



**2016
Worcester
Healthy Baby
Collaborative**

**Infant
Mortality
Update**

**A Baby's
Health
Is
A City's
Wealth**

The WHBC would like to thank the following member organizations:

**March of Dimes Foundation,
Massachusetts**

UMass Medical School

**Department of Social Services,
Worcester**

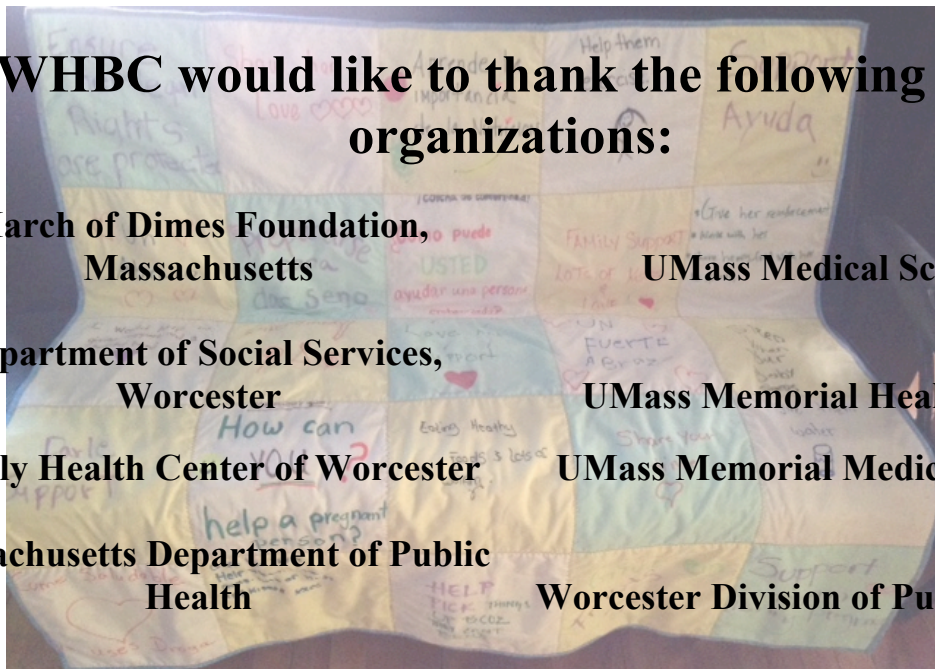
UMass Memorial Health Care

Family Health Center of Worcester

UMass Memorial Medical Center

**Massachusetts Department of Public
Health**

Worcester Division of Public Health



Executive Summary:

Infant mortality is not simply a medical problem but rather a reflection of a city's overall health, including its economic health.

In spite of progress, Worcester has a persistently higher infant mortality rate (IMR) than similar cities in MA, with persistent racial/ethnic disparities in infant mortality.

Worcester's high IMR occurs in the setting of excellent access to health care and nationally-recognized neonatal care services.

Poverty, lack of educational attainment, and perceptions of racism among Worcester's immigrant and disadvantaged communities are important factors in Worcester's high IMR.

Reducing infant mortality requires addressing the social determinants of health through programs that reduce poverty, provide access to safe housing, and improve educational achievement among at-risk populations.

From 2001 to 2010, we noted an alarming rise in infant deaths to Hispanic mothers in Worcester.

- The Hispanic IMR in Worcester since 2010 remains over twice the state IMR.
- For the 3 year period 2012-14, for the first time, Worcester's Hispanic IMR surpassed the Black IMR.

What the City Council Can Do

The issue of IM in the Worcester community is much more a reflection of socioeconomic disparities than specific medical issues. The overall health of communities adversely affected by IM must be improved, and that can only be done by improving their overall quality of life. The avenue for achieving this change is the improvement of educational opportunities in Worcester. This is a particular concern for the Worcester Hispanic community, which has a lower graduation rate than other populations.

