

Ohio Child Fatality Review Fifteenth Annual Report



September 30, 2015



Ohio
Department of Health



Ohio Child Fatality Review Fifteenth Annual Report

This report includes reviews of child deaths that occurred in 2013 and 2014 and aggregate reviews for 2009-2013.

MISSION

To reduce the incidence of preventable child deaths in Ohio

SUBMITTED SEPTEMBER 30, 2015, to:

John R. Kasich, Governor, State of Ohio
Clifford A. Rosenberger, Speaker, Ohio House of Representatives
Keith Faber, President, Ohio Senate
Fred Strahorn, Minority Leader, Ohio House of Representatives
Joe Schiavoni, Minority Leader, Ohio Senate
Ohio Child Fatality Review Boards
Ohio Family and Children First Councils

SUBMITTED BY

Ohio Department of Health
Ohio Children's Trust Fund

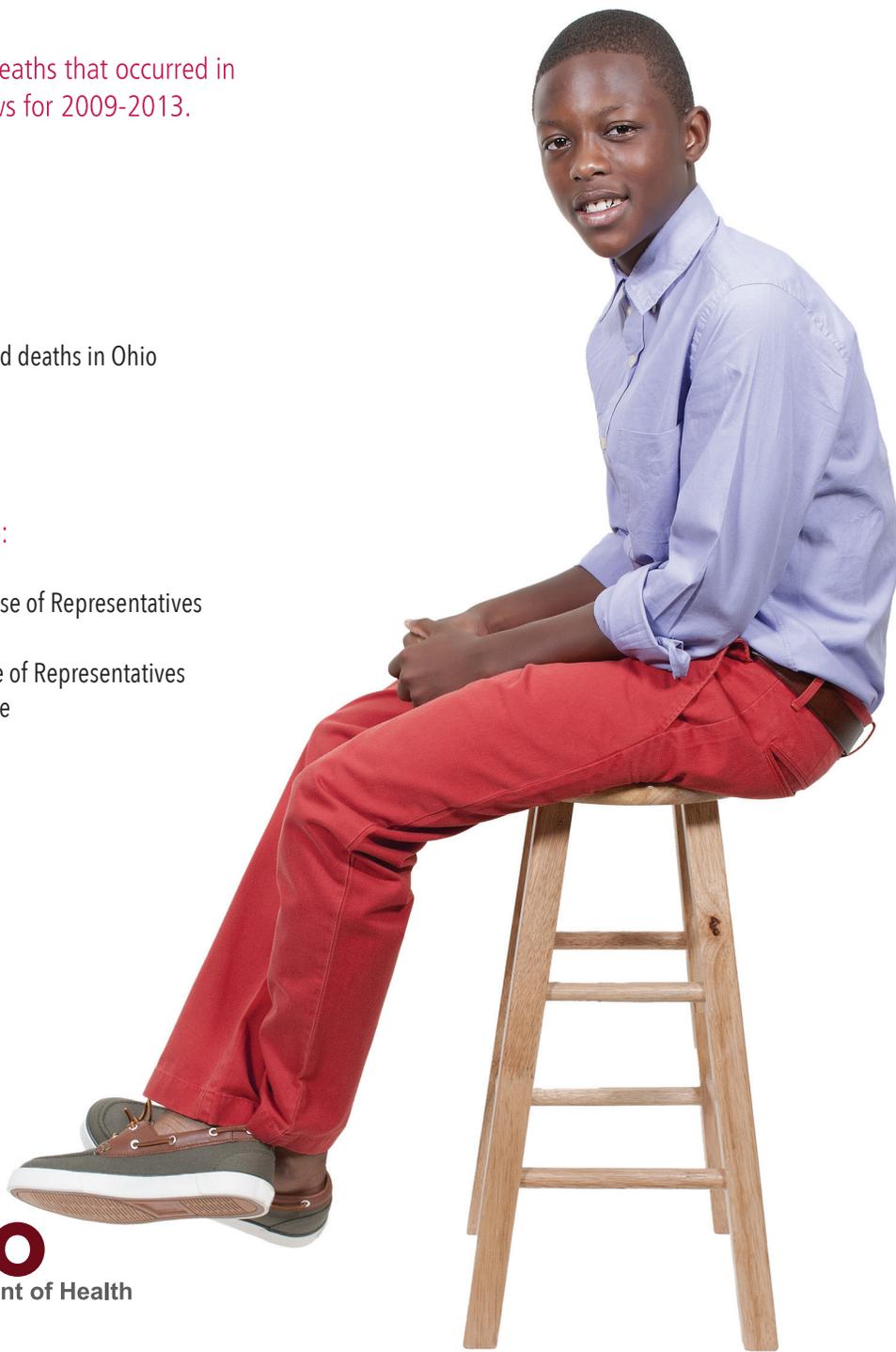




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Dear Friends of Ohio Children:

We respectfully present the 15th annual Ohio Child Fatality Review (CFR) report. The Ohio General Assembly established the CFR program in July 2000 in order to examine the contributing factors leading to children's deaths in Ohio. It is only through careful review of child deaths that we can be better prepared to prevent future deaths.

This report contains comprehensive summary data pertaining to child deaths from the five-year period of 2009 to 2013, as well as preliminary data from reviews of 2014 deaths. In addition, it outlines the work undertaken by local CFR boards and state agencies to decrease preventable child deaths. We are confident that this report can help reduce the incidence of these untimely child deaths by informing Ohio communities about their prevalence and causes, as well as how they can be prevented.

The CFR process begins at the local level, where local boards consisting of professionals from public health, recovery services, children's services, law enforcement and health care review the circumstances surrounding every child death in their county. It is through their collective expertise and collaborative assessment that preventive solutions and initiatives are developed for use throughout the state.

It is incumbent upon all of us to work together to prevent untimely child deaths in Ohio by:

- Empowering individuals to intervene in situations where violence and neglect harm children.
- Encouraging community and individual involvement in recognizing and preventing risk factors that contribute to child deaths.
- Improving systems of care so all children receive optimal health care before and after birth and throughout their lives.
- Educating families, children, neighbors, organizations and communities about preventable child deaths.
- Assisting and supporting families to achieve healthy parenting practices through education and resources.

As you review the facts, analyses and recommendations contained in this report, we ask that you make a commitment to create a safer and healthier Ohio for our children. By working together, we can eliminate preventable child deaths.

Sincerely,



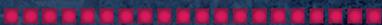
Richard Hodges, MPA
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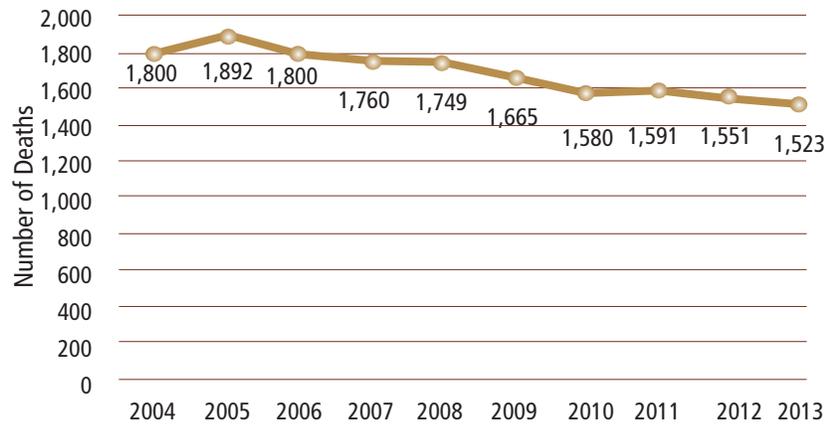


Executive Summary and Key Findings

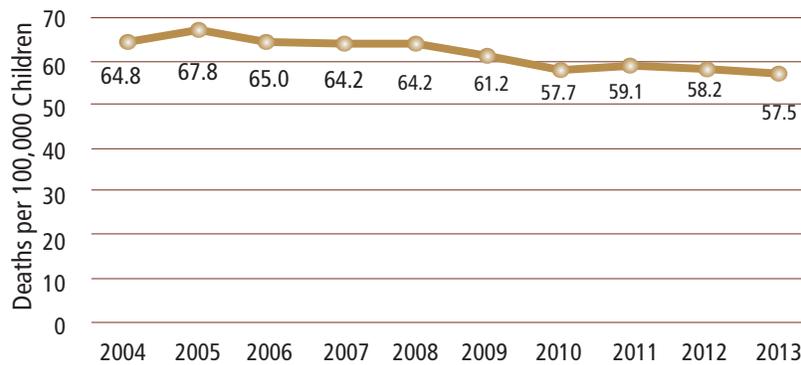


According to Ohio Bureau of Vital Statistics, the number of Ohio child deaths has decreased from 1,918 in 2000 when CFR was established by Ohio law to 1,523 in 2013. The child mortality rate has decreased from 66.5 deaths per 100,000 children in 2000 to 57.5 in 2013. The charts below show the trends during the ten-year period from 2004-2013.

Ohio Child Deaths by Year, 2004-2013



Ohio Child Mortality Rate by Year, 2004-2013

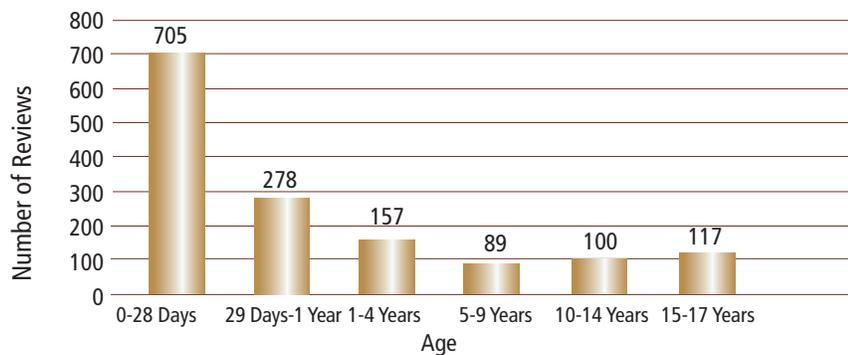


Reviews for 2013 Deaths

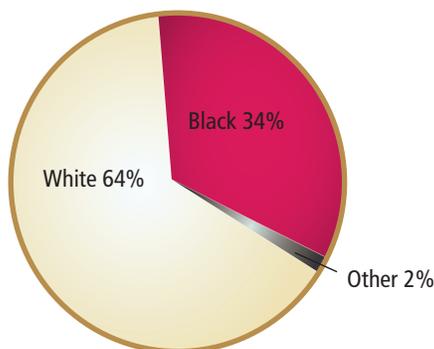
Reviews by Demographic Characteristics

Local child fatality review (CFR) boards reviewed the deaths of 1,446 children who died in 2013. Sixty-eight percent (983) of the reviews were for children less than 1 year of age. There were greater percentages of reviews among boys (58 percent) and among black children (34 percent) relative to their representation in the general Ohio child population (51 percent for boys and 17 percent for black children, per U.S. Census data¹). Six percent (85) of all reviews were for children of Hispanic ethnicity, which closely compares to their representation in the general Ohio child population (6 percent).

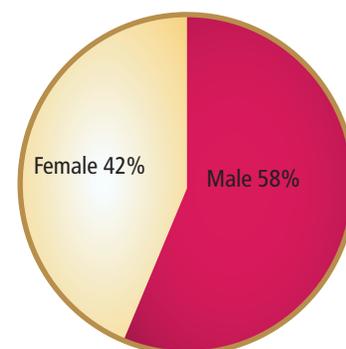
Reviews of 2013 Deaths by Age, N=1,446



Reviews of 2013 Deaths by Race, N=1,446



Reviews of 2013 Deaths by Gender, N=1,446



*69 cases with multiple races indicated were assigned to the minority race.

Reviews by Manner of Death

Manner of death is a classification of deaths based on the circumstances surrounding a cause of death and how the cause came about. The five manner-of-death categories on the Ohio death certificate are natural, accident, homicide, suicide and undetermined. For deaths being reviewed, CFR boards report the manner of death as indicated on the death certificate. For deaths that occurred in 2013, the 1,446 reviews were classified as follows:

- Seventy-three percent (1,052) were natural deaths.
- Fourteen percent (207) were accidents.
- Four percent (51) were homicides.
- Two percent (35) were suicides.
- Seven percent (101) were of an undetermined or unknown manner.

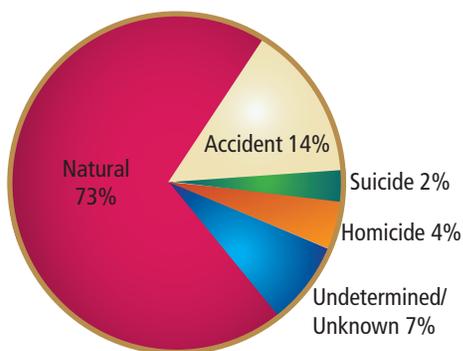
Since 2004, the proportional distribution of reviews across the manners has changed very little. See Appendix V on page 94 for additional tables including manner of death by demographic information.

Reviews by Cause of Death

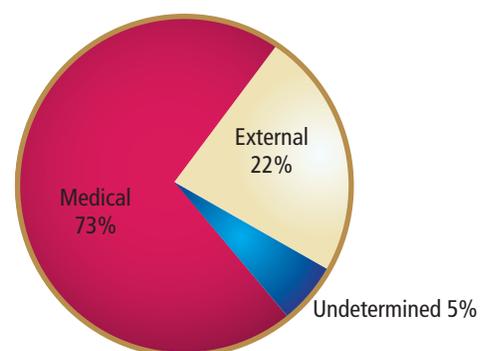
The CFR case report tool and data system implemented in 2005 classify causes of death by medical or external causes. Medical causes are further specified by particular disease entities. External causes are further specified by the nature of the injury. CFR boards select the cause of death category that allows the most information about the circumstances of the death to be recorded in the data system, with a focus on prevention. The cause of death category selected may not match the death certificate. In 2013, the 1,446 reviews were classified as follows:

- Seventy-three percent (1,051) were due to medical causes.
- Twenty-two percent (314) were due to external causes.
- In 81 reviews, the cause of death could not be determined as either medical or external.

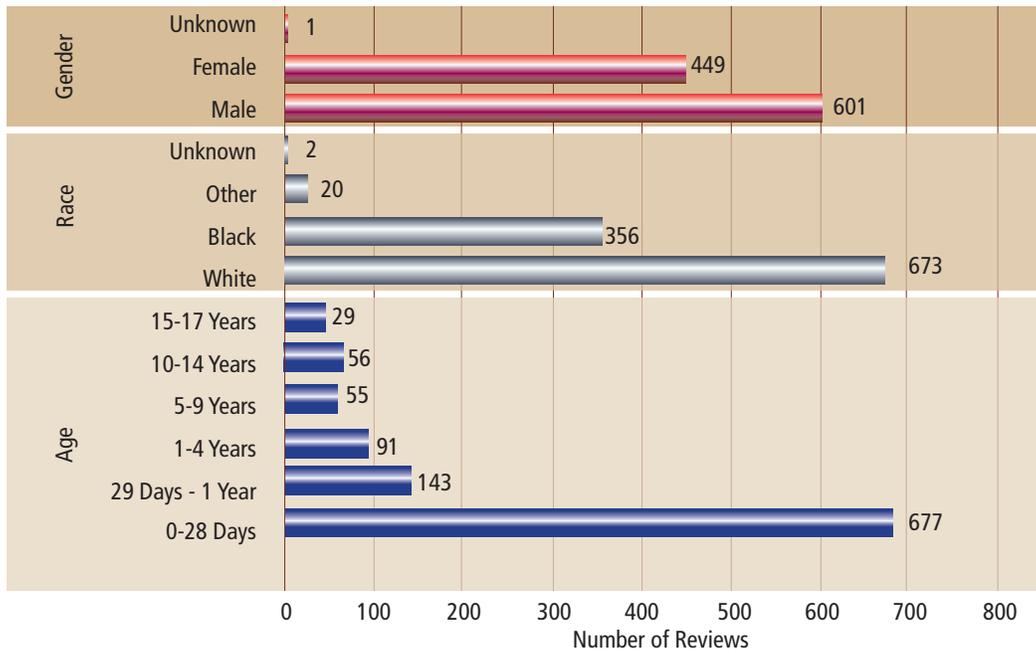
Reviews of 2013 Deaths
by Manner, N=1,446



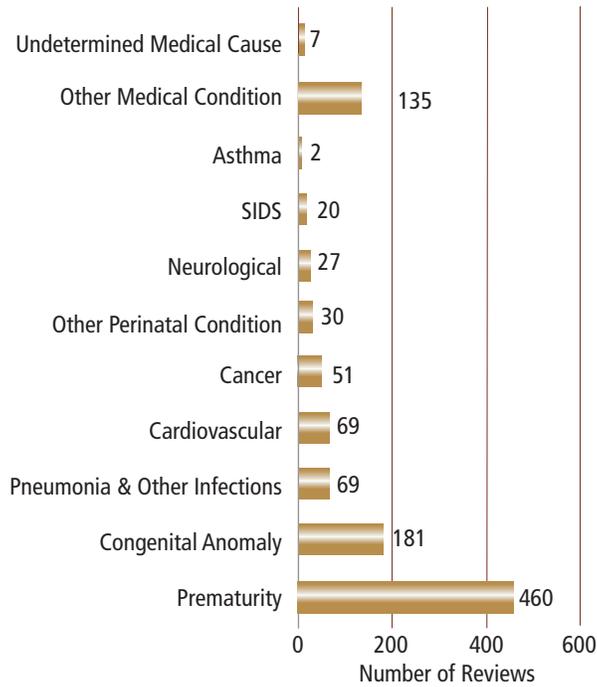
Reviews of 2013 Deaths
by Cause, N=1,446



Reviews of 2013 Deaths from Medical Causes, N=1,051



Reviews of 2013 Deaths from Medical Causes, N=1,1051



Three Leading Medical Causes of Death, by Age, Race and Gender, 2013

Age	Prematurity (N=460)		Congenital Anomalies (N=181)		Cardiovascular (N=69)	
	#	%	#	%	#	%
1-28 Days	442	96	99	55	32	46
29 – 364 Days	16	3	37	20	15	22
1-4 Years	2	<1	22	12	9	13
5-9 Years	-		12	7	4	6
10-14 Years	-		8	4	2	3
15-17 Years	-		3	2	7	10
Unknown	-	-	-	-	-	-
Race						
White	250	54	130	72	53	77
Black	201	44	45	25	15	22
Other	8	2	5	3	1	1
Unknown	1	<1	1	<1	-	
Gender						
Male	283	62	94	52	41	59
Female	177	38	87	48	28	41
Unknown	-		-		-	
Total	460		181		69	

Percents may not total 100 due to rounding.

