



# **Pennsylvania Child Death Review Annual Report**

# **2014**

**The Bureau of Family Health, Division  
of Child and Adult Health Services**

**September 2014**



The 2014 Child Death Review Annual Report is a publication of the Pennsylvania Department of Health (DOH) under the requirements of Act 87 of 2008. The department would like to acknowledge the contribution of the Child Death Review (CDR) local teams and the Pennsylvania Chapter, American Academy of Pediatrics.

This report presents information on the distribution and causes of child deaths in Pennsylvania and reflects information collected on death certificates and during the child death review process. The data contained in this report came from a variety of sources. The vital statistics data presented in this report were provided by the DOH, Bureau of Health Statistics and Research (BHSR). Death review data were obtained through the Web-based National Child Death Review Case Reporting System. This system was developed in collaboration between the National Maternal and Child Health (MCH) Center for Child Death Review and state Child Death Review programs and was supported, in part, by a grant from the MCH Bureau (Title V, Social Security Act), Health Resources and Services Administration, U.S. Department of Health and Human Services.

<p>For more information about the CDR Program, please contact:</p>	<p>For more information about the Pennsylvania CDR Annual Report, please contact:</p>
<p>Julie Hohney, Pa. Child Death Review Program Administrator                  Pa. Department of Health                  Bureau of Family Health, Division of Child and Adult Health Services                  Health and Welfare Building                  625 Forster St., Harrisburg, PA 17120                  Telephone: 717-772-2762                  Email: <a href="mailto:jhohney@pa.gov">jhohney@pa.gov</a></p>	<p>Tony Norwood, Public Health Program Administrator                  Pa. Department of Health                  Bureau of Family Health, Division of Child and Adult Health Services                  Health and Welfare Building                  625 Forster St., Harrisburg, PA 17120                  Telephone: 717-772-2762                  Email: <a href="mailto:tnorwood@pa.gov">tnorwood@pa.gov</a></p>

**About this Report**

This report is based on death year and not review year. It focuses on those deaths occurring in 2011 and the reviews of those deaths. It incorporates data from multiple sources, including DOH, BHSR, The National Center for Child Death Review Case Reporting System, The National Center for Health Statistics (The Centers for Disease Control and Prevention) and the Pennsylvania Pregnancy Risk Assessment Monitoring System (PA PRAMS).

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**Act 87 of 2008:** Pennsylvania's Public Health Child Death Review Act of Oct. 8, 2008 (see Appendix C).

**Child:** According to the Pennsylvania Public Health Child Death Review Act, a child is defined as an individual 21 years of age and under. Reviews are conducted on deaths occurring in this age group.

**Child death rate:** Number of child deaths per 100,000 population in specified group.

**Child death review (CDR):** A multi-agency, multi-disciplinary process that routinely and systematically examines the circumstances surrounding child deaths in a given geographical area and a given age group.

**Infant death:** Death occurring to a person under 1 year of age.

**Infant mortality rate:** Number of infant deaths per 1,000 live births.

**Neonatal death:** Death occurring to an infant under 28 days of age.

**Neonatal mortality rate:** Number of neonatal deaths per 1,000 live births.

**Pennsylvania Child Death Review Program:** The Pennsylvania CDR program is designed to promote the safety and well-being of children and reduce preventable child fatalities through timely reviews of child deaths.

**Pennsylvania State Child Death Review Team:** The Pennsylvania CDR Team is comprised of representatives from agencies and organizations that focus on children in Pennsylvania. Aggregated information is shared with legislators and state policy makers in order to concentrate funding and program priorities on appropriate prevention strategies.

**Pennsylvania's Child Death Review local teams:** Local teams are comprised of community participants representing organizations and agencies that serve and protect children within their respective counties. CDR team members review child deaths and analyze data in order to develop prevention strategies. There are currently 63 local review teams covering all 67 counties statewide.

**Postneonatal death:** Death occurring to an infant between 28 days and 364 days.

**Postneonatal death rate:** Number of postneonatal deaths per 1,000 live births.

#### Data in this Report

To overcome the problems associated with the statistical manipulation of small numbers of events, some of the information in this report is based on combined years of data (three-year sums).

