Ohio Department of Health

2014 Ohio Infant Mortality Data: General Findings

INFANT MORTALITY IN OHIO

Nationally, infant mortality is defined as the death of a live-born baby before his or her 1st birthday. An Infant Mortality Rate is calculated as the number of babies who died during the first year of life per 1,000 live births.

Ohio's goal is to reach the Healthy People 2020[1] Objective of a 6.0 Infant Mortality Rate or lower in every race and ethnicity group.

In 2014, 955 Ohio infants died before their 1st birthday compared to 1,024 in 2013, a decrease of nearly 6.7 percent. 2014 marked the first time since deaths were registered in Ohio beginning in 1939 that the state had fewer than 1,000 infant deaths in a year.

Table 1: Ohio Infant Mortality Rate, 2014 (Number of Deaths per 1,000 Live Births)

Group	2013	2014	National Rate (2013)*
All Races	7.4	6.8	6.0
Race			
White	6.0	5.3	5.1
Black	13.8	14.3	11.2
American Indian	**	**	7.6
Asian/Pacific Islander	**	**	4.1
Ethnicity			
Hispanic	8.8	6.2	5.3
Non-Hispanic***	7.3	6.9	6.1

** Most recent national data available, except for 2014 infant mortality rate for all races.*
*** Rates based on fewer than 20 infant deaths are unstable and not reported.*
**** Non-Hispanic births and deaths include those of unknown ethnicity.*

Ohio's All Races Infant Mortality Rate, White Infant Mortality Rate and Black Infant Mortality Rate are trending downward over time (see Figure 1). The White Infant Mortality Rate in 2014 approached the 2013 national rate (the most recent national data available) and was well below the Healthy People 2020 Objective. However, the Black Infant Mortality Rate remained well above the Healthy People 2020 Objective, and black infants in Ohio continued to die at more than twice the rate of white infants. Ohio's Hispanic Infant Mortality Rate was higher than the 2013 national Hispanic Infant Mortality Rate and the Healthy People 2020 Objective.

[1] Healthy People 2020 is a national collaborative 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.

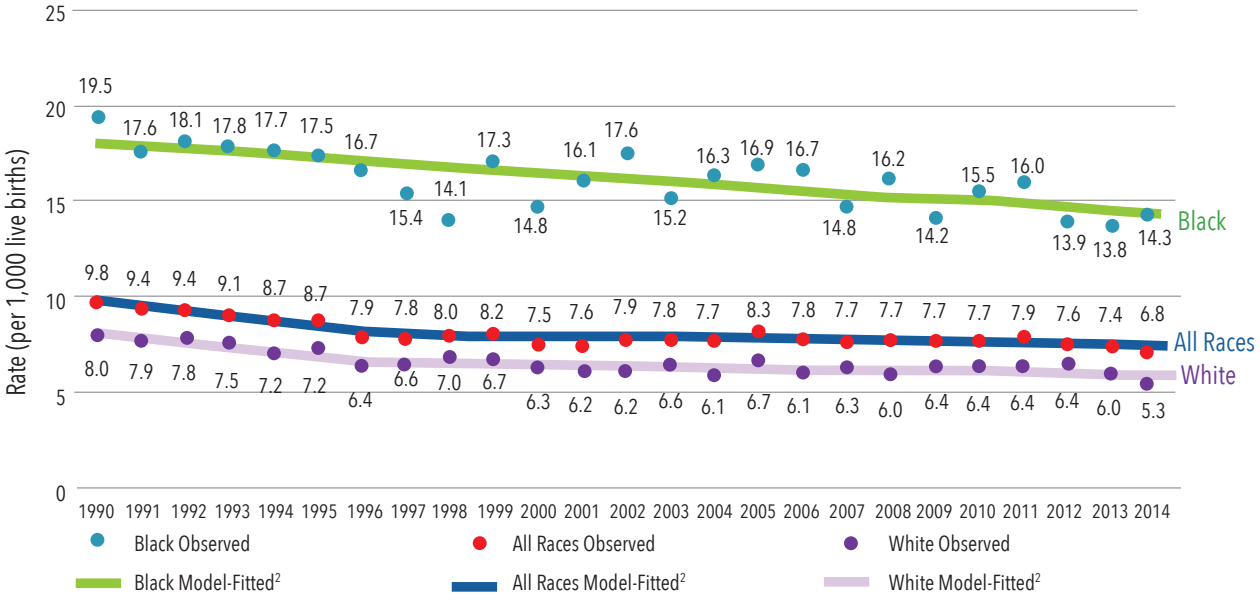
Table 2: Ohio Infant Mortality by Race and Ethnicity, 2014

Group	Infant Deaths (Number)	Infant Mortality Rate (Per 1,000 Live Births)
Race		
White	568	5.3
Black	344	14.3
American Indian	0	*
Asian/Pacific Islander	15	*
All Other Races	28	6.1
Ethnicity		
Hispanic	43	6.2
Non-Hispanic**	912	6.9
TOTAL (All Races)	955***	6.8

** 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.*

Ohio's All Races Infant Mortality Rate decreased significantly from 1990 through 2014. Ohio's White and Black Infant Mortality Rates also saw a statistically significant decrease from 1990 through 2014.

