Department of Health and Human Services
Maine People Living Safe, Healthy and Productive Lives
Paul R. LePage, Governor
Mary C. Mayhew, Commissioner

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February 6, 2015

Senator Eric Brakey, Chair
Representative Andrew Gattine, Chair
Members, Joint Standing Committee on Health and Human Services
#100 State House Station
Augusta, Maine 04333-0100

Dear Senator Brakey, Representative Gattine and members of the Joint Standing Committee on Health and Human Services:

Enclosed is the 2014 Annual Report for the Maine CDC Maternal, Fetal and Infant Mortality Review Panel submitted by the Department of Health and Human Services.

This report is required under Title 22 of the M.R.S.A., Chapter 261. The report discusses the Maine CDC Maternal, Fetal and Infant Mortality Review Panel activities and accomplishments in 2014 as well as planned activities for 2015.

Sincerely,

Mary C. Mayhew
Commissioner

MCM/klv

Enclosure

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

July 1, 2013 - June 30, 2014

Submitted to the Joint Standing Committee on Health and Human Services

2014 Annual Report

Maine Center for Disease Control and Prevention
An Office of the Department of Health and Human Services

Paul R. LePage, Governor
Mary C. Mayhew, Commissioner

Maine CDC
Maternal, Fetal and Infant Mortality Review Panel (MFIMR)
2014 Annual Report to the Legislature

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EXECUTIVE SUMMARY

Background

In 2005, the 122nd Legislature passed *An Act to Establish a Maternal and Infant Death Review Panel* to examine issues related to maternal and infant deaths in Maine. In 2010, the 124th Legislature amended this statute to authorize the Maternal and Infant Death Review Panel to review fetal deaths occurring after 28 weeks gestation, i.e., stillborn infants. With this change, the Panel is now referred to as the Maternal, Fetal and Infant Mortality Review Panel.

Purpose

The Maine DHHS CDC Maternal, Fetal and Infant Mortality Review Panel (MFIMR) uses a public health approach to strengthen community resources and enhance State and local systems and policies affecting women, infants and families in order to improve health outcomes in this population and prevent maternal, fetal and infant mortality and morbidity. The infant mortality rate is a sensitive public health indicator of social health and well-being and the extent to which a society invests in children as its most precious natural resource. By understanding the factors associated with maternal, fetal and infant deaths, we will improve our ability as a State to most effectively direct prevention efforts and to take actions to promote healthy mothers and infants.

Highlights

This 2014 report summarizes relevant data contributing to perinatal outcomes, challenges, activities and plans of the MFIMR Panel.

The MFIMR Panel identified the following issues as needing in-depth investigation over the next five years (2013-2018):

- Factors that contribute to preterm birth, pregnancy loss, and strategies for prevention.
- Barriers to delivery of the highest risk infants (e.g. very low birth weight/premature) at Level III facilities.
- Sudden Infant Death and Sudden Unexpected Infant Death as emerging issues, including sleep related deaths.

Recommendations of the MFIMR Panel for the Maine CDC:

- Increase awareness of MFIMR Panel and related activities and resources.
- 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.
- Consider recommendations from National FIMR Technical Assistance to implement improvements in the MFIMR system.

For more information on activities of the MFIMR Panel:

Contact Ellie Mulcahy, Panel Coordinator, Maine CDC, eleanor.a.mulcahy@maine.gov, or 207-287-4623 www.maine.gov/dhhs/mecdc/population-health/cshn/maternal-infant/index.html

Background

In 2005, the 122nd Legislature passed *An Act to Establish a Maternal and Infant Death Review Panel.* As stated in the Panel's *Procedures Manual and Guidelines* its purpose is to:

> "…conduct thorough examinations of maternal and infant deaths in Maine. By understanding the factors associated with infant and maternal deaths, we will expand our capacity as a State to direct prevention efforts to the most effective and humane strategies possible and be able to take actions to promote healthy mothers and infants. The overall purpose of the program, using a public health approach, is to strengthen community resources and enhance state and local systems and policies affecting women, infants and families, in order to improve health outcomes in this population and prevent maternal and infant mortality and morbidity."[i]

In 2010, the 124th Legislature amended this statute to authorize the Maternal and Infant Death Review Panel to review fetal deaths occurring after 28 weeks gestation, i.e., stillborn infants. With this change, the Panel is now referred to as the Maternal, Fetal and Infant Mortality Review (MFIMR) Panel. The Legislature also repealed the sunset clause on the Panel allowing the Panel to continue its work beyond the original end date of January 1, 2011.