Data appearing in this report came from multiple sources. For that data provided by the Pennsylvania Department of Health, Bureau of Health Statistics and Research (BHSR), the Department specifically disclaims responsibility for any analyses, interpretations or conclusions.

There were fewer deaths of children in 2011 than in 2010. There were 1,996 deaths of children in 2011, reflecting a 6.6 percent decrease from 2,138 deaths in 2010. Of those deaths, 1,305 were reviewed. As in 2010, a significant portion of all deaths were those occurring in infants (under 1 year of age). Close to half (46.6 percent) of all deaths were those occurring in infants. Less than one quarter (24.5 percent) were those that occurred in children 1 through 17 years of age, and 28.9 percent were those that occurred in children 18 through 21 years of age. As in 2010, the 2011 data related to these deaths revealed cause and manner profiles unique to various age groupings. As expected, the leading cause of death changed with age. The following are the main findings:

- The infant mortality rate decreased from 7.3 to 6.5 per 1,000 live births between 2010 and 2011. A comparison of two three-year periods, 2006–2008 and 2009–2011, revealed the infant mortality rate decreased 5.4 percent from 7.4 to 7.0 per 1,000 live births.
- The infant mortality rate within the Hispanic population increased from 6.6 to 6.7 per 1,000 live births; in the black population, it decreased 7.5 percent, from 16.1 to 14.9 per 1,000 live births, between the three-year periods 2006–2008 and 2009–2011.
- The five leading causes of infant death (in rank order) were (1) disorders related to length of gestation and fetal malnutrition; (2) congenital malformations, deformations, chromosomal abnormalities; (3) newborn affected by maternal factors and by complications of pregnancy, labor and delivery, (4) other symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified and (5) sudden infant death syndrome (SIDS). Within the postneonatal age group (infants aged 28 through 364 days), 16.4 percent of the deaths were caused by SIDS.
- The mortality rate in children 1 through 17 years of age decreased 12.2 percent between 2006 and 2011. It decreased from 21.3 per 100,000 population in 2006 to 18.7 per 100,000 population in 2011. However, in 2011, the rate of deaths in black children within this age range (27.6 per 100,000 population) was 1.6 times the rate in white children and 2.3 times the rate in Hispanic children.
- The five leading causes of death (in rank order) of children 1 through 17 years of age were (1) accidents (unintentional injuries), (2) cancer, (3) intentional self-harm (suicides), (4) assaults (homicides), and (5) congenital malformations, deformations and chromosomal abnormalities. The five leading causes of death (in rank order) of children 18 through 21 years of age were (1) accidents, (2) assaults (homicides), (3) intentional self-harm (suicides), (4) cancer, and (5) diseases of the heart.
- Approximately three quarters of all injury deaths of children 1 through 21 years of age during the three year period 2009–2011 were injury deaths in males.
- Intentional self-harm (suicide) was the second leading cause of death in children 10 through 17 years of age during the three year period 2009–2011. The rate of death due to suicide in Pennsylvania’s black children was approximately twice the rate in black children nationally.

The CDR program is administered by the Pennsylvania Departments of Health and Public Welfare. Additional support is provided by the Pennsylvania Chapter of the American Academy of Pediatrics.

The mission of the Pennsylvania CDR program is to promote the safety and well-being of children and reduce preventable child fatalities. This is accomplished through timely reviews of child deaths.

Currently, all 67 counties in Pennsylvania are covered by one of the 63 local review teams (see appendix A). Local team members are comprised of community leaders who represent organizations and agencies that serve and protect children within their respective counties. Diverse organizational representation includes Department of Health agencies and others. CDR teams analyze data in order to develop the most effective prevention strategies to reduce preventable child deaths in Pennsylvania. Teams design prevention education, trainings, and recommendations for legislation and public policy. A statewide multidisciplinary team comprised of local professionals and representatives of state agencies review data submitted by local teams and develop protocols and prevention strategies for child death review.