Figure 1: Ohio Infant Mortality Rates, by Race (1990-2014)



Source: Vital Statistics birth and mortality files, Ohio Department of Health

[2] "Model-Fitted" Definition – Joinpoint software models were used to test whether an apparent change in trend was statistically significant 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

Table 3: Neonatal, Postneonatal and Infant Mortality, Ohio & Counties (2014)

County	Number Neonatal Deaths**	Neonatal IM Rate	Number Postneonatal Deaths***	Postneonatal IM Rate	Total Number Infant Deaths	Overall IM Rate	Number Births
Ohio	692	5.0	263	1.9	955	6.8	139,518
Adams	4	*	0	*	4	*	322
Allen	10	*	1	*	11	*	1,280
Ashland	1	*	1	*	2	*	608
Ashtabula	7	*	4	*	11	*	1,060
Athens	3	*	2	*	5	*	557
Auglaize	1	*	0	*	1	*	542
Belmont	2	*	0	*	2	*	705
Brown	4	*	2	*	6	*	476
Butler	32	7.2	7	*	39	8.8	4,457
Carroll	1	*	1	*	2	*	264
Champaign	1	*	0	*	1	*	375
Clark	10	*	3	*	13	*	1,594
Clermont	13	*	3	*	16	*	2,311
Clinton	1	*	0	*	1	*	525
Columbiana	3	*	2	*	5	*	1,057
Coshocton	0	*	2	*	2	*	466
Crawford	0	*	2	*	2	*	500
Cuyahoga	94	6.2	28	1.9	122	8.1	15,080
Darke	2	*	1	*	3	*	667
Defiance	1	*	2	*	3	*	436
Delaware	6	*	3	*	9	*	2,213
Erie	8	*	4	*	12	*	787
Fairfield	8	*	4	*	12	*	1,598
Fayette	1	*	0	*	1	*	326
Franklin	118	6.3	40	2.1	158	8.4	18,880
Fulton	0	*	0	*	0	*	525

Source: Ohio Department Of Health Bureau Of Vital Statistics.

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

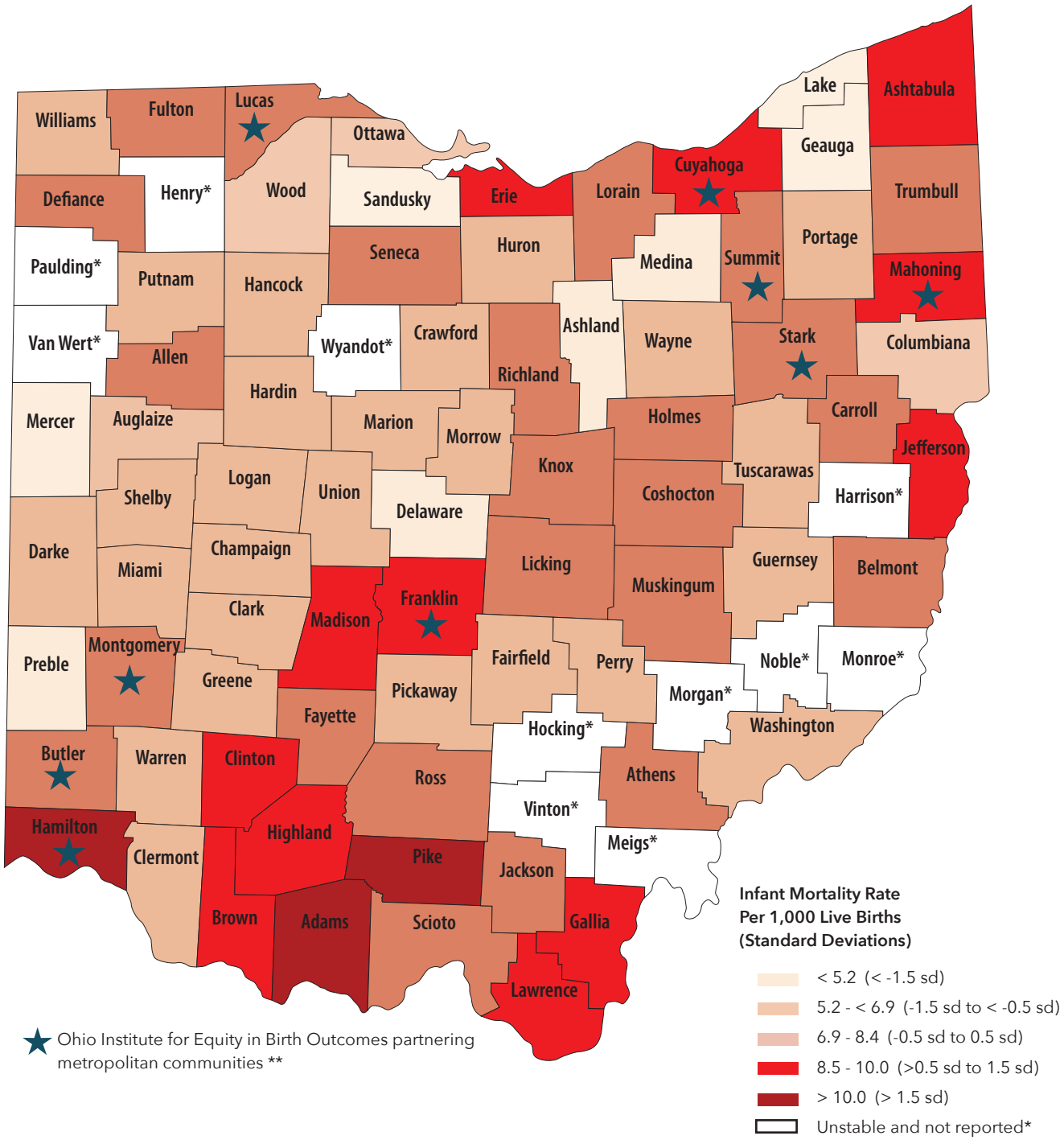
*** Neonatal Death – Death of live-born infant during first 28 days of life.*