The legislation requires that an annual report be presented to both the Department of Health and Human Services and to the legislative committee having jurisdiction over health and human services. This 2014 report discusses the MFIMR Panel's activities and areas of focus for State Fiscal Year 2014 (7/1/13-6/3/14) and provides related State and national data regarding fetal, infant and maternal mortality.

The Panel

The Maine CDC MFIMR Panel is a multidisciplinary group of health care and social service providers, public health officials, law enforcement officers, parents and other persons with professional expertise on maternal and infant health and mortality. The Panel is supported by a dedicated revenue account for a portion of the Panel coordinator's time. All Panel members are volunteers.

The Panel is scheduled to meet four times a year and takes a broad holistic approach to improving the quality of life for all of Maine's women, infants and families. The infant mortality rate is a sensitive public health indicator of social health and well-being and the extent to which a society invests in children as its most precious natural resource. The Panel gathers and reviews information relevant to infant and maternal mortality, including factors contributing to mortality, considers the strengths and weaknesses of the current maternal and infant health care delivery system and makes recommendations to prevent future deaths and improve the overall health and safety of Maine's infants and mothers.

The following issues have been identified as needing in-depth investigation over the next five years (2013 to 2018):

- Factors that contribute to preterm birth, pregnancy loss and strategies for prevention.

- 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).

- Sudden Infant Death and Sudden Unexpected Infant Death as an emerging issue, including sleep related deaths.

Maine CDC MFIMR Activities in State Fiscal Year 2014

The Maine CDC MFIMR Panel met three times in SFY 2014. During this past year, the Panel was able to review only two cases and focused on improving case ascertainment and technical assistance with National Fetal and Infant Mortality Review (NFIMR), an initiative of the American College of Obstetrics and Gynecology (ACOG).

Summary of Activities:

Actions to Strengthen Community Resources

- Perinatal nurse managers of Maine discussed eliminating elective deliveries and promoting inter-conception care. Sample protocols and policies were posted on a website used for nurse manager communications. (http://www.bbch.org/Programs/perinatal-outreach/Pages/Clinical-Guidelines.aspx).

    - Twenty five of the twenty eight birth hospitals in Maine voluntarily report data on the rate of elective deliveries before 39 weeks of pregnancy to Leapfrog Group, a non-profit organization that compares hospitals on national standards of safety and quality. Three of these hospitals exceeded the goal of less than 5% of births between 37-39 completed weeks being delivered by cesarean section or induction without a medical indication. Each of those three hospitals has shown progress over the past year. (http://www.leapfroggroup.org/cp?frmbmd=cp_listings&find_by=state&city=&state=ME)

- Because safe sleep environment was identified as an issue of interest, a series of training sessions was developed by the Perinatal Outreach Education and Consultation Program at Maine Medical Center to use with community partners including Public Health Nursing, Maine Families Home Visiting, case managers, and Medication Assisted Treatment Center staff. Training was provided in Bangor, Waterville and Portland with 145 participants. Others in Maine received training via grand rounds presentations at hospitals, at the American Academy of Pediatrics meeting in May (2013) and at the Perinatal Nurse Leadership Collaborative.

    - Birth hospital staff were surveyed to identify methods of educating families regarding safe sleep environments. Approaches included discussion at prenatal classes, during tours of the birthing unit and during birth hospitalization.

