

*A Community Health Profile of Maternal  
and Infant Health in the Bronx*



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and Mental Hygiene  
Bureau of Maternal Infant Health**

**2007 -2008**

## FORWARD

This 2008 edition of *A Community Health Profile of Maternal and Infant Health in the Bronx* is the third such document produced by the Bronx Health Link in recent years – but this one is differently conceived and focused. Past issues have catalogued in considerable detail the demographics of the Bronx, particularly as to women who give birth, and statistical measures of the medical, social, environmental and economic aspects of maternal and child health, both nationally and locally.

The current report is less detailed in its data citations and less focused on the national picture.\* Instead, it attempts to begin to analyze some of the underlying causes of the distressingly high rates of infant mortality, low birth weight, prematurity, maternal mortality, and other such indicators in the Bronx and similar communities with large numbers of poor women of color. Several sections in this year's report include research, experience, and analysis from both health professionals and community advocates on the relationship of institutional and personal racism and poor health of mothers and children. The important roles of poverty, lack of medical care access, language barriers, low health literacy in generating these health problems are also reviewed.

This *Community Health Profile* is not merely an academic report – it is, as our introduction states, a ***call to action***. The conditions facing many Bronx women and children – particularly African Americans and Latinas – are atrocious, producing a catalogue of shamefully unnecessary anguish and death in stark contrast to the outcomes in many wealthier and whiter communities. But many of the barriers to improved health identified in these pages *can be dismantled* by concerted policy changes and institutional improvements. Achieving that will take organized advocacy efforts through a partnership of health professionals and consumers in these communities. We intend this report to be a useful tool for such an effort, a catalyst for change.

Despite the poor health indicators documented in this profile, there are thousands of women, babies and families who survive and succeed in the borough. Their resilience in the face of endemic barriers is to be lauded. We believe that notwithstanding the issues we highlight here, the assets of the individuals, families and the communities create a will to survive in spite of poverty, racism, and discrimination. A fortitude that transcends even the statistics cited herein. It is this spirit of survival, of endurance, that creates the hope that the men, women and children of the Bronx will use their individual drive, the strength of their families, and the determination of the community to address, struggle against and finally overcome those issues that threaten their existence in a state of well-being and health.

The next stage of our work will be -- in consultation with front-line health providers, community leaders, and consumers -- development of a policy agenda for maternal and child health equity in the Bronx. We intend this report to be a cornerstone in the process of planning such an agenda for action. We invite you to join us in this work.

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\* Readers seeking such information are referred to the 2007 *Community Health Profile*, available by emailing <bob@bronxhealthlink.org>.

## **About The Bronx Health Link, Inc.**

The Bronx Health Link, Inc. (TBHL)), is a unique collaboration created in 1998 by Bronx-Lebanon Hospital Center, Montefiore Medical Center, Our Lady of Mercy Medical Center, and St. Barnabas Hospital—and the office of the Bronx Borough President. The shared vision was to build an organization that addresses community concerns by creating linkages between the different providers, organizations, coalitions and stakeholders that serve Bronx communities. The goal of TBHL is to create a platform for the involvement of residents and other stakeholders in public health planning, programming and decision-making, TBHL currently works with over 150 community organizations and providers. While TBHL serves the entire borough, the focus is on low income neighborhoods with the highest risk poor health outcomes, many located in the 16<sup>th</sup> Congressional District, the poorest Congressional District in the entire United States.

The Bronx Health Link, Inc. is an organization that serves as a clearinghouse for the members of the health and human service delivery system of the Bronx. In this capacity, we reach over 500 members and agencies that actively participate in an electronic mailing list and numerous workgroups, advisory boards and task forces. We also coordinate the Perinatal Information Network and thus work extensively with the community and health care providers with the aim of improving birth outcomes, prenatal care and the reproductive health of women in the Bronx. The Bronx Health Link works with many community partners to improve the overall health of Bronx women, children and families.

## **The Bronx Health Link, Inc.**

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## EXECUTIVE SUMMARY

**Overview:** While slow progress continues nationally on maternal and infant health, the Bronx lags behind on all key indicators. The borough's rates of infant mortality, maternal mortality, and percentages of prematurity, low birth weight, teen pregnancy, and late or no prenatal care exceed—in some cases substantially—those of the city and country. Several of the poorest neighborhoods are particularly hard hit. In addition, a large racial disparity remains, with African American/Black and Latino mothers and babies at the greatest risk.

Many of the risk factors for maternal and infant illness and death are well-known, including poverty, racism, lack of access to culturally sensitive, woman-focused health care, inadequate nutrition, environmental exposures, domestic violence, sexually transmitted infections and HIV/AIDS. Prenatal care, a key to maintaining maternal and infant health, needs expansion, as do supportive prenatal, birthing and postnatal services. Programs for education, counseling and direct services concerning many of the issues identified in this report need to be created, funded, and implemented, or -- where they exist -- greatly expanded.

**Infant Mortality:** The rate of infants dying before the age of one year continues to be high in the Bronx (7.1 infant deaths per 1,000 live births in 2006)—exceeding the city (5.9) and national rates (6.8) (which themselves are far worse than those of most industrialized countries) and the federal Healthy People 2010 goals. In 2006, within the Bronx, the highest infant mortality rates are in Mott Haven (12.7), Williamsbridge (11.6) and Morrisania (9.6). Mirroring national trends, the infant mortality rate in New York City among African Americans continues to be double that of whites, with Puerto Ricans close behind.

**Sudden Infant Death Syndrome (SIDS):** SIDS – sudden unexplained infant deaths despite thorough investigations – have declined dramatically in recent years, both nationwide and in the Bronx. This may be partly due to educational campaigns emphasizing the importance of putting infants to sleep on their backs, which greatly reduces the risk of SIDS. Maternal smoking and second-hand smoke are other important risk factors for SIDS, and there are campaigns against these exposures as well.

**Prematurity:** Babies born before 37 weeks of gestation are at extremely high risk for serious, sometimes lifelong illness, disability, and possibly death. Percentages of babies born prematurely have been increasing nationally and in the city. Many premature babies also have low birth weight. As with other maternal and infant health problems, African American/Black and Latino infants have much higher risk of being born preterm than white infants. In 2005, 10.2% of babies born in the Bronx were premature. Bronx districts with the highest percentages were Morrisania (12.8), Williamsbridge (11.1), Concourse/Highbridge (10.6), University/Morris Heights (10.5), East Tremont (10.5), and Unionport-Soundview (10.4).

**Low Birth Weight:** Infants with low birth weight (less than 5 pounds, 8 ounces) are at much higher risk of serious health problems and SIDS. Factors such as maternal smoking and use of alcohol play key roles in causing low birth weight. In 2006, 10.2% of infants born in the Bronx were born with a low birthweight, a higher percentage than that of any other borough or the NYC total (8.9%). Citywide, African American/Black babies were almost twice as likely as white babies to have low birth weight.

**Prenatal Care:** Prenatal is key to healthy pregnancy and childbirth, and must start early to be fully effective. In recent years, higher proportions of pregnant women nationally have obtained timely

prenatal care. In 2005, 24% of pregnant women in the Bronx obtained late or no care, a higher percentage than for the whole city. Higher still were such percentages in the following Bronx neighborhoods: Mott Haven (32.6%), Hunts Point (30.3%) and Concourse/Highbridge (29.6%).

**Teen Pregnancy:** Teenage mothers are much less likely to obtain prenatal care, and are at especially high risk for serious illnesses; their babies are at a higher risk of low birth weight and preterm delivery. The Bronx, like the city and country, has seen a drop in the percentage of teen births over the past decade, but in 2006, 11.9% of all live births in the Bronx were to teenagers (age under 20), the highest of the five boroughs in NYC. This rate was about two times higher than the percentage of live births to teenagers in Manhattan (5.9%), Queens (6.1%), and Staten Island (5.9%). Within the Bronx, percentages are even higher in Mott Haven (15.8%), Hunts Point (15.8%), East Tremont (14.9%), Morrisania (14.7%), University/Morris Heights (13.0), and Concourse/Highbridge (12.1). In 2006, 79.2% of the women under age 20 who had live births in the Bronx were on Medicaid.

**Breastfeeding:** Breastfeeding is key to the health and development of the baby and to the mother's health. Numerous studies have shown that breastfeeding lowers levels of infant diarrhea, ear infections, pneumonia, meningitis, obesity, and asthma, as well as several maternal illnesses. It is now the standard recommended for the first six months of life. Percentages of mother who breastfeed have increased steadily over the past decade and a half nationally and in New York City, with the highest percentage increase among African Americans. Nonetheless, exclusive breastfeeding is not the norm particularly among low-income women and women of color because of issues related to work, lack of familial support and other factors.

**Maternal Illness and Mortality:** Among the more common illnesses faced by pregnant women are hypertension, hemorrhage, ectopic (tubal) pregnancy, and infection. Other health risks come from domestic violence, smoking, and drug abuse. For the period of 2003-2005, the maternal mortality rate for the Bronx (at 29.9 maternal deaths per 100,000 live births) continues to greatly exceed the citywide rate (23.1). Citywide, Black women die at a rate over 15 times higher than do white women.

**Cesarean Sections:** Cesarean section has become the country's most common surgery, at levels far above the recommended maximum of 15% of all deliveries set by the World Health Organization. Nationwide, 30% of all births are by C-sections, and the New York City level is nearly as high, 29%. The percentage of births by C-sections at Bronx hospitals was 27.5 -- far above the WHO upper limit. The NYC Public Advocate has recommended "an initiative that prioritizes reducing the cesarean rate, emphasizes continued research into the risks associated with the procedure, and establishes 'best practice' procedures for all health care facilities and providers in New York City."

**Domestic Violence and Pregnancy:** Three to four million women in the United States are beaten in their homes each year by their husbands, ex-husbands, or partners. Pregnant women are especially vulnerable. Studies have found that pregnant women subjected to violence are far more likely to suffer from high blood pressure, vaginal bleeding, and hospitalization during pregnancy, and to deliver preterm and/or low-birth-weight babies.

**Sexually Transmitted Infections:** Sexually transmitted infections (STIs) in pregnant women can be a major threat to the health of both the fetus and the mother. In 2005, there were only 8 cases of congenital syphilis in New York State, for a rate of 3.2 per 100,000 live births, compared to the

national rate of 8.0.<sup>1</sup> Indeed, all STDs can also have serious implications for maternal health; according to the CDC in Healthy People 2010, “Pelvic inflammatory disease caused by chlamydia and gonorrhea is the leading cause of preventable tubal scarring that can result in ectopic pregnancy”—which is one of the major causes of maternal death. The March of Dimes reported in 2003 that common infections of the genital tract -- bacterial vaginosis, chlamydia, and gonorrhea, as well as urinary tract infections -- account for up to 50% of preterm births, especially those that occur before 30 weeks.

**HIV/AIDS:** Rates of HIV infection among women continue to rise nationwide, with unsafe heterosexual sex now the predominant risk. In 2006, the Bronx had a rate of HIV diagnoses was 62.4 per 100,000 population, second to Manhattan at a rate of 70.5; particular Bronx neighborhoods had high rates such as Hunts Point-Mott Haven (102.5), Highbridge-Morrisania (95.4), and Crotona-Tremont (82.2). Despite availability of powerful antiretroviral drugs, women with AIDS continue to die at higher proportions than men. However, NYC cases of perinatal HIV transmission declined from 334 in 1990 to 13 in 2005 (7 of which were in the Bronx).

