

# MAINE STATE LEGISLATURE

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Paul R. LePage, Governor

Mary C. Mayhew, Commissioner

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



**January 1, 2011- December 31, 2011**

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Submitted to the Joint Standing Committee on Health and Human Services

**2011 Annual  
Report**

**Maine CDC  
Maternal, Fetal and Infant Mortality Review Panel (MFIMR)  
2011 Annual Report to the Legislature**

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## EXECUTIVE SUMMARY

### Background

In 2005, the 122<sup>nd</sup> 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 123<sup>rd</sup> 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 overall purpose of the Maine CDC Maternal, Fetal and Infant Mortality Review Panel (MFIMR), 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, fetal and infant mortality and morbidity. The infant mortality rate is a sensitive public health indicator of social health and well-being and of 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 2011 report summarizes relevant data contributing to perinatal outcomes, challenges, activities and recommendations of the MFIMR Panel.

The MFIMR Panel identified the following issues as needing in-depth investigation:

- Factors that contribute to pregnancy loss, and strategies for prevention, specifically fetal deaths greater than 28 weeks.
- 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

Recommendations of the MFIMR Panel include facilitating educational efforts to increase awareness of factors contributing to maternal, fetal and infant deaths in Maine: preterm birth risk, access to high risk birth facility and to promote appropriate health, behavior and safety screening for all pregnant women, promote infant safe sleep practices, and identify depression and other needs of bereaved families. Other recommendations include: promoting follow-up care for women and infants, and promoting bereavement and other services available for families who have experienced a death of a mother, fetus, or infant.

### For more information on activities of the MFIMR Panel:

Contact Ellie Mulcahy, Panel Coordinator, Maine CDC, [eleonor.a.mulcahy@maine.gov](mailto:eleonor.a.mulcahy@maine.gov), or 207-287-4623  
[www.maine.gov/dhhs/mecdc/population-health/cshn/maternal-infant/index.html](http://www.maine.gov/dhhs/mecdc/population-health/cshn/maternal-infant/index.html)

## FULL REPORT

### Background

In 2005, the 122<sup>nd</sup> 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.”<sup>i</sup>

In 2010, the 123<sup>rd</sup> 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. The Legislature also repealed the sunset on the panel allowing the Panel to continue its work beyond the original end date of January 1, 2011. With this change, the Panel will be referred to as the Maternal, Fetal and Infant Mortality Review Panel.

The legislation requires that an annual report be presented to the Department of Health and Human Services and to the legislative committee having jurisdiction over health and human services. This 2011 report discusses the MFIMR Panel's activities and areas of focus for 2011 and provides some 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.

Meeting four times a year, the panel 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 of the extent to which a society invests in children as a 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 were identified as needing in-depth investigation over the next five years:

- Factors that contribute to pregnancy loss, and strategies for prevention, specifically fetal deaths greater than 28 weeks.
- 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.

## 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 & Child Health (MCH) Title V Block Grant report and the MCH Strengths and Needs Assessment, which is updated every five years.<sup>ii</sup> Summaries of indicators related to birth trends and infant mortality have been provided below.<sup>1</sup>

### **Fetal Mortality: An average of 64 fetal deaths occur in Maine each year at 20+ weeks gestation.**

Rate: Although the majority of fetal deaths occur before 20 weeks gestation, these are not officially recorded in Maine and many other states. The current measured fetal mortality rate is 4.22 in Maine (2006-2010) and 6.2 in the U.S. (2005) (per 1,000 live births and fetal deaths of 20+ weeks).<sup>iii</sup>

Timing: More than half of Maine's recorded fetal deaths occurred between 20 and 27 weeks gestation (54.5%), 27.5% occurred between 28 and 36 weeks, and 18.2% occurred at 37 weeks or more

Leading Causes: Deaths resulting from complications of the placenta, umbilical cord and membranes were the most frequently recorded cause of fetal death in Maine. Congenital malformations, deformations, chromosomal abnormalities, maternal complication of pregnancy and disorders related to short gestation and low birth weight were other frequently recorded causes of fetal death. Among fetal deaths of 20+ weeks of gestation in Maine, 24.2% of records have no recorded underlying cause of death.

Data Quality: Completeness of fetal death certificates has been identified as an issue to be addressed, as missing data on key indicators limits the use of these indicators in analyses of risk and trends.<sup>iii</sup> For example, 26.9% of Maine's fetal death certificates in the last decade have missing birthweight and 20.2% do not indicate the timing of death. While some omissions are due to difficulties in measurement and classification, others are due to provider practices.