- Dr. Jennifer Hayman from Maine Medical Center developed a Maine Chapter of Cribs for Kids. This program is available statewide through the network of Maine Families Home Visiting programs. A family or a healthcare provider that identifies a family with a need for a crib to significantly reduce the risk of an unsafe sleep situation can make a referral to the

DHHS Maine Families Home Visiting Program. Maine Families will conduct a home visit to determine eligibility for the crib as well as to establish a relationship with the family for other identified support and education needs. Approximately 463 cribs have been distributed to families in need since July 2010. Funding has been provided through small grants by the Kohl's Cares for Kids Foundation and Maine Families Home Visiting/Maine Children's Trust for future distribution.[ii]

- The Maine CDC convened a multi-disciplinary workgroup to focus on high-quality obstetric and newborn care for families planning a home birth. The Continuum of Care Collaborative developed a communication tool for the transfer of care that has a potential impact for any transfer of care (home to hospital, community hospital to tertiary care center) and has improved rates of bloodspot screening among babies born at home from 84% in 2012 to 91% in 2013.

Additional Actions to Enhance State and Local Systems and Policies

- Review of infant deaths that occurred in unsafe sleep environments for 2009-2012 of cases from the Chief Medical Examiner's Office. Maine continues to have ten to fifteen deaths fitting this definition annually. The data collected was analyzed and compared to a previous study for the time period 2002-2006. There continue to be multiple unsafe aspects of the sleep setting in each death (multiple items in crib plus known substance use or bed-sharing). One new risk was identified in two cases with wearable blankets that were used to swaddle the infants over two months of age.

- Follow up from a previous case reviewed by the Panel that involved an infant that died from a rare immune disorder, Severe Combined Immune Deficiency (SCID). A new screening test is being implemented in many states that can identify affected infants in the first week of life with this type of disorder. Early detection allows for treatment and reduces mortality related to specific primary immune deficiencies. The Maine CDC Newborn Screening Program convened a multidisciplinary workgroup to assist with implementation of SCID screening and screening for SCID began August 1, 2014.

- Screening for Critical Congenital Heart Defects (CCHD) for all newborns, which offers early identification of at-risk infants with the opportunity for further evaluation and potential to reduce infant deaths to some congenital heart diseases. Legislation was enacted by the Maine Legislature Public Law 397, An Act to Protect Newborns from Critical Congenital Heart Disease. Education has been provided to birthing hospitals in Maine to promote consistent and quality screening. All Maine birth hospitals were screening babies for CCHD as of September 2013. Although a reporting requirement is not in place at this time, one baby with no signs of a heart defect was confirmed by screening to have a CCHD.

- Over the past several years, U.S. DHHS, Health Resource Services Administration (HRSA) brought teams from thirteen states together to facilitate collaborative learning and adoption of proven quality improvement principles and practices to reduce infant mortality and improve birth outcomes (Collaborative Improvement and Innovation Network-CoIIN). Maine, as part of the rollout of the national initiative, has convened a group of stakeholders to review data surrounding infant mortality rate (IMR) and prioritize strategies to reduce the IMR utilizing 24 months of Plan Do Check Act (PDCA) cycles of change.

- The HRSA Maternal Child Health Block Grant requires states to conduct a comprehensive strength and needs assessment every five years. This process began during FY15 and will assess the health of Maine women, pregnant women, infants and children, teens and young adults and children with special health needs. This assessment and the COIIN work align with the work of MFIMR and will facilitate activities of the MFIMR Panel.

Challenges Experienced by the MFIMR Panel

- Fewer MFIMR Panel meetings than planned were held due to the very limited number of cases available for Panel review.

- Statutory requirements providing a four-month waiting period before contacting the family and requiring family consent to review records present challenges to inviting families to participate in the review process. Experience has shown that a) some families have moved since the infant death, b) many have unlisted phone numbers or only use cell phones, and c) research to ensure a valid mailing address is a time consuming process, using web and programmatic resources to avoid sending materials to the wrong family.

- All cases reviewed by the Panel were referred to the Panel coordinator by a healthcare provider or the family contacted the Panel coordinator after viewing the website. None of the referrals were attributed as a result of a letter from the Maine CDC.

