Appendix to City Council Report

Preterm Birth and Risk Factors

Risk factors for infant mortality include those related to women's health prior to and during pregnancy, those related to the pregnancy experience, those associated with the birth and newborn experience, and those associated with the child's health and well-being in the first year of life.

Nationally, the infant mortality rate for infants born at less than 32 weeks of gestation is nearly 70 times the rate for infants born at between 37 and 41 weeks of gestation. With preterm birth a major contributor to infant mortality in general, in particular to disparities in the United States, much of the success our nation has achieved in reducing infant mortality rates has been in keeping small infants alive rather than preventing their birth.

The risk factors for preterm birth and low birthweight are not fully understood but in general include: maternal cigarette smoking, high altitude, poor nutritional status, low pre- pregnancy weight, low pregnancy weight gain, low or high parity (a woman's number of births), maternal low birthweight, obstetric history, mode of delivery (i.e., elective cesarean section), use of drugs or alcohol, maternal morbidity (e.g., chronic hypertension, incompetent cervix), maternal age (< 17; >34 years), multiple gestation pregnancies, infection prior to and during pregnancy, short (< 18 mos.) and long interpregnancy interval (> 60 months),

Birth to Black Mothers Report

The number of incoming African immigrants and refugees in the 1990s was nearly double the aggregate of all previous years. This trend mirrored the national migration flow to the U.S. from Africa over the last thirty years. The U.S. Census Bureau [1] estimates that the number of Africans who migrated or were resettled to Massachusetts has more than tripled in the last seventeen years and currently is at 71,000 individuals. According to the Migration Policy Institute [2], Africans constitute approximately 8% of the total foreign-born population in MA, in comparison with to 3.7% nationally. Approximately 22% of all Africans live in or around Boston (Suffolk County). Of all African immigrants, 51% are women the majority of whom are of reproductive age (15-45).

Despite the aid-mitigated access to medical care, African women still experience poor birth outcomes. Overall, births to African women account for 2% of all births in the state [3]. In the *2007 Births Report*, The Massachusetts Department of Public Health (DPH) reports that births to African women increased by 175 births (15%) over figures from 2006 [3]. African women have the lowest rate of prenatal care during the first trimester compared to the state average (69% versus 89%). Cape Verdeans also experience the highest levels of low birth weight levels among all other ethnic groups (9.7%) compared to the state average (7.9%). Of all African mothers who deliver in the State, 6.6% have Gestational Diabetes Mellitus (GDM), compared to 3.4% of African-American women. Africans in Massachusetts also have the third-lowest birth numbers to women under 20 years of age, indicating a bias towards later

births. African women also have the fourth highest rate of cesarean sections among all other ethnic groups in the state. In fact, 37% of all African women deliver through cesarean section. The groups with higher rates are Brazilians (44.7%), Asian Indians (39%), and Haitians (37.6%) [3].

In 2004, the Massachusetts DPH released *Births to Black Mothers in Massachusetts* [4] that examined in greater detail the health disparities that Africans and African-American women experience. The following are some highlights from the report. The highest education attainment among all Black mothers was among Nigerians who showed rates of education similar to Whites. The lowest rate of education was among Cape Verdeans (20%).

The *Report* also notes that in general African women have higher parity (13.9% pregnant over 4-5 times, vs. white 6.2%), with the highest parity among Somalis (31%) and Liberians (20%). Mothers showed higher rate of anemia, hypertension, diabetes, eclampsia. As a group, African pregnant women have the lowest incidence of prenatal care of all ethnic groups (83%) ranging from 56% of Ugandans to 76% of Somalis.

The Births to Black Mothers notes that African-born mothers face a number of educational and employment challenges that negatively affect their health. Because the Department of Public Health tends to be more attuned to the social determinants of health, it indirectly links women's backgrounds and social histories to the women's maternal health. The Report does not provide any recommendations on improving access or outreach to the women.

Data Tables

Table 1. Worcester IMR compared to MA and US (Data source: Massachusetts Department of Public Health; WHBC data)

Year	Total # of Births to Worcester Women	Total # of Infant Deaths to Worcester Women	Worcester IMR	MA IMR	US IMR
1990	3005	23	7.7	7.0	9.2
1991	2830	27	9.5	6.5	8.9
1992	2706	20	7.4	6.5	8.5
1993	2725	17	6.2	6.2	8.4
1994	2475	30	12.1	6.0	8.0
1995	2375	21	8.8	5.1	7.6
1996	2253	22	9.8	5.0	7.3
1997	2330	19	8.2	5.3	7.2
1998	2417	17	7.0	5.1	7.2
1999	2473	20	8.1	5.2	7.1
2000	2535	25	9.9	4.6	6.9
2001	2572	21	8.2	5.0	6.8
2002	2617	23	8.8	4.9	7.0
2003	2588	11	4.3	4.8	6.8

2004	2579	17	6.6	4.8	6.8
2005	2589	36	13.9	5.1	6.8
2006	2596	13	5.0	4.8	6.7
2007	2554	21	8.2	4.9	6.7
2008	2670	29	10.9	5.0	6.6
2009	2592	10	3.9	4.9	6.4
2010	2477	14	5.7	4.4	6.1
2011					6.1
2012					

Massachusetts ranks seventh in the country in the size of the immigrant population. A quarter of all immigrants in the State entered during the 1990s. The foreign-born currently represent 14% of total state population. The top sending regions are Africa, Asia, Europe, and Latin America (Figure 1 and Table 2).

