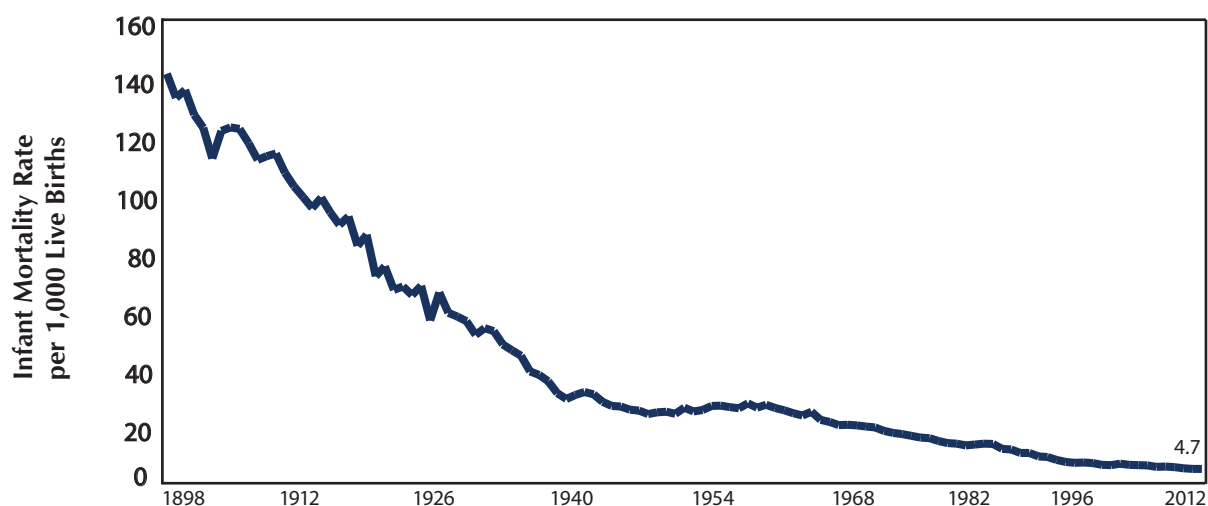


# SUMMARY OF VITAL STATISTICS

## 2012

### THE CITY OF NEW YORK

### INFANT MORTALITY



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BUREAU OF VITAL STATISTICS, NEW YORK CITY DEPARTMENT OF HEALTH AND MENTAL HYGIENE  
125 WORTH STREET, CN 7, NEW YORK, NEW YORK, 10013

# SUMMARY OF VITAL STATISTICS 2012 THE CITY OF NEW YORK INFANT MORTALITY

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November 2013

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THIS REPORT WAS PREPARED BY THE DEPARTMENT OF HEALTH AND MENTAL HYGIENE, OFFICE OF VITAL STATISTICS STAFF UNDER THE DIRECTION OF REGINA ZIMMERMAN, PhD, MPH AND WENHUI LI, PhD.

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2012 INFANT MORTALITY, MORTALITY, PREGNANCY OUTCOMES AND EXECUTIVE SUMMARY REPORTS ARE AVAILABLE ONLINE AT [HTTP://WWW.NYC.GOV/VITALSTATS](http://www.nyc.gov/vitalstats).

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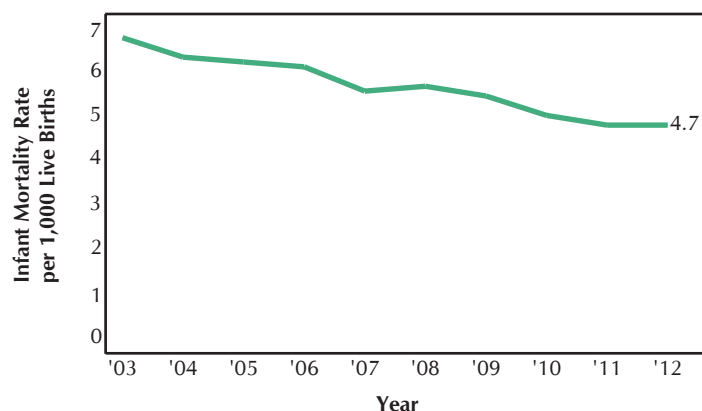
# INFANT MORTALITY OVERVIEW

Infant mortality is a key indicator of a population's overall health and is defined as the number of infant deaths occurring within the first year of life per 1,000 live births. To characterize infant mortality in New York City, the Bureau of Vital Statistics links the mother's demographic data from the child's birth certificate to data from the death certificate and confidential medical report of death. Rates are displayed as three-year rolling averages or as single year depending on the stability of the measure. For technical notes, sample certificates, and additional data tables, please see the Bureau of Vital Statistics website at [www.nyc.gov/vitalstats](http://www.nyc.gov/vitalstats).

