Delaware Healthy Mother and Infant Consortium

2006 Annual Report

Reducing Infant Mortality in Delaware

October 2006

Prepared by
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DELAWARE HEALTH AND SOCIAL SERVICES
Division of Public Health

Delaware Healthy Mother & Infant Consortium

Embracing the future of Delaware

Dear Governor Minner,

It is with a great sense of accomplishment that we submit this 1st annual report of the Delaware Healthy Mother and Infant Consortium. As you are well aware, legislation to form the Consortium was passed in late 2005 and the Consortium met for the first time in February of 2006. In a short period of time, not only have we developed the infrastructure necessary to maintain the Consortium, but we have gotten the Consortium off to a very productive start. The early work of the Consortium culminated with a *Widening the Circle* Conference in Dover in June 2006. This highly successful conference had close to 200 participants and served well to educate the public as well as health care practitioners on issues related to women's health and infant mortality in Delaware.

It has been a little over a year since publication of the 2005 Infant Mortality Task Force recommendations. Many of the 20 recommendations from the Task Force have been initiated and are starting to make an impact. However, it will take time for these programs to make a difference. Reducing infant mortality and improving maternal health in Delaware will also take much ongoing effort and funding.

Our early success could not have been achieved without your support and the tireless efforts of the Division of Public Health (DPH). DPH supports all infant mortality initiatives throughout the state including direct services to women who are at high risk of experiencing an infant death and research to identify behaviors and lifestyles that may lead to pregnancy complications and subsequent infant death.

Furthermore, DPH concurs that timely preconception, prenatal, and postnatal care are a vitally important part in the overall health and welfare of women and infants. The interventions implemented by DPH are fundamentally important to reducing the infant mortality rate, and the Division is dedicated to increasing awareness of risks and causes of infant mortality in the Delaware community.

We look forward to the future challenge of continuing to improve maternal health and reducing infant mortality in Delaware.

Sincerely,

David A. Paul, MD
Chair, Delaware Healthy Mother and Infant Consortium

Jaki Gorum, DSW
Co-Chair, Delaware Healthy Mother and Infant Consortium

Executive Summary

Over the past ten years, Delaware has been challenged by increasing infant mortality (IM) rates. IM rates have gradually increased to over nine infant deaths per 1000 live births beginning in the latter half of the last decade (i.e., 1998-2002: 9.2/1000 live births; 1999-2003: 9.1/1000 live births)[1]. This increase in the rate of infant deaths is in contrast to an overall steady decline in the United States with the exception of 2001 and 2002 rates (slight increase from 2001: 6.8/1000 live births to 2002: 7.0/1000 live births). Further, in Delaware, the disparity in infant mortality between African American and White infants remains significant at a 2.42 difference between the two groups (i.e., 1998-2002: 2.42; 1999-2003: 2.42)[1]. This disparity ratio is similar to the national disparity ratio (1999-2003: 2.49). Although the disparity is steady at a more than two-fold difference between African American and White infant deaths, efforts to reduce the racial and ethnic difference in Delaware are paramount to reducing the overall infant mortality rate. The Delaware Healthy People 2010 Goal is to reduce the infant death rate per 1000 live births to 5.0 in conjunction with the National Healthy People 2010 Goal of reducing the number of infant deaths from 7.2 to 4.5/1000 live births[2, 3]. As a result, infant mortality (defined as an infant death within the first twelve months of life) is a critical public health problem in Delaware.

In May of 2005, the Infant Mortality Task Force, convened by Governor Ruth Ann Minner, published a report outlining 20 priority recommendations focused on decreasing infant mortality. In Fiscal Year (FY) 2006, eight of those recommendations identified as principal priority concerns required immediate action. Five of the principal priority recommendations were fully funded to support capacity building for collaboration and partnerships, research, and direct services while the remaining three were designated as recommendations requiring priority review to amend current state and provider practices.

During the past year, the Division of Public Health (DPH) and key stakeholders have developed the infrastructure required to implement the Infant Mortality Task Force recommendations. DPH partnered with Medicaid to fund wraparound services supplementing direct care services for preconception, prenatal, and postnatal care. Prevention services included the implementation of a direct services program utilizing the Comprehensive (holistic) Family Practice Team model, a Fetal Infant Mortality Review (FIMR) as a committee of the existing Child Death Near Death Stillbirth Commission (CDNDSC), and the Pregnancy Risk Assessment Monitoring System (PRAMS) project. The Delaware Healthy Mother and Infant Consortium (DHMIC) was established by Governor appointment to monitor and evaluate implemented programs and services. Additionally, the Center for Excellence in Maternal and Child Health and Epidemiology was established to provide scientific expertise and technical support to DPH and the DHMIC.

In brief, DPH selected two contractors, Delmarva Rural Ministries, Inc., and Westside Health, Inc. for funding to expand wraparound services in preconception, prenatal, and postnatal care to targeted populations in Delaware using the Comprehensive Family Practice Team model approach. Targeted populations were defined as women residing in specific zip codes where the number of infant deaths was high compared with other regions, and women who had a history of

poor birth outcomes such as a previous premature birth, low birth weight infant delivery, infant death, fetal death, or stillbirth. These services supplement those currently provided by Medicaid and other insurers such as psychosocial screening and support, and additional nutrition monitoring. The FIMR committee established three full-time staff positions to implement the program. At the end of FY 2006, approval for position advertisement and hire was initiated. The PRAMS project completed a pilot study, applied and was awarded federal funding to begin annual data collection January 1, 2007. The DHMIC convened four times and appointed five critical area committees for monitoring implementation of the Infant Mortality Task Force recommendations including systems of care, standards of care, health disparities, health education and prevention, and data and science. An objective of the DHMIC was to base its framework for operation on the previous work of the Cancer Consortium, and to integrate the current goals of the Health Disparities Task Force, based on IM disparities, into the priority recommendations from the IMTF. The Center for Excellence in Maternal and Child Health and Epidemiology contracted with the Centers for Disease Control and Prevention (CDC) to employ the State Maternal and Child Health (MCH) Epidemiologist, and established three full time positions to provide scientific expertise in study design, program evaluation, and data analyses to all maternal and child health programs at DPH.

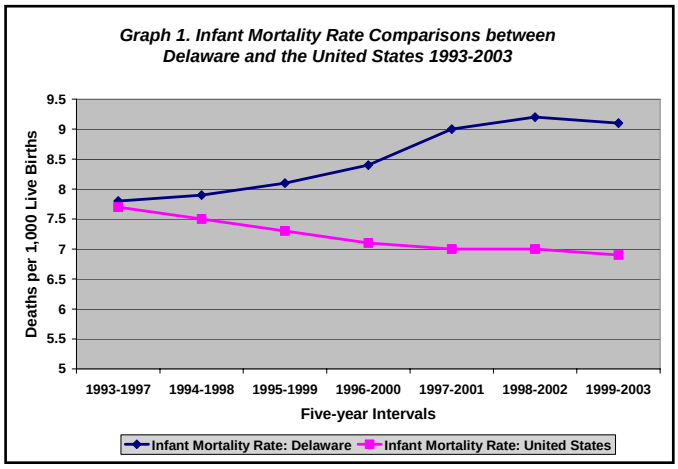
The purpose of this report is to describe the progress to date of the five principal priority and three principal priority review recommendations by providing discussion of activities and accomplishments, evaluation of performance measures, and preliminary data analyses. Description is also provided for the remaining twelve priority recommendations with discussion of annual progress. Finally, performance measures and the implementation plan for all principal priority recommendations in FY 2007 are described and followed by concluding remarks.

This report highlights the collaborative efforts, established partnerships, and key accomplishments of the DHMIC and DPH as well as other internal and external agencies including Medicaid, Women Infants and Children (WIC) program, Christiana Care Health Systems, Beebe Medical Center, Westside Health, Inc., Delmarva Rural Ministries, Inc., March of Dimes, Woman to Woman Health Care, Nanticoke Memorial Hospital, Bayhealth Medical Center, and others. Each agency contributed to the planning of infrastructure and proposed implementation of this initiative. Looking toward the future with these partners, as the infrastructure to support programs aimed at decreasing infant mortality is established, it is anticipated that the health of Delaware's most vulnerable populations will be improved and the burden of infant mortality reduced throughout the state.

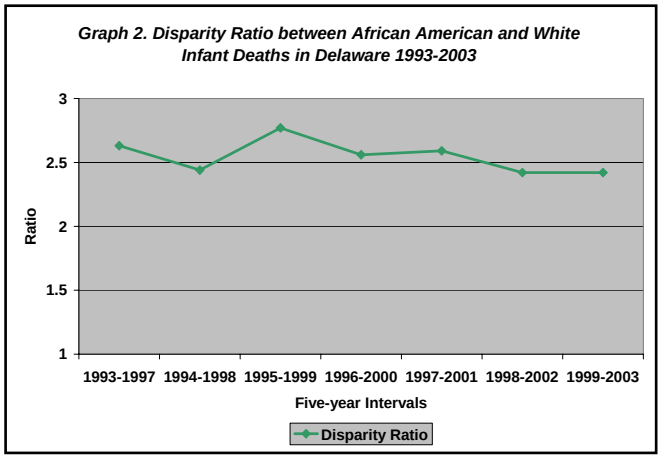
I.