### **Infant Mortality: Between 2005 and 2009, 423 Maine babies died before their first birthday; an average of 85 deaths per year.**

Rate: The 5-year infant mortality rate is 6.1 infant deaths per 1,000 live births (2005-2009) which is higher than the average rate of 5.2 between the years 2000-2004, a statistically significant increase of 18%.<sup>iv</sup> Maine's rate is lower than the U.S. rate (6.8 in 2007), but slightly higher than the U.S. non-Hispanic white infant mortality rate (5.6).<sup>v</sup>

Disparities: Infant mortality is higher among black infants (5-year infant mortality rate of 9.6 per 1,000) than white infants (5.9 per 1,000). Over the past 5 years, 18 of the 423 infant deaths in Maine were infants born to black mothers. Nationally, the rate among black infants is 12.9 per 1,000.

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<sup>1</sup> Birth data and fetal death data from 2010 and infant mortality data from 2009 were the most recent data available at the time of analysis for most of the discussions. Five year averages were used for some analysis with small numbers of events.

Characteristics: Table 1 Infant Mortality Characteristics (2005-2009)

<b>Characteristic</b>	<b>Percent</b>
<b>Timing of Death</b>	
< 24 hours after birth	43.0%
2-7 days after birth	15.1%
8-28 days after birth	10.6%
29-365 days after birth	31.2%
<b>Gestational Age</b>	
Very preterm Infant (< 34 weeks gestation)	60.8%
Preterm (34-36 weeks gestation)	8.5%
Not preterm (37 weeks or more)	30.7%
<b>Plurality</b>	
Singleton	83.0%
<b>Birthweight</b>	
<1500 Grams	55.6%
1500-2500	11.4%
2500+ grams	30.3%
Unknown	2.8%
<b>Location of Death</b>	
Hospital Inpatient	81.1%
Outpatient or Emergency Room	10.2%
A Residence	5.9%
Dead on arrival to medical facility	2.4%

Source: Maine Vital Records Data

**Cause of Infant Death: Nearly half of the infant deaths in Maine were caused by three groups of conditions: congenital anomalies, disorders related to short gestation and low birthweight and SIDS.**

The 10 leading causes of infant death in Maine accounted for 70.2% of all infant deaths in Maine; the ranking of leading causes was similar to the causes of infant deaths in the United States.<sup>vi</sup> By rank, the 10 leading causes were:

1. Congenital malformations, deformations and chromosomal abnormalities (congenital malformations), 22% with a 5 year rate of 1.35/1,000 live births which is similar to the US
2. Disorders related to short gestation and low birth weight, not elsewhere classified (low birthweight), 18% with a 5 year rate of 1.09/1,000 live births which is similar to the US
3. Sudden infant death syndrome (SIDS), 6.4% with a 5 year rate of 0.39/1,000 live births which is similar to the US
4. Newborn affected by maternal complications of pregnancy (maternal complications), 6.2% with a 5 year rate of 0.38/1,000 live births
5. Accidents (unintentional injuries), less than 5% of total infant deaths
6. Newborn affected by complications of placenta, cord and membranes (cord and placental complications), less than 5% of total infant deaths
7. Bacterial sepsis of newborn, less than 5% of total infant deaths
8. Respiratory distress of newborn, less than 5% of total infant deaths
9. Diseases of the circulatory system, less than 5% of total infant deaths
10. Neonatal hemorrhage, less than 5% of total infant deaths

**Maternal Mortality: There have been two maternal deaths in the past 10 years due to causes related to pregnancy and 36 deaths to women who died within one year of pregnancy in Maine.**

Nationally, recent maternal deaths were attributed to direct obstetric causes including eclampsia and pre-eclampsia, hemorrhage and placenta previa, obstetrical tetanus, obstetric embolism, and other direct causes. Possible explanations for the national increase include a rise in the number of caesarean sections, particularly among women who have undergone several previous C-sections, and the rise in obesity.

Using a more inclusive definition of maternal mortality, from 2000-2009 there were 36 deaths to Maine women who died within one year of pregnancy; 38.9% of these deaths were attributed to illness or disease, 44.4% to unintentional injuries such as motor vehicle crashes and 13.9% to assault or suicide.