## Select Key Findings:

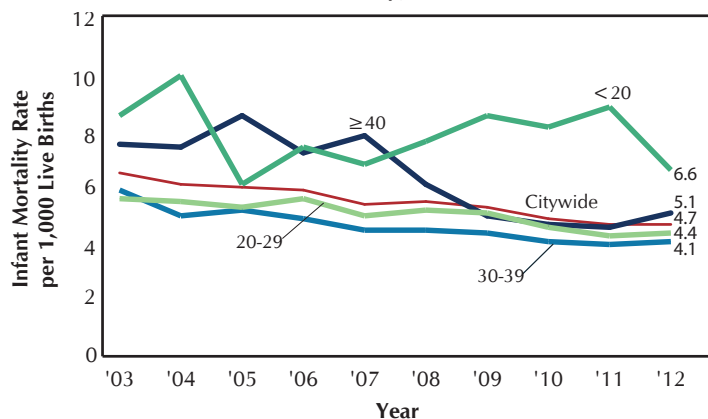
- New York City's 2012 infant mortality rate remained unchanged from 2011, at 4.7 infant deaths per 1,000 live births. Since 2003, it declined 27.7% from 6.5. The Take Care New York goal of a citywide infant mortality rate of 5.0 by 2012 was met in 2010 and the Healthy People 2020 goal of 6.0 was met in 2005.
- The 3 leading causes of infant death in 2012 were birth defects (congenital malformations/deformations) (21.4%), followed by prematurity (short gestation and low birth weight) (20.4%) and cardiovascular disease deaths originating in the perinatal period (12.9%). External causes, which include injuries, homicides and deaths of undetermined intent also accounted for a substantial number of these deaths. (9.4%).
- Infant mortality rates were highest in the city's poorest neighborhoods; while there were 3.0 infant deaths per 1,000 live births in areas with <10% poverty, there were 5.7 infant deaths in areas with >30% poverty.
- Although infant mortality rates have declined among all racial/ethnic groups since 2003, disparities persist. In 2012, the infant mortality rate was highest among non-Hispanic blacks, at 8.5 infant deaths per 1,000 live births, followed by Puerto Ricans, at 6.6, other Hispanics, at 4.8, Asian & Pacific Islanders, at 3.3 and non-Hispanic whites, at 2.7.
- Since 2003, infant mortality decreased 41.7% in Manhattan to 2.8 infant deaths per 1,000 live births, 32.6% in the Bronx to 5.8, 31.7% in Brooklyn to 4.3, 15.4% in Staten Island to 4.4 and 7.3% in Queens to 5.1.

**Figure 1. Infant Mortality Rate, New York City, 2003–2012**



# DEMOGRAPHIC INDICATORS

**Figure 2. Infant Mortality Rate by Mother's Age\*, New York City, 2003–2012**

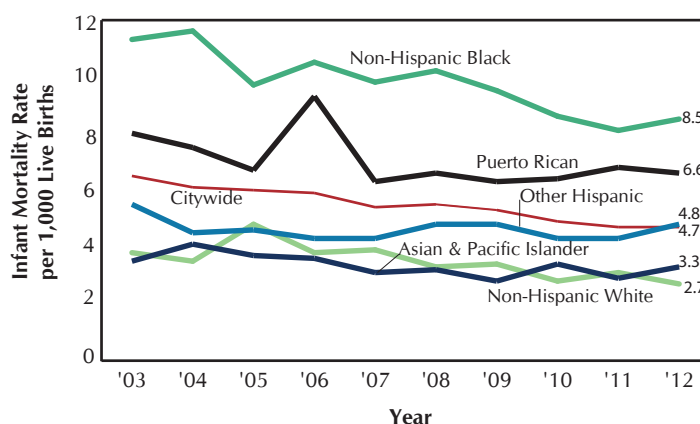


\*The fluctuation in the infant mortality rate among infants born to mothers <20 and ≥40 is likely due to small numbers.

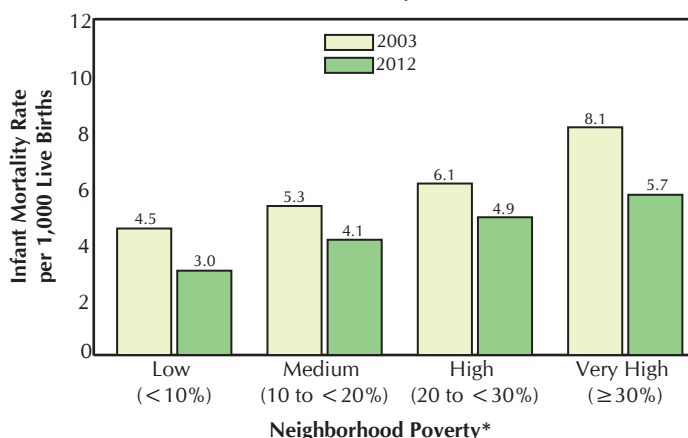
- In 2012, the infant mortality rate was highest among infants born to the youngest mothers (<20 years of age), at 6.6 infant deaths per 1,000 live births, followed by infants born to the oldest mothers (≥40 years of age), at 5.1; infants born to mothers 20 to 29 years of age, and to mothers 30 to 39 years of age had the lowest infant mortality rates at 4.4 and 4.1 infants deaths per 1,000 live births, respectively.
- Since 2003, infant mortality rates decreased in all age groups: 32% among infants born to mothers aged 40 and older, 30.5% among those to mothers aged 30 to 39, 22.4% among those to mothers aged <20, and 21.4% among those to mothers aged 20 to 29.

- Although infant mortality rates have declined among all racial/ethnic groups since 2003, disparities persist. In 2012, the infant mortality rate was highest among infants born to non-Hispanic blacks, at 8.5 infant deaths per 1,000 live births, followed by Puerto Ricans, at 6.6, other Hispanics, at 4.8, Asian & Pacific Islanders, at 3.3, and non-Hispanic whites, at 2.7.
- From 2003 to 2012, infant mortality rates declined 28.9% among non-Hispanic whites, 24.8% among non-Hispanic blacks, 17.5% among Puerto Ricans, 12.7% among other Hispanics and 5.7% among Asian and Pacific Islanders.

**Figure 3. Infant Mortality Rate by Mother's Racial/Ethnic Group, New York City, 2003–2012**



**Figure 4. Infant Mortality Rate by Neighborhood Poverty\*, New York City, 2003, 2012**



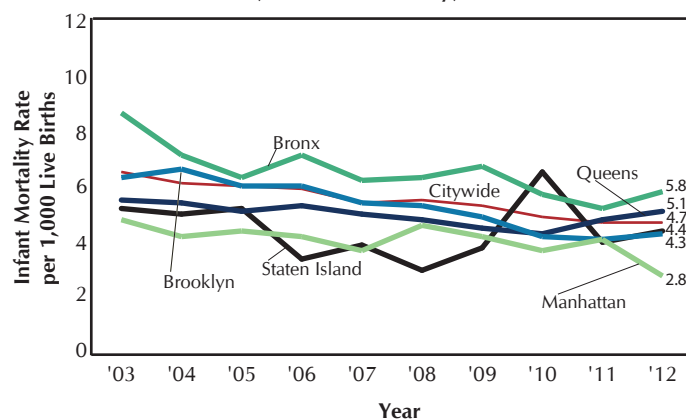
\*Neighborhood poverty (based on mother's census tract) defined as percent of residents with incomes below 100% of the Federal Poverty Level, per Census 2010.