- Currently there are too few cases reviewed by the Panel to identify recommendations that can be generalized. The small number of cases creates a biased sample representing those families that have already accessed services and do not represent underserved and minority populations.

Comprehensive Assessment and Technical Assistance from NFIMR

The Maine CDC MFIMR Panel engaged the NFIMR Program at ACOG with the goal of improvements to Maine's system to increase the number of cases available to be reviewed by the Panel.

Recommendations from NFIMR included:

- Implement multiple overlapping processes for case identification.
- 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.
- Identify a spokesperson for MFIMR with possible public service announcements on topics related to prevention of fetal and infant mortality.
- Improve the system of accessing death certificates.
- Identify dedicated staff to coordinate panel and related activities.

Recommendations were reviewed by Maine CDC and discussed with the Panel. The Panel supports actions to implement these recommendations.

Recommendations of the MFIMR Panel

Panel discussions identified several recommendations for the Maine CDC:

- Increase awareness of MFIMR Panel and related activities and resources.
- 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.
- Consider recommendations from the NFIMR Technical Assistance to implement improvements in the MFIMR system.

Plans for Maine CDC MFIMR Panel in 2015

Panel discussions identified several activities to be addressed in the coming year:

- 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, and the appropriateness of care for infants with very low birth weight, including distance from a Level III facility.
- Review findings from an analysis of data related to fetal deaths, including relevant risk factors such as smoking, substance abuse and chronic disease, such as diabetes, and identify opportunities for preventing future deaths.
- Receive regular updates from the MFIMIR Panel coordinator on Maine's participation in the *Collaborative Improvement and Innovation Network to Reduce Infant Mortality* (CoIIN) activities that address factors contributing to infant mortality; address as appropriate.
- Provide input to the MFIMR Panel coordinator on plans to implement system improvements.

Appendix A

Data Highlights

Appendix A

Data Highlights

The Maine CDC MFIMR Panel monitors statistical data for trends in maternal, fetal and infant mortality. Sources of Maine information include data compiled for the annual Maternal and Child Health (MCH) Title V Block Grant report and the MCH Strengths and Needs Assessment, which is updated every five years.[iii] Summaries of indicators related to several birth trends and infant mortality have been provided below.[1]

Indicators of Fetal, Infant, and Maternal Mortality

Indicator	Maine Current Period[iv]	U.S. Data	Maine Prior Period	Maine Prior Period
Fetal Mortality Measures- Time Period	**2008-2012**	**2012[v]**	**2007-2011**	**2006-2010**
Fetal mortality rate (per 1,000 live births and fetal deaths) 20+ weeks gestation	4.2	6.1	4.4	4.4
Number of Fetal deaths per year (20+ weeks gestation)		24,073		
Range	48-62	--	48-65	48-65
Average	56	--	58	60
Gestational age at death				
Between 20 and 27 weeks	46.8%	51.2%	48.0%	50.5%
At 28 weeks or more	53.2%	48.8%	52.0%	49.5%
Infant Mortality Measures- Time Period	**2008-2012[vi]**	**2010[vii]**	**2007-2011[viii]**	**2006-2010[ix]**
Infant mortality rate (number of deaths under 1 year of age per 1,000 live births)	5.9	6.1	5.8	5.8
Neonatal mortality rate (number of deaths to infants less than 28 days per 1,000 live births)	4.0	4.1	4.1	4.0
Number of infant deaths per year		24,572	--	--
Range	67-87	--	67-87	67-89
Average	78	--	78	79
Distribution of Timing of Death (percent)				
< 24 hours after birth	44.0%		44.7%	43.4%
1-7 days after birth	14.5%		14.4%	14.8%
8-27 days after birth	11.8%	*<28 days* 65.9%	11.1%	10.5%
28-365 days after birth	31.6%	34.2%	29.8%	31.4%
Gestational Age at Birth among Infant Deaths (percent)				
Early preterm infant (< 34 weeks gestation)	57.7%	56.8%	60.7%	58.2%
Preterm (34-36 weeks gestation)	7.5%	9.9%	6.9%	8.2%
Not preterm (37 weeks or more)	33.1%	30.2%	30.3%	31.1%
Unknown	1.7%	-	2.1%	2.6%

[1] Maine birth data (preliminary) from 2013 and fetal death data and infant mortality data from 2012 were the most recent data available at the time of these analyses. In general, U.S. mortality data lag by several years. Five year averages were used for some analyses with small numbers of events.

