

2015 Ohio Infant Mortality Data: General Findings

INFANT MORTALITY IN OHIO

Infant mortality is defined as the death of a live-born baby before his or her first birthday. An infant mortality rate is the number of babies who died during the first year of life per 1,000 live births. Ohio's target is to achieve fewer than 6.0 infant deaths per 1,000 live births in every racial and ethnic group, which aligns with the national Healthy People 2020 objective established in 2010.¹ Ohio's All Races Infant Mortality Rate in 2010 was 7.7 infant deaths per 1,000 live births.

In 2015, 1,005 Ohio infants died before their first birthday, compared to 955 in 2014. Ohio's 2015 All Races Infant Mortality Rate was 7.2 deaths per 1,000 live births, compared to 6.8 deaths per 1,000 live births in 2014.

Ohio's Black Infant Mortality Rate in 2015 remains well above the Healthy People 2020 objective, and black infants in Ohio died at nearly three times the rate as white infants. Ohio's White Infant Mortality Rate in 2015 was better than the national Healthy People 2020 objective, and the Hispanic Infant Mortality Rate met the Healthy People 2020 objective.

Ohio's All Races Infant Mortality Rate, White Infant Mortality Rate and Black Infant Mortality Rate all have been trending downward significantly since at least 1990 (Figure 1 on page 2).

**Table 1: Ohio Infant Mortality Rate (2013-2015)
(Number of Deaths per 1,000 Live Births)**

| Group | 2013 | 2014 | 2015 |
|------------------------|------|------|------|
| All Races | 7.4 | 6.8 | 7.2 |
| Race | | | |
| White | 6.0 | 5.3 | 5.5 |
| Black | 13.8 | 14.3 | 15.1 |
| American Indian | * | * | * |
| Asian/Pacific Islander | * | * | * |
| Ethnicity | | | |
| Hispanic | 8.8 | 6.2 | 6.0 |
| Non-Hispanic** | 7.3 | 6.9 | 7.3 |

Source: Ohio Department Of Health, Bureau of Vital Statistics.

*Rates based on fewer than 20 infant deaths are unstable and not reported.

**Non-Hispanic births and deaths include those of unknown ethnicity.

¹ Healthy People 2020 is a national collaborative established in 2010 that provides science-based, national objectives for improving the health of Americans. It is managed by the federal Office of Disease Prevention and Health Promotion within the U.S. Department of Health and Human Services.

OHIO INFANT MORTALITY TREND DATA

Table 2: Ohio Infant Mortality, by Race and Ethnicity (2015)

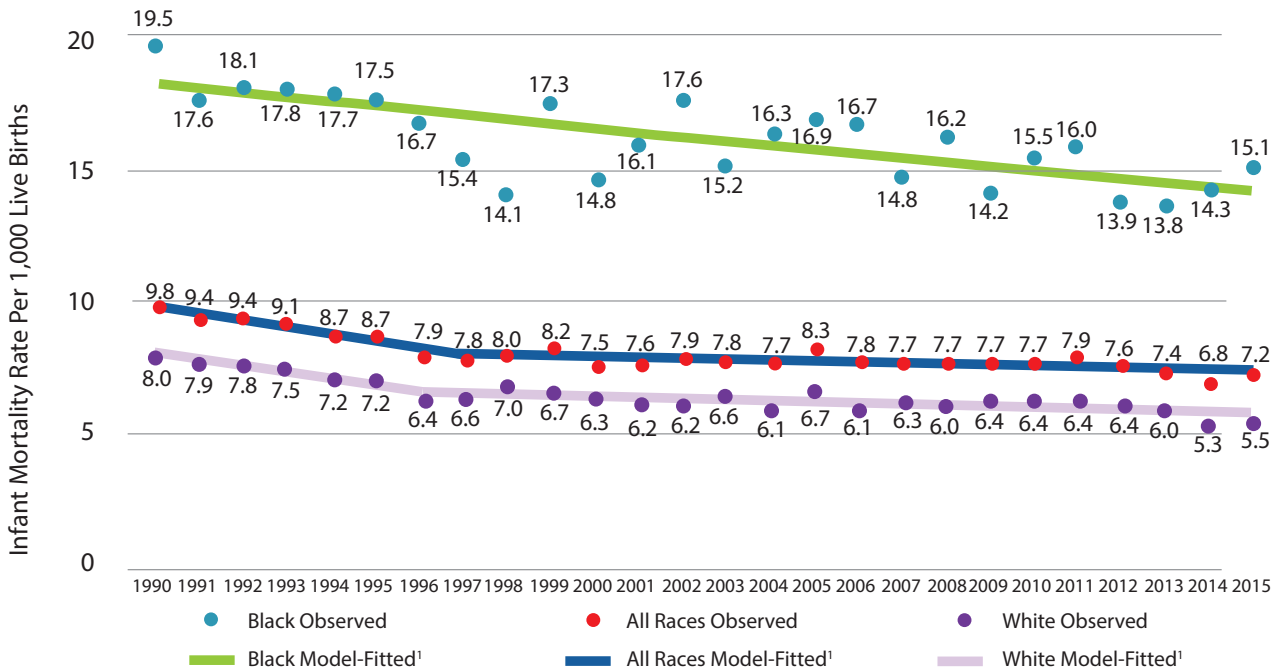
| Group | Infant Deaths (Number) | Infant Mortality Rate (Per 1,000 Live Births) |
|--------------------------|------------------------|---|
| Race | | |
| White | 580 | 5.5 |
| Black | 367 | 15.1 |
| American Indian | 2 | * |
| Asian/Pacific Islander | 16 | * |
| Unknown | 40 | 8.9 |
| Ethnicity | | |
| Hispanic | 42 | 6.0 |
| Non-Hispanic** | 963 | 7.3 |
| TOTAL (All Races) | 1,005*** | 7.2 |

* Rates based on fewer than 20 infant deaths are unstable and not reported.

