Improving Reproductive Health Key to Reducing Infant Mortality in Cuyahoga County

Overlooked and Accessible Ways to Improve Birth Outcomes

A REPORT by THE CENTER FOR COMMUNITY SOLUTIONS

Rose Frech, Policy and Planning Associate

June, 2014
Infant Mortality in Cuyahoga County

Ohio’s infant mortality rate has reached epidemic proportions; the state currently ranks 47th in the nation. Locally, Cuyahoga County’s rates are considerably worse than the state average. Commendable efforts are underway to reduce the staggering infant mortality rate, including critical messaging around safe sleep. The majority of infant deaths occur in the first weeks of a baby’s life, as a result of prematurity and low birth weight. Poor pre- and post-conception health, as well as unplanned pregnancies, results in higher rates of premature births, creating a greater risk for infant death. Greater emphasis must be placed on improving reproductive health as a means to prevent infant mortality.

Infant mortality is the death of a baby before his or her first birthday. Rates are determined by the number of deaths per 1,000 live births. In 2012, Ohio’s rate was 7.57. This equates to 1,047 infant deaths. Cuyahoga County fared worse, at 8.86 per 1,000, or 131 deaths. Cuyahoga County accounted for 12 percent of the infant deaths in Ohio. Racial disparities in infant mortality are striking, as African American babies die at rates much higher than White infants. In Cuyahoga County, the African American infant mortality was 14.5 (2012), with a five-year average (2008-2012) just over 16 deaths per 1,000. The City of Cleveland’s Black infant death rate is consistently even higher, at 18.1 deaths per 1,000 live births in 2010.

In 2013, University Hospitals Rainbow Babies & Children’s Hospital’s Neonatology Division Chief and Professor of Pediatrics Michele Walsh, M.D., stated on a radio program that “within the three miles surrounding the University Circle area, infant mortality exceeds some Third World countries.” These comments generated widespread attention and some controversy. However, they proved to be largely true. The good news is that there has been a little progress in reducing infant mortality rates. Preliminary rates for 2013 for Ohio are marginally lower (7.24), and infant deaths may drop to below 1,000 per year for the state. This may signal improvement after many years of increased or relatively steady rates (see Table 1).
TABLE 1

Infant Mortality Rates 2006-2012

Infant deaths are described as either neonatal (occurring in the first 28 days of a child’s life) or post neonatal (deaths from 28 days to one year of age). In Cuyahoga County, as well as throughout the state and nation, neonatal deaths are significantly higher, at a rate of 6.42 compared with 2.43 postnatal (2012). Two-thirds of all child deaths in Ohio occur in the first year of life. 

Causes

While reducing sleep-related deaths is crucial, most infant deaths occur when a baby is born too small or too early. Prematurity is the top cause of infant death in Cuyahoga County, accounting for 58 percent, or 75 deaths, in 2012. One additional death after age one was attributed to prematurity. Birth defects are the second most common cause (25 deaths), followed by sleep-related injuries (18 deaths). In Ohio, sleep-related deaths comprise about 15 percent of overall infant deaths.

Premature, or preterm, births occur before 37 weeks gestation. A low birth weight, or babies born weighing less than 5 ½ pounds, is not exclusive to preterm births, though is often an outcome. Most preterm births occur spontaneously, though early induction accounts for a small portion. The premature birth rate in Cuyahoga County is 14.1 (per 100), higher than Ohio’s average and the national benchmark (11.4). While often no single factor is responsible for

Infant deaths are described as either neonatal (occurring in the first 28 days of a child’s life) or post neonatal (deaths from 28 days to one year of age). In Cuyahoga County, as well as throughout the state and nation, neonatal deaths are significantly higher, at a rate of 6.42 compared with 2.43 postnatal (2012). Two-thirds of all child deaths in Ohio occur in the first year of life.

Causes

While reducing sleep-related deaths is crucial, most infant deaths occur when a baby is born too small or too early. Prematurity is the top cause of infant death in Cuyahoga County, accounting for 58 percent, or 75 deaths, in 2012. One additional death after age one was attributed to prematurity. Birth defects are the second most common cause (25 deaths), followed by sleep-related injuries (18 deaths). In Ohio, sleep-related deaths comprise about 15 percent of overall infant deaths.