**Delivery Characteristics: Improving the number of very low birth weight babies born at Level III hospitals may improve the health outcomes; among high-risk births, 79.9% of very low birthweight infants were delivered at a Level III facility in 2010.**

High Risk Birth Facility: Maine has two Level III facilities, which are the most advanced neonatal care facilities and have the specialty physicians (Maternal Fetal Medicine and Neonatologists), staffing and technical capability to manage high-risk obstetric and complex neonatal patients. These Level III birthing facilities are located in Bangor and Portland. For VLBW and very preterm infants, birth outside of a level III hospital is significantly associated with increased likelihood of neonatal or pre-discharge death.<sup>vii</sup>

In 2010, 107 of 134 (79.9%) very low birthweight infants weighing less than 1,500 grams were delivered at a Level III facility. Between 1999 and 2010, the five-year moving average has ranged between 80.7% and 83.3%. While the statewide average between 2006 and 2010 was 82.5%, the average within Maine counties ranged between 42.1% and 96.9%. Four counties had fewer VLBW infants born at Level III facilities, (Androscoggin (70.7%), Aroostook (69%), Knox (42.1%) and Washington (70%). If the mother resides in, or near, a county where a Level III facility is located, (Cumberland and Penobscot counties) her VLBW infant is more likely to be delivered at that Level III facility. Delivery of a VLBW infant in a Level II facility (Androscoggin) can improve the outcome as this type of facility can provide stabilization, some intermediate level care and transport the infant if clinically indicated to another higher level facility. Several factors are considered when making the decision whether to transfer a high risk mother or to deliver her VLBW infant at a Level I birthing facility. These factors include; the distance to these Level III and Level II facilities, weather conditions, the clinical situation and progression of labor when the mother presents at the facility. Level III facilities provide consultation on perinatal management of complications, including preterm labor to all birthing facilities in Maine. This consultation contributes to appropriate management of care and transfer to Level III facilities as soon as possible.



## **Emerging Issues:**

### **Safe Sleep: Nearly two in ten Maine infants are not frequently placed supine to sleep.**

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).<sup>viii</sup> Other safe sleep recommendations include: placing infants on their backs to sleep for every sleep, on a firm sleep surface, room-sharing without bed-sharing, keeping soft objects and loose bedding out of the crib, avoiding smoke exposure and alcohol and illicit drugs, and avoiding overheating. There have been twenty infant deaths in Maine reported to Child Protection Services that were related to unsafe sleep environments causing smothering or entrapment since December 2009<sup>x</sup>. This cause of death is one that is most likely preventable.

**Sleep Position:** More than eight of ten Maine mothers most often placed their infants on their backs to sleep (82.0%) in 2009.<sup>x</sup> This exceeds the Healthy People 2020 objective of 75.9%.<sup>xi</sup> Nearly one in ten new mothers (9.1%) most often placed their infants on their sides to sleep, 8.5% of new mothers placed their infants prone (on their stomachs), and less than 1% used a combination of positions. Using the recommended sleeping position was more common among mothers over the age of 20 and among women with higher educational attainment.

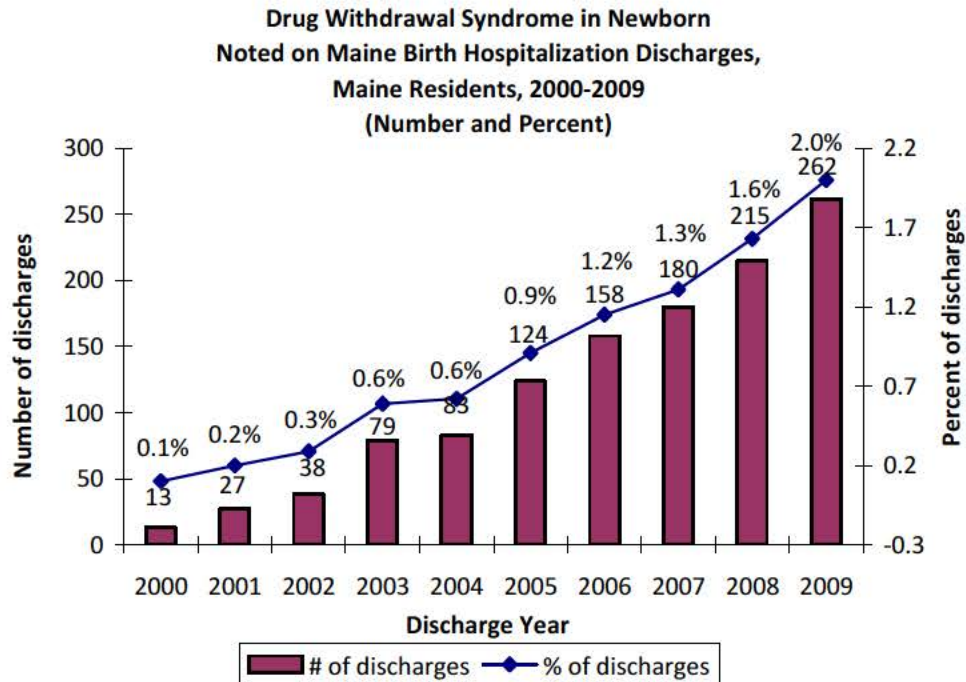
### **Drug-Affected Newborns: In 2009, “drug withdrawal syndrome in newborn” was noted on 262 of the Maine birth hospitalization discharges.**