Indicator	Maine Current Period[iv]	U.S. Data	Maine Prior Period	Maine Prior Period
Maternal Mortality Measures Time Period	**2003-2012[x]**	**2007[xi]**	**2002-2011[xii]**	**2001-2010**
Number of maternal deaths due to pregnancy-related causes	4	548	3	1
Number of maternal deaths, women who died within one year of pregnancy, due to any cause	38	--	39	40
Infant Birth Measures- Time Period	**2013[xiii]**	**2013[xiv]**	**2012[xv]**	**2011[xvi]**
Number of live births to Maine residents	12,431	3,957,577	12,692	12,700
Percent of very low birth weight infants delivered at facilities for high-risk deliveries and neonates (Level III facility)	81.3%	*States range* 45.6% - 99.1%[xvii]	80.5%	82.6%
Percent low birth weight births, <2500 grams	7.2	8.0%	6.7%	6.7%
Low birth weight birth status Very low birth weight (<1500 grams) Moderate low birth weight (1500-2499 grams) Normal birth weight (2500+ grams) Unknown	1.2% 6.0% 92.8% <1%	1.4% 6.6%	1.1% 5.6% 93.2% <1%	1.1% 5.6% 93.2% <1%
Percent of women with first trimester prenatal care	88.7%*	--	88.1%	89.4%
Percent preterm birth (less 37 weeks gestation)	8.1%	11.5%	7.8%	8.3%
Infant Health Time Period	**2011**	**2011**	**2010**	**2009[xviii]**
Sleep Position – (percent and 95% confidence interval) Percent of new moms who most often placed their infants on their backs to sleep	81.2% [xix] (78.1-83.9%)	*22 state range* 62.1.-85.9% [xx]	80.9%[xxi] (77.9-83.6%)	77.5% (76.2-78.7%)
Drug-Affected Newborns - Number of "drug withdrawal syndrome in newborn" coded on Maine birth hospitalization discharge records	2.2% 273	--	2.2% 274	2.0% 262

***Based on only the records collected in the first 8 months of 2013 using the non-revised certificate**

Appendix B

Indicators/Measures

Appendix B

Indicators/measures monitored by MFIMR
Critical to the work of the MFIMR Panel is maintaining an awareness of data and trends related to fetal, infant, and pregnancy-related maternal deaths and birth outcomes in Maine, as well as nationally. The insights gained through case reviews coupled with population level data guide the efforts of the MFIMR Panel to improve the overall health and safety of Maine's infants and mothers.

Fetal Mortality
Although the majority of fetal deaths occur before 20 weeks gestation for unknown reasons, it is important to look at the timing and causes we have the ability to impact for better pregnancy outcomes. In Maine, fetal mortality rates are based on deaths that occur in utero beyond 19 weeks gestation. There is an average of 56 fetal deaths that occur each year in Maine; nearly half of Maine's recorded fetal deaths occur between 20 and 27 weeks gestation. About 43% of fetal deaths of 20+ weeks of gestation have no recorded underlying cause of death. Four leading causes of death account for 53% of recorded fetal deaths in Maine.

The leading causes of fetal deaths, in rank order, in Maine between 2008 and 2012 were:

1. Complications of the placenta, umbilical cord and membranes
2. Congenital malformations, deformations, chromosomal abnormalities
3. Maternal complications of pregnancy
4. Disorders related to short gestation and low birth weight

Infant Mortality
The infant mortality rate includes all deaths of infants from birth to 365 days of life. There is an average of 78 Maine babies that die before their first birthday. Five leading causes of death account for 64% of infant deaths in Maine. Nearly 15% of infant deaths have no underlying cause of death recorded on the death certificate.