Premature, or preterm, births occur before 37 weeks gestation. A low birth weight, or babies born weighing less than 5 ½ pounds, is not exclusive to preterm births, though is often an outcome. Most preterm births occur spontaneously, though early induction accounts for a small portion. The premature birth rate in Cuyahoga County is 14.1 (per 100), higher than Ohio’s average and the national benchmark (11.4). While often no single factor is responsible for
premature birth, research points to many risk factors that likely contribute. Smoking, hypertension, stress, diabetes, obesity, and substance abuse are all serious risk factors, as is a lack of prenatal care. Additionally, there is an increased risk for those with sexually transmitted infections. Adolescent mothers also experience greater rates of preterm birth.

In Cuyahoga County, multiple risk factors were present for the majority of preterm births that resulted in infant deaths (see Table 2). Parental tobacco use was present in 31.6 percent of cases, 28.9 percent had a history of sexually transmitted infection, and substance abuse was a risk factor present in almost 16 percent of deaths that occurred due to prematurity. Overall, Cuyahoga County’s health rankings on factors associated with premature births are worrisome. According to 2010 data provided by the Cuyahoga County Community Health Status Assessment, 13.2 percent of mothers smoked while pregnant, 26.2 percent of people in the county were obese, and 15 percent of respondents in Cuyahoga County and almost 27 percent in Cleveland reported their health as fair or poor. Cuyahoga County has the highest rate of chlamydia infection in the state, and the birth rate among 15 to 17 year olds is higher than the state average, at 16.7 births per 1,000 teens. Within the City of Cleveland, the birth rate for adolescents was more than double, at 34.8 births per 1,000. Additionally, substance abuse, a factor present in a number of premature births, is a severe issue, with Ohio reporting 88 babies hospitalized per 10,000 for Neonatal Abstinence Syndrome, or substance abuse withdrawal, more than twice the national rate.

Costs

Costs associated with premature births are higher than costs associated with full-term births. Reducing preterm birth rates could lead to considerable taxpayer cost saving. According to the 2012 Cuyahoga County Child Fatality Review report:

“The average cost of a pregnancy and delivery of a preterm birth is almost $65,000 per infant, compared to $15,000 for those with no complications. With over 2,000 preterm births in 2012 the total approximate cost for supporting Cuyahoga County mothers for these preterm births was over $130,000,000. It is important to note that almost one in five (18%) African American babies born in 2012 were preterm and over 70% of all African American deliveries were paid by Medicaid. This demonstrates the significance of poverty as a social determinant of health that affects the well-being of our African American population. Lowering the African American preterm birth rate would cause a significant savings to the Medicaid system.”

In addition to significant costs, prematurity leads to increased risk for long-term disabilities and developmental delays, and often substantial emotional burden for families.
TABLE 2
Common Risk Factors Associated with 76 Deaths Due to Prematurity in Cuyahoga County