** Non-Hispanic births and deaths include those of unknown ethnicity.

*** Ethnicity is separate from race, and a single infant death may be included in both a race category and an ethnic category. In order to avoid double-counting, only infant deaths by race are included in total deaths.

Figure 1: Trends in Ohio Infant Mortality Rates, by Race (1990-2015)



Source: Ohio Department Of Health, Bureau Of Vital Statistics.

¹“Model-Fitted” Definition – Joinpoint software models were used to test the statistical significance of changes in trends using a Monte Carlo permutation method. The same methods were used to assess All Races, Black and White Infant Mortality trends. In all cases, the best fitting line for the observed data is presented.

FROM 2011 – 2015 OHIO'S INFANT MORTALITY RATES IMPROVED FASTER THAN NATIONAL RATES THROUGH 2014

From 2011 through 2015, Ohio's infant mortality rates for all races, white infants and black infants improved faster than the national rates through 2014 (national 2015 infant mortality rates have not yet been reported).

**Table 3: Infant Mortality by Race
Percent Change (Improvement) in Infant Mortality Rate¹
From 2011 to 2015**

| | Ohio | | | National | | |
|-----------|------|------|----------|----------|------|----------|
| | 2011 | 2015 | % Change | 2011 | 2014 | % Change |
| All Races | 7.9 | 7.2 | -8.9% | 6.1 | 5.8 | -4.9% |
| White | 6.4 | 5.5 | -14.1% | 5.1 | 4.9 | -3.9% |
| Black | 16.0 | 15.1 | -5.6% | 11.5 | 11.1 | -3.5% |

**Table 4: Neonatal Infant Mortality² by Race
Percent Change (Improvement) in Neonatal Infant Mortality Rate
From 2011 to 2015**

| | Ohio | | | National | | |
|-----------|------|------|----------|----------|------|----------|
| | 2011 | 2015 | % Change | 2011 | 2014 | % Change |
| All Races | 5.3 | 4.8 | -9.4% | 4.1 | 3.9 | -4.9% |
| White | 4.2 | 3.6 | -14.3% | 3.5 | 3.4 | -2.9% |
| Black | 11.0 | 10.4 | -5.5% | 7.5 | 7.3 | -2.7% |

**Table 5: Postneonatal Infant Mortality³ by Race
Percent Change (Improvement) in Postneonatal Infant Mortality Rate
From 2011 to 2015**

| | Ohio | | | National | | |
|-----------|------|------|----------|----------|------|----------|
| | 2011 | 2015 | % Change | 2011 | 2014 | % Change |
| All Races | 2.6 | 2.4 | -7.7% | 2.0 | 1.9 | -5.0% |
| White | 2.2 | 1.9 | -13.6% | 1.7 | 1.6 | -5.9% |
| Black | 5.0 | 4.7 | -6.0% | 4.0 | 3.7 | -7.5% |

Source: Ohio Department Of Health, Bureau of Vital Statistics; Centers for Disease Control and Prevention, Center for Health Statistics.

¹ Infant mortality rate is expressed as the number of infant deaths during the first year of life per 1,000 live births.

² Neonatal Death – Death of a live-born infant during the first 27 days of life.

³ Postneonatal Death – Death of infant aged 28 days through 364 days of life.

2015 COUNTY-LEVEL DATA

Table 6: Ohio Neonatal, Postneonatal and Infant Mortality, by County (2015)

| County | Number Neonatal Deaths** | Neonatal IM Rate | Number Postneonatal Deaths*** | Postneonatal IM Rate | Total Number Infant Deaths | Overall IM Rate | Number Births**** |
|------------|--------------------------|------------------|-------------------------------|----------------------|----------------------------|-----------------|-------------------|
| Ohio | 667 | 4.8 | 338 | 2.4 | 1005 | 7.2 | 139,312 |
| Adams | 1 | * | 1 | * | 2 | * | 322 |
| Allen | 4 | * | 4 | * | 8 | * | 1,272 |
| Ashland | 4 | * | 2 | * | 6 | * | 603 |
| Ashtabula | 3 | * | 3 | * | 6 | * | 1,146 |
| Athens | 1 | * | 3 | * | 4 | * | 491 |
| Auglaize | 1 | * | 1 | * | 2 | * | 563 |
| Belmont | 5 | * | 4 | * | 9 | * | 692 |
| Brown | 1 | * | 1 | * | 2 | * | 501 |
| Butler | 24 | 5.2 | 9 | * | 33 | 7.2 | 4,604 |
| Carroll | 1 | * | 0 | * | 1 | * | 292 |
| Champaign | 5 | * | 3 | * | 8 | * | 417 |
| Clark | 5 | * | 1 | * | 6 | * | 1,630 |
| Clermont | 11 | * | 5 | * | 16 | * | 2,321 |
| Clinton | 2 | * | 2 | * | 4 | * | 517 |
| Columbiana | 4 | * | 0 | * | 4 | * | 1,106 |
| Coshocton | 3 | * | 1 | * | 4 | * | 472 |
| Crawford | 1 | * | 1 | * | 2 | * | 494 |
| Cuyahoga | 109 | 7.3 | 47 | 3.2 | 156 | 10.5 | 14,843 |
| Darke | 5 | * | 1 | * | 6 | * | 578 |
| Defiance | 1 | * | 1 | * | 2 | * | 413 |
| Delaware | 7 | * | 0 | * | 7 | * | 2,231 |
| Erie | 0 | * | 3 | * | 3 | * | 785 |
| Fairfield | 3 | * | 4 | * | 7 | * | 1,749 |
| Fayette | 1 | * | 0 | * | 1 | * | 365 |
| Franklin | 101 | 5.3 | 44 | 2.3 | 145 | 7.6 | 19,064 |
| Fulton | 0 | * | 2 | * | 2 | * | 493 |