The leading causes of infant deaths in Maine[xxii] between 2008 and 2012, in rank order, were:

1. Congenital malformations, deformations and chromosomal abnormalities
2. Disorders related to short gestation and low birth weight, not elsewhere classified (low birth weight)
3. Newborn affected by maternal complication of pregnancy (maternal complications)
4. Sudden infant death syndrome (SIDS)
5. Unintentional injuries

Maternal Mortality
Although rare in Maine, across the country for every 100,000 births there are about 13 maternal deaths per year related to or aggravated by pregnancy or pregnancy management[xxiii]. Maternal deaths attributed to direct obstetric causes include eclampsia and pre-eclampsia, hemorrhage and placenta previa, obstetrical tetanus, obstetric embolism, and other direct causes. Possible explanations for an observed national increase in maternal mortality include an increase in the number of caesarean sections, particularly among women who have undergone several previous C-sections, and the rise in obesity.

Maternal mortality can also be measured using a more inclusive definition, that is, deaths to women within one year of pregnancy from any cause. Between 2003 and 2012 there were 38 deaths of Maine women who died in Maine within one year of pregnancy; 42.1% of these deaths were attributed to illness or disease, 39.5% to unintentional injuries such as motor vehicle crashes or unintentional poisonings, 15.8% to assault or suicide and 2.6% of undetermined intent. Of the deaths directly related to pregnancy or childbirth in the last decade in Maine, one death was due to an obstetric embolism, two deaths resulted from hemoperitoneum/ ruptured tubal ectopic pregnancy and one death resulted from peripartum cardiomyopathy.

Infant Birth and Health

Maine's MFIMR Panel examines local, state and national data on risk factors for poor birth and infant health outcomes to inform case selection and review. Many infant birth and health indicators are associated with infant health, illness, disability and death, and they are among the objectives of Healthy People 2020[xxiv], Healthy Maine 2020, and the Maternal and Child Health Bureau's Title V Program.[xxv] Emerging issues and those with the potential to improve infant outcomes through public health and policy approaches are monitored on a regular basis. Three of these issues are summarized below.

Delivery Facility for High Risk Births: Research has shown that very low birth weight and very preterm infants not born in level III hospitals are at increased risk of neonatal or pre-discharge death.[xxvi] Increasing the number of very low birth weight babies born at Level III hospitals may improve health outcomes for these infants. In Maine, 81.3% of very low birth weight infants were delivered at a Level III facility in 2013. MFIMR Panel members have reviewed high-risk infant delivery patterns to determine the feasibility of system-related improvements in access to appropriate birth facilities.

Sleep position: For nearly two decades, the American Academy of Pediatrics (AAP) has recommended that infants be placed on their backs to sleep, because infants who sleep prone have an increased risk of dying from sudden infant death syndrome (SIDS). [xxvii] More than eight of ten Maine mothers most often placed their infants on their backs to sleep (81.2%) in 2011. [xxviii] Using the recommended sleeping position is more common among mothers with higher educational attainment and mothers not enrolled in MaineCare. [xxix]

Drug affected babies: Another emerging issue that may impact infant and maternal health is the number of infants born who have been exposed to drugs in utero. This population is of concern because they are at increased risk for preterm birth, sudden unexpected infant death (SUID) and other causes of death. Based on Maine hospital discharge data, "drug withdrawal syndrome in newborn" (based on ICD-9-CM 779.5) was noted on 272 (2.2%) of the Maine birth hospitalization discharges in 2011.[xxx] This represents a twenty-fold increase since 2000, when thirteen birth hospitalization discharges were noted to involve drug withdrawal syndrome. It is difficult to determine whether this noted increase represents true change in the incidence of drug withdrawal syndrome in newborns or is due, at least in part, to required reporting resulting in better recognition and diagnostic coding of the syndrome in more recent years.