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>#</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poverty</td>
<td>60</td>
<td>78.9</td>
</tr>
<tr>
<td>Premature rupture of membranes (PROM)</td>
<td>35</td>
<td>46.1</td>
</tr>
<tr>
<td>Missed appointments</td>
<td>28</td>
<td>36.8</td>
</tr>
<tr>
<td>Previous preterm delivery</td>
<td>25</td>
<td>32.9</td>
</tr>
<tr>
<td>Parental tobacco use</td>
<td>24</td>
<td>31.6</td>
</tr>
<tr>
<td>Intrauterine tobacco exposure</td>
<td>24</td>
<td>31.6</td>
</tr>
<tr>
<td>Sexually transmitted infections--past history</td>
<td>22</td>
<td>28.9</td>
</tr>
<tr>
<td>Maternal history of mental health problems</td>
<td>22</td>
<td>28.9</td>
</tr>
<tr>
<td>Mom with a chronic health condition</td>
<td>21</td>
<td>27.6</td>
</tr>
<tr>
<td>Placental abruption</td>
<td>20</td>
<td>26.3</td>
</tr>
<tr>
<td>Multiple gestation</td>
<td>13</td>
<td>17.1</td>
</tr>
<tr>
<td>No prenatal care</td>
<td>12</td>
<td>15.8</td>
</tr>
<tr>
<td>Illicit drug abuse</td>
<td>12</td>
<td>15.8</td>
</tr>
<tr>
<td>Previous fetal loss</td>
<td>12</td>
<td>15.8</td>
</tr>
<tr>
<td>Intrauterine alcohol exposure</td>
<td>11</td>
<td>14.5</td>
</tr>
<tr>
<td>Incompetent cervix</td>
<td>11</td>
<td>14.5</td>
</tr>
<tr>
<td>Parental education less than high school</td>
<td>11</td>
<td>14.5</td>
</tr>
<tr>
<td>Parental alcohol use</td>
<td>11</td>
<td>14.5</td>
</tr>
<tr>
<td>Sexually transmitted infections--during pregnancy</td>
<td>10</td>
<td>13.2</td>
</tr>
<tr>
<td>History of domestic violence</td>
<td>10</td>
<td>13.2</td>
</tr>
<tr>
<td>At-risk maternal age</td>
<td>8</td>
<td>10.5</td>
</tr>
</tbody>
</table>

From “Protecting Our Future” The 2012 Child Fatality Review Report

Solutions

It’s clear that a woman’s health before, during and after pregnancy, has an impact on her birth outcome. Improving reproductive health—including birth spacing, STD testing and treatment, and planning of pregnancies—can reduce preterm births, and subsequently, help to reduce staggering infant mortality rates. Interventions are necessary prior to conception and throughout pregnancy, as well as postnatal.

Access to Prenatal Care

Prenatal care is the cornerstone of post-conception health. Improved access to prenatal care, including the establishment of the Medicaid program in the 1960s, has been associated with improved birth outcomes and declining infant mortality. Significantly, Ohio’s recent Medicaid Expansion, the advent of the Healthcare Marketplace, and the Medicaid Family Planning Waiver all have led to important inroads in increased access. Furthermore, community health
programs have reduced barriers to care for geographically isolated women. But despite these improvements, millions of pregnant women continue to receive inadequate or untimely care.

Less than 70 percent of women in Cuyahoga County received first trimester prenatal care in 2010, and within the City of Cleveland the percentage falls to about 60 percent. Of the 76 total deaths attributed to prematurity in Cuyahoga County in 2012, 15.8 percent of the mothers reported receiving no prenatal care. Prenatal care for women eligible for Medicaid is particularly important in reducing infant mortality, as this population is less likely to receive comprehensive care, where risk factors would be identified early, and is at a greater risk for poor birth outcomes. Moreover, Medicaid pays for almost 50 percent of all Ohio births—68,886 in 2012. Due to eligibility requirements, care often begins too late and ends too early. Forty-seven percent of women who ultimately deliver their babies under Medicaid coverage received no first trimester prenatal care, 20 percent received no care in their first or second trimester, and 10 percent received no care at all. Helping women to identify their pregnancy early and begin care immediately is essential. Presumptive eligibility or the process by which a woman or a child can be enrolled in Medicaid while their application is pending, is an important step for getting women into care as soon as possible. Educating consumers and providers on these policies is of great importance.

**Progesterone, Eliminating Early Elective Deliveries, and ART**

For pregnant women, progesterone, a hormone supplement used to reduce preterm labor for those at high risk, is a cost-effective and easy to administer mechanism to decrease the overall premature birth rate. Use among physicians should be encouraged. Clearly, as only women receiving prenatal care are accessing this treatment, this presents another benefit to early identification and treatment for pregnant women.

For women not deemed high-risk, early induction (prior to 38 weeks) continues to occur for non-medical reasons. While Ohio’s elective early birth rate continues to decline (and reached 6.8 percent in 2013), it is still above targets. While reporting is not universal, local hospitals continue to report varying percentages of elective early births. This practice is harmful to babies and mothers and should be stopped.