**** Post-neonatal Death – Death of infant between 29 days and 364 days of life.*

County	Number Neonatal Deaths	Neonatal IM Rate	Number Postneonatal Deaths	Postneonatal IM Rate	Total Number Infant Deaths	Overall IM Rate	Number Births
Gallia	2	*	3	*	5	*	383
Geauga	2	*	0	*	2	*	906
Greene	3	*	2	*	5	*	1,824
Guernsey	1	*	0	*	1	*	462
Hamilton	69	6.2	28	2.5	97	8.8	11,050
Hancock	4	*	1	*	5	*	962
Hardin	1	*	0	*	1	*	376
Harrison	1	*	1	*	2	*	169
Henry	1	*	0	*	1	*	297
Highland	3	*	2	*	5	*	530
Hocking	1	*	2	*	3	*	302
Holmes	2	*	2	*	4	*	766
Huron	4	*	2	*	6	*	741
Jackson	1	*	1	*	2	*	409
Jefferson	4	*	5	*	9	*	681
Knox	1	*	4	*	5	*	709
Lake	4	*	1	*	5	*	2,216
Lawrence	4	*	2	*	6	*	717
Licking	10	*	3	*	13	*	2,086
Logan	1	*	1	*	2	*	531
Lorain	16	*	5	*	21	6.1	3,471
Lucas	40	7.0	13	*	53	9.3	5,707
Madison	5	*	0	*	5	*	430
Mahoning	10	*	5	*	15	*	2,410
Marion	5	*	0	*	5	*	709
Medina	4	*	5	*	9	*	1,883
Meigs	0	*	0	*	0	*	215
Mercer	0	*	3	*	3	*	553
Miami	4	*	0	*	4	*	1,224
Monroe	0	*	1	*	1	*	147
Montgomery	26	3.9	14	*	40	6.1	6,593

County	Number Neonatal Deaths	Neonatal IM Rate	Number Postneonatal Deaths	Postneonatal IM Rate	Total Number Infant Deaths	Overall IM Rate	Number Births
Morgan	0	*	0	*	0	*	151
Morrow	0	*	0	*	0	*	379
Muskingum	8	*	0	*	8	*	1,041
Noble	0	*	0	*	0	*	139
Ottawa	1	*	0	*	1	*	363
Paulding	1	*	0	*	1	*	220
Perry	1	*	0	*	1	*	431
Pickaway	1	*	1	*	2	*	616
Pike	2	*	1	*	3	*	360
Portage	4	*	0	*	4	*	1,518
Preble	0	*	2	*	2	*	434
Putnam	1	*	2	*	3	*	473
Richland	3	*	5	*	8	*	1,350
Ross	2	*	2	*	4	*	898
Sandusky	3	*	0	*	3	*	628
Scioto	2	*	0	*	2	*	852
Seneca	3	*	1	*	4	*	574
Shelby	1	*	1	*	2	*	621
Stark	29	6.8	6	*	35	8.2	4,253
Summit	32	5.2	12	*	44	7.1	6,194
Trumbull	12	*	5	*	17	*	2,089
Tuscarawas	3	*	1	*	4	*	1,141
Union	2	*	1	*	3	*	637
Van Wert	0	*	2	*	2	*	335
Vinton	1	*	0	*	1	*	138
Warren	5	*	0	*	5	*	2,397
Washington	0	*	1	*	1	*	581
Wayne	6	*	1	*	7	*	1,540
Williams	1	*	0	*	1	*	416
Wood	7	*	1	*	8	*	1,408
Wyandot	1	*	0	*	1	*	254
Unknown	0	*	0	*	0	*	17