For additional tables including all medical causes of death by demographic information, please see Appendix V on page 94.

DEATHS FROM EXTERNAL CAUSES

Background

External causes of death are injuries, either unintentional or intentional, resulting from acute exposure to forces that exceed a threshold of the body's tolerance, or from the absence of such essentials as heat or oxygen.²

Vital Statistics

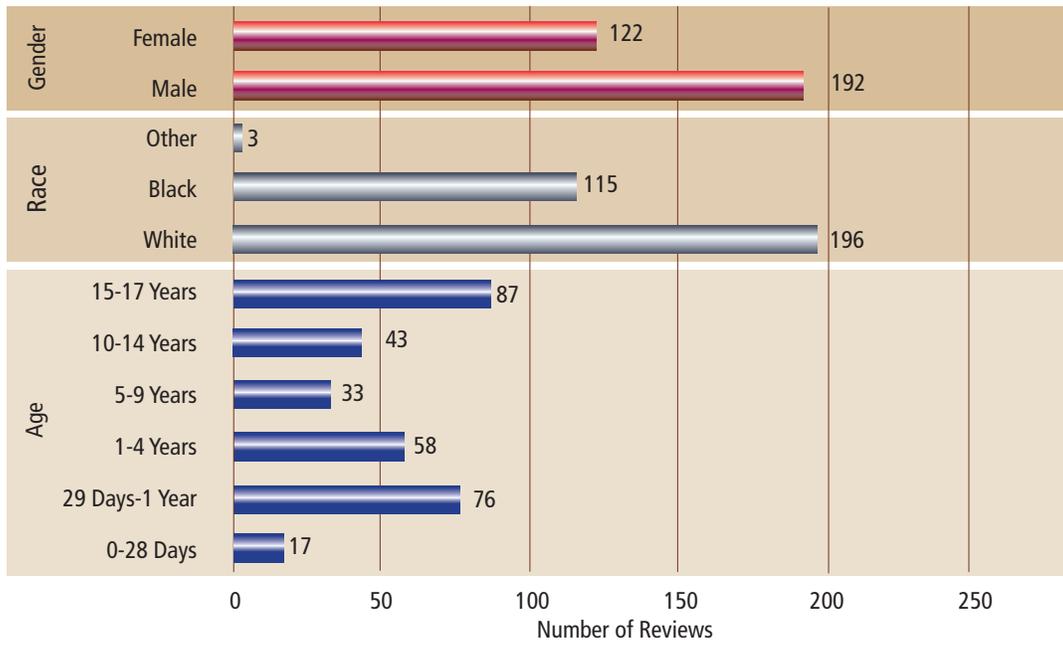
Ohio Vital Statistics reported 366 children who died of external causes in 2013. For further information on the ICD-10 codes used to produce vital statistics data, see Appendix III on page 92.

CFR Findings

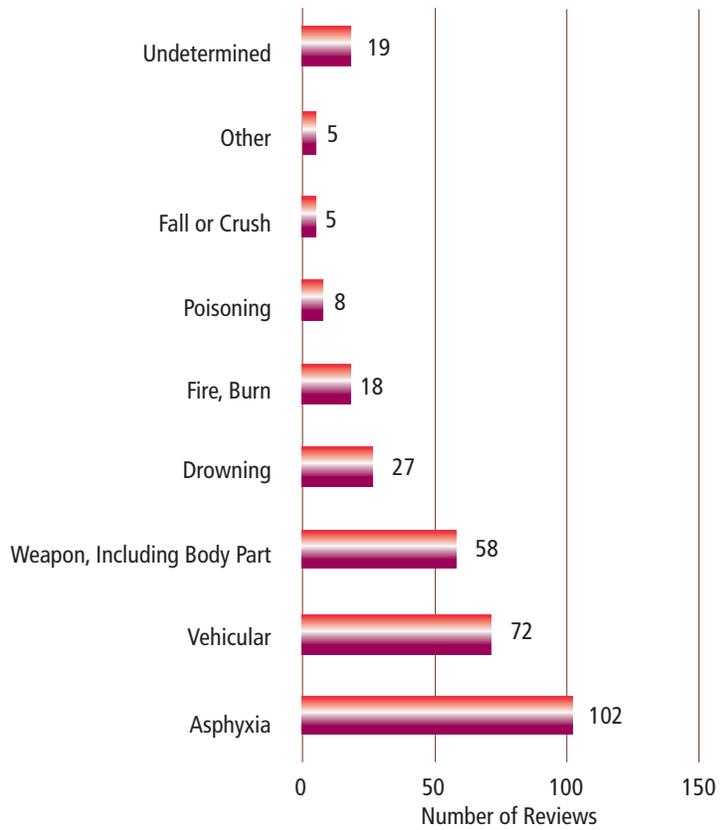
Twenty-two percent (314) of the 1,446 reviews for 2013 deaths were due to external causes.

- Twenty-nine percent (92) percent of the 314 reviews of deaths from external causes were for infants less than 1 year of age, while 28 percent (87) were for children ages 15 to 17 years.
- Thirty-seven percent (115) of the 314 reviews for external causes were for black children, which is disproportionate to their representation in the Ohio child population (17 percent).
- Sixty-one percent (192) of the 314 reviews for external causes were for boys, which is disproportionate to their representation in the population (51 percent).
- Asphyxia, vehicular injuries and weapons injuries were the three leading external causes for the 314 reviews. Asphyxia has been the leading external cause of death for four of the past five years.
 - ◆ Thirty-two percent (102) were due to asphyxia.
 - ◆ Twenty-three percent (72) were due to vehicular injuries
 - ◆ Eighteen percent (58) were due to weapons injuries, including the use of body parts as weapons.

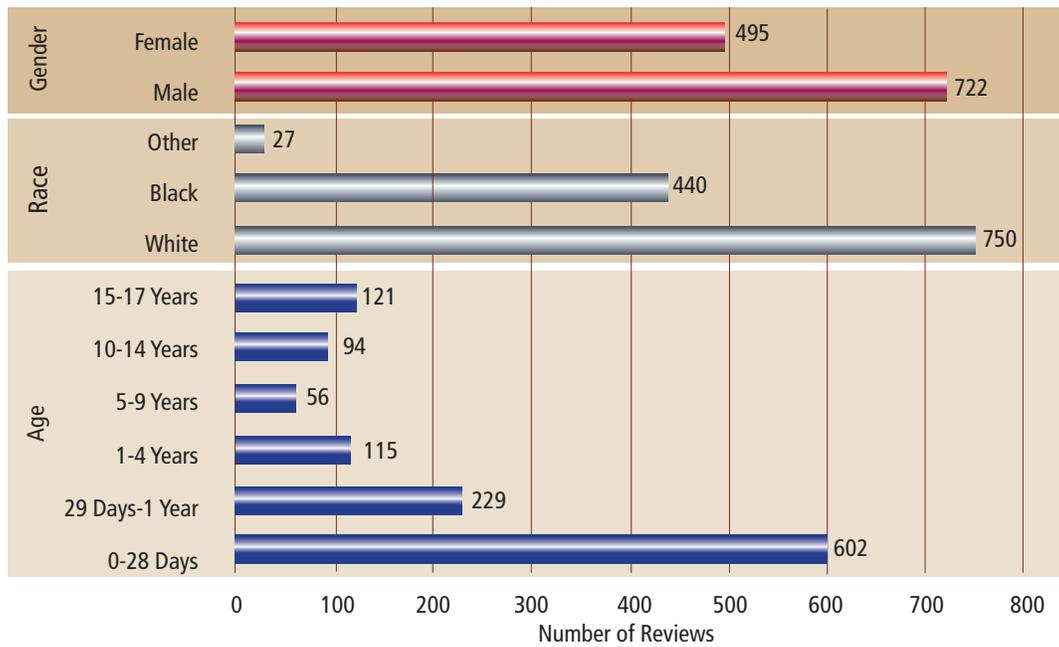
Reviews of 2013 Deaths from External Causes, N=314



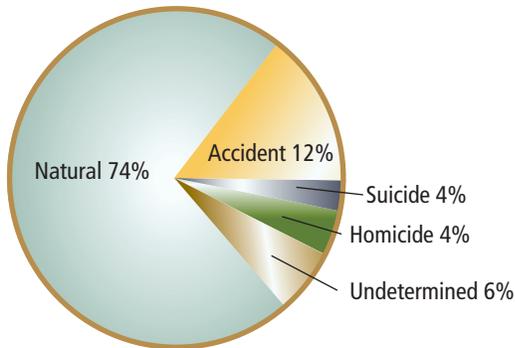
Reviews of 2013 Deaths from External Causes, N=314



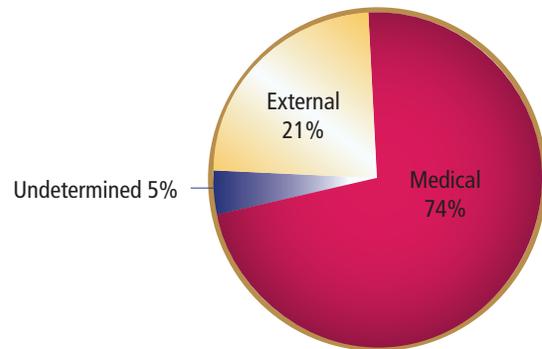
Reviews of 2014 Deaths by Age, Race and Gender, N=1,217



Reviews of 2014 Deaths by Manner, N= 1,217



Reviews of 2014 Deaths by Cause, N= 1,217



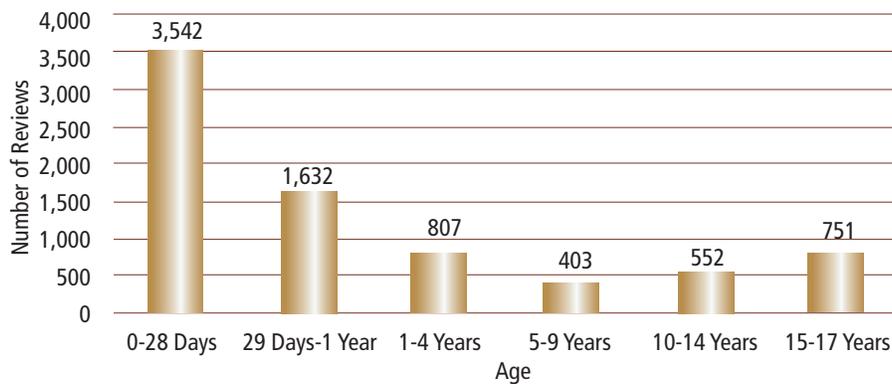
REVIEWS FOR 2009-2013 DEATHS

SUMMARY OF REVIEWS

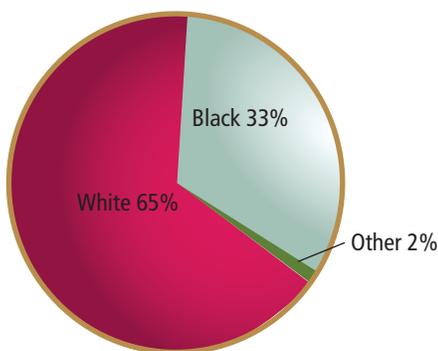
To gain more understanding of the factors related to child death, data have been analyzed for the five-year period 2009 through 2013. For the five-year period, Ohio CFR boards have completed 7,671 reviews, which represent 97 percent of the 7,910 child deaths reported by Ohio Bureau of Vital Statistics.

- Sixty-eight percent (5,174) of the reviews were for children less than 1 year of age.
- There were greater percentages of reviews among boys (57 percent) and among black children (33 percent) relative to their representation in the general Ohio population (51 percent for boys and 17 percent for black children, per U.S. Census data³).
- Five percent (386) of all reviews were for children of Hispanic ethnicity. Hispanic children make up 6 percent of Ohio's child population.

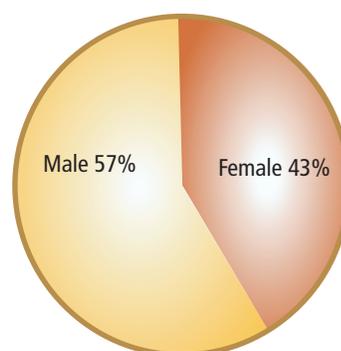
Reviews of 2009-2013 Deaths by Age, N=7,671



Reviews of 2009-2013 Deaths by Race, N= 7,671

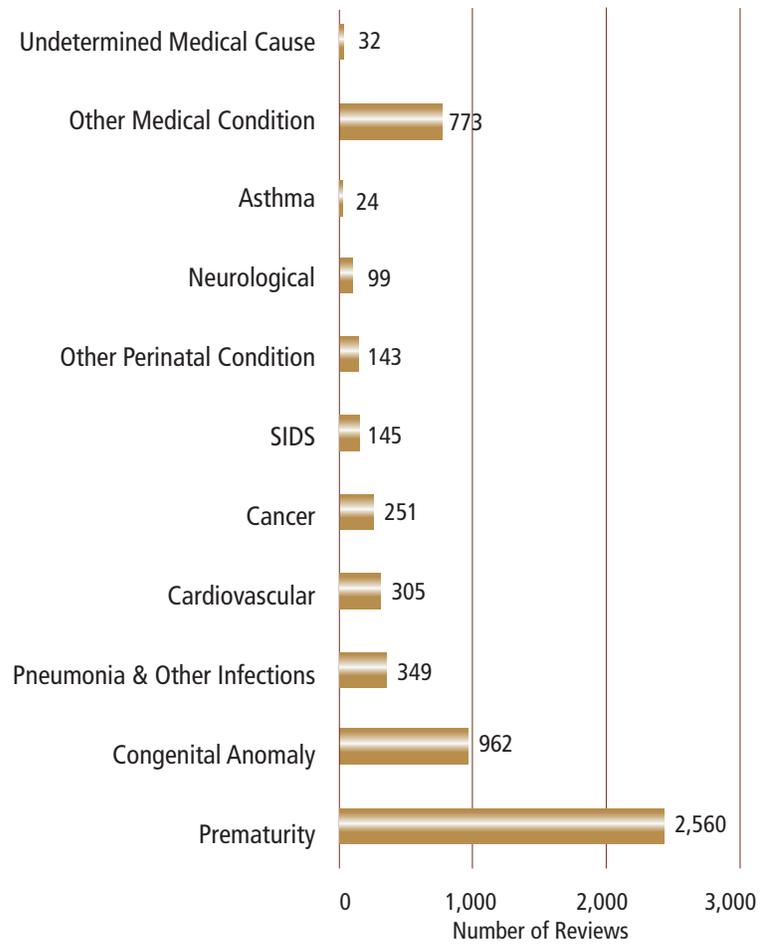


Reviews of 2009-2013 Deaths by Gender, N= 7,671



* 225 cases with multiple races were assigned to the minority race.

