCS' Collaborating Partners Advisory Group (CPAG) emphasizes and encourages the inclusion of parents and family member voices to promote equity in all aspects of their work. The Parent Ambassador program, led by Kennebec Valley Community Action Program, is a statewide, year-long Parent Ambassador program that includes four two-day workshops designed to support and sustain parent involvement. The program has been so successful it has spun off an alumni group to provide ongoing support and mentoring. The Maine Parent Federation is a statewide organization dedicated to "providing knowledge and voice to families of children and dependents with special needs" and engages in education, mentoring and advocacy.

Efforts by the health care system to engage parents and family members, either formally or informally, were significantly challenged by COVID-19. One tertiary care center had both a pediatric and NICU parent advisory board prior to the pandemic. These were discontinued at the start of the pandemic, and it is unknown if they have resumed as of the writing of this report. The other tertiary care center established a Patient Family Advisory Committee that is coordinated through their Department of Pediatrics. The group meets regularly and has provided recommendations about the hospital's social media posts, hospital policies and issues related to safety and quality. This same tertiary care center also has a NICU Family Support Specialist who is a March of Dimes employee and embedded in their NICU. Her responsibilities include peer support for families with a baby or babies in the NICU. This support takes a variety of forms including participating in development of family education materials and bringing families together for meals and/or craft projects.

Cross-cutting Component: Diversity, Equity, Inclusion and Belonging

Health equity is the state in which everyone has a fair and just opportunity to attain their highest level of health. Achieving this requires focused and ongoing societal efforts to address historical and contemporary injustices; overcome economic, social, and other obstacles to health and healthcare; and eliminate preventable health disparities (US CDC). Advancing health equity is a stated goal of several Perinatal System of Care initiatives, from PQC4ME to Maternal Health Innovation, Maine MOM, and others. What is less clear, however, are the strategies and activities that could/will be implemented to promote and advance health equity, measures that will be used to assess progress, and how impact will be assessed on people, communities, programs, services, and policies.

As stated in the previous sections of this report, data is an essential element of this process, from analyses of birth and death certificates, hospital discharges, claims data (MaineCare, commercially insured and uninsured), and qualitative data from focus groups, interviews, and individual stories. Partnerships with organizations that serve and are led by communities of color, Maine's Indigenous tribes, and other historically disadvantaged communities and/or have familiarity with mental health, substance use, family violence, food insecurity, homelessness and other issues are essential. These partnerships must be based on mutual respect for power, decision making and resource sharing – qualities that have not always been present in projects and initiatives among health care, social service, and community-based organizations.

A 2022 report on LD 1113: Racial Disparities in Prenatal Access in Maine submitted to the Maine Legislature from the Permanent Commission on Racial, Indigenous and Maine Tribal Population, done in collaboration with the Cutler Institute at the University of Southern Maine and the Maine Women's Lobby, contained several recommendations to enhance the collection of culturally sensitive data.[11]

Maine DHHS has made strides in recent years to prioritize diversity, equity, inclusion, and justice. It has a stated goal to address systemic challenges to health equity by working internally to establish a director of Diversity, Equity and Inclusion who reports to the Commissioner, conduct training programs for DHHS staff, and establish an Office of Population Health Equity within the Maine CDC, with its own Advisory Committee. Several PSC projects are directly addressing

The DEIB Workgroup's Strategic Workplan for 2022 – 2026 contains six strategies:

- **Increase diversity on the PQC4ME Executive and Membership Committees** and quality improvement initiatives.
- **Continue/expand the DEIB Workgroup** to assure goals and activities are met and resources are secured.
- **Create and use a DEIB Toolkit** for PQC4ME and QI projects.
- **Raise awareness within the state of Maine's inequities** among birthing parents, infants, caregivers, and others in historically disadvantaged, oppressed or othered communities.
- **Lead and participate in QI projects that increase knowledge, attitudes, and practices** to improve outcomes and experiences for birthing parents, infants, caregivers, and others in historically disadvantaged, oppressed or othered communities.
- **Support policies that advance health equity** for birthing parents, infants, caregivers, and others in historically disadvantaged, oppressed or othered communities.

Proposed activities, timelines and responsible parties for each strategy are included in the Plan. The DEIB Workgroup, and PQC4ME's Executive and Membership are charged with monitoring and evaluating implementation and impact.

[11] https://legislature.maine.gov/doc/7888

Diversity, Equity, Inclusion and Belonging in their strategies and workplans. For example, the ECCS initiative has established a Community Partners Advisory Group that emphasizes the inclusion of parents, family members and others with lived experience.

To begin the process of advancing health equity within the Perinatal System of Care, PQC4ME convened a Diversity, Equity, Inclusion, and Belonging Workgroup in 2021. Initially, the Workgroup crafted a vision, mission, definition, and a set of principles to guide PQC4ME's work on statewide QI initiatives as well as those that are implemented by partners and collaborators. Involvement in the Workgroup is open and has grown from seven to 15 individuals who represent hospitals, advocacy and community-based organizations, and state government as well as a broad range of lived experience. The audience for this work includes PQC4ME leaders and participants: birthing people, families, and others with lived experience, in communities, hospitals, health systems, rural health centers, birthing centers, home settings, community-based organizations, state and local government, advocates, funders and others who may be involved in PQC4ME's initiatives. DHHS/MCDC is also working with consultants on a Perinatal Needs Assessment that involves a qualitative assessment of maternal access to care, including interviews with women and families in diverse and rural communities.

Cross-cutting Component: Communication, Coordination, and Infrastructure

Communication

Communication is another essential cross-cutting component of the Perinatal System of Care. The explosion of communication tools (podcasts, webinars, e-newsletters, social media, and others) has led to an overwhelming amount information aimed at patients, families, providers, and the general public. Keeping abreast of science, research, policy, and community-specific information is challenging and has led to the expansion of statewide resources such as 211. Communication has improved in recent years with the creation of perinatal-related workgroups, websites, educational webinars, and professional relationship building across sectors. Expanded access to the internet and easy to use videoconference platforms facilitated communication by reducing the need to travel - a longstanding problem, given Maine's size, geography, and weather.