Introduction

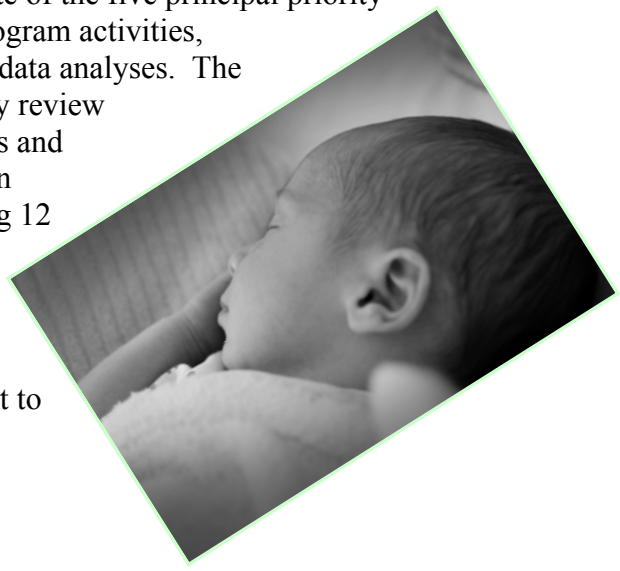
Over the past decade in the United States, the infant mortality rate has steadily decreased. Infant mortality is defined as the death of an infant at less than one year of life (≤ 12 months). By contrast, the infant mortality rate in Delaware has consistently increased. Graph 1 demonstrates the increase in five-year rates from 1993-1997 to 1999-2003[1]. In comparison with the decreasing U.S. rates, it is clear that Delaware must address infant deaths as a priority issue. Additionally, the disparity ratio in infant mortality remains steady with an almost two and a half fold difference between African American and White infants (Graph 2)[1]. In response to the steady increase in infant mortality and the significant disparity ratio, Governor Ruth Ann Minner convened a state-wide Infant Mortality Task Force (IMTF) to address the possible causes and complications of infant mortality in Delaware and provide a written report of findings and recommendations.



In June of 2005, the Governor secured funding with the approval of the state legislature for an infant mortality initiative in the state of Delaware to address the high infant mortality rate. This approval was based on the published report of recommendations produced by the IMTF in conjunction with DPH[4]. The report included 20 priority recommendations designed to mitigate the increasing rate of infant mortality in the state. For the state FY 2006, the Governor's office prioritized eight of those recommendations as principal to decreasing IM rates then targeted five for immediate implementation, dedicating approximately one million dollars to the infant mortality initiative. The following report presents an overview of the implementation status of all 20 priority recommendations, and highlights the eight principal priority and review recommendations for 2006. Further description and detailed data analyses are provided for the five principal priority recommendations including progress to date and program successes, while progress toward review and amendment is provided for the three principal priority review recommendations.



The first section of the report describes progress to date of the five principal priority recommendations including key accomplishments, program activities, evaluation of performance measures, and preliminary data analyses. The following section highlights the three principal priority review recommendations demonstrating key accomplishments and evaluation of performance measures. The third section summarizes program activities related to the remaining 12 priority recommendations followed by a fourth section describing future directions in FY 2007 for principal priority recommendations. The final section consists of concluding remarks and a summary of the DHMIC and DPH's commitment to continue the effort to reduce infant mortality in Delaware.



II. Principal Priority Recommendations

Five principal priority recommendations were funded for immediate implementation in FY 2006. Specifically, DPH is responsible for contracting supplemental direct services for the Comprehensive (Holistic) Family Practice Team model and implementing PRAMS. The Division is also responsible for partnering with agencies within the state to establish FIMR, the DHMIC, and the Center for Excellence in Maternal and Child Health and Epidemiology. Each recommendation is defined and discussed in turn within this section.

A. Comprehensive (Holistic) Family Practice Team Model

The Comprehensive Family Practice Team model program is a direct services model targeting disparity in access to care, specifically among minority and lower income populations. The Family Practice Team model is a community-based model aimed at increasing access to supplemental care among targeted populations through combining prenatal and medical care with social services, nutrition services, and other components of health services coordinated by a case management system. The program is funded to cover areas of care not typically paid by insurance providers and to provide care during time periods where insurance coverage is limited or for identified gaps in service. For instance, the program provides postpartum care to women between six weeks and up to two years after delivery, a time period of limited coverage by Medicaid and other insurers. The program also provides coverage for women who are uninsured or under-insured based on income level.

The strengths of implementing this supplemental care model are more comprehensive prenatal care for women at highest risk for a poor birth outcome and subsequent infant death, intensive monitoring of infants that present with complications or other risk factors for death,

intervention after delivery to increase birth spacing, and monitoring of lifestyle behaviors that increase women's risks for future pregnancy and delivery complications.

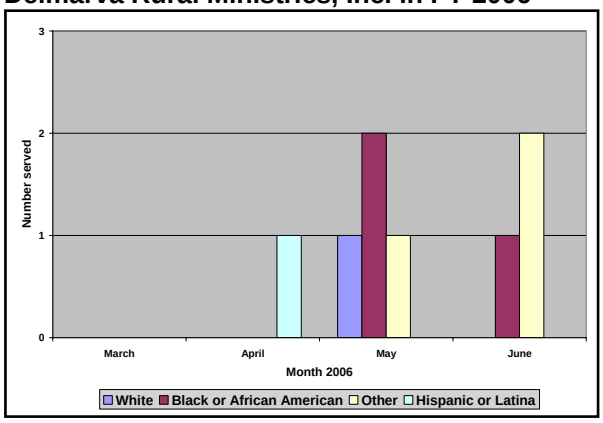
In order to address the significant disparity in infant mortality, DPH focused intervention on targeted populations, or minority women residing in zip codes containing the highest numbers of infant deaths for the time period of 1999-2003, women who were uninsured or under-insured, and women with a history of poor birth outcomes [e.g., previous premature birth (< 37 weeks gestation), low birth weight infant delivery (≤ 2500 grams), infant death, fetal death, or stillbirth (fetus weighs at least 350 grams, or if weight is unknown, reached at least 20 weeks gestation)]. For FY 2006, in order to monitor effectiveness of program implementation, entry into program care occurred at the first prenatal visit and participants were followed for the duration of the pregnancy, through childbirth, and up to two years post-partum.

Two contractors were funded by DPH for FY 2006, Delmarva Rural Ministries, Inc. and Westside Health, Inc., through a request for proposal (RFP) process. A DPH panel reviewed three applicants for funding, and based on the methodology presented, selected the applications with the most comprehensive implementation plans. Each contractor was expected to partner with other agencies to ensure full implementation of the comprehensive program (e.g., Resource Mothers, Medicaid, etc.), and to submit monthly data and fiscal reports documenting program progress. Both contractors were encouraged to highlight efforts to recruit women in the targeted populations.

During the three and a half month start-up phase in the latter part of FY 2006 (mid-March through June 30, 2006), services were provided to a total of 8 clients at Delmarva Rural Ministries, Inc. and a total of 194 clients at Westside Health, Inc. (Graphs 3 and 4). Seventy-five percent (75%) of those served by Delmarva Rural Ministries were African American/other, while 9% served by Westside Health, Inc. were African American/other. Twenty-five percent (25%) of participants served by Delmarva Rural Ministries, Inc. and 85% served by Westside Health, Inc. were Hispanic. Both contractors are scheduled to receive initial site visits in FY 2007 to provide suggestions for increasing recruitment of African Americans into their programs.

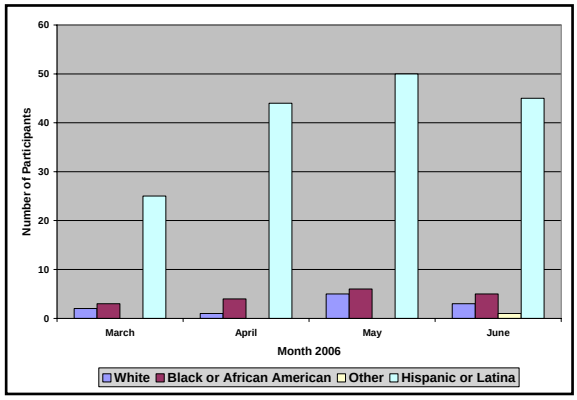
Of those women recruited into both programs (Delmarva Rural Ministries, Inc. and Westside Health, Inc.), a total of five had experienced a previous premature birth and three had experienced a previous infant death. In addition, 21 had chronic conditions including heart disease and hypertension or high blood pressure. Of infants born into both programs (N = 4), two were born prematurely (≤ 37 weeks gestation) and two were born at term. Both premature infants were delivered low birth weight (≤ 2500 grams), while the term infants were delivered at normal weight.