- Infant mortality rates were highest in the city's poorest neighborhoods; while there were 3.0 infant deaths per 1,000 live births in areas with <10% poverty, there were 5.7 infant deaths in areas with ≥30% poverty.
- Since 2003, infant mortality rates decreased most in census tracts with low poverty (32.1%), followed by census tracts with very high poverty (29.4%); infant mortality rates in areas of medium poverty and high poverty declined 21.5% and 19.5% respectively.

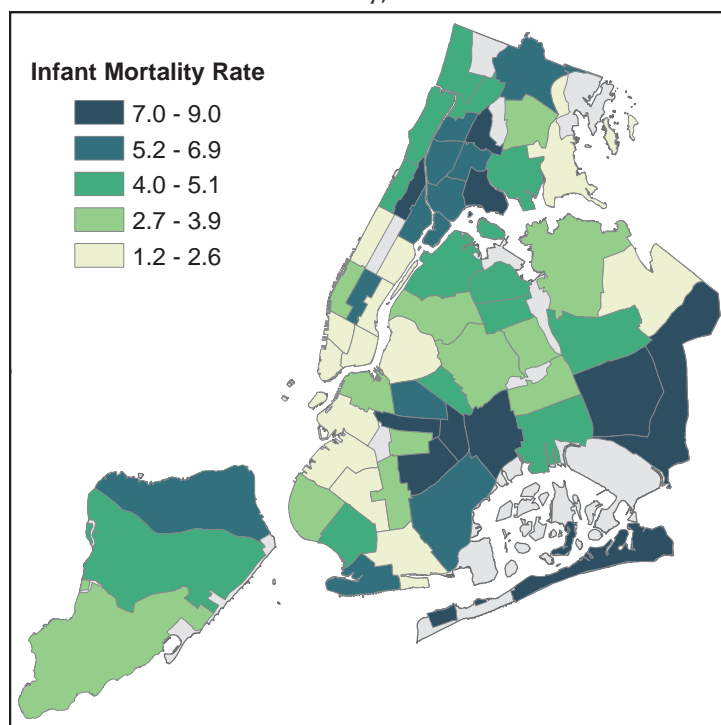
# DEMOGRAPHIC INDICATORS

- In 2012, the infant mortality rate was highest in the Bronx at 5.8 deaths per 1,000 live births, followed by Queens (5.1), Staten Island (4.4), Brooklyn (4.3) and Manhattan (2.8).
- Since 2003, infant mortality decreased 41.7% in Manhattan to 2.8 deaths per 1,000 live births, 32.6% in the Bronx, 31.7% in Brooklyn, 15.4% in Staten Island and 7.3% in Queens.

**Figure 5. Infant Mortality Rate by Borough of Residence, New York City, 2003–2012**



**Figure 6. Average\* Infant Mortality Rate by Community District of Residence, New York City, 2010–2012**



- The community districts with the highest average infant mortality rate (2010–2012) were East Tremont at 9.0 infant deaths per 1,000 live births, followed by Hunts Point and Jamaica/St. Albans, both at 8.7, Central Harlem at 8.4, East New York at 7.7 and the Rockaways at 7.5.
- The community districts with the lowest average infant mortality rates were Battery Park/Tribeca at 1.2 infant deaths per 1,000 live births followed by Upper East Side at 1.5, Borough Park at 2.0, Sunset Park and Upper West Side both at 2.2 and Murray Hill at 2.3.

\*Due to instability of the infant mortality rates by community district, rates are presented as three-year averages.