Source: Ohio Department Of Health, Bureau Of Vital Statistics.

* Rates based on fewer than 20 infant deaths are unstable and not reported.

** Neonatal Death – Death of a live-born infant during the first 27 days of life.

*** Postneonatal Death – Death of infant aged 28 days through 364 days of life.

**** Number of births and infant mortality rates for Hamilton, Mahoning and Stark counties have been restated since initial report was released to correct a data error.

2015 COUNTY-LEVEL DATA

Ohio Neonatal, Postneonatal and Infant Mortality, by County (2015) continued

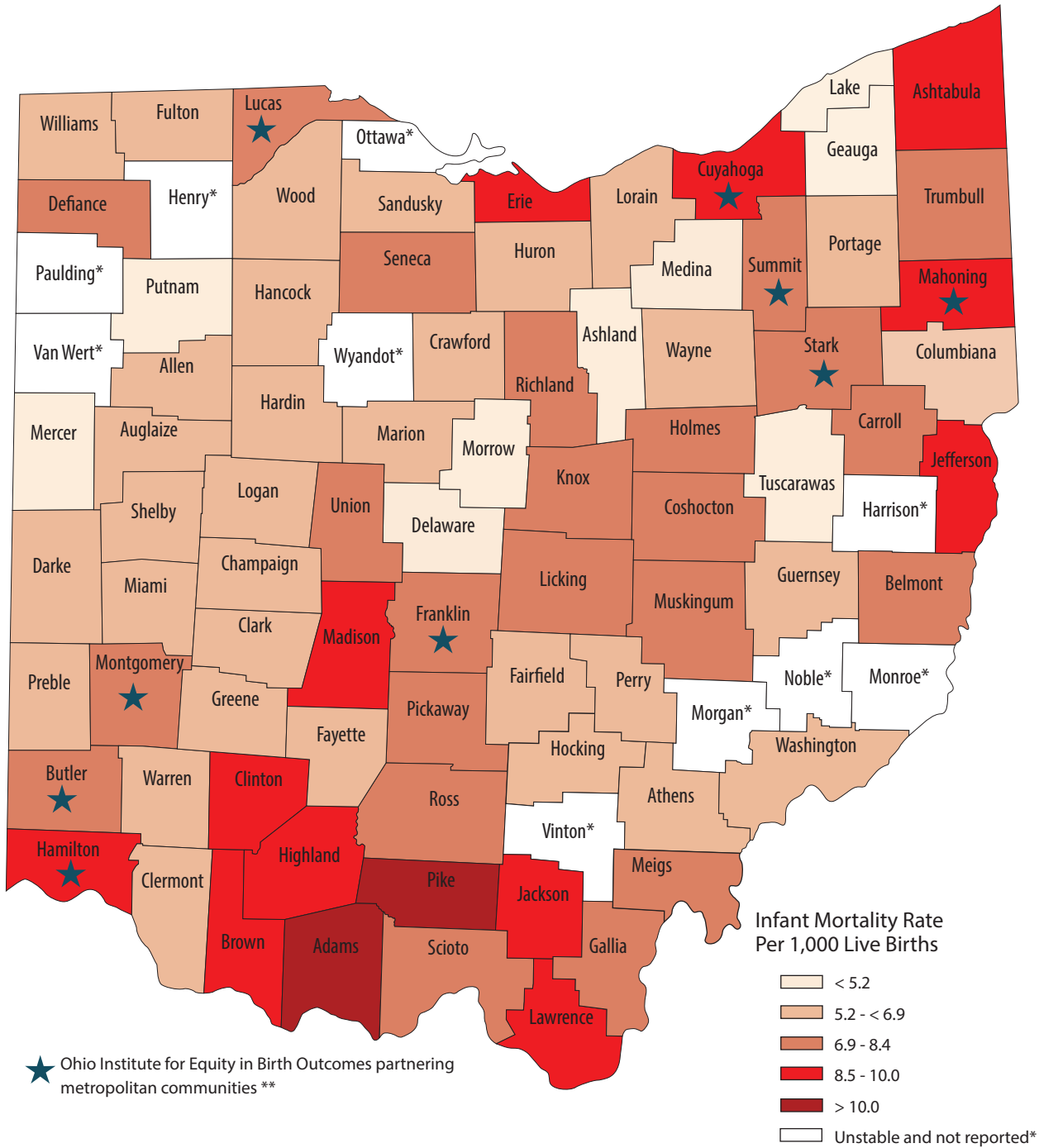
| County | Number Neonatal Deaths | Neonatal IM Rate | Number Postneonatal Deaths | Postneonatal IM Rate | Total Number Infant Deaths | Overall IM Rate | Number Births |
|------------|------------------------|------------------|----------------------------|----------------------|----------------------------|-----------------|---------------|
| Gallia | 1 | * | 1 | * | 2 | * | 360 |
| Geauga | 2 | * | 2 | * | 4 | * | 891 |
| Greene | 9 | * | 4 | * | 13 | * | 1,891 |
| Guernsey | 4 | * | 1 | * | 5 | * | 470 |
| Hamilton | 70 | 6.4 | 30 | 2.8 | 100 | 9.2 | 10,890 |
| Hancock | 6 | * | 2 | * | 8 | * | 917 |
| Hardin | 0 | * | 0 | * | 0 | * | 347 |
| Harrison | 0 | * | 1 | * | 1 | * | 159 |
| Henry | 0 | * | 0 | * | 0 | * | 305 |
| Highland | 0 | * | 2 | * | 2 | * | 563 |
| Hocking | 4 | * | 0 | * | 4 | * | 325 |
| Holmes | 4 | * | 1 | * | 5 | * | 741 |
| Huron | 2 | * | 1 | * | 3 | * | 757 |
| Jackson | 4 | * | 0 | * | 4 | * | 445 |
| Jefferson | 3 | * | 2 | * | 5 | * | 670 |
| Knox | 2 | * | 1 | * | 3 | * | 750 |
| Lake | 3 | * | 11 | * | 14 | * | 2,342 |
| Lawrence | 2 | * | 3 | * | 5 | * | 683 |
| Licking | 8 | * | 4 | * | 12 | * | 1,885 |
| Logan | 4 | * | 2 | * | 6 | * | 581 |
| Lorain | 14 | * | 6 | * | 20 | 5.9 | 3,402 |
| Lucas | 23 | 4.1 | 12 | * | 35 | 6.3 | 5,566 |
| Madison | 0 | * | 0 | * | 0 | * | 407 |
| Mahoning | 16 | * | 10 | * | 26 | 11.0 | 2,368 |
| Marion | 2 | * | 2 | * | 4 | * | 735 |
| Medina | 2 | * | 4 | * | 6 | * | 1,724 |
| Meigs | 2 | * | 4 | * | 6 | * | 239 |
| Mercer | 5 | * | 1 | * | 6 | * | 599 |
| Miami | 4 | * | 1 | * | 5 | * | 1,186 |
| Monroe | 1 | * | 1 | * | 2 | * | 148 |
| Montgomery | 34 | 5.1 | 16 | * | 50 | 7.5 | 6,653 |