Individuals interviewed for this report commented on the lack of knowledge about programs and services and how best to communicate and collaborate with them. Workforce turnover due to job changes and retirements, families without prior birthing experiences, and new families moving to Maine challenge us to develop systems that build communication and collaboration into the fiber of our state. As noted in the Permanent Commission report on Racial Disparities in Prenatal Access in Maine, one focus group participant stated "If you don't know it's available, it's not available."

Many of the groups previously mentioned in this report schedule open, regular meetings that are opportunities for communication on shared work. The PQC4ME Membership is open to anyone who is interested and meets quarterly. PLCM meets monthly. The Perinatal System of Care Working Partners Group meets quarterly. In total, more than 250 people across the state regularly participate in these meetings and that number is increasing.

Coordination

State government, professional, private, and community organizations are all invested in perinatal care and services and have initiatives intended for health care providers, teams, and families. The need for more and better coordination among organizations that are involved in some aspect of the Perinatal System of Care is growing. The Perinatal Systems of Care Working Partners Group, the Community Partners Advisory Group, the PQC4ME Membership, the Statewide Perinatal Grants Coordination Group, the Ethnic Community-Based Organizations group, and the Children's Council are examples of cross-sector groups addressing common goals.

The following section describes some of the organizations that are involved in building Maine's Perinatal System of Care.

In the workforce section of this report, professional organizations (ACOG, AAFP, ACNM, AWHONN, PLCM, MAAP, and MACPM) and their education and advocacy activities were described.

Maine Children's Alliance, Maine Primary Care Association, Maine Medical Association, Maine Parents Federation, the Maine Hospital Association, the March of Dimes, and many other groups serve as advocacy organizations for children, primary care providers, physicians and hospitals, and families. Maine is home to hundreds of active community-based organizations that provide services, programs, and resources, including regional Community Action Programs, Maine Families, regional United Ways, Birthroots, and others that serve specific communities of immigrants such as In Her Presence and Presente, individuals seeking mental health and substance use services such as Spurwink, Sweetser, and Maine Behavioral Health or domestic violence, such as the Maine Coalition to End Domestic Violence.

In 2008, providers identified an increase in the number of Abusive Head Trauma cases (also known as Shaken Baby Syndrome). The Maine Children's Alliance convened a group of interested parties from around the state including the Maine Children's Trust, Maine CDC pediatrician, Title V Director, Maine CDC Injury Prevention manager, a child abuse pediatrician, pediatricians and pediatric residents, social workers, nurses, the Perinatal Outreach Education Nurse Coordinator, and an affected family member whose child was shaken and killed by a day care provider.

The group selected the Period of PURPLE Crying as the program that was most parent-friendly and had a broader public health message on the normalcy of infant crying and strategies for coping if the baby's crying made the parent/care provider angry or distressed. In 2009/2010, the Perinatal Outreach Nurse Coordinator traveled statewide with the child abuse pediatrician, a public health nurse, and the previously mentioned affected family member to provide interprofessional education. Regional sessions were held starting in Aroostook County and a variety of health care providers including physicians, nurses, public health nurses, Maine Families Home Visitors and others attended the education sessions.

Hospital implementation began with nurses introducing the program's video in the hospital and encouraging families to watch it. Reinforcement of the information occurred with Public Health Nurses and home visitors in the home setting and a general public education campaign. By the end of 2010, each birthing facility had a supply of DVDs and had trained nurses to deliver materials. Some facilities had materials available in multiple languages and one group funded the translation of materials into Somali. Since 2010, updates to the Period of PURPLE Crying materials have been disseminated through newsletters from the National Center on Shaken Baby to hospital leaders and in person and virtual presentations to the Perinatal Leadership Coalition of Maine, a voluntary collaborative of nurse leaders and midwives in Maine. Statewide collaboration and coordination were key to the success of the program.

Infrastructure

Infrastructure includes formal and informal structures in the public and private sectors that support strategic planning, management and administration, governance and decision making and securing and allocating resources for the Perinatal System of Care. This section of the report describes agencies and organizations that provide some aspect of infrastructure.

Maine Department of Health and Human Services

Maine DHHS has several offices that work in the perinatal space, including the Office of Child and Family Services, Office of MaineCare Services, Office for Family Independence, the Maine Centers for Disease Control and Prevention and the Department of Licensing and Certification (see Appendix IV). The Department also works closely with the Maine Department of Education and the Children's Cabinet in the Governor's Office of Policy, Innovation, and the Future. Within the Maine DHHS Commissioner's Office is a Chief Child Health Officer (CCHO), who

is a pediatrician with additional training in public health and business administration and expertise in quality improvement. The Perinatal System of Care Working Partners Group is coordinated by the CCHO who facilitates quarterly meetings and serves as a liaison to Perinatal System of Care projects. The CCHO works closely with the Maine CDC MCH Title V Director.

Office of Child and Family Services

The Maine DHHS Office of Child and Family Services (OCFS) is dedicated to helping create a future where all Maine children and families are safe, stable, happy, and healthy.

OCFS supports Maine's children and their families by regulating childcare facilities and providers, assisting Maine families in accessing and paying for childcare, administering Maine's child welfare system, overseeing fostering and adoption services, and facilitating access to child behavioral health services. Help Me Grow, a national initiative to connect families to services that help young children grow up healthy and thriving, was launched in 2022 by Maine DHHS and OCFS, in collaboration with 211, and legislation that supports free access to early developmental screening, diagnostic and treatment services and referrals for early intervention. OCFS is also overseeing the implementation of the Plan of Safe Care work.

Maine's Child Death and Serious Injury Review Panel (CDSIRP) conducts reviews of all child deaths and serious injuries where OCFS was involved with the family. Efforts are underway to coordinate with the MFIMR panel to reduce duplication of efforts related to reduction of infant deaths in Maine. Both MFIMR and CDSIRP must agree to submission of both data and recommendations in order to utilize the National Center for Child Fatality Review and Prevention which will assist in preventing infant and child deaths. [12]

Office of MaineCare Services

MaineCare is Maine's Medicaid program that is funded by the federal and state government. MaineCare provides free or low-cost health insurance and other health benefits to Mainers who meet certain requirements, usually based on income, disability, or age. MaineCare helps to ensure that all Maine people are able to access the critical health services, both preventative and emergency, that enable them to live healthy, safe, and resilient lives. MaineCare employees administer MaineCare services by reimbursing health care providers for the vital services, medication, and equipment they provide MaineCare enrollees. MaineCare partners with other DHHS offices, vendors, advocacy groups, and community resources to ensure enrollees receive high quality health coverage.