**Postpartum Depression:** Estimates of postpartum depression incidence among new mothers nationally range from 5 to 25%. Depression has significant effects on women’s relationships, their ability to nurture their newborn, and their overall quality of life. Effective treatments exist for depression, but because of stigma, lack of understanding of post partum depression in affected communities, and the inability to define stress and other life issues affecting many women as depression many women do not disclose their symptoms to their medical provider. There is some evidence that routine depression screening of women in obstetric or in pediatric settings can increase the detection of mental illness and referrals for services. However, we face a dearth of mental health providers in the Bronx specifically trained and working with the varied and complex issues related to post partum depression.

### **Risk Factors for Maternal and Infant Health**

**Nutrition:** Maternal weight can profoundly affect infant health – underweight mothers are at risk of birthing an underweight baby, and obese women are at risk for pregnancy complications, birthing a malformed baby, and contracting various diseases later in life.

**Alcohol:** Drinking alcohol—even small amounts—during pregnancy can cause physical and mental birth defects. Each year, more than 40,000 babies are born with some degree of alcohol-related damage, and 1,300-8,000 have Fetal Alcohol Syndrome (FAS), a combination of physical and mental birth defects.

**Illicit Drug Use:** A range of illicit drugs (particularly heroin, cocaine, Ecstasy, crystal meth) poses risks for both unborn babies and their mothers. A nationwide survey of pregnant women found that 4% used illicit drugs, mostly marijuana, plus another 1% who made non-medical use of prescription drugs. There can be barriers for pregnant women drug users in obtaining prenatal care and drug treatment. For example, some drug-using women, fearing loss of custody if detected, are deterred from seeking care. Thus, the women most in need of services are often alienated from prenatal care.

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<sup>1</sup> CDC, STD Surveillance 2005: Special Focus Profiles, Women and Infants. Table 38. Available at <http://0-www.cdc.gov.mill1.sjlibrary.org/std/stats/tables/table38.htm> (accessed January 17, 2007).

## **Exposure to Environmental Pollutants**

**Chemicals:** The environment can significantly impact the health of mothers and children. Some four million-plus chemical mixtures are in homes and businesses nationwide. While little information is available on the effects of most during pregnancy, several are known to be harmful to an unborn baby. A pregnant woman can inhale these chemicals, ingest them in food or drink, or, in some cases, absorb them through the skin.

**Cigarette Smoke:** The percentage of pregnant women who smoke has been steadily dropping for many years, currently around 10% -- lower among Latinas and African Americans/Blacks than whites. Cigarette smoke, whether from the mother's smoking or second-hand smoke, endangers both the mother's and infant's lives. Infants born to smoking mothers are 65% more likely to have low birth weight and 70% more likely to die in infancy than infants born to nonsmokers, and children of mothers exposed to smoke during pregnancy were found to have postponed development.

**Lead:** Exposure to high levels of lead during pregnancy contributes to miscarriage, preterm delivery, low birth weight and developmental delays in the infant. Lead toxicity in children is characterized by behavioral and learning problems and anemia.

## **Demographic Profile of the Bronx**

We document in summary form the following demographic indicators. Our goal in listing these is to give the reader a snapshot of the borough using traditional indicators such as population, gender, age, educational levels etc. This brief profile is a way of laying a foundation – we give you an abbreviated picture of who, what, how, and why. Since current data is difficult to find, all the data is from 2005 unless otherwise noted. For the more exhaustive profile of demographic data, see our 2007 Community Health Profile.

### **What the population is:**

- \* Total population: 1,357, 589
- \* Live births: 20,766 (a 21% decrease from 1990)
- \* Crude birth rate (number of births per 1,000 population): 15.6 (down from 16.2 in 2000)
- \* General fertility rate (number of births per 1,000 women of childbearing age): 69.7 (second highest borough, after Brooklyn)

### **Who lives in the borough:**

- \* Median age: 31.8 (lowest of any borough)
- \* Race/ethnicity of mothers, % of live births (2003-5): African Americans, 35%, Puerto Ricans, 21%; other Latinas, 35%; Asians, 4%; whites 6%<sup>2</sup>
- \* Immigrants in overall population: 32% (a 52% increase from 1990; 75% of the 2005 total are from Latin America)
- \* Immigrants among women giving birth: 52% Countries of origin providing largest numbers: Dominican Republic (16%), Mexico (8%), And Jamaica (4%).<sup>3</sup>\* Neighborhoods with more than 25,000 immigrants (2000 census data): Norwood, University Heights-Kingsbridge, Wakefield, Morris Heights
- \* Residents who speak language other than English at home: 57% of those over 5 (679,770 people); 82% of those speak Spanish.

### **Why things are at a crisis level:**

- \* Education level attained (% of those 25 and older): 32% did not graduate from high school; 31% only graduated from high school; 15% had some college; 6% had an associate's degree, 10% had a bachelor's degree and 6% had a graduate or professional degree (vs. Manhattan figures of 15% no graduates from high school and 58% with bachelor's degree or higher)
- \* Residents without high school diploma with incomes below federal poverty level: 38% (vs. 10% of those with bachelor's degree or higher).
- \* Residents below federal poverty level: overall, 29%; families, 27%; women-headed families, 42%; children under 18, 41.4%
- \* According to the Citizen's Committee for Children, African American and Latino households in NYC are more likely to have incomes less than \$10,000 than are white and Asian households, and one fifth of Latino households are earning at or below this level
- \* Median household income: less than \$30,000 (\$29,228) vs. \$55,000 in Manhattan

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2 Data provided by request to NYC Department of Health and Mental Hygiene, September 2007.

3 Data provided by request to NYC Department of Health and Mental Hygiene, September 2007

**Who does and doesn't have medical coverage: Medicaid Usage:**

In 2005, 12% of the 7.4 million women of reproductive age nationwide utilized Medicaid for their care. Of the 125,506 births in NYC in 2006, approximately 53% were covered by Medicaid – and 68% of births in the Bronx (versus 42% in Manhattan and about a third nationwide). Districts with even higher proportions: of delivering women on Medicaid are Mott Haven, Hunts Point, Unionport /Soundview, Concourse/ Highbridge, Fordham, and Williamsbridge. In NYC, the racial distribution of Medicaid-covered births was 43% Latinos, 28% Blacks, 14% Asian/Pacific Islanders, and 15% whites.

**The Uninsured:**

The Bronx has a higher percentage of uninsured under-65 adults (29%) than the country at large (18%). Being uninsured threatens the health of the individual who often delays treatment because of a lack of access to care. In New York State, an estimated 20% of women of childbearing age are uninsured. Numerous studies have found that uninsured pregnant women are less likely to receive prenatal care than women who have private insurance.

## Introduction – The Socio-Economic-Political Context for Health Disparities

Underlying every aspect of the maternal and infant health picture are social, economic and political factors that influence the determinants of health or illness. Infant mortality, low birth weight, prematurity, sexually transmitted infections, environmental pollutants, nutrition, smoking, alcohol, and street drugs are all fundamentally affected by these interrelated dynamics: racism, language barriers, low educational levels, providers' inadequacies at communication, poverty, and restricted access to medical care.

The publication of *Healthy People 2010* in 2000 advanced a goal for the elimination of all health disparities in the United States, and acknowledged that a comprehensive strategy incorporating research, education, policy changes, and community partnerships is fundamental to accomplishing this goal. Throughout this report, we will refer to the Healthy People goals. Yet, despite some improvements drastic gaps persist in maternal and infant health indicators between people of color and white people in the Bronx, New York City as a whole, and nationally. In October 2007, the NYC Department of Health and Mental Hygiene reported, "In 2006, the infant mortality rates for black and Puerto Rican New Yorkers were more than double those for whites and Asians – a pattern that has persisted for more than a decade."<sup>4</sup> Rates of low birth weight and prematurity – both drivers of the infant mortality rates – show similar racial disparities.

What is behind these extreme disparities?

A disparity is an inequality – simply, the existence of racial and ethnic disparities in health care represents a failure to provide equal, high quality health care to all individuals, regardless of ethnicity, race and other factors. These disparities in health care exist even when controlling for gender, condition, age and socio-economic status.

According to Ronald David, a physician, professor and co-author of the recent research on infant mortality by the Joint Center for Political and Economic Studies, "For many years, the operating theory in the health community has been that the high incidence of infant deaths among African-Americans is attributed to higher teen pregnancy rates, single motherhood, lower education levels, poverty and, most recently, genetic causes. However, we found that infant mortality for blacks remained high even when all these factors were controlled."<sup>5</sup> Research here in New York City supports this finding as to income levels: The NYC Health Department recently reported, "The race gap persists even when poverty is taken out of the equation. Infants born to higher-income black women died at nearly three times the rate of those born to higher-income white women. While the reasons are not well understood, some experts believe the stress of experiencing of racial discrimination may affect the health of black women."<sup>6</sup>

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4 NYC DOHMH, "City's Infant Mortality Rate Declined Again In 2006; Poverty, Race, and Mother's Health Before Pregnancy All Affect Infant Survival," Available at <http://www.nyc.gov/html/doh/html/pr2007/pr082-07.shtml> (accessed Oct. 6, 2007).

5 Halimah Abdullah, "Racism May Affect Infant Mortality Rates," McClatchy Newspapers. Available at <http://www.commondreams.org/archive/2007/09/29/4203/> (accessed on Oct. 1, 2007).

6 NYCDOHMH, "City's Infant Mortality Rate Declined..."- see fn 3.

Several recent studies have provided strong support for this hypothesis, finding that “whether rich or poor, well-educated or barely literate, African-American women were still more likely than white women, first-generation, poor Hispanic immigrant women and foreign-born black women to have premature and low birth-weight babies.”<sup>7</sup>

Another study focusing on Black mothers of very low birth weight (VLBW) babies also found a strong correlation with racism:

We found that African American mothers who delivered VLBW preterm infants were more likely to report experiencing interpersonal racial discrimination during their lifetime than African American mothers who delivered non-LBW infants at term... Our data show that the magnitude of the association between maternal reported life-time exposure to racial discrimination and infant VLBW was strongest in the “finding a job” and “at place of employment” domains....These findings are consistent with the limited literature showing a negative association between pregnant African American women’s psychosocial job strain and infant birthweight....[I]nterventions that target both the reported incidents of racial discrimination in the workplace and the structural issues of race inequality that place a large percentage of African American women in conditions of severe income insecurity are needed to narrow the racial disparity in infant VLBW.<sup>8</sup>

In another study by Michael Lu, an obstetrician-gynecologist and professor at the University of California at Los Angeles, he and his colleagues found that, as one summary put it, “the disproportionately higher number of fast-food restaurants and liquor stores, lower number of grocery stores and the higher cost of fresh produce in many urban, predominately black communities caused poorer pregnant black women to make stressful choices about what to eat and where to live. So did the higher crime rates in these communities and worries about sending children to poorly equipped, understaffed schools.”

There are several likely mechanisms by which the experience of discrimination and the stresses of daily life in a disenfranchised, impoverished community damages the health of women of color and, through them, their babies. Dr. Lu of UCLA has noted, “We know that stress is an important risk factor [for infant mortality], and it initiates the release of stress hormones leading to preterm birth and increase susceptibility for infection.”<sup>9</sup>

Another research team cites “evidence on links between gestational hypertension and adverse birth outcomes” and proposes an additional pathway of causation: Citing the ample literature linking stress with hypertension, and particularly elevated hypertension among Black people in general, S. Mustillo and colleagues note that “in our sample, gestational hypertension was reported more frequently by Black than by White women, and the risk of LBW deliveries was elevated among Black women reporting gestational hypertension.” (Other literature has found that hypertension

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7 Abdullah, see fn 5.

8 J.W. Collins, R.J. David, A. Handler, S. Wall, S. Andes. Very Low Birthweight in African American Infants: The Role of Maternal Exposure to Interpersonal Racial Discrimination. *American Journal of Public Health*, Dec. 2004, Vol. 94, No. 12, p. 2135, 2137.