Reviews of 2009-2013
Deaths from Medical Causes, N= 5,512

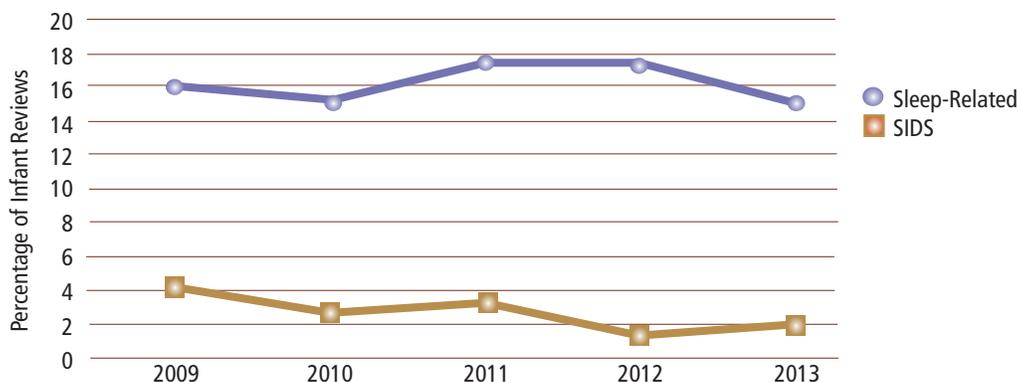


TRENDS OVER FIVE YEARS

For the five-year period 2009 through 2013, the proportional distribution of reviews across many factors, such as manner of death, age, race, gender and preventability, has changed very little.

- Seventy-one percent (5,473) of the reviews were for deaths of natural manner. The percentage changed little during the period, from a high of 73 percent in 2010 and 2013 to a low of 70 percent in 2011.
- Sixty-eight percent (5,174) of the reviews were for infants less than 1 year old. The percentage has changed little during the period, from 66 percent in 2009 to 68 percent in 2010, 2011, 2012 and 2013.
- Fifty-seven percent (4,372) of the reviews were for boys. The percentage changed little during the period, from a high of 58 percent in 2009 and 2013 to a low of 56 percent in 2010 and 2011.
- Thirty-three percent (2,528) of the reviews were for black children. The percentage has changed little during the period, from a high of 34 percent in 2009, 2011 and 2013 to a low of 31 percent in 2010 and 2012.
- Twenty-three percent (1,759) of the deaths reviewed were deemed probably preventable. The percentage changed little during the period, from a high of 24 percent in 2011 and 2012 to a low of 22 percent in 2009 and 2010.
- Reviews for sleep-related infant deaths account for 16 percent (836) of all infant reviews. The percentage changed little during the period, from a high of 17 percent in 2011 and 2012 to a low of 15 percent in 2010 and 2013. The percentage of infant reviews for SIDS deaths has decreased from 4 percent in 2009 to less than 2 percent in 2012.

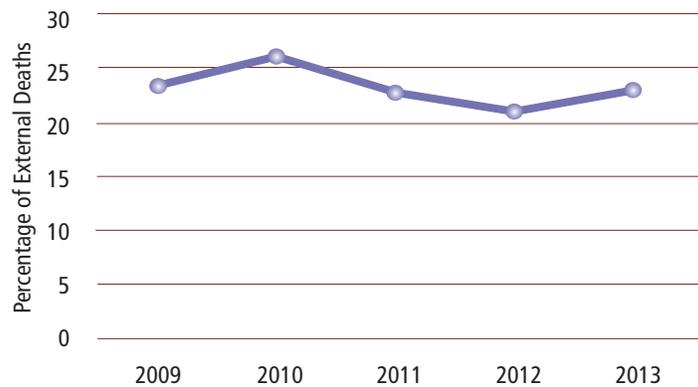
Sleep-Related Deaths and SIDS, 2009-2013



During the five-year period, changes were noted in the percentage of reviews for some groups of death, particularly vehicular injuries and asphyxia.

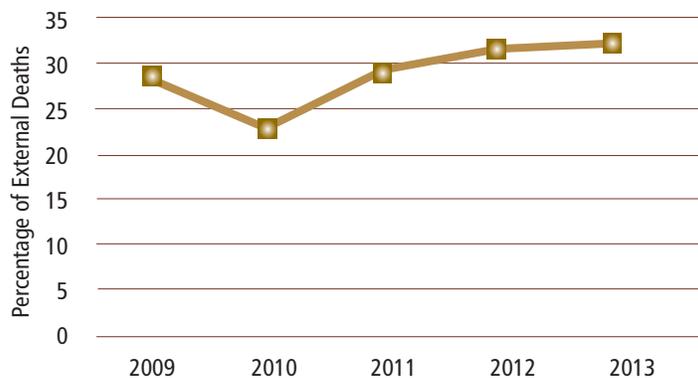
- Five percent (409) of all reviews were due to vehicular crashes. This is 23 percent of the 1,758 reviews for deaths from external causes. After decreasing dramatically since 2005, the percentage varied during this five-year period, from a high of 26 percent in 2010 to a low of 21 percent in 2012. Before 2008, vehicular crashes were the leading external cause of death. In 2012, vehicular crashes ranked third behind asphyxia and weapons deaths. White boys ages 15 to 17 years accounted for 25 percent (104) of all vehicular deaths.

Reviews of Vehicular Deaths, 2009-2013



- Seven percent (509) of all reviews were due to asphyxia. The percentage of deaths from external causes due to asphyxia increased from 29 percent in 2009 to 33 percent in 2013, with a decrease to 23 percent in 2010. Each year, the largest numbers of asphyxia deaths are suffocation deaths to infants less than 1 year old. Fifty-three percent (272) of the asphyxia deaths were sleep-related infant deaths.

Reviews of Asphyxia Deaths, 2009-2013



See Appendix V, Tables 14 and 15 on page 106 for additional review information regarding trends for 2009-2013 deaths.

The comprehensive nature of the case report tool and the functionality of the data system have allowed more complete analysis for all groups of deaths. The following sections of this report offer in-depth information about reviews of deaths to Hispanic children, poisoning deaths, deaths by special circumstances, such as suicides, homicides and child abuse deaths, and by age group. Each section contains detailed data regarding the circumstances and factors related to child deaths.

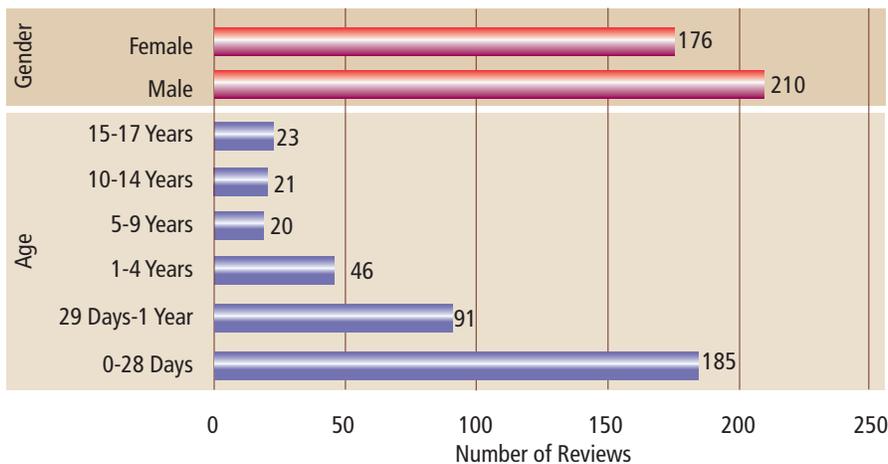
DEATHS TO HISPANIC CHILDREN, ALL AGES

The CFR case report tool and data system record Hispanic ethnicity as a variable separate from race. A child of any race may be of Hispanic ethnicity.

For the five-year period 2009-2013, five percent (386) of the 7,671 total reviews were for children of Hispanic ethnicity. The population of Hispanic children living in Ohio has steadily increased from 3 percent of the total child population in 2005 to 6 percent in 2013.⁴

- Seventy-one percent (276) of the reviews for Hispanic children were for infants.
- Prematurity and congenital anomalies were the leading medical causes of death, accounting for 50 percent (194) of the reviews for Hispanic children.
- The leading external causes of death were asphyxia (21) and weapons (16), followed by vehicular crashes (14).
- Seventeen percent (47) of the 276 reviews for Hispanic infants were sleep-related deaths

Reviews of Deaths to Hispanic Children
by Age and Gender, 2009-2013, N=386



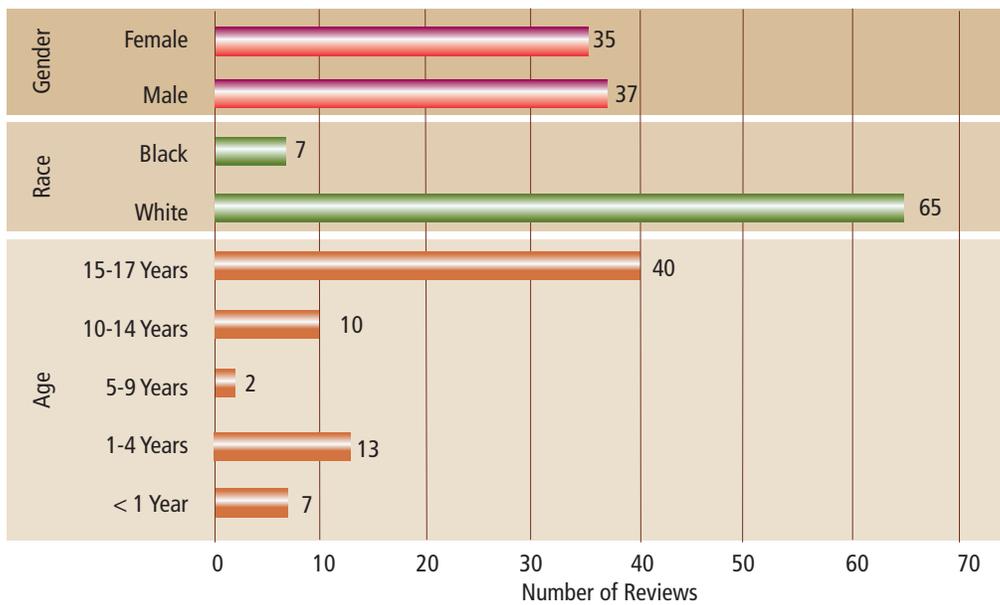
POISONING DEATHS, ALL AGES

Combining data from five years allows more analysis for deaths due to poison, where in-depth analysis is limited by small numbers in a single year.

Local CFR boards reviewed 72 poisoning deaths for 2009-2013. These deaths represent four percent of the 1,758 deaths from external causes for the period. Sixty-four percent (46) of the deaths were of accidental manner. Ten percent (7) were suicides.

- Sixty-nine percent (50) of the deaths occurred to 10 to 17 year olds.
 - ◆ The poison agents for this age group included opiates, prescription medications, antidepressants, methadone, and street drugs.
- Thirty-one percent (22) of the poisoning deaths occurred to children younger than 10 years.
 - ◆ The poison agents for this age group included opiates, and other prescription and over-the-counter medications. None were poisoned by household cleaners or plants.

Reviews of Poison Deaths, 2009-2013, N=72



HOMICIDE, ALL AGES

Background

The CFR case report tool and data system capture information about homicide as a manner of death and as an act of commission, regardless of the cause of death. As homicide has unique risk factors and prevention strategies, homicide reviews from all causes of death have been combined for further analysis as a group.

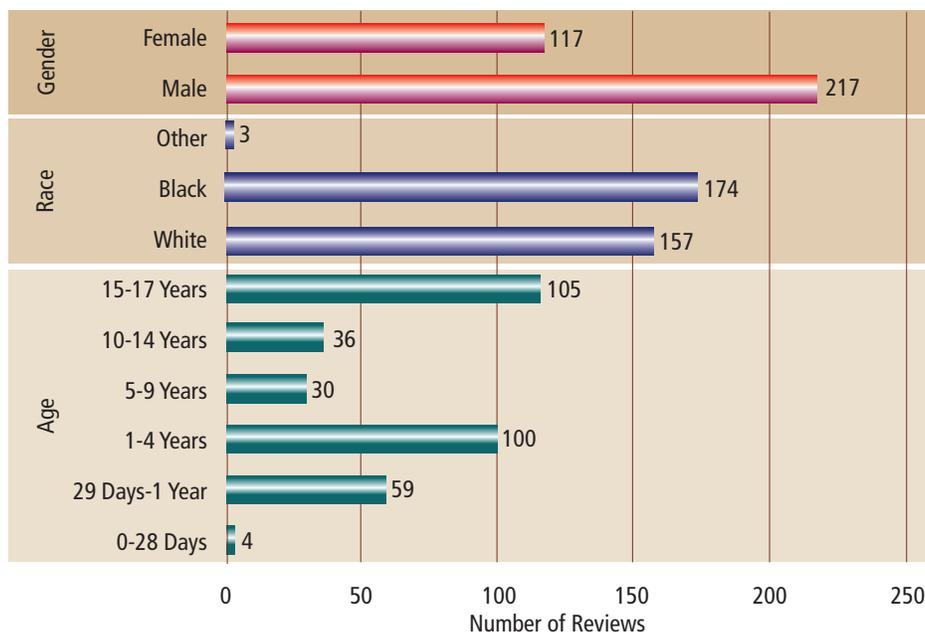
According to the National Center for Injury Prevention and Control, nationally in 2013, homicide was the fourth-leading cause of death for children ages 1 to 17 years and accounted for 8 percent of the deaths in this age group. Homicide was the leading manner of death for black children ages 10 to 17 years, accounting for 24 percent.⁵

CFR Findings

For the five-year period from 2009 through 2013, local CFR boards reviewed 334 deaths to children resulting from homicide. Homicides represent four percent of the total reviews and fourteen percent of all reviews for children ages 15 to 17 years. The percentage of all reviews due to homicide was 5 percent in 2008, 2009 and 2012, and 4 percent in 2010 and 2011.

- Homicide deaths to boys (65 percent) were disproportionately higher than their representation in the general population (51 percent).
- The proportion of homicide deaths to black children (52 percent) was more than three times their representation in the general population (17 percent).
- Of the 145 deaths from all causes to black boys ages 15 to 17 years, 46 percent (67) were homicides, while only 4 percent (14) of the 339 deaths from all causes to white boys ages 15 to 17 years were homicide.

Reviews of Homicides, 2009-2013, N=334



SUICIDE, ALL AGES

Background

Suicide is death caused by self-directed injurious behavior with intent to die.⁶ The CFR case report tool and data system capture information about suicide as a manner of death and as an act of commission, regardless of the cause of death. As suicide has unique risk factors and prevention strategies, suicide deaths from all causes have been combined for further analysis.

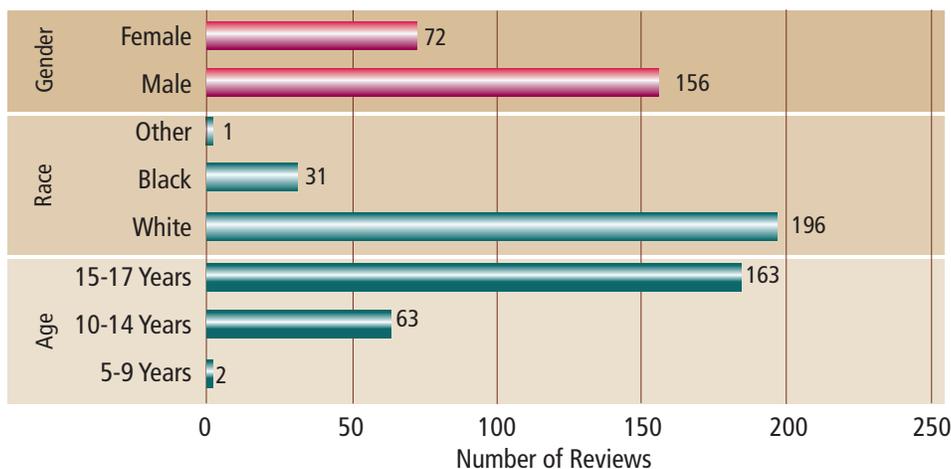
According to the National Center for Injury Prevention and Control, suicide accounted for 17 percent of the deaths for young people ages 10 to 17 years nationally in 2013.⁷

CFR Findings

For the five-year period from 2009 through 2013, local CFR boards reviewed 228 deaths to children from suicide. These represent three percent of the total 7,671 reviews and 18 percent of all reviews for children ages 10 to 17. The largest number of suicides occurred in 2011 (57) and the fewest occurred in 2010 (28).

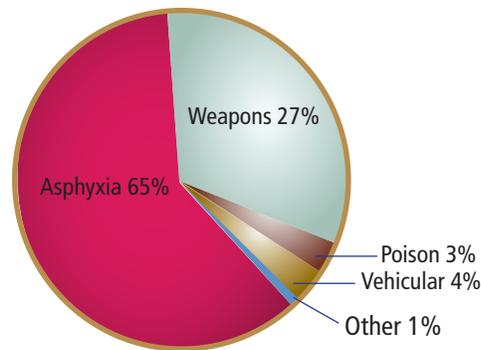
- Suicide deaths were disproportionately higher among boys (69 percent) than their representation in the general population (51 percent).
- Seventy-two percent (163) of the suicide deaths reviewed were to children ages 15 to 17.
- Nineteen percent (43) of reviews for suicide deaths were from rural non-Appalachian counties, which is disproportionately higher than the proportion of children living in those counties (15 percent).