Maine Centers for Disease Control and Prevention

The Maine CDC oversees several perinatal related projects. Much of the work is funded through the Title V MCH Block grant with additional financial support from the state funding sources.

[12] https://ncfrp.org/

The Title V Director is required to submit an annual report and workplan to HRSA that includes outcomes and measures. Every five years, the Title V Director submits priorities to HRSA for the coming five-year period. 2020-2025 Maine MCH Priorities Projects and staff includes funds to the Department of Education for adolescent work and money to fund Maine Parent Federation which includes physical and behavioral health, patient education, and navigator services. Maine CDC contracts with MCH epidemiologists who assist with the grant and work plan which is a driver for activities. The epidemiology contract goes out to bid every five years.

Perinatal Outreach is another Block Grant funded program. Perinatal Outreach consists of expert nurses and physicians contracted to provide education and consultation services on topics related to pregnancy, childbirth, and newborn care to health care providers throughout the state. This contract also goes out to bid every five years with contracts awarded for two years and the possibility of renewal for two two-year periods and one final one-year renewal period. New in 2023 is the separation of the contract into a northern region and a southern region with tertiary care in each region responsible for activities. Other activities that fall under the MCH Block Grant include child and adolescent activities that are 30% of budget and Children with Special Health Needs (CSHN) is another 30%. The mission of CSHN is "to improve the health and well-being of our population by developing and sustaining community-based systems of care."

Within the Maine CDC are other divisions which intersect with the preconception, pregnant, postpartum and/or newborn populations. These include Women, Infants and Children (WIC), Chronic Disease Prevention, and Tobacco and Substance Use Prevention and Control. WIC provides financial support to pregnant and lactating women and newborns to ensure a healthy pregnancy and infant. WIC also has lactation support and peer supports for those who are breastfeeding.

The new (established and funded in 2023) Maine Prevention Services Network engages the nine public health districts and their partners in strategies and activities focused on the prevention of obesity, tobacco, and substance use disorders. The Network includes a focus area titled Breastfeeding Policy, Systems, and Environmental Changes with a goal of supporting breastfeeding best practices in health care systems, at worksites, and within the community. Tobacco-related work includes expanding access to and use of tobacco treatment among pregnant women combined with a mass media education campaign aimed at pregnant people, families and parents of young children, a separate campaign on the dangers of exposing children to second and smoke and activities aimed at other age groups.
The Chronic Disease Prevention Program supports breastfeeding initiatives, promoting healthy weight and the prevention of obesity. One recent program, 6 for ME, supported breastfeeding initiatives as part of the goal of healthy weight and prevention of obesity. 6 for ME worked to support hospitals in implementing 6 of the 10 steps to the Baby Friendly Hospital Initiative. The Program is also working with the Maine State Breastfeeding Coalition to create a toolkit supporting return to work while breastfeeding with a projected completion date of fall of 2024. Plans are underway to collaborate with the Perinatal Outreach Education Coordinators to provide

technical assistance to birthing hospitals in their support of breastfeeding families as funding allows.

Public Health Nurses (PHN) are employed by the Maine CDC and cover the state. Like many other health professionals, the pandemic added challenges to staffing, recruitment, and efforts to achieve the statutory required number of fifty PHNs are ongoing. There are currently five public health districts where PHN services are contracted out to other home health agencies. In addition to working with the Maternal Child Health (MCH) population, public health nurses also staff the TB (tuberculosis) clinic as well as immunization clinics. As a result of the pandemic, each district has appropriate refrigeration to store vaccines and PHNs are assisting with immunization "catch up" clinics, helping with those who got behind on receiving immunizations during the pandemic and also with new Mainer clinics.

All PHNs now have their certification as Certified Lactation Counselors and this has been built into the orientation processes as new PHNs are hired. Many PHNs have completed the Child Passenger Safety Certification course that has given them knowledge and skills around proper child safety seat installation in vehicles and are collaborating with communities in a variety of ways such as at community baby showers. PHN is in the early stages of discussing universal Naloxone distribution in alignment with PQC4ME's QI project of Naloxone distribution at postpartum discharge. One additional challenge is provider and public knowledge of who should have home visits from a public health nurse. There is a misperception that only certain populations, such as those with substance use disorder, would benefit from public health nurse visits. Discussions are underway for the PHN marketing referral team to collaborate with local hospitals, providers, and community partner agencies to increase both prenatal and postpartum referrals to the general population of birthing people and their newborns.
CradleME is a referral system that connects families to services such as PHN, Maine Families, WIC, Maine MOM, and Child Development Services. Families can self-refer (cradleme.org) or can be referred by a health care provider. All services are available at no cost to those who are pregnant or have a new baby.

Other programs that intersect with the perinatal population include the Office of Rural Health, Office of Population Health Equity, and the Maine Immunization Program. The Title V director oversees the Maine Families Visitors grant and a contract with the University of Southern Maine to provide MCH epidemiology services.

Adolescent Health and Injury Prevention falls under Tobacco and Substance Use Prevention and Control. This program is also involved in efforts to reduce injuries and death related to Abusive Head Trauma (AHT) also known as Shaken Baby Syndrome and injuries and deaths related to infant unsafe sleep.

Also falling under the Maine CDC Maternal and Child Health Program is the ECCS grant that is funded by HRSA and its intended outcome is to improve linkages between Maine's perinatal system (P-1) and early care and intervention services (0-3).

Maine Department of Education

In 2023, DOE began a pilot with Mammha, (https://www.mammha.com/), an organization created by women to support pregnant and postpartum people by improving screening by providers, care coordination and referrals for those who screen positive, and ongoing support and patient navigation. One goal is that 90% of parents are screened using Edinburgh Postpartum Depression Scale via text messaging. Currently the Maine DOE pilot is limited to families who have a child enrolled in Child Development Services (CDS). There are both longstanding partnerships between DHHS and DOE – including Early Head Start, Head Start and Child Development Services – as well as new initiatives such as the Preschool Development Grant. Additional work is needed to identify and define how these programs and services as well as others impact and support transitions from the perinatal period into early childhood and beyond.