# DEMOGRAPHIC INDICATORS

**Table 1. Average\* Infant and Neonatal Mortality Rates by Community District of Residence, New York City, 2008–2012**

Community District		2008–2010*		2009–2011*		2010–2012*	
		Infant Mortality Rate	Neonatal Mortality Rate	Infant Mortality Rate	Neonatal Mortality Rate	Infant Mortality Rate	Neonatal Mortality Rate
	<b>NEW YORK CITY</b>	<b>5.2</b>	<b>3.5</b>	<b>4.9</b>	<b>3.3</b>	<b>4.8</b>	<b>3.1</b>
	<b>MANHATTAN</b>	<b>4.1</b>	<b>2.8</b>	<b>3.9</b>	<b>2.6</b>	<b>3.5</b>	<b>2.2</b>
101	Battery Park, Tribeca	1.4	1.0	1.6	1.3	1.2	1.2
102	Greenwich Village, SOHO	3.1	2.7	2.4	2.4	2.4	2.4
103	Lower East Side	4.4	2.3	3.4	1.1	2.6	1.3
104	Chelsea, Clinton	3.2	2.5	3.3	2.5	2.9	1.4
105	Midtown Business District	5.3	3.6	4.0	2.3	5.7	3.4
106	Murray Hill	3.1	3.1	3.9	3.1	2.3	1.5
107	Upper West Side	2.0	1.3	1.3	0.7	2.2	1.3
108	Upper East Side	2.7	1.9	2.5	1.9	1.5	1.1
109	Manhattanville	5.7	4.3	4.7	3.2	4.9	3.6
110	Central Harlem	7.5	4.6	8.5	6.2	8.4	5.7
111	East Harlem	6.6	4.1	6.9	4.5	5.3	3.9
112	Washington Heights	4.7	3.1	4.9	2.6	4.2	1.8
	<b>BRONX</b>	<b>6.3</b>	<b>4.3</b>	<b>5.9</b>	<b>3.9</b>	<b>5.6</b>	<b>3.7</b>
201	Mott Haven	7.1	4.6	6.3	4.1	6.6	4.2
202	Hunts Point	6.4	4.1	7.6	4.5	8.7	5.5
203	Morrisania	7.8	5.0	7.7	4.8	6.9	3.9
204	Concourse, Highbridge	5.7	3.7	4.8	3.3	5.5	3.4
205	University/Morris Heights	7.5	5.1	7.3	4.9	6.1	4.4
206	East Tremont	7.4	5.2	6.6	3.6	9.0	6.0
207	Fordham	5.5	4.4	4.6	3.6	4.3	3.3
208	Riverdale	5.2	4.3	5.3	4.5	4.0	2.8
209	Unionport, Soundview	4.9	3.2	5.4	3.3	4.2	2.4
210	Throgs Neck	4.9	3.6	4.6	3.0	2.4	1.4
211	Pelham Parkway	6.3	5.4	6.3	5.1	3.8	3.0
212	Williamsbridge	7.0	3.9	6.0	3.4	6.6	4.3
	<b>BROOKLYN</b>	<b>4.8</b>	<b>3.1</b>	<b>4.4</b>	<b>2.8</b>	<b>4.2</b>	<b>2.6</b>
301	Williamsburg, Greenpoint	2.5	1.8	2.4	1.5	2.4	1.6
302	Fort Greene, Brooklyn Heights	4.8	2.7	3.5	2.6	3.4	2.5
303	Bedford Stuyvesant	8.5	5.3	7.0	4.0	6.0	3.5
304	Bushwick	5.0	3.8	4.4	3.2	4.5	2.7
305	East New York	8.7	4.6	8.4	4.5	7.7	4.5
306	Park Slope	3.3	1.9	1.9	0.9	2.6	1.3
307	Sunset Park	3.1	2.0	2.9	2.0	2.2	1.7
308	Crown Heights North	5.8	4.2	4.2	3.1	7.2	3.8
309	Crown Heights South	5.1	3.2	4.4	2.6	3.1	1.4
310	Bay Ridge	4.0	2.7	4.0	2.5	3.5	2.2
311	Bensonhurst	3.7	2.9	4.2	3.1	4.4	2.6
312	Borough Park	2.7	1.7	2.8	2.0	2.0	1.4
313	Coney Island	4.9	3.0	5.6	3.6	6.3	4.1
314	Flatbush, Midwood	4.3	2.2	3.8	2.3	3.9	2.8
315	Sheepshead Bay	3.1	2.0	2.1	1.3	2.6	1.1
316	Brownsville	9.9	6.5	9.2	5.6	7.4	5.1
317	East Flatbush	6.4	4.4	6.8	4.6	7.2	5.1
318	Canarsie	5.3	3.2	4.8	3.2	5.2	3.0
	<b>QUEENS</b>	<b>4.5</b>	<b>2.9</b>	<b>4.5</b>	<b>2.9</b>	<b>4.8</b>	<b>3.2</b>
401	Astoria, Long Island City	5.3	3.8	4.3	2.5	4.7	3.2
402	Sunnyside, Woodside	2.8	2.2	2.4	1.9	2.9	2.5
403	Jackson Heights	3.6	2.2	3.2	1.7	4.1	2.2
404	Elmhurst, Corona	3.7	2.4	4.1	2.9	5.1	3.5
405	Ridgewood, Glendale	3.0	2.0	3.7	2.4	3.4	2.4
406	Rego Park, Forest Hills	2.1	1.3	2.3	2.1	2.8	2.3
407	Flushing	2.8	1.9	2.7	1.5	3.3	2.3
408	Fresh Meadows, Briarwood	6.1	3.8	5.1	3.0	4.3	2.7
409	Woodhaven	4.1	1.7	3.5	1.2	2.8	1.4
410	Howard Beach	4.8	2.8	4.9	2.7	4.6	2.8
411	Bayside	2.5	2.0	3.0	3.0	2.4	2.4
412	Jamaica, St. Albans	7.3	4.3	8.4	5.2	8.7	5.6
413	Queens Village	5.9	4.0	6.4	4.9	7.2	5.6
414	The Rockaways	7.5	4.9	7.2	4.8	7.5	5.0
	<b>STATEN ISLAND</b>	<b>4.4</b>	<b>3.5</b>	<b>4.8</b>	<b>3.6</b>	<b>5.0</b>	<b>3.9</b>
501	Port Richmond	5.9	4.5	5.5	3.9	6.0	4.2
502	Willowbrook, South Beach	3.0	2.5	4.5	3.8	5.1	4.6
503	Tottenville	3.1	2.5	3.6	2.7	3.3	2.6

\*Due to instability of the infant mortality rates by community district, rates are presented in rolling three-year averages.

Figure 5 provides single-year infant mortality rate by borough.

# DEMOGRAPHIC INDICATORS

**Table 2. Average Infant Mortality Rate by Mother's Birthplace, New York City, 2006–2012**

Birthplace	2006-2008	2007-2009	2008-2010	2009-2011	2010-2012
<b>Total, New York City</b>	<b>5.6</b>	<b>5.4</b>	<b>5.2</b>	<b>4.9</b>	<b>4.8</b>
Yemen Arab Republic	5.0	3.4	3.7	6.3	8.5
Puerto Rico ‡	8.6	7.0	7.9	8.5	8.4
Honduras	3.1	4.2	6.8	7.4	8.3
Nigeria	5.6	6.9	7.2	8.1	7.1
Jamaica	7.2	5.8	6.2	5.6	7.0
Guyana	8.8	7.6	7.8	6.6	6.7
Guatemala	4.1	4.5	6.0	6.4	6.4
Pakistan	7.5	6.2	5.4	5.6	6.1
Trinidad and Tobago	7.3	4.7	5.1	3.4	6.1
Haiti	7.4	5.7	6.1	4.9	5.4
India	3.3	2.5	2.3	2.4	5.2
United States †	6.2	6.3	6.0	5.7	5.2
Bangladesh	2.8	3.9	3.9	4.6	4.1
Ghana	6.8	6.2	4.8	4.3	4.0
Mexico	4.1	3.8	3.8	3.4	4.0
Philippines	2.5	1.6	3.0	3.4	3.9
Dominican Republic	3.8	4.2	4.2	4.0	3.8
Ecuador	3.9	3.3	3.0	3.2	3.7
El Salvador	4.9	2.9	2.9	3.4	3.0
Colombia	1.6	1.4	1.5	2.8	2.9
Peru	5.0	3.8	2.0	2.1	2.3
Russia	1.8	1.8	2.8	2.8	2.0
Canada	2.2	2.2	2.2	2.1	2.0
United Kingdom	3.8	1.7	2.3	1.2	1.8
China	2.0	2.0	2.3	2.1	1.7
Egypt	3.3	3.1	2.9	1.3	1.7
Poland	2.1	2.4	1.8	0.7	1.6
Uzbekistan	0.7	0.6	0.6	1.5	1.4
Japan	3.6	2.8	1.4	1.3	1.3
Korea	1.9	1.3	0.7	0.7	1.1
Ukraine	2.5	2.9	2.1	1.2	0.8
Israel	1.7	1.4	0.6	0.6	0.3

