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**Maine  
Maternal, Fetal and  
Infant Mortality  
Review Panel  
(MFIMR)**

*July 1, 2017 - June 30, 2018*

**Submitted to the Joint Standing Committee  
on Health and Human Services**

**SFY 2018  
Annual  
Report**



Janet T. Mills  
Governor

Jeanne M. Lambrew, Ph.D.  
Commissioner



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February 13, 2019

Senator Geoff Gratwick, Chair  
Representative Patricia Hymanson, Chair  
Joint Standing Committee on Health and Human Services  
100 State House Station  
Augusta, Maine 04333-0100

Dear Senator Gratwick, Representative Hymanson, and Members of the Joint Standing Committee on Health and Human Services:

Attached, please find the 2018 Annual Report to the Legislature for the Maine Maternal, Infant and Fetal Mortality Review Panel (MFIMR) submitted by the Department of Health and Human Services. This report is required under Title 22 of the M.R.S.A., Chapter 101 Section 261. The report discusses the MFIMR Panel's activities and accomplishments in 2018 as well as planned activities for 2019.

Thank you for the opportunity to provide the Joint Committee on Health and Human Services with a report on the activities and accomplishments of the Maine CDC MFIMR Panel.

Sincerely,

A handwritten signature in cursive script that reads "Jeanne M. Lambrew".

Jeanne M. Lambrew, Ph.D.  
Commissioner

JML/klv

Enclosure

Maine CDC/DHHS  
Maternal, Fetal and Infant Mortality Review Panel (MFIMR)  
2018 Annual Report to the Legislature

TABLE OF CONTENTS

|                                                                      |    |
|----------------------------------------------------------------------|----|
| Introduction.....                                                    | 3  |
| History.....                                                         | 3  |
| Panel Activities in SFY 2018 .....                                   | 4  |
| Panel Plans for SFY 2019.....                                        | 5  |
| Epidemiology Report: Data Highlights .....                           | 5  |
| Appendix A: Overall Recommendations, Plans and Identified Needs..... | 12 |

## INTRODUCTION

The Maine Center for Disease Control and Prevention's (Maine CDC) Maine Maternal, Fetal and Infant Mortality Review Panel (MFIMR) is a multidisciplinary group of health care and social service providers, public health officials, and other persons with professional expertise in maternal and infant health and mortality. All Panel members are volunteers. The Panel's purpose is to gain an understanding of the factors associated with fetal, infant, and maternal deaths in order to expand the state's capacity to direct prevention efforts and to be able to take actions to promote healthy mothers and infants. Using a public health approach, the program's goal is to strengthen community resources and enhance state and local systems and policies affecting women, infants, and families to improve health outcomes in this population and prevent maternal and infant mortality and morbidity.

This State Fiscal Year (SFY) 2018 report summarizes relevant data contributing to perinatal outcomes, challenges, activities, and future plans for the MFIMR Panel.

## HISTORY

In 2005, the 122nd Maine Legislature passed *An Act to Establish a Maternal and Infant Death Review Panel*. In 2010, the 124th Maine Legislature amended this statute to authorize the Maternal and Infant Death Review Panel to review fetal deaths occurring after 28 weeks gestation (stillborn infants). With this change, the Panel was referred to as the Maternal, Fetal and Infant Mortality Review Panel. The Legislature also repealed the Panel's sunset provision allowing the Panel to continue its work beyond the original end date of January 1, 2011.

The MFIMR Panel did not meet between SFY 2014, and SFY 2016. In 2016, the following areas were modified to improve the function of the MFIMR Panel process:

- The process of contacting families for interviews and consent for record reviews was revamped and families were contacted;
- Records were reviewed on the few cases with family consent; and
- The Office of Child and Family Services was tasked with conducting interviews for families interested in sharing their experience with delivery of care, challenges, and recommendations.

In 2017, an amendment to modify the MFIMR statute was approved and went into effect November 1, 2017. The changes to the statute are as follows:

- It formally changed the Maternal and Infant Death Review Panel to the Maternal, Fetal and Infant Mortality Review Panel.
- It provides that "director" in the laws governing the Panel refers to the medical director of the Maine Center for Disease Control and Prevention (Maine CDC).
- It allows the Panel coordinator to obtain, without the individual's or family's consent, the health information of a woman who died during pregnancy or within 42 days of giving birth, a child who died within one year of birth or a mother of a child who died within one year of birth, including fetal deaths after 28 weeks of gestation.
- It provides that the Panel is required to meet at least twice per year.

In SFY18 the MFIMR Panel was housed within the Division of Licensing and Certification (DLC). In July of 2018 the Panel was moved under Maternal and Child Health as part of Maine CDC's Division of Disease Prevention.

## Recommendations from Previous Years

See **Appendix A** for a full list of recommendations and progress made towards implementing them.

## **MFIMR PANEL ACTIVITIES IN STATE FISCAL YEAR 2018**

During SFY18, the MFIMR Panel convened two times; once in November 2017 and once in March 2018 with participation of some past Panel members as well as new members. During the November meeting, the Maternal and Child Health epidemiologist presented on the Perinatal Periods of Risk (PPOR) Approach for assessing infant mortality. This analytic method was developed by CityMatCH, CDC, and March of Dimes with the intent to bring stakeholders together to understand and address fetal and infant mortality using vital records data.<sup>1</sup> For more information about the results of Maine's PPOR analyses, please see page 4. Two cases (one fetal death and one infant death) were also reviewed by the Panel at this meeting.