Emergency Medical Services (EMS)

Like the public education sector, outreach to EMS was limited by the scope and timetable for the Roadmap project. A 2021-22 pilot project that brought together perinatal providers, birthing and non-birthing hospitals with state EMS officials focused on the development and evaluation of tools to improve and standardize the process of transporting birthing people and infants among Maine hospitals. The project was prompted by a recommendation in the 2020 infant mortality needs assessment report and was undertaken by CQI with guidance from a statewide Advisory Committee. The first tool developed was a spreadsheet to document the number and nature of interfacility transports in a sample of hospitals; a second tool, the Preterm Labor Algorithm tool, was developed to guide assessment, care, and decision making regarding when and where to transport patients. Results of the pilot are being used to support dissemination and statewide adoption in collaboration with Maternal Fetal Medicine, CQI and others. In discussions after the pilot was concluded, strong support was voiced about the need to explore additional ways to improve transport-related communication and coordination statewide.

Birthing Hospitals

Map of Birthing Hospitals

Maine has three health systems consisting of 16 birthing hospitals and another 6 hospitals that are independent hospitals providing birthing services. Each hospital system has a website and individualized infrastructure. Within hospital systems there are service lines such as Women's Health and Children's Health with the goal of consistent evidence informed care across the hospital system. Coordination and collaboration between hospitals and hospital systems occurs through the Perinatal Outreach program and the PLCM group previously described.

Five hospitals in Maine closed their maternity units between August 2021 and September 2023. These five hospitals delivered a total of approximately 1,000 babies each year. Hospitals are required to notify Maine DHHS through the Division of Licensing and Certification (DLC) a

minimum of 30 days (and ideally, 120 days) prior to a status change in their Level of Care or closure of maternity unit.

Cross-cutting Component: Policy and Environment

In 2022, in response to maternity unit closures and increased numbers of obstetric related calls to Emergency Medical Services (EMS), Perinatal Outreach partnered with EMS-C (Emergency Medical Services for Children) to present a national course from the American Academy of Family Physicians called Basic Life Support in Obstetrics (BLSO) to both EMS providers and emergency department teams. BLSO was chosen by a team from Maine CDC including the DHHS Chief Child Health Officer, the Perinatal Outreach Coordinator, and EMS. This course includes self-study, simulation and testing and has so far been presented to approximately 133 providers in or near areas where maternity units have closed.

Federal and state government policies are vital to support, facilitate and sustain Perinatal System of Care processes and outcomes – from access to care (example: 12 months of postpartum coverage for women enrolled in MaineCare), to data reporting (example: a requirement to report pregnancy-related hospital discharge data by race and ethnicity), to workforce training and education (example: expanding family medicine residency requirements for rural OB rotations), to quality improvement (example: the CMS requirement issued in 2022 for birthing hospitals to engage in quality and performance improvement).

Environment includes the economic, social, political, and cultural context in which policies are considered, enacted, and implemented. The changing nature of these influencers demands an ongoing assessment of the extent to which policies result in intended effects or unintended consequences.

Policies to improve, expand and enhance services and programs related to access, quality, workforce and data, surveillance and evaluation are supported by several state reports published since 2020: *Understanding and Addressing the Drivers of Infant Mortality in Maine*, the *Children's Cabinet Plan for Young Children*, the *ECCS SAGA and Strategic Plan*, the *2022 Children's Cabinet Annual Report*, and *Maine Kids Count 2023*. Conversations with advocates, educators, clinicians, leaders of community-based organizations and others identified three areas of focus to advance policies that could strengthen and advance Maine's Perinatal System of Care:

1. Identify policies that have been shown to improve outcomes for birthing people, infants, and families, especially those that integrate across sectors and promote equity.
2. Assure coordination among agencies and organizations working to implement policies.
3. Align PSC-related policies with those that support early childhood development, school readiness, healthy youth, and young adults.

While organizations in Maine have been leaders in advancing policies to benefit infants, children and families, there is no single entity that maintains information about these policies, including state and federal legislation, rulemaking, licensing and certification requirements, professional training, and program policies related to the core and cross-cutting components of the Perinatal

System of Care. Establishing such a clearinghouse would provide a useful historical record and inform the development of new or modified policies.

Table of Roadmap Findings and Actions Currently Underway or For Future Consideration

The Roadmap report led to the development of a separate *Table of Roadmap Findings and Actions Currently Underway or for Future Consideration.* The Table is organized into sections corresponding to the four core components and the four cross-cutting components of Maine's Perinatal System of Care. Findings included in the Table were based on the research phase of the Roadmap project and content included in the Roadmap report. Actions underway or for future considerations include those made directly by interviewees and/or were drawn from information provided to the authors of the report.

Feedback on the *Table of Roadmap Findings and Actions Currently Underway of for Future Consideration* was solicited via in-person meetings and an anonymous online survey from perinatal advisory committees and groups across the state that include health care providers, advocates, community-based organizations, and others. Comments from in-person meetings and the survey were summarized and incorporated into the Table.

Both the Roadmap Report and the Table are to be considered works in progress and will benefit from periodic updates.

Appendix I: Descriptions of Current Perinatal System of Care Projects

Title of Project: Perinatal Quality Improvement for Maine (PQC4ME)
Lead organization: MMA – CQI
Key contact: Ashlee Crowell-Smith, MBA, Project Manager, acrowell-smith@mainemed.com
Duration of project: September 30, 2022 – September 29, 2027
Annual Funding: $275,000
Funding source: U.S. CDC
Key outcomes: Strategies for Year 1 proposed in this application include:

1. Plan, implement, and evaluate the AIM Severe Hypertension in Pregnancy Bundle by engaging with 100% of Maine's 25 birthing hospitals, with particular focus on those that serve disproportionately impacted populations;
2. Advance health equity in the diagnosis and management of maternal hypertension by engaging vulnerable populations in evaluating tools and resources used in birthing facility patient education and discharge planning; and
3. Establish PQC4ME as Maine's center of excellence for perinatal quality improvement initiatives by enhancing its capacity to make measurable improvements in perinatal care and outcomes statewide.