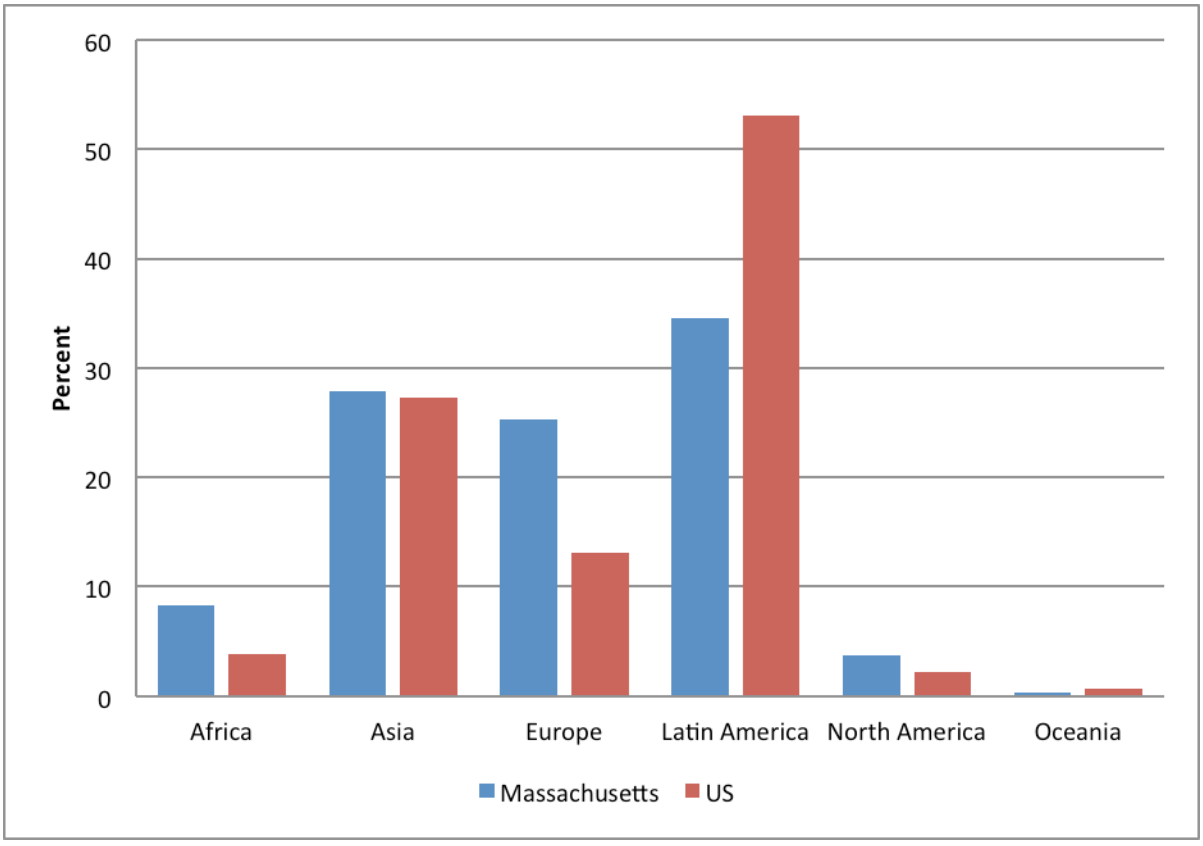

Figure 1. Massachusetts foreign-born population compared to national rates (2008) (Data Source: Migration Policy Institute 2008)

Table 2. Change in Foreign-Born population (1990-2008) (Data Source: Migration Policy Institute, 2009)

Region of Birth	1990	2008	Change	% Change
Born in Europe	241,703	237,014	-4,689	-2%
Born in Asia	116,608	261,770	145,162	124%
Born in Africa	21,557	77,682	56,125	260%
Born in Oceania	1,593	2,365	772	48%
Born in Latin America	117,526	324,084	206,558	176%
Born in Northern America	53,072	34,285	-18,787	-35%
Total	**552,059**	**937,200**	**385,141**	**70%**

Year	Total # of Infant Deaths	# of black Infant Deaths	% of infant deaths who are black infants	% of black Infant deaths with immigrant mother
2000	25	8	32%	50%
2001	21	9	43%	67%
2002	23	8	35%	100%
2003	11	6	55%	100%
2004	17	5	29%	100%
2005	36	6	17%	50%
2006	12	5	42%	80%
2007	21	6	29%	67%
2008	29	11	38%	91%
2009	10	4	40%	50%
2010	14	3	21%	67%
2011	15	6	40%	83%
2012	19	5	26%	60%