The second meeting of SFY18 was held in March of 2018. Data were presented to the Panel by the Panel Coordinator and the Panel reviewed two cases. The Panel also began discussing ways to improve the efficiency and effectiveness of the reviews. After this meeting it was determined that the National Fetal and Infant Mortality Review technical assistance provider would be invited to present in July 2018 and provide tools for the Panel to use in future reviews.

## Challenges Experienced by the MFIMR Panel

During SFY18 the MFIMR Panel leadership was changed from the Division of Disease Prevention within Maine CDC to the Division of Licensing and Certification (DLC). An interim panel coordinator was named until a permanent one was hired. During this time, DLC reviewed the work that had been done by the previous coordinator and worked with the epidemiologist to prepare cases for review at the November 2017 Panel meeting. In addition to the Panel leadership changing, DHHS appointed a new Director for Maine CDC in October 2017. The new Director has identified a misalignment with the current process and the national standards. The National FIMR will be invited to provide technical assistance in order to realign the process. Efforts will be placed on reconstituting the Maine MFIMR Panel to adopt the standards that align with the National standards and to become more systems focused.

## **PLANS FOR MFIMR PANEL FOR STATE FISCAL YEAR 2019**

The Panel is required by statute to meet a minimum of two times in a state fiscal year. The SFY2019 meeting schedule is as follows:

- July 18, 2018 2-4pm at 45 Commerce Drive – Francis Perkins Conference Room
- October 23, 2018 2-4pm at 286 Water Street - Room # 16
- January 22, 2019 2- 4pm at 221 State Street - Main Conference Room
- April 23, 2019 2-4pm 286 at Water Street - Room # 16

During SFY19, a new panel coordinator will be hired as the current one will stay with DLC. The Panel plans to utilize guidance provided by the National Fetal and Infant Mortality Review (NFIMR) technical assistance organization to more efficiently and effectively review cases. Also utilizing the NFIMR guidance, a new process will be put in place using tools recommended by the NFIMR Program, which follow suit with the way other states in the country are conducting reviews. In addition, there are plans to begin reviewing maternal deaths.

The Panel will continue to work with the Maine CDC and DHHS leadership to follow up on recommendations and develop plans to implement system improvements. This activity includes connecting with other groups who are working on similar projects to ensure collaboration is happening statewide. Other groups include the Child Death and Serious Injury group and other community groups. In order to efficiently implement recommendations and to ensure the guidance provided by NFIMR is followed, Maine CDC will make two structural changes to the MFIMR Panel. First, a chair of the Panel will be named. This person will be well-qualified and have experience working with MFIMR Panels. Secondly, a subcommittee will be created to help plan Panel meetings and advise on topics to be discussed at meetings, including case selection.

## **MFIMR: EPIDEMIOLOGY REPORT**

In support of the MFIMR Panel, funding is provided for epidemiologic analyses of maternal, infant and fetal mortality through the Maternal and Child Health Block Grant (MCH BG) to help the Panel understand patterns and trends associated with maternal, fetal and infant deaths. In the previous fiscal year, MFIMR epidemiologists:

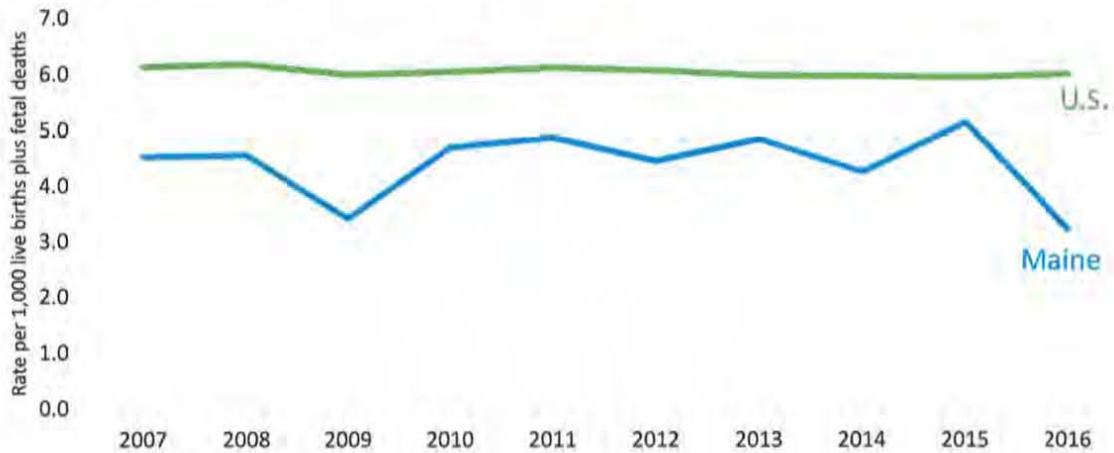
- Conducted analyses of infant mortality causes and trends and presented the results to the MFIMR panel.
- Obtained provisional quarterly birth and infant death data from Maine CDC's Data, Research and Vital Statistics program to monitor infant mortality and associated risks.
- Conducted a Perinatal Period of Risk (PPOR) Analyses to identify potential areas of focus for the MFIMR panel.
- Conducted an analysis of provisional maternal death data.