Based on Maine hospital discharge data<sup>2</sup>, “drug withdrawal syndrome in newborn” (based on ICD-9-CM 779.5) was noted on 262 (2%) of the Maine birth hospitalization discharges in 2009.<sup>xii</sup> This represents a 19-fold increase since 2000, when 13 birth hospitalization discharges were noted to involve drug withdrawal syndrome (Figure 1). 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. This population is of concern because of increased risk for preterm birth, sudden unexpected infant death (SUID) and other causes of death. See Figure 1.

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<sup>2</sup> Note: A limitation of this analysis is that for a number of discharges, if child was born in one hospital and then transferred to another hospital on the day they were born, there will be two birth hospitalization discharges for that child; analysis conducted by USM Epidemiology cannot de-duplicate these cases from the Maine Hospital Discharge Dataset.

Figure 1



No information is available about the nature of the drug exposure, such as which drugs were involved. Between 2000 and 2009, median length of stay was more than four times longer for birth hospitalizations of newborns with drug withdrawal syndrome than birth hospitalizations of other newborns (9.0 vs. 2.1 days).

Over the last ten years, birth hospitalization discharges with drug withdrawal syndrome noted were significantly more likely than other birth hospitalization discharges to (a) have Medicaid as the expected primary payer (82.7% vs. 35.5%); (b) involve a cesarean delivery (34.4% vs. 27.8%); and (c) have a discharge status other than a routine discharge to home (e.g., discharged to home under home health service care) (40.0% vs. 7.4%).

Table 2. Percent of Drug Withdrawal Syndrome in Newborn and Percent of Birth Hospitalization Discharges by Public Health District of Residence (2000-2009)

Public Health District	Number of Drug Withdrawal Syndrome Discharges in Newborn (2000-2009)	Percent of Drug Withdrawal Syndrome in Newborn Discharges	Percent of Birth Hospitalization Discharges
Aroostook	34	2.9%	5.3%
Central Maine	137	11.6%	13.3%
Cumberland	284	24.1%	22.0%
Downeast	130	11.0%	6.2%
Mid Coast	109	9.3%	11.1%
Penquis	312	26.5%	13.0%
Western Maine	85	7.2%	13.4%
York	88	7.5%	13.4%
Total	1,179	100%	100%

## **Maine CDC MFIMR Activities in 2011**

The Maine CDC Maternal, Fetal and Infant Mortality Review Panel met two times in 2011. During this past year the MFIMR Panel discussed data related to fetal deaths occurring at 28 weeks gestation or more and continued to address specific risk factors for fetal and infant mortality that have emerged as growing concerns in Maine. Areas of review included:

- Factors that contribute to pregnancy loss, specifically fetal deaths greater than 28 weeks.
- 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.