Abstract: Maine is the most rural state in the nation, with a total population of 1.34 million. Poverty, rural isolation, lack of public transportation, food insecurity and substance use are some of Maine's top health-related challenges, all of which impact maternal, child and family health status. Over the last 20 years, eight hospital OB units have closed. Key assets of the state include a shared commitment by health care providers, advocates, public health organizations, community leaders and many others to improving outcomes for all infants, children, and families, particularly those experiencing health inequities. PQC4ME, Maine's statewide perinatal quality collaborative, is actively working to address these challenges and improve outcomes for all mothers, infants, and families. In addition to the Year 1 QI initiative, PQC4ME will continue implementation of existing QI projects, identify priorities for future perinatal QI initiatives, lead the PQC4ME Membership, implement education training and dissemination activities and collaborate with state, regional and national partners, including the NNPQC. Results of the initiative will be used to improve the prevention, diagnosis and treatment of maternal hypertension and will ultimately lead to reductions in maternal morbidity and mortality. Based at the Maine Medical Association Center for Quality Improvement, PQC4ME plans, implements and evaluates perinatal QI initiatives in collaboration with all Maine birthing hospitals and many public and private sector partners.

Title of Project: Alliance for Innovation on Maternal Health
Lead organization: MMA – CQI
Key contact: Ashlee Crowell-Smith, MBA, acrowell-smith@mainemed.com
Duration of project: September 1, 2021 – August 31, 2023
Funding: $35,00.00
Funding source: ACOG
Key outcomes:

1. Provide hospitals participating in the initiative with a learning collaborative for education, technical assistance, and share experiential learning to implement the evidence-based recommendations for this safety bundle.
2. Reduce severe morbidity and mortality associated with severe hypertension in pregnancy.

Abstract: The purpose of this project is to reduce maternal deaths and severe maternal morbidity by engaging provider organizations, state-based public health systems, consumer groups, and other stakeholders within a national partnership to assist state-based teams in implementing evidence-based maternal safety bundles. According to the Alliance for Innovation on Maternal Health (AIM), hypertensive disorders of pregnancy, including pre-eclampsia, are the most common major medical disorders of pregnancy and complicate up to 10% of pregnancies worldwide. Pre-eclampsia is the leading cause of perinatal morbidity and mortality. It is estimated that these disorders are responsible for 17% of maternal deaths in the United States. In Fall 2021, Maine became a participating AIM state through the Perinatal Quality Collaborative of Maine (PQC4ME). The collaborative, in partnership with the Maine Medical Association, Center for Quality Improvement (MMA-CQI) and the Maine Department of Health and Human Services, is launching the Severe Hypertension in Pregnancy Patient Safety Bundle. Standardization of health care processes and reduced variation has been shown to improve outcomes and quality of care. Through the use of the AIM Severe Hypertension in Pregnancy Bundle, maternal mortality and severe morbidity can be reduced in Maine. The Severe Hypertension in Pregnancy Bundle reflects emerging clinical, scientific, and patient safety advances, and guides clinical teams in implementing processes for readiness, recognition and prevention, response, and reporting and systems learning.

Title of project: Universal Postpartum Naloxone Project
Lead organization: PQC4ME/CQI
Key contact email: Nell Tharpe, MS, CNM nelltharpe.cnm@gmail.com; Jay Naliboff, MD jnaliboff@me.com
Duration of project: April 2020 – December 2023
Annual funding:
Funding source: Current funder: MaineMOM project
Key outcomes:

1. Reduce postpartum maternal mortality due to opioid overdose.
2. Reduce implicit bias by healthcare workers.
3. Foster relationships between community resource providers and hospitals.
4. Create and disseminate a project toolkit to support project replication

Abstract: Overdose deaths increased 20% in Maine from 2020 to 2021, with 13% of pregnancy associated deaths in 2020 due to opioid overdose. Two thirds of Mainer's who died in the first twelve months postpartum were previously identified as substance users. The *Universal Postpartum Naloxone* project has three goals. First, to educate birthing unit staff about implicit bias and harm reduction as they apply to people who use substances. Second, to provide to every postpartum person a home first aid kit containing a digital thermometer, band-aids, a CPR mask, a poison control refrigerator magnet, information on community recovery resources, a suicide hotline card, and a two-dose nasal naloxone kit. The kit is provided to everyone postpartum as those at risk may not have yet been identified, a family member or friend may need overdose reversal, or a child may accidentally ingest a prescription narcotic analgesic. Maternal mortality due to overdose almost always occurs between 42 days and one year postpartum and having access to naloxone at home may save a life. Third, to further relationships between hospital staff and community agencies offering services to people who use or have used substances. These agencies will be providing the first aid kits.

Title of project: Maternal Mortality Review Committee
Lead organization: MMA – CQI
Key contact: Mariah Pfeiffer, RN, MPH, Project Manager, mpfeiffer@mainemed.com
Duration of project: September 30, 2022 – September 30, 2024
Annual Funding: $150,000
Funding source: U.S. CDC
Key outcomes:

Three primary strategies will help improve the maternal mortality review process in Maine:

1. Improve the availability, quality, and timeliness of MMRC data.
2. Improve multi-disciplinary, population-level review of potential pregnancy-related deaths and documentation of recommendations for prevention.
3. Improve dissemination, access to, and employment of quality MMRIA data to drive opportunities for prevention.

Abstract: This funding provides capacity and expertise to maintain a multidisciplinary and diverse review committee, inclusive of representatives from communities disproportionately impacted by pregnancy related mortality. Together, the Maternal, Fetal, and Infant Mortality Review Panel in collaboration with the Maine CDC and the Maine Medical Association Center for Quality Improvement will work to identify pregnancy-associated deaths, apply a consistent process and standardized criteria for selecting deaths that will be fully abstracted for committee review, implement informant interview approaches, and abstract and enter information from medical records, social service records, informant interviews, and other relevant sources about all deaths potentially related to pregnancy into MMRIA within 18 months of death. We will then analyze pregnancy related MMRIA data for Maine, prioritize recommendations for action based on analyses of quantitative and qualitative MMRIA data, and disseminate data products and related information from pregnancy-related analyses. Lastly, we will develop and sustain bidirectional partnerships with communities that increase the utilization of MMRC data to address disproportionate burdens of maternal mortality, and leverage these collaborative partnerships to inform practice, program, and policy changes.