Graph 3. Number and Race of Clients Served at Delmarva Rural Ministries, Inc. in FY 2006



Outreach and contact are paramount to this intervention effort to improve access and intensity of prenatal and post-partum care. In the case of Delmarva Rural Ministries, Inc., of the eight women in the program, 62 attempts at contact were made for appointments and referrals; therefore, contact effort averaged eight contacts per participant over the reporting period. For Westside Health, Inc., 494 contacts were attempted for all 194 participants averaging three contacts per participant. This contact intensity exemplifies the contractors' efforts to intervene among these high-risk populations. Since all infants were born in June, the number of infant contacts was minimal (N = 2).

Graph 4. Number and Race of Clients served at Westside Health, Inc. in FY 2006



In terms of program implementation and services rendered, Table 1 indicates the numbers of visits per participant for both Delmarva Rural Ministries, Inc. and Westside Health, Inc. As is clearly displayed, the 202 participants are receiving intensive intervention regarding screening, counseling, and outreach. Beginning in FY 2007 with the contract site visits, program-specific services will be reviewed by DPH and suggestions given for focusing on targeted populations to decrease the poor birth outcomes of premature birth, low birth weight delivery, and infant death.

Table 1. Program Services Provided by Each Contractor for FY 2006

Services*	Delmarva Rural Ministries, Inc.	Westside Health, Inc.	*Total*
Prenatal Care Visit	9	194	**203**
Screening and referral for alcohol use, substance use, or tobacco use	24	583	**607**
Outreach visit and scheduling	34	4	**38**
Nutrition counseling	9	388	**397**
Breastfeeding promotion	7	54	**61**
Screening and counseling for chronic diseases	2	388	**390**
Total	**85**	**1611**	**1696**

*Services are defined in each row title and numbers include services for each type listed. For example, screening and referral for alcohol, substance use, or tobacco use includes all screenings and referrals for all three categories. Each participant may have multiple services, screenings, and referrals.

Table 2 provides an update on FY 2006 performance measures. As is shown, the RFP release and award were completed as scheduled, and program start-up services implemented

in March of 2006. Monthly service statistics enabled the compilation of participant numbers highlighted in the graphs and tables above, and program evaluation is expected in FY 2007.

Table 2. Performance Measures and Progress for Comprehensive (Holistic) Family Practice Team Model in FY 2006

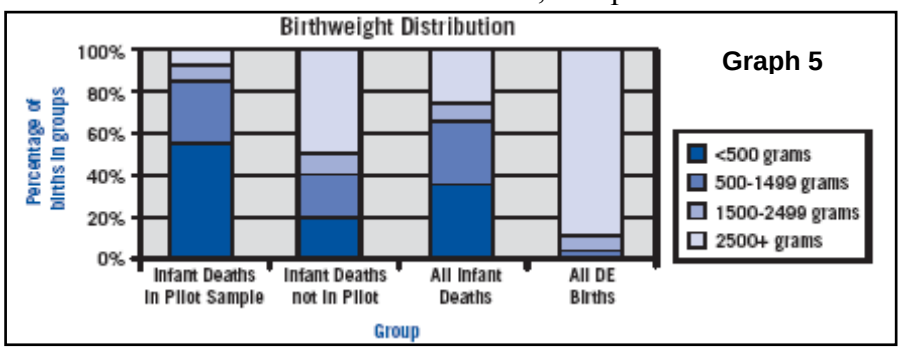
FY 2006 Performance Measure	2006 Progress
1. RFP released by October 31, 2005.	The RFP was released by October 2005 as originally scheduled.
2. Award contracts by January 31, 2005.	Contracts were awarded by January 2006 as originally scheduled.
3. Vendors will begin implementing services by March 1, 2006.	Direct services were implemented on March 1, 2006 by Delmarva Rural Ministries, Inc. and on March 15, 2006 by Westside Health, Inc.
4. Vendors will submit service statistics on a monthly basis.	Service statistics were submitted for the months of March, April, May, and June by both contractors.
5. Vendors will provide an end of the fiscal year evaluation of program progress.	Due to the later implementation of services, both vendors were at the end of the start-up period on June 30, 2006. Therefore, they submitted a narrative report of progress to date, not an evaluation of services. The evaluation of services is in process for FY 2007.

B. Fetal Infant Mortality Review (FIMR)

FIMR, a panel of the CDNDSC, is responsible for reviewing all infant and fetal deaths in the state of Delaware (e.g., in 2003, there were 107 infant deaths). The CDNDSC, under the purview of the Administrative Office of the Courts is required to review all child deaths, while FIMR is a review of infant deaths only (i.e., ≤ 12 months). The FIMR review consists of assessment of medical charts; hospital discharge records; birth certificates; death certificates; interviews with the mother and family; and physician and other social service intervention program interviews.

The purpose of FIMR is to "enhance the health and well-being of women, infants, and families by improving community resources and service delivery systems available to them"[5] (page 1). In a national evaluation of existing FIMR programs, states with FIMR were two to three times more likely to support outreach activities for prenatal care, develop and certify population-based standards of care for pregnant women and infants, work closely with local American College of Obstetrics and Gynecology chapters to advocate for women and infants, collaborate with community group initiatives or programs, and undertake data collection and analysis activities using a client database compared with states that did not have a FIMR in place[5]. The strengths associated with implementing FIMR in Delaware are highlighted above, increasing monitoring of high risk women and infants, collaboration, advocacy, certification of standards, and data analyses. All of these strengths lead to more focused interventions for women of childbearing age and ultimately, a reduction in infant mortality.

In the fall of 2005, the FIMR pilot study, generated by Nemours Health and Prevention Services of the Nemours Foundation, was published and disseminated to the public (N = 48 infant deaths reviewed)[6]. Primary results of the pilot study indicated that key services for women at risk for premature labor are needed, follow-up and referral for at risk women should be more closely monitored, bereavement



services for women experiencing loss must be implemented, women with sub-optimal health should be closely followed throughout pregnancy, and extreme weight loss or gain during pregnancy must be monitored[ii]. Since a high proportion of infant deaths in the state occur during the neonatal period to extremely low birth weight infants, the pilot study focused on over-sampling from that population of infants. Graphs 5 and 6 provide data comparisons of those cases sampled for the pilot, those cases not sampled, and all infant deaths in Delaware. Over 90% of those cases sampled were considered low birth weight (≤ 2500 grams), and 92% were infants who died in the neonatal period (< 28 days of age).

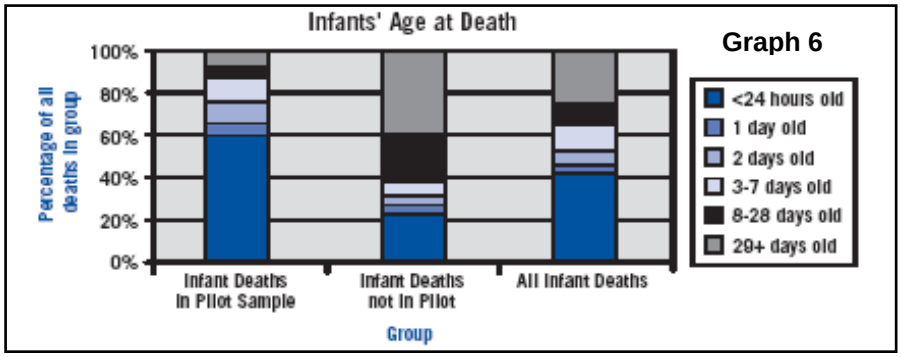


Table 3: Data Quality

Information available for review	Cases in pilot sample (%)
Minimal information (0-25% complete)	5 (10)
Major gaps (25-50% complete)	24 (50)
Minor gaps (50-75% complete)	10 (21)
Substantially complete (75-100% complete)	4 (8)
Undetermined	5 (10)
Total	48

Regarding primary findings of the medical chart review, 85% of all cases selected died due to complications of prematurity. In terms of all infant deaths in the state, over 50% died due to these same complications (the primary cause of infant death in 2002). In addition, 60% of those cases reviewed contained major gaps in available information such as lack of maternal information, unavailable prenatal records, and incomplete hospital records (Table 3). These findings indicate that practitioners within the state must focus on collecting and recording complete information on all women at risk for premature birth and low birth weight infant delivery. Completeness in information allows for detailed analyses of risk factors among women who experience an infant death in Delaware.

In FY 2006, based on the results from the FIMR Pilot Study, the CDNDSC initiated a process to review every fetal and infant death in Delaware, formulate recommendations based on findings, and develop an action plan to reduce fetal and infant mortality in the state. Three positions were established to implement the FIMR program in Delaware: a Registered Nurse, Senior Medical Social Work Consultant, and Administrative Specialist (Table 4). The Administrative Office of the Courts submitted necessary paperwork to the Office of Management and Budget for classification and approval of these positions. A detailed action

plan for FIMR was developed by a subcommittee of the CDNDSC which included members representing DPH. Key elements of the plan included a defined program infrastructure, transition from pilot project to statewide implementation, operations and process management, accountability and reporting, evaluation and quality improvement, and developing formal relationships with key collaborative partners (e.g. DPH) and key stakeholders. A staff person was hired to coordinate FIMR and the hiring of full-time positions. At the end of the year, the approval process for advertisement of the positions was initiated. Also, a contract with a physician to train staff was approved by DPH.