2015 COUNTY-LEVEL DATA

Ohio Neonatal, Postneonatal and Infant Mortality, by County (2015) continued

| County | Number Neonatal Deaths | Neonatal IM Rate | Number Postneonatal Deaths | Postneonatal IM Rate | Total Number Infant Deaths | Overall IM Rate | Number Births |
|------------|------------------------|------------------|----------------------------|----------------------|----------------------------|-----------------|---------------|
| Morgan | 0 | * | 1 | * | 1 | * | 158 |
| Morrow | 0 | * | 1 | * | 1 | * | 396 |
| Muskingum | 5 | * | 4 | * | 9 | * | 1,026 |
| Noble | 1 | * | 0 | * | 1 | * | 139 |
| Ottawa | 0 | * | 1 | * | 1 | * | 358 |
| Paulding | 1 | * | 1 | * | 2 | * | 223 |
| Perry | 1 | * | 0 | * | 1 | * | 444 |
| Pickaway | 4 | * | 3 | * | 7 | * | 629 |
| Pike | 1 | * | 1 | * | 2 | * | 354 |
| Portage | 7 | * | 2 | * | 9 | * | 1,400 |
| Preble | 4 | * | 1 | * | 5 | * | 434 |
| Putnam | 0 | * | 1 | * | 1 | * | 420 |
| Richland | 7 | * | 3 | * | 10 | * | 1,451 |
| Ross | 4 | * | 3 | * | 7 | * | 847 |
| Sandusky | 6 | * | 1 | * | 7 | * | 696 |
| Scioto | 1 | * | 1 | * | 2 | * | 884 |
| Seneca | 1 | * | 2 | * | 3 | * | 595 |
| Shelby | 2 | * | 0 | * | 2 | * | 611 |
| Stark | 15 | * | 5 | * | 20 | 4.8 | 4,204 |
| Summit | 29 | 4.8 | 16 | * | 45 | 7.4 | 6,054 |
| Trumbull | 12 | * | 8 | * | 20 | 9.6 | 2,079 |
| Tuscarawas | 2 | * | 0 | * | 2 | * | 1,184 |
| Union | 4 | * | 2 | * | 6 | * | 659 |
| Van Wert | 4 | * | 0 | * | 4 | * | 311 |
| Vinton | 0 | * | 1 | * | 1 | * | 159 |
| Warren | 5 | * | 2 | * | 7 | * | 2,354 |
| Washington | 1 | * | 1 | * | 2 | * | 617 |
| Wayne | 12 | * | 5 | * | 17 | * | 1,596 |
| Williams | 1 | * | 1 | * | 2 | * | 431 |
| Wood | 2 | * | 3 | * | 5 | * | 1,376 |
| Wyandot | 0 | * | 0 | * | 0 | * | 245 |
| Unknown | 1 | * | 0 | * | 1 | * | 15 |