9 Abdullah, see fn 5.

also increases the risk of maternal mortality.) Mustillo's team proposes that racial discrimination elevates the risk of gestational hypertension.<sup>10</sup>

### **Language Barriers: A Special Case of Enduring Institutional Racism**

In order to have full access to medical care, a patient must be able to communicate effectively in her/his own language with the medical provider. This is often a problem for those who do not speak English as a first language in the Bronx and New York City. Despite the existence of laws and programs aimed at dealing with these deficiencies, the lack of consistent implementation and enforcement has left disparities in access to care because of language.

According to a January 2005 report by the New York City Comptroller,<sup>11</sup> nearly 75% of the 51 hospitals surveyed failed to provide Spanish-language services to callers to one or more of the hospitals' departments; Spanish-speaking callers were not able to schedule an appointment with one third of the hospital clinics tested in the study, and more than 40% of calls to the billing department ended in frustration, i.e. the testers were unable to reach an attendant who spoke Spanish. In a May 2006 report by the New York Academy of Medicine, more than half of New York City's Haitian, Russian, and Latino first-generation immigrants interviewed said that language barriers led to reduced quality care for their children, prevented them from fully using healthcare services, and left them dissatisfied with their medical care.<sup>12</sup> According to the report, Federal, state, and city laws require that interpreter services and translated documents be provided to non-English-speaking patients at all healthcare facilities that serve Medicare and Medicaid patients, including hospitals, health clinics, and Medicaid offices. However, the report indicated that implementation of these requirements had been slow and remained inadequate. In September, 2006, New York State regulations went into effect requiring hospitals to provide interpretation services for patients with limited English proficiency. However, according to a January 2007 account, "the programs vary widely, and no standardized assessments are in place, leading some experts to worry that the new law could unleash interpreters ill-equipped for the job."<sup>13</sup> In addition, few full-time positions have been created since the regulations came into being, so it remains to be seen if the situation will improve significantly.

According to a June 2008 report by the National Association of Community Health Centers, 84% of community health centers surveyed nationwide treat patients with limited English proficiency on a daily basis, yet only 5% receive direct reimbursement for language services from Medicare,

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10 S. Mustillo, N. Krieger, E.P. Gunderson, S. Sidney, H. McCreath, C.I. Kiefe. Self-Reported Experiences of Racial Discrimination and Black-White Differences in Preterm and Low-Birthweight Deliveries: The CARDIA Study. *American Journal of Public Health*. Dec. 2004, Vol. 94, No. 12 p. 2130

11 City of New York, Office of the Comptroller, *Getting in the Door: Language Barriers to Health Services at New York City's Hospitals*, January 10, 2005. Available at [http://www.comptroller.nyc.gov/press/2005\\_releases/pr05-01-004.shtm](http://www.comptroller.nyc.gov/press/2005_releases/pr05-01-004.shtm) (accessed January 23, 2007).

12 New York Academy of Medicine, *Language as a Barrier to Healthcare for New York City Children in Immigrant Families*, May 2006. Available at <http://www.nyam.org/news/2668.html> (accessed January 23, 2007).

13 I-Ching Ng, "What Language Is Your Health Care?", *City Limits*, January 8, 2007. Available at [http://www.citylimits.org/content/articles/viewarticle.cfm?article\\_id=3248](http://www.citylimits.org/content/articles/viewarticle.cfm?article_id=3248) (accessed January 23, 2007).

Medicaid or private insurers."Ninety-nine percent [of patients] not only prefer ... but find it absolutely necessary, to receive care in their native language," the report found.<sup>14</sup>

### **Education Levels, Health Literacy and Providers' Communication Skills**

Low health literacy threatens every person in the United States, regardless of age, race, education level or income. Health literacy is the goal and it is more than just the ability to read written material; it also encompasses the ability to understand and act on the information.

The Institute of Medicine report entitled *Health Literacy: A Prescription to End Confusion*<sup>15</sup>, released in 2004, reported that nearly half of U.S. adults have difficulty understanding and using health information. According to the Bronx Working Group on Infant Mortality, "Individuals with low health literacy are more likely to be disempowered during their clinical encounter, and medication and treatment errors are more likely to occur, for example, because individuals cannot read labels. Furthermore, ineffective communication between a consumer and a provider can lead to misdiagnosis because consumers may not be able to explain and effectively communicate their symptoms."<sup>16</sup> A study by the Bronx Health Link found that 26% of patients could not understand an informed consent form and only 50% of patients surveyed took their medications as directed.<sup>17</sup>

Health Literacy is a two-way street. It is not only about the perceived "level" of understanding of the patient but as well the inability of the care provider to explain herself/himself in language that the patient can use and manage for her/his treatment and care.

### **Poverty and Inequitable Access to Medical Care**

Despite the wealth and economic stability of certain neighborhoods in New York, other communities -- particularly in the Bronx -- exhibit high levels of poverty, unemployment and underemployment. These realities mean that the vast majority of Bronx women bearing children are either on Medicaid - or uninsured, and again the racial disparities are vast. According to Bronx Health REACH, "Black and Latino New Yorkers are more than twice as likely as whites to be uninsured, or to receive Medicaid or other public insurance. As a result, people of color face more barriers to accessing high-quality care, leading to disparities in health outcomes."<sup>18</sup> Even for those eligible to participate in a public insurance program, obstacles to enrollment abound. One review reported:

A study sponsored by Children's Defense Fund found that Medicaid, Child Health Plus, Family Health Plus and PCAP have different eligibility levels, enrollment processes and reenrollment requirements, which make it hard for families to comply with the rules of these programs. Another study by the Commonwealth Fund found that the overwhelming

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14 National Association of Community Health Centers, *Serving Patients with Limited English Proficiency: Results of a Community Health Center Survey*, June 16, 2008. Available at <http://www.nachc.com/client/documents/FINALNACHC%20Report.6.10.08.pdf>

15 Available at [www.nap.edu/html/health\\_literacy/reportbrief.pdf](http://www.nap.edu/html/health_literacy/reportbrief.pdf).

16 Bronx Working Group on Infant Mortality, *Bronx Infant Mortality*, 2005, p. 5

17 *Bronx Infant Mortality*, p. 5.

18 Bronx Health REACH, *Separate and Unequal: Medical Apartheid in New York City*, 2005, p. 3

majority of children who disenrolled from Child Health Plus B are financially still eligible to continue in the program. The study found that many eligible individuals inappropriately lost coverage from the State's Medicaid, Family Health Plus or Child Health Plus programs because they failed to complete required documentation – not because changes in their economic or family circumstances made them ineligible for continued coverage.<sup>19</sup>

For those who do end up obtaining coverage, they often obtain worse care than those who are privately insured – a system that Bronx Health REACH, which studied these disparities in NYC health care facilities, labeled “medical apartheid.” Among their findings:

...even within the same institutions, the uninsured, people covered by Medicaid, and sometimes, even those enrolled in Medicaid Managed Care, Family Health Plus and Child Health Plus, receive poorer quality care in different locations, at different times, and by less trained physicians than those who are privately insured – a practice that is prohibited by the Patient Bill of Rights and Medicaid Managed Care contracts...

In New York a private physician providing a comprehensive visit to a new Medicare (elderly) patient is paid six times as much as when he [or she] provides the same service to a Medicaid (poor) patient. Such discrepancies virtually ensure unequal access to care. Medicaid expenditures per recipient, when stratified by race and ethnicity, reveal further inequities....[T]otal Medicaid payments per white recipient per year are 60% higher than those for Blacks, 140% higher than for Asians, and 15% higher than for Latinos.<sup>20</sup> Low reimbursement rates to providers almost always translate to less time spent per patient and thus much lower quality of care.

Furthermore, many women – especially undocumented immigrants – encounter a range of obstacles when applying for Medicaid and PCAP: long waits; inadequate documentation; rude staff; lack of Spanish-speaking staff; and lack of air conditioned offices.<sup>21</sup> All of these factors perpetuate health injustices and interrupt the work of many community organizations and community groups in their efforts to transform and move the health care system.

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19 Bronx Working Group on Infant Mortality, *Bronx Infant Mortality*, 2005, pp. 3-4.

20 Bronx Health REACH, *Separate and Unequal: Medical Apartheid in New York City*, 2005, p. 3, 27.

21 Community Service Society, *Lost in the Medicaid Maze*, January 2003.

## MATERNAL AND INFANT HEALTH IN THE BRONX

### Infant Mortality

Despite the overall improvements in the infant mortality rates in recent years, the infant mortality rate<sup>22</sup> in the Bronx is higher than the national average. According to the CDC, in 2002 the national rate for African American infants was 13.7 versus 5.7 for whites (national data collection on Latinos is unreliable and often produces undercounts).<sup>23</sup> New York City statistics show similar patterns: In 2005, whites, Asians/Pacific Islanders, and Latinos other than Puerto Ricans had infant mortality rates in the range of city goals (4.6, 3.7 and 4.8, respectively; the TCNY target is 5.0 for 2008). But rates remain high among Puerto Ricans (6.7) and African Americans (9.7).<sup>24</sup> A 2004 report by the NYC Department of Health and Mental Health (NYCDOHMH) on health disparities noted, “If the infant mortality rate among African Americans decreased to that of Whites, nearly 200 fewer babies would die [in New York City] each year.”<sup>25</sup>

The 2006 New York City rate (5.9) is below the national rate (6.8), but still falls far short of attaining either the Healthy People 2010 goal (4.5) or the Take Care New York (TCNY) 2008 goal (5.0). The Bronx, at 7.1 in 2006, continues to exceed the citywide rate, and is higher than any other borough (Brooklyn, 6.0; Staten Island, 3.4; Queens, 5.3; and Manhattan, 4.2).<sup>26</sup>

There are major differences in infant mortality rates among the various community districts of the Bronx. For the 2003 to 2005 period, the Morrisania district had the highest infant mortality rate (10.4 per 1,000 live births) in the Bronx and the entire city, followed by Williamsbridge (9.2) and East Tremont (8.6). See Figure 4. Outside the Bronx, the highest rates were in Queens Village (10.6), Crown Heights North (10.5), East New York (9.6), Coney Island (9.6), East Flatbush (9.3), and Jamaica/St. Albans (9.3).

### Sudden Infant Death Syndrome (SIDS)

According to the National SIDS/Infant Death Resource Center, Sudden Infant Death Syndrome (SIDS) is the major cause of death in infants from 1 month to 1 year of age, with most deaths occurring between 2 and 4 months. In New York City in 2006, there were 10 SIDS deaths, five of which were in the Bronx. Experts agree that the risk of SIDS is much higher among infants who sleep on their stomach or side, and among those who live with a cigarette smoker.

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22 The *infant mortality rate* is defined as the ratio of the number of infant deaths (from birth to one year) divided by the number of live births during the same period. The *neonatal mortality rate* is defined as the ratio of the number of newborn deaths (birth up to 28 days) divided by the number of live births during the same period. Both rates are usually expressed per 1,000 live births. The infant mortality rate encompasses both neonatal mortality rate and post-neonatal (28 days to one year) mortality rate. It is an important health indicator because it is used to compare the health and well-being of populations within and across nations.

23 Ibid., Table 1.

24 NYCDOHMH, Summary of Vital Statistics 2005, Figure 26, p. 56; Table 43, p. 58.

25 Karpati A, Kerker B, Mostashari F, Singh T, Hajat A, Thorpe L, Bassett M, Henning K, Frieden T., Health Disparities in New York City. New York: New York City Department of Health and Mental Hygiene, 2004, p. 20.