Table 4. Performance Measures and Progress for FIMR in FY 2006

FY 2006 Performance Measure	2006 Progress
1. Develop Memorandum of Understanding between CDNDSC and DPH.	The Memorandum of Understanding is in negotiation between CDNDSC and DPH. A formal agreement will be completed in FY 2007.
2. Execute contracts for training and FIMR model development.	Contracts for training will be executed in FY 2007 contingent on hiring of all staff.
3. Hire and train three staff.	One staff person was hired by DCNDSC to oversee establishment and hiring of subsequent staff. One physician was contracted in FY 2006. Remaining staff will be hired in FY 2007.
4. Initiate development of the FIMR database.	The FIMR database will be developed in FY 2007 after training of all staff is completed.
5. Create case review teams and community action teams throughout the state.	Case review teams and community action teams will be assembled after all FIMR staff have been hired and fully trained in FY 2007.
6. Develop formal relationships with key stakeholders in Delaware and Nationally.	FIMR is a priority with the DHMIC. The Consortium membership includes state legislators, practicing physicians, other health care professionals, non-profit organization directors, and community members. Utilizing these key stakeholders in the Consortium is the first step to establishing formal relationships with other key stakeholders within the state.
7. Begin review of fetal and infant deaths in Delaware.	In process for FY 2007 contingent on hiring and training staff.

C. Pregnancy Risk Assessment Monitoring System (PRAMS)

The overall purpose of PRAMS is to reduce infant morbidity and mortality and to promote maternal health by influencing MCH programs, policies, and maternal behaviors during pregnancy and early infancy. The information obtained from PRAMS will lead to improvement in the health of mothers and infants in the state of Delaware. The strengths of implementing a state-wide PRAMS project include identifying risk factors specific to Delaware mothers and infants for intervention, modification of existing prevention and service programs based on study findings, and community awareness of risk factors for birth complications disseminated through research results.

PRAMS is a surveillance system designed to collect information on a representative sample of women who deliver infants in the state of Delaware. The information collected in the PRAMS questionnaire consists of selected maternal behaviors, beliefs, practices, and experiences before, during, and after pregnancy. The high quality of the PRAMS collected information enables participating states such as Delaware to more efficiently develop and evaluate existing programs including Newborn Screening, SIDS awareness, and the MCH Title V Block Grant. PRAMS also provides a mechanism to monitor the state's progress towards achieving the Healthy People 2010 Goal of reducing infant and maternal morbidity and mortality. PRAMS includes information that will enhance DPH's ability to focus current programs on the highest risk populations within the state, including minorities and women who deliver low birth weight infants.

In the fall of 2005, the PRAMS Pilot Study was implemented in preparation for the application for federal funding. The goals of the pilot study were four-fold: to provide demographic information for a small, random sample of women in the state of Delaware; provide methodological and technical information to improve DPH's application for CDC PRAMS submitted on January 12, 2006; enable DPH to create the basic structure for implementation of the PRAMS surveillance system in its entirety; and allow DPH to test the CDC approved core questions for PRAMS on a randomly selected sub-segment of the state population (N = 100 women childbearing age)[7]. There were no hypotheses or research questions to be answered in the pilot study. The purpose of the pilot was to demonstrate the state's capacity to conduct PRAMS and to identify areas for improvement to implement a complete PRAMS project.

Of the 100 women randomly sampled for inclusion in the pilot study, 56 responded by mail survey and one responded by telephone interview (60% response rate)[iii]. Four women were lost to follow-up due to inaccurate information on the birth certificate (i.e., contact information was no longer current), and one refused to participate in the study. The remaining 38 women were considered non-responders. Table 5 displays the demographic characteristics of the responders in comparison with the non-responders excluding those women lost to follow-up and refusing to participate. In comparison with the Delaware state population, the pilot sample was representative; however, the sample includes higher percentages of Hispanic women and women of other races (State proportions - White 69.0%; Black 25.3%; Other 5.7%; Hispanic 12.2%). Regarding response rates, more white women responded to the survey compared with black or African American women. Responders were also two years older on average compared with non-responders.

Table 5. Demographic Characteristics by Response Rate*

Variable Name	Responder (%)	Non-Responder (%)	Total (%)
Mother's Race			
White	78.9	42.1	**65.0**
	12.3	42.1	**24.0**
Other	8.8	15.8	**11.0**
Mother's Ethnicity Hispanic			
Yes	8.9	23.1	**15.0**
No	91.1	76.9	**85.0**
Mother's Age **	*28.3*	*26.9*	***26.9***

*Proportions are provided unless otherwise noted.
**The mean is reported for Mother's Age.

Of the four women lost to follow-up, three were white and one was African American or black. One considered herself of Hispanic origin, and the average age of those women lost was 22.5. The one woman who refused to participate in the study was white and 22 years of age.

When examining birth weight and plurality (i.e., the total number of infants born during one delivery), non-responders had a higher percentage of low birth weight deliveries compared with responders (21% versus 16%; Table 6). The average birth weight of infants born to women who responded to the questionnaire was higher compared with the average birth weight of non-responders and the overall sample. Plurality was stable across response rates. Of the two infant deaths included in the sample, one responded to the questionnaire, and one mother did not respond (i.e., 50% response rate for infant mortality).

Table 6. Birth Weight and Plurality by Response Rate*

Variable Name	Responder (%)	Non-Responder (%)	Total (%)
*Birth weight***	*3166.4grams (g)*	*3010.6g*	***3125.8g***
Low Birth Weight	16.1	21.1	**17.0**
Normal Birth Weight	83.9	78.9	**83.0**
Plurality			
Singleton	94.7	94.7	**95.0**
Twins or more	5.3	5.3	**5.0**

*Proportions are provided unless otherwise noted.
**The mean is reported for Birth Weight.

Insurance status and payment, income level and number of supported dependents, previous complications of childbirth, and the health status of the newborn infant are highlighted among the 57 respondents in Tables 6 and 7. The majority of respondents had prenatal and delivery care provided by private insurance. The average income range for respondents was $35,000 to $49,999 with a family size of three (includes the respondent). The income levels ranged from less than $10,000 to more than $50,000, and the total number of dependents ranged from one to seven.

Table 7. Insurance Payment for Prenatal Care and Delivery*

Variable Name (Multiple Sources of Payment Possible)	Prenatal Care		Delivery	
	Count	(%)	Count	(%)
Medicaid	15	26.8	14	**25.0**
Personal Income (cash, check, or credit card)	10	17.9	7	**14.0**
Private Insurance (HMO from work or partner's work)	43	75.4	43	**75.4**

*Respondents had multiple responses; therefore, columns do not equal 100%.

Fifty-one percent (51%) of all respondents experienced a previous live birth (Table 8). Of 29 women who had a previous live birth, 11% had a premature delivery and also delivered a low birth weight infant. Of all 57 respondents, 30% of their newborns spent time in the Neonatal Intensive Care Unit (NICU). NICU stays ranged from less than 24 hours to more than 8 weeks. The average stay for an infant was 24 to 48 hours; 21% of infants in the NICU stayed for 5 days or more. Although not requested, two respondents wrote in commentary regarding experiencing a previous infant death.

Table 8. Pregnancy and Delivery Complications

Variable Name	Count	(%)
Previous Live Birth		
Yes	29	**51.0**
No	28	**49.0**
Previous Low Birth Weight Infant*		
Yes	3	**11.1**
No	24	**88.9**
Previous Premature Birth*		
Yes	3	**11.1**
No	24	**88.9**
Infant in NICU after Delivery		
Yes	17	**29.8**
No	40	**70.2**

*Two cases were missing.

Regarding the four objectives of the PRAMS pilot study, a representative, random sample of women who gave birth in Delaware in 2005 was selected and demographic characteristics were collected. Conducting the study enabled DPH staff to construct the infrastructure necessary to implement the state-wide PRAMS project. The DPH staff established protocols for collecting data including sample selection from the Office of Vital Statistics, maintenance of sampling databases, structure of mailing and telephone interview schedules, and generation of a statistical database for data entry and analysis. Finally, the PRAMS questionnaire was pilot-tested for use with a larger population-based sample.

In FY 2006, the state funding provided support for conducting the pilot study. The resulting pilot data were used in the federal application for funding. Based on the increasing infant mortality rate and steady disparity ratio, for the state-wide application, DPH staff proposed a focus on minorities and women who delivered a low birth weight infant (a risk factor for infant death). When implemented, the sampling methodology would include more women in these two categories in order to collect additional information from these groups. In April

2006, Delaware received federal funding to implement PRAMS and to supplement the funding provided in the infant mortality initiative (Table 9).