Reviews of Suicides, 2009-2013, N=228

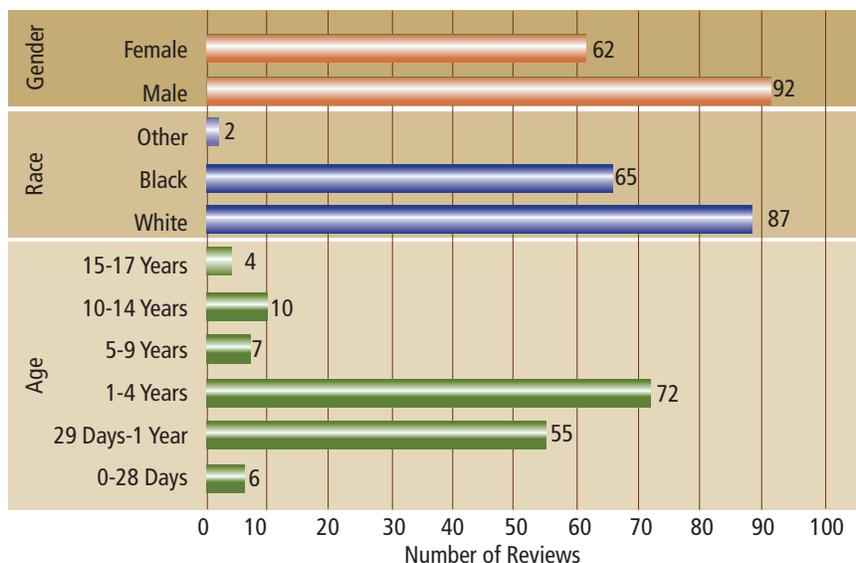


- Sixty-five percent (149) of the suicide deaths were caused by asphyxiation and 27 percent (61) were caused by a weapon.
- The most frequently indicated factors that might have contributed to the child's despondency included family problems, such as divorce and arguments with parents; arguments and break-ups with friends; school issues including failure; drug and alcohol use; victimization by bullying; and other personal crises.
- Twenty percent (46) of reviews for suicide deaths indicated the child had a history of child abuse or neglect. Seven had an open child protective services case at the time of the incident.
- Twenty-seven percent (61) of the suicide victims were receiving mental health services at the time of the incident. Twenty-one percent (48) had been prescribed medications for mental health conditions.

Suicides by Cause of Death, N=228

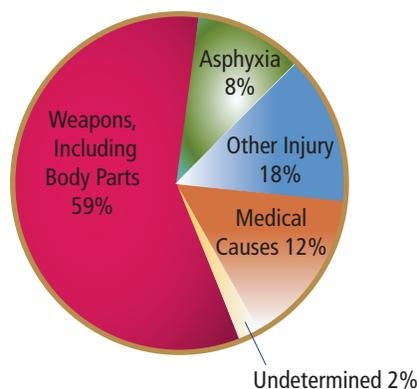


Reviews of Child Abuse and Neglect Deaths 2009-2013, N=154



- The 154 deaths identified as child abuse and neglect were the result of several kinds of injuries.
 - ◆ Sixty-two percent (96) were the result of weapons including use of a body part as a weapon.
 - ◆ Other causes of death included medical causes, asphyxiation, exposure, drowning, poisoning and fire/burn injuries.
- The majority of the 154 child abuse and neglect deaths reviewed were violent deaths, with 122 resulting from physical abuse, including 29 indicating the child had been shaken.

Child Abuse and Neglect Deaths by Cause of Death, N=154



Manner of Death by County Type

- Sixty-two percent (3,416) of natural deaths reviewed were from metropolitan counties, which is disproportionately higher than the proportion of children living in metropolitan counties (54 percent).
- Nineteen percent (203) of reviews for accidental deaths were from rural Appalachian counties, which is disproportionately higher than the proportion of children living in those counties (13 percent).
- Reviews for suicide deaths were disproportionately higher in rural non-Appalachian counties, with 20 percent (43) of the suicide reviews compared to 15 percent of the population.
- Ten percent (35) of the reviews for homicide deaths were from rural non-Appalachian counties, and 10 percent (33) were from suburban counties, which is disproportionately lower than the proportion of children living in those counties (15 percent for rural non-Appalachian and 19 percent for suburban). Conversely, the percentage of reviews for homicide deaths was higher in metropolitan (67 percent) than the proportion of children living in those counties (54 percent).

Manner of Death by County Type, 2009-2013, N=7,671

	Rural Appalachian		Rural Non-Appalachian		Suburban		Metropolitan		Total
	#	%	#	%	#	%	#	%	#
Natural	612	11	724	13	721	13	3,416	62	5,473
Accident	203	19	188	17	176	16	518	48	1,085
Suicide	24	11	43	19	40	18	120	53	228
Homicide	36	11	35	11	33	10	230	69	334
Undetermined/Unknown	51	9	41	7	55	10	404	73	551
Total	927	12	1,031	13	1,025	13	4,688	61	7,671

Percents may not total 100 due to rounding.

Manner of Death by County Type

- Sixty-two percent (3,439) of the reviews of deaths from medical causes were from metropolitan counties, which is disproportionately higher than the proportion of children living in metropolitan counties (54 percent). Reviews of deaths due to prematurity were particularly over-represented in metropolitan counties. Seventy-two percent (1,756) of deaths due to prematurity were from metropolitan counties. In contrast, only 10 percent (243) of the deaths due to prematurity were from suburban, which is disproportionately less than the proportion of children living in those counties (19 percent).

Medical Causes of Death by County Type, 2009-2013, N=5,512

	Rural Appalachian		Rural Non-Appalachian		Suburban		Metropolitan		Total
	#	%	#	%	#	%	#	%	#
Prematurity	202	8	228	9	243	10	1,756	72	2,429
Congenital Anomaly	118	12	119	12	145	15	580	60	962
Cardiovascular	42	14	60	20	43	14	160	53	305
Cancer	36	14	46	18	38	15	131	52	251
All Other Medical Causes	222	14	271	17	260	17	812	52	1,565
Total	620	11	724	13	729	13	3,439	62	5,512

Percents may not total 100 due to rounding.

REVIEWS FOR BY AGE GROUPS

In response to recommendations from the Ohio CFR Advisory Committee to present the data and findings in ways that are meaningful and useful to program developers and policy makers, this report presents the findings by age groups. It is reasonable to assume that some risk and protective factors may vary by age group.

INFANT DEATHS FROM ALL CAUSES

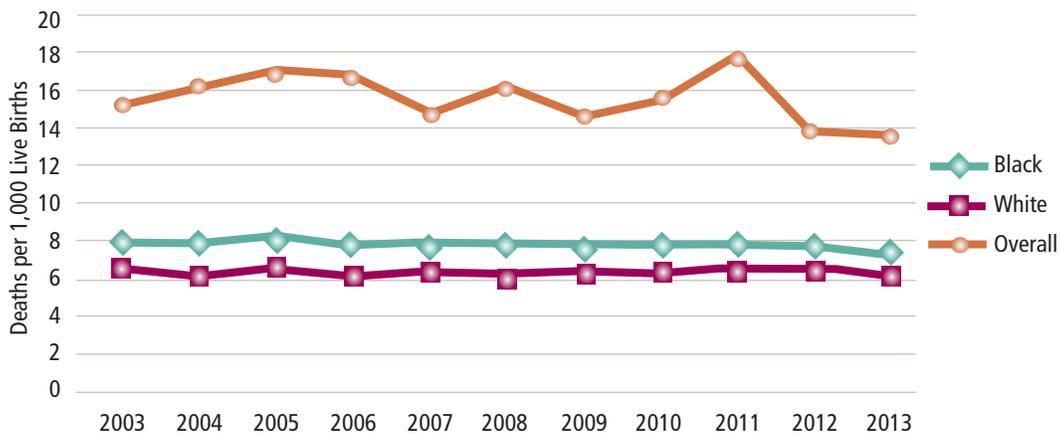
Background

Infant mortality (IM) is an important gauge of the health of a community because infants are uniquely vulnerable to the many factors that impact health, including socioeconomic disparities. The U.S. IM rate for 2013 was 5.96 infant deaths per 1,000 live births.¹³ With the exception of 2002 and 2005, the national IM rate has statistically remained the same or decreased significantly each year from 1958 through 2010.

Ohio's 2013 overall IM rate was 7.4; the black IM rate was 13.8; and the white IM rate was 6.0 deaths per 1,000 live births. These rates have changed little during the past decade.¹⁴

Though the number of infant deaths in Ohio declined slightly from 1,047 in 2012 to 1,024 in 2013, Ohio's 2013 overall infant mortality rate still remains higher than the national average by 23 percent. In addition, the racial disparity continues to be substantial, with black infants dying at more than twice the rate of white infants. For these reasons, ODH has identified decreasing infant mortality as a top priority in its strategic plan.

Infant Mortality by Race, 2003-2013



Caution should be used in interpreting rates and trends due to small numbers

Vital Statistics

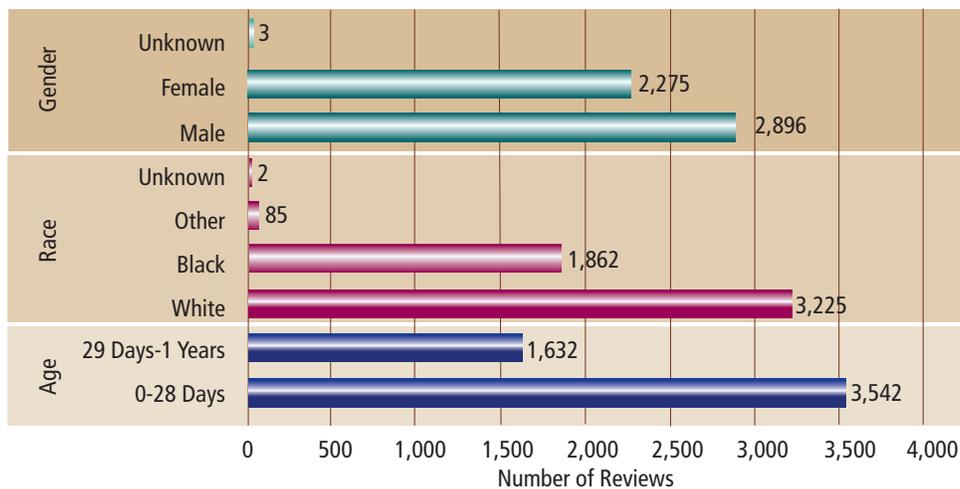
Ohio Bureau of Vital Statistics data report 3,649 neonatal deaths (from birth to 28 days old) and 1,685 post-neonatal deaths (from 29 days to 1 year old) for a total of 5,334 infant deaths for the five-year period 2009-2013.

CFR Findings

Local child fatality review boards reviewed 5,174 infant deaths from 2009 through 2013. These represent 67 percent of all reviews for all ages.

- Forty-two percent (2,154) of the infant deaths occurred in the first day of life.
- Sixty-nine percent (3,542) were infants from birth to 28 days old.
- Thirty-two percent (1,632) were infants from 29 days to 1 year old.
- Reviews for infant deaths were disproportionately higher among boys (56 percent) and among black infants (36 percent) relative to their representation in the general population (51 percent for infant boys and 18 percent for black infants).
- Five percent (276) of the infant deaths reviewed were to Hispanic infants. Hispanic infants account for 6 percent of Ohio's infant population.
- Thirteen percent (683) of the deaths were deemed probably preventable.

Reviews of Infant Deaths by Age, Race and Gender,
2009-2013, N=5,174



Reviews of infant deaths are grouped by cause of death:

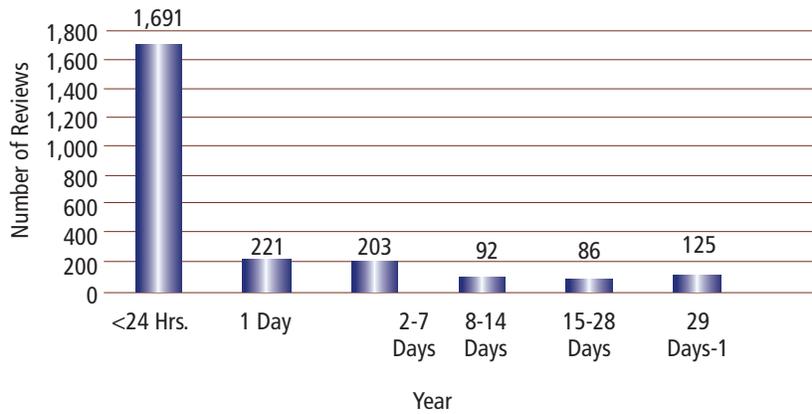
- 4,329 (84 percent) of all infant deaths were due to medical causes.
- 488 (9 percent) were due to external injury causes.
- 357 (7 percent) were unknown if caused by medical or external causes.

Prematurity and congenital anomalies account for 73 percent (3,180) of all infant deaths from medical causes and 61 percent of infant deaths from all causes. Prematurity and congenital anomalies account for 80 percent (2,818) of the deaths to infants 0-28 days old.

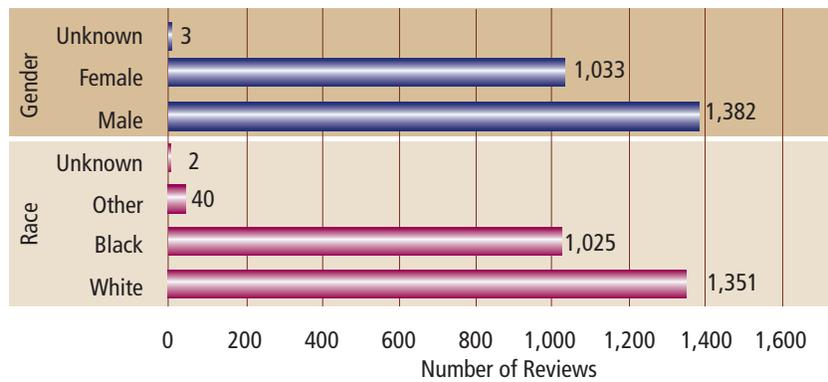
Asphyxia is the leading cause of infant death due to external injury (61 percent of the infant deaths due to external injury). The next leading external cause of death is "undetermined" (19 percent of the infant deaths due to external injury).

Sleep-related deaths accounted for 16 percent (836) of all infant deaths and 46 percent (746) of the deaths to infants 29 days to 1 year old.

Prematurity Deaths by Age Lived, 2009-2013, N=2,418

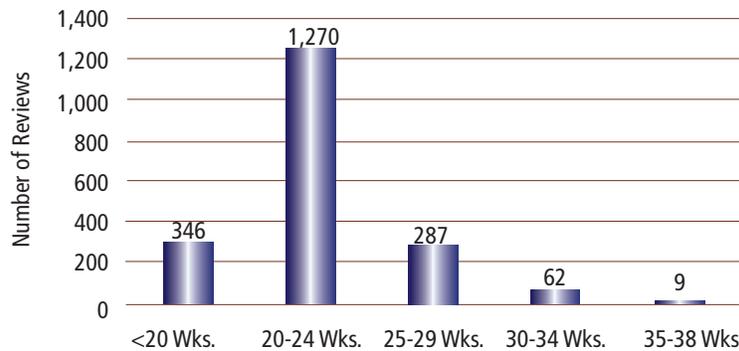


Reviews of Prematurity Deaths by Race and Gender, 2009-2013, N=2,418



CFR boards review all deaths for children born alive, regardless of gestational age. Many of the deaths due to prematurity occurred at gestational ages considered pre-viable, yet the child was born alive. Of the 1,974 reviews where gestational age was known, 18 percent (346) of the deaths occurred before 20 weeks gestation. An additional 64 percent (1,270) occurred between 20 and 24 weeks gestation.

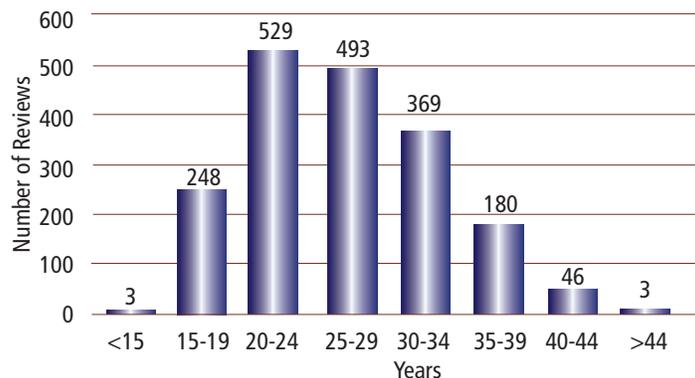
Prematurity Deaths by Gestation, 2009-2013, N=2,418



Although only 1 percent (31) of the deaths due to prematurity were deemed preventable, local CFR boards identified many factors that might increase the risk of prematurity.