26 NYC Department of Health and Mental Hygiene, Infant Deaths and Infant Mortality Rate by Health Center District of Residence, New York City, 2002-2006, Oct. 2, 2007.

There are major racial disparities nationally in the levels of SIDS. African-American and Native American infants are two to three times more likely to die from SIDS as other infants.<sup>27</sup> According to data from the New York City Pregnancy Risk Assessment Monitoring System (PRAMS) for 2004-5, 43% of Bronx mothers placed their infants on their backs to sleep, compared with 67% of Manhattan mothers. Citywide, far greater percentages of white (65%) than Black (50%) or Latina (45%) mothers do so, and many more 35-and-older mothers (64%) than 20-24-year-olds (44%) and teenagers (40%) do so. (A related issue is the risk of accidental injury or death due to “co-sleeping,” i.e., having the infant sleep in the same bed with adults. Here too, educational efforts are being made to encourage parents to put infants to sleep in a separate unit. PRAMS data showed that in the Bronx, 82% of mothers said their infant “usually” sleeps in a crib, cradle or bassinet, while 48% said their baby “sometimes,” “often” or “always” sleeps in a bed with others.)

Thus educational efforts have been mounted nationally and in the Bronx to reach new mothers with risk-reduction messages. Several government agencies and community-based organizations are intensifying efforts to reach these populations with the latest information about SIDS.<sup>28</sup>

### Prematurity

Premature (pre-term) birth is defined as births prior to 37 weeks of gestation. The CDC estimated that nationwide in 2003, 498,000 infants or 12.3% of all live births were premature (the federal Healthy People 2010 goal is 7.6%). Yet that small portion of births accounted for 68.1% of all deaths of infants under one year of age. The figures for very short gestation (under 28 weeks) are even more dramatic: They constituted 0.7% of live births, yet 46.4% of all infant deaths.<sup>29</sup> Premature babies face a far higher risk of serious illness and death compared to full-term babies.

The problems of prematurity and low birth weight are closely linked. According to the NYCDOHMH, “virtually all very low birth weight infants [defined as those weighing less than 1,500 grams] are born prematurely and had much higher rates of infant mortality (205 per 1,000 in 2004) than normal birth weight infants (1.5 per 1,000).”<sup>30</sup>

Nationally, the percentage of premature births increased almost 31% between 1981 and 2003 (from 9.4 to 12.3%).<sup>31</sup> In 2003, preterm births accounted for 11.4% of all live births in New York State, an increase from 10.9% in 1995. The NYC rate was higher, 12.0%.<sup>32</sup> For 2005, the figure for

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27 Task Force on Sudden Infant Death Syndrome. The Changing Concept of Sudden Infant Death Syndrome: Diagnostic Coding Shifts, Controversies Regarding the Sleeping Environment, and New Variables to Consider in Reducing Risk (by Task Force on Sudden Infant Death Syndrome, *Pediatrics*, Vol. 116 No. 5 November 2005, pp. 1245-1255. Available at <http://aappolicy.aappublications.org/cgi/content/full/pediatrics;116/5/1245> (accessed January 3, 2007).

28 The National SIDS/Infant Death Resource Center.

29 Centers for Disease Control and Prevention, National Vital Statistics Reports: Infant Mortality Statistics from the 2003 Period Linked Birth/Infant Death Data Set. Available at <http://www.cdc.gov/nchs/linked.htm>, Figure 2, p. 2, and p. 6 (accessed January 16, 2007).

30 NYC DOHMH, “Citywide Infant Mortality Rate Was 6.1 in 2004, A Decline of 6% From 2003” (press release). Available at <http://www.nyc.gov/html/doh/html/pr/pr095-05.shtml> (accessed January 16, 2007).

31 March of Dimes, Prematurity: Learn the Facts. What We Know and What We Don’t. Available at [http://www.marchofdimes.com/prematurity/21191\\_5578.asp](http://www.marchofdimes.com/prematurity/21191_5578.asp) (accessed January 16, 2007).

32 New York State Department of Health. Kids’ Well-being Indicators Clearinghouse. Available at [http://www.nyskwic.org/u\\_indicators/indicator\\_narrative.cfm?numIndicatorID=13](http://www.nyskwic.org/u_indicators/indicator_narrative.cfm?numIndicatorID=13) (accessed January 17, 2007).

the Bronx was 10.2%. Bronx districts with the highest percentages were Morrisania (12.8), Williamsbridge (11.1), Concourse/Highbridge (10.6), University/Morris Heights (10.5), East Tremont (10.5), and Unionport-Soundview (10.4).

As with other health problems of pregnancy, the racial disparity is dramatic. A report by the Institute of Medicine, citing 2003 nationwide data, found that 17.8% of live births to Black women are premature, compared to 11.5% born to white women and 11.9% to Latinas.<sup>33</sup> For the Bronx in 2005, 10.7% of African American births were premature vs. 9.8% of white births (Latino data unavailable). For mothers born outside the U.S., the highest percentages were for Guyanese (14.5), Puerto Ricans (13.7), Ghanaians (12.5), and Jamaicans (11.9).<sup>34</sup> Dr. Diane Ashton, Associate Director of the March of Dimes, has proposed several reasons for this disparity, including “differences in the quality of care received within the health care delivery system; differences in access to health care including preventive and curative services; and differences in social, political, economic or environmental exposures which result in differences in underlying health status.” Dr. Ashton also said, “Racial and ethnic disparities in birth outcomes are the consequences of disadvantages and inequities carried over a life course of differential exposures.”<sup>35</sup>

### **Low Birth Weight**

Low birth weight is defined as less than 2,500 grams (5 pounds, 8 ounces). Very low birth weight is considered to be less than 1,500 grams (3 pounds). Babies born with low birth weight are more susceptible to serious medical problems, such as respiratory distress syndrome and trouble maintaining a normal body temperature to support growth. Also, infants born with low birth weight have an increased risk of dying from SIDS. In New York City in 2005, low birth weight was the third leading cause of infant death (after congenital malformations/ deformations and cardiovascular disorders), accounting for 109 or 15% of infant deaths.<sup>36</sup> In addition, low birth weight was a factor in about 67% of infant deaths in New York City, and the lower the weight, the higher the death rate.<sup>37</sup>

Race/ethnicity, low birth weight in New York City was highest in 2005 for Black babies at 13%, followed by Latino and Asian/Pacific Islander babies, both at 8%, compared to white babies at 7%.<sup>38</sup> Black babies were almost two times more likely than white babies to have low birth weight. In the Bronx, mothers of particular nationalities had dramatically higher percentages of low-birth-weight babies than their larger racial/ethnicity categories: Puerto Ricans, 12%; Guyanese, 15%; Jamaicans, 13%; and Ghanaians, 12%.<sup>39</sup>

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33 Amanda Gardner, “Preemies Cost \$26 Billion a Year - Government report suggests infertility treatments are part of the problem.” Health Day, July 13, 2006. Available at <http://www.hon.ch/News/HSN/533802.html>.

34 Data provided by request to NYC DOHMH, Sept. 2007.

35 March of Dimes, “Why Are African-American Women Twice As Likely to Have a Premature Baby?” (press release), October 22, 2004. Available at [http://www.marchofdimes.com/aboutus/10651\\_13893.asp](http://www.marchofdimes.com/aboutus/10651_13893.asp) (accessed January 16, 2007).

36 NYCDOHMH, Vital Statistics 2005, Table 44, p. 59.

37 NYCDOHMH, Vital Statistics 2005, Table 42, p. 58; Table 43, p. 58.

38 NYCDOHMH, Vital Statistics 2005, Table 42, p. 58.

39 Data provided by request to NYC DOHMH, Sept. 2007.

In 2005, the percentage of live births which were low birth weight in New York City was 9.0%,<sup>40</sup> higher than the national level of 8.0% in 2003 (the most recent data available).<sup>41</sup> The Bronx had the highest percentage --10.3% -- of any borough. By comparison, the figures were 8.9% for Brooklyn, 8.2% for Queens, 8.6% for Manhattan, and 8.5% for Staten Island.

Five of the 12 community districts in the Bronx recorded rates higher than the borough's overall percentage: Unionport/Soundview (10.5%), Mott Haven (11.0%), Williamsbridge (11.1%), East Tremont (11.7%) and Morrisania (12.8%). Only two other community districts in the city experienced a higher percentage, Bedford Stuyvesant (12.9%) and Brownsville (15.4%), both in Brooklyn.

The March of Dimes states that genetic conditions, multiparity (twins, triplets), socioeconomic factors (low income), and high-risk maternal behaviors during pregnancy (such as smoking) are some of the factors associated with low birth weight. Furthermore, social factors such as domestic violence are also associated with the prevalence of babies born with low birth weight.<sup>42</sup> (See section on domestic violence below for more details.)

### Prenatal Care

There is a significant disparity in the what, when and how women obtain prenatal care. Poor, women of color are less likely than white women to access prenatal care in a timely manner. Nationally in 2004, only 2.2% of white pregnant women had late or no prenatal care, compared to 5.4% of Latinas and 5.7% of African Americans.<sup>43</sup> The disparities in New York City are even more stark: In 2005, the numbers were 2.5% for whites and 8.3% for African Americans.<sup>44</sup> In the Bronx, mothers of particular nationalities had even higher proportions: Mexicans (34.8%), Ecuadorans (29.2%), Bangladeshis (28.7%), Ghanaians (27.6%), Hondurans (27.2%), Nigerians (26.5%), and Dominicans (24.4%).<sup>45</sup>

Within the Bronx, the Mott Haven district of the Bronx had the highest percentage (32.6) of live births with late or no prenatal care during pregnancy in 2005. Other districts with high rates included Hunts Point (30.3%), Concourse/Highbridge (29.6), Unionport/Soundview (25.3), and Morrisania (24.1).

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40 NYCDOHMH, Vital Statistics 2005, Table 34, p. 48.

41 Centers for Disease Control and Prevention, National Vital Statistics Reports: Infant Mortality Statistics from the 2003 Period Linked Birth/Infant Death Data Set, at <http://www.cdc.gov/nchs/linked.htm>, p. 6.

42 In terms of age, the highest percentage of low birth weight occurred with mothers aged 35-39 (12.6%) and 40 or older (15.8). First-time mothers accounted for 42% of low-birth-weight babies; second or later mothers, 58%. Data provided by request to NYC DOHMH, Sept. 2007.

43 Births: Preliminary Data for 2004. Table D.

44 DOHMH, Summary of Vital Statistics 2005, Table 33, p. 46.

45 Data provided by request to NYC DOHMH, Sept. 2007.

National data from the 1997 PRAMS (Pregnancy Risk Assessment Monitoring System) survey found: “The top three reasons for delayed entry into prenatal care...were: (1) ‘I didn’t know I was pregnant’, (2) ‘I didn’t have enough money or insurance to pay for my visits’ (this reason was even cited by 33% of women whose prenatal care was paid for by Medicaid or state programs) and (3) inability to get an appointment.”<sup>46</sup>

According to a 2001 report “Barriers to Accessing Prenatal Care in New York City” by the NYC DOHMH, “Depression and unhappiness about pregnancy, long waiting times at clinics, fatigue, transportation, and clinic overcrowding have been identified as additional barriers to prenatal care for low-income, urban pregnant women. Other issues that may hinder a woman’s ability to obtain prenatal care include lack of childcare, uncertainty as to whether to continue the pregnancy, substance abuse issues, and language or cultural barriers. For some pregnant women, basic issues such as trying to obtain food or shelter may take precedence over prenatal care.”

