Douglas County Health Department
Fetal and Infant Mortality Review
(FIMR) 2016 Community Annual Report

Though our time was short,
you were deeply loved...
forget-me-not.
# Douglas County 2016 Annual FIMR Report

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Overview
Data Gathering

Infant mortality rate has increased from 4.9 (2014) to 6.6 (2015).

Source: 2015 Douglas County population-based infant only data

Case Review

Infant mortality rates have increased for both African American and Caucasian mothers and the health disparity has increased from 1.8 to 2.3.

Source: 2015 Douglas County population-based infant only data

Community Action

Hispanic mothers (9.1) and African American mothers (11.8) have a higher infant mortality rate than Caucasian mothers (5.1).

Source: 2015 Douglas County population-based infant only data

Changes in Community System

Top 4 single causes of infant mortality
1. Congenital Anomalies
2. Other Perinatal Causes (other than prematurity)
3. SIDS/SUID
4. Prematurity/Extreme Prematurity

Source: 2015 Douglas County Vital Statistics information using ICD-10 codes
Background
The Douglas County Health Department (DCHD) uses the nationally recognized best practice model known as the FIMR Cycle of Improvement to reduce the impact of infant mortality in the Douglas County community. Key steps of the FIMR process include:

- Gathering information about the infant death from medical and public health records, including voluntary interviews with the mother of loss by a public health nurse (PHN) who is trained in grief counseling, assessment, quality assurance and policy development.

- Utilizing a case review team (CRT), a diverse group of medical and community experts, to review summaries of case information, identify risk and protective factors present in the case, and make recommendations for community change.

- Guiding the community action team (CAT), also known as the Baby Blossom’s Collaborative, through the review of CRT recommendations and population-based data in an effort to prioritize identified issues and design/implement interventions via the community action plan (CAP).

- Implementing the CAP, resulting in system change that improves services and resources for the citizens of Douglas County, Nebraska.
Pathway for Success

Incorporating a new model

In 2012, DCHD was awarded a grant from National FIMR to incorporate life course theory (LCT) into the FIMR Model. Life course theory is a conceptual framework that helps explain health and disease patterns across populations and over time. Instead of focusing on differences in health patterns one disease or condition at a time, LCT points to broad social, economic and environmental factors as underlying causes of persistent inequalities in health. It also utilizes the concept of protective factors and risk factors. Protective factors improve health and contribute to healthy development while risk factors diminish health and make it more difficult to reach full developmental potential. The DCHD grant focused on protective factors found in infant mortality. Protective factors were identified via an extensive literature review, with a list of protective factors added to the Summary of Findings form (the form which contains a list of contributing factors or risk factors currently utilized by CRT as a tool to screen all cases for standardization).

During case review, protective factors are identified along with contributing or risk factors to infant mortality. The top protective factors are tabulated, and that data is used in the development of the community action plan (CAT) which occurs every 2-3 years. The belief is that increasing the protective factors while decreasing the risk factors, will improve infant outcomes.

The top 5 protective factors found during 2016 case review included:

1) No prenatal tobacco use
2) Obtained at least 12th grade education
3) Access to quality primary care and other health services
4) Strong and positive relationships
5) A safe neighborhood

Infant review only

Since 2014, the Douglas County FIMR Program has been reviewing infant cases only, based on a directive from the Nebraska Child and Maternal Death Review Team (NCMDRT). The NCMDRT had determined that review of fetal deaths was not in their mandate, and thus the Douglas County FIMR Program was not authorized to obtain records related to fetal death on their behalf. Douglas County averages 50-60 infant deaths/year with a CRT goal of reviewing 3 cases per meeting for a total of 30 cases per year.

We continue to look for ways to incorporate fetal review into our process, and most recently have incorporated an Iowa based “Count the Kicks” Program into our Community Action Plan. Count the Kicks is a systematic method of counting daily fetal kicks starting at 26-28 weeks, and has decreased the fetal mortality rate in Iowa by 26%. The Nebraska Perinatal Quality Improvement Collaborative, a MCH advocacy group aimed at improving access to health care for all Nebraska mothers and newborns, has recently advocated for “Count the Kicks” by getting program materials into the hands of every obstetrician and birthing hospital in Nebraska.
Perinatal Periods of Risk (PPOR)
Perinatal Periods of Risk (PPOR) is an approach used by CityMatCH, the national organization of urban MCH leaders, and the Centers for Disease Control and Prevention (CDC), for analyzing feto-infant mortality at the local level. It divides mortality into four periods of risk based on age at death and birth weight. Each period of risk is associated with its own set of risk and prevention factors.

**The four periods of risk are:**

- Maternal health and prematurity (blue box which represents fetal and infant deaths with very low birth weights)
- Maternal care (pink box which represents larger wt. fetal deaths or stillbirths)
- Newborn care (yellow box which represents larger wt. neonatal infant deaths)
- Infant health (green box which represents larger wt. post-neonatal infant deaths including most Sudden Infant Death Syndrome [SIDS] and Sudden Unexpected Infant Death [SUID] cases)

The DCHD FIMR Program has traditionally used the PPOR model to assist with data review and analysis. Specifically, Case Review Team has used PPOR data as a method of selecting the medical criteria utilized for case review. This selection is driven by determining where excess deaths are occurring in the area of infant mortality. These excess deaths are determined in part by using a reference group to estimate preventable mortality. From 2011 to 2016, the medical criteria for local FIMR Program referral has included 1) a birth weight of < 1500 grams, also known as very low birth weight or VLBW (blue box) and 2) a diagnosis of SIDS/SUID (green box).