Title of project: State Maternal Health Innovation and Data Capacity Grant
Lead organization: Maine CDC and MMA-CQI
Key contact email: Kelly Roberts, MSN, RN, Project Manager, kroberts@mainemed.com
Duration of project: September 30, 2022 – September 29, 2027
Annual funding: $1 million annually
Funding source: HRSA
Key outcomes:
Short-term Outcomes:

- Clearer understanding of maternal health
- Policies, strategies, and programming implemented to improve maternal health outcomes
- Maternal health data that are timely and reliable

Longer-term Outcomes

- Decrease in the number of maternal deaths
- Decrease in the number of people suffering from SMM and a decrease in the severity
- Improved birth outcomes and/or improved maternal overall health and wellbeing

Abstract: The purpose of this project is to improve maternal health and address maternal health disparities through quality services, a skilled workforce, enhanced data quality and capacity, and innovative programming that aims to reduce maternal mortality and severe maternal morbidity (SMM). Most maternal deaths are preventable whether they are related to hemorrhage, infection, blood pressure, substance use or mood and anxiety disorders. One way to prevent maternal mortality and SMM is having access to adequate healthcare, which includes access to prenatal and postpartum services.
The three focus areas of the grant include:

1. Improving the collection, reporting, and analysis of AIM data and increasing the number of AIM safety bundles implemented and the number of birthing facilities participating in AIM.
2. Establishing and executing a Maternal Health Task Force charged with creating, communicating, and implementing a Maternal Health Strategic Plan.
3. Improving state-level Maternal Health Data and Surveillance and promoting and executing data enhancements.

Title of project: Rural Maternity and Obstetrics Management Strategies (RMOMS)
Lead organization: MaineHealth
Key contact email: Caroline Zimmerman, MPP, caroline.zimmerman@mainehealth.org
Duration of project: 2022-2026
Annual funding: $997,000 annually
Funding source: HRSA
Key outcomes:
Abstract: The Maine RMOMS (Rural Maternity and Obstetrics Management Strategies) Network is a statewide initiative by MaineHealth, which includes every rural Maine hospital offering maternity services, a Level IV and Level III facility, critical access hospitals (CAHs), rural health clinics (RHCs), a federally qualified health center (FQHC), state agencies including MaineCare, organizations with continuous quality improvement (CQI) and telehealth expertise, and the organization responsible for home visits in Maine.

The RMOMS Network has three focus areas, including: 1) Expand access to maternal care services in rural communities across Maine through telehealth modalities; 2) Improve the continuum of care, particularly to address maternal mental health as well as chronic conditions such as hypertension and diabetes and 3) Support access to tailored education and training offerings to sustain and grow the perinatal workforce.

Medium term outcomes include:

- Increase care team members' and/or patients' use of telehealth for maternal care in rural communities
- Increase retention of clinicians and health care team members in rural labor & delivery hospitals
- Improve coordination across rural delivery hospitals
- Improve collaboration to address workforce shortages
- Improve quality of care (especially for maternal hypertension, mental health, and diabetes)

Among expected longer-term outcomes are development and implementation of telehealth across maternal care locations, and improvements in the continuum of care, leading to improvements in maternal and infant morbidity and mortality rates. Through these efforts, the RMOMS Network will also seek to build sustainable models of care through policy change supporting reimbursement for services that improve the health of pregnant and postpartum patients across Maine.

Title of project: MaineMOM
Lead organization: Maine DHHS, Office of MaineCare Services
Key contact email: Lisa Tuttle, MPH, lisa.a.tuttle@maine.gov
Duration of project: January 2020 – December 2024 (5-year cooperative agreement)
Annual funding: Varies; total award brings over $5 million to accomplish the delivery system improvements
Funding source: Centers for Medicare and Medicaid Innovation
Key outcomes: MaineMOM is designing and strengthening a statewide system of care for pregnant and postpartum women with OUD and their infants; and developing successful, sustainable payment and care-delivery strategies by incorporating appropriate services/payments into the MaineCare program.

Abstract: MaineMOM is designing and strengthening a statewide system of care for pregnant and postpartum women with OUD and their infants; and developing successful, sustainable payment and care-delivery strategies by incorporating appropriate services/payments into the MaineCare program. When fully implemented, MaineMOM will offer:

- A "no-wrong-door," coordinated referral and screening system where women will be welcomed and engaged in care regardless of their entry point to the system;
- Same-day access with a "medications-first" model;
- Increased capacity of integrated care teams to deliver evidence-based care through provider trainings, telehealth connections, and a standard curriculum to guide care;
- Integrated care model w/MAT and group clinics available to MOM enrollees, no matter where they live, with a goal of co-located pregnancy and OUD care;
  - Strengthening of existing Opioid Health Homes (OHH) capacity to serve the unique needs of pregnant/postpartum women with OUD;
  - Integrated care team members must be able to fill the following functions: prescribe MAT, provide prenatal and postpartum care, provide SUD counseling, coordinate care, and deliver peer support services. Groups must feature a pediatric provider in the prenatal period and local WIC, and home visiting staff (may be via telehealth);
  - Warm hand-offs to- and coordination with- home visiting and community supports;
- Heightened coordination with home visiting and community supports through streamlined communication, shared training, and shared data;
- Effective and person-centered planning for the perinatal period;
  - Use of the Eat, Sleep, Console (ESC) approach in all hospitals statewide;
  - Early conversations about the safety and effectiveness of Long-Acting Reversible Contraceptives inserted in the immediate postpartum period;
  - Increased planning and communication around pain management during delivery;
- Care through 12 months postpartum with a focus on both mother and infant wellness.
- Payment model that fills gaps in MaineCare funding to cover care for this population.