Note: Foreign countries are listed according to the descending order of infant mortality rates in the most current period.

† The infant mortality rate is listed for only countries with 500 or more live births in any year of 2006-2012.

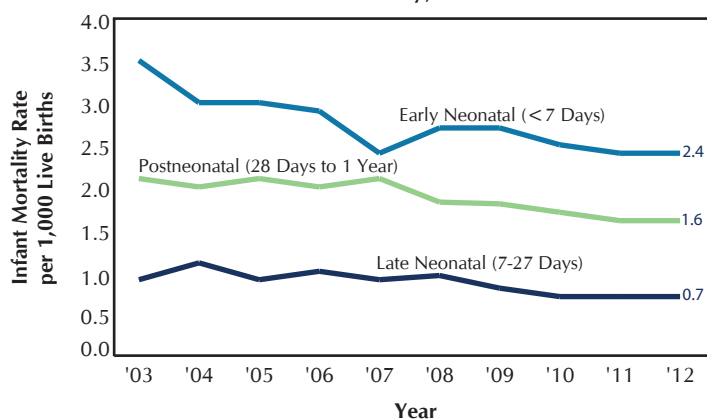
‡ As of 2006, US Virgin Islands and Guam are included in the United States. Puerto Rico is a US territory, but is not included as a birthplace in the United States due to the large number of births to Puerto Rican-born women.

- The most recent average infant mortality rates (2010-2012) were highest among mothers from Yemen Arab Republic, at 8.5 deaths per 1,000 live births, followed by mothers from Puerto Rico at 8.4, Honduras at 8.3, Nigeria 7.1 and Jamaica at 7.0.

## NEONATAL AND POSTNEONATAL MORTALITY

- In 2012, infant mortality rates by age of infant remained the same as in 2011. The highest rates occurred during the early neonatal period (age less than 7 days) at 2.4 deaths per 1,000 live births, followed by the postneonatal period (age 28 days to 1 year) at 1.6. The late neonatal mortality rate (age 7 to 27 days) has remained at 0.7 for 3 years.
- Since 2003, the early, post and late neonatal mortality rates have declined 31.4%, 23.8%, and 22.2%, respectively.

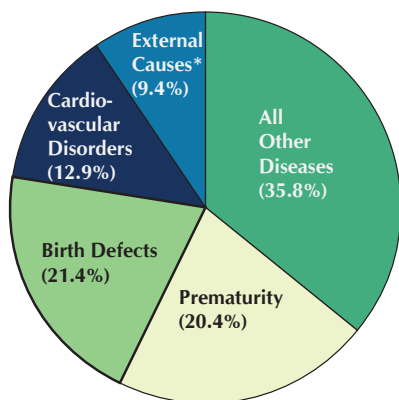
**Figure 7. Neonatal and Postneonatal Mortality Rates, New York City, 2003–2012**





# NEONATAL AND POSTNEONATAL MORTALITY

**Figure 8. Leading Causes of Infant Deaths, New York City, 2012**

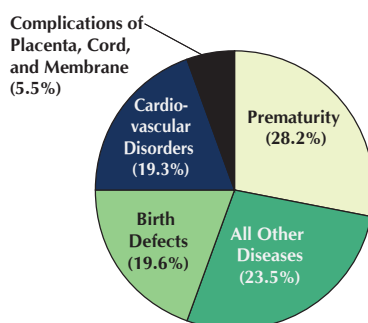


583 Infant Deaths

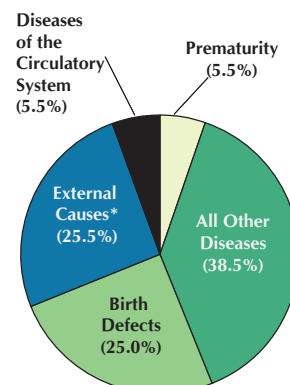
- The 3 leading causes of infant death in 2012 were birth defects (congenital malformations/deformations) (21.4%), followed by prematurity (short gestation and low birth weight) (20.4%) and cardiovascular disorders originating in the perinatal period (12.9%). External causes, which include injuries, homicides and deaths of undetermined intent also contributed a substantial number of deaths (9.4%).

- Neonatal deaths (<28 days old) were primarily caused by prematurity (short gestation and low birth weight) (28.2%) followed by birth defects (congenital malformations/deformations) (19.6%) and cardiovascular disorders originating in the perinatal period (19.3%).
- Postneonatal deaths (28 days to 1 year) were primarily due to external causes (25.5%), followed by birth defects (congenital malformations/deformations) (25.0%). Prematurity (short gestation and low birth weight) and diseases of the circulatory system (both at 5.5%), were also among the leading causes of death in the post-neonatal period.

**Figure 9. Leading Causes of Neonatal and Postneonatal Deaths, New York City, 2012**



383 Neonatal Infant Deaths (<28 days)



200 Post-neonatal Infant Deaths (>28 days to 1 year)

\*External causes of death include accidents, suicide, assault, legal intervention, events of undetermined intent, operations of war and their sequelae, and complications of medical and surgical care.