Figure 2: Ohio Infant Mortality Average 10-Year Rate by County (2005-2014)



** 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 2005-2014: 7.6 infant deaths per 1,000 live births.

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

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

Table 4: Ohio Neonatal, Postneonatal, and Total Infant Mortality (2007-2014)

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	2007	512	4.2	257	2.1	769	6.3	121,267
White	2008	460	3.9	253	2.1	713	6.0	118,901
White	2009	494	4.3	244	2.1	738	6.4	115,328
White	2010	482	4.5	206	1.9	688	6.4	107,189
White	2011	439	4.2	233	2.2	672	6.4	104,906
White	2012	469	4.4	206	1.9	675	6.4	106,004
White	2013	446	4.3	184	1.8	630	6.0	104,938
White	2014	406	3.8	162	1.5	568	5.3	106,369
Black	2007	261	10.1	123	4.7	384	14.8	25,959
Black	2008	290	11.1	134	5.1	424	16.2	26,131
Black	2009	251	9.9	111	4.4	362	14.2	25,433
Black	2010	231	9.8	132	5.6	363	15.5	23,469
Black	2011	256	11.0	115	5.0	371	16.0	23,252
Black	2012	220	9.3	110	4.6	330	13.9	23,696
Black	2013	244	10.1	90	3.7	334	13.8	24,158
Black	2014	252	10.4	92	3.8	344	14.3	24,132
Total	2007	781	5.2	382	2.5	1,163	7.7	150,784
Total	2008	755	5.1	389	2.6	1,143	7.7	148,592
Total	2009	750	5.2	359	2.5	1,109	7.7	144,569
Total	2010	725	5.2	343	2.5	1,068	7.7	139,034
Total	2011	724	5.3	362	2.6	1,086	7.9	138,024
Total	2012	720	5.2	327	2.4	1,047	7.6	138,284
Total	2013	729	5.2	295	2.1	1,024	7.4	139,035
Total	2014	692	5.0	263	1.9	955	6.8	139,518

Source: Ohio Department Of Health, Bureau Of Vital Statistics.
** Neonatal Death – Death of live-born infant during first 27 days of life.*
*** Post-neonatal Death – Death of infant between 28 days and 1 year of life.*
The majority of infant deaths were neonatal deaths while fewer than one-third were postneonatal deaths.
The total number of infant deaths by year includes all races.

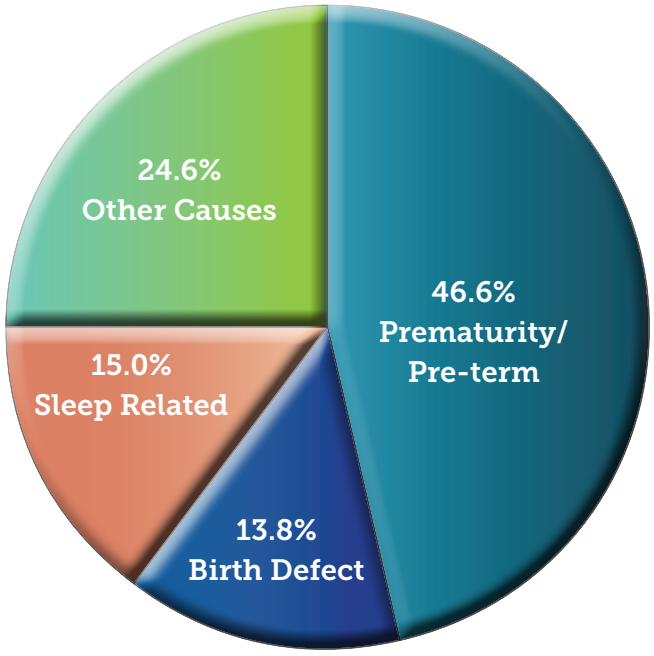
Table 5: 10-Year Average Annual Infant Mortality Rate, Ohio and by County (2005-2014)