Figure 2: Ohio Infant Mortality Average 10-Year Rate, by County (2006-2015)



Source: Ohio Department of Health, Bureau of Vital Statistics.

* Rates based on fewer than 20 infant deaths are unstable and not reported.

** Ohio Institute for Equity in Birth Outcomes partnering communities seek to improve overall birth outcomes and reduce racial and ethnic disparities in infant mortality.

Ohio Overall Infant Mortality Rate 2006-2015: 7.5 infant deaths per 1,000 live births.

Healthy People 2020 Objective: 6.0 infant deaths per 1,000 live births.

OHIO INFANT MORTALITY 10-YEAR COUNTY-LEVEL DATA

Table 7: Ohio 10-Year Average Annual Infant Mortality Rate, by County (2006-2015)

| Area | Total Births | Total Deaths | Infant Mortality Rate | Area | Total Births | Total Deaths | Infant Mortality Rate |
|------------|--------------|--------------|-----------------------|------------|--------------|--------------|-----------------------|
| Ohio | 1,427,658 | 10,763 | 7.5 | | | | |
| Adams | 3,560 | 37 | 10.4 | Licking | 19,961 | 138 | 6.9 |
| Allen | 13,349 | 91 | 6.8 | Logan | 5,805 | 39 | 6.7 |
| Ashland | 6,401 | 31 | 4.8 | Lorain | 34,684 | 231 | 6.7 |
| Ashtabula | 11,744 | 100 | 8.5 | Lucas | 59,232 | 461 | 7.8 |
| Athens | 5,524 | 37 | 6.7 | Madison | 4,534 | 40 | 8.8 |
| Auglaize | 5,717 | 30 | 5.2 | Mahoning | 24,708 | 219 | 8.9 |
| Belmont | 7,090 | 49 | 6.9 | Marion | 7,854 | 50 | 6.4 |
| Brown | 5,241 | 49 | 9.3 | Medina | 18,250 | 75 | 4.1 |
| Butler | 47,552 | 366 | 7.7 | Meigs | 2,533 | 20 | 7.9 |
| Carroll | 2,997 | 22 | 7.3 | Mercer | 5,545 | 23 | 4.1 |
| Champaign | 4,425 | 29 | 6.6 | Miami | 11,949 | 64 | 5.4 |
| Clark | 16,894 | 105 | 6.2 | Monroe | 1,540 | 10 | * |
| Clermont | 25,012 | 164 | 6.6 | Montgomery | 68,816 | 531 | 7.7 |
| Clinton | 5,308 | 45 | 8.5 | Morgan | 1,528 | 6 | * |
| Columbiana | 11,426 | 64 | 5.6 | Morrow | 4,024 | 20 | 5.0 |
| Coshocton | 4,483 | 31 | 6.9 | Muskingum | 10,591 | 74 | 7.0 |
| Crawford | 4,880 | 31 | 6.4 | Noble | 1,490 | 6 | * |
| Cuyahoga | 154,648 | 1,454 | 9.4 | Ottawa | 3,741 | 19 | * |
| Darke | 6,454 | 39 | 6.0 | Paulding | 2,352 | 17 | * |
| Defiance | 4,673 | 34 | 7.3 | Perry | 4,447 | 24 | 5.4 |
| Delaware | 22,271 | 98 | 4.4 | Pickaway | 6,132 | 44 | 7.2 |
| Erie | 8,025 | 69 | 8.6 | Pike | 3,654 | 39 | 10.7 |
| Fairfield | 16,966 | 92 | 5.4 | Portage | 15,103 | 93 | 6.2 |
| Fayette | 3,752 | 24 | 6.4 | Preble | 4,643 | 24 | 5.2 |
| Franklin | 184,240 | 1,552 | 8.4 | Putnam | 4,730 | 24 | 5.1 |
| Fulton | 5,124 | 31 | 6.0 | Richland | 14,732 | 102 | 6.9 |
| Gallia | 3,937 | 33 | 8.4 | Ross | 8,818 | 63 | 7.1 |
| Geauga | 9,266 | 43 | 4.6 | Sandusky | 7,212 | 41 | 5.7 |
| Greene | 17,930 | 105 | 5.9 | Scioto | 9,326 | 69 | 7.4 |
| Guernsey | 4,740 | 28 | 5.9 | Seneca | 6,319 | 48 | 7.6 |
| Hamilton | 112,519 | 1,110 | 9.9 | Shelby | 6,527 | 41 | 6.3 |
| Hancock | 9,283 | 61 | 6.6 | Stark | 42,696 | 328 | 7.7 |
| Hardin | 3,862 | 22 | 5.7 | Summit | 62,734 | 457 | 7.3 |
| Harrison | 1,678 | 13 | * | Trumbull | 22,085 | 178 | 8.1 |
| Henry | 3,401 | 15 | * | Tuscarawas | 11,395 | 58 | 5.1 |
| Highland | 5,587 | 48 | 8.6 | Union | 6,392 | 45 | 7.0 |
| Hocking | 3,306 | 20 | 6.0 | Van Wert | 3,463 | 18 | * |
| Holmes | 8,029 | 55 | 6.9 | Vinton | 1,568 | 15 | * |
| Huron | 7,761 | 50 | 6.4 | Warren | 25,235 | 151 | 6.0 |
| Jackson | 4,307 | 39 | 9.1 | Washington | 6,295 | 36 | 5.7 |
| Jefferson | 6,834 | 58 | 8.5 | Wayne | 15,558 | 94 | 6.0 |
| Knox | 7,339 | 55 | 7.5 | Williams | 4,393 | 24 | 5.5 |
| Lake | 23,700 | 108 | 4.6 | Wood | 13,680 | 81 | 5.9 |
| Lawrence | 7,350 | 69 | 9.4 | Wyandot | 2,687 | 15 | * |