Below is a summary of data related maternal, fetal and infant mortality, including results from Maine's PPOR analysis.

### **Fetal deaths**

A fetal death is the spontaneous death of a fetus in utero, deaths that occur at 20 weeks of gestation or after receiving a fetal death certificate. Fetal death data are maintained by Maine CDC's Data, Research and Vital Statistics Program. Maine's 2016 fetal death rate was 3.2 fetal deaths per 1,000 live births (41 fetal deaths); the U.S. fetal death rate in 2016 was 6.1 fetal deaths per 1,000 live births.<sup>2</sup> Maine's fetal death rate has consistently been lower than the U.S. rate (figure 1).

**Figure 1. Fetal mortality rate, Maine and US, 2006 – 2016.**

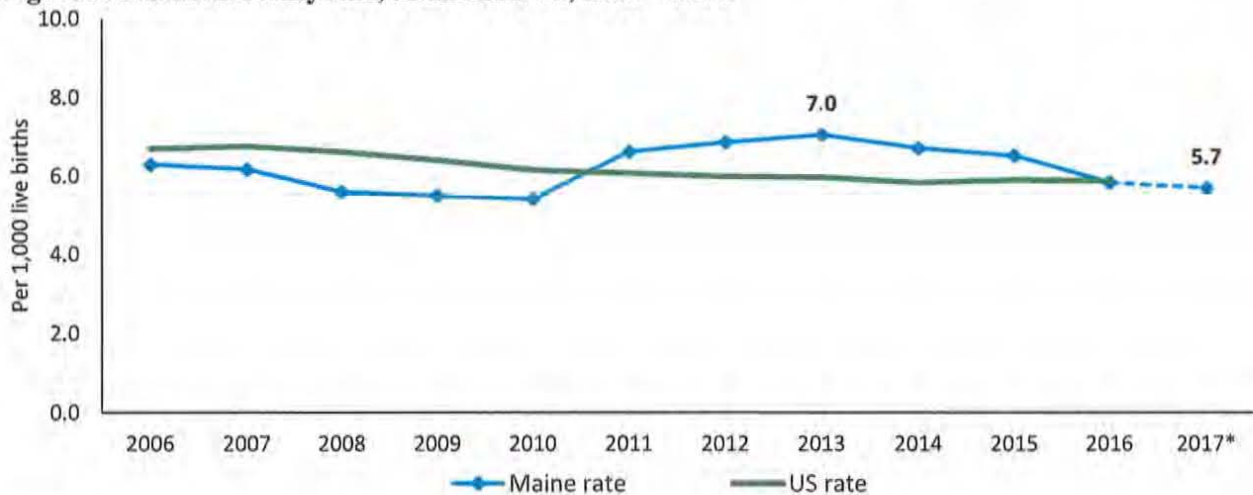


Source: CDC WONDER Online Database

## Infant Mortality

Maine's infant mortality rate peaked in 2013, but has been declining since that time. In 2017, there were 70 deaths among Maine resident infants, and the State's infant mortality rate was 5.7 deaths per 1,000 live births (figure 2). In 2016, Maine's infant mortality rate was the 20<sup>th</sup> lowest in the U.S.<sup>3</sup>

**Figure 2. Infant mortality rate, Maine and US, 2006 – 2017.**



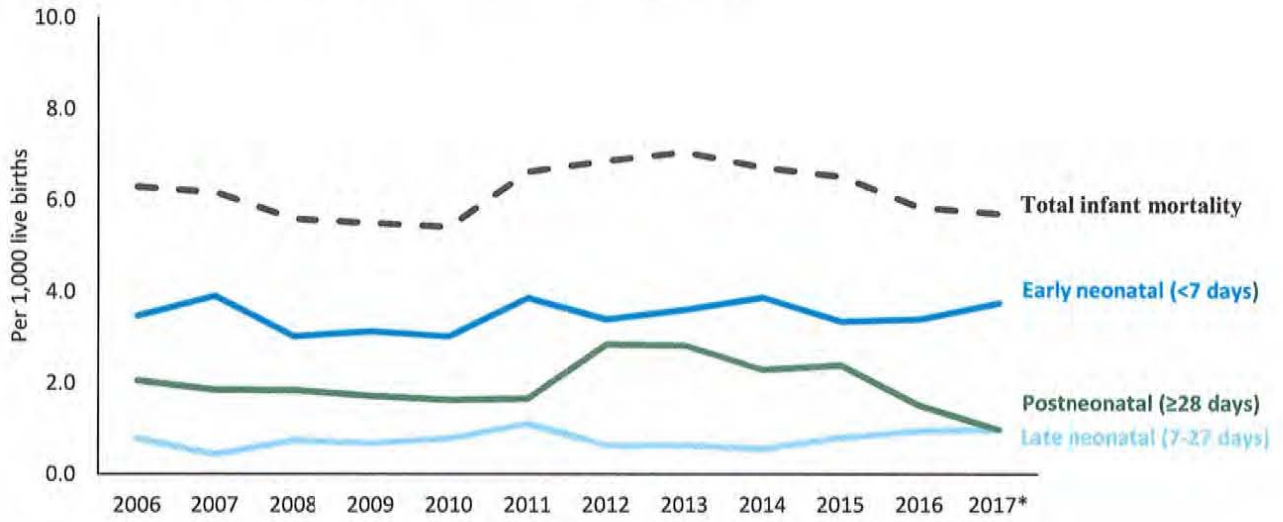
\*Data are provisional and subject to change.