Other potential barriers suggested by the study, which focused on undocumented, uninsured women, included “fear of deportation,...insensitivity of staff, belief that prenatal care isn’t useful...and lack of time off work to go to prenatal care visits.”<sup>47</sup> In addition, a 1998 DOHMH study found that lack of translation can be a major barrier to non-English speaking women.<sup>48</sup>

The 2001 survey found that “administrative barriers continue to create unnecessary roadblocks, which may delay entry into prenatal care,” and noted that these were likely to be both policy-related and the result of poor staff training at both public and private prenatal care clinics. For example, 22% of those who were denied an appointment were told they needed to first speak with a PCAP or financial director, 22% were told to repeat a pregnancy test, and 20% were told to register first. The report found that these barriers are unnecessary and can be eliminated by retraining staff or policy changes.<sup>49</sup> Seven years after this survey, anecdotal comments from community women in the Bronx, suggests that many of these issues continue unabated.

In New York City, the NYCDOHMH reports that the percentage of late or no prenatal care has dropped significantly since 1986.<sup>50</sup> Nonetheless, this measure remains unacceptably high, particularly in the Bronx, where it was 24.4% of live births in 2005.<sup>51</sup>

### **Teen Pregnancy**

Adolescent or teen pregnancy is defined as a pregnancy occurring to a woman below the age of 19. According to the CDC, about one-third of girls in the United States get pregnant before age 20. In 2006, a total of 435,427 infants were born to mothers aged 15–19 years, a birth rate of 41.9 per

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46 As summarized in Celia Golden, Melanie Besculides, Fabienne Laraque, Prenatal Care Appointment Survey 2001: Barriers to Accessing Prenatal Care in New York City. Bureau of Maternal, Infant and Reproductive Health, NYC DOHMH.

47 Prenatal Care Appointment Survey 2001, see fn 46.

48 R. Thadani, R. Nelson, F. Laraque. Prenatal Care Appointment Survey 1998. Bureau of Maternity Services and Family Planning, NYC DOHMH.

49 Prenatal Care Appointment Survey 2001, see fn 46, pp. 1, 10.

50 DOHMH, Summary of Vital Statistics 2005, Figure 24, p. 57.

51 Data provided by request to NYC DOHMH, Sept. 2007.

1,000 women in this age group. More than 80% of these births were unintended. In the United States, rates for pregnancy, birth, sexually transmitted diseases (STDs), and abortion among teenagers are considerably higher than rates in Canada, England, France, Ireland, the Netherlands, Sweden, Japan, and most other developed countries. Data show that U.S. teens' sexual behavior is similar to teens of other developed countries in terms of when they start to have sex and how often they are having it. Yet, U.S. teens are less likely to use contraception or to consistently use more effective methods of contraception when compared to the teens of several other developed countries

Adolescent pregnancy is associated with higher rates of illness and death for both the mother and the child. Babies born to adolescents are, compared to babies born to older women:

- much more likely to be pre-term<sup>52</sup>;
- 34% more likely to be low birth weight<sup>53</sup> (in New York City, 10% of babies born to teen mothers in 2005 had low birth weight, a number that has hardly improved since 1992);<sup>54</sup> and
- 38% more likely to die before the age of one year (In 2003, national infant mortality rates were 10.2 deaths per 1,000 live births among mothers 10-19 and 7.4 among older mothers. The rate for teen mothers exceeded even the 8.6 rate for mothers over 40, a very high-risk group).<sup>55</sup>

In addition to the clinical issues cited above, the life for the teen mother and her baby will be difficult, many teen mother have lower annual incomes with 80% percent of teen mothers relying on welfare at some point.

- Teenage mothers are more likely to drop out of school. Only about one-third of teen mothers obtain a high school diploma. Only 40 percent of teenagers who have children before age 18 go on to graduate from high school, compared to 75 percent of teens from similar social and economic backgrounds who do not give birth until ages 20 or 21.<sup>56</sup>
- Teenage pregnancies are associated with increased rates of alcohol and substance abuse, lower educational level, and reduced earning potential in teen fathers.
- In the United States, the annual cost of teen pregnancies from lost tax revenues, public assistance, child health care, foster care, and involvement with the criminal justice system is estimated to be about \$7 billion.

Mirroring national trends, New York City has seen a decline in births to teen mothers in recent years. The percentage of live births to mothers aged 10 to 19 decreased from 10.5 in 1995 to 7.0 in

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52 Lara J. Akinbami, Kenneth C. Schoendorf, John L. Kiely, Risk of Preterm Birth in Multiparous Teenagers, *Arch Pediatr Adolesc Med.* 2000;154:1101-1107. Available at <http://archpedi.ama-assn.org/cgi/content/abstract/154/11/1101> (accessed January 11, 2007).

53 Annie E. Casey Foundation, "KIDS COUNT Indicator Brief: Preventing Low Birth Weight," available at <http://www.aecf.org/kidscount/sld/databook.jsp> (accessed January 11, 2007).

54 NYCDOHMH, *Vital Statistics 2005*, Table 40.

55 Centers for Disease Control and Prevention, *National Vital Statistics Reports: Infant Mortality Statistics from the 2003 Period Linked Birth/Infant Death Data Set*, p. 11 (Available at <http://www.cdc.gov/nchs/linked.htm> (accessed December 28, 2006).

56 National Campaign to Prevent Teen Pregnancy. *Why It Matters*. Accessed 7/15/08, <http://www.teenpregnancy.org/>.

2005 (unchanged from 2004). The actual numbers dropped from 131,009 to 122,725. While the Bronx has experienced a similar drop -- from 15.2% in 1995 to 12.1% in 2004 and 11.8% (2,450 in numbers) in 2005 -- this remains a far higher percentage than for any of the boroughs, and is fully twice the level in Manhattan.<sup>57</sup> Three of the 12 community districts in the Bronx (Concourse/Highbridge, University/Morris Heights and Unionport/Soundview) account for 39% of the total number of teen births in the borough. For the period 2003-2005, the highest percentages of teen births in the Bronx were recorded in the Mott Haven (16.2), Hunts Point (15.2), East Tremont (15.1), and Morrisania (15.1) sections.

Once again, there is a serious racial disparity in these figures: In the Bronx in 2005, the highest percentages of live births to teen mothers, classified by mother's ancestry, were among Puerto Ricans (17.8), African Americans (10.7), other Latinas (12.1, including Mexicans at 13.2)— compared to the overall percentage of 12.1.

The proportion of teen mothers in New York City receiving prenatal care in the first six months of pregnancy has improved in recent years: going from 66% in 1992 to 86% in 2005. In the Bronx in 2005, 8.5% of the teens delivering live babies had received late or no prenatal care (compared to 6.1% of women of all ages), although the percentages were higher for teen mothers residing in Pelham Parkway (10.6), Mott Haven (11.2) and Hunts Point (11.3).

### **Breastfeeding**

Breastfeeding is about women, not just about food for babies. Breastfeeding is linked to women's status in society, their health, their economic development, and the realization of their reproductive and sexual rights. It is the physiological norm for mothers and children.

In New York City, the percentages of mothers in 2005 initiating breastfeeding, breastfeeding at six months, and breastfeeding at 12 months were 82, 50 and 29, respectively.<sup>58</sup> According to NYC PRAMS data for 2004-5, the percentages of Bronx mothers reporting: ever breastfeeding, 80%; breastfeeding for at least 8 weeks, 49%; and exclusively breastfeeding for at least 8 weeks, 19%. Breastfeeding is important for all infants, but children exposed to overcrowding or to poverty are especially vulnerable to the risks of not being breastfed. Racial and ethnic disparities in breastfeeding rates persist despite some increases among women of color. In NYC, according to PRAMS data, 34% of white women reported exclusive breastfeeding vs. 26% of Latinas and 19% of Blacks. Reasons for relatively low rates in several ethnic and socioeconomic subgroups are both cultural and economic.<sup>59</sup>

### **Maternal Illness and Mortality**

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57 NYCDOHMH, Summary of Vital Statistics 1995 (Table 26), 2004 (Table 41), 2005 , Table 41.

58 Centers for Disease Control and Prevention, Breastfeeding: Data and Statistics: Breastfeeding Practices — Results from the 2005 National Immunization Survey; at [http://www.cdc.gov/breastfeeding/data/NIS\\_data/data\\_2005.htm](http://www.cdc.gov/breastfeeding/data/NIS_data/data_2005.htm) (accessed January 17, 2007).

59 Ryan AS, Wenjun Z, Acosta A, Breastfeeding continues to increase into the new millennium. *Pediatrics* 2002 Dec; 110(6):1103-9.

The World Health Organization defines maternal death as “the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and the site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes.”

During the course of pregnancy and the postpartum period, many women are affected by complications that are commonplace -- yet some women’s complications lead to death. The most common complications are hypertension (high blood pressure), hemorrhage, ectopic (tubal) pregnancy, pregnancy-induced hypertension, infection, and postpartum depression. Other health risks come from domestic violence, smoking, and drug abuse (see separate sections below on each).

In New York City, according to the NYCDOHMH, in 2004 hemorrhage was the leading cause of maternal death – approximately one-third of all cases, the majority of which occurred late in the pregnancy.<sup>60</sup> Nationwide, eclampsia/pre-eclampsia – both of which have hypertension as an underlying precipitating factor – is among the top three causes of maternal death. This is also a serious concern for its potential to create lifelong health problems in survivors. PRAMS data for 2004-5 found that 8% of New York City women who gave birth reported having high blood pressure before and/or during pregnancy.

A review of maternal death records in New York City from 1989 and 1998 found persisting, dramatic racial disparities, and concluded, “Potential reasons for this higher [maternal mortality rate] among Black women include higher prevalence of diabetes, hypertension, and other medical problems; less access to care; lower-quality care; and lower socioeconomic status.”<sup>61</sup> The most recent data suggests that these disparities have grown: In the period 2004-2006, the maternal mortality ratio in New York City averaged 2.7 for whites, 52.6 for Blacks, and 17.9 for Latinas.<sup>62</sup>

Women in the United States are becoming pregnant at older ages, and the prevalence of chronic medical conditions increases with age. In addition, older women -- particularly those 35 years or older -- are at increased risk for pregnancy-related death and adverse reproductive health outcomes. CDC data compiled in 2006 show that the risk of death is nearly three times greater for women aged 35–39 years than for women aged 20–24 years. The risk is nearly five times greater for women over 40.<sup>63</sup> Approximately 6 million pregnancies occur each year in the U.S. and more than 10,000 women give birth each day. However, we often ignore the dangers associated with pregnancy. Studies indicate that as many as half of all pregnancy-related deaths could be prevented if women had better access to health care, received better quality care, and made changes in their health and lifestyle habits.<sup>64</sup>

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60 NYS Department of Health, “Health Advisory: Prevention of Maternal Deaths Through Improved Management of Hemorrhage,” September 12, 2004. Available at [www.nyhealth.gov/professionals/protocols\\_and\\_guidelines/maternal\\_hemorrhage/docs/health\\_advisory\\_update.pdf](http://www.nyhealth.gov/professionals/protocols_and_guidelines/maternal_hemorrhage/docs/health_advisory_update.pdf) (accessed January 25, 2007).

61 Sundaram V, Liu K, Laraque F. Disparity in Maternal Mortality in New York City. *JAMWA*. 2005;60:52-57. Available at <http://www.amwa-doc.org/index.cfm?objectid=1B0F0FC8-D567-0B25-52524464E3B6F48A>

62 NYCDOHMH, Summary of Vital Statistics 2006, Table 46, p. 62.

63 Centers for Disease Control and Prevention. Safe Motherhood: Promoting Health for Women Before, During, and After Pregnancy 2006. At a glance. 2006, at <http://www.cdc.gov/nccdphp/publications/aag/drh.htm/>.