Table 3. Infant deaths to Hispanic mothers

Year	Total # of Infant Deaths	# of Hispanic Infant Deaths	% of infant deaths who are Hispanic infants	% of Hispanic infant deaths with PR or Dominican mother
2000	25	3	12%	67%
2001	21	4	19%	100%
2002	23	6	26%	83%
2003	11	2	18%	100%

2004	17	6	35%	83%
2005	36	13	36%	92%
2006	12	4	33%	50%
2007	21	9	43%	89%
2008	29	11	38%	91%
2009	10	8	80%	88%
2010	14	4	29%	100%
2011	15	7	47%	
2012	19	9	47%	

Infant mortality ultimately is a measure of many non-medical factors in the community, including the rates of poverty and educational attainment for young people. Thus there are specific psychosocial risk factors known to be associated with pregnancies at risk for premature delivery and infant mortality. Specifically, mothers who are young (teens), poor, uneducated, unmarried, and those who smoke cigarettes, drink alcohol, or use drugs, are at high risk for poor birth outcomes.

Maternal Characteristics	2011	%	2010	%	2009	%	2008	%	2007	%	2006	%	2005	%	2004	%	2003	%
Total Number of Infant Deaths	15		14		18		28		20		12		34		15		12	
Unmarried	9	60%	7	50%	10	56%	15	54%	10	50%	7	58%	15	44%	10	67%	8	67%
Publically insured	9	60%	8	57%	4	22%	14	50%	13	65%	5	42%	20	20%	10	67%	7	58%
Not high school grad	1	7%	0	0%	2	11%	1	4%	1	5%	2	17%	6	18%	2	13%	2	17%
Teens	2	13%	0	0%	4	22%	2	7%	3	15%	1	8%	7	21%	5	33%	1	8%
Black	6	40%	3	21%	4	22%	11	39%	6	30%	5	42%	6	18%	5	33%	6	50%
If black, non-native	5	83%	2	67%	2	50%	10	91%	4	20%	4	80%	3	50%	5	100%	6	100%
White, non-Hispanic	3	20%	6	43%	6	33%	6	21%										
Asian	0	0	1	7%	1	6%	0	0%										
Hispanic	7	47%	4	29%	7	39%	12	43%	7	35%	5	42%	14	41%	8	53%	2	17%
Using drugs	0	0	2	14%	2	11%	3	11%	3	15%	0	0%	2	6%	1	7%	1	8%
Using Alcohol	0	0	1	7%	0	0%	0	0%	0	0%	0	0%	0	0%	1	7%	1	8%
Smokers	2	13%	6	43%	1	6%	6	21%	5	25%	4	33%	3	9%	3	20%	3	25%
Obese	7	47%	7	50%	8	44%	14	50%										
Received care in 1st Trimester	11	73%	12	86%	14	78%	20	71%	16	80%	10	83%	25	74%	10	67%	9	75%
Missed prenatal visits	2	13%	2	14%	2	11%	8	29%	2	10%	4	33%	5	15%	3	20%	4	33%
Adequate prenatal care	12	80%	12	86%	16	89%	23	82%	19	95%	10	83%	29	85%	12	80%	10	83%
Target census tracts	1	7%	1	7%	5	28%	13	46%										

Work by WIMRTF/WHBC 2007-2013

1. With the WHSI, we supported community educational forums two to three times annually on topics related to prenatal, infant, or general health care.

2. We supported the annual WHSI Black Women's Health Summit.

3. We collaborated with the Shaken Baby Syndrome Committee of the Child Abuse Prevention and Protection Collaborative.

4. We conducted a 1 year pilot study of all African deliveries in the two Worcester hospitals to generate hypotheses about the high Black IMRs.

5. We developed a series of public service announcements (PSAs) concerning prenatal care and infant care to help educate the public about Shaken Baby Syndrome, improper infant sleep practices, or trauma.

6. We worked with medical and nursing students from the University of Massachusetts Medical and Nursing Schools to explore the health care practices of women from Ghana and other African countries to help Worcester providers and agencies be more sensitive and aware of cross-cultural differences.

7. We spoke with church groups in the African community and sought to include leaders from the African community on the WIMRTF.

8. We held a retreat in 2009 with funding from the University of Massachusetts to address a long-term strategy and goals, within the context of the all-volunteer collaborative that we remain.

9. Our main project since 2009 has been to adapt a March of Dimes perinatal educational program called "Honey Child," originally developed for African American women in Texas, to the needs of the local African community. Since late 2012, the focus of this educational program (now called Nhyira Ba (Blessed Baby in Twi, the most common Ghanaian language) has shifted from having an in-person longitudinal class at local churches to developing social media to educate Ghanaian women and families. We are now collaborating with leaders of the local Ghanaian community and with students from Worcester Polytechnic Institute and Dr. Marianne Sarkis of Clark University to expand this program.

10. In January 2012, we presented a poster about our longitudinal WIMRTF work at the national Prematurity Prevention Symposium in Washington, DC.

11. We participated in the development of the Community Health Improvement Plan (CHIP) in the fall of 2012.

12. With the ongoing efforts of Dr. Dale Magee, we are tracking near real-time the outcomes in Worcester and are able to get more recent and more detailed information than the state DPH is able to provide (the latest Linked Infant Death Data is 2009).