Since initiating infant review only in 2014, the blue box, representing VLBW infant deaths, and the green box, representing SIDS/SUID cases, are the primary boxes used by the Douglas County FIMR Program because this is where our infant deaths lie.
The chart below compartmentalizes the contributing factors most frequently noted in infant mortality case review within the PPOR framework for 2016.

### Douglas County CRT Findings Related to PPOR Map of Infant Deaths (2016)

<table>
<thead>
<tr>
<th>Maternal Health/Prematurity – Preconception Health</th>
<th>Maternal Care (fetal deaths) Prenatal Care</th>
<th>Infant Health (live birth) &amp; Safe Sleep Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Medical Infant – Prematurity</td>
<td>• Medical Infant – Intrauterine Growth Restriction</td>
<td>• Environment – Infant Sleeping with Others</td>
</tr>
<tr>
<td>• Medical Infant – Congenital Anomaly</td>
<td>• Medical Mother – Incompetent Cervix</td>
<td>• Environment – Soft Bedding</td>
</tr>
<tr>
<td>• Medical Mother – Incompetent Cervix</td>
<td>• Medical Mother – Pre-eclampsia</td>
<td>• Environment – Non-back Sleep Position</td>
</tr>
<tr>
<td>• Medical Mother – Congenital Anomaly</td>
<td>• Medical Mother – No Prenatal Care</td>
<td>• Documentation – Missing Data</td>
</tr>
<tr>
<td>• Medical Mother – Pre-eclampsia</td>
<td></td>
<td>• Environment – Second Hand Smoke</td>
</tr>
<tr>
<td>• Medical Mother – Chorioamnionitis</td>
<td></td>
<td>• Environment – Infant in Non-bed</td>
</tr>
</tbody>
</table>

The chart below compartmentalizes the contributing factors most frequently noted in infant mortality case review within the PPOR framework for 2016.
Infant Case Review
The selection for infant case review includes the following criteria:

- The mother must be a Douglas County resident.
- The infant loss must have occurred from 20 weeks of pregnancy (< 20 weeks is considered a miscarriage) up to one year of age.
- Infant cases with a diagnoses of VLBW (<1500 grams) and/or SIDS/SUID cases will be prioritized for review, as this is where the greatest number of infant deaths are occurring.

A summary of 2016 infant case review is listed below:

- 23 infant cases were reviewed from January 1, 2016 to December 31, 2016, (including one twin case) as opposed to 30, due to the complexity of cases.
- Based on Perinatal Periods of Risk data, infant death cases of prematurity with a VLBW and/or SIDS/SUID were prioritized for review.
- Out of the 23 cases reviewed, 39% were reviewed less than three months after death, 39% of cases were reviewed less than six months after death, and 22% were reviewed less than nine months after death.
- Phone contact was achieved with 15 out of 23 total cases (65%), with four of these cases (17%) resulting in a maternal interview.

The top five contributing factors to infant mortality, which were identified during 2016 case review, were:

1. Perinatal Conditions
2. Prematurity/Previability
3. Infant in Non-bed
4. Congenital Anomalies
5. Infant Sleeping with Others

The above contributing factors were identified by Case Review Team (CRT) during their monthly case review. There is a system in place where CRT members “vote” on which factor(s) they feel contribute most significantly to the infant death in that specific case. These factors are then documented following each meeting, with all of the factors reviewed and prioritized at the end of the year. As you can see, the 2016 “top five” contributing factors identified during case review are consistent with the 2015 population based contributing factors identified in the Overview Section of this report.
2016 CRT Recommendations
2016 CRT Recommendations

During case review, the top contributing factors are used as a guide to develop recommendations with the assistance of a gap analysis process. This process allows findings to be linked with the appropriate recommendations and adjusted as needed. The above process is completed at each CRT meeting, with recommendations presented to BBC every two years. BBC, functioning in the role of the Community Action Team, then prioritizes the recommendations and crafts an extensive two year Community Action Plan.

The current CRT recommendations are listed below:

**Preconception Health:**
Comprehensive preconception health education shall be offered at an early age that addresses 4 umbrella concepts:
1) Need for consistent medical home, 2) Lifestyle issues,
3) Need for a culturally & religiously sensitive reproductive plan.
4) Education/management of chronic conditions including mental health, substance abuse, obesity and previous fetal loss, emphasizing that these conditions may put women of childbearing age at increased risk for negative pregnancy outcomes.

**Prenatal Care (1):**
Throughout the prenatal period of all women, “consistent and ongoing” screening for medical & nonmedical risk factors shall occur; noting any red flags in order to signal a tiered, multidisciplinary response to include appropriate referrals.