Source: Ohio Department Of Health, Bureau Of Vital Statistics.

* Rates based on fewer than 20 infant deaths are unstable and not reported. Total births includes 112 unknown county.

OHIO INFANT MORTALITY 10-YEAR DATA

Table 8: Ohio Neonatal, Postneonatal, and All Races Infant Mortality, by Race (2006-2015)

| Group | Year | Number Neonatal Deaths* | Neonatal IM Rate | Number Postneonatal Deaths** | Postneonatal IM Rate | Total Number Infant Deaths | Overall Infant Mortality Rate | Number Births |
|-----------|------|-------------------------|------------------|------------------------------|----------------------|----------------------------|-------------------------------|---------------|
| WHITE | 2006 | 489 | 4.0 | 249 | 2.0 | 738 | 6.1 | 121,465 |
| | 2007 | 512 | 4.2 | 257 | 2.1 | 769 | 6.3 | 121,267 |
| | 2008 | 460 | 3.9 | 253 | 2.1 | 713 | 6.0 | 118,901 |
| | 2009 | 494 | 4.3 | 244 | 2.1 | 738 | 6.4 | 115,328 |
| | 2010 | 482 | 4.5 | 206 | 1.9 | 688 | 6.4 | 107,189 |
| | 2011 | 439 | 4.2 | 233 | 2.2 | 672 | 6.4 | 104,906 |
| | 2012 | 469 | 4.4 | 206 | 1.9 | 675 | 6.4 | 106,004 |
| | 2013 | 446 | 4.3 | 184 | 1.8 | 630 | 6.0 | 104,938 |
| | 2014 | 406 | 3.8 | 162 | 1.5 | 568 | 5.3 | 106,369 |
| | 2015 | 379 | 3.6 | 201 | 1.9 | 580 | 5.5 | 106,028 |
| BLACK | 2006 | 292 | 11.5 | 133 | 5.2 | 425 | 16.7 | 25,494 |
| | 2007 | 261 | 10.1 | 123 | 4.7 | 384 | 14.8 | 25,959 |
| | 2008 | 290 | 11.1 | 134 | 5.1 | 424 | 16.2 | 26,131 |
| | 2009 | 251 | 9.9 | 111 | 4.4 | 362 | 14.2 | 25,433 |
| | 2010 | 231 | 9.8 | 132 | 5.6 | 363 | 15.5 | 23,469 |
| | 2011 | 256 | 11.0 | 115 | 5.0 | 371 | 16.0 | 23,252 |
| | 2012 | 220 | 9.3 | 110 | 4.6 | 330 | 13.9 | 23,696 |
| | 2013 | 244 | 10.1 | 90 | 3.7 | 334 | 13.8 | 24,158 |
| | 2014 | 252 | 10.4 | 92 | 3.8 | 344 | 14.3 | 24,132 |
| | 2015 | 252 | 10.4 | 115 | 4.7 | 367 | 15.1 | 24,288 |
| ALL RACES | 2006 | 783 | 5.2 | 384 | 2.6 | 1,167 | 7.8 | 150,510 |
| | 2007 | 781 | 5.2 | 382 | 2.5 | 1,163 | 7.7 | 150,784 |
| | 2008 | 755 | 5.1 | 389 | 2.6 | 1,143 | 7.7 | 148,592 |
| | 2009 | 750 | 5.2 | 359 | 2.5 | 1,109 | 7.7 | 144,569 |
| | 2010 | 725 | 5.2 | 343 | 2.5 | 1,068 | 7.7 | 139,034 |
| | 2011 | 724 | 5.3 | 362 | 2.6 | 1,086 | 7.9 | 138,024 |
| | 2012 | 720 | 5.2 | 327 | 2.4 | 1,047 | 7.6 | 138,284 |
| | 2013 | 729 | 5.2 | 295 | 2.1 | 1,024 | 7.4 | 139,035 |
| | 2014 | 692 | 5.0 | 263 | 1.9 | 955 | 6.8 | 139,518 |
| | 2015 | 667 | 4.8 | 338 | 2.4 | 1,005 | 7.2 | 139,312 |

Source: Ohio Department Of Health, Bureau Of Vital Statistics.

