



# Maryland Vital Statistics

## Infant Mortality in Maryland, 2012

August 2013

### FAST FACTS

- Maryland's 2012 infant mortality rate of 6.3 per 1,000 live births was the lowest rate ever recorded in the State, and a 6% decline from the 2011 rate of 6.7.
- The black infant mortality rate fell from 12.0 in 2011 to 10.3 in 2012, a 14% decline and a historic low for the State.
- The neonatal mortality rate fell by 8% between 2011 and 2012, while the postneonatal mortality rate remained stable.
- The leading causes of infant death were low birth weight, congenital abnormalities, SIDS, maternal complications of pregnancy, and complications of the placenta, cord and membranes.
- The average infant mortality rate has fallen by 12% over the past decade, with decreases among both white infants and black infants.
- Despite the statewide decline in infant mortality over the past decade, generally small increases have occurred in several counties, mainly in the Eastern Shore area of the State.

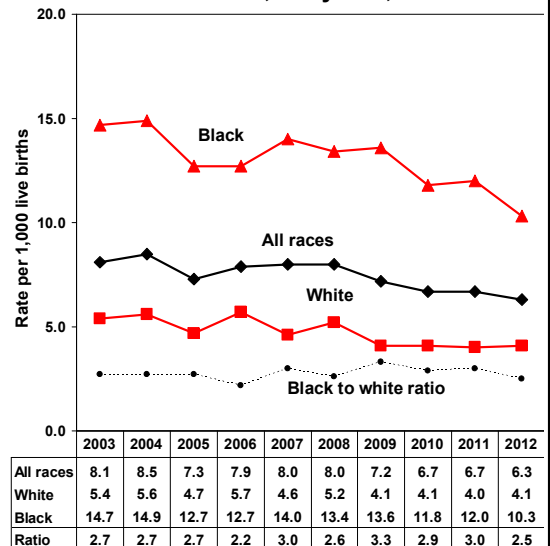
### Trends

The infant mortality rate in Maryland was 6.3 per 1,000 live births in 2012, the lowest rate ever recorded in the State and a 6% decline from the 2011 rate of 6.7. A total of 458 infants died in 2012 compared with 493 in 2011, including 174 white infants and 251 black infants.

While the white infant mortality rate has remained relatively stable since 2009, the black infant mortality rate has fallen substantially in recent years, reaching an all-time low of 10.3 per 1,000 live births in 2012. This represents a 14% decline from the 2011 rate of 12.0, and a 24% decline since 2009, after which time the black rate began to fall sharply (Figure A and Table 1). Despite these improvements, a black infant born in 2012 was still 2.5 times more likely to die than a white infant.

Despite the decline in the overall number of deaths, the number of deaths among Hispanic infants rose from 31 in 2011 to 56 in 2012, thereby increasing the infant mortality rate for this group from 3.0 to 5.5 per 1,000 live births. There were no changes in causes of death, maternal sociodemographic characteristics, birth weight, or gestational age between 2011 and 2012 that appear to explain this increase, which may represent a single year increase rather than a changing trend.

Figure A. Infant Mortality Rates by Race and Black to White Ratio, Maryland, 2003-2012.



Average infant mortality rates have fallen substantially in Maryland over the past decade. The overall rate fell from an average of 8.0 per 1,000 live births in the years 2003-2007 to an average of 7.0 per 1,000 live births in the years 2008-2012, a 12% decline. The average rate for whites fell by 17%, while the average rate for blacks fell by 12%. All of these changes were statistically significant (Table 1).

### Age at Time of Death

The neonatal mortality rate (deaths to infants under 28 days of age per 1,000 live births) fell from 5.1 in 2011 to 4.7 in 2012, an 8% decline (Table 1). Neonatal mortality rates fell by 3% among white infants and 10% among black infants. The overall postneonatal mortality rate (deaths from 28 days through 11 months of age per 1,000 live births) remained stable at 1.6, however the white postneonatal mortality rate increased by 22% while the black rate fell by 24% (Table 1). None of these changes was statistically significant.

Table 1. Infant, Neonatal and Postneonatal Mortality Rates\* for Selected Years, Maryland.