Table 9. Performance Measures and Progress for PRAMS in FY 2006

FY 2006 Performance Measure	2006 Progress
1. Pilot study implemented and data collection initiated.	The PRAMS Pilot Study was implemented in October 2005 and completed in March 2006. One hundred women were randomly selected for participation in the pilot study.
2. PRAMS grant application submitted to CDC in late 2005.	The PRAMS grant application was submitted in January 2006 and DE was awarded the grant in April 2006.
3. Progress report outlining evaluation of Pilot Study implementation and any preliminary results available.	The PRAMS pilot study final report was submitted to the DE Human Subjects Review Board and was approved in April 2006.

D. Delaware Healthy Mother and Infant Consortium (DHMIC)

The DHMIC consists of a representative group of concerned practicing physicians and other health care providers, hospital administrators, public health practitioners, community-based organization directors, and other community representatives. The mandate of the DHMIC is to ensure the effective implementation and refinement of the priority recommendations set forth by the IMTF and the Governor in the 2005 report. In monitoring the recommendations, the DHMIC will also utilize the most recent analytic data such as demographic shifts in the state population or changes in infant mortality trends for modification of initiatives. Lastly, the DHMIC is responsible for reviewing and analyzing evaluations and reports, and making appropriate recommendations for program or system modifications.

In FY 2006, by-laws for DHMIC were prepared and approved by an Interim Committee in order for the consortium to work promptly and effectively. Membership on the consortium was established by Governor appointment; additional nominees for seats were provided by the Interim Committee, a group comprised of both state and community stakeholders. In early 2006, the Consortium adopted the by-laws necessary for efficient functioning, elected officers, appointed other members of the community as partners/committee members and met on a regular basis (Table 10). The DHMIC hired a strategic planning consultant to facilitate development of the strategic plan. On June 20, 2006, a public conference was held to introduce the Consortium to the public and public health community. Approximately 200 community members and DPH staff attended the conference.

Additionally, the Consortium was provided technical and scientific expertise from the Center for Excellence in Maternal and Child Health and Epidemiology in order to monitor all the priority recommendations of the IMTF. Five critical component committees were established to address the following: standards of care, systems of care, education and prevention, health disparities, and data and science. The committees were responsible for monitoring specific recommendations directly associated with their purpose as formerly defined. Each committee met at least once during FY 2006 to develop foci and short-term objectives for FY 2007. Committee foci and objectives as identified from meeting minutes are summarized in Table 11.

Table 10. Performance Measures and Progress for DHMIC in FY 2006

FY 2006 Performance Measure	2006 Progress
1. Meet regularly according to its bylaws.	The Consortium convened four times in FY 2006 for regular meetings. The first Consortium meeting took place on February 14, 2006. Followed by meetings on March 22, May 5, and June 2, 2006. The Consortium also convened a public conference on June 20, 2006 to introduce the Consortium to the public.
2. Establish an inclusive partner/membership.	Membership was formally established in January 2006 for the first meeting in February and consists of practicing physicians, other health care providers, state legislators, community-based organization directors, community representatives, and DPH staff. The Consortium is composed of 23 members excluding DPH representatives.
3. Develop a strategic plan to carry out its mission.	At the end of FY 2006, the consultant was in the process of compiling a final report of recommendations to the Consortium. It is expected that the Strategic Plan will be solidified by the end of FY 2007.
4. Meet with the Secretary of DHSS to present progress reports.	Due to the initial Consortium meetings occurring in the latter half of FY 2006, meetings with the Secretary of DHSS are scheduled to occur in FY 2007.
5. Prepare and submit to the Governor an annual report.	The Consortium annual report for FY 2006 is in process for submission in FY 2007.
6. Develop an advocacy agenda to educate the public about infant mortality and morbidity.	The Consortium advocacy agenda is in process pending approval of the strategic plan.

Table 11. DHMIC Committee Focus and Short-term Objectives Established in FY 2006 for Implementation in FY 2007

Committee	FY 2007 Focus	Short-term Objectives
Standards of Care	Focus on preconception care, neonatal transport, definition of a live birth in Delaware, availability of antenatal care in all areas of the state, availability of dental care to all women of childbearing age in Delaware, Medicaid provision of drugs to decrease the risk of premature labor	♦ Establish criteria for dental care during pregnancy ♦ Establish preconception care guidelines for practitioners ♦ Coordinate Medicaid payment for drugs to decrease the risk of premature labor
Systems of care	Focus on community development-enhanced support systems, reducing social stress in the environment for pregnant women and their families, developing a sense of community and support groups, improving access to case managed care to reduce the stressful environment of pregnant women and mothers, and advocating for universal health care for children and increased coverage for women up 600% of the poverty level	♦ Celebrate partnerships and increased visibility of the consortium ♦ Develop programs to reduce stress through increased social support ♦ Develop programs to reduce intimate partner violence
Education and Prevention	Focus on a preconception health care awareness campaign, supporting community-based services, services targeting high-risk populations, programs aimed at increasing birth spacing, and reproductive life planning	♦ Partner with the American Lung Association to campaign for smoking cessation during pregnancy ♦ Partner with the March of Dimes to raise awareness of premature deliveries ♦ Partner with the Diabetes Association to raise awareness of the effect of diabetes during pregnancy ♦ Begin the awareness and education campaign for preconception health
Disparities	Focus on reducing racism through cultural competence training of providers in Delaware, partnering with the Health Disparities Task Force, and raising awareness of the concept of 'blaming the victim'	♦ Provide cultural competence training using the IMTF report as a guideline ♦ Explore other programs that provide competence training ♦ Award hospitals and other agencies for providing culturally competent care
Data and Science	Focus on linking existing databases within the state, funding the Birth Defects Registry, implementing PRAMS and FIMR, establishing a research agenda in order to seek further funding, partnering with Christiana Care, Nemours Health and Prevention, and the Center for Excellence in Maternal and Child Health and Epidemiology, and researching preconception health care in Delaware	♦ Implement PRAMS in Delaware ♦ Apply for funding to research preconception health care

E. Center for Excellence in Maternal and Child Health and Epidemiology

The Center for Excellence in Maternal and Child Health and Epidemiology is composed of three full time staff dedicated exclusively to collecting, generating, and analyzing data in MCH. The staff also provides current updates of local, state, and national data to DPH, the Department of Health and Social Services, collaborative and partnering agencies, and the DHMIC. The goals of Center staff are to impact all programs that provide services in MCH, provide expertise in application for federal and other supplemental funding opportunities, and facilitate evaluation of all MCH-related programs. The Center is responsible for monitoring and evaluating the implementation of the 20 priority recommendations mandated by the IMTF, documenting progress toward reducing infant mortality, eliminating racial and ethnic disparities in birth outcomes, and providing data for MCH federal and state performance measures. In short, the Center and its staff is a resource for DPH and other agencies involved in research, care, and provision of services in the area of maternal and child health.

In FY 2006, DPH contracted with the CDC to employ a State MCH Epidemiologist to supervise the Center. The CDC-assigned State MCH Epidemiologist supervises the research and data projects within the Center, and offers scientific advising for all MCH-related projects. Additionally, DPH was authorized to hire 3 full-time equivalent positions: a Management Analyst for statistics to be located in the Delaware Health Statistics Center, a Management Analyst responsible for budgetary program management, and a MCH Epidemiologist to conduct research (Table 12). All three positions were established, and the Epidemiologist and Management Analyst in statistics hired. The Management Analyst to support budgetary program management was in the process of interview and hire at the end of the fiscal year. These positions enable DPH to analyze and report Delaware's infant mortality data and address research involving the health issues of women and children.

Since its inception, the Center has actively involved its staff in monitoring program implementation and providing scientific advising for all MCH-related programs including PRAMS and the Comprehensive Family Practice Team model contracts, the evaluation of progress of all other recommendations, provision of data to MCH-related programs such as the MCH Title V Block Grant, and collaboration with other state entities on research applications and publications including Christiana Care, University of Delaware, Medicaid, and Johns Hopkins University.

Table 12. Performance Measures and Progress for the Center for Excellence in Maternal and Child Health and Epidemiology in FY 2006

FY 2006 Performance Measure	2006 Progress
1. Establish and fill 3.0 FTE positions authorized in the FY 2006 Budget Act.	All positions were established in FY 2006. The MCH Epidemiologist and MAII were hired in late June 2006.
2. Develop a strategic plan to carry out responsibilities.	The strategic plan is in process pending hiring of other staff in FY 2007.
3. Develop an evaluation framework and plan to monitor progress in reducing infant mortality and eliminating racial and ethnic disparities in birth outcomes.	The evaluation framework is in process for FY 2007 pending hiring of other staff.

III.

Principal Priority Review Recommendations

The three principal priority review recommendations include the establishment of standards of care for preconception, prenatal, and interconception care; improvement of the statewide neonatal transport program; review of the most current capacity studies in Delaware; and submission of an annual report to the Governor regarding the status of the infant mortality initiative.