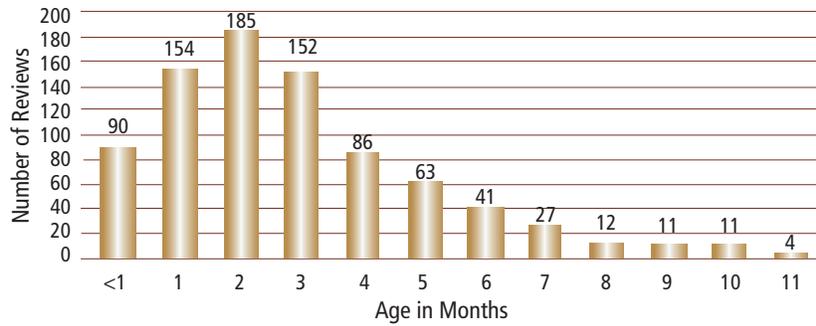
- In addition to being born too early, most infants who died of prematurity were very small at birth. Forty-five percent (1,098) weighed less than 500 grams at birth. An additional 26 percent (616) weighed between 500 and 999 grams.
- Twenty-two percent (542) of the reviews of deaths due to prematurity indicated the infants were from multiple births, including 52 from triplet or higher order births. Of the 698 multiple births among infant deaths from all causes, 78 percent (542) of the causes of death were prematurity.
- Nineteen percent (453) of the prematurity deaths reviewed were infants born to mothers who smoked during the pregnancy. For all births in Ohio in 2012, 17 percent were born to mothers who smoked during the pregnancy.
- Forty percent (968) of the prematurity deaths reviewed indicated the mother experienced health complications during pregnancy. Many reviews indicated multiple complications. Complications included pregnancy-related conditions such as preterm labor, chorioamnionitis, and premature rupture of membranes (1,381) as well as non-pregnancy-related conditions such as hypertension, diabetes, and other infections (410).
- For the 1,871 reviews for prematurity deaths that indicated the primary caregiver was the female biological parent (mother) and the age was known, 13 percent (251) indicated the mother's age was less than 20 years old. This is greater than the proportion of all Ohio births for this age group (8 percent).

Prematurity Deaths by Age of Mother,* 2009-2013, N=2,871

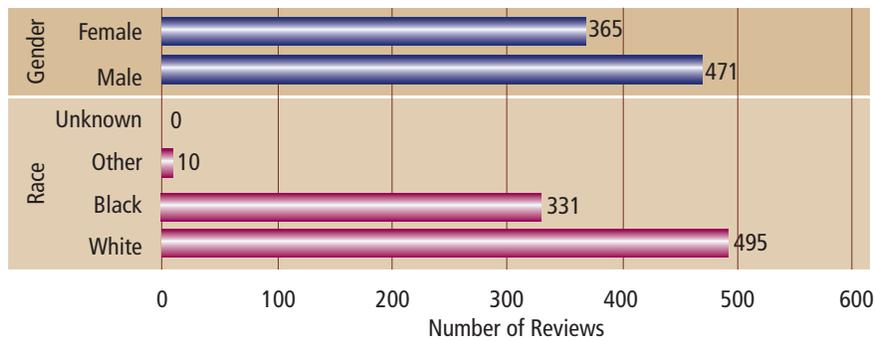


*Where primary caregiver identified as female biological parent.

Sleep-Related Deaths by Age in Months,
2009-2013, N=836



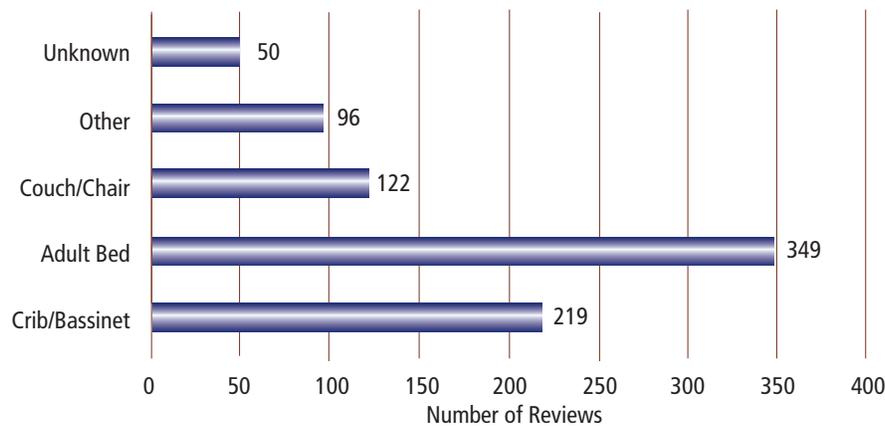
Reviews of Sleep-Related Deaths by Race and Gender,
2009-2013, N=836



As discussed earlier in this section, determining the cause of death for infants in sleep situations is difficult, even when a complete investigation has occurred. Forty-six percent (383) of the sleep-related deaths were diagnosed as unknown or undetermined cause, even though autopsies were completed for 98 percent of the cases and death scene investigations were completed for 88 percent.

Twenty-six percent (219) of sleep-related deaths occurred to infants while sleeping in cribs or bassinets. Fifty-six percent (471) of sleep-related deaths occurred in adult beds, on couches or on chairs.

Sleep-Related Deaths by Location of Infant
When Found, 2009-2013, N=836



Bedsharing was a commonly reported circumstance for sleep-related deaths. Fifty-one percent (425) of sleep-related deaths occurred to infants who were sharing a sleep surface with another person at the time of death.

- Of 425 cases that indicated bedsharing, 87 percent (371) of the infants were sharing a sleep surface with an adult, including 78 infants who were sharing with an adult and another child.
- An additional 28 infants were sharing with another child only.
- Three infants were sharing a sleep surface with pets.
- Thirty-eight reviews indicated an adult fell asleep while feeding the infant. Fourteen were bottle feeding; 17 were breastfeeding. The feeding type was unknown or missing for seven reviews.
- Of the 371 reviews indicating the infant was sharing a sleep surface with an adult, 208 (56 percent) indicated the infant's supervisor was impaired at the time of the incident.
 - ◆ Fifty-three percent (199) of the bedsharing supervisors were impaired by sleep.
 - ◆ Sixteen supervisors (4 percent) were impaired by alcohol.
 - ◆ Eight supervisors (2 percent) were impaired by drugs.

Exposure to smoking was another commonly reported circumstance for sleep-related deaths.

- Forty-six percent (380) of the infants were exposed to smoke either in utero or after birth.
- Of the 371 infants sharing a sleep surface with an adult, 52 percent (192) were also exposed to smoke either in utero or after birth.

Infant Safe Sleep Recommendations

In October 2011, the American Academy of Pediatrics issued a policy statement expanding its 2005 recommendations for reducing the risk of SIDS and other sleep-related infant deaths. Many local CFR risk reduction activities are based on these recommendations. ODH continues to urge parents and caregivers to follow these recommendations as the most effective way to reduce the risk of infant death.

- Place infants for sleep wholly on the back for every sleep, nap time and night time.
- Use a firm sleep surface. A firm crib mattress is the recommended surface.
- Room-sharing without bedsharing is recommended. The infant's crib should be in the parents' bedroom, close to the parents' bed.
- Keep soft objects and loose bedding out of the crib.
- Pregnant women should receive regular prenatal care.
- Do not smoke during pregnancy. Avoid exposure to secondhand smoke.
- Avoid alcohol and illicit drug use during pregnancy and after birth.
- Breastfeeding is recommended.
- Offer a pacifier at sleep time after breastfeeding has been established.
- Avoid overheating.
- Avoid commercial devices marketed to reduce the risk of SIDS. None have been proven safe or effective.
- Encourage supervised "tummy time" when infant is awake to avoid flat spots on the back of the infant's head and to strengthen the upper torso and neck.
- All infants should be immunized in accordance with AAP and CDC recommendations.

The policy statement includes four recommendations directed toward health policy makers, researchers and professionals to endorse the recommendations; continue research and surveillance; adhere to safe sleep guidelines in media and manufacturing advertising; and expand the Back to Sleep campaign for parents, grandparents and all other caregivers with a major focus on the safe sleep environment.

Infant Safe Sleep



Baby sleeps safest alone, on their back, in a crib.

DEATHS TO CHILDREN 1 TO 4 YEARS OLD

Background

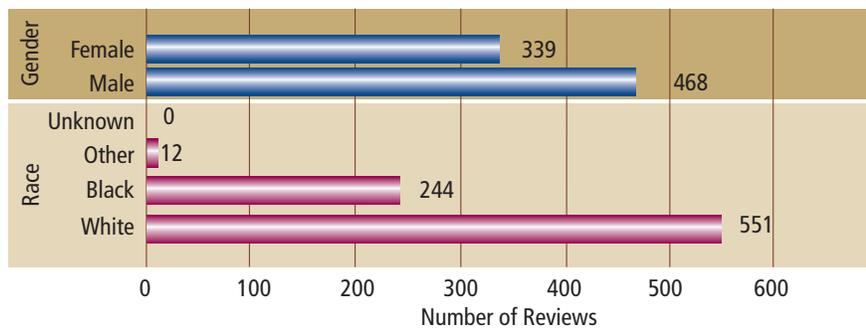
No longer babies, toddlers and preschoolers experience increased mobility and more awareness of their surroundings, but lack the reasoning skills to protect themselves from many dangers.¹⁸ According to the National Center for Health Statistics, the leading causes of death for 1 to 4 year olds are accidents, congenital anomalies and homicides. Nationally, the 2013 mortality rate for this age group was statistically unchanged from 26 per 100,000 population since 2010.¹⁹

CFR Findings

For the five-year period from 2009 through 2013, local CFR boards reviewed 807 deaths to children ages 1 to 4 years. These represent 11 percent of all 7,671 deaths reviewed.

- Reviews were disproportionately higher among boys (58 percent) relative to their representation in the general population (51 percent).
- A greater percentage of deaths in this age group occurred among black children (30 percent) relative to their representation in the general population for this age group (19 percent).
- Six percent (46) of the reviews were for Hispanic children.
- Thirty-nine percent (318) of the deaths were deemed probably preventable.

Reviews of Deaths to 1-4 Year Olds
by Race and Gender, 2009-2013, N=807



The 807 reviews were classified by manner as follows:

- Fifty-two percent (417) were natural deaths.
- Twenty-nine percent (234) were of accidental manner.
- Twelve percent (100) were homicides.
- Seven percent (56) were of an undetermined manner.

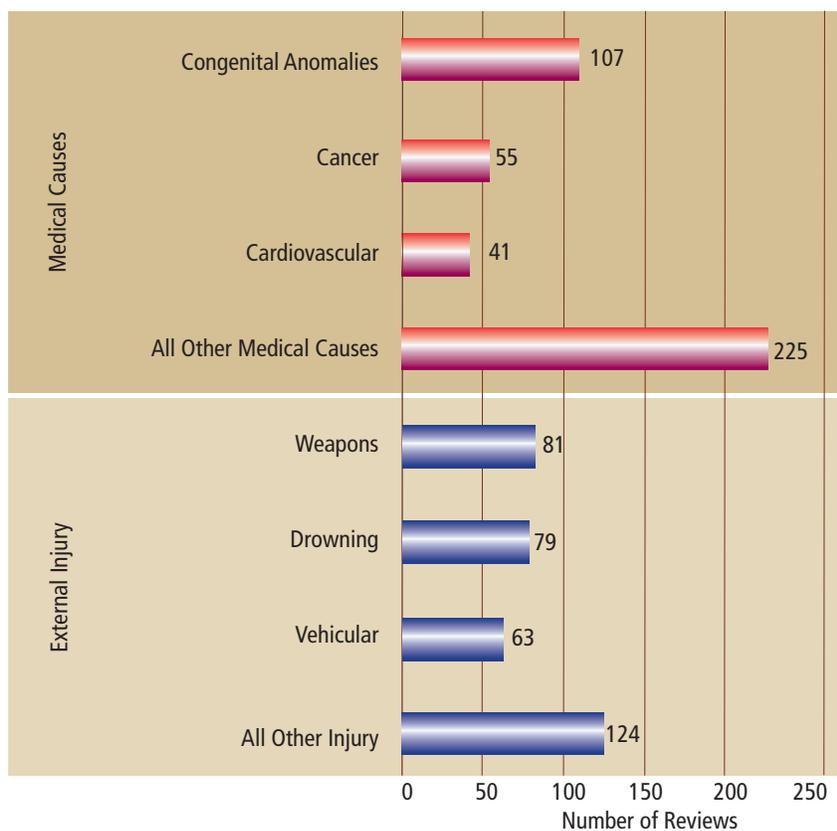
Fifty-three percent (428) of the 807 reviews for 1 to 4 year olds were from medical causes.

- Congenital anomalies were the leading cause of death in this age group.
- Twenty-five percent (107) of the deaths from medical causes were due to congenital anomalies.
- Fifteen percent (64) were due to pneumonia and other infections.
- Cancer accounted for 13 percent (55) of the deaths from medical causes.

Forty-three percent (347) of the 807 reviews for 1 to 4 year olds were due to external causes. Weapons injuries, drowning and vehicular crashes were the three leading external causes of death for this age group.

- Twenty-three percent (81) were due to weapons injuries, including the use of body parts as weapons.
- Twenty-three percent (79) of the 347 reviews were due to drowning.
- Eighteen percent (63) were due to vehicular injuries.

Reviews of 1-4 Year Old by Leading Causes of Death, 2009-2013, N=807



Weapons injuries were the leading external cause of death for 1 to 4 year olds, accounting for 81 deaths. Seventy-six of the 81 weapons deaths were homicides. Sixty-two percent (50) were deemed child abuse or neglect.

- Of the 76 homicides, 40 percent (30) indicated the perpetrator was a biological parent. The parent's partner was cited in 36 percent (27) of the reviews.
- The weapon type was indicated as body parts in 51 percent (41) of the weapons deaths to 1 to 4 year olds. Firearms (handguns, shotguns and rifles) were indicated in 27 percent (22) of the reviews.

DEATHS TO CHILDREN 5 TO 9 YEARS OLD

Background

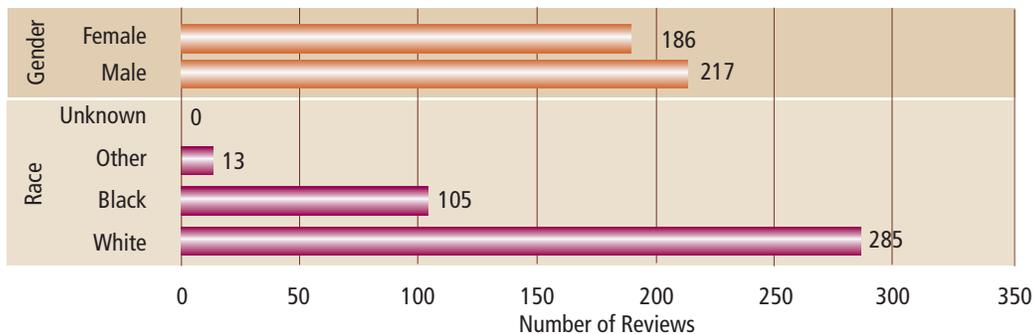
Children ages 5 to 9 years continue to improve motor skills and have more regular contact with people outside their family. They have a growing understanding of consequences and of right and wrong.²⁰ According to the National Center for Injury Prevention and Control, the leading causes of death for 5 to 9 year olds are accidents, cancers and congenital anomalies.²¹

CFR Findings

For the five-year period 2009-2013, local CFR boards reviewed 403 deaths to children ages 5 to 9 years. These represent 5 percent of all 7,671 deaths reviewed.

- The proportion of reviews for the deaths of boys (54 percent) was slightly greater than their representation in the general population (51 percent).
- A greater percentage of deaths in this age group occurred among black children (26 percent) relative to their representation in the general population (18 percent).
- Five percent (20) of the reviews were for Hispanic children.
- Thirty percent (122) of the deaths were deemed probably preventable.

Reviews of Deaths to 5-9 Year Olds by Race and Gender,
2009-2013, N=403



The 403 reviews were classified by manner as follows:

- Sixty-three percent (254) were natural deaths.
- Twenty-eight percent (112) were of accidental manner.
- Seven percent (3) were homicides.
- Less than 1 percent (2) were suicides.
- Less than 2 percent (5) were of an undetermined manner.