Area	Total Births	Total Deaths	Infant Mortality Rate
Ohio	1,436,606	10,987	7.6
Adams	3,657	39	10.7
Allen	13,507	98	7.3
Ashland	6,428	29	4.5
Ashtabula	11,901	104	8.7
Athens	5,601	40	7.1
Auglaize	5,776	32	5.5
Belmont	7,122	50	7.0
Brown	5,303	48	9.1
Butler	47,866	375	7.8
Carroll	3,005	22	7.3
Champaign	4,517	26	5.8
Clark	17,043	113	6.6
Clermont	25,445	166	6.5
Clinton	5,379	48	8.9
Columbiana	11,522	63	5.5
Coshocton	4,447	32	7.2
Crawford	4,964	32	6.4
Cuyahoga	156,148	1,465	9.4
Darke	6,535	36	5.5
Defiance	4,768	37	7.8
Delaware	22,478	100	4.4
Erie	8,082	71	8.8
Fairfield	17,059	97	5.7
Fayette	3,801	27	7.1
Franklin	182,592	1,555	8.5
Fulton	5,193	36	6.9
Gallia	3,969	35	8.8
Geauga	9,460	45	4.8
Greene	17,857	100	5.6
Guernsey	4,764	26	5.5
Hamilton	112,985	1,169	10.3
Hancock	9,322	60	6.4
Hardin	3,873	25	6.5
Harrison	1,701	14	*
Henry	3,455	16	*
Highland	5,615	54	9.6
Hocking	3,332	18	*
Holmes	7,911	55	7.0
Huron	7,842	52	6.6
Jackson	4,363	36	8.3
Jefferson	6,891	58	8.4
Knox	7,348	55	7.5
Lake	23,887	109	4.6
Lawrence	7,424	73	9.8
Licking	20,106	138	6.9
Logan	5,811	37	6.4
Lorain	34,920	242	6.9
Lucas	59,854	476	8.0
Madison	4,575	43	9.4
Mahoning	25,081	219	8.7
Marion	7,902	51	6.5
Medina	18,595	84	4.5
Meigs	2,589	18	*
Mercer	5,507	21	3.8
Miami	11,998	71	5.9
Monroe	1,529	9	*
Montgomery	69,249	534	7.7
Morgan	1,563	6	*
Morrow	4,020	26	6.5
Muskingum	10,605	77	7.3
Noble	1,500	6	*
Ottawa	3,783	21	5.6
Paulding	2,383	16	*
Perry	4,444	26	5.9
Pickaway	6,143	41	6.7
Pike	3,706	40	10.8
Portage	15,341	92	6.0
Preble	4,725	23	4.9
Putnam	4,830	26	5.4
Richland	14,877	108	7.3
Ross	8,912	65	7.3
Sandusky	7,316	38	5.2
Scioto	9,397	73	7.8
Seneca	6,401	48	7.5
Shelby	6,628	45	6.8
Stark	42,881	347	8.1
Summit	63,254	462	7.3
Trumbull	22,364	177	7.9
Tuscarawas	11,470	63	5.5
Union	6,467	43	6.6
Van Wert	3,542	18	*
Vinton	1,567	14	*
Warren	25,698	158	6.1
Washington	6,368	38	6.0
Wayne	15,649	86	5.5
Williams	4,381	24	5.5
Wood	13,676	80	5.8
Wyandot	2,756	15	*

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

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

Figure 3: Ohio Infant Mortality by Leading Causes (2013)



Based on in-depth Child Fatality Reviews (CFRs) of approximately 96 percent of infant deaths. Ohio law requires every county to review the deaths of children through a CFR process. CFR 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 CFR may not match the death certificate.

Most infant deaths in Ohio in 2013 (most recent data available) occurred when babies:

- Were born too early (pre-term births are those before 37 weeks gestation) which accounts for 46.6 percent of all infant deaths.
- Were born with a serious birth defect which accounts for 13.8 percent of all infant deaths.
- Died from sleep-related causes, including Sudden Infant Death Syndrome (SIDS), asphyxia and undetermined causes which account for 15.0 percent of all infant deaths.

These proportions have not changed meaningfully from 2009-2013. 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 SIDS infant deaths, and 5-7 percent of pre-term related infant deaths in the U.S. are attributable to smoking during pregnancy.[1]

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

In March 2011, Governor John R. Kasich addressed infant mortality in Ohio in his first State of the State Address, making reducing low birth-weight babies a priority. In follow up, the Governor's Office of Health Transformation, working with Ohio Departments of Medicaid, Health, Mental Health & Addiction Services, and other human services agencies initiated a comprehensive package of reforms to save babies' lives by:

- Improving overall health system performance.
- Focusing resources where the need is greatest, such as in high-risk communities and populations.
- Preventing premature births, including reducing medically unnecessary scheduled deliveries prior to 39 weeks gestation.
- Focusing evidence-based strategies to reduce maternal smoking.
- Preventing sleep-related deaths, including by promoting infant safe sleep practices.