It is important to recognize that the number of deaths reviewed will not equal the number of deaths that occurred. Teams review deaths after investigations are completed and death certificates are filed with the Pennsylvania Department of Health, Vital Statistics Administration. Most deaths are reviewed six to nine months after they occurred. In Pennsylvania, deaths occurring in children 21 years of age and under are reviewed. This includes infant deaths (under 1 year), and deaths of children 1 through 17 years of age, as well as deaths of children 18 through 21 years of age. These age groupings frequently appear separately because they represent periods in which the data reveal uniquely different behaviors, circumstances and death profiles.

Deaths in 2011 and the reviews of those deaths are the basis for this report. There were 1,996 total deaths of children 21 years of age and under occurring that year. Of the total, 46.6 percent occurred in infants (less than one 1 of age), 24.5 percent occurred in children ages 1 through 17 years, and 28.9 percent occurred in children ages 18 through 21 years. The percentage of all child deaths reviewed decreased from 70.2 percent in 2010 to 65.4 percent in 2011. This was primarily due to delays in receiving 2011 death certificate data (Table 1).

<b>Age Group</b>	<b>Number of Deaths in 2011</b>	<b>Number of Reviews of 2011 Deaths</b>	<b>Percent of Deaths Reviewed</b>
<b>&lt; 1 year (Infants)</b>	<b>930</b>	<b>572</b>	<b>61.5%</b>
Neonatal (< 28 days)	643	386	60.0%
Postneonatal (28 – 364 days)	287	186	64.8%
<b>1–17 years</b>	<b>490</b>	<b>345</b>	<b>70.4%</b>
<b>18–21 years</b>	<b>576</b>	<b>388</b>	<b>67.4%</b>
<b>Total (&lt; 22 years)</b>	<b>1,996</b>	<b>1,305</b>	<b>65.4%</b>
Data Sources: DOH, BHSR and the National Center for Child Death Review Case Reporting System			

## Population

Based on U.S. Census Bureau estimates for 2011, Pennsylvania remained the sixth largest state in the nation with an overall population of 12,742,886. According to the Center for Rural Pennsylvania, based on 2010 population data, 71.6 percent of the state's counties are defined as rural, with less than 284 persons per square mile.

Of the state's total population, 3,541,660 were children 21 years of age and under, representing 27.8 percent of the state's total population. The state's child population under 18 years was 2,757,244 in 2011, and it represented 21.6 percent of the total population. From 2010 to 2011, there was no change in the percent of the child population under 18 years represented by children less than 1 year (infants). It remained at 5.1 percent (Table 2).

<b>Age</b>	<b>Number of Children</b>	<b>Percent of Child Population*</b>
Infants (< 1 year)	140,795	5.1
1–4 years	583,091	21.1
5–9 years	748,257	27.1
10–14 years	784,882	28.5
15–17 years	500,219	18.1
<b>Total (&lt; 18 years)</b>	<b>2,757,244</b>	<b>100.0</b>
* Percent of population of the specified age group Data source: Pennsylvania State Data Center at Penn State Harrisburg Notes: Percentages may not total 100 due to rounding		

According to a one year estimate of the U.S. Census Bureau's American Community Survey for 2011, Pennsylvania's population of children 18 through 21 years was 784,416.

## Child Population by Race/Ethnicity

An examination of Pennsylvania's child population by race and ethnicity revealed a similar profile to that realized in 2010 across four categories (Table 3). In 2010, Pennsylvania's minority children (black, Asian/Pacific Islander, and others combined) comprised approximately 25 percent of the state's population under 18 years. In 2011, they comprised approximately 22 percent.