A. Review of Current Standards of Care for Preconception, Prenatal, and Interconception Care

The IMTF report recommends that all insurers within the state be required to cover services included in federal standards of care for preconception, prenatal, and interconception care. The first step in ensuring such coverage is to establish standards of care for preconception health in collaboration with providers, the Medical Society of Delaware, and the American College of Obstetrics and Gynecology (ACOG). In FY 2006, DPH began to identify key stakeholders for organized discussions of provided care (Table 13). In addition, the DHMIC convened the Standards of Care committee to provide expertise in review of state standards.

Table 13. Performance Measures and Progress for Standards of Care in FY 2006

FY 2006 Performance Measure	2006 Progress
1. Review of existing standards of care completed.	A preliminary review of current standards of care was completed. Current ACOG state and national recommendations were included in the review.
2. Key stakeholders identified.	Key stakeholders attending the DHMIC meetings were identified in conjunction with state ACOG representatives for further discussion of standards to be addressed in FY 2007. The Standards of Care committee (formed from the Consortium) consists of practicing physicians, program administrators, other health care providers, and directors of Medicaid, Woman to Woman Health Care, Nanticoke Memorial Hospital, Christiana Care Hospital, Beebe Medical Center, Bayhealth Medical Center, and DPH.
3. Meetings with key stakeholders completed.	The DHMIC Standards of Care Committee convened once in late June 2006, and more meetings are scheduled for FY 2007.
4. Implementation plan developed.	The implementation plan is in process for FY 2007 pending further meetings of the Standards of Care committee.

B. Improve the Statewide Neonatal Transport Program

Evaluation of the existing neonatal transport program enables DPH and tertiary care providers to identify gaps in regional services, and provides a forum for modification of current protocols. In FY 2006, DPH began reviewing the existing neonatal transport program and identifying key stakeholders for discussion (Table 14). The DHMIC convened the Standards of Care committee to engage key stakeholders who were also members of the DHMIC in a discussion regarding the effectiveness of the current system.

Table 14. Performance Measures and Progress for Neonatal Transport in FY 2006

FY 2006 Performance Measure	2006 Progress
1. Review of existing neonatal transport program completed.	Initial review of the existing neonatal transport system was completed.
2. Key stakeholders identified.	Key stakeholders were identified and added to the membership for the DHMIC. The Standards of Care committee (formed from the Consortium) consists of practicing physicians, program administrators, other health care providers, and directors of Medicaid, Woman to Woman Health Care, Nanticoke Memorial Hospital, Christiana Care Hospital, Beebe Medical Center, Bayhealth Medical Center, and DPH.
3. Meetings with key stakeholders completed.	The DHMIC Standards of Care Committee convened once in late June 2006, and more meetings are scheduled for FY 2007.
4. Recommendations for improvements developed.	Recommendations for improvement are in process pending additional meetings with key stakeholders and the Standards of Care committee in FY 2007.

C. Provide Annual Report to the Governor Including Recommendations to Remedy Systems Capacity Issues

Within DPH it was determined that the annual report to the Governor must include a summary of progress to date on all 20 priority recommendations and a commentary on biennial health care capacity studies completed within the state. The Center for Excellence in Maternal and Child Health and Epidemiology is coordinating with the Health Systems Management section to review previously completed capacity studies and studies to be implemented in the next two fiscal years. In FY 2006, the methodology of an evaluation plan for all 20 priority recommendations was developed. An initial annual report format was developed for this publication and approved within DPH (Table 15).

Table 15. Performance Measures and Progress for Annual Report in FY 2006

FY 2006 Performance Measure	2006 Progress
1. Review of Health Systems Management capacity studies completed.	Review of the Health Systems Management capacity studies is in process for FY 2007.
2. Evaluation Plan completed.	The methodology of the evaluation plan has been developed for implementation in FY 2007.
3. Report format finalized.	The report format is under review for FY 2007.
4. A report submitted to the Governor's Office by July 30, 2006.	The final FY 2006 report is scheduled to be submitted by October 2006.

IV.

Priority Recommendations

The remaining priority recommendations were assigned to key DPH staff for assessment of sustainability, refinement of focus, and collaboration with the DHMIC for implementation in FY 2006. The priority recommendations consist of the following areas:

- Improving access to care for populations with high infant mortality
- Providing access to preconception care for all women of childbearing age in Delaware
- Assuring federal standards for culturally and linguistically appropriate services are provided
- Creating a cultural competence curriculum for state providers
- Improving comprehensive reproductive health services for uninsured and underinsured Delawareans
- Funding analyses and quality improvement programs to address infant mortality
- Creating epidemiologic surveillance to monitor trends in infant mortality
- Linking existing databases to improve health care systems and services
- Conducting a statewide education campaign to address infant mortality
- Expanding birth defect registry surveillance
- Evaluating environmental risk factors for poor birth outcomes within the state
- And improving oral health care through treatment of periodontal disease in perinatal programs.

A. Improve Access to Care for Populations with High Infant Mortality

Improvement of access to prenatal care ensures earlier intervention during pregnancy. Earlier intervention decreases a woman's risk of experiencing a poor birth outcome such as premature birth, low birth weight delivery, fetal death, stillbirth, or infant death.

Within DPH, existing direct care services were under review in FY 2006, and multiple meetings between DPH and Medicaid were convened to discuss exchange of key health indicators. In conjunction with the Comprehensive Family Practice Team model recommendation, DPH negotiated with its contractors to expand prenatal services to high risk populations (i.e., Delmarva Rural Ministries, Inc.; Westside Health, Inc.). In addition, DPH met with La Red Health Center to partner in an expansion of prenatal services.

B. Provide Access to Preconception Care for All Women of Childbearing Age

Women with previous poor birth outcomes such as premature delivery, low birth weight delivery, fetal death, stillbirth, or infant death are at a higher risk of experiencing these same outcomes in subsequent pregnancies. Ensuring adequate preconception care allows health care practitioners to effectively monitor this population and intervene prior to pregnancy if necessary.

In FY 2006, an internal Department of Health and Social Services work group including DPH and Medicaid staff convened to establish a Registry for Improved Birth Outcomes, a focused educational intervention effort among high risk women, and to obtain funding for expanded direct services by providers in Delaware. The Registry for Improved Birth Outcomes was defined and inclusion and exclusion criteria determined. The Registry would include women who resided and delivered in Delaware and experienced a premature birth, low birth weight delivery, previous fetal death, stillbirth, or infant death. At the end of the fiscal year, the Registry was in a pilot testing phase. Based on the women included in the finalized Registry and using the CDC Morbidity and Mortality Weekly Report: *Recommendations to Improve Preconception Health and Health Care in the United States*[8], the group began planning a multi-level educational intervention among Registry members, their physicians, and clinics and hospitals. The work group planned to collaborate with the Education and Prevention committee of the DHMIC for further guidance on the proposed intervention and use of the Registry. Additionally, the internal planning group agreed on a RFP for supplemental funding for current preconception care providers within the state. The RFP would provide funds for an expansion of preconception care services to high risk women in Delaware. At the end of FY 2006, the RFP was drafted and submitted for internal approval within DPH.

C. Implement Federal Standards for Culturally and Linguistically Appropriate Services

Ensuring health care services for all cultural groups requires a review of the current standards of care in Delaware. Based upon review, changes to programs with cultural or linguistic barriers to care expand the level of services throughout the state.

In FY 2006, DPH and Medicaid staff met to discuss a review of current services to diverse populations. Discussion of the review is ongoing between the two agencies.

D. Create a Cultural Competence Curriculum for Providers

Training of direct services staff ensures patient satisfaction, compliance, and participation in their health care. A staff that provides services must be aware of differences in beliefs, behaviors, practices, and knowledge of their client base in the state of Delaware.

In FY 2006, DPH convened an internal committee to begin working on a culturally competent public education campaign for health care providers in Delaware. DPH worked on this project in conjunction with Medicaid to coordinate education efforts. The framework used to develop this campaign was adapted from the model used by the Cancer Consortium in its education and awareness efforts to inform the public about colon and breast cancer prevention.

E. Improve Comprehensive Reproductive Health Services for Uninsured and Underinsured Delawareans

By improving reproductive services to women in Delaware, the cost of pregnancy complications would be significantly reduced. In order to effectively provide services to all

women, expanding the cut point for poverty coverage increases the eligibility of targeted lower income populations.

DPH and Medicaid met twice during FY 2006 to discuss expansion of poverty level care. At the end of the fiscal year, both agencies agreed to jointly coordinate funding for services to expanded populations. DPH initiated a dialogue with Medicaid regarding application for both a change in the eligibility waiver (Section 1115 Waiver) and access to all relevant Medicaid data for analyses of services.