Assistive Reproductive Technology (ART) is a fertility treatment combining eggs and sperm in a laboratory, which is then returned to the female donor or another woman who will carry the baby. *In vitro* fertilization is a frequently referenced instance of ART. For women who struggle with infertility but want to become pregnant, ART can provide an attractive, yet expensive, option. However, though rare (accounting for 1 percent of U.S. births), this practice is well documented in leading to an increase of preterm births and low birth weight babies. Incidence of this practice and its association with preterm births should be closely monitored.

**Preconception Care**

Early discussions on reproductive health are important to positive birth outcomes. The Ohio Pregnancy Risk Assessment Monitoring System, (PRAMS) is an ongoing survey of a random
sample of recent mothers, and provides population estimates on pregnancy-related indicators. According to survey results from 2010, only about 32 percent of women discussed with their doctor how to prepare for a healthy pregnancy prior to becoming pregnant.

Enhanced preconception health can be addressed by the following:

1. **Increased use of folic acid to reduce development of neural tube defects**
   According to PRAMS, 54.1 percent of respondents reported no pre-pregnancy multi vitamin use. Folic Acid consumption of about 400 micrograms prior to conception and throughout pregnancy is associated with a decreased risk for birth defects of the brain and spinal cord.

2. **Increased cervical screenings**
   Women with a short cervix have higher rates for premature births. Screening through ultrasound, pre- and post-conception, can identify women with a short cervix and lead to appropriate intervention to reduce the risk for early birth.

3. **Screening for genetic disorders**
   In certain instances, both prior to conception and prenatally, families may benefit from genetic screening to determine if they may be a carrier for a genetic disorder than could result in a birth defect. Birth defects are a common cause of death among infants, and early identification is imperative.

4. **STI screening and treatment**
   Many curable sexually transmitted infections put women at risk for preterm birth. Many curable sexually transmitted infections put women at risk for preterm birth.20 STI testing and treatment is an important component of preconception health. Expedited partner therapy (EPT)--the practice of treating the sex partner of someone infected with chlamydia or gonorrhea without seeing the partner (through a prescription medication)--could help to reduce STI rates and prevent reinfection, though the practice is currently prohibited in Ohio.21 Ohio is one of only six states that prohibit EPT.21

5. **Smoking cessation**
   Smoking during pregnancy puts women at an increased risk for preterm birth and low birth weight babies. Furthermore, second-hand smoke in the environment after the baby comes home is associated with an increase in infant deaths. Smoking cessation programs are a necessary component to preventing infant deaths.

6. **An active lifestyle among women of childbearing age and maintenance of a healthy weight**
   Obesity can decrease the chances that a woman can become pregnant. Furthermore, overweight and obese women are at an increased risk for complications during pregnancy and after birth. Preeclampsia and a higher risk for miscarriage and stillbirth are among problems associated with obesity during pregnancy.22
7. *Inter-birth spacing*

Birth spacing is important, as pregnancies that occur within 18 months of having given birth are associated with greater odds for preterm birth and low birth weight. Further, women who have experienced a prior preterm birth are at an even greater risk. In Cuyahoga County, 32.9 percent of women whose baby died in the first year of life due to prematurity reported a previous preterm delivery.

8. *Effective family planning*

Family planning, or the use of contraception to determine the number of children there will be in a family and when those children will be born, can reduce unplanned pregnancies and assist women in spacing births.

9. *Engagement of young men in sexual and reproductive health agendas*

The importance of male reproductive health and family planning is often overlooked. Family planning and sexual health initiatives must be inclusive of the needs of both males and females. In addition to the importance of addressing their own health needs, encouraging male partner involvement before and throughout pregnancy may act as a protective factor to increase positive birth outcomes.