Recommendations to the City Council

"A Baby's Health is a City's Wealth" (Dr. Leonard Morse)

Work with the Mayor to declare an annual day of awareness about infant mortality.

Send a representative to the quarterly WHBC full-membership meetings.

Collaborate with the March of Dimes to implement its free Healthy Babies, Healthy Business program starting with staff employed by the city and encouraging other city businesses to follow.

Work to improve opportunities for educational advancement and job opportunities for disadvantaged populations.

Encourage and support targeted outreach work and collaboration with Worcester's academic institutions, through the Center for Public Health Practice at Worcester's DPH.

Advocate for funding:

- Advocate for Worcester's community health programs and agencies to receive Maternal/Child Health funding and postpartum depression funding at the state level.
- Advocate for Worcester's community health programs and agencies to receive funding for the MA Healthy Families program.
- Support adequate staffing of the Worcester DPH
- Advocate for increasing the minimum wage and the Earned Income Tax Credit

Background: The Importance of Social Determinants of Health

Neonatal mortality is driven by high rates of preterm birth. Preterm birth is the leading cause of infant death as well as the leading cause of long-term neurological disabilities in children, according to the CDC [CDC(a)]. The national Infant Mortality Rate, defined as the number of infant deaths per year in an infant's first year of life per 1,000 live births for that year, has been in decline since 2005, down from 6.87 per 1,000 in 2005 to 5.96 per 1,000 in 2013. Similarly, Worcester's IMR has also improved in that time period, from over 8 in 2003-2005 to under 6 in 2012-2014. (DPH/WHBC) However, challenges remain.

Worcester's health care system has two important contributions to infant health. These improvements represent a positive step in reducing infant mortality: first, access to specialized neonatal care for the smallest and most premature infants through the Level III intensive care nursery at UMass, and second, access to primary and prenatal care available to our community's most vulnerable populations at Worcester's two community health centers as well as access to prenatal care at UMass obstetric clinics. *However, despite these resources and the level of care available, we still see a distinctly high rate of infant mortality in the city, and racial/ethnic disparities in rates of preterm birth are worse in Worcester than elsewhere in the state.*

Worcester's high IMR represents the influence of many other factors on the health of Worcester's children. While several medical risk factors can influence preterm birth, a broader influence comes from what is termed the "social determinants of health." The Healthy People 2020 program defines social determinants of health as "*conditions in the environments in which people are born, live, learn, work, play, worship, and age that affect a wide range of health and quality-of-life outcomes and risks.*" (Healthy People 2020) Thus, social determinants of health can include individual and environmental stress, poor social support, an adverse physical environment, an overall lack of trust in primary care in the community, lack of educational

attainment, and poverty. *In essence, place matters, and public policies at all levels of government need to reflect this fact.*

Of the many factors potentially contributing to infant mortality, social determinants of health present the greatest opportunity for influence by the city of Worcester. Infant mortality acts like a gauge of the overall health of a community. A robust health care system, a culture of healthy choices and a healthy environment in the community will result in a lower rate of multiple poor health conditions, including infant mortality. Encouraging proper nutrition and providing access to safe housing as well as promoting education and job training can, therefore, have an effect on lowering a region’s infant mortality rate. Indeed, there is emerging evidence that targeted poverty-reduction efforts, such as increasing the minimum wage and the Earned Income Tax Credit (EITC) can lead to improved birth outcomes (Hoynes 2015, Arno 2015).

Infant Mortality Rates (IMR) in Worcester

This graph shows a “3-Year Rolling Average” for infant mortality rates in Worcester and Massachusetts since 1992. *Although the rate of Worcester IMR is declining with that of Massachusetts and the nation as a whole, Worcester's IMR remains higher than the state's, and significant racial and ethnic disparities persist in Worcester that are not as evident in the rest of the state.* Worcester showed an unofficial IMR of 5.2 per 1,000 in 2013-5 compared to Massachusetts’ 2013 rate of 4.15 per 1,000 (WHBC/CDC (b)).