**Table 3. Infant Deaths by Cause, Sex, and Age, New York City, 2012**

Cause of Death		Male			Female	
		Total	Neonatal (< 28 Days)	Post-neonatal (≥ 28 Days)	Neonatal (< 28 Days)	Post-neonatal (≥ 28 Days)
ICD Code Group	Name	583	214	103	169	97
(B20-B24)	HIV Infection†	1	-	-	-	1
(I00-I99)	Diseases of the Circulatory System†	11	-	7	-	4
(J10-J18)	Influenza and Pneumonia†	3	-	2	-	1
(P01)	Newborn Affected by Maternal Complications of Pregnancy†	4	3	-	1	-
(P02)	Newborn Affected by Complications of Placenta, Cord, and Membranes†	22	12	1	9	-
(P07)	Short Gestation and Low Birthweight†	119	58	5	50	6
(P20-P21)	Intrauterine Hypoxia and Birth Asphyxia†	5	3	-	1	1
(P22)	Respiratory Distress of Newborn†	15	12	-	3	-
(P26)†	Pulmonary Hemorrhage Originating in the Perinatal Period	8	4	-	4	-
(P28.0-P28.1)	Atelectasis†	3	2	-	1	-
(P23-P28)	Other Respiratory Conditions Originating in the Perinatal Period‡	10	2	2	2	4
(P29)	Cardiovascular Disorders Originating in the Perinatal Period‡	75	40	1	34	-
(P35-P39)	Infections Specific to the Perinatal Period‡	13	7	-	6	-
(P36)	Bacterial sepsis of newborn	10	6	-	4	-
(P50-P52, P54)	Neonatal Hemorrhage†	9	7	-	2	-
(P77)	Necrotizing Enterocolitis of Newborn†	9	5	-	3	1
(Rest of P00-P99)	Remainder of Conditions Originating in the Perinatal Period	22	10	3	7	2
(Q00-Q99)	Congenital Malformations, Deformations†	125	38	22	37	28
(Q20-Q24)	Congenital malformations of heart	40	7	10	10	13
(R95)	Sudden Infant Death Syndrome†	4	-	1	-	3
(Rest of A00-R99)	All Other Diseases	70	9	31	7	23
(V01-Y89)	External Causes‡	55	2	28	2	23

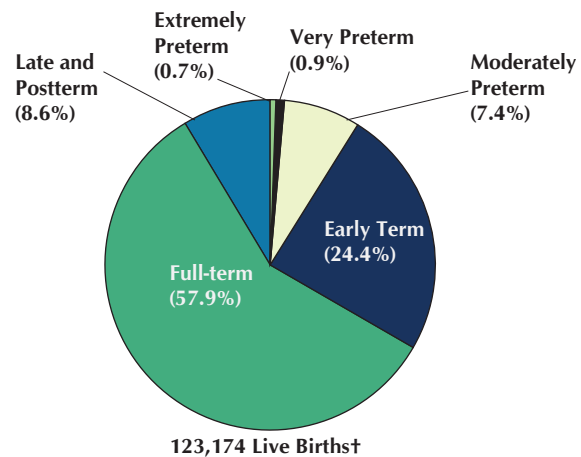
†ICD Code groups are defined and used to rank leading causes nationally by the National Center for Health Statistics and in New York City.

‡ICD Code group is not ranked nationally. However, these grouped causes are ranked in New York City.

# PRETERM BIRTHS

- Preterm birth is a risk factor for infant death that varies by gestational age. The 2012 gestational age distribution of live births is presented to assist with interpretation of the rates below.
- Term births\* ( $\geq 37$  weeks) include early term ( $37 \leq \text{weeks} < 39$ ); full-term ( $39 \leq \text{weeks} < 41$ ); late and postterm ( $\geq 41$  weeks). In 2012, term births accounted for 91.0% of all New York City births; they decreased 0.3% since 2003 (data not shown).
- Preterm births ( $< 37$  weeks) include extremely preterm ( $< 28$  weeks); very preterm ( $28 \leq \text{weeks} < 32$ ); moderately preterm ( $32 \leq \text{weeks} < 37$ ) includes early ( $32 < \text{weeks} < 33$ ) and late preterm ( $34 < \text{weeks} < 36$ ). These births accounted for 9.0% of 2012 births and decreased 5.9% since 2003 (data not shown).

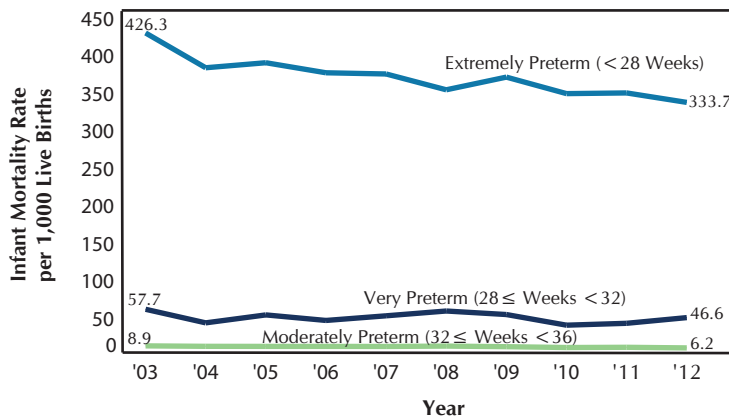
**Figure 10. Live Births by Gestational Age\*, New York City, 2012**



\*See Technical Notes for revised definition of term births.