In December 2014, Governor Kasich spoke at the 2014 Ohio Infant Mortality Summit and said that the current infant mortality rate is "clearly unacceptable." He announced that the Ohio Departments of Medicaid and Health would work together to surge resources into the neighborhoods with the highest incidence of pre-term birth and low birth-weight babies. His proposed executive budget and the final state budget approved by the Ohio General Assembly for the 2016-17 biennium contained initiatives to help reduce infant mortality through:

- Enhanced care management for women in high-risk neighborhoods.
- Engaging leaders in high-risk neighborhoods to connect women to healthcare services.
- Expanding evidence-based strategies to reduce maternal smoking.
- Expanding access to peer support programs for expecting mothers through "Centering Pregnancy" model of care.
- Expanding state's capacity to analyze and respond to infant mortality data.

For more information about all of these initiatives, read the Governor's Office of Health Transformation white paper titled "Reduce Infant Mortality" here or on its website at healthtransformation.ohio.gov. The following is an abbreviated chronology highlighting select initiatives to address infant mortality in Ohio over the past five-plus years.

Making Infant Mortality a Statewide Priority and Raising Awareness

2009: ODH convenes an Infant Mortality Task Force which recommends the establishment of a statewide collaborative to reduce infant mortality in Ohio. In response, ODH and its partners launch the Ohio Collaborative to Prevent Infant Mortality.

2010: Ohio establishes the Pregnancy Associated Mortality Review (PAMR) system to ensure that all maternal deaths are identified and preventive actions are developed. This includes the death of a woman from any cause while she is pregnant or within one year of pregnancy.

2011: Governor Kasich addresses infant mortality in Ohio in his first State of the State Address and makes reducing low birth-weight babies a priority.

2011: The Governor's Office of Health Transformation, working with Ohio Departments of Medicaid, Health, Mental Health & Addiction Services, and other human services agencies initiate a comprehensive package of reforms to improve overall health system performance for pregnant women and infants.

2012: ODH, as a member of the Ohio Collaborative to Prevent Infant Mortality, publicly releases for the first time Ohio's infant mortality data with the goal of raising public awareness.

2012: ODH and the Ohio Collaborative to Prevent Infant Mortality host the first biannual statewide Infant Mortality Summit with more than 900 attendees who are encouraged to host Summits in their own communities to initiate local conversations about how to reduce infant mortality.

2013: ODH hires a coordinator for the statewide Fetal Infant Mortality Review (FIMR) initiative. FIMR is a multi-disciplinary, multi-agency, community-based process that identifies local infant mortality issues through the review of fetal and infant deaths and develops recommendations and initiatives to reduce them.

2014: ODH and the Ohio Collaborative to Prevent Infant Mortality host the second biannual statewide Infant Mortality Summit with more than 1,700 attendees. Governor Kasich tells audience that Ohio's Infant Mortality Rate is "simply unacceptable" and announces new initiatives to focus support and resources to mothers and babies most at-risk.

2014: Ohio launches "Text4Baby", an initiative of ODH and the National Healthy Mothers, Healthy Babies Coalition to customize text messages to expectant mothers in Ohio. An educational service, Text4Baby provides women with health information for them and their baby during pregnancy and through the baby's first year.

2014: Governor Kasich signs into law House Bill 394 which creates a Commission on Infant Mortality.

2015: ODH launches a public education campaign to raise awareness about infant mortality in the nine high-risk metropolitan communities targeted by the Ohio Institute for Equity in Birth Outcomes.

2015: The Ohio Collaborative to Reduce Infant Mortality releases a 2015-2020 infant mortality reduction plan, addressing issues such as preventing premature births; preventing birth defects; reducing maternal smoking before, during and after pregnancy; improving health equity, addressing social determinants of health and eliminating racism; promoting optimal women's health before, during and after pregnancy, promoting infant health; and promoting fatherhood involvement in maternal and child health.

Initiatives to Address Black Infant Mortality

2011-15: The ODH Ohio Infant Mortality Reduction Initiative (OIMRI) home visiting program continues to address barriers (e.g., financial, geographic, cultural, infrastructural) that African-American women and children experience, and improves their access to and utilization of healthcare and social services. OIMRI programs provide community-based outreach and care coordination services in targeted communities with high-risk, low-income, African-American pregnant women and their infants.

2013: ODH partners with CityMatCH, a national organization that supports urban maternal and child health initiatives at the local level, to launch the Ohio Institute for Equity in Birth Outcomes. The partnership includes nine Ohio metropolitan communities to improve overall birth outcomes and reduce disparities in infant mortality. These metropolitan communities include Butler County, Canton-Stark County, Cincinnati, Columbus, Cleveland-Cuyahoga County, Youngstown-Mahoning County, Dayton-Montgomery County, Summit County, Toledo-Lucas County.