	Rate* by year		Average rate*	
	2011	2012	2003-07	2008-12
<b>Infant mortality</b>				
All races**	6.7	6.3	8.0	7.0 ***
White	4.0	4.1	5.2	4.3 ***
Black	12.0	10.3	14.0	12.3 ***
<b>Neonatal mortality</b>				
All races**	5.1	4.7	5.7	5.1 ***
White	3.1	3.0	3.7	3.1 ***
Black	8.7	7.8	10.1	9.0 ***
<b>Postneonatal mortality</b>				
All races**	1.6	1.6	2.2	1.9 ***
White	0.9	1.1	1.5	1.2 ***
Black	3.3	2.5	4.0	3.2 ***

\*Per 1,000 live births

\*\*Includes races other than White and Black

\*\*\*Rates for 2003-2007 and 2008-2012 differ significantly (p<.05)

The overall neonatal mortality rate declined by an average of 11% between the periods 2003-2007 and 2008-2012, with average rates of decline of 17% among white infants and 11% among black infants. Postneonatal mortality

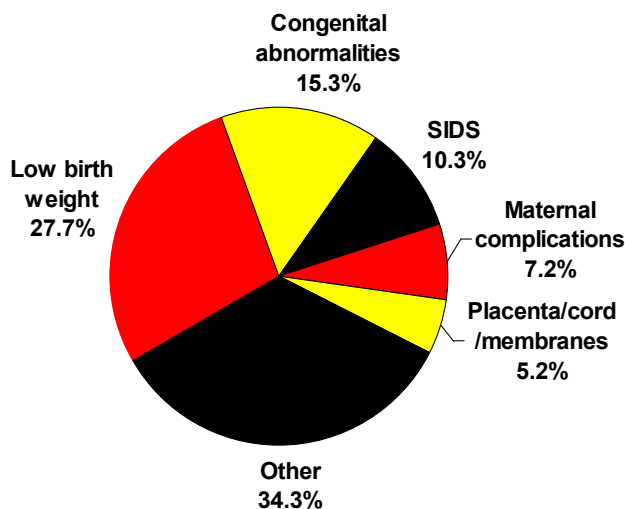
rates fell by an average of 15%, with a 22% decline among white infants and a 19% decline among black infants. These declines were all statistically significant.

### Causes of death

The leading causes of infant death in 2012 were disorders relating to short gestation and unspecified low birth weight (“LBW”); congenital malformations, deformations, and chromosomal abnormalities (“congenital abnormalities”); Sudden Infant Death Syndrome (“SIDS”); maternal complications of pregnancy; and complications of the placenta, cord and membranes. Maternal complications of

pregnancy include conditions such as premature rupture of membranes and cervical incompetence. (Figure B). The fall in the number of infant deaths between 2011 and 2012 was mainly the result of a 32% decline in the number of newborns affected by maternal complications of pregnancy, and a 27% decline in the number of newborns affected by complications of the placenta, cord, and membranes.

**Figure B. Leading Causes of Infant Death, Maryland, 2012.**



Congenital abnormalities were the leading cause of death among white infants. Low birth weight was the leading cause of death among black infants.

The leading causes of neonatal mortality were LBW, congenital abnormalities, and maternal complications of pregnancy. Although these were the leading causes of neonatal mortality for both black and white infants, maternal complications were responsible for a larger proportion of deaths among black infants than among white infants. The leading causes of postneonatal mortality were SIDS and congenital abnormalities.

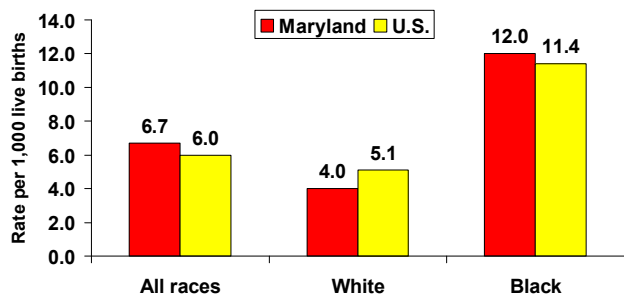
Cause-specific mortality rates continue to be higher for black infants than white infants for all leading causes of death. Compared with white infants, black infants were six times more likely to die in 2012 as a result of complications of the placenta, cord, and membrane or respiratory distress syndrome; four times more likely to die as a result of maternal complications or LBW, and twice as likely to die from SIDS.

### Comparison of rates in Maryland and the U.S.

Maryland’s infant mortality rate for all races combined has historically been higher than the national rate, mainly because the Maryland population is comprised of a higher proportion of black residents, a group with generally higher infant mortality rates than whites. White infant mortality rates have generally been lower in Maryland than in the nation. Black rates have been higher in Maryland than nationally in recent years, although the gap has been closing.