### **Actions to Strengthen Community Resources**

- All preterm infants need a plan for follow-up after discharge from the hospital. A Maine CDC grant funded program at Maine Medical Center, The Perinatal Outreach Education & Consultation Program (POEC), is working with professional groups, to assure preterm infants receive age/gestation appropriate care. A collaborative workgroup has been established between Maine's three Neonatal Intensive Care Units (NICU), Department of Education's Child Development Services and Maine CDC Children with Special Health Needs (CSHN) to increase referrals to early intervention for NICU babies. This group will continue to collaborate on issues such as facilitating follow-up standards for discharge of high risk infants.
- In order to assure that all families experiencing an infant death or specifically a SIDS or unexpected death receive at least one Maine CDC Public Health Nurse (PHN) visit, a system has been re-established to promote communication between PHN and the Medical Examiner's Office. In addition, the MFIMR Panel Coordinator will include a brochure describing PHN services with materials sent to families when inviting them to participate in a Maine CDC MFIMR process.
- Safe sleep environments was identified as an issue needing focused attention thus a series of 1.5 hour presentations training sessions was developed to use with birth hospitals. Across the state 10 of the 30 birthing hospitals have received training on safe sleep. As a result many hospitals are developing institutional policies and modeling appropriate sleep position and environment. Another action of Maine CDC MFIMR Panel reviews has been the development of a Maine Chapter of Cribs for Kids. This program is available statewide through local Home Visiting Programs. A family or a doctor can identify a family with a need for a crib to significantly reduce the risk of an unsafe sleep situation. The DHHS Home Visiting Program will do a home visit to determine eligibility and to establish a relationship with the family for support and education. So far approximately 125 cribs have been distributed to families in need since July 2010. Funding has been provided through small grants by the Kohls Cares for Kids Foundation. Ongoing funding is a concern for this project.
- Recently the death of an infant in a homeless shelter emphasized the need to increase awareness of safe sleep practices to community service providers, home visitors, child protective case workers and family shelters to support education for families and assessing sleep environment for risks.

- In 2011, through 6-8 transport conferences and other education sessions, the POEC is promoting the use of the NICHD Neonatal Research Network (NRN): Extremely Preterm Birth Outcome Data Calculator as a tool for obstetrical providers in decision making related to managing preterm birth and optimizing outcomes.<sup>3</sup> This tool is being used at Maine Medical Center and Eastern Maine Medical Center by Obstetrical providers and neonatologists and helps to promote consistency in the message of risk presented to parents anticipating a preterm birth.
- To facilitate follow-up with bereaved families, Primary Care Providers are encouraged to request the final death certificate and autopsy reports to allow them to discuss findings with the family. This follow-up should include discussion of the cause of death, reduction of recurrence risk, and assess for risk for mental health concerns, offer support and referrals and consider the effect of the death on other children in the family. These recommendations are discussed in case review consultation through the POEC.

### **Additional Actions to Enhance State and Local Systems and Policies**

- In January 2011, the Maine CDC Data, Research, and Vital Statistics implemented an electronic death certificate system. This new system will include information indicating if a woman's death was related to a pregnancy or a birth thus improving identification of maternal deaths. Beginning in January 2012, all deaths with the exception of fetal deaths will be filed using the electronic system. Fetal deaths will continue to be filed using the paper version. The Maine CDC MFIMR Panel discussed the new electronic death certificate and considered the implications for the Panel. Implementation of an automated system will improve the timeliness and quality of the information on Maine death certificates and support a shorter turnaround time for obtaining certified copies for families and will promote uniformity in cause-of-death statistics. Upgrades to Maine's birth registration system have been identified and are in the planning stages. In the future, birth and death certificates will be able to be rapidly matched.
- A previous case reviewed by the panel 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 allowing for treatment reducing mortality related to specific primary immune deficiencies. The Maine CDC Newborn Screening Program is planning for implementation of SCID screening in 2012.
- Leadership from the Maine CDC Division of Family Health and POEC met with leadership from the Sentinel Events Program within the Division of Licensing and Regulation, Department of Professional and Financial Regulation. The group discussed ways to collaborate to improve systems of care for pregnant women and infants for improved outcomes.

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<sup>3</sup> [http://www.nichd.nih.gov/about/org/cdbpm/pp/prog\\_epbo/epbo\\_case.cfm](http://www.nichd.nih.gov/about/org/cdbpm/pp/prog_epbo/epbo_case.cfm).

## **Challenges Experienced by the MFIMR Panel**

- The number of MFIMR Panel meetings was less than planned due to limited staffing and the workload of the Panel coordinator. The Attorney General’s Office has advised the Panel that a contractor may function as a panel coordinator designee or assistant. To help facilitate work, the Maine CDC MFIMR Panel Coordinator will develop a contract for assistance in Panel activities.
- Completeness and accuracy of data from fetal death certificates contributes to challenges in further reviews. The fetal death data was presented to the Perinatal Nurse Managers of Maine in June, 2011 which stimulated discussion about encouraging more complete and accurate data submission with fetal death certificates to improve usefulness of data.