2014: Eight Ohio Institute for Equity in Birth Outcomes teams are trained to conduct Fetal Infant Mortality Reviews, a multi-disciplinary, multi-agency, community-based process that identifies local infant mortality issues through the review of fetal and infant deaths and develops recommendations and initiatives to reduce them.

2014: Ohio Institute for Equity in Birth Outcomes teams review local data with their communities and use it to select evidence-based interventions to address highest risk populations in targeted areas.

2015: The Ohio Commission on Minority Health releases a white paper, *Achieving Equity and Eliminating Infant Mortality Disparities within Racial and Ethnic Populations: From Data to Action*.

2015: Ohio Institute for Equity in Birth Outcomes teams launch evidence-based interventions to address highest risk populations in targeted areas, and collect data for evaluation. Interventions include Centering Pregnancy programs, family planning initiatives, promoting reproductive life plans, safe sleep initiatives, progesterone initiatives, and a smoking cessation initiative.

2015: ODH partners with The Paul J. Aicher Foundation and its Everyday Democracy Program to support the Ohio Institute for Equity in Birth Outcomes and its nine urban teams. Everyday Democracy assists in enhancing community engagement that raises awareness about the connections between social determinants of health and infant mortality; increases public knowledge and awareness around populations most impacted by high infant mortality; and engages conversations about racism and its effects on infant mortality rates. Everyday Democracy has 25 years of experience in partnering with diverse community coalitions to help create and sustain broad based community engagement on a range of public issues, and in helping communities incorporate an understanding of racial equity throughout their engagement efforts.

Reducing the Incidence of Prematurity/Pre-Term Birth

2013: Prematurity/pre-term birth is the leading cause of newborn illness and mortality. A hormone supplement of progesterone in the second and third trimesters of pregnancy for women with specific risk factors can reduce the incidence of pre-term birth. The 2014-15 state budget includes funding to develop protocols for incorporating progesterone treatment into clinical practice.

2013: The Progesterone Quality Improvement Project launches to improve birth outcomes for Medicaid recipients by encouraging wider use of progesterone treatment. This project increases funding so that prenatal care providers can better identify, screen and track outcomes for women who can benefit from progesterone treatment.

2013: Smoking during pregnancy remains one of the most common preventable risk factors for infant mortality. It increases the risk of miscarriage, premature birth, low birth weight and stillbirth. The 2014-15 state budget includes funding to expand women's access to providers with tools and training to assist them to quit smoking.

2013: The Ohio Perinatal Quality Collaborative launches an initiative to ensure that all pregnant women at risk of delivering a baby between 24 and 34 weeks gestation receive antenatal corticosteroids, an evidence-based therapy shown to reduce mortality and morbidity among pre-term infants. This therapy is designed to promote lung development in newborn infants, and thus reduce the incidence of respiratory distress, a common reason for infant stays in neonatal intensive care.

2013: The Ohio Perinatal Quality Collaborative launches an initiative to increase early feeding of mother's milk to newborns since its protective properties are linked to a reduced risk of some infections and illnesses in newborns.

2013: In response to rising prescription drug abuse, including by pregnant women, the state launches the Maternal Opiate Medical Support Project (MOMS) to link such pregnant women with treatment which is associated with improved neurocognitive outcomes in infants of opiate-addicted mothers.

2013: As prescription drug abuse by pregnant women rises in Ohio, so does the number of babies born addicted to narcotics – known as Neonatal Narcotic Abstinence Syndromes (NAS). NAS produces jitteriness, fever, diarrhea, and poor feeding and if not treated may lead to seizures and even death. Ohio's six children's hospitals work together supported by a state grant to study NAS and best treatment strategies.

2014: Ohio's birth certificate begins tracking important indicators of evidence-based care including provision of progesterone therapy and breastmilk feeding during the hospital stay.

2015: ODH and the Ohio Hospital Association launch "Ohio First Steps for Healthy Babies" to encourage hospitals to promote and support breastfeeding by new mothers. ODH is training obstetrical healthcare staff in Ohio's birthing hospitals in one of the evidence-based steps to support breastfeeding.

Increasing Public Awareness About Safe Sleep Practices

2013: Suffocation is the leading cause of injury-related death for babies before their 1st birthday. Babies who sleep on couches, in their parents' bed, or on their stomach are more likely to die from an unexpected, sudden cause. The 2014-15 state budget includes funding for a targeted campaign to educate parents, caregivers and healthcare providers about the ABCs of safe sleep practices. According to the American Academy of Pediatrics, babies should be placed **Alone**, on their **Back**, in a **Crib**.