## Cesarean Sections

Cesarean section (C-section) is an invasive surgical procedure in which a baby is delivered through the mother's abdomen and uterus. It is designed for situations when natural childbirth may be hazardous. Today C-section is one of the most common surgeries performed, with 30% of all babies nationally delivered by this method, up from 7% in 1970. Yet the World Health Organization (WHO) has called for reducing the rate to 15% or less. A review by medical researchers published in the *Lancet* in 2006 concluded, "For the health of both the mother and the neonate, and until further research gives new evidence, a frequency of between 5% and 10% seems to achieve the best outcomes, whereas a rate of less than 1%, or of higher than 15% seems to result in more harm than good."<sup>65</sup>

Experts agree that some childbirths are appropriate candidates for the risks of C-sections, but those risks are substantial: incidence of maternal death two and a half times that of vaginal delivery; increased risk of infection, injury to other organs, and infertility, anesthesia complications; and difficulty with breastfeeding (because recovery can be lengthy and painful). For the baby, there is a risk of accidental surgical cut and short- and long-term breathing problems, and the denial of breastfeeding weakens the bond with the mother. Long-term, the mother runs the risk of a future ectopic pregnancy or placenta previa (placenta growing in the cervix, causing life-threatening vaginal bleeding). Many women are discouraged from having vaginal birth after a Cesarean (VBAC), but recent studies show that women who have had prior Cesareans face no greater risk of uterine rupture than those who have had only vaginal deliveries.<sup>66</sup>

New York City rates of C-sections parallel national percentages. In 2004 (the most recent data available), the average percentage was 28.6%, an increase over the 2003 rate of 26.6%. Generally public hospitals had somewhat lower rates than private hospitals. The percentages at Bronx hospitals in 2004 varied from 18 to 29%, but all were far above the WHO's recommended upper limit.<sup>67</sup> In 2005, there were 5,703 C-sections in the Bronx, or 27.5% of live births. Of these, 64% were to women on Medicaid, and 6.8% got their Medicaid coverage through PCAP.<sup>68</sup>

A December 2006 report by the New York City Public Advocate noted:

...rather than as a last resort, today patients and physicians elect to use Cesarean delivery for a variety of reasons. Advocates and doctors have raised concerns that many women who deliver by Cesarean section are not provided with complete and accurate information regarding risks and

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64 Centers for Disease Control and Prevention. Safe Motherhood Promoting Health for Women Before, During, and After Pregnancy 2005. At a glance. 2005.

65 Fernando Althabe and Jose M. Belizan, Caesarean section: the paradox. *Lancet*, Oct. 28, 2006: 368 (9546): 1472-3. Available at [http://www.accessmylibrary.com/coms2/summary\\_0286-26678636\\_ITM](http://www.accessmylibrary.com/coms2/summary_0286-26678636_ITM) (accessed on January 20, 2007).

66 Kaiser Network, "Vaginal Birth After Multiple C-Sections Safe, Study Says," June 30, 2006, [www.kaisernet.org/daily\\_reports/rep\\_women.cfm#38234](http://www.kaisernet.org/daily_reports/rep_women.cfm#38234) (accessed on January 20, 2007).

67 Giving Birth in the Dark (see fn 69), p. 10.

68 Data provided by request to NYC DOHMH, Sept. 2007.

recovery time and that women's choice of birthing method is constrained by doctors' interest in more lucrative and less time-consuming births. In a national survey of women who gave birth in U.S. hospitals in 2005, 25% of those who had a C-section reported having experienced pressure from a health professional to have this procedure. Fear of malpractice suits has also likely influenced the rates of surgical intervention. In some cases, doctors are pressured by hospital officials to perform Cesarean sections in order to avoid liability...<sup>69</sup>

In New York State, the Maternity Information Act (MIA) passed in 1989 requires each hospital to provide consumers with a pamphlet that lists the rate of C-sections at that hospital in the most recent year available. As the NYC Public Advocate noted: "The information required by the MIA is a useful resource for women when choosing the hospital at which they would like to give birth. The MIA was put in place to give women important information in a simple format, so that they could compare and evaluate hospital practices."<sup>70</sup> Yet the Public Advocate's survey from June to July 2006 found that "all New York City hospitals failed to provide the pamphlet mandated by the MIA in response to a telephone request." As of January 23, 2007 (seven weeks after the issuance of the report and attendant publicity), three-quarters of NYC hospitals had produced such pamphlets.<sup>71</sup>

The Public Advocate's report made this recommendation: "The NYS Department of Health should provide leadership in meeting the goal of a Cesarean delivery rate of no more than 15 percent set by the World Health Organization. Action taken should include an initiative that prioritizes reducing the Cesarean rate, emphasizes continued research into the risks associated with the procedure, and establishes 'best practice' procedures for all health care facilities and providers in New York City."<sup>72</sup>

### **Domestic Violence and Pregnancy**

According to the Family Violence Prevention Fund, violence against women is a health care problem of epidemic proportions and one that uniquely impacts women of reproductive age. The CDC defines domestic violence during pregnancy as "physical, sexual, or psychological/emotional violence or threats of physical or sexual violence that are inflicted on a pregnant woman." A 1998 household survey found that pregnant women were 60% more likely to be beaten than non-pregnant women. In fact, the survey showed, "violence [was] cited as a pregnancy complication more often than diabetes, hypertension, or any other serious complication."<sup>73</sup> Abuse often limits the ability of women to manage their reproductive health, and abuse during pregnancy has long-lasting effects for women, the developing fetus and newborns.<sup>74</sup>

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69 Public Advocate for the City of New York, [Giving Birth In The Dark: City Hospitals Still Failing To Provide Legally Mandated Maternity Information](#), December 2006, p. 4. Available at <http://pubadvocate.nyc.gov/policy/reports.html> (accessed on January 20, 2007).

70 Giving Birth in the Dark (see fn 69), p. 7.

71 Elan McAllister, Choices in Childbirth, private communication.

72 Giving Birth in the Dark (see fn 69), p. 9.

73 "Battering and Pregnancy," *Midwifery Today*, 19:1998.

74 Family Violence Prevention Fund

According to the NYC PRAMS survey, in 2004-5, 7% of Bronx women reported intimate partner violence during pregnancy – more than four times the percentage in Manhattan (1.5). Percentages for Black women (7) and Latinas (4) were far higher than for whites (2), and for those with less than 12 years of education reported twice the incidence (6%) of those with some college education (3%) Younger women reported much higher proportions (10% for those under 19) than older women (2% for those over 35).

### **Sexually Transmitted Infections**

Sexually transmitted infections (STIs) in pregnant women can be a major threat to the health of both the fetus and the mother. According to the CDC, “Sexually transmitted organisms in the mother can cross the placenta to the fetus or newborn, resulting in congenital infection, or these organisms can reach the newborn during delivery, resulting in perinatal infections. Regardless of the route of infection, these organisms can permanently damage the brain, spinal cord, eyes, auditory nerves, or immune system. Even when the organisms do not reach the fetus or newborn directly, they can significantly complicate the pregnancy by causing spontaneous abortion, stillbirth, premature rupture of the membranes, or preterm delivery.”<sup>75</sup>

Sexually transmitted infection pose serious and specials risks for women, prior to a pregnancy as well as to pregnant women and their babies. Untreated STIs can cause:

- Miscarriage
- Ectopic pregnancy
- Preterm delivery
- Stillbirth
- Birth defects
- Illness in the newborn period (first month of life)
- Death

In 2005, there were only 8 cases of congenital syphilis in New York State, for a rate of 3.2 per 100,000 live births, compared to the national rate of 8.0.<sup>76</sup> Indeed, all STDs can also have serious implications for maternal health; according to the CDC in Healthy People 2010, “Pelvic inflammatory disease caused by chlamydia and gonorrhea is the leading cause of preventable tubal scarring that can result in ectopic pregnancy”—which is one of the major causes of maternal death.

The March of Dimes reported in 2003 that common infections of the genital tract -- bacterial vaginosis, chlamydia, and gonorrhea, as well as urinary tract infections -- account for up to 50% of preterm births, especially those that occur before 30 weeks.<sup>77</sup> One study found that women with

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75 Centers for Disease Control and Prevention, Healthy People 2010 – Sexually Transmitted Diseases. Available at [http://www.healthypeople.gov/document/HTML/Volume2/25STDs.htm#\\_Toc489706326](http://www.healthypeople.gov/document/HTML/Volume2/25STDs.htm#_Toc489706326) (accessed January 17, 2007).

76 CDC, STD Surveillance 2005: Special Focus Profiles, Women and Infants. Table 38. Available at <http://0-www.cdc.gov.mill1.sjlibrary.org/std/stats/tables/table38.htm> (accessed January 17, 2007).

77 March of Dimes, “Infections and Other Risk Factors Linked to Premature Birth, Experts Say” (press release), December 4, 2003. Available at [http://www.marchofdimes.com/aboutus/9564\\_10427.asp](http://www.marchofdimes.com/aboutus/9564_10427.asp) (accessed January 17, 2007).

bacterial vaginosis were 40% more likely to deliver a preterm, low-birth-weight infant than were mothers without this condition, a disparity that remained after adjusting for other variables.<sup>78</sup> Gonorrhea and chlamydia can also cause neonatal ophthalmia (conjunctivitis) and, in the case of chlamydia, neonatal pneumonia. No specific rates of STDs in pregnant women are available for New York City.<sup>79</sup>

## HIV/AIDS

In the quarter century since the HIV virus first appeared, New York City has been the domestic center of the epidemic with the largest number of reported infections and deaths of any U.S. city. The AIDS rate in New York City is approximately double the national rate for men and triple the rate for women. In turn, the rate in the Bronx is higher than for the city as a whole: The Bronx accounts for 17% of New York City's total population, yet 28% of all cases of women with HIV reside in the borough.<sup>80</sup> And the rate of HIV diagnoses (for women, men and children) per 100,000 population in 2006 was 46.8 citywide, but in the Bronx it was 62.4, and even higher in the neighborhoods of Hunts Point-Mott Haven (102.5), Highbridge-Morrisania (95.4), and Crotona-Tremont (82.2).<sup>81</sup>

Although in the past decade there has been a dramatic decline in the number of AIDS deaths due mainly to stronger drug treatments, women continue to die sooner than men from time of diagnosis. According to the CDC, citing national data, "From 1999 to 2003, men experienced a modest but steady decrease in HIV/AIDS mortality; the death rate for women was unchanged."<sup>82</sup> In New York City, as of 2005, AIDS was the second leading cause of death in women aged 25-44.<sup>83</sup> HIV/AIDS has always disproportionately affected women of color. In 2005, 96% of the 8,373 women living with HIV/AIDS in the Bronx were women of color: Black women accounted for 50% of the cases, Latinas for 45%; only 4% were whites.<sup>84</sup> In 2004, the national AIDS diagnosis rate for Black women was approximately 23 times higher than it was for white women. HIV prevalence for Black women increased by 20% between 1999 and 2002, according to a report published in the *Journal of the National Medical Association*.<sup>85</sup> The NYCDOHMH reports that in New York City, Black women are nine times more likely, and Latinas four times more likely, than

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78 National Institute for Child Health and Human Development, "Common Vaginal Condition Increases Risk of Preterm Delivery and Low Birth Weight," (press release), December 27, 1995. Available at <http://www.hhs.gov/news/press/1995pres/951227.html> (accessed January 17, 2007).

79 Centers for Disease Control and Prevention, *Healthy People 2010 – Maternal, Infant and Child Health*. Available at [http://www.healthypeople.gov/document/HTML/Volume2/16MICH.htm#\\_edn73#\\_edn73](http://www.healthypeople.gov/document/HTML/Volume2/16MICH.htm#_edn73#_edn73) (accessed January 17, 2007).