## **Recommendations of the MFIMR Panel**

Discussions of cases identified the following recommendations:

- Educational efforts will include promoting active screening for every pregnant woman for nutritional status, home security (permanent address), abuse and psychological issues and referrals to be offered to help with identified risk or needs. This can be accomplished through partnerships with Perinatal Outreach Education, healthcare provider professional organizations and Maine CDC Public Health Nursing.
- The "Infant Safe Sleep" recommendations from the AAP and other pertinent councils need to be adopted on a state-wide level, including updated standards, published in Oct. 2011.<sup>xiii</sup>
  - Safe sleep encompasses:
    - Back to sleep for every sleep
    - Use a firm sleep surface
    - Room-sharing without bed-sharing
    - Keep soft objects and loose bedding out of the crib
    - Pregnant women should receive regular prenatal care
    - Avoid smoke exposure during pregnancy and after birth
    - Avoid alcohol and illicit drug use during pregnancy and after birth
    - Breastfeeding is recommended
    - Consider offering a pacifier at naptime and bedtime
    - Avoid overheating
    - Do not use home cardiorespiratory monitors as a strategy for reducing the risk of SIDS
    - Recommendations also include: Expand the national campaign to reduce the risk of SIDS to include a major focus on the safe sleep environment and ways to reduce the risk of all sleep related infant deaths, including SIDS, suffocation, and other accidental deaths; pediatricians, family physicians, and other primary care providers should actively participate in their campaign.
- Perinatal Outreach Education will promote a postpartum visit to occur within 1 to 2 weeks following a fetal loss to follow up and check on maternal and paternal mental health. An objective assessment tool will be identified and encouraged to be used to assess for depression and healthcare providers will be encouraged to ensure a referral to resources such as the Maine CDC PHN, Maine Families, bereavement support, and spiritual support.

- A fetal or neonatal death checklist will be developed for use when discharging a mother from the hospital to ensure referral to resources. Existing hospital bereavement packets will be reviewed and modified for consistency. Perinatal Outreach Education will schedule this discussion to occur as part of a meeting of the Perinatal Nurse Managers of Maine in 2012.

## **Plans for Maine CDC MFIMR Panel in 2012**

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

- The MFIMR Panel Coordinator will work with the Maine CDC CSHN Director to identify resources for contracting with an individual or agency for consultation and assistance with Panel activities.
- Refine case identification to include death certificates, fetal death certificates, hospitals, other healthcare provider referrals, and self-referrals
- Consider review of specific cases regarding the following topics: VLBW babies (<1500 grams) who were born and died at a Level 1 or Level 2 hospital, and Late Preterm Birth infants. Maternal case identification will improve with the new death certificates.
- Continue to perform ongoing assessment of Maine CDC MFIMR processes, i.e. case ascertainment, provider and family information and bereavement resources. Consult with National Fetal Infant Mortality Review Program (American College of Obstetrics and Gynecology) and other national organizations to identify areas for improvement and further development.
- 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 very low birth weight infants including distance from a Level 3 facility.
- Perform a more in depth analysis of fetal death data, including period of gestation, maternal risk factors: age, pregnancy history, obesity, smoking, diabetes, and hypertension.
- Complete a comprehensive analysis of infant deaths, including relevant risk factors such as smoking, substance abuse, and infant sleep environment and identifying opportunities for preventing future deaths.
- Survey birthing hospitals for activities related to hospital-based screening for Critical Congenital Heart Disease (CCHD) and monitor proposed legislation for upcoming bills related to CCHD.
- The Panel will continue to support the work of the Safe Sleep Coalition being undertaken by the Children’s Trust and their efforts around increasing awareness of safe sleep practices, pursuing public service announcements and providing education to nurses, physicians, and other neonatal care providers.
- Promote Public Health Nursing services for families such as linking to bereavement resources and other services and introducing the MFIMR review process including a home interview. Observe the process for referral of SIDS cases by the Medical Examiner’s Office to Maine CDC Public Health Nursing to allow PHN to provide services to families.

- Schedule discussion at a Perinatal Nurse Managers meeting in 2012, to facilitate consistency in bereavement packets and checklists and referrals at birthing hospitals statewide. Peg Bradstreet, a MFIMR Panel member and Clinical Nurse Specialist at MMC, is identified as a resource to lead discussions with nurses.
- The Perinatal Outreach Education & Consultation Program (POEC) and other professional groups will encourage a consistent approach for follow-up after discharge for preterm infants to assure they receive age appropriate care. The NICU workgroup discussing referrals for NICU babies can collaborate on this as a discharge planning activity. POEC will explore presentations at the Maine Nurse Practitioner Association (MNPA) to education nurse practitioners on follow-up care and exams for premature infants.