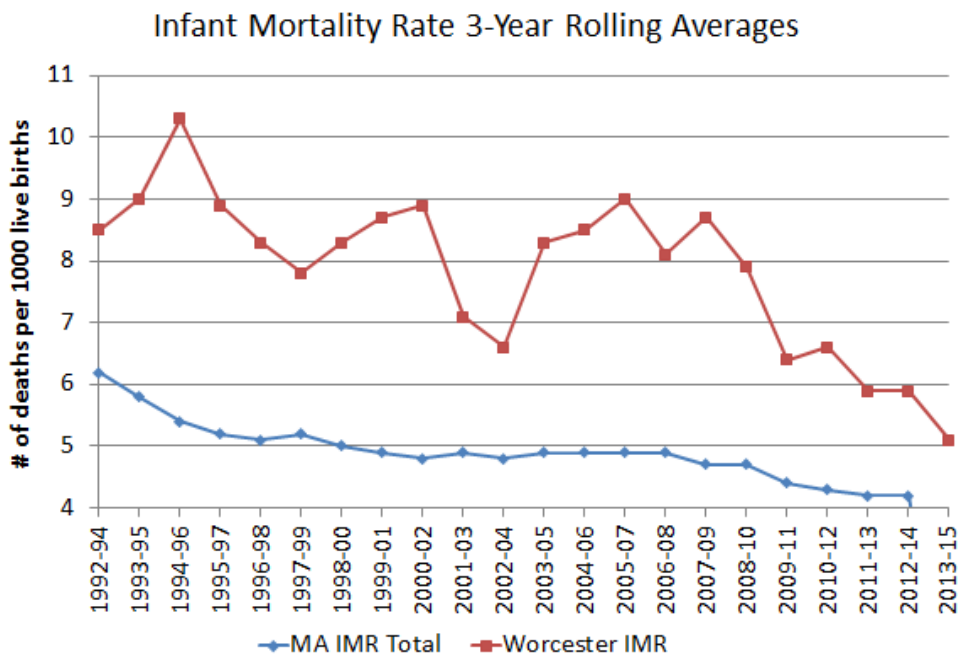


Figure 1: 3 year rolling average IMR (source: MA DPH, WHBC)

Infant Mortality by Race 3 Year Rolling Average

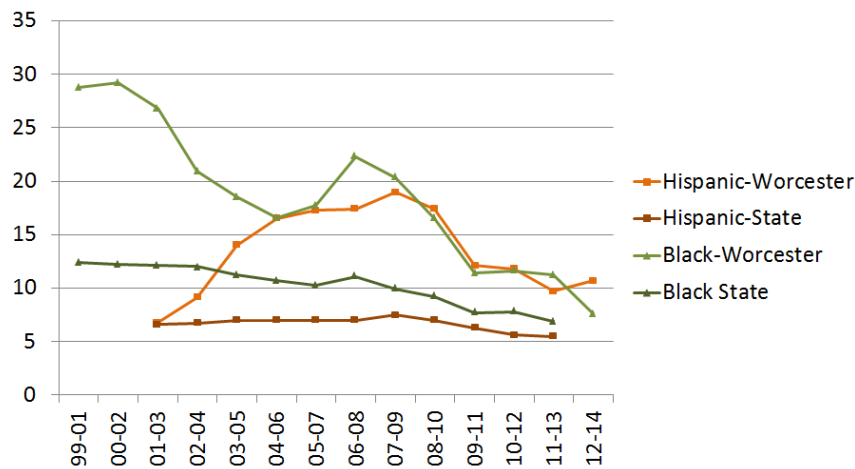


Figure 2: IMR by Race (source: MA DPH, WHBC)

There are a number of take-aways from examining these data:

Neonatal Deaths are the primary issue. Over the last decade, about 75% of Worcester’s infant deaths are neonatal deaths and are usually related to extreme prematurity (22-24 weeks gestation). The UMass Neonatal Intensive Care Unit is recognized nationally as a center of excellence, but a NICU is unable to save an infant born with this degree of prematurity (22-24 weeks). Prematurity like this is usually a reflection of an underlying maternal health issue, such as chronic medical disease or psychosocial stress, and often reflects the social determinants of health mentioned previously.