**Additional Family Planning Solutions**

For all women of childbearing age, unplanned pregnancy contributes to an increase in preterm birth rates. Women who have an unplanned pregnancy are less likely to identify their pregnancy early, seek care throughout, have risk factors identified and monitored, and follow healthy prenatal practices. PRAMS data estimate that, for 2010, 47 percent of women with infants wanted pregnancy later or not at all. Contraception is key. In Cuyahoga County, according to 2012 data, 9 percent of sexually active adults were not using any form of birth control, and 10 percent were using the unreliable approaches of withdrawal or rhythm methods. Health insurance coverage of contraceptive care in Ohio has been an issue for women, especially to prevent their first pregnancy. According to a large scale study, women who have access to a full range of contraception methods at no cost experienced lower rates of teen pregnancy and abortion.

Ohio’s Medicaid family planning waiver, implemented in 2012 to improve coverage for low income women, and Medicaid Expansion under the Affordable Care Act have led to a decrease in the number of individuals who lack insurance as a barrier to family planning (for details on coverage of women’s preventative services under the ACA, see Table 3). However, protecting funds allocated to the Medicaid Family Planning Benefit and creating a seamless transition between Medicaid programs are other ways to assure adults can access coverage. Educating women and providers on the benefits of family planning across the lifespan, including improved physician/patient communication and broad use of reproductive life plans, are equally important. Additionally, emergency contraception, designed to prevent pregnancy soon after sex, is not associated with higher rates of unprotected intercourse or sexually transmitted...
infection and provides additional options for women to prevent unplanned pregnancies, especially for victims of sexual assault.

Family planning is critical to decreasing the preterm birth rate which subsequently can reduce infant mortality rates. Discussions of family planning should occur at multiple junctures throughout a woman’s life, beginning both in school and with her own family on an age-appropriate basis. Comprehensive sex education for both sexes is a necessary component in all school systems and should extend into environments where young adults frequent. For women of childbearing age, family planning discussions should occur at regular intervals with primary care physicians and OB-GYNs, and should continue throughout pregnancy and immediately after. This can be especially challenging, as 32 percent of women on Medicaid skipped their postnatal care appointment, which is often critical to family planning and discussions of inter-conception care.
<table>
<thead>
<tr>
<th>Type of Preventive Service</th>
<th>HHS Guideline for Health Insurance Coverage</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Well-woman visits.</td>
<td>Well-woman preventive care visit annually for adult women to obtain the recommended preventive services that are age- and developmentally appropriate, including preconception care and many services necessary for prenatal care. This well-woman visit should, where appropriate, include other preventive services listed in this set of guidelines, as well as others referenced in section 2713.</td>
<td>Annual, although HHS recognizes that several visits may be needed to obtain all necessary recommended preventive services, depending on a woman’s health status, health needs, and other risk factors.</td>
</tr>
<tr>
<td>Screening for gestational diabetes.</td>
<td>Screening for gestational diabetes.</td>
<td>In pregnant women between 24 and 28 weeks of gestation and at the first prenatal visit for pregnant women identified to be at high risk for diabetes.</td>
</tr>
<tr>
<td>Human papillomavirus testing.</td>
<td>High-risk human papillomavirus DNA testing in women with normal cytology results.</td>
<td>Screening should begin at 30 years of age and should occur no more frequently than every 3 years.</td>
</tr>
<tr>
<td>Counseling for sexually transmitted infections.</td>
<td>Counseling on sexually transmitted infections for all sexually active women.</td>
<td>Annual.</td>
</tr>
<tr>
<td>Counseling and screening for human immune-deficiency virus.</td>
<td>Counseling and screening for human immune-deficiency virus infection for all sexually active women.</td>
<td>Annual.</td>
</tr>
<tr>
<td>Contraceptive methods and counseling.</td>
<td>All Food and Drug Administration approved contraceptive methods, sterilization procedures, and patient education and counseling for all women with reproductive capacity.</td>
<td>As prescribed.</td>
</tr>
<tr>
<td>Breastfeeding support, supplies, and counseling.</td>
<td>Comprehensive lactation support and counseling, by a trained provider during pregnancy and/or in the postpartum period, and costs for renting breastfeeding equipment.</td>
<td>In conjunction with each birth.</td>
</tr>
<tr>
<td>Screening and counseling for interpersonal and domestic violence.</td>
<td>Screening and counseling for interpersonal and domestic violence.</td>
<td></td>
</tr>
</tbody>
</table>