F. Fund In-depth Analysis and Quality Improvement for Programs Addressing Infant Mortality in Delaware

By evaluating existing direct service MCH programs in Delaware, resulting recommendations for program modification or expansion directly impacts the quality and effectiveness of health care. Evaluation allows programs to re-focus resources on identified areas of need and to re-define targeted populations for intervention.

During FY 2006, DPH partnered with Medicaid to coordinate a quality review of provided services. The proposed review of services included the Best Clinical Administrative Practices (BCAP) model.

G. Create Epidemiologic Surveillance System to Evaluate and Investigate Trends in Infant Mortality

Epidemiologic surveillance of disease trends and risk factors causally associated with poor health outcomes provides quantitative data to support program initiatives and interventions. Consistent monitoring and investigation of trends and risk factors supports existing direct service programs and implementation of programs in newly identified service areas.

The State Infant Mortality (SIM) collaborative project funded by the CDC is a multi-state initiative to investigate the underlying causes of infant mortality, and provide basic scientific methodology for its use in all states. Delaware is one of five participating states and over the past two years including FY 2006, DPH has worked closely with the CDC to identify underlying trends in infant mortality. Additional data provided by contractors for the Comprehensive Family Practice Team model allowed DPH to begin monitoring of specific risk factors for poor birth outcomes including chronic disease, poor nutrition, initiation of prenatal care, and previous premature birth or infant death.

H. Create Linked Database System to Improve Health Care and Services

Linking existing databases with the state system allows for more comprehensive service provision and data analyses of risk factors for infant mortality. By combining information from the Office of Vital Statistics, DPH health services, and local hospitals, more detailed analyses of health service effectiveness and participant behaviors and practices support program enhancement and modification.

In FY 2006, DPH began a review of all internal databases to assess the networking capability of existing systems with external partners. A Business Case Summary (i.e., a request to the Bureau of Information Management Services to obtain permission for information technology modifications) to begin data linkage was submitted to the Department of Technology and Information in late 2005 and was approved.

I. Conduct Statewide Education Campaign on Infant Mortality

By educating the state population of the risk factors associated with infant mortality, both high and low risk women can more effectively monitor their pregnancies. Educational components should include information about the effects of smoking, chronic disease, late prenatal care, lack of breastfeeding, and other unhealthy lifestyle choices.

DPH began review of existing educational campaigns throughout the state in FY 2006. The Women Infant and Children Nutrition (WIC) program obtained external funding to implement a state-wide breastfeeding campaign to support healthy infant feeding practices. The campaign addressed the positive impact of breastfeeding on infants.

J. Expand Birth Defect Registry Surveillance

Expansion of the Birth Defect Registry Surveillance System allows for capture of multiple risk factors leading to congenital anomalies. In addition, including more information on mothers and infants provides data for expansion of existing services and application for funding of new programs.

In FY 2006, DPH developed an additional entry screen in the Newborn Screening database to capture congenital anomalies including birth defects. The additional screen was added after the Business Case Summary was submitted and approved by the Department of Technology and Information.

K. Evaluate Environmental Risk Factors for Poor Birth Outcomes

Monitoring environmental exposures to pregnant women and infants reduce health complications and poor birth outcomes. By conducting periodic environmental assessments in collaboration with the Department of Natural Resources and Environmental Control (DNREC), DPH could more effectively intervene to improve the health of women and children in Delaware.

DPH initiated discussion with DNREC in FY 2006. Review of existing data and literature was underway at the end of the fiscal year.

L. Promote Oral Health Care and Treatment of Periodontal Disease in Comprehensive Perinatal Programs

By treating periodontal disease prior to and during pregnancy, the incidence of delivery complications such as premature birth and delivery of low birth weight infants would be decreased. Oral health care could be integrated into educational, outreach, and access to care public health programs.

In FY 2006, DPH began a review of in-state oral health programs including interagency meetings to coordinate and facilitate increased access to treatment. Review of existing educational interventions was also initiated.

V. Future Directions

In FY 2007, the infant mortality initiative in Year 2 of implementation was awarded an additional two million dollars to focus programs and interventions on women with a history of poor birth outcomes who are again pregnant or intend to become pregnant. Targeting this group ensures that the risk of future poor birth outcomes such as premature birth, low birth weight delivery, stillbirth, and fetal or infant death are decreased. Additionally, in partnership with the DHMIC, DPH will expand efforts of the principal priority recommendations, and implement a new principal priority recommendation focusing on preconception health care. DPH will continue to support the infrastructure of FIMR, the PRAMS project, the Center for Excellence in Maternal and Child Health and Epidemiology, and the DHMIC. DPH will expand the Comprehensive Family Practice Team model to new sites and existing services in preconception care targeting women with chronic diseases, lack of access to care, and previous poor birth outcomes such as premature birth, low birth weight infant delivery, stillbirth, and fetal or infant death. FY 2007 performance measures are detailed in Tables 16 through 21.

In FY 2007, a funding request to provide preconception care to women of childbearing age has been added to expand services to all women in Delaware. DPH has prioritized women who had a previous poor birth outcome (e.g., premature birth, low birth weight infant delivery, stillbirth, fetal or infant death), and are Medicaid eligible, medically under-insured, or uninsured as recipients of services (Table 16). The internal planning group will release a RFP state-wide to providers of preconception care to initiate this service component or supplement current services to these prioritized populations. Also, a Registry for Improved Birth Outcomes will be established and women identified for an education-focused intervention based on inclusion in the registry. Inclusion in the Registry is defined as the experience of a previous poor birth outcome as described above.

Table 16. Preconception Care Program FY 2007 Performance Measures

FY 2007 Performance Measures
Outcome Measures
1. Baseline rates of services will be established by June 2007 for contractors awarded by DPH.
Process Measures
1. New RFP released by July 15, 2006.
2. Award contracts by October 1, 2006.
3. Vendors will begin implementing services by November 1, 2007.
4. Vendors will submit service statistics on a monthly basis.
5. Vendors will provide an end of the fiscal year evaluation of program progress.
6. Baseline participation rates will be established by end of FY 2007.
7. The internal DPH group will begin the process for legislative approval of the Registry for Improved Birth Outcomes in FY 2008.
8. The internal DPH group will identify and define an education-based intervention for women included in the Registry for Improved Birth Outcomes.
9. The Registry for Improved Birth Outcomes will be defined, inclusion criteria established, internal agreements finalized, and the methodology for linking data tested.

In addition to expanding services for current contractors of the Comprehensive Family Practice Team model, the DPH internal planning group will draft a new RFP open to all vendors in the state to supply these services to identified target populations (Table 17). The new RFP targets additional zip codes identified as high-risk based on the occurrence of infant deaths, minorities, medically uninsured or underinsured women, and women with a history of poor birth outcomes.

DPH will also prioritize practitioner and community-based initiatives aimed at reducing health disparities among these target populations and target adolescents who require these services. To further address prioritized populations, DPH will facilitate the initiation of a new action-based strategy focused on specific regions of the state to support community-based initiatives. DPH as an organization plans to fundamentally change its relationships with community-based organizations such as communities of faith in order to strengthen partnerships and increase efforts to reach populations in need. DPH will work with local and statewide partners to develop a model of local community empowerment and engagement in order to facilitate care for identified populations with insurers such as Delaware Physicians Care Inc., and providers including Christiana Care Health Systems, and Beebe Medical Center. These partnerships enable DPH to engage other grassroots organizations to develop comprehensive care in preconception care, prenatal care, cancer prevention, disparity elimination, and chronic disease monitoring.

Table 17. Comprehensive (Holistic) Family Practice Team Model FY 2007 Performance Measures

FY 2007 Performance Measures
Outcome Measures
1. Four times the number of participants served in FY 2006 (services were provided for three months) will be established as the baseline rate for service for existing contractors.
2. Current contractors will increase the number of participants by 20% from baseline.
Process Measures
1. New RFP released by July 15, 2006.
2. Award contracts by October 1, 2006.
3. Vendors will begin implementing services by November 1, 2007.
4. Vendors will submit service statistics on a monthly basis.
5. Vendors will provide an end of the fiscal year evaluation of program progress.
6. Baseline participation rates will be established by end of FY 2007 for new contractors.
7. DPH will begin implementation of the action-based strategy targeted at specific regions in the state for community-based interventions.

The FIMR project will hire and train full-time staff, convene case review and community action teams, then begin formal collection of data on infant and fetal deaths in FY 2007 (Table 18). In addition, the contracts for a physician and information technology support will be completed. Data collection is expected to begin in the late spring of 2007.