80 *Ibid.*, p. 4.

81 NYC DOHMH, *NYC HIV/AIDS Annual Surveillance Statistics, 2006*, Updated Nov. 27, 2007. Available at [http://www.nyc.gov/html/doh/downloads/pdf/ah/surveillance2006\\_tables\\_all.pdf](http://www.nyc.gov/html/doh/downloads/pdf/ah/surveillance2006_tables_all.pdf) (accessed March 3, 2008).

82 Centers for Disease Control and Prevention, *QuickStats: Age-Adjusted Death Rates for Human Immunodeficiency Virus (HIV) Infection, by Sex --- United States, 1987---2003*. MMWR, November 25, 2005, 54(46); 1188. Available at <http://www.cdc.gov/MMWR/preview/mmwrhtml/mm5446a7.htm> (accessed January 2, 2007).

83 NYCDOHMH, *Vital Statistics 2005*, p. 13.

84 NYCDOHMH, *Vital Statistics 2005*, p. 22.

85 The Century Foundation, "The Changing Face of AIDS," June 26, 2006. Available at <http://www.tcf.org/list.asp?type=NC&pubid=1341> (accessed January 2, 2007).

white women to die of AIDS.<sup>86</sup> One AIDS organization has noted, “The estimated prevalence of HIV and other [STDs] is especially high for young women of color, many of whom lack health insurance and have little or no access to health care. A lack of well-funded prevention programs specifically addressing young women of color further limits the capacity of some these young women to protect themselves against HIV infection.”<sup>87</sup>

Since the mid-1990s, the rate of HIV infection among pregnant women has declined nationwide, and with advances in AIDS treatment, the rate of transmission to their babies has dropped even more drastically. In New York City, the HIV-positive rate among childbearing women declined from 1.23% in 1990 to 0.40% in 2005.<sup>88</sup> However, in the Bronx, the rate has been somewhat higher, declining from 1.80% in 1990 to 0.79% in 2005, when 170 women with HIV gave birth.<sup>89</sup> The statewide perinatal HIV transmission rate declined from an estimated 25% in the early 1990s to 2.8% in 2004. Recorded cases of NYC perinatal transmission declined from 334 in 1990 to 13 in 2005.<sup>90</sup> In the Bronx in 2005 there were only 7 recorded cases of perinatal transmission.<sup>91</sup> Similarly, the annual number of reported pediatric AIDS cases and pediatric deaths from AIDS have also declined significantly.<sup>92</sup> One factor contributing to continuing HIV transmission to infants may be the lack of prenatal care for HIV-positive women. New York State data for 2001-2004 show that 16% of mothers of HIV-positive infants had no documented prenatal care visits. The figure for NYC for 1997-2005 was reported to be 14%.<sup>93</sup> A New York State Health Department analysis adds, “For many HIV-infected women, mental health or substance use concerns and HIV-related stigma present barriers to prenatal care. Increasing accessibility to prenatal care services is crucial to sustain and maximize the decline in perinatal HIV infections.”<sup>94</sup>

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86 NYCDOHMH, “HIV/AIDS Information,” available at <http://www.nyc.gov/html/doh/html/ah/ah.shtml> (accessed January 2, 2007).

87 Advocates for Youth, *The Facts: Young Women of Color and the HIV Epidemic*. Available at <http://www.advocatesforyouth.org/publications/factsheet/fsyngwom.htm> (accessed January 24, 2007).

88 New York State Department of Health New York State Comprehensive Newborn Screening Program, *HIV Prevalence in Childbearing Women Who Delivered in 1990 and 2005, by Region*, via special request, emailed March 5, 2008.

89 New York State Department of Health, *Area Profile of Bronx, NYC: Data through December 31, 2004*, available at [www.nyhealth.gov/diseases/aids/statistics/epi/docs/bronx\\_04.pdf](http://www.nyhealth.gov/diseases/aids/statistics/epi/docs/bronx_04.pdf) (accessed Jan. 2, 2007).

90 NYS Department of Health, *Pediatric/Adolescent HIV/AIDS Surveillance in New York City: Semiannual Report, Dec. 2007*, p. 9. Available at <http://www.nyc.gov/html/doh/downloads/pdf/dires/dires-pedhiv-report-2007.pdf> (accessed March 5, 2008).

91 NYS Department of Health, *Prevention of Perinatal Transmission*. Available at <http://www.health.state.ny.us/diseases/aids/about/perinatal.htm> and *HIV Cases Newly Diagnosed (2005)*, New York City, updated 2007 (accessed on March 4, 2008).

92 New York State Department of Health, “*Women, Children, Youth and Family Services*,” available at <http://www.health.state.ny.us/diseases/aids/about/women.htm> (accessed January 2, 2007).

93 NYS Department of Health, *Pediatric/Adolescent HIV/AIDS Surveillance in New York City: Semiannual Report, Dec. 2007*, p. 15. Available at <http://www.nyc.gov/html/doh/downloads/pdf/dires/dires-pedhiv-report-2007.pdf> (accessed March 5, 2008).

94 *Ibid.*

More than half a million people in the United States have died as a result of HIV/AIDS. The CDC estimates that (as of 2003, the most recent data available) between 1.0 and 1.2 million people nationwide are living with HIV or AIDS.<sup>95</sup>

### **Pregnancy-Related Depression**

Estimates of the national percentages of new mothers suffering from postpartum depression range from 5 to 25%, depending on the study methods used.<sup>96</sup> The New York City PRAMS survey found that 6.1% of Bronx new mothers received this diagnosis in 2004-5. Foreign-born mothers having twice the percentage (7.1) that U.S.-born mothers had (3.4), and figures were higher for less educated and uninsured or publicly insured women (versus those privately insured). Depression has significant effects on women's relationships, their ability to nurture their newborn, and their overall quality of life. Effective treatments exist for depression, but because many women are unaware of their depression or because of the social stigma of depression, many women do not disclose their symptoms to their medical provider.

The U.S. Preventative Services Task Force recommends screening adults for depression in clinical practices that have systems in place to assure accurate diagnosis, effective treatment, and follow-up. Because depression screening and treatment issues are different for pregnant and lactating women than in non-pregnant populations, the findings from primary care clinics serving non-pregnant patients may not apply to pregnant and postpartum populations, and there are no agreed-upon recommendations for screening during pregnancy or the postpartum period. However, there is evidence that routine depression screening of women in obstetric or in pediatric settings is feasible and will increase the detection of depression and referrals for services. In one study, instituting use of the use of the Edinburgh Postnatal Depression Scale increased diagnoses of postpartum depression from 3.7 to 10.7%.<sup>97</sup>

### **Risk Factors for Maternal and Infant Health**

#### **Nutrition**

The March of Dimes has reported that "women who are obese before conception may experience complications during pregnancy and childbirth. In addition, they are at higher risk of having babies with congenital malformations." According to 2004-5 PRAMS data, 56% of new mothers in the Bronx (versus 28% in Manhattan) reported that they were overweight or obese before pregnancy. Citywide, there was a great racial disparity: the proportions were 55% of Black mothers, 43% of Latinas, 26% of whites, and 25% of Asians. The numbers were 41% for women with less than 12 years of education and 34% for those with more than 12 years education.

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95 Centers for Disease Control and Prevention, "A Glance at the HIV/AIDS Epidemic," April 2006, Available at <http://www.cdc.gov/hiv/resources/factsheets/At-A-Glance.htm> (accessed on January 2, 2007).

96 Agency for Healthcare Research and Quality, Perinatal Depression: Prevalence, Screening Accuracy, and Screening Outcomes. Available at <http://www.ahrq.gov/clinic/epcsums/peridepsum.htm> (accessed January 25, 2007).

97 Sophia Cariati, Society for Women's Health Research, Postpartum Depression: Should You be Screened? Available at [http://www.womenshealthresearch.org/site/News2?page=NewsArticle&id=5389&news\\_iv\\_ctrl=0&abbr=press\\_&JServSessionIdr001=r14ceow4k2.app8b](http://www.womenshealthresearch.org/site/News2?page=NewsArticle&id=5389&news_iv_ctrl=0&abbr=press_&JServSessionIdr001=r14ceow4k2.app8b) (accessed January 25, 2007).

The March of Dimes also reported that “vitamin and mineral deficiencies and low birth weight contribute to the impaired growth and development of infants and young children.” According to 2004-5 PRAMS data, 68% of pregnant women in the Bronx reported that they did not take any multivitamins during the month before they got pregnant, and only 18% took a multi every day.<sup>98</sup>

According to the CDC, “Research indicates that consumption of folic acid, a B vitamin, before conception and during the first trimester can reduce the occurrence of neural tube defects [which cause spina bifida] by 50–70%.” Most neural tube defects occur during the first month of pregnancy – often before women know they are pregnant. Thus the U.S. Public Health Service recommends that all women capable of becoming pregnant take multivitamins containing 400 micrograms (mcg) of folic acid daily. A CDC summary of the survey noted that “nonwhite, young, less educated, and lower-income women [were] the least likely to report taking folic acid daily.”<sup>99</sup> The CDC also has found that only 7% of women know that folic acid is needed *before* pregnancy.<sup>100</sup>

## Alcohol

A major risk factor for a healthy pregnancy is alcohol consumption. According to the March of Dimes:

Drinking alcohol during pregnancy can cause physical and mental birth defects. Each year, more than 40,000 babies are born with some degree of alcohol-related damage. Although many women are aware that heavy drinking during pregnancy can cause birth defects, many do not realize that moderate—or even light—drinking also may harm the fetus. In fact, no level of alcohol use during pregnancy has been proven safe.

The 2004-5 PRAMS survey found that 6% of Bronx participants reported drinking any alcohol during the last three months of pregnancy—a percentage far lower than the one for Manhattan (17). Indeed, all the demographics here are the *reverse* of the usual pattern for maternal and child health: citywide, far higher percentages were registered for whites (17) vs. Blacks (6%) and Latinas (5%), and for more highly educated (14 for those with college education) than for less educated (3% for those with less than 12 years of education), On the positive side, 81% of Bronx women who said they had drunk alcohol before pregnancy reported fully abstaining during pregnancy.

## Illicit Drug Use

A range of illicit drugs (particularly heroin, cocaine, Ecstasy, crystal meth) have been demonstrated to pose risks for both unborn babies and their mothers. For the mother, these can include

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98 PRAMS survey data from July-Dec. 2004 and May-Dec. 2005. Results of request to NYC DOHMH, Sept. 2007.

99 Centers for Disease Control and Prevention. Use of Dietary Supplements Containing Folic Acid Among Women of Childbearing Age --- United States, 2005. MMWR, September 30, 2005. 54 (38); 955-958. Available at <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5438a4.htm> (accessed January 18, 2007).