*Neonatal Death – Death of a live-born infant during the first 27 days of life.

** Postneonatal Death – Death of infant aged 28 days through 364 days of life

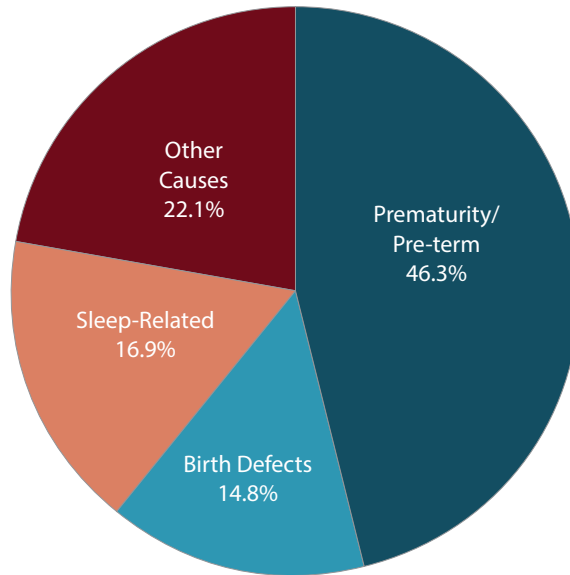
The majority of infant deaths were neonatal deaths while fewer than one-third were postneonatal deaths.

APPENDIX A

Causes of Death as Identified through Child Fatality Review

Causes of death in Ohio illustrated below were identified through in-depth Child Fatality Reviews of infant deaths. Ohio law requires every county to review the deaths of children. These data are the outcome of thoughtful inquiry and discussion by a multi-disciplinary group of local experts who consider all circumstances surrounding the death of each child. The cause of death identified through this process may not match the death certificate.

Ohio Infant Mortality by Leading Causes Identified by Child Fatality Review (2015)



The leading causes of infant deaths in Ohio have not changed meaningfully from 2009-2015. Some risk factors, such as smoking, may have contributed to more than one of the above factors. It is estimated that 23-34 percent of deaths due to Sudden Infant Death Syndrome, and 5-7 percent of preterm related infant deaths in the U.S., are attributable to smoking during pregnancy.¹

| Number of Deaths by Cause as Identified by Child Fatality Review (2012-2015) | | | | |
|--|------|------|------|------|
| Cause | Year | | | |
| | 2012 | 2013 | 2014 | 2015 |
| Prematurity | 469 | 457 | 445 | 411 |
| Other Causes | 220 | 244 | 195 | 196 |
| Sleep-Related | 173 | 148 | 118 | 150 |
| Birth Defects | 144 | 136 | 134 | 131 |

¹ Dietz PM, England LJ, Shapiro-Mendoza CK, Tong VT, Farr SL, Callaghan WM. Infant morbidity and mortality attributable to prenatal smoking in the U.S. *Am J Prev Med* 2010

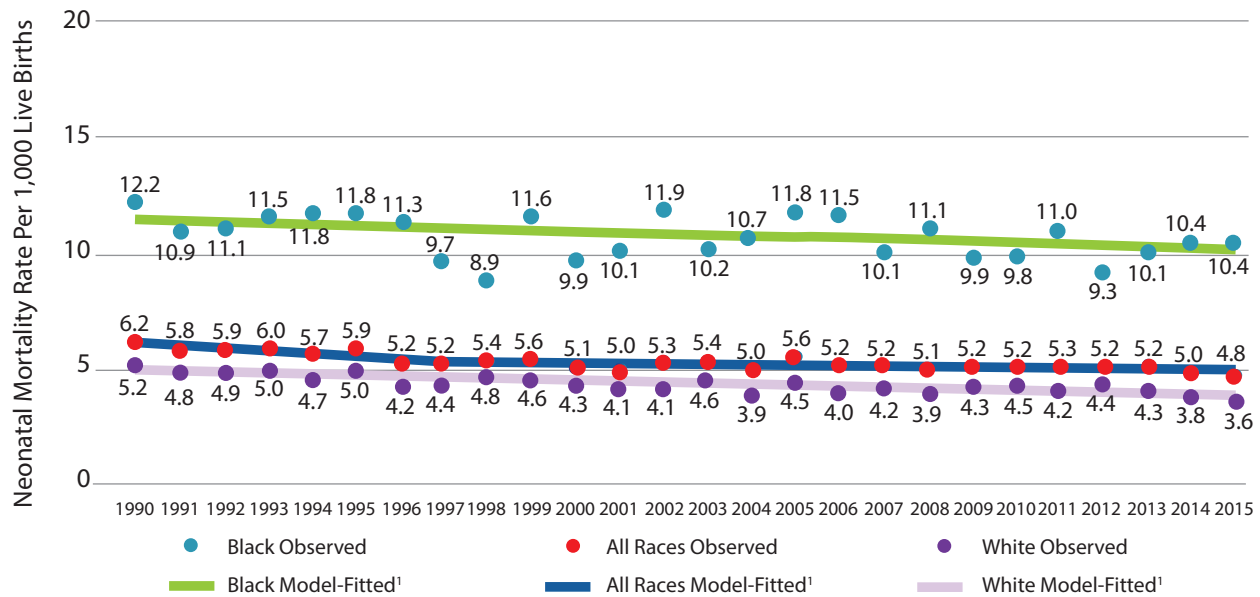
**APPENDIX B:
Neonatal and Postneonatal Infant Mortality Trends
(1990-2015)**

Neonatal Infant Mortality Rate Trends (1990-2015)

Neonatal infant mortality is defined as the death of a live-born infant during the first 27 days of life. Ohio's neonatal infant mortality rate was 6.2 deaths per 1,000 live births in 1990; 5.1 deaths per 1,000 live births in 2000; 5.2 deaths per 1,000 live births in 2010; and 4.8 deaths per 1,000 live births in 2015.