Title of project: Early Childhood Comprehensive System (ECCS)
Lead organization: MCDC/MCH
Key contact email: Becky Lambert, Project Manager, Rebecca.lambert@maine.gov
Duration of project: August 2021- July 2026
Annual funding: $255,600
Funding source: HRSA ECCS Grant
Key outcomes: The Early Childhood Comprehensive System (ECCS) grant facilitates the coordination and collaboration of state agencies and community partners to support and promote an equitable comprehensive prenatal-to-3 (P–3) system increasing access to care while also making Maine's complex network of health and early childhood care system easier to navigate for both families and providers.

Abstract: ECCS is not a program itself and its intended outcome is not to create new programs but is instead designed to provide an opportunity to improve linkages between Maine's perinatal system (P-1) and early care and intervention services (0-3). To lead this effort, ECCS established the Collaborating Partners Advisory Group (CPAG) as a cross-sector advisory council to advance the work of Maine's ECCS program and promote the centralization of current initiatives and work, share data and information among the stakeholders, and come to consensus on goals and strategies to address the needs of the P-3 population in Maine.

ECCS works to support the advancement of the Perinatal Systems of Care (PSOC) workgroup's goals including building and strengthening PSOC in Maine, support implementation of AIM Bundles, continue to build pathways for maternal transport, gather more information on gaps in the perinatal system around health equity, provide education on preconception health, chronic disease management during pregnancy, and post-partum health and continue work around improving care for pregnant people with substance use disorders/opioid use disorder and substance exposed infants.

Maternal and Child Health Title V Block Grant
Lead organization: MCDC/MCH
Key contact email: Maryann Harakall, maryann.harakall@maine.gov
Duration of project: 2021-2026 (current in year 3 of 5-year award)
Annual funding: $3.3 million (10% admin, 30% children with special health care needs, 30% child and adolescents); $3.9 million annually from state general fund (Maintenance of Effort)
Funding source: HRSA
Key outcomes: Maternal and Child Health Outcomes and Priorities (graphic)

Title of project: Perinatal Health Disparities Needs Assessment
Lead organization: Market Decisions Research with support from Hart Consulting
Key contact email: Cecelia Stewart, PhD, MPH cstewart@marketdecisions.com
Duration of project: February 2023 – February 2024
Annual funding: $157,310
Funding source: Maine Center for Disease Control and Prevention, U.S. CDC Disparities Grant
Key outcomes: To produce a needs assessment of perinatal care across the state of Maine

Abstract: The Perinatal Health Disparities Needs Assessment combines secondary data collection, original qualitative data collection, and integration with key stakeholders to understand the unique needs of the perinatal system of care across the state of Maine. This needs assessment will include a quantitative review of maternal morbidity and mortality data, a summary of existing perinatal care and initiatives across the state, and an overview of perinatal workforce capacity as well as accompanying visualizations. Additionally, this project will utilize focus groups and/or interviews with a diverse group of pregnant and parenting Maine women to better understand their needs related to perinatal care and supports. Market Decisions Research and Hart Consulting will compile feasible recommendations for stakeholders to implement based on collected and analyzed data. The final deliverable for this project will be a Needs Assessment Report.

Title of Project: Preschool Development Grant (B-5) – Office of Child and Family Services, MDHHS
Lead organization: Office of Child and Family Services
Key contact email: Elissa Wynne

Duration of project: January 2023 – December 2025
Annual funding: $8 million
Funding source: Administration of Children and Families, US Department of Health and Human Services
Key outcomes: In its grant application, Maine DHHS identified a series of key outcomes including:

- More infants and toddlers are screened for concerns about development and receive early intervention services.
- More families and young children are accessing needed services.
- Parents inform policy decisions for and improvements to Maine's ECE system.
- Maine has a robust, well-trained diverse ECE workforce supported through increased compensation and targeted professional development opportunities.
- Transitions for children between early childhood settings and early elementary grades are streamlined, strengthened, and supported.
- Maine has an integrated early childhood data system which connects data across agencies and informs better policy and programmatic decisions.

Abstract: The Preschool Development Grant will support the Maine Department of Health and Human Services (MDHHS) and the Maine Department of Education (MDOE) to build needed infrastructure and capacity to create a more coordinated, efficient, and high-quality mixed delivery system for children ages birth to five and their families, targeting key needs surfaced in the initial PDG needs assessment. The initiatives funded through the PDG build upon the successful cross agency work to ensure that all children enter Kindergarten prepared to succeed. Through the Help Me Grow program, the state will provide targeted outreach and support to ensure that all families, including New Mainer parents, with young children are able to access care coordination services, developmental screenings, and early intervention services. The evidence-based Parents as Ambassador program will expand to provide parent leadership training to New Mainer parents. The First 10 Community Pilots will link parents of young children to comprehensive services, coordinate local public school and ECE systems and support smooth transitions for young children entering school. A public education campaign will help parents and caregivers to better understand the developmental milestones of their children and simple activities and actions they can employ to encourage and support healthy development.

To strengthen the quality and availability of Maine's ECE workforce, the state will offer child care scholarships to new staff working at licensed child care programs, provide incentives to help child care programs move up Maine's quality rating scale, pay for quality bumps to licensed programs serving children through Maine's TANF work program, pilot the addition of a Workforce Navigator, and develop articulated ECE education pathways. Current evidenced-based professional development for B-5 providers and early elementary educators will be expanded to include inclusion practices, transitions, early elementary principal training, and trauma-informed practices. Grant funds will support a significant expansion of community-based pre-K partnerships.

The new Early Childhood Integrated Data System will provide state leaders across agencies with information to make informed decisions about programs and policies that promote access, quality, and a strong workforce to support all Maine children ages 0-5. The project will have both a process and outcome evaluation which will include a cost-analysis to ensure proposed goals are being met. MDHHS and MDOE will continue to engage stakeholders to solicit.