Worcester IMRs surpass surrounding communities. High Worcester IMRs are *not* reflected in the IMRs of surrounding communities. The data in this report are solely reflective of Worcester city residents.

Racial and Ethnic Disparities in IMR exist in Worcester for Hispanic and African-Born Women. The 3-year rolling average IMR for Hispanics rose from about 7-8 in 2000-2004 (comparable to city’s overall IMR in this time period) to 17-20 in 2005-2010 (which means that on average 1-2 *percent* of Hispanic babies born every year in that time period were dying before their first birthday). Since 1996, the majority of Worcester's infant deaths to Hispanic mothers are to mothers born in the mainland US or Puerto Rico.

Worcester’s increase in Hispanic infant mortality in that decade is especially worrisome because statewide, the Hispanic IMR did not increase during this time. In addition, national trends are different. Between 2005-2011, with the overall national IMR down 12%, Hispanic IMR was down 9% nationally. Although the Hispanic IMR in Worcester since 2010 has been declining, it remains over twice the state Hispanic IMR, and for the 3 year period 2012-2014, for the first time, Worcester's Hispanic IMR surpassed the Black IMR.

From 1995-2015, the major concern of the infant mortality collaborative has been to address the high rate of infant deaths among Worcester's Black immigrant mothers. Since 2013, our work focused on using a community engagement model coupled with collaboration with several of Worcester's academic institutions on a project called Nhyira Ba ("Blessed Baby" in Twi, the dialect spoken by most of Worcester's Ghanaian population).

Addressing the existing socioeconomic disparities in Worcester's Latino population as a whole could be the most direct way to reduce Hispanic IMR. The Worcester Hispanic population does show more typical socio-economic and educational disparities, which generally lead to higher IM, including higher rates of poverty, single parenting, and poor high school graduation rates. Worcester's Hispanic population also has higher rates of teen births than in other similar cities in the Commonwealth, and teen pregnancy in Worcester is closely linked to the interconnected social determinants of poverty, lack of high school graduation, and single parenthood.

Of note, while the opioid epidemic impacts Worcester's Hispanic community in general, the WHBC's data on infant deaths does *not* show that the Hispanic mothers experiencing infant death have been using opioids.

Future WHBC Steps

1. **Ongoing collaboration with local educational institutions** through the Worcester DPH Academic Health Department.
2. **Ongoing outreach to and engagement with the Hispanic community**, using the lessons and successes of the Nhyira Ba program, to plan future interventions that are "of the community, by the community, and for the community", thus working with Hispanic community leaders to identify targeted health education and intervention programs.
3. **Presence at several health fairs in Worcester** to share information regarding best practices to reduce infant mortality, such as safe sleep, and to engage with the community directly to address concerns regarding infant mortality.
4. **Collaboration with other organizations** providing resources and insight into the complex IM issue, such as the Massachusetts Perinatal Quality Collaborative and organizations similar to the WHBC in Boston and Springfield, and the national Collaborative Improvement Network (CoIN) to reduce IM in which Massachusetts is participating.
5. **Advocacy for IM strategies as part of WDPH's Community Health Improvement Plan.** Future reduction in IM rates can be viewed as one of the most concrete indicators of the success of the CHIP.

References

CDC (a): <http://www.cdc.gov/reproductivehealth/maternalinfanthealth/pretermbirth.html>

CDC (b): http://www.cdc.gov/nchs/pressroom/states/MA_2015.pdf

Mass DPH: *Massachusetts Births 2011 and 2012*. Boston, MA: Office of Data Management and Outcomes Assessment, Massachusetts Department of Public Health. May 2014.

WHBC data (available on request; data since 2012 unofficial)

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