Sources: US: 2006-2016 Linked Birth / Infant Death Records, CDC Wonder; Maine: Maine CDC death certificate and birth certificate data (non-linked). 2016: CDC National Center for Health Statistics

The majority of Maine's infant deaths occur in the early neonatal period (i.e., the first seven days of life) followed by the post-neonatal period (figure 3). In 2017, nearly two-thirds of deaths to Maine infants occurred during the early neonatal period.



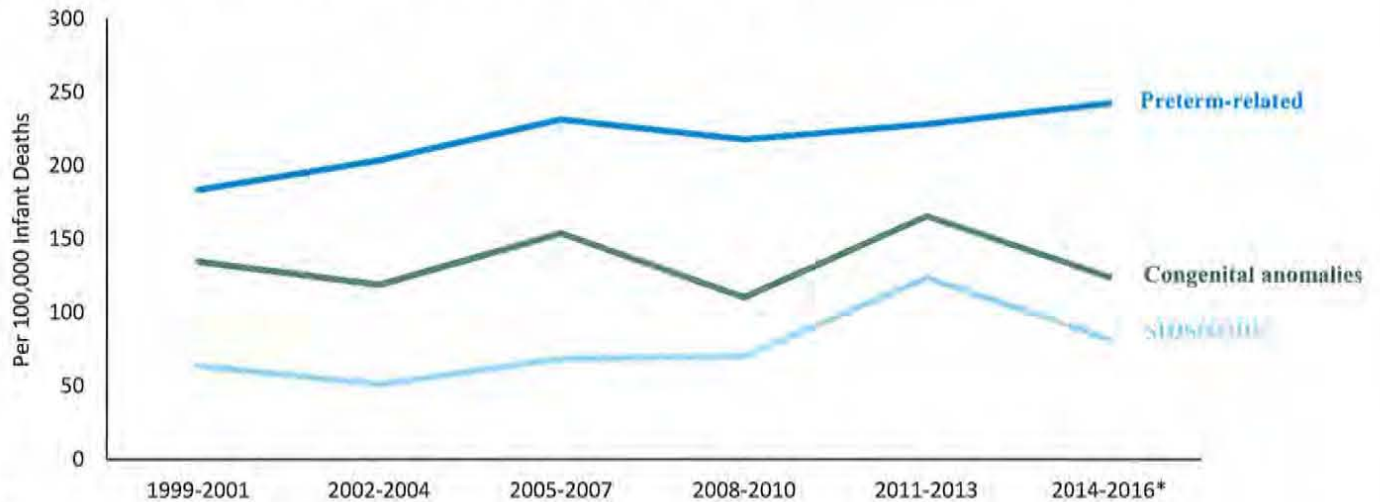
**Figure 3. Infant mortality by age group, Maine, 2006 – 2017.**



\*Data are provisional and subject to change; Source: Maine CDC Death Certificate data.

Preterm-related conditions are the leading cause of infant mortality in Maine. These are deaths to infants born at less than 37 weeks of gestation in which the cause of death was a direct consequence of preterm birth. Congenital anomalies (i.e., birth defects) and Sudden Infant Death Syndrome (SIDS)/Sudden Unexpected Infant Deaths(SUID) were the second and third leading causes respectively (figure 4).

**Figure 4. Leading causes of infant mortality, Maine, 1999 - 2016.**



\*Data are provisional and subject to change.  
Source: Maine CDC death certificate data.

### **Risk Factors for Infant Mortality: Perinatal Period of Risk**

To gain a better understanding of infant and fetal deaths in Maine, a Perinatal Period of Risk (PPOR) analysis was conducted in 2017. PPOR is a data analysis method that allows states and communities to identify the “risk period” in which infant and fetal deaths are higher than would be expected.<sup>4</sup> Maine’s PPOR analysis utilized birth certificate data from August 2013 - 2015. This 29-month timeframe was chosen for two reasons: 1) Maine adopted the 2003 US standard birth certificate in August 2013, which marked a significant change in birth certificate data collection and 2) at the time of analysis, 2015 was the most recent complete year of data available for analysis.

In conducting a PPOR analysis, infant and fetal deaths are divided into four groups based on the age and birthweight of the infant at death (figure 5).

- **Maternal Health and Prematurity:** This period includes all deaths of infants and fetuses weighing between 500 and 1,499 grams (very low birth weight). To prevent deaths in this group, the focus is generally on preconception health and health behaviors such as smoking during pregnancy.
- **Maternal Care:** This period includes fetal deaths greater than 24 weeks gestation that weigh 1,500 grams or more. Prevention strategies in this period focus on prenatal care, ensuring appropriate referrals for high risk infants, and adequate obstetric care.

- **Newborn Care:** This period includes deaths to infants 0 and 27 days of age who weigh at least 1,500 grams at birth. Prevention efforts for these infants focus on perinatal management and NICU care.
- **Infant Health:** This period includes deaths to infants between 28 and 364 days of age who weighed 1,500 grams or more at birth. Prevention strategies for infants in this group focus on safe sleep practices, injury prevention and infection prevention and management.