†Live births for which gestational age was reported in 2012

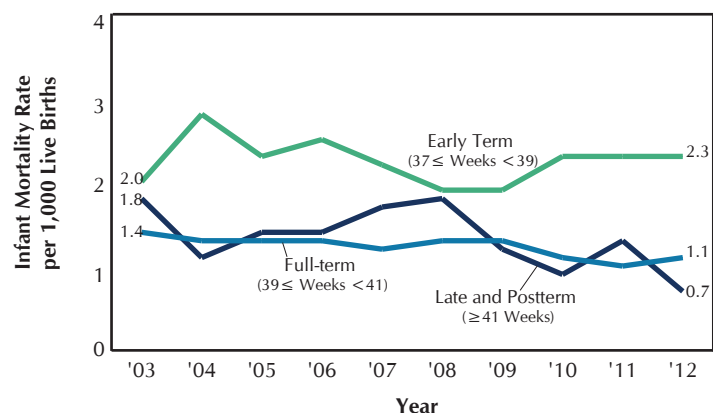
**Figure 11. Infant Mortality Rate among Preterm Live Births, New York City, 2003–2012**



- The less than 2 percent of infants born extremely and very preterm have very high risks for death with infant mortality rates of 333.7 and 46.6 infant deaths per 1,000 live births respectively in 2012. Rates of infant death for early preterm and late preterm were 12.0 and 5.2 respectively (data not shown) averaging to 6.2 deaths among moderately preterm births.
- Since 2003, infant mortality declined 21.7% among extremely preterm, 19.2% among very preterm and 30.3% among moderately preterm.

- Among pregnancies that reached term in 2012, the infant mortality rate was highest among early term births at 2.3 deaths per 1,000 live births, followed by full-term births at 1.1 and lowest among late and postterm births at 0.7.
- Since 2003, the infant mortality rate declined 15.0% among early term births, 28.6% among full-term births and 26.1% among postterm births.

**Figure 12. Infant Mortality Rate among Term Live Births\*, New York City, 2003–2012**

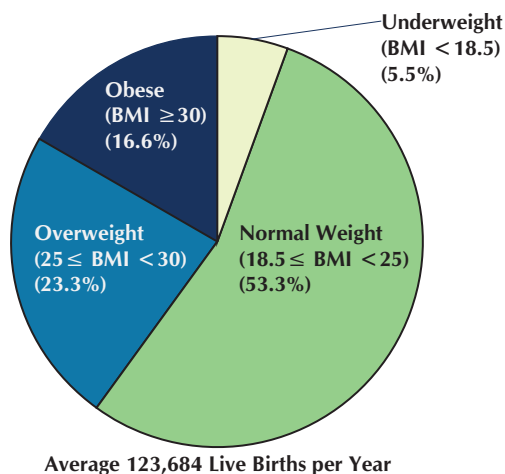


\*See Technical Notes for revised definition of term births.

# MOTHER'S BODY MASS INDEX

**Figure 13. Live Births by Mother's Pre-pregnancy Body Mass Index (BMI), New York City, 2010-2012**

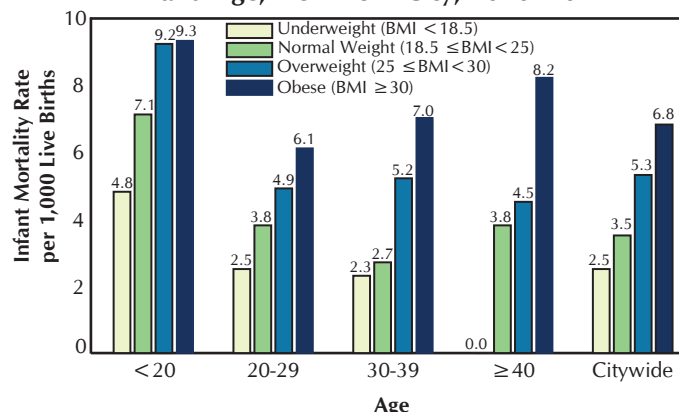
16.0%



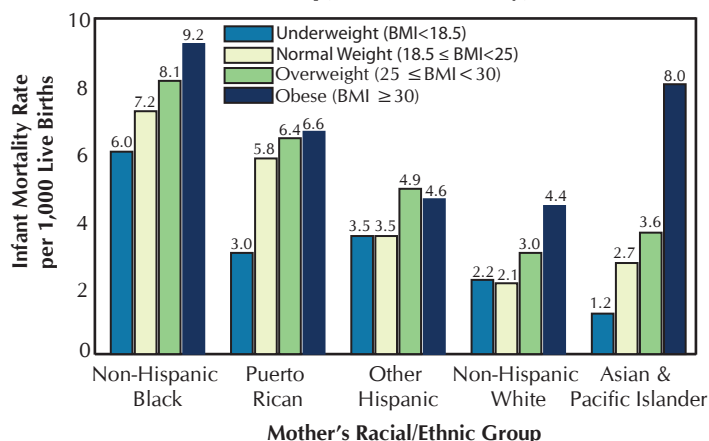
- The average infant mortality rate among pre-pregnancy obese mothers was 9.3 deaths per 1,000 live births among mothers less than 20 years old, followed by mothers 40 years and older at 8.2, 30 to 39 years old at 7.0, and 20 to 29 years old at 6.1.
- The average infant mortality rate was 1.3 times greater among obese vs. normal weight mother's less than 20 years old, 1.6 times greater among those 20 to 29 years old, 2.6 times greater among those 30 to 39 years old and 2.2 times greater among those 40 years and older.

- The prevalence of mother's pre-pregnancy Body Mass Index (BMI) is presented to assist with the interpretation of the rates below. Nearly 40% of mothers were either obese (16.6%) or overweight (23.3%) pre-pregnancy.
- Citywide, the average infant mortality was lowest among infants born to underweight mothers at 2.5 infant deaths per 1,000 live births and highest among obese mothers at 6.8 deaths (see Figure 14 "Citywide" below). Risk of death for infants born to obese mothers was nearly two times higher (6.8 vs. 3.5) than for infants born to normal weight mothers.

**Figure 14. Average\* Infant Mortality Rate by Mother's Pre-pregnancy Body Mass Index (BMI) and Age, New York City, 2010-2012**



**Figure 15. Average\* Infant Mortality Rate by Mother's Pre-pregnancy Body Mass Index (BMI) and Racial/Ethnic Group, New York City, 2010-2012**



\*Due to instability of the infant mortality rates by certain mother's characteristics, rates are presented in rolling three-year averages.