2013: In cases of sudden, unexpected infant deaths, accurate determination of the cause of death requires a review of the child's health history, a complete autopsy, and a thorough scene investigation. To improve consistent scene investigations throughout Ohio, ODH launches regional training for coroners, medical examiners and law enforcement jurisdictions to expand implementation of the Centers for Disease Control and Prevention's Sudden Unexpected Infant Death investigation protocol.

2014: The Ohio General Assembly passes Senate Bill 276 establishing the Safe Sleep Education Program to be administered by ODH. The new law requires hospitals with maternity units and freestanding birthing centers to implement an infant safe sleep screening procedure to assess whether an infant will have a safe crib or other suitable place to sleep after discharge. ODH provides free Cribs for Kids "Survival Kits" to families who meet financial eligibility guidelines.

2014: ODH sponsors the Ohio Sudden Infant Death Network's "Safe Sleep Community Forums" around the state to increase awareness and education to preventing infant mortality.

2015: The new state budget for the 2016-17 biennium continues funding to support raising public awareness about infant safe sleep practices.

Prevention and Early Identification of Birth Defects

2013: Folic acid is crucial to prevent neural tube defects, which occur in 1 per 1,000 pregnancies. In addition, women who take folic acid supplements before and during early pregnancy are about 40 percent less likely to have a baby later diagnosed with autism. Ohio Connections for Children with Special Needs birth defects surveillance system staff collaborate with Michigan and Minnesota to develop two online trainings for health professionals – "Folic Acid in the Prevention of Neural Tube Defects and How to have a Healthy Pregnancy: Focus on 5."

2013: Critical Congenital Heart Disease (CCHD), a group of heart defects requiring surgery or other clinical interventions, accounts for five percent of all infant deaths in Ohio. While the majority of Ohio maternity hospitals already screen newborns for this disease, Governor Kasich signs Senate Bill 4 into law requiring hospitals and freestanding birthing centers to screen all newborns for CCHD for early diagnosis and treatment.

2013: ODH launches an initiative to work with healthcare providers to increase postpartum screening rates for women with a history of gestational diabetes. Women who enter pregnancy with undiagnosed and uncontrolled diabetes are at greater risk of fetal death or having a child with a birth defect.

2014: In accordance with Senate Bill 4, ODH promulgates administrative rules for the equipment, methodology and reporting of results for newborn screening for Critical Congenital Heart Disease (CCHD). On October 1, all hospitals begin screening and reporting.

2015: ODH launches a redeveloped birth defects information system, a web-based application used by hospitals to report cases of birth defects in Ohio. The new system links to the ODH Bureau of Vital Statistics electronic birth records and sends potential referrals for children to the Help Me Grow program in their county. Data will be used to target prevention strategies to reduce birth defects and infant mortality.

Improving Overall Health System Performance

2012: About half of all pregnancies in Ohio are unintended, with higher rates among women at risk of having a poor birth outcome, such as lower income women, African-American women and teens. Ohio Medicaid adopts a Medicaid Family Planning State Plan Amendment to expand eligibility for family planning services for women and men up to 200 percent of the federal poverty level.

2013: The 2012-13 state budget provides temporary Medicaid coverage enabling pregnant women to receive medical care while their Medicaid application is processed, accelerating quicker access to care for better birth outcomes.

2013: Ohio Medicaid negotiates new contracts with Medicaid managed care plans to include enhanced maternal care and inter-conception care requirements for women at highest risk for poor pregnancy outcomes.

2013: Ohio Medicaid managed care plans and hospital neonatal intensive care units (NICUs) forge partnerships focusing on transitioning infants from NICUs to the home setting, including opportunities for the managed care plans to bridge gaps in care during the transition.

2013: Ohio Medicaid promotes better birth outcomes and encourages appropriate postpartum visits as well as family planning services by holding managed care plans accountable for minimum performance standards on related measures.

2014: Medicaid benefits are extended to additional women of reproductive age to increase access and improve birth outcomes.

2014: Ohio's Pregnancy Associated Mortality Review Program becomes one of six programs nationally to participate in the Every Mother Initiative (EMI), an Action Learning Collaborative funded by Merck for Mothers and operated by the Association of Maternal and Child Health Programs. EMI helps Ohio strengthen its maternal mortality surveillance system and provides funding for translational (data-to-action) projects.

2015: ODH selects four community health centers across the state to pilot an evidence-based healthcare delivery model for pregnant women called "Centering Pregnancy" which integrates maternal care, education and support to improve birth and infant health outcomes in high-risk communities in Ohio.

2015: ODH contracts with the Clinical Skills Education and Assessment Center at The Ohio State University Wexner Medical Center to provide obstetric emergency simulation training for birthing center labor and delivery, and postpartum unit staff. The training focuses on three clinical simulations – postpartum hemorrhage, cardiomyopathy, and preeclampsia – developed based on Pregnancy Associated Mortality Review Program cases.