**Figure 5. Perinatal Period of Risk (PPOR) groupings.**



For the PPOR, a reference population (e.g., lower risk group) is chosen and compared to all other infant and fetal deaths. Excess deaths comparing the reference group to the higher risk group are calculated to determine which period of risk contributes the most to the overall rate of excess deaths.

In Maine, the selected reference group was white mothers between the ages of 20-34 and who had completed at least 13 years of education. Nationally, this demographic group generally experiences the best birth outcomes. The infant mortality rate of the reference group was subtracted from the infant mortality rate of all other women to determine the excess mortality in each period of risk. These excess mortality rates are presented below (figure 6).

**Figure 6. Excess infant mortality findings, Maine, 2013-2015.**



Findings from Maine's PPOR analysis indicated that the excess infant and fetal deaths were most likely to occur in the Maternal Care period (59%), followed by the Maternal Health/Prematurity (19%) period, and Infant Health (14%) period. Based on the birth outcomes of the reference population, a total of 36 fetal and infant deaths could have been prevented during the 29-month study period. Priorities for future prevention strategies include:

- **Maternal Care:** Maternal Care: The deaths during this period are fetal deaths weighing more than 1,500g. Known risk factors for fetal demise include: hypertension, uncontrolled diabetes, obesity, smoking during pregnancy, substance use, birth defects, inadequate prenatal care and stress.
- **Maternal Health:** The deaths in this period are very low birth weight infants (Less than 1,500g) who died during pregnancy or within the first year of life. In the target population, excess deaths were primarily caused by a higher frequency of very low birth weight infants compared to the reference population. Risk factors for premature, very low birth weight infants include: smoking during pregnancy, low weight gain during pregnancy, inadequate prenatal care, pre-pregnancy diabetes, substance use and previous preterm birth.
- **Infant Health:** This period represents deaths among infants greater than 1,500 grams that occurred after the first 28 days of life. Excess deaths in this period were driven by injury and SIDS deaths. Risk factors for deaths during this period include maternal depression, child maltreatment, unsafe sleep conditions and improper car seat use.

Table 1 highlights key risk factors contributing to excess fetal and infant deaths in Maine. Maine's rates of smoking during pregnancy, obesity prior to pregnancy, pre-pregnancy depression, and neonatal abstinence syndrome are areas for potential prevention and intervention efforts.

**Table 1. Select risk factors for infant mortality, Maine and US.**

| Select risk factors                                                                         | ME    | US    | Year |
|---------------------------------------------------------------------------------------------|-------|-------|------|
| Percent of women who smoke during pregnancy <sup>5</sup>                                    | 12.3% | 6.9%  | 2017 |
| Percent of births to women with diabetes (any type) <sup>5</sup>                            | 7.4%  | 7.3%  | 2017 |
| Percent of women who received late or no prenatal care <sup>5</sup>                         | 3.6%  | 6.1%  | 2017 |
| Percent of infants born low birth weight (<2,500 grams) <sup>5</sup>                        | 7.1%  | 8.3%  | 2017 |
| Percent of infants born very low birth weight (<1,500 grams) <sup>5</sup>                   | 1.2%  | 1.4%  | 2017 |
| Percent of infants born premature (<37 weeks gestation) <sup>5</sup>                        | 8.7%  | 9.9%  | 2017 |
| Percent of births to women with less than a high school education <sup>5</sup>              | 6.8%  | 13.1% | 2017 |
| Percent of births to women with a pre-pregnancy BMI of >25.0 <sup>6</sup>                   | 56.8% | NA    | 2016 |
| Percent of new mothers told by a provider they had depression before pregnancy <sup>7</sup> | 16.1% | 10.5% | 2015 |
| Incidence of neonatal abstinence syndrome (rate per 1,000 live births) <sup>8</sup>         | 34.7  | 6.4   | 2015 |
| Percent of infants most often laid on back to sleep <sup>7</sup>                            | 84.0% | 78.4% | 2015 |
| Percent of women who were enrolled in Medicaid/MaineCare during pregnancy <sup>7</sup>      | 29.7% | 29.1% | 2015 |

Findings from Maine's PPOR analysis suggest prevention efforts should focus on:

- Reducing the number of very low birth weight births
- Preventing injury and SIDS/SUID deaths

- Reducing risk factors associated with fetal demise (smoking, inadequate prenatal care, parental substance use, obesity).

These factors will be considered during MFIMR panel reviews of infant and fetal deaths.

## Maternal Mortality

There are several different ways to measure and monitor maternal deaths.<sup>10</sup> Maine’s MFIMR panel staff are working with the Maine CDC’s Data, Research and Vital Statistics Program to follow best-practices for maternal mortality case ascertainment.<sup>11</sup> Best practice involves linking death certificates of women of reproductive age to birth certificates and fetal death certificates from the 12 months prior to the death to determine if the woman was pregnant at the time of death or within 12 months of the birth. A pilot death-birth-fetal-death linkage with a subset of deaths occurring in 2017 and 2018 was completed by the Data, Research and Vital Statistics Program in April 2018.

In 2018, a provisional examination of death certificates from 2014 – 2017 was conducted using the Maine death certificate pregnancy status field. Based on data collected in this field, 30 Maine resident women died during or within one year of being pregnant between 2014 and 2017. Half of these deaths occurred during the decedent’s pregnancy (Figure 6).