- The average infant mortality rate among pre-pregnancy obese mothers was highest among non-Hispanic blacks, at 9.2 deaths per 1,000 live births, followed by Asian & Pacific Islanders (8.0), Puerto Ricans (6.6), other Hispanic (4.6), and non-Hispanic whites (4.4).
- The relative difference in rates for obese vs. normal pre-pregnancy weight mothers was 2.1 times greater among non-Hispanic whites, 1.3 times greater among non-Hispanic blacks and other Hispanics and 1.1 times greater among Puerto Ricans. The relative difference was 3.0 among Asian and Pacific Islanders; interpret this difference with caution, as numbers are small.
- Only among other Hispanics was the average infant mortality rate higher among pre-pregnancy overweight (4.9) vs. obese (4.6) mothers.

# MOTHER'S CHARACTERISTICS

**Table 4. Live Births and Infant Mortality Rate by Characteristics of Mother, New York City, 2012**

Characteristics	Live Births		Infant Mortality Rate (IMR) per 1,000 Live Births					
			All		Neonatal		Post-neonatal	
	Number	Percent	Deaths	Rate	Deaths	Rate	Deaths	Rate
<b>Total</b>	<b>123,231</b>	<b>100.0</b>	<b>583</b>	<b>4.7</b>	<b>383</b>	<b>3.1</b>	<b>200</b>	<b>1.6</b>
<b>Race/Ethnicity</b>								
Puerto Rican	8,673	7.0	57	6.6	42	4.8	15	1.7
Other Hispanic	27,969	22.7	133	4.8	90	3.2	43	1.5
Asian and Pacific Islander	21,149	17.2	70	3.3	45	2.1	25	1.2
Non-Hispanic White	39,112	31.7	104	2.7	67	1.7	37	0.9
Non-Hispanic Black	24,758	20.1	211	8.5	135	5.5	76	3.1
Other and unknown	1,570	1.3	8	-	4	-	4	-
<b>Age of Mother</b>								
Age < 18	1,805	1.5	14	7.8	9	5.0	5	2.8
Age 18-19	3,990	3.2	24	6.0	17	4.3	7	1.8
Age 20-29	53,397	43.3	236	4.4	155	2.9	81	1.5
Age 30-39	57,374	46.6	235	4.1	164	2.9	71	1.2
Age ≥ 40	6,664	5.4	34	5.1	23	3.5	11	1.7
Age unknown	1	0.0	-	-	-	-	-	-
Unmatched*	-	-	40	-	15	-	25	-
<b>Mother's Education</b>								
11th grade or less/12th grade, no diploma	26,578	21.6	152	5.7	103	3.9	49	1.8
High school graduate or GED	26,699	21.7	145	5.4	96	3.6	49	1.8
Some college/associate degree	26,915	21.8	113	4.2	69	2.6	44	1.6
Bachelor's degree	23,723	19.3	78	3.3	58	2.4	20	0.8
Master's degree or higher	18,968	15.4	40	2.1	29	1.5	11	0.6
Mother's education unknown	348	0.3	15	-	13	-	2	-
Unmatched*	-	-	40	-	15	-	25	-
<b>Marital Status of Mother†</b>								
Not married	50,995	41.4	312	6.1	205	4.0	107	2.1
Married	72,235	58.6	231	3.2	163	2.3	68	0.9
Unknown	1	0.0	-	-	-	-	-	-
Unmatched*	-	-	40	-	15	-	25	-
<b>Mother's Birthplace</b>								
US born, including territories	59,868	48.6	284	4.7	193	3.2	91	1.5
Foreign born	63,337	51.4	259	4.1	175	2.8	84	1.3
Birthplace unknown	26	0.0	-	-	-	-	-	-
Unmatched*	-	-	40	-	15	-	25	-
<b>Primary Payer for This Birth</b>								
Medicaid/Family Plus/Child PlusB/other govt	72,883	59.1	360	4.9	226	3.1	134	1.8
Other	49,737	40.4	179	3.6	139	2.8	40	0.8
Coverage unknown	611	0.5	4	-	3	-	1	-
Unmatched*	-	-	40	-	15	-	25	-
<b>Plurality</b>								
Singletons	118,549	96.2	461	3.9	303	2.6	158	1.3
Multiples	4,681	3.8	82	17.5	65	13.9	17	3.6
Plurality unknown	1	0.0	-	-	-	-	-	-
Unmatched*	-	-	40	-	15	-	25	-
<b>Parity</b>								
First birth	54,969	44.6	233	4.2	171	3.1	62	1.1
Second birth or higher	68,211	55.4	308	4.5	196	2.9	112	1.6
Unknown	51	0.0	2	-	1	-	1	-
Unmatched*	-	-	40	-	15	-	25	-
<b>First Prenatal Care Visit</b>								
No prenatal care	870	0.7	30	34.5	27	31.0	3	3.4
First trimester (1-3 months)	87,325	70.9	338	3.9	235	2.7	103	1.2
Second trimester (4-6 months)	26,115	21.2	117	4.5	71	2.7	46	1.8
Late (7-9 months)	7,442	6.0	30	4.0	12	1.6	18	2.4
Prenatal care unknown	1,479	1.2	28	-	23	-	5	-
Unmatched*	-	-	40	-	15	-	25	-
<b>Pre-pregnancy Body Mass Index (BMI)</b>								
Underweight (BMI < 18.5)	7,140	5.8	20	2.8	14	2.0	6	0.8
Normal weight (18.5 ≤ BMI < 25)	67,125	54.5	220	3.3	163	2.4	57	0.8
Overweight (25 ≤ BMI < 30)	28,720	23.3	147	5.1	93	3.2	54	1.9
Obese (BMI ≥ 30)	19,683	16.0	147	7.5	90	4.6	57	2.9
Pre-pregnancy BMI unknown	563	0.5	9	-	8	-	1	-
Unmatched*	-	-	40	-	15	-	25	-

\* Infants who died in New York City who were born elsewhere were classified as unmatched.

† Reporting of mother's marital status on the birth certificate is prohibited by NYC Health Code 201.05(b). Marital status was computed using father's name. When missing or accompanied by an Acknowledgment of Paternity, marital status is categorized as unmarried; all others with father's name were categorized as married.