Long-acting reversible contraception, or LARC, is a method of birth control which provides a long period of contraception without action by the user, such as injectables, implants, or intrauterine devices. LARC can be of particular benefit to women who may struggle with compliance with traditional forms of birth control, or are in relationships where abuse or coercion make traditional forms difficult for women to control. Other advantages to LARC methods include cost efficiency, high user satisfaction, and a decreased need for regular office visits. In fact, recent research suggests that LARC is far more effective than pills, patches, or rings. As the products are reversible through removal of the device, women are able to become fertile again quickly should they choose to do so.

Despite their efficacy, myths about LARCs persist, for both providers and patients. This includes the false beliefs that LARC may cause abortions, infertility, or cancer, or that they are painful or ineffective. Delivery of accurate education and counseling on LARC can lead to increased requests for the method and subsequent satisfaction.

LARC is highly effective yet continues to be underutilized. According to survey results, only an estimated 4 percent of Cuyahoga County adults reported using LARC. Improvements in billing through insurance, as a part of the prenatal and delivery bundle of services, could lead to increased use. In turn, increased use of LARC would reduce unplanned pregnancies.

Analysis of data from states that have had Medicaid Family Planning Waivers for a number of years has found that an increase in access to family planning has reduced unplanned pregnancies, increased birth spacing, improved birth outcomes, and consequently reduced the risk of infant death. Family planning public health initiatives offer women the ability to not only plan their family size but also improve their birth outcomes, and have been categorically successful at improving maternal and child health.

Current Initiatives

Recent local efforts show that important headway is being made. The Ohio Collaborative to Prevent Infant Mortality, established in 2010, has an active and diverse membership, and is a strong voice in supporting varied efforts to reduce infant mortality across the state, including family planning. Additionally, the Ohio Institute for Equity in Birth Outcomes is a three-year initiative underway in nine communities across the state, including Cleveland. The Institute is a partnership between the Ohio Department of Health and CityMatch, focused on improving birth outcomes and reducing racial and ethnic disparities in infant mortality, with an emphasis on a data-driven and evidenced-based approach. Cleveland’s project, a collaborative effort of the Cuyahoga County Board of Health and the Cleveland Department of Public Health, is in its first year. A team of community partners is working to select, implement, and evaluate projects focused on improving equity in birth outcomes. Family planning has been selected as their “downstream” approach and will be a significant component of this movement.

Efforts such as this indicate that family planning is coming to the forefront as an important factor in combatting infant mortality. However, continued work must be done to improve access, better coordinate services, and assure that family planning and reproductive health care
are integrated into health care throughout the lifespan. This is a vital component of a multifaceted approach to reduce infant mortality.

2. Ibid.
3. Ibid.
5. [http://www.ideastream.org/soi/entry/52937](http://www.ideastream.org/soi/entry/52937)
7. Dr. Arthur James, Presentation to the Ohio Collaborative to Prevent Infant Mortality Quarterly Meeting, June, 2014.
16. Medicaid data on births and pre- and postnatal care included in this section are from the Ohio Office of Health Transformation Perinatal Episodic, Compilation of Analyses Discussion Document, February 2014, online at [http://www.healthtransformation.ohio.gov/LinkClick.aspx?fileticket=FyYsOJJ_qA%3d&tabid=226](http://www.healthtransformation.ohio.gov/LinkClick.aspx?fileticket=FyYsOJJ_qA%3d&tabid=226)
29. [http://www.cdc.gov/mmwr/preview/mmwrhtml/mm4847a1.htm](http://www.cdc.gov/mmwr/preview/mmwrhtml/mm4847a1.htm)
Improving Reproductive Health Key to Reducing Infant Mortality in Cuyahoga County is published by The Center for Community Solutions. Copyright 2014 by The Center for Community Solutions. All rights reserved. Comments and questions may be sent to rfrech@CommunitySolutions.com.

1501 Euclid Ave., Ste. 310, Cleveland, OH 44115
37 W. Broad St., Ste. 350, Columbus, OH 43215