Appendix II: Components of an Ideal System of Perinatal Care in Maine

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Figure 6. Components of an Ideal Comprehensive Perinatal System of Care in Maine

Goals: *1) Achieve healthy pregnancies & the best possible maternal & birth outcomes in all areas of the state, and across all populations. 2) Ensure all mothers and infants receive the right care in the right place at the right time through perinatal regionalization efforts.*

Target populations: *Low-, medium- and high-risk women of reproductive age; prenatal, intrapartum & post-partum women; & infants up to the age of one. Includes vulnerable populations at risk due to clinical, psychological, social, & economic factors.*

Place of birth: *Birth hospitals, birth centers, home.*

Access to Services

- Local pre- & post-pregnancy well-woman care including primary care screenings, chronic disease management & reproductive life planning.
- All recommended screenings completed & addressed including: clinical/genetics & social/behavioral screens (e.g., substance use, mental health, oral health, domestic violence, social determinants of health).
- Prenatal, intra-partum, post-partum & pediatric care, including all level of risk & trauma-informed care across the different care settings.
- Mental health (MH) services.
- Substance use (SU) services, including nicotine.
- Domestic violence (DV) services.
- Other public and private community-based services such as case management (e.g., PH Nursing, WIC, Maine Families), including services for CYSHCN.
- Telehealth, including care & referrals, as needed.

Workforce & Training

- Adequate supply of providers - OBs, midwives, FMs, PEDs, nurses, SWs & other MH providers.
- Availability of medical specialists: perinatal ultrasound, genetics/counseling, MFM & neonatology to all areas of the state.
- Perinatal providers trained in all screening & referral activities, and current topics (e.g., trauma-informed care, shared decision-making, telehealth).
- Interdisciplinary perinatal trainings for SU, MH, DV providers caring for these populations.
- Training for all providers caring for diverse families on cultural competency & structural & implicit bias (e.g., race).

Referrals, Coordination & Collaboration

- Maternal & neonatal referrals & transports mechanisms in place, as needed, to hospitals w/higher level of care.
- Mechanisms for referral & F/U to community-based services, including Early Intervention, in place.
- Team-based care; inter-provider communications & collaboration re: shared patients (w/ patients' consent).
- Statewide & local efforts established to collaborate and coordinate perinatal activities (e.g., QI projects through PQC4ME).

Family Engagement & Education

- Referrals & care/services provided involve shared decision-making between families & providers.
- Providers who care for perinatal populations provide families with information and education on priority topics (e.g., smoking, safe sleep).
- Families across the cultural spectrum are invited to participate in program development and evaluation as family advisors in practices.

Public Policies & Programs

- Public policies support payment mechanisms (e.g., MaineCare) to cover needed perinatal services.
- Policies and procedures in place to ensure that eligible perinatal populations participate in public programs/services that promote good birth outcomes (e.g., Maine Families, PH Nursing, MaineCare, EI, WIC, SNAP, TANF).
- Federal, state and other perinatal funding opportunities (e.g., CDC, CMS, HRSA) monitored & pursued to enhance availability of services.

Assessment, Monitoring & Evaluation – Includes: 1) **quality assurance processes** to review adverse perinatal outcomes to ID & address causes; 2) **review panels** for maternal, fetal & infant deaths (Maine CDC) & child deaths and serious injury (OCFS), 3) statewide & regional key **perinatal outcome data identified, reported & distributed.**

(See footnote #5, *Understanding and Addressing the Drivers of Infant Mortality In Maine Report, January 2020, pg. 30)*

Appendix III Maine Department of Health and Human Services Organizational Chart

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[13] Visio-DHHS Overall Organizational Chart -- 4-24-23.vsdx (maine.gov)

Appendix IV: Perinatal System of Care Assets in Maine's P-3 System, 2022

Appendix V: Commonly Used Acronyms

AAFP American Academy of Family Physicians
AAP American Academy of Pediatrics
ACGME Accreditation Council for Graduate Medical Education determines residency education requirements
ACOG American Congress of Obstetricians and Gynecologists
AHT Abusive Head Trauma, more commonly known as Shaken Baby Syndrome
AIM Alliance for Innovation on Maternal Health
APRN Advanced Practice Registered Nurse
AWHONN Association of Women's Health, Obstetrics, and Neonatal Nurses
BBCH Barbara Bush Children's Hospital
BIPOC Black, Indigenous, People of Color
CDC Centers for Disease Control and Prevention
CDSIRP Child Death and Serious Injury Review Panel
CM Certified Midwife
CMS Center for Medicare and Medicaid Services
CNM Certified Nurse Midwife
CPM Certified Professional Midwife
CQI Center for Quality Improvement based at Maine Medical Association
DEIB Diversity, Equity, Inclusion and Belonging
DHHS Department of Health and Human Services
ECCS Early Childhood Comprehensive Systems
EMS Emergency Medical Services
EMS-C Emergency Medical Services for Children
FM Family Medicine physician
HRSA Health Resources Services Administration, part of the federal Health and Human Services Administration
IPV Intimate Partner Violence
LGBTQ+ Lesbian, Gay, Bisexual, Transgender, Queer
LOCATe Levels of Care Assessment Tool electronic version; tool created by CDC and based on ACOG and AAP guidance on maternal and newborn levels of care

MaineMOM Addiction and Recovery care coordination and resources grant from CMS
MCDC Maine Centers for Disease Control
MCH Maternal Child Health
MFIMR Maternal Fetal Infant Mortality Review Committee
MFV Maine Families Visitors
MH Mental Health
MHTF Maternal Health Task Force
MIHYS Maine Integrated youth Health Survey
MMA Maine Medical Association
MMRC Maternal Mortality Review Committee
mPINC Maternity Practices in Infant Nutrition and Care
MSCHNA Maine Shared Community Health Needs Assessment
NNEPQIN Northern New England Perinatal Quality Improvement Network
NSCH National Survey of Child health
OB/GYN Obstetrician gynecologist
OCME Office of Chief Medical Examiner
PHN Public Health Nursing
PLCM Perinatal Leadership Coalition of Maine
POEC Perinatal Outreach Education and Consultation Services
PQC Perinatal Quality Collaborative
PQC4ME Perinatal Quality Collaborative for Maine
PRAMS Pregnancy Risk Assessment Monitoring System
PSOC Perinatal System of Care
QI Quality Improvement
RMOMS Rural Maternal Obstetrics Management Strategies
SAGA Strategic Asset and Gap Analysis
SDOH Social Determinants of Health
SMHI State Maternal Health Innovation Grant
SUD Substance Use Disorder
WIC Women, Infants and Children Nutrition Program