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<sup>i</sup> 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.

<sup>ii</sup> 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 2010 and Annual Report for 2008 and 2012 MCH Services application and the 2010 annual report. Available from Health Resources and Services Administration. <https://perfdata.hrsa.gov/MCHB/TVISReports/default.aspx>.

<sup>iii</sup> MacDorman, M. and S. Kirmeyer. Fetal and perinatal mortality, United States, 2005. National vital statistics reports 2009 vol 57 no 8. Available from: [http://www.cdc.gov/nchs/data/nvsr/nvsr57/nvsr57\\_08.pdf](http://www.cdc.gov/nchs/data/nvsr/nvsr57/nvsr57_08.pdf). Accessed April 22, 2010.

<sup>iv</sup> Maine Department of Health and Human Services, Maine Center for Disease Control and Prevention, *Maine Vital Records Data (Birth and Death Certificates)*. Analyzed by University of Southern Maine, Department of Applied Medical Sciences: Augusta Maine. 2012011.

<sup>v</sup> Xu JQ, Kochanek KD, Murphy SL, Tejada-Vera B. Deaths: Final data for 2007. National Vital Statistics Reports 2009, vol 58 no 19. Centers for Disease Control and Prevention, National Center for Health Statistics, National Vital Statistics System: Hyattsville, MD.2010. [http://www.cdc.gov/nchs/data/nvsr/nvsr58/nvsr58\\_19.pdf](http://www.cdc.gov/nchs/data/nvsr/nvsr58/nvsr58_19.pdf)

<sup>vi</sup> Heron M. Deaths: Leading Causes for 2007. National vital statistics reports; vol 59, no 8. Hyattsville, MD: National Center for Health Statistics. 2011. [http://www.cdc.gov/nchs/data/nvsr/nvsr59/nvsr59\\_08.pdf](http://www.cdc.gov/nchs/data/nvsr/nvsr59/nvsr59_08.pdf). Accessed November 1, 2011.

<sup>vii</sup> Lasswell S. M., et al, Perinatal Regionalization for Very Low Birth Weight and Very Preterm Infants, *JAMA*. 2010; 304(9): 992-1000.

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<sup>x</sup> Maine Department of Health and Human Services, Maine Center for Disease Control and Prevention, *2009 PRAMS data*. Analyzed by University of Southern Maine, Department of Applied Medical Sciences. Augusta Maine. 2011.

<sup>xii</sup> 2000-2009 Maine Hospital Discharge Data, using code ICD-9-CM 779.5. Analyzed by University of Southern Maine, Department of Applied Medical Sciences: Augusta Maine. 2011.

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## **Maternal, Fetal and Infant Mortality Review Panel Members**

Shannon Bonsey, Chief Operating Officer, Penquis CAP

Kolawole Bankole, Minority Health Program Coordinator, City of Portland

Denise Yob, Epidemiologist, Maine CDCP

Sheryl Peavey, Director, Early Childhood Systems Initiative, Maine CDCP

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

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

Carolyn Taggett, Health Information Services, Northern Maine Medical Center

Julie Keen, Certified Nurse Midwife

Laurie Caton-Lemos, Instructor, University of Maine

Dwight Littlefield, Public Health Nurse Consultant, Maine CDCP

Rick Hobbs, Maine Chapter, Academy of Family Physicians

Michael Pinette, OB/GYN Associates

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

Margaret Greenwald, Chief Medical Examiner

Peg Bradstreet, Clinical Nurse Specialist, Maine Medical Center

Lisa Sockabasin, Director, Office of Minority Health, Maine CDCP

Shirley Perron, Nurse Manager: Family Birthing Unit, St. Mary's Regional Medical Center

Ellie Mulcahy, Director, Genetics Program/MIMR Panel Coordinator, Maine CDCP

Stephen Meister, MCH Medical Director, Maine CDCP

Anna Love, State Police - Public Safety

Kathleen Clark, Turning Tide

Jennifer Hayman, Hospitalist, Maine Medical Center

Thomas Saviello, State Representative

Doug Dransfield, Retired Neonatologist

Ellen Bridge, Methodist Minister

Elizabeth Kubik, Clinical Psychologist