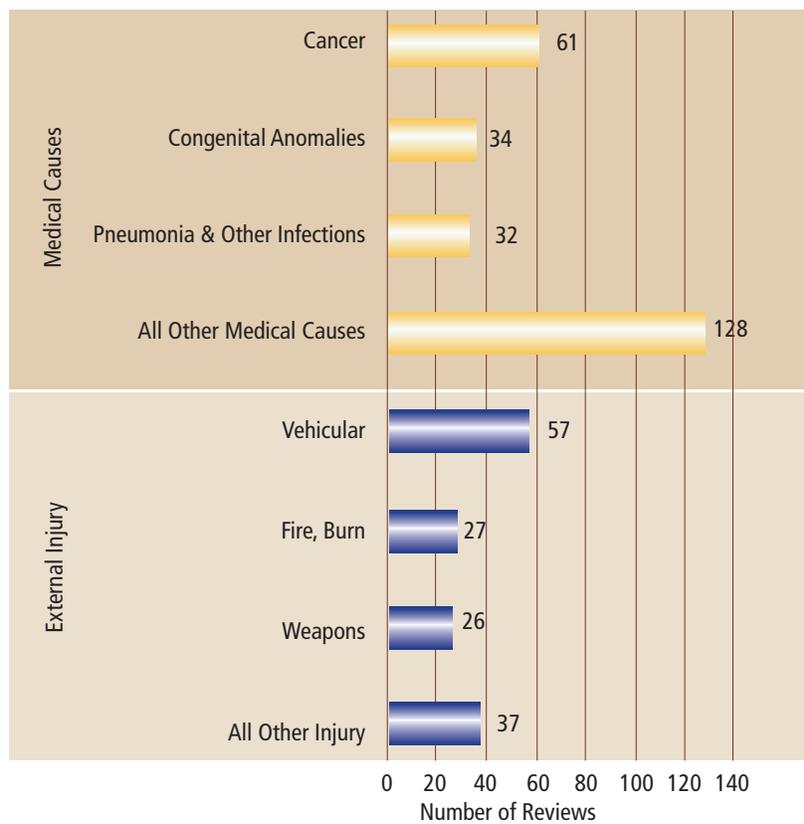
Sixty-three percent (255) of the 403 reviews for 5 to 9 year olds were from medical causes.

- Cancer was the leading medical cause of death in this age group.
- Twenty-four percent (61) of the deaths from medical causes were due to cancer.
- Congenital anomalies accounted for 13 percent (34) of the deaths from medical causes.
- Thirteen percent (32) were due to pneumonia, influenza and other infections.

Thirty-seven percent (147) of the 403 reviews for 5 to 9 year olds were due to external causes. Vehicular crashes, fires and weapons injuries were the three leading external causes of death for this age group.

- Thirty-nine percent (57) of the 147 reviews were due to vehicular injuries.
- Eighteen percent (27) were due to fires and burns.
- Eighteen percent (26) were due to weapons injuries, including the use of body parts as weapons.

Reviews of 5-9 Year Olds by Leading Causes of Death, 2009-2013, N=403



Vehicular injuries accounted for 57 deaths to 5 to 9 year olds.

- Fifty-four percent (31) of the 58 were passengers in vehicles. Only two reviews indicated the child's driver was younger than 21 years. One of the 31 drivers was impaired, while five drivers of the other vehicle were impaired at the time of the incident.
- Forty-seven percent (27) indicated the child killed was a passenger in a car, truck, van or SUV, where by law, children must use seat belts and safety seats or boosters. Of those 27, 41 percent (11) were properly restrained.
- Forty-two percent (24) of the vehicular deaths were to pedestrians or children on bicycles or other pedal cycles. Seven of the 24 pedestrians or cyclists had supervision at the time of the incident.

Fire and burn injuries (27) were the second leading cause of external death for 5 to 9 year olds. Eleven percent (3) of the 27 fire and burn deaths were homicides.

- Forty-one percent (11) of the reviews indicated a smoke detector was present. Seven were known to be functioning.

Local CFR boards identified seven deaths from child abuse and neglect among 5 to 9 year olds. These represent 2 percent of all reviews for this age group, and 5 percent of the 154 child abuse and neglect deaths for all ages.

- Fifty-seven percent (4) of the reviews indicated the person causing the death was a biological parent
- Other perpetrators included other relatives and the parents' partner.

Ohio Law Enforcement Training for Child Passenger Safety Law

Ohio's child passenger safety laws can be confusing and contain several nuances that law enforcement must learn to appropriately enforce it. To provide a training resource, the Child Injury Action Group Child Passenger Safety Committee developed an online training for law enforcement. The training, housed on the electronic Ohio Peace Officers Training Academy (eOPOTA), provides clarification on the law, reasons why law enforcement should cite, and resources for law enforcement to utilize in the field.

DEATHS TO CHILDREN 10 TO 14 YEARS OLD

Background

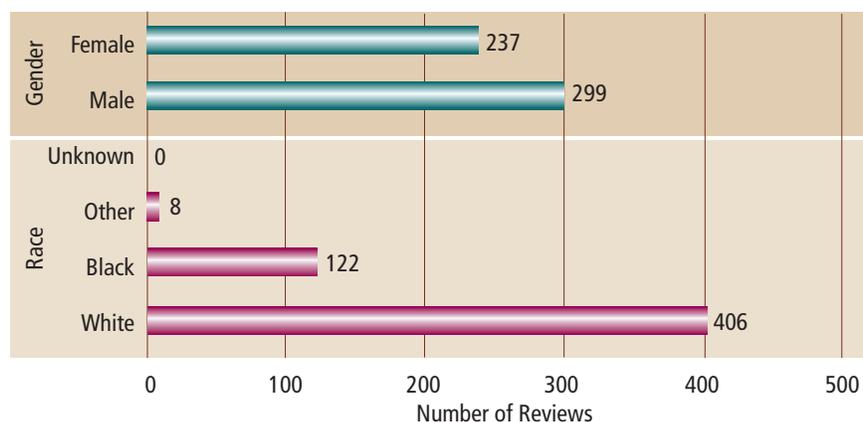
Children in early adolescence experience many physical, cognitive and social-emotional changes. As 10 to 14 year olds experience more independence, they also encounter strong peer pressure.²² According to the National Center for Injury Prevention and Control, nationally the leading causes of death for 10 to 14 year olds are cancers, vehicular crashes and suicides.²³

CFR Findings

For the five-year period 2009 through 2013, local CFR boards reviewed 536 deaths to children ages 10 to 14 years. These represent 7 percent of all 7,61 deaths reviewed.

- Reviews were disproportionately higher among boys (56 percent) relative to their representation in the general population (51 percent).
- A greater percentage of deaths in this age group occurred among black children (23 percent) relative to their representation in the general population in this age group (17 percent).
- Four percent (21) of the reviews were for Hispanic children.
- Thirty-seven percent (200) of the deaths were deemed probably preventable.

Reviews of Deaths to 10-14 Year Olds
by Race and Gender, 2009-2013, N=536



The 536 reviews were classified by manner as follows:

- Fifty-five percent (292) were natural deaths.
- Twenty-four percent (130) were of accidental manner.
- Twelve percent (63) were suicides.
- Seven percent (36) were homicides.
- Three percent (15) were of an undetermined or unknown manner.

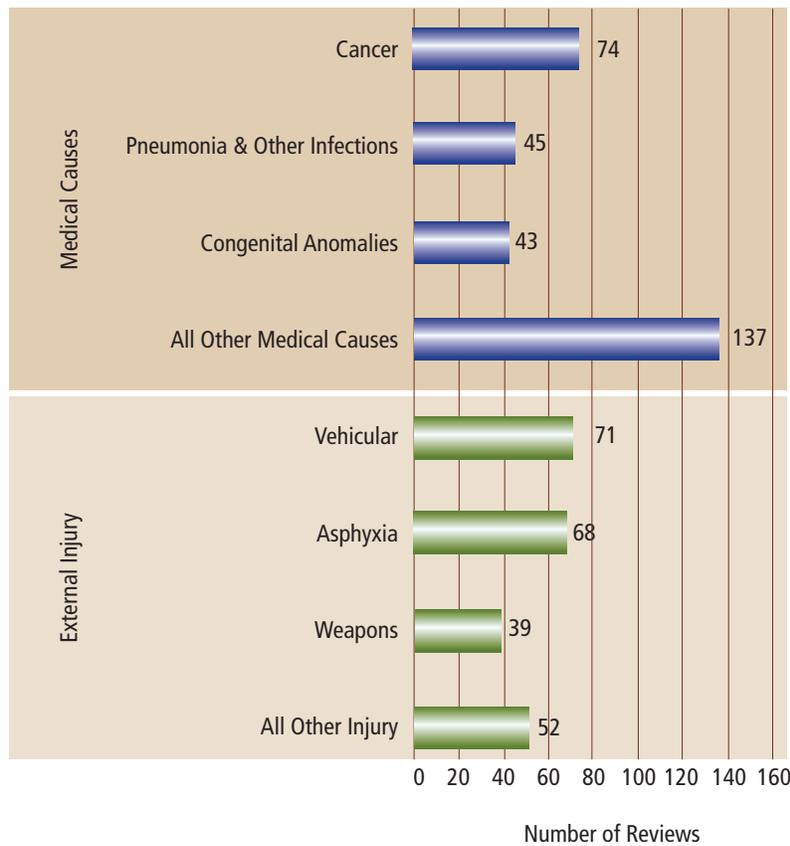
Fifty-six percent (299) of the 536 reviews for 10 to 14 year olds were from medical causes.

- Cancer was the leading medical cause of death in this age group.
- Twenty-five percent (74) of the deaths from medical causes were due to cancer.
- Fifteen percent (45) were due to pneumonia, influenza and other infections.
- Congenital anomalies accounted for 14 percent (43) of the deaths from medical causes.

Forty-three percent (230) of the 536 reviews for 10 to 14 year olds were due to external causes. Vehicular crashes, asphyxia and weapons injuries were the three leading external causes of death for this age group.

- Thirty-one percent (71) of the 230 reviews were due to vehicular injuries.
- Thirty percent (68) were due to asphyxia.
- Seventeen percent (39) were due to weapons injuries, including the use of body parts as weapons.

Reviews of 10-14 Year Olds
by Leading Causes of Death, 2009-2013, N=536



DEATHS OF CHILDREN 15 TO 17 YEARS OLD

Background

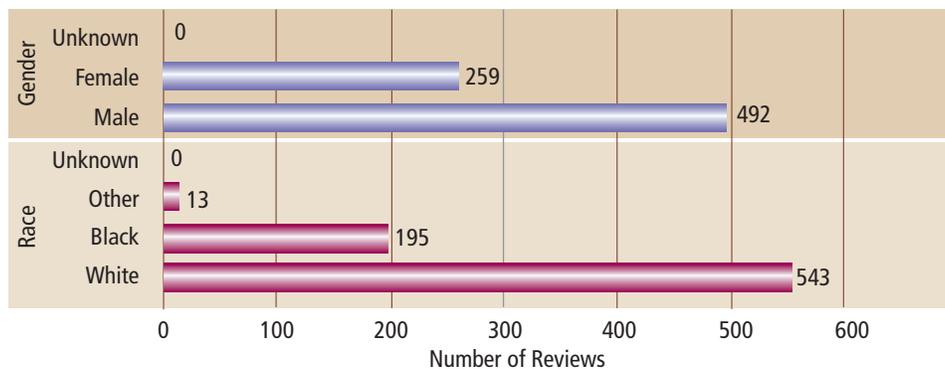
Known for challenging the limits, teenagers enjoy more independence from their family and develop strong relationships with peers.²⁴ According to the National Center for Injury Prevention and Control, the leading causes of death for 15 to 17 year olds are vehicular crashes, suicides and homicides.²⁵

CFR Findings

For the five-year period 2009-2013, local CFR boards reviewed 751 deaths of children ages 15 to 17 years. These represent 10 percent of all 7,671 deaths reviewed.

- Reviews were disproportionately higher among boys (66 percent) relative to their representation in the general population (51 percent).
- A greater percentage of deaths in this age group occurred among black children (26 percent) relative to their representation in the general population (16 percent).
- Three percent (23) of the reviews were for Hispanic children.
- Fifty-eight percent (436) of the deaths were deemed probably preventable.

Reviews of Deaths to 15-17 Year Olds
Race and Gender, 2009-2013, N=751



The 751 reviews were classified by manner as follows:

- Twenty-seven percent (201) were natural deaths.
- Thirty-six percent (269) were of accidental manner.
- Twenty-two percent (163) were suicides.
- Fourteen percent (105) were homicides.
- Two percent (13) were of an undetermined or unknown manner.

Of the 145 deaths from all causes to black boys ages 15 to 17 years, 46 percent (67) were homicides, while only 4 percent (14) of the 339 deaths from all causes to white boys ages 15 to 17 years were homicide.

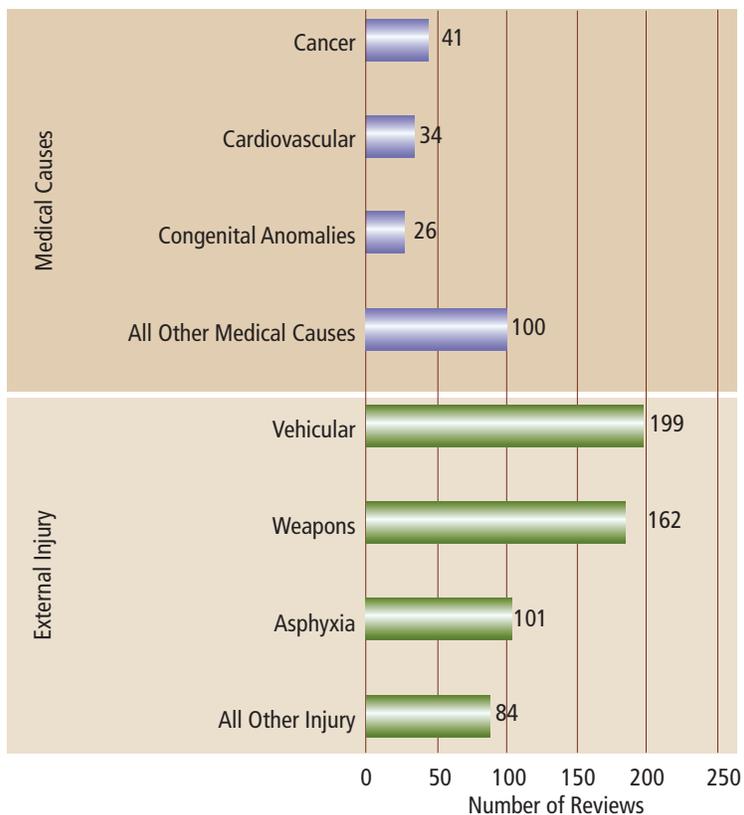
Twenty-seven percent (201) of the 751 reviews for 15 to 17 year olds were from medical causes.

- Cancer was the leading medical cause of death in this age group.
- Twenty percent (41) of the deaths from medical causes were due to cancer.
- Cardiovascular disorders accounted for 17 percent (34) of the deaths from medical causes.
- Congenital anomalies claimed 13 percent (26) of the deaths from medical causes

Seventy-three percent (546) of the 751 reviews for 15 to 17 year olds were due to external causes. Vehicular crashes, weapons injuries and asphyxia were the three leading external causes of death for this age group.

- Thirty-six percent (199) of the 546 reviews were due to vehicular injuries.
- Thirty percent (162) were due to weapons injuries, including the use of body parts as weapons.
- Eighteen percent (101) were due to asphyxia.

Reviews of 15-17 Year Olds
by Leading Causes of , 2009-2013, N=751



PREVENTABLE DEATHS

The mission of the Ohio CFR program is to reduce the incidence of preventable child deaths in Ohio. A child's death is considered preventable if the community or an individual could reasonably have changed the circumstances that led to the death.²⁶ The review process helps CFR boards focus on a wide spectrum of factors that may have caused or contributed to the death or made the child more susceptible to harm. After these factors are identified the board must decide which, if any, of the factors could reasonably have been changed. Cases are then deemed "probably preventable" or "probably not preventable."

Even if a particular case is deemed "probably not preventable," the CFR process is valuable in identifying gaps in care, systemic service delivery issues or community environmental factors that contribute to less than optimal quality of life for vulnerable individuals. For this reason, many local boards make recommendations and initiate changes even when a particular death is not deemed preventable.

CFR Findings

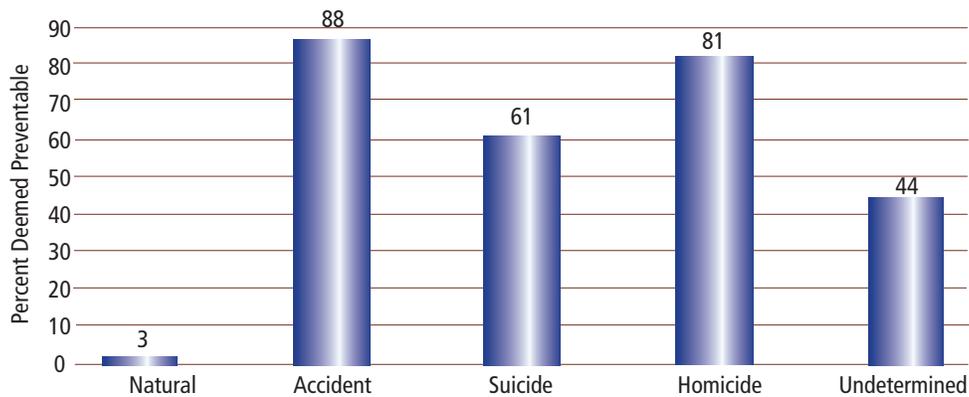
Of the 7,409 reviews for the five-year period from 2009 through 2013 that indicated preventability status, 24 percent (1,759) of the reviews indicated the death probably could have been prevented. Preventability differed by manner of death and by age group.