**Prenatal Care (2):**
Intergenerational and multicultural education shall be provided by medical, social work and other community health providers in the areas of preterm labor (warning signs during pregnancy) and prematurity (undesired outcome) in addition to the healthy signs of pregnancy.

**Infant Health:**
All infants should have a medical home as defined as an environment in which care is accessible, continuous, comprehensive (including appropriate referrals, ex: agencies i.e. CPS), family-centered, coordinated, compassionate and culturally effective. (AAP)

**Safe Sleep:**
Safe sleep messages shall be repeated at every medical home visit (wellness and illness) for parents and other child care providers.

**Other:**
All relevant medical, psychosocial, and SUID crime scene investigation data, from all locations (ex. home, childcare, hospital, pharmacy), will be gathered through best practice methods and available for review by CRT.
Community Action Plan
Preconception Health

Goal: All adolescents and young adults will have access to culturally and developmentally-appropriate healthy lifestyle/behavioral health education.

Objective: Define adolescent and young adult health needs for Douglas County, Nebraska.

Objective: Investigate and identify evidence-based practices that promote healthy lifestyles that include developmentally appropriate education on subjects such as relationships, weight, intercourse, etc.

Objective: Increase awareness and educate target adolescent healthcare providers concerning evidence-based practices around developmentally appropriate healthy lifestyles.

Prenatal Care (1)

Goal: To ensure all pregnant women have access to prenatal care within first trimester.

Objective: Identify women who test positive for pregnancy early.

Objective: Match pregnant women with healthcare providers.

Prenatal Care (2)

Goal: To reduce prematurity by 10% and fetal death by 50% through education.

Objective: Awareness by media campaign targeting community and providers.

Objective: Promote “Count the Kicks” to community and providers.

Preconception Health

• Adopted American Academy of Pediatrics (AAP) Bright Futures Age Guidelines & Milestones

• Referenced 2015 Community Health Needs Assessment & 2015 Child & Adolescent Community Health Needs Assessment to identify needs specific to DC community

• Currently working to align the AAP milestones with Douglas County data collection

Prenatal Care (1)

• Identified barriers to early access to prenatal care using Pregnancy Risk Assessment Monitoring System (PRAMS) data and literature review

• Identified early “point of contact” for pregnant women

• Currently developing focus group questions to identify local barriers to access to care and local “points of contact”

Prenatal care (2)

• Established media campaign for “Count the Kicks”

• Completed extensive data review in the area of prematurity

• Currently focusing on “risk factors” in prematurity as a means of creating community awareness
Infant Health

Goal: At least 95% of infants in Douglas County are connected to a quality medical home at birth.

Objective: Investigate and identify quality (evidence-based patient centered) medical homes models.

Objective: Awareness of return on investment (ROI) of having infants connected to medical homes with healthcare systems, providers, parents and community.

Safe Sleep

Goal: To decrease occurrence of SIDS/SUID in Douglas County.

Objective: To create a safe sleep plan for birthing hospitals/providers and the community at large.

Objective: To integrate a safe sleep plan into birthing hospitals/providers and the community.

(Status Report)

Infant Health

• Completed extensive literature review on evidence-based, patient centered medical home models
• Interviewed President of Nebraska Chapter of AAP re: quality pediatric medical homes in Douglas County (environmental scans)
• Currently defining quality medical home for our community

Safe Sleep

• Partnering with Nebraska Collaborative Innovation and Improvement Network (COIIN) Project on creating a safe sleep plan for birthing hospitals/providers
• Provided input on state-wide safe sleep training for child care providers
• Currently creating safe sleep messaging for Douglas County specific to Case Review Team (CRT) data
On the Horizon
The Baby Blossoms Collaborative (BBC) is approximately midway through their 2016-2018 Community Action Plan. Six affinity groups are being facilitated by a diverse cohort of MCH leaders whose agency mission aligns with their specific affinity group topic. They are using a data driven approach which sets the stage for corresponding interventions and outcomes. In the upcoming year, additional work will be done in the areas of preconception health, prenatal care, infant health and safe sleep, with long term goals of early entry to prenatal care, a decrease in the number of premature births and fetal deaths, access to quality medical homes for all infants, a decrease in the number of sleep related infant deaths, and adolescents and young adults having access to the resources needed to live healthy lives.

Nationally, the National Fetal Infant Mortality Review (FIMR) Program is now collaborating with the National Center for Fatality Review and Prevention (NCFRP) to develop a joint data base, provide technical assistance and training, and offer regional FIMR support calls. The Douglas County FIMR team has been involved in the development of the joint data base for over two years. Our hope is that the data base will help develop consistency in data collection and data definitions for the Douglas County FIMR Program, while being user friendly.

The Douglas County FIMR Program continues to provide training and assistance to FIMR Programs nationally. The Kansas City, Kansas FIMR Team came to Omaha in July, 2016 to observe our Community Action Team and discuss our FIMR process. In addition, we participated in a webcast held by CityMatch, the national urban MCH agency in our community, to share our Community Action Plan development process with HIV FIMR programs across the country.

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