There was a downward trend in neonatal infant mortality in Ohio throughout the course of this 25-year period. This downward trend has been similar for both white infant mortality and black infant mortality.

Figure 3: Trends in Ohio Neonatal Mortality, by Race (1990-2015)



Source: Ohio Department Of Health, Bureau Of Vital Statistics.

¹ "Model-Fitted" Definition – Joinpoint software models were used to test the statistical significance of changes in trends using a Monte Carlo permutation method. For each group the best fitting trend lines are presented. A change in trend was observed for all races infant mortality in 1997. No change in trend was detected for black infant mortality or white infant mortality.

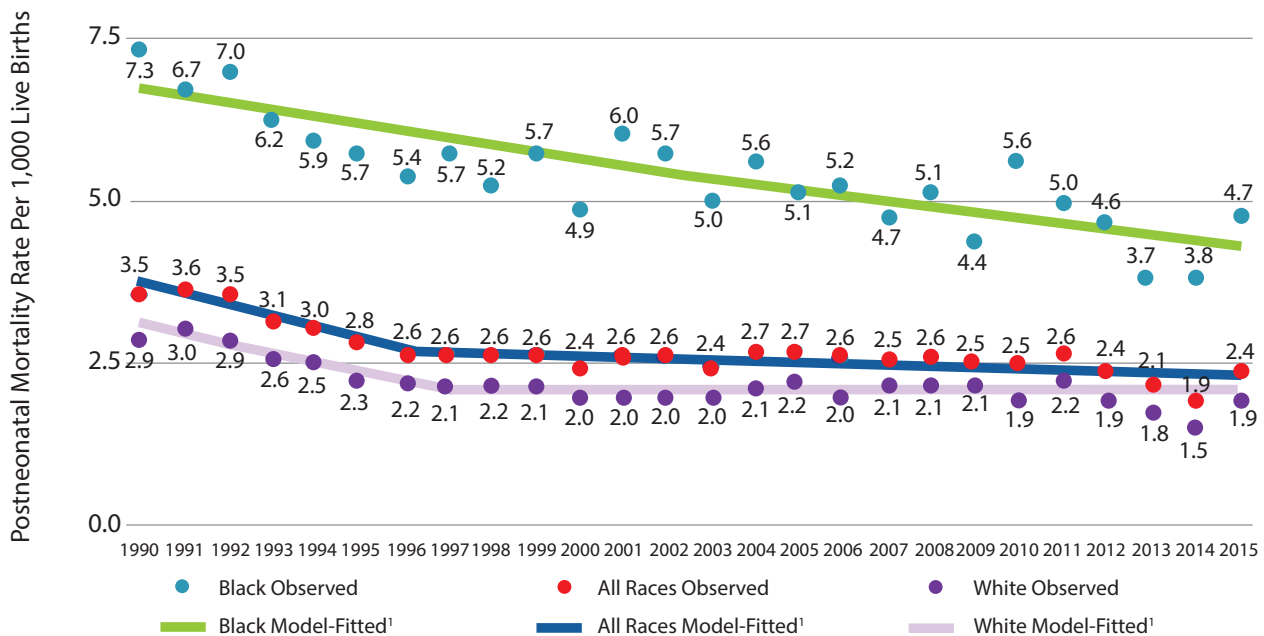
**APPENDIX B:
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(1990-2015)**

Postneonatal Infant Mortality Rate Trends (1990-2015)

Postneonatal infant mortality is defined as the death of an infant between 28 days and 364 days of life. Ohio's postneonatal mortality rate was 3.5 deaths per 1,000 live births in 1990; 2.4 deaths per 1,000 live births in 2000; 2.5 deaths per 1,000 live births in 2010; and 2.4 deaths per 1,000 live births in 2015.

There was a downward trend in postneonatal infant mortality in Ohio throughout the course of this 25-year period. Postneonatal infant mortality for white infants and black infants differed significantly during this timeframe. Among white infants, postneonatal infant mortality decreased throughout the 25-year period, but more slowly after 1997 than from 1990 to 1996. Among black infants, however, an ongoing significant decrease in postneonatal infant mortality occurred throughout the entire period from 1990 through 2015.

Figure 4: Trends in Ohio Postneonatal Mortality, by Race (1990-2015)



Source: Ohio Department Of Health, Bureau Of Vital Statistics.

¹ "Model-Fitted" Definition – Joinpoint software models were used to test the statistical significance of changes in trends using a Monte Carlo permutation method. For each group the best fitting trend lines are presented. A change in trend was observed for all races infant mortality in 1996 and for white mortality in 1997. No change in trend was detected for black infant mortality.