**Figure 2. Deaths to Maine women during pregnancy and up to one year postpartum, 2014-2017.**



Half of the deaths were due to injury related causes (e.g., overdose, homicide, suicide, car crash). Close to 40 percent of these deaths were due to a cause related to or aggravated by pregnancy. These types of deaths are often related to cardiovascular diseases, infection, hemorrhage, cardiomyopathy, and embolism.<sup>12</sup> The MFIMR team will use this information, as well as the findings of a recently completed review of maternal morbidities in Maine, to inform maternal death review case selection and prevention recommendations.

<sup>1</sup>Peck, M.G., Sappenfield, W.M. & Skala, Perinatal Periods of Risk: A Community Approach for Using Data to Improve Women and Infants' Health. *Matern Child Health J* (2010) 14: 864.

<sup>2</sup> United States Department of Health and Human Services (US DHHS), Centers for Disease Control and Prevention (CDC), National Center for Health Statistics (NCHS), Division of Vital Statistics (DVS). Fetal Deaths 2005-2016, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program, on CDC WONDER Online Database. Accessed at <http://wonder.cdc.gov/fetal-deaths-current.html>

<sup>3</sup>United States Department of Health and Human Services (US DHHS), Centers of Disease Control and Prevention (CDC), National Center for Health Statistics (NCHS). Accessed at [https://www.cdc.gov/nchs/pressroom/sosmap/infant\\_mortality\\_rates/infant\\_mortality.htm](https://www.cdc.gov/nchs/pressroom/sosmap/infant_mortality_rates/infant_mortality.htm)

<sup>4</sup> CityMatCH. *What is PPOR?* <http://www.citymatch.org/perinatal-periods-risk-ppor-home/what-ppor>

<sup>5</sup> Maine: Maine CDC Birth Certificate Data. US: United States Department of Health and Human Services (US DHHS), Centers for Disease Control and Prevention (CDC), National Center for Health Statistics (NCHS), Division of Vital Statistics, Natality public-use data 2007-2017, on CDC WONDER Online Database, October 2018. Accessed at <http://wonder.cdc.gov/natality-current.html> on Dec 12, 2018 1:39:35 PM

<sup>6</sup> Deputy NP, Dub B, Sharma AJ. Prevalence and Trends in Prepregnancy Normal Weight — 48 States, New York City, and District of Columbia, 2011–2015. *MMWR Morb Mortal Wkly Rep* 2018;66:1402–1407. DOI: <http://dx.doi.org/10.15585/mmwr.mm665152a3>

<sup>7</sup> Centers for Disease Control and Prevention, Pregnancy Risk Assessment Monitoring System. Prevalence of Selected Maternal and Child Health Indicators for all PRAMS sites, 2012-2015.

<sup>8</sup> Health Resources and Services Administration, Maternal and Child Health Bureau. Title V State-Federal Partnership, National Outcome Measures. <https://mchb.tvisdata.hrsa.gov/PrioritiesAndMeasures/NationalOutcomeMeasures>.

<sup>9</sup> Maine Center for Disease Control and Prevention, Pregnancy Risk Assessment Monitoring System. 2014. <http://www.maine.gov/dhhs/mecdc/public-health-systems/data-research/prams/tables2014/73-sleepbed14.pdf>

<sup>10</sup> MacDorman MF, Declercq E, Cabral H, Morton C. Is the United States maternal mortality rate increasing: Disentangling trends from measurement issues. *Obstetrics and Gynecology* .2016. 128(3): 447-455.

<sup>11</sup> Building U.S. Capacity to Review and Prevent Maternal Deaths. (2017). Report from maternal mortality review committees: a view into their critical role. Retrieved from <https://www.cdcfoundation.org/sites/default/files/upload/pdf/MMRIReport.pdf>.

<sup>12</sup> Centers for Disease Control and Prevention. *Pregnancy Mortality Surveillance System*. <https://www.cdc.gov/reproductivehealth/maternalinfanthealth/pmss.html>