100 Centers for Disease Control and Prevention. Excite Education Curriculum Module: Folic Acid. Available at [http://0-www.cdc.gov.mill1.sjlibrary.org/ncbddd/folicacid/excite/6fa\\_info.htm](http://0-www.cdc.gov.mill1.sjlibrary.org/ncbddd/folicacid/excite/6fa_info.htm) (accessed January 18, 2007).

increased risk for anemia, blood and heart infections, skin infections, hepatitis, and other infectious diseases (including STDs).<sup>101</sup> Risks to the infants include low birth weight, birth defects, withdrawal symptoms, and learning and behavioral problems.<sup>102</sup> In the case of marijuana, the evidence for harm to the infant is considerably less than for the other drugs, and problems have only been found in women who use marijuana daily.<sup>103</sup>

But a 2006 literature review by University of California-Berkeley researchers found that the fetal effects of certain illicit drugs are not as harmful as widely believed, even within the medical community.<sup>104</sup>

There are major problems in access to services for addicted pregnant women. According to one review, “many drug treatment programs refuse to treat pregnant women, and many prenatal care agencies refuse drug-using women. Housing, medical and mental health services often demand total abstinence as a requirement for access.”<sup>105</sup> Another problem is that “fear of loss of custody [if they are found to test positive for illicit drugs] deters women from seeking care that could help them and their future children. As a result, the women most in need of social and medical services—‘those most heavily involved in the drug life’--are most alienated from prenatal care.” More broadly, another researcher concludes, “the current legal, social, and welfare policies on prenatal illicit drug use may impede constructive exploration of the full range of social and therapeutic options.”<sup>106</sup>

## Exposure to Environmental Pollutants

### Chemicals

The environment can significantly impact the health of mothers and children. According to the March of Dimes, “there are more than four million chemical mixtures in homes and businesses in this country, with little information on the effects of most of them during pregnancy. However, due to the failure of federal law to require pre-market testing of chemicals, only a few are known to be harmful to an unborn baby. Most of these are found in the workplace, but certain environmental pollutants found in air and water, as well as chemicals used at home, may pose a risk during pregnancy.”<sup>107</sup>

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101 Narconon Southern California, Drug Use During Pregnancy. Available at <http://www.addictionca.com/drug-use-pregnancy.htm> (accessed January 19, 2007).

102 March of Dimes, Quick Reference Fact Sheets: Illicit Drug Use During Pregnancy. Available at [http://www.marchofdimes.com/professionals/14332\\_1169.asp](http://www.marchofdimes.com/professionals/14332_1169.asp) (accessed January 19, 2007).

103 Ibid.

104 National Abandoned Infants Assistance Resource Center, University of California at Berkeley, Literature Review: Effects of Prenatal Substance Exposure on Infant and Early Childhood Outcomes. March 2006. Available at [aia.berkeley.edu/media/pdf/prenatal\\_substance\\_exposure\\_review.pdf](http://aia.berkeley.edu/media/pdf/prenatal_substance_exposure_review.pdf) (accessed January 19, 2007).

105 Sara Kershner and Lynn Paltrow, “Pregnancy, Parenting and Drug Use: Which Women? Which Harms?” Available at <http://www.harmreduction.org/pubs/news/summer01/kershner.htm> (accessed January 19, 2007).

106 Shahul H. Ebrahim, MD, PhD and Joseph Gfroerer. Pregnancy-Related Substance Use in the United States During 1996–1998. *Obstetrics & Gynecology* 2003;101:374-379., Available at <http://www.greenjournal.org/cgi/content/full/101/2/374> (accessed January 19, 2007).

The Bronx is overburdened by environmental pollutants. Waste transfers stations, the high rate of highway traffic emitting tons of diesel-related contaminants to the air, stationary sources of pollution, and waste transfers stations that process over 60% all New York City's garbage all contribute to an environmental burden that affects pregnant women in many Bronx communities. Many environmental analysts have cited the Bronx, and particularly the South Bronx, as a prime example of environmental racism. Environmental racism refers to intentional or unintentional racial discrimination in the enforcement of environmental rules and regulations, and the intentional or unintentional targeting of communities of color for the siting of polluting industries.

A 2005 study by the Columbia University Center for Children's Environmental Health revealed that prenatal exposure to combustion-related urban air pollutants altered the structure of chromosomes (the carriers of genes) of babies in the womb.<sup>108</sup> This was the first study to show that environmental exposure during pregnancy to such pollutants can cause a modest increase in chromosomal abnormalities in the fetal tissues. Such genetic alterations have been linked in other studies to increased risk of cancer in children and adults.

The research involved a sample of 60 newborns and their non-smoking mothers in low-income neighborhoods of New York City (Harlem, Washington Heights, and the South Bronx). The mothers' exposure during pregnancy to varying levels of airborne combustion-related pollutants, known as polycyclic aromatic hydrocarbons (PAHs), was measured by personal air monitoring of the mothers during pregnancy. PAHs are carcinogenic air pollutants that cross the placenta. They enter the environment when combustion occurs – such as from car, truck, or bus engines, residential heating, power generation, or environmental tobacco smoke.

### **Cigarette Smoke**

As of 2004, CDC data showed that 10% of pregnant women reported smoking, a drop from 20% in 1989.<sup>109</sup> The percentages varied greatly by race: 2.6% of Latinas overall (although 8.5% of Puerto Ricans); 8.4% of African Americans, and 13.8% of whites. In terms of age, the highest rates are for the 18-19-year-old group (16.0)—each older group has lower rates, and younger women and girls also have lower rates. Educational level is strikingly correlated with smoking rates: Those with 9-11 years education have the highest rates, 23.7%, compared with 12 years (14.9%), 13-15 years (8.4) and 16 years or more (1.5%). Pregnant women with less than 8 years education smoke at the rate of 5.5%.

According to NYC PRAMS data for 2004-5, 5% of Bronx women reported smoking during the last three months of pregnancy. Citywide, figures were somewhat higher for white women (7%) than Blacks or Latinas (6% each). The good news is that the Bronx had the highest proportions of women reporting having stopped smoking during pregnancy (70% vs. 63% for Manhattan, 54% for Queens, 49% for Brooklyn, and 33% for Staten Island). This is despite the Bronx's second

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107 Lappe, M. and Chalfin, N. Identifying Toxic Risks Before and During Pregnancy: A Decision Tree Action Plan. Report to the March of Dimes, Center for Ethics and Toxics (CETOS), Gualala, CA, April 15, 2002.

108 Columbia University Mailman School of Public Health, Center for Children's Environmental Health. "New study reveals that prenatal exposure to urban air pollutants can cause genetic alterations in babies in utero" (press release), February 15, 2005. Available at [http://www.mailman.hs.columbia.edu/ccceh/news-events/ChromMutationsReleaseFinal\\_Emb-2-15.htm](http://www.mailman.hs.columbia.edu/ccceh/news-events/ChromMutationsReleaseFinal_Emb-2-15.htm) (accessed January 25, 2007).

109 CDC, Health, United States, 2006, Table 12.

highest figure of the five boroughs for smoking during the three months prior to conception – 15%. A 2007 study of 1,500 pregnant women nationwide found that pregnant smokers were typically poor, less educated and had less access to health care.<sup>110</sup>

Besides the obvious risk of cigarette smoke to the mother, this environmental pollutant can also jeopardize the baby's health, whether it comes from the mother's smoking or from second-hand smoke in the home. Based on 2004 data, the CDC reported that "infants born to mothers who smoke during pregnancy are 65% more likely to have low birth weight and 70% more likely to die in infancy than infants born to nonsmokers."<sup>111</sup> These much higher infant mortality rates among smokers crossed all racial/ethnic groups

In a 2004 study sponsored by the Columbia University Center for Children's Environmental Health, researchers found that children whose mothers are exposed during pregnancy to second-hand smoke have lower scores (5 points out of 100) on tests of cognitive development at age two than do children from smoke-free homes.<sup>112</sup> In addition, the children exposed to second-hand smoke are twice as likely to have scores below 80, indicative of developmental delay.

The combined effect of smoke exposure and poverty – mothers with inadequate housing, food or clothing -- results in a deficit of about seven points in cognitive development. "These findings reveal the dangers for pregnant women and their unborn children of multiple 'toxic' exposures—both chemical and socioeconomic," said Dr. Virginia Rauh, an Associate Professor at the Mailman School of Public Health and principal investigator of the study. "They show, for the first time, that urban children exposed to both conditions experience a kind of double jeopardy with consequences persisting into early childhood and possibly beyond."

Recent research has found a strong linkage between smoking during pregnancy and depression. A 2007 study of 1,500 pregnant women found that a majority of smokers suffered from depression; 30% of smokers (three times higher than nonsmokers) and 50% of those deemed nicotine-dependent had a mental health disorder. Experts noted that these findings suggest that "quit for your baby" messages are "too simplistic an approach for many women."<sup>113</sup> According to Nora Volkow, director of NIH's National Institute on Drug Abuse, nicotine and other chemicals in cigarette smoke can act in the brain like mild antidepressants. Women "are not just smoking to get the habit-forming aspects ... they are seeking the therapeutic effect," Volkow said. She added that

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110 "New Studies Link Depression to Smoking During Pregnancy," Kaiser Daily Women's Health Policy Report. Available at [http://www.kaisernetwork.org/daily\\_reports/rep\\_index.cfm?DR\\_ID=47439](http://www.kaisernetwork.org/daily_reports/rep_index.cfm?DR_ID=47439) (accessed Sept. 12, 2007).

111 Centers for Disease Control and Prevention, QuickStats: Birth Rates Among Females Aged 15--19 Years, by State --- United States, 2004. MMWR, January 5, 2007 / 55(51); 1383, Available at <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm551a6.htm> (accessed January 11, 2007).

112 Columbia University Mailman School of Public Health, Center for Children's Environmental Health. "Effect of Prenatal Exposure to Airborne Polycyclic Aromatic Hydrocarbons on Neurodevelopment in the First Three Years of Life Among Inner-City Children" (press release), April 24, 2006. Available at <http://www.mailman.hs.columbia.edu/ccceh/news-events/PAHdevelopmentPRfinal042406.html> (accessed January 25, 2007).

113 See fn 110.

because it often is difficult for people who are depressed to realize they need help, smoking can become like "a disease instead of a choice."<sup>114</sup>

## Lead

In 2004, the New York City Council passed (over Mayor Bloomberg's veto) the Lead Poisoning Prevention Act, which required landlords to clean up lead dust, not just lead paint. The law also required inspections of all apartments in a building where high lead levels in children have been found, and requires removal of peeling lead paint in day care centers.

According to the NYCDOHMH, in 2005 nearly 500 women of reproductive age citywide were reported to have blood lead levels in the high risk range (above 10 ug per deciliter).<sup>115</sup> The Department's surveys in 2001-2003 of women with elevated blood lead levels found that 96% were foreign-born, and 64% were born in Mexico.<sup>116</sup> This may be partly due to use of lead-glazed pottery or consumption of lead-containing folk remedies, cosmetics, food and spices. Of course, many immigrant women also live in housing with lead-based paints or pipes.

However, even low levels of exposure to lead can cause learning and behavioral problems in children. Also, research has revealed that women exposed to lead as children may have bone stores of lead that are released during pregnancy, thus exposing the fetus. In 2003 (the most recent data available), 3,490 NYC children under 6 years old were newly identified with elevated blood lead levels, although this marked a decline over the preceding decade.<sup>117</sup> Women who live in older homes may be exposed to higher levels of lead due to deteriorating lead-based paint. About 80% of homes built before 1978 were painted with lead-based paint.

Lead poses health risks for everyone, young children and unborn babies. Exposure to high levels of lead during pregnancy contributes to miscarriage, preterm delivery, low birth weight and developmental delays in the infant. Lead toxicity in children is characterized by serious behavioral and learning problems and anemia. As a result of the various bans, far fewer pregnant women and children are exposed to high levels of lead.

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114 See fn 110.

115 NYC DOHMH, "Guidelines for Health Care Providers on the Prevention, Identification, and Medical Management of Lead Poisoning in Pregnant Women in New York City," June 30, 2006.

116 Lead Poisoning Prevention Program, New York City Department of Health and Mental Hygiene. New York City Plan to Eliminate Childhood Lead Poisoning. December 2005, p. 25. Available at <http://www.nmic.org/nycceelp.htm> (accessed January 30, 2007).

117 Lead Poisoning Prevention Program, New York City Department of Health and Mental Hygiene. New York City Plan to Eliminate Childhood Lead Poisoning. December 2005, p. 8. Available at <http://www.nmic.org/nycceelp.htm> (accessed January 30, 2007).