Reviews by Preventability,
2009-2013, N=7,409

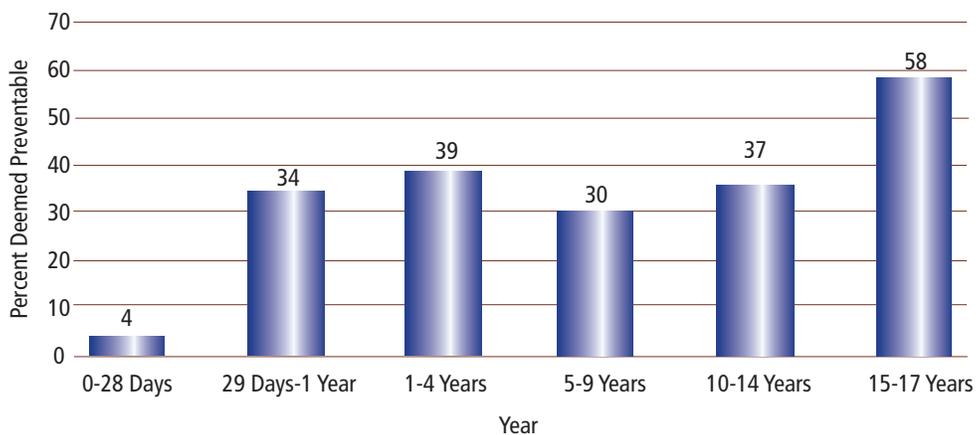


- Eighty-seven percent (945) of the 1,085 deaths of accidental manner were considered probably preventable.
- Fifty-eight percent (436) of the 830 deaths to 15 to 17-year-olds were considered probably preventable.
- Only 4 percent (130) of the 3,542 deaths to infants less than 29 days old were considered probably preventable.

Reviews Deemed Preventable by Manner, 2009-2013, N= 7,409



Reviews Deemed Preventable by Age, 2009-2013, N= 7,409



Local CFR boards identify many deaths that likely could have been prevented through changes in laws or policies, such as mandating the use of booster seats in cars; or through the implementation of programs, such as Cribs for Kids. Many other deaths likely could have been prevented through increased adult supervision, increased parental responsibility and the exercise of common sense. Through the sharing of perspectives during the CFR discussions, members have learned that often-repeated health and safety messages need to be presented in new ways to reach new generations of parents, caregivers and children.

APPENDIX I

OVERVIEW OF OHIO CHILD FATALITY REVIEW PROGRAM

Child deaths are often regarded as indicators of the health of a community. While mortality data provide us with an overall picture of child deaths by number and cause, it is from a careful study of each and every child's death that we can learn how best to respond to a death and how best to prevent future deaths.

Recognizing the need to better understand why children die, in July 2000 then Governor Bob Taft signed the bill mandating child fatality review (CFR) boards in each of Ohio's counties to review the deaths of children under 18 years of age. For the complete law and administrative rules pertaining to CFR, refer to the ODH website at www.odh.ohio.gov/odhprograms/cfhs/cfr/cfrrule.aspx. The mission of these local review boards, as described in the law, is to reduce the incidence of preventable child deaths. To accomplish this, it is expected that local review teams will:

- Promote cooperation, collaboration and communication among all groups that serve families and children.
- Maintain a database of all child deaths to develop an understanding of the causes and incidence of those deaths.
- Recommend and develop plans for implementing local service and program changes and advise ODH of data, trends and patterns found in child deaths.

While membership varies among local boards, the law requires that minimum membership include:

- County coroner or designee.
- Chief of police or sheriff or designee.
- Executive director of a public children service agency or designee.
- Public health official or designee.
- Executive director of a board of alcohol, drug addiction and mental health services or designee.
- Pediatrician or family practice physician.

Additional members are recommended and may include the county prosecutor, fire/emergency medical service representatives, school representatives, representatives from Ohio Family and Children First Councils, other child advocates and other child health and safety specialists. The health commissioner serves as board chairperson in many counties.

CFR boards must meet at least once a year to review the deaths of child residents of that county. The basic review process includes:

- The presentation of relevant information.
- The identification of contributing factors.
- The development of data-driven recommendations.

Local CFR board review meetings are not open meetings and all discussion and work products are confidential.

Each local CFR board provides data to ODH by recording information on a case report tool before entering it into a national Web-

APPENDIX II

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APPENDIX III

ICD-10 Codes Used for Vital Statistics Data Included in CFR Report

Cause of Death	ICD-10 Codes
Animal Bite or Attack	W53-W59, X20-27, X29
Asphyxia	W75-W84, X47, X66, X67, X70, X88, X91, Y17, Y20
Child Abuse and Neglect	Y06-Y07
Drowning	W65-W74, X71, X92, Y21
Environmental Exposure	W92, W93, W99, X30, X31, X32
Fall and Crush	W00-W19, W23, X80, Y01, Y02, Y30, Y31
Fire, Burn, Electrocution	X00-X09, X33, X76, X77, X97, X98, Y26, Y27, W85, W86, W87
Medical Causes (Excluding SIDS)	A000-B999, C000-D489, D500-D899, E000-E909, F000-F999, G000-G999, H000-H599, H600-H959, I000-I999, J000-J999, K000-K939, L000-L999, M000-M999, N000-N999, O000-O999, P000-P969, Q000-Q999, R000-R949
Other Causes (Residual)	All other codes not otherwise listed
Poisoning	X40-X49, X60-X65, X68, X69, X85, X87, X89, X90, Y10-Y16, Y18, Y19
Sudden Infant Death Syndrome	R95
Suicide	X60-X84
Vehicular	V01-V99, X81, X82, Y03, Y32
Weapon, Including Body Part	W26, W32-W34, X72-75, X78, X79, X93-96, X99, Y00, Y04, Y05, Y08, Y09, Y22-25, Y28-Y29, Y35.0, Y35.3

For this report, ICD-10 codes used for classification of vital statistics data were selected to most closely correspond with the causes of death indicated on the CFR case report tool. Therefore, the ICD-10 codes used for this report may not match the codes used for other reports or data systems.

APPENDIX V
Data Tables

Table 1: Reviews of 2013 Deaths by Manner of Death by Age, Race and Gender (N=1,446)

	Natural	Accident	Homicide	Suicide	Undetermined/ Unknown	Total
Age						
1-28 Days	679	14	1	-	11	705
29-364 Days	147	48	8	-	75	278
1-4 Years	88	49	10	-	10	157
5-9 Years	55	25	7	1	1	89
10-14 Years	54	23	8	14	1	100
15-17 Years	29	48	17	20	3	117
Unknown	-	-	-	-	-	-
Missing	-	-	-	-	-	-
Race*						
White	679	137	20	26	60	922
Black	351	67	31	9	40	498
Other	20	3	-	-	1	24
Unknown	2	-	-	-	-	2
Missing	-	-	-	-	-	-
Gender						
Male	602	123	34	21	63	843
Female	450	84	17	14	38	603
Unknown	-	-	-	-	-	-
Missing	-	-	-	-	-	-
Total	1,052	207	51	35	101	1,446

*69 cases with multiple races indicated were assigned to the minority race.

For this report, cases with multiple races indicated were assigned to the race that represents the least proportion of the general child population of Ohio. For example, if a case indicated both black and Asian, the case was assigned to Asian, because the proportion of Asian children is less than the proportion of black children in Ohio.

Table 2: Reviews of 2013 Deaths by Age
 Medical Causes of Death by Age (N=1,051)

	0-28 Days	29-364 Days	1-4 Years	5-9 Years	10-14 Years	15-17 Years	Total
Asthma	-	-	-	-	2	-	2
Cancer	1	3	12	13	16	6	51
Cardiovascular	32	15	9	4	2	7	69
Congenital Anomalies	99	37	22	12	8	3	181
Neurological Disorders	5	3	8	4	4	3	27
Pneumonia	5	14	5	4	3	1	32
Prematurity	445	16	2	-	-	-	463
SIDS	3	17	-	-	-	-	20
Other Infection	8	10	9	3	4	2	36
Other Perinatal Conditions	25	2	2	1	-	-	30
Other Medical Condition	52	22	21	14	17	7	133
Undetermined/Unknown	2	4	1	-	-	-	7
Medical Causes Total	677	143	91	55	56	29	1,051
External Causes of Death by Age (N=314)							
	0-28 Days	29-364 Days	1-4 Years	5-9 Years	10-14 Years	15-17 Years	Total
Asphyxia	11	49	10	6	15	11	102
Vehicular	2	1	9	12	14	34	72
Weapon (Including Body Part)	-	7	7	7	9	28	58
Drowning	-	-	13	4	4	6	27
Fire, Burn or Electrocution	-	-	11	3	1	3	18
Poisoning	1	1	2	-	-	4	8
Fall or Crush	-	-	3	1	-	1	5
Exposure	1	-	1	-	-	-	2
Other Injury	-	-	2	-	-	-	2
Undetermined/Unknown	2	17	2	-	-	-	21
External Causes Total	17	76	58	33	43	87	314
Unable to Determine if Medical or External Cause by Age (N=81)							
	0-28 Days	29-364 Days	1-4 Years	5-9 Years	10-14 Years	15-17 Years	Total
Unable to Determine	11	59	8	1	1	1	81

Table 3: Reviews of 2013 Deaths by Race
 Medical Causes of Death by Race* (N=1,051)

	White	Black	Other	Unknown	Missing	Total
Asthma	-	1	1	-	-	2
Cancer	41	10	-	-	-	51
Cardiovascular	53	15	1	-	-	69
Congenital Anomalies	130	45	5	1	-	181
Neurological Disorders	18	9	-	-	-	27
Pneumonia	20	12	-	-	-	32
Prematurity	253	201	8	1	-	463
SIDS	19	1	-	-	-	20
Other Infection	21	14	1	-	-	36
Other Perinatal Conditions	21	9	-	-	-	30
Other Medical Condition	92	37	4	-	-	133
Undetermined	5	2	-	-	-	7
Medical Causes Total	673	356	20	2	-	1,051

*47 cases with multiple races indicated were assigned to the minority race.

External Causes of Death by Race (N=314)

	White	Black	Other	Unknown	Missing	Total
Asphyxia	60	40	2	-	-	102
Vehicular	56	16	-	-	-	72
Weapon (Including Body Part)	29	29	-	-	-	58
Drowning	20	7	-	-	-	27
Fire, Burn or Electrocution	8	10	-	-	-	18
Poisoning	7	1	-	-	-	8
Fall or Crush	5	-	-	-	-	5
Exposure	-	2	-	-	-	2
Other Injury	1	1	-	-	-	2
Undetermined/Unknown	9	9	1	-	-	19
External Causes Total	196	115	3	-	-	314

*17 cases with multiple races indicated were assigned to the minority race.

Unable to Determine if Medical or External Cause by Race (N=81)

	White	Black	Other	Unknown	Missing	Total
Unable to Determine	53	27	1	-	-	81

*5 cases with multiple races indicated were assigned to the minority race.

For this report, cases with multiple races indicated were assigned to the race that represents the least proportion of the general child population of Ohio. For example, if a case indicated both black and Asian, the case was assigned to Asian, because the proportion of Asian children is less than the proportion of black children in Ohio.

Table 4: Reviews of 2013 Deaths
 Medical Causes of Death by Gender (N=1,051)

	Male	Female	Unknown	Missing	Total
Asthma	-	2	-	-	2
Cancer	27	24	-	-	51
Cardiovascular	41	28	-	-	69
Congenital Anomalies	94	87	-	-	181
Neurological Disorders	13	14	-	-	27
Pneumonia	18	14	-	-	32
Prematurity	284	179	-	-	463
SIDS	13	7	-	-	20
Other Infection	17	18	1	-	36
Other Perinatal Conditions	21	9	-	-	30
Other Medical Condition	69	64	-	-	133
Undetermined	4	3	-	-	7
Medical Causes Total	601	449	1	-	1,051
External Causes of Death by Gender (N=314)					
	Male	Female	Unknown	Missing	Total
Asphyxia	58	44	-	-	102
Vehicular	42	30	-	-	72
Weapon (Including Body Part)	47	11	-	-	58
Drowning	20	7	-	-	27
Fire, Burn or Electrocutation	7	11	-	-	18
Poisoning	3	5	-	-	8
Fall or Crush	3	2	-	-	5
Exposure	-	2	-	-	2
Other Injury	1	1	-	-	2
Undetermined/Unknown	11	8	-	-	19
External Causes Total	192	122	-	-	314
Unable to Determine if Medical or External Cause by Gender (N=81)					
	Male	Female	Unknown	Missing	Total
Unable to Determine	50	31	-	-	81

Table 5: Reviews of 2014 Deaths by Manner of Death by Age, Race and Gender (N=1,217), Preliminary

	Natural	Accident	Homicide	Suicide	Undetermined/ Unknown	Total
Age						
1-28 Days	579	9	1	-	13	602
29-364 Days	132	35	6	-	56	229
1-4 Years	72	29	8	-	6	115
5-9 Years	35	16	4	-	1	56
10-14 Years	41	18	11	22	2	94
15-17 Years	38	36	16	30	1	121
Unknown	-	-	-	-	-	-
Missing	-	-	-	-	-	-
Race*						
White	537	111	16	43	43	750
Black	337	30	29	8	36	440
Other	23	2	1	1	-	27
Unknown	-	-	-	-	-	-
Missing	-	-	-	-	-	-
Gender						
Male	519	93	30	34	46	722
Female	378	50	16	18	33	495
Unknown	-	-	-	-	-	-
Missing	-	-	-	-	-	-
Total	897	143	46	52	79	1,217

*49 cases with multiple races indicated were assigned to the minority race.

For this report, cases with multiple races indicated were assigned to the race that represents the least proportion of the general child population of Ohio. For example, if a case indicated both black and Asian, the case was assigned to Asian, because the proportion of Asian children is less than the proportion of black children in Ohio.

Table 6: Reviews of 2014 Deaths by Age, Preliminary
Medical Causes of Death by Age (N=897)

	0-28 Days	29-364 Days	1-4 Years	5-9 Years	10-14 Years	15-17 Years	Total
Asthma	-	-	-	-	4	2	6
Cancer	1	-	14	13	11	11	50
Cardiovascular	23	7	8	3	3	3	47
Congenital Anomalies	88	32	14	3	3	5	145
Neurological Disorders	2	8	5	6	7	4	32
Pneumonia	-	9	3	1	-	1	14
Prematurity	395	28	4	-	-	-	427
SIDS	-	12	-	-	-	-	12
Other Infection	10	5	6	9	1	1	26
Other Perinatal Conditions	23	1	1	-	-	-	25
Other Medical Condition	36	25	16	6	13	11	107
Undetermined/Unknown	2	2	1	-	-	1	6
Medical Causes Total	580	129	72	35	42	39	897
External Causes of Death by Age (N=258)							
	0-28 Days	29-364 Days	1-4 Years	5-9 Years	10-14 Years	15-17 Years	Total
Asphyxia	3	28	6	1	16	22	76
Vehicular	3	2	8	7	13	27	60
Weapon (Including Body Part)	-	4	6	4	19	21	54
Drowning	1	3	10	3	2	4	23
Fire, Burn or Electrocutation	-	1	3	4	2	2	12
Poisoning	-	-	2	1	-	5	8
Fall or Crush	1	-	3	1	-	-	5
Exposure	-	-	-	-	-	-	0
Other Injury	-	-	-	-	-	1	1
Undetermined/Unknown	2	16	1	-	-	-	19
External Causes Total	10	54	39	21	52	82	258
Unable to Determine if Medical or External Cause by Age (N=62)							
	0-28 Days	29-364 Days	1-4 Years	5-9 Years	10-14 Years	15-17 Years	Total
Unable to Determine	12	46	4	-	-	-	62

Table 7: Reviews of 2014 Deaths by Race, Preliminary
Medical Causes of Death by Race* (N=897)

	White	Black	Other	Unknown	Missing	Total
Asthma	5	1	-	-	-	6
Cancer	39	9	2	-	-	50
Cardiovascular	36	9	2	-	-	47
Congenital Anomalies	112	32	1	-	-	145
Neurological Disorders	23	8	1	-	-	32
Pneumonia	6	8	-	-	-	14
Prematurity	198	215	14	-	-	427
SIDS	8	4	-	-	-	12
Other Infection	13	13	-	-	-	26
Other Perinatal Conditions	15	10	-	-	-	25
Other Medical Condition	74	30	3	-	-	107
Undetermined	5	1	-	-	-	6
Medical Causes Total	534	340	23	-	-	897

*44 cases with multiple races indicated were assigned to the minority race.