# Appendix A:

## Overall Recommendations, Plans and Identified Needs

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                  |
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| <p><b><u>The MFIMR Panel identified the following issues as needing in-depth investigation over the next five years (2013-2018):</u></b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <p><b><u>Activities Conducted:</u></b></p>                                                                                                                                                                                                                                                                                                                                       |
| <ul style="list-style-type: none"> <li>• Factors that contribute to preterm birth, pregnancy loss, and strategies for prevention.</li> <li>• Barriers to delivery of the highest risk infants (e.g. very low birth weight/premature) at hospitals with appropriate facilities and professionals to provide the best chance of survival for the infant (i.e. Level III facilities).</li> <li>• Sudden Infant Death (SIDS) and Sudden Unexpected Infant Death (SUID) as emerging issues, including sleep related deaths.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <ul style="list-style-type: none"> <li>• Reviewed rates of deaths during home births. The outcome was that the rate was very low.</li> <li>• Chart reviews of safe sleep deaths have been completed by Maine Medical Center staff Kelley Bowden, RN (Perinatal Outreach Coordinator) and Dr. Jennifer Hayman (pediatrician).</li> </ul>                                          |
| <p><b><u>MFIMR Panel Recommendations</u></b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <p><b><u>Activities Conducted:</u></b></p>                                                                                                                                                                                                                                                                                                                                       |
| <ul style="list-style-type: none"> <li>• Increase awareness of the MFIMR Panel and related activities and resources for healthcare providers and bereaved families.</li> <li>• Facilitate educational efforts to increase awareness of the MFIMR Panel and factors contributing to maternal, fetal, and infant deaths in Maine:             <ul style="list-style-type: none"> <li>○ Preterm birth risk,</li> <li>○ Access to high risk birth facility,</li> <li>○ To promote appropriate health, behavior, and safety screening for all pregnant women, (SnuggleME <a href="https://www.maine.gov/dhhs/SnuggleME/">https://www.maine.gov/dhhs/SnuggleME/</a>)</li> <li>○ Promote infant safe sleep practices,</li> <li>○ Screening of infants for Critical Congenital Heart Disease (CCHD), and (done as above)</li> </ul> </li> <li>• Conduct a comprehensive assessment of the MFIMR process to achieve a representative sample of classes.</li> <li>• Maine CDC Newborn Bloodspot Screening Program will proceed with planning and implementation of screen newborns for Severe Combined Immune Deficiency (SCID).</li> </ul> | <ul style="list-style-type: none"> <li>• Conference 5/20/2010 at Maple Hill Farms</li> <li>• Chart reviews of safe sleep deaths have been completed by Maine Medical Center staff Kelley Bowden, RN (Perinatal Outreach Coordinator) and Dr. Jennifer Hayman (pediatrician).</li> <li>• Midwives received pulse oximeters to conduct CCHD screenings for home births.</li> </ul> |
| <p><b><u>National Fetal and Infant Mortality Review (NFIMR) Panel Recommendations</u></b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <p><b><u>Activities Conducted:</u></b></p>                                                                                                                                                                                                                                                                                                                                       |
| <ul style="list-style-type: none"> <li>• Continue to work with NFIMR to a) review the MFIMR system in Maine to improve case ascertainment to reflect a representative sample of fetal and infant deaths; b) identify gaps and trends and the opportunity to prevent</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <ul style="list-style-type: none"> <li>• Site visit from NFIMR in July 2018 to look at data collection tools and the online database.</li> </ul>                                                                                                                                                                                                                                 |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                    |
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| <p>future deaths, and c) identify best practices related to this type of review process. (2013 Annual Report)</p> <ul style="list-style-type: none"> <li>• Consider recommendations from National FIMR Technical Assistance to implement improvements in the MFIMR system. (2014 Annual Report)</li> <li>• Determine which recommendations to implement from the technical assistance provided by the National Fetal Infant Mortality Review (NFIMR) Technical Assistance in order to improve the MFIMR system. (2015 &amp; 2016 Annual Report)</li> <li>• Implement multiple overlapping processes for case identification.</li> <li>• Expand partnerships with organizations and individuals (birth hospitals, advocacy groups, providers and bereavement counselors) to increase awareness by bereaved families of the work of the Panel.</li> <li>• Identify a spokesperson for MFIMR Panel with possible public service announcements on topics related to the prevention of fetal and infant mortality.</li> <li>• Improve the system of accessing death certificates.</li> <li>• Identify dedicated staff to coordinate panel and related activities.</li> <li>• Recommendations were reviewed by the Maine CDC and Division of Disease Prevention (was Population Health) leadership and discussed with the Panel. The Panel supports actions to implement these recommendations. (2014 Annual Report) (to more completely understand the factors surrounding maternal, fetal and infant deaths in Maine. (2015 Annual Report)</li> </ul> | <ul style="list-style-type: none"> <li>• Legislative changes made in 2017 to allow for record review without family consent.</li> </ul>                                                                            |
| <p><b><u>Screening for Critical Congenital Heart Disease Recommendations</u></b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <p><b><u>Activities Conducted:</u></b></p>                                                                                                                                                                         |
| <ul style="list-style-type: none"> <li>• Maine CDC will work with stakeholders to draft rules relating to Screening for Critical Congenital Heart Disease for all newborns. Rules will outline screening methodology, follow-up, and data collection to promote consistency and quality in screening systems. (2013 Annual Report)</li> <li>• Prepare rules relating to Screening for Critical Congenital Heart Disease for all newborns for public comment. Rules will outline screening methodology, follow up and data collection to promote consistency and quality in screening systems. (2014 Annual Report)</li> <li>• Distribute Rules related to Screening Newborns for Critical Congenital Heart Disease to hospitals and health care providers. Rules outline screening methodology, follow up and data collection to promote consistency and quality in screening systems. (2015 Annual Report)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <ul style="list-style-type: none"> <li>• Education programs to nurses and physicians and midwives. Pulse oximeters to midwives doing home births.</li> <li>• CCHD Rules were adopted in August of 2015.</li> </ul> |