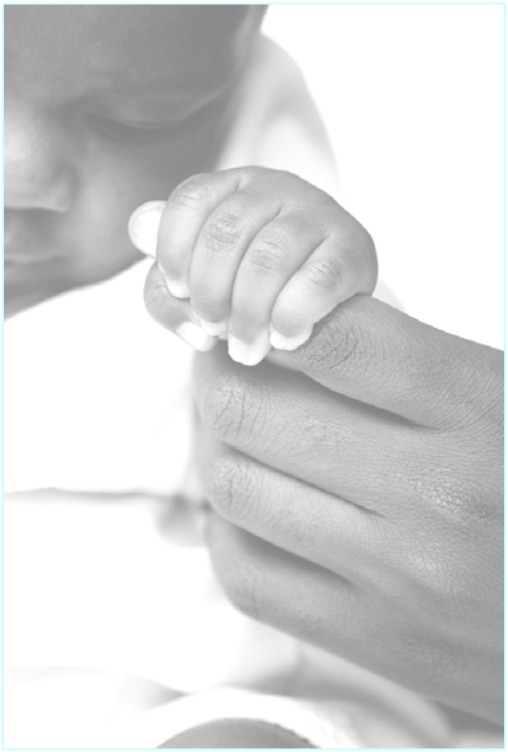
Table 18. FIMR FY 2007 Performance Measures

FY 2007 Performance Measures
Outcome Measures
1. A baseline rate of fetal and infant deaths will be established for use in subsequent years of FIMR operation.
2. Twenty percent (20%) of all fetal and infant deaths in the state of Delaware will be included in the FIMR sample.
Process Measures
1. Develop Memorandum of Understanding between CDNDSC and DPH.
2. Execute contracts for training and FIMR model development.
3. Hire and train three full-time staff.
4. Initiate development of the FIMR database.
5. Create case review teams and community action teams throughout the state.
6. Develop formal relationships with key stakeholders in Delaware and Nationally.
7. Sample fetal and infant death in Delaware for data collection and review.

In FY 2007, data collection for PRAMS is scheduled to begin January 1, 2007 and will follow a calendar year timeframe (Table 19). In calendar year 2006, the full PRAMS protocol will be completed, all staff hired, and the application for research will be under review for approval by the Delaware Human Subjects Review Board. Implementation of the fully funded PRAMS project in Delaware enables DPH to better focus intervention efforts among women of childbearing age in the state.

Table 19. PRAMS FY 2007 Performance Measures

FY 2007 Performance Measures
Outcome Measures
1. A baseline sample rate for the PRAMS project will be established using 2007 data.
2. A 50% minimum response rate of women sampled for participation in the PRAMS project will be achieved by June 2007.
Process Measures
1. Develop PRAMS Protocol using the CDC Guidance.
2. Implement data collection of fully-funded PRAMS project on January 1, 2007.
3. Sample approximately 1250 women between two and four months post-partum who gave birth in Delaware in 2007.
4. Submit interim progress report of PRAMS project by June 2007.



The Consortium is expected to solidify its strategic plan, convene its five committees, establish partnerships with hospitals, clinics, and practitioners in the state, and receive the support of state legislators for the infant mortality initiative in FY 2007 (Table 20). It will provide expertise in preparation of an annual report for the Governor which includes appropriate recommendations based on review and analysis of collected data and other evidence. The leadership of the DHMIC will partner with the leadership of the Governor's other priority initiatives, the Cancer Consortium and the Health Disparities Task Force, to focus on intervention of health behaviors which impact all three areas of focus (i.e., IM, cancer, and health disparities). For example, smoking is a behavior that increases the rate of premature labor and delivery as well as the rate of cancer. Reducing this behavior among women impacts both health outcomes. Also, improving cultural competence of providers in health care is an important goal for both the Health Disparities Task Force and the DHMIC. Increased cultural competence leads to increased access to care and patient satisfaction.

Table 20. DHMIC FY 2007 Performance Measures

FY 2007 Performance Measures
Outcome Measures
1. Establish formal partnerships with 50% (3 of 6) of the birthing facilities in the state of Delaware.
2. Receive adequate representation (at least 1) from members of the state legislature and American College of Obstetrics and Gynecology on 40% of the committees.
Process Measures
1. Meet regularly and convene committees according to its bylaws.
2. Finalize a strategic plan to carry out its mission.
3. Meet with the Secretary of the Department of Health and Social Services to present progress reports.
4. Prepare and submit to the Governor an annual report.
5. Develop an advocacy agenda to educate the public about infant mortality, morbidity, and issues related the health of women of childbearing age.

In FY 2007, the Center for Excellence in Maternal and Child Health and Epidemiology will be fully staffed (Table 21). Project responsibilities of the new Epidemiologist include providing analytic capability for the MCH Title V Block Grant, coordination of the PRAMS project, data analysis of vital statistics and hospital discharge data, and scientific expertise on the Data and Science Committee of the Consortium (committee for the DHMIC). The Management Analyst positions will provide fiscal and data management of all Center-related projects. Staff will also collaborate with external agencies by providing scientific expertise on research projects, and update DPH and DHSS staff on current local, state, national, and international statistics in MCH. Finally, monitoring including implementation and evaluation of the 20 priority recommendations is a primary objective of the Center.

Table 21. Center for Excellence in Maternal and Child Health and Epidemiology FY 2007 Performance Measures

FY 2007 Performance Measures
Outcome Measures
1. Scientific expertise for the 9 priority recommendations of the 20 priority recommendations by the IMTF Report will be provided by the Center.
2. One hundred percent (100%) of the data collection and management capacity for the PRAMS project will be provided by the Center.
3. Ninety percent (90%) of the data collection and analysis for the Title V MCH Block Grant renewal application will be provided by the Center.
Process Measures
1. Hire and train all three funded positions.
2. Develop a strategic plan to carry out responsibilities.
3. Develop an evaluation framework and plan to monitor progress in reducing infant mortality and eliminating racial and ethnic disparities in birth outcomes.

VI.

Concluding Remarks

Despite the complexity of implementing the 20 IMTF recommendations, the DHMIC and DPH are dedicated to decreasing the infant mortality rate in Delaware by expanding existing services, evaluating service capacity, supporting surveillance, and establishing sound scientific evidence for new program foci. In FY 2006, new collaborative partnerships and work groups were established in both areas of research and intervention, new programs were funded to identify, examine, and analyze risk factors for infant mortality, and new interventions supported to provide services to targeted populations within the state. It is anticipated that in FY 2007, additional funding will be used to maximize current services to the citizens of Delaware, and partnerships cultivated with state service centers and hospitals to disseminate research results to public health practitioners. By supporting active collaboration among the three Governor's initiatives: IM, Cancer, and Health Disparities; in conjunction with the DHMIC, DPH will effectively utilize state funds, resources, and staff allocated to each initiative. These efforts combined will affect the health of mothers and infants throughout the state, and will impact the rate of infant mortality within Delaware.

VII.

Citation Index

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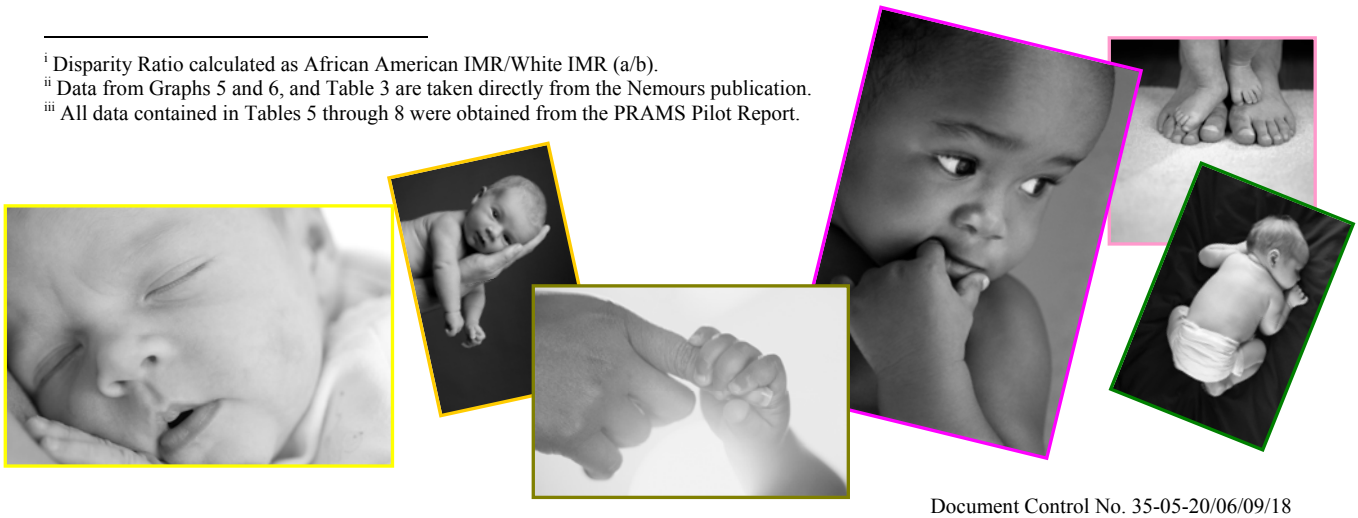
[i] Disparity Ratio calculated as African American IMR/White IMR (a/b).
[ii] Data from Graphs 5 and 6, and Table 3 are taken directly from the Nemours publication.
[iii] All data contained in Tables 5 through 8 were obtained from the PRAMS Pilot Report.



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