Appendix C

Panel Membership

Appendix C

Maternal, Fetal and Infant Mortality Review Panel Members

Shannon Bonsey, Chief Operating Officer, Penquis CAP

Jay Naliboff, Maine Chapter, American College of Obstetrics and Gynecology, Panel Co-Chair

Kelley Bowden, Perinatal Outreach Education, Maine Medical Center, Panel Co-Chair

Cheri Sarton, Instructor, University of Maine

Nell Tharpe, Public Health Nurse Consultant, Maine CDC

Rick Hobbs, Maine Chapter, Academy of Family Physicians

Mary Connolly, Neonatology Section – Kelley 6, Eastern Maine Medical Center

Peg Bradstreet, Clinical Nurse Specialist

Shannon King, Women's Health, Maine CDC

Kathy O'Connor, Perinatal Nurse, Southern Maine Medical Center

Ellie Mulcahy, Director, Genetics Program/MFIMR Panel Coordinator, Maine CDC

Christopher Pezzullo, Medical Director, Div. Population Health, Maine CDC

Jennifer Hayman, Hospitalist, Maine Medical Center

Doug Dransfield, Retired Neonatologist

Ellen Bridge, Methodist Minister

Denise Yob, Epidemiologist, USM/Maine CDC

Ad Hoc members

Anna Love, State Police – Public Safety

Margaret Greenwald, Chief Medical Examiner

Lisa Sockabasin, Director, Office of Health Equity, Maine CDC

Michael Pinette, OB/GYN Associates

Sheryl Peavey, Strategic Reform Coordinator, DHHS

Appendix D

End Notes

Appendix D

End Notes

[i] Maine Department of Health and Human Services. (2008). Maternal and Infant Mortality Review Panel Procedures Manual and Guidelines. Augusta, ME: Maine Department of Health and Human Services, p 1.

[ii] Personal communication, Jen Hayman, MD, Barbara Bush Children's Hospital, Portland, Maine

[iii] Maine Department of Health and Human Services, Division of Family Health, Maternal and Child Health Services Title V Block Grant, State Narrative for Maine: Application for 2014. Available from Health Resources and Services Administration. https://perfdata.hrsa.gov/MCHB/TVISReports/default.aspx.

[iv] Maine Center for Disease Control & Prevention, *Maine Vital Records Data (Fetal Death Certificates)*. 2007-2012.

[v] User Guide to the 2012 Fetal Death Public Use File, Reproductive Statistics Branch, Division of Vital Statistics, NCHS. Hyattsville, MD: Accessed 10/18/14 from ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Dataset_Documentation/DVS/fetaldeath/2012FetalUserGuide.pdf

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[xii] Maine Center for Disease Control & Prevention, *Maine Vital Records Data (Death Certificates)*. 2000- 2011.

[xiii] Maine Center for Disease Control & Prevention, *Maine Vital Records Data (Birth Certificates)*. 2011, 2012, 2013.

[xiv] Hamilton BE, Martin JA, Osterman MJK, Curtin SC. Births: Preliminary data for 2013. National vital statistics reports; vol 63 no 2. Hyattsville, MD: National Center for Health Statistics. 2014. Accessed 10/18/14 http://www.cdc.gov/nchs/data/nvsr/nvsr63/nvsr63_02.pdf

[xv] Maine Center for Disease Control & Prevention, *Maine Vital Records Data (Birth Certificates)*. 2012.

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[xvii] Maternal and Child Health Bureau. Title V Information System. National Performance Measure #17: Percent of very low birth weight infants delivered at facilities for high-risk deliveries and neonates. As reported by States in the Title V Block Grant FY 2012 Annual Report and FY 2014 Application; Form 11. (most states reporting 2012 data)Accessed 10/18/14 from https://mchdata.hrsa.gov/TVISReports/MeasurementData/StandardNationalMeasureIndicatorSearch.aspx?MeasureType=Performance&YearType=MostRecent.

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