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| <p><b><u>Plans for Maine CDC MFIMR Panel in 2014, 2015, 2016, 2017</u></b></p> <ul style="list-style-type: none"> <li>• Continue to monitor statistical data for trends in maternal, fetal, and infant mortality. Specifically, the Panel will look at the timing and adequacy of prenatal care, access to care for pregnant teens, impact of substance abuse and the appropriateness of care for infants with very low birth weight, including distance from a Level III facility. (2013, 2014, 2015, 2016 Annual Report)</li> <li>• Complete a comprehensive analysis of data related to fetal (2013, 2014) / preterm (2015, 2016) births, including relevant risk factors such as smoking, substance abuse, and chronic disease such as diabetes. (2013, 2014, 2015, 2016 Annual Report) <ul style="list-style-type: none"> <li>○ The Panel will review the findings when available. (2013 and 2015 Annual Report)</li> <li>○ Identify opportunities for preventing future deaths. (2014 Annual Report)</li> <li>○ Review the findings of this analysis and identify opportunities for reducing preterm births and other causes of infant death. (2016 Annual Report)</li> <li>○ A collaborative workgroup with representatives from Maine CDC, MFIMR Panel, the DHHS Sentinel Events Program and the Childhood Death and Serious Injury Panel will review the findings and identify opportunities for reducing preterm births. (2015 Annual Report)</li> </ul> </li> </ul> | <p><b><u>Activities Conducted:</u></b></p> <ul style="list-style-type: none"> <li>• A Perinatal Periods of Risk (PPOR) analysis was done in the summer of 2017 and will be used in choosing cases to review.</li> </ul>                                                                                                                                                                                                                                                                                                                                                 |
| <p><b><u>Plans for Maine CDC MFIMR Panel in 2014 (2013 Annual Report)</u></b></p> <ul style="list-style-type: none"> <li>• Identify hospital practices related to elective deliveries-avoiding inductions and caesarean births for non-medical indications prior to 39 weeks gestation to reduce prematurity.</li> <li>• Explore hospital practices re: education of families and modeling safe sleep environments by position infants on their back, use of appropriate swaddling and no blankets or other items in the bassinet.</li> <li>• Continue to work with the Office of Chief Medical Examiner to review cases of babies who die while sleeping. The most recent review covers the years 2009-2011. A plan is in place to review the 2012 deaths once the medical Examiner has completed their review. Initial data finds that 10-12 babies per year are dying in unsafe sleep conditions, with about 1 baby per year dying of SIDS. The additional year of data will allow for analysis comparing a preview study that was done for infant sleep deaths that occurred between 2002 and 2006.</li> <li>• The MFIMR Panel Coordinator will work with the Division of Disease</li> </ul>                                                                                                                                                                                                                                                                               | <p><b><u>Activities Conducted:</u></b></p> <ul style="list-style-type: none"> <li>• Reviewed where the highest C-section rates were in the state and began working with those facilities to reduce the low-risk first birth C-sections.</li> <li>• Safe sleep education has been provided to health care providers and to families since 2010.</li> <li>• Hospitals have been encouraged to become safe sleep certified since March 2015. There are currently 5 hospitals that have become Safe Sleep Certified by the National Cribs for Kids organization.</li> </ul> |

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| <p>Prevention (Population Health) leadership to identify potential approaches and solutions for challenges in case ascertainment.</p> <ul style="list-style-type: none"> <li>• Continue to work with the NFIMR coordinator to review MFIMR processes and institute best practices for State-level maternal, fetal, and infant mortality review panels.</li> </ul>                                                                                                                                                                                                  |                                                                                                                                                                                                                                                     |
| <p><b><u>Plans for Maine CDC MFIMR Panel in 2015 (2014 Annual Report)</u></b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <p><b><u>Activities Conducted:</u></b></p>                                                                                                                                                                                                          |
| <ul style="list-style-type: none"> <li>• Receive regular updates from the MFIMR Panel coordinator on Maine's participation in the <i>Collaborative Improvement and Innovation Network to Reduce Infant Mortality (ColIN)</i> activities that address factors contributing to infant mortality; address as appropriate.</li> <li>• Provide input to the MFIMR Panel coordinator on plans to implement system improvements.</li> </ul>                                                                                                                               | <ul style="list-style-type: none"> <li>• The Panel provided the Panel Coordinator with recommendations on how to implement the system and necessary improvements.</li> </ul>                                                                        |
| <p><b><u>Plans for Maine CDC MFIMR Panel in 2016 (2015 Annual Report)</u></b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <p><b><u>Activities Conducted:</u></b></p>                                                                                                                                                                                                          |
| <ul style="list-style-type: none"> <li>• The Panel coordinator will participate in ColIN activities to address factors contributing to infant mortality, specifically prenatal smoking and unsafe sleep environments.</li> <li>• The Panel coordinator will work with the Division of Disease Prevention (Population Health) leadership to follow up on recommendations and develop plans to implement system improvements.</li> <li>• Explore options to allow more flexibility in the review of records related to maternal, fetal and infant deaths.</li> </ul> | <ul style="list-style-type: none"> <li>• Statutory amendment was adopted in 2017 to allow more flexibility in the review of records.</li> </ul>                                                                                                     |
| <p><b><u>Plans for Maine CDC MFIMR Panel in 2017 (2016 Annual Report)</u></b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <p><b><u>Activities Conducted:</u></b></p>                                                                                                                                                                                                          |
| <ul style="list-style-type: none"> <li>• Work with the Maine CDC and DHHS leadership to follow up on recommendations and develop plans to implement system improvements.</li> <li>• Explore with Maine CDC and DHHS leadership supporting a statutory amendment for MFIMR Panel to repeal the requirement for family consent to review medical records related to maternal, fetal, and infant deaths.</li> </ul>                                                                                                                                                   | <ul style="list-style-type: none"> <li>• A document was developed to track activities on recommendations and system improvements.</li> <li>• Statutory amendment was adopted in 2017 to allow more flexibility in the review of records.</li> </ul> |

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