Figure C shows a comparison of infant mortality rates in Maryland and the U.S. in 2011, the most recent year for which preliminary national data are available.

**Figure C. Infant Mortality Rates by Race, Maryland and the U.S., 2011.**



## Regional and county differences

The number of infant deaths and infant mortality rates by race, region and political subdivision for 2011 and 2012 are shown in Table 2. Although infant mortality rates declined in many subareas of the state between 2011 and 2012, the only statistically significant decline occurred among white infants in the Eastern Shore area, where the rate fell by 57% between the two years. Rates are shown in Table 2 for only those areas where five or more infant deaths occurred since rates based on small numbers are statistically unreliable.

The average infant mortality rate declined in all regions of the State between the years 2003-2007 and 2008-2012, with statistically significant declines occurring in the Baltimore Metro, National Capital, and Southern regions (Table 3). Average rates have increased in several Maryland counties over the past decade, mainly in the Eastern Shore Area, but these increases have generally been small. The exception is Caroline County, where the average infant mortality rate increased from 4.9 in 2003-2007 to 9.3 in 2008-2012.

**TABLE 2. INFANT DEATHS AND INFANT MORTALITY RATES BY RACE, REGION AND POLITICAL SUBDIVISION, MARYLAND, 2011 AND 2012.**

Region and political subdivision	ALL RACES				WHITE				BLACK			
	Number of infant deaths		Infant mortality rate*		Number of infant deaths		Infant mortality rate*		Number of infant deaths		Infant mortality rate*	
	2011	2012	2011	2012	2011	2012	2011	2012	2011	2012	2011	2012
<b>Maryland</b>	<b>493</b>	<b>458</b>	<b>6.7</b>	<b>6.3</b>	<b>170</b>	<b>174</b>	<b>4.0</b>	<b>4.1</b>	<b>293</b>	<b>251</b>	<b>12.0</b>	<b>10.3</b>
<b>Northwest Area</b>	<b>20</b>	<b>21</b>	<b>3.7</b>	<b>3.8</b>	<b>13</b>	<b>16</b>	<b>2.8</b>	<b>3.4</b>	<b>7</b>	<b>5</b>	<b>14.6</b>	<b>9.1</b>
Garrett	1	0	**	**	1	0	**	**	0	0	**	**
Allegany	5	2	7.7	**	3	2	**	**	2	0	**	**
Washington	4	7	**	4.0	4	4	**	**	0	3	**	**
Frederick	10	12	3.6	4.4	5	10	2.2	4.4	5	2	16.3	**
<b>Baltimore Metro Area</b>	<b>220</b>	<b>220</b>	<b>6.6</b>	<b>6.6</b>	<b>64</b>	<b>81</b>	<b>3.3</b>	<b>4.2</b>	<b>148</b>	<b>124</b>	<b>13.1</b>	<b>11.0</b>
Baltimore City	93	88	10.5	9.7	9	10	3.1	3.4	83	73	14.5	12.6
Baltimore County	62	51	6.3	5.3	21	19	3.6	3.3	40	29	12.7	9.5
Anne Arundel	35	44	5.1	6.4	18	29	3.5	5.5	16	11	13.0	9.0
Carroll	4	6	**	3.7	4	6	**	4.0	0	0	**	**
Howard	16	17	4.7	4.9	7	10	3.5	5.1	4	4	**	**
Harford	10	14	3.7	5.3	5	7	2.3	3.3	5	7	10.9	17.1
<b>National Capital Area</b>	<b>184</b>	<b>169</b>	<b>7.3</b>	<b>6.8</b>	<b>55</b>	<b>59</b>	<b>4.5</b>	<b>4.9</b>	<b>108</b>	<b>92</b>	<b>10.4</b>	<b>9.0</b>
Montgomery	69	66	5.3	5.1	24	34	2.9	4.2	28	23	10.1	8.2
Prince George's	115	103	9.5	8.6	31	25	7.9	6.4	80	69	10.5	9.3
<b>Southern Area</b>	<b>25</b>	<b>15</b>	<b>5.9</b>	<b>3.6</b>	<b>10</b>	<b>7</b>	<b>3.4</b>	<b>2.5</b>	<b>14</b>	<b>8</b>	<b>12.0</b>	<b>6.6</b>
Calvert	7	4	7.3	**	6	4	7.4	**	1	0	**	**
Charles	15	7	8.2	3.6	3	1	**	**	11	6	13.5	6.7
Saint Mary's	3	4	**	**	1	2	**	**	2	2	**	**
<b>Eastern Shore Area</b>	<b>44</b>	<b>33</b>	<b>8.9</b>	<b>6.9</b>	<b>28</b>	<b>11</b>	<b>7.6</b>	<b>3.0</b> ***	<b>16</b>	<b>22</b>	<b>14.8</b>	<b>21.0</b>
Cecil	10	4	8.8	**	10	3	9.7	**	0	1	**	**
Kent	2	1	**	**	0	0	**	**	2	1	**	**
Queen Anne's	2	2	**	**	2	0	**	**	0	2	**	**
Caroline	3	5	**	13.6	1	4	**	**	2	1	**	**
Talbot	7	1	22.2	**	5	0	22.3	**	2	1	**	**
Dorchester	1	3	**	**	1	0	**	**	0	3	**	**
Wicomico	10	13	7.7	10.8	5	2	6.3	**	5	11	10.6	24.8
Somerset	4	2	**	**	2	1	**	**	2	1	**	**
Worcester	5	2	10.6	**	2	1	**	**	3	1	**	**