External Causes of Death by Race (N= 258)

	White	Black	Other	Unknown	Missing	Total
Asphyxia	56	20	-	-	-	76
Vehicular	51	9	-	-	-	60
Weapon (Including Body Part)	27	25	2	-	-	54
Drowning	15	6	2	-	-	23
Fire, Burn or Electrocution	10	2	-	-	-	12
Poisoning	5	3	-	-	-	8
Fall or Crush	3	2	-	-	-	5
Exposure	-	-	-	-	-	0
Other Injury	1	-	-	-	-	1
Undetermined/Unknown	5	14	-	-	-	19
External Causes Total	173	81	4	-	-	258

*5 cases with multiple races indicated were assigned to the minority race.

Unable to Determine if Medical or External Cause by Race (N=81)

	White	Black	Other	Unknown	Missing	Total
Unable to Determine	43	19	-	-	-	62

*No cases with multiple races indicated were assigned to the minority race.

For this report, cases with multiple races indicated were assigned to the race that represents the least proportion of the general child population of Ohio. For example, if a case indicated both black and Asian, the case was assigned to Asian, because the proportion of Asian children is less than the proportion of black children in Ohio.

Table 8: Reviews of 2014 Deaths, Preliminary Medical Causes of Death by Gender (N=897)

	Male	Female	Unknown	Missing	Total
Asthma	5	1	-	-	6
Cancer	29	21	-	-	50
Cardiovascular	30	17	-	-	47
Congenital Anomalies	65	80	-	-	145
Neurological Disorders	18	14	-	-	32
Pneumonia	8	6	-	-	14
Prematurity	256	171	-	-	427
SIDS	9	3	-	-	12
Other Infection	17	9	-	-	26
Other Perinatal Conditions	17	8	-	-	25
Other Medical Condition	63	44	-	-	107
Undetermined	3	3	-	-	6
Medical Causes Total	520	377	-	-	897

External Causes of Death by Gender (N=258)

	Male	Female	Unknown	Missing	Total
Asphyxia	48	28	-	-	76
Vehicular	38	22	-	-	60
Weapon (Including Body Part)	39	15	-	-	54
Drowning	18	5	-	-	23
Fire, Burn or Electrocutation	5	7	-	-	12
Poisoning	4	4	-	-	8
Fall or Crush	3	2	-	-	5
Exposure	-	-	-	-	0
Other Injury	1	-	-	-	1
Undetermined/Unknown	7	12	-	-	19
External Causes Total	163	95	-	-	258

Unable to Determine if Medical or External Cause by Gender (N=62)

	Male	Female	Unknown	Missing	Total
Unable to Determine	39	23	-	-	62

Table 9: Child Population, Child Deaths and Reviews by County Type, 2013

County Type	Child Population		Child Death		Review Completed		Percent Death Reviews
	#	%	#	%	#	%	%
Rural Appalachian	334,467	13	203	13	175	12	86
Rural Non-Appalachian	391,060	15	199	13	192	13	97
Suburban	491,915	19	203	13	191	13	94
Metropolitan	1,432,388	54	918	60	888	61	97
Total	2,649,830	100	1,523	100	1,446	100	95

Table 10: Reviews of 2009-2013 Deaths by Manner of Death by Age, Race and Gender (N=7,671)

	Natural	Accident	Homicide	Suicide	Undetermined/ Unknown	Total
Age						
1-28 Days	3,435	54	4	-	49	3,542
29-364 Days	874	286	59	-	413	1,632
1-4 Years	417	234	100	-	56	807
5-9 Years	254	112	30	2	5	403
10-14 Years	292	130	36	63	15	536
15-17 Years	201	269	105	163	13	751
Unknown	-	-	-	-	-	-
Missing	-	-	-	-	-	-
Race*						
White	3,560	789	157	196	308	5,010
Black	1,806	280	174	31	237	2,528
Other	105	16	3	1	6	131
Unknown	2	-	-	-	-	-
Missing	-	-	-	-	-	-
Gender						
Male	3,018	668	217	156	313	4,372
Female	2,452	417	117	72	238	3,296
Unknown	3	-	-	-	-	-
Missing	-	-	-	-	-	-
Total	5,473	1,085	334	228	551	7,671

*225 cases with multiple races indicated were assigned to the minority race.

For this report, cases with multiple races indicated were assigned to the race that represents the least proportion of the general child population of Ohio. For example, if a case indicated both black and Asian, the case was assigned to Asian, because the proportion of Asian children is less than the proportion of black children in Ohio.

Table 11: Reviews of 2009-2013 Deaths by Age
All Medical Causes of Death by Age (N=5,512)

	0-28 Days	29-364 Days	1-4 Years	5-9 Years	10-14 Years	15-17 Years	Total
Asthma	-	1	5	7	5	6	24
Cancer	4	16	55	61	74	41	251
Cardiovascular	118	63	41	24	25	34	305
Congenital Anomalies	516	236	107	34	43	26	962
Malnutrition/Dehydration	-	4	2	1	-	-	7
Neurological Disorders	10	14	18	23	18	16	99
Pneumonia	24	64	28	7	25	10	158
Prematurity	2,302	126	8	2	-	1	2,439
SIDS	16	124	5	-	-	-	145
Other Infection	43	55	36	25	20	12	191
Other Perinatal Conditions	121	16	4	1	1	-	143
Other Medical Condition	280	152	111	70	88	55	756
Undetermined/Unknown	7	17	8	-	-	-	32
Medical Causes Total	3,441	888	428	255	299	201	5,512
All External Causes of Death by Age (N=1,758)							
	0-28 Days	29-364 Days	1-4 Years	5-9 Years	10-14 Years	15-17 Years	Total
Asphyxia	43	253	32	12	68	101	509
Vehicular	3	16	63	57	71	199	409
Weapon (Including Body Part)	-	50	81	26	39	162	358
Drowning	-	7	79	16	18	23	143
Fire and Burns	1	7	47	27	15	6	103
Poisoning	3	4	13	2	10	40	72
Fall or Crush	-	3	16	6	8	12	45
Exposure	1	1	7	-	-	1	10
Other Injuries	1	1	4	1	1	1	9
Undetermined/Unknown	9	85	5	-	-	1	100
External Causes Total	61	427	347	147	230	546	1,758
Unable to Determine if Medical or External Cause by Age (N=401)							
	0-28 Days	29-364 Days	1-4 Years	5-9 Years	10-14 Years	15-17 Years	Total
Unable to Determine	40	317	32	1	7	4	401

Table 13: Reviews of 2009-2013 Deaths by Gender
All Medical Causes of Death by Gender (N=5,512)

	Male	Female	Unknown	Missing	Total
Asthma	15	9	-	-	24
Cancer	124	127	-	-	251
Cardiovascular	161	144	-	-	305
Congenital Anomalies	497	465	-	-	962
Malnutrition/Dehydration	5	2	-	-	7
Neurological Disorders	51	48	-	-	99
Pneumonia	94	64	-	-	158
Prematurity	1,390	1,046	3	-	2,439
SIDS	90	55	-	-	145
Other Infection	98	93	-	-	191
Other Perinatal Conditions	82	61	-	-	143
Other Medical Condition	424	332	-	-	756
Undetermined/Unknown	13	19	-	-	32
Medical Causes Total	3,044	2,465	3	-	5,512

All External Causes of Death by Gender (N= 1,758)

	Male	Female	Unknown	Missing	Total
Asphyxia	298	211	-	-	509
Vehicular	259	150	-	-	409
Weapon (Including Body Part)	257	101	-	-	358
Drowning	101	42	-	-	143
Fire and Burns	56	47	-	-	103
Poisoning	37	35	-	-	72
Fall or Crush	36	9	-	-	45
Exposure	1	9	-	-	10
Other Injuries	3	6	-	-	9
Undetermined/Unknown	56	44	-	-	100
External Causes Total	1,104	654	-	-	1,758

Unable to Determine if Medical or External Cause by Race (N=401)

	Male	Female	Unknown	Missing	Total
Unable to Determine	224	177	-	-	401

Table 14: Reviews of 2009-2013 Deaths by Year by Age, Race and Gender (N=7,671)

	2009	2010	2011	2012	2013	Total
Age	#	#	#	#	#	#
1-28 Days	726	720	702	689	705	3,542
29-364 Days	343	332	354	325	278	1,632
1-4 Years	157	181	153	159	157	807
5-9 Years	81	81	82	70	89	403
10-14 Years	130	103	95	108	100	536
15-17 Years	172	414	170	151	117	751
Unknown	-	-	-	-	-	-
Missing	-	-	-	-	-	-
Race*						
White	1,041	1,038	1,004	1,004	923	5,010
Black	543	487	532	468	498	2,528
Other	25	33	20	29	24	131
Unknown	-	-	-	1	1	2
Missing	-	-	-	-	-	-
Gender						
Male	932	876	870	851	843	4,372
Female	677	682	685	649	603	3,296
Unknown	-	-	1	2	-	3
Missing	-	-	-	-	-	-
Total	1,609	1,558	1,556	1,502	1,446	7,671

* 225 cases with multiple races indicated were assigned to the minority race.

For this report, cases with multiple races indicated were assigned to the race that represents the least proportion of the general child population of Ohio. For example, if a case indicated both black and Asian, the case was assigned to Asian, because the proportion of Asian children is less than the proportion of black children in Ohio.

Table 15: Reviews of 2009-2013 Deaths by Year by Cause, Circumstances and Preventability (N=7,671)

	2009	2010	2011	2012	2013	Total
Medical Causes	#	#	#	#	#	#
Prematurity	486	515	503	472	463	2,439
Congenital Anomaly	193	188	207	193	181	962
Cardiovascular	64	44	50	78	69	305
Cancer	48	50	45	57	51	251
Other Infection	55	34	39	27	36	191
SIDS	45	28	37	15	20	145
Pneumonia	33	34	29	30	32	158
Other Perinatal	34	24	29	26	30	143
Neurological	13	21	23	15	27	99
Asthma	3	4	10	5	2	24
Other Medical	176	186	126	142	133	736
Undetermined/Unknown	11	6	4	4	7	32
External Causes						
Asphyxia	109	79	107	112	102	509
Vehicular	89	90	84	74	72	409
Weapon (Including Body Part)	81	61	80	78	58	358
Drowning	27	29	30	30	27	143
Fire and Burns	18	30	22	15	18	103
Poisoning	15	16	17	16	8	72
Fall or Crush	14	9	8	9	5	45
Exposure	2	3	1	2	2	10
Other Injuries	1	1	3	1	3	9
Undetermined/Unknown	24	27	14	16	19	100
Child Abuse & Neglect						
Child Abuse & Neglect	36	27	30	37	24	154
Sleep-related Infant Deaths						
Sleep-related Infant Deaths	170	160	183	176	147	836
Probably Preventable-All Reviews						
Probably Preventable-All Reviews	356	348	366	354	335	1,759
Year Total	1,609	1,558	1,556	1,502	1,446	7,671

Table 16: Reviews of 2009-2013 Deaths by County Type by Age, Race and Gender (N=7,671)

	Rural Appalachian	Rural Non-Appalachian	Suburban	Metropolitan	Total
Age	#	#	#	#	#
1-28 Days	351	402	423	2,366	3,542
29 – 364 Days	207	212	206	1,007	1,632
1-4 Years	120	135	111	441	807
5-9 Years	59	75	71	195	403
10-14 Years	75	97	85	279	536
15-17 Years	115	107	129	400	751
Race*					
White	857	934	891	2,327	5,009
Black	58	78	121	2,269	2,526
Other	11	19	13	88	131
Unknown	-	-	-	2	2
Gender					
Male	543	583	585	2,661	3,542
Female	383	448	440	2,025	3,296
Unknown	1	-	-	2	3
Total	927	1,031	1,025	4,688	7,671

* 225 cases with multiple races indicated were assigned to the minority race.

For this report, cases with multiple races indicated were assigned to the race that represents the least proportion of the general child population of Ohio. For example, if a case indicated both black and Asian, the case was assigned to Asian, because the proportion of Asian children is less than the proportion of black children in Ohio.

Table 17: Reviews of 2009-2013 Deaths by County Type by Cause, Circumstances and Preventability (N=7,671)

	Rural Appalachian	Rural Non-Appalachian	Suburban	Metropolitan	Total
Medical Causes	#	#	#	#	#
Asthma	2	4	1	17	24
Cancer	36	46	38	131	251
Cardiovascular	42	60	43	160	305
Congenital Anomalies	118	119	145	580	962
Neurological Disorders	12	15	16	56	99
Pneumonia	15	28	23	92	158
Prematurity	207	231	243	1,758	2,439
SIDS	35	37	27	46	145
Other Infection	24	32	28	97	191
Other Perinatal Conditions	11	27	19	86	143
Other Medical Condition	108	124	127	404	763
Undetermined/Unknown	10	1	9	12	32
External Causes					
Asphyxia	74	71	82	282	509
Vehicular	85	80	77	170	409
Weapon (Including Body Part)	35	45	42	236	358
Drowning	26	25	17	75	143
Fire and Burns	33	21	10	39	103
Poisoning	8	12	16	36	72
Fall or Crush	6	17	4	18	45
Exposure	1	1	2	6	10
Other Injuries	1	2	-	6	9
Undetermined/Unknown	1	2	3	94	100
Child Abuse & Neglect					
Child Abuse & Neglect	23	16	16	99	154
Sleep-related Infant Deaths					
Sleep-related Infant Deaths	94	93	89	560	836
Probably Preventable – All Reviews					
Probably Preventable – All Reviews	273	255	236	995	1,759
Total	927	1,031	1,025	4,688	7,671

questionnaire form has been shared with hospitals and birthing centers and is available at www.SafeSleep.Ohio.gov by clicking on Ohio Infant Safe Sleep Law.

- When hospitals register with ODH or renew their license, the facilities are to report to ODH the outcomes of the safe sleep screening procedures. ODH has identified the most efficient method for hospitals and birthing facilities to report. Specifications for the data collection system include ease of use for the facilities, assurance of screening for every infant, and an accurate count of outcomes. ODH will enhance the electronic hospital registration system in order to annually capture the information, as hospitals only renew their license every three years and the registration process is done on an annual basis. Facilities will begin reporting data to ODH when registration occurs in early 2016.

Next Steps

- ODH will continue to work with all partners and stakeholders to advertise the availability of safe sleep educational materials and the responsibilities of those professionals required to provide safe sleep education to parents and caregivers.
- ODH will continue to work towards an efficient electronic data collection system for the outcomes of the safe sleep screening procedure for every infant.
- ODH will annually provide a report of the effectiveness of the safe sleep education program. The report will be included in the annual Ohio Child Fatality Review report to the governor and public each September 30. The report will also summarize the information provided by the hospitals and birthing facilities regarding the outcomes of the safe sleep screening procedures.

ODH anticipates the full implementation of this law will result in a decrease in preventable sleep-related deaths, which is a significant contributor to infant mortality in Ohio. We look forward to continuing collaborations with partners, stakeholders, the legislature and the state administration to improve the lives of our youngest Ohioans.

¹⁵Centers for Disease Control and Prevention. National Prematurity Awareness Month page. Available at <http://www.cdc.gov/features/prematurebirth/>.

¹⁶Willinger M, James LS, Catz C. Defining the sudden infant death syndrome (SIDS): Deliberations of an expert panel, convened by the National Institute of Child Health and Human Development. *Pediatric Pathology*. 1991; 11:677-684.

¹⁷Centers for Disease Control and Prevention. Sudden Infant Death Syndrome (SIDS) and Sudden Unexpected Infant Death (SUID): Sudden, Unexpected Infant Death (SUID) Initiative page. Available at <http://www.cdc.gov/sids/SUIDAbout.htm>.

¹⁸National Center on Birth Defects and Developmental Disabilities. *Child Development*. Available at <http://www.cdc.gov/ncbddd/childdevelopment/facts.html>.

¹⁹National Center for Health Statistics. *Deaths: Final Data for 2013*. Available at http://www.cdc.gov/nchs/data/nvsr/nvsr64/nvsr64_02.pdf.

²⁰National Center on Birth Defects and Developmental Disabilities. *Child Development*. Available at <http://www.cdc.gov/ncbddd/childdevelopment/facts.html>.

²¹National Center for Injury Prevention and Control. WISQARS Fatal Injury Reports, 1999 – 2013 page. Available at <http://www.cdc.gov/injury/wisqars/fatal.html>.

²²National Center on Birth Defects and Developmental Disabilities. *Child Development*. Available at <http://www.cdc.gov/ncbddd/childdevelopment/facts.html>.

²³National Center for Injury Prevention and Control. WISQARS Fatal Injury Reports, 1999 – 2013 page. Available at <http://www.cdc.gov/injury/wisqars/fatal.html>.

²⁴National Center on Birth Defects and Developmental Disabilities. *Child Development*. Available at <http://www.cdc.gov/ncbddd/childdevelopment/facts.html>.

²⁵National Center for Injury Prevention and Control. WISQARS Fatal Injury Reports, 1999 – 2013 page. Available at <http://www.cdc.gov/injury/wisqars/fatal.html>.

²⁶Program Manual for Child Death Review. Ed. Covington T, Foster V, Rich S. The National Center for Child Death Review, 2005.

*All Internet sites referenced were last accessed July 28, 2015.

NOTES



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