\*Per 1,000 live births

\*\*Rates based on <5 deaths are not presented since rates based on small numbers are statistically unreliable.

\*\*\*p<.05.

TABLE 3. NUMBER OF INFANT DEATHS, AVERAGE INFANT MORTALITY RATE BY FIVE YEAR INTERVAL AND PERCENT CHANGE IN RATES BETWEEN INTERVALS BY REGION AND POLITICAL SUBDIVISION, MARYLAND, 2003-2007 AND 2008-2012.

Region and political subdivision	Number of infant deaths		Average infant mortality rate*		Percent change**
	2003-2007	2008-2012	2003-2007	2008-2012	
<b>Maryland</b>	<b>3024</b>	<b>2605</b>	<b>8.0</b>	<b>7.0</b>	<b>-12.0 ***</b>
<b>Northwest Area</b>	<b>156</b>	<b>138</b>	<b>5.3</b>	<b>4.9</b>	<b>-7.6</b>
Garrett	6	7	3.8	4.9	29.1
Allegany	27	19	8.0	5.4	-33.1
Washington	52	45	5.8	5.1	-11.3
Frederick	71	67	4.7	4.7	1.3
<b>Baltimore Metro Area</b>	<b>1420</b>	<b>1248</b>	<b>8.3</b>	<b>7.4</b>	<b>-10.9 ***</b>
Baltimore City	574	527	12.2	11.4	-6.8
Baltimore County	373	325	7.7	6.6	-14.4 ***
Anne Arundel	246	209	7.1	6.0	-15.9
Carroll	37	31	3.8	3.8	-0.5
Howard	102	92	5.9	5.4	-8.4
Harford	88	64	5.9	4.6	-22.0
<b>National Capital Area</b>	<b>1095</b>	<b>913</b>	<b>8.4</b>	<b>7.1</b>	<b>-14.4 ***</b>
Montgomery	429	342	6.3	5.1	-18.3 ***
Prince George's	666	571	10.6	9.3	-11.8 ***
<b>Southern Area</b>	<b>165</b>	<b>125</b>	<b>7.6</b>	<b>5.9</b>	<b>-22.3 ***</b>
Calvert	27	25	5.4	5.4	0.4
Charles	87	59	9.2	6.4	-30.6 ***
St. Mary's	51	41	7.1	5.7	-20.3
<b>Eastern Shore Area</b>	<b>188</b>	<b>181</b>	<b>7.3</b>	<b>7.2</b>	<b>-2.1</b>
Cecil	33	29	5.2	4.9	-6.6
Kent	5	6	5.5	6.4	17.8
Queen Anne's	14	14	5.4	5.7	5.8
Caroline	11	20	4.9	9.3	90.0
Talbot	10	11	5.5	6.4	15.5
Dorchester	23	25	12.4	12.5	0.9
Wicomico	56	50	9.0	7.8	-13.5
Somerset	19	11	14.4	8.4	-42.0
Worcester	17	15	7.1	6.6	-8.1

\*Per 1000 live births.

\*\*Percent change is based on the exact rates and not the rounded rates presented here.

\*\*\*Rates for 2003-2007 and 2008-2012 differ significantly (p<.05).



For more information or to obtain Maryland vital statistics data please contact the:

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