Race/Hispanic Origin	Population (Under 18 Years)		Percent of Total	
	2010	2011	2010	2011
<b>Total (all races)</b>	<b>2,792,155</b>	<b>2,757,244</b>	<b>100.0</b>	<b>100.0</b>
White	2,092,056	2,148,751	74.9	77.9
Black	384,891	397,933	13.8	14.4
Asian/Pacific Islander	83,540	89,661	3.0	3.3
Hispanic origin (all races)	260,239	267,139	9.3	9.7

Data sources: 2010 Population: U.S. Census Bureau; 2011 Population: Pennsylvania State Data Center at Penn State Harrisburg

### Economic and Health Insurance Status

Pennsylvania's population and economic activity are unevenly distributed, with a high concentration of population and income in the southeastern region. Three of the state's 67 counties had an estimated median household income above \$70,000 in 2011, and they are all located in the southeastern region. While the estimated median household income in the U.S. increased by less than 1 percent from 2010 to 2011, Pennsylvania's estimated median household income increased by 2 percent from \$49,245 to \$50,221. In 2011, the state's overall poverty rate (all ages) was 13.7 percent, and its child (under 18 years of age) poverty rate was 19.4 percent. Both were lower than the national rates that year (U.S.: overall, 15.9; child, 22.5). Child poverty rates by Pa. county ranged from 38.7 to 7.2 percent (Table 4).

Measure	U.S.	Pa.	High Pa. County	Low Pa. County
Estimated median household income	\$50,502	\$50,221	\$79,508	\$32,852
Child poverty rate (< 5 years of age)	25.8%	23.0%	NA	NA
Child poverty rate (< 18 years of age)	22.5%	19.4%	38.7%	7.2%
All ages in poverty	15.9%	13.7%	27.9%	6.5%

Data source: U.S. Census Bureau, Small Area Income and Poverty Estimates (SAIPE)  
Notes: SAIPE estimates for child poverty rates (< 5 years of age) were only available on state and national level.

Examined over a five-year period, the percentage of people in poverty increased both nationally and in Pennsylvania. Nationally, the poverty rate for people of all ages rose 22.3 percent from 13.0 percent in 2007 to 15.9 percent in 2011. In Pennsylvania, it rose 18.1 percent from 11.6 percent in 2007 to 13.7 percent in 2011.

Nationally, the poverty rate for children under 18 years of age rose 25.0 percent from 18.0 percent in 2007 to 22.5 percent in 2011. Pennsylvania's child poverty rate in that same age group rose 19.8 percent from 16.2 percent in 2007 to 19.4 percent in 2011.

In Pennsylvania, uninsured children and teens not eligible for or enrolled in Medical Assistance are eligible for the Children’s Health Insurance Program (CHIP). CHIP is provided by private health insurance companies that are licensed and regulated by the Pennsylvania Insurance Department.

An examination of the U.S. Census Bureau’s 2011 Small Area Health Insurance Estimates revealed that, while 92.1 percent of children under 19 years of age were covered by health insurance nationally, 94.4 percent were covered in Pennsylvania. That year, the uninsured rate by Pennsylvania county for that age group ranged from 3.9 percent to 10.3 percent (Table 5).

<b>Table 5. Uninsured Children Under 19 Years of Age, Comparison: Pa. and U.S., 2011</b>				
	<b>U.S.</b>	<b>Pa.</b>	<b>High Pa. County</b>	<b>Low Pa. County</b>
Uninsured (children under 19 years of age)	7.9%	5.6%	10.3%	3.9%
Data source: U.S. Census Bureau, Small Area Health Insurance Estimates				

Examined over a five-year period, Pennsylvania’s uninsured rate (under 19 years of age) dropped 1.5 percentage points, representing a 21.1 percent decrease, from 7.1 percent in 2007 to 5.6 percent in 2011. Nationally, the uninsured rate in that same age category dropped 3.3 percentage points, representing a 29.5 percent decrease, from 11.2 percent in 2007 to 7.9 percent in 2011.

In 2011, there were 1,996 deaths of children 21 years of age and under in Pennsylvania. Of those total deaths, 1,420 occurred in children under 18 years of age. Infant deaths accounted for 65.5 percent of all the deaths occurring in children under 18 years, and they comprised close to half, 46.6 percent, of all the deaths occurring in children 21 years of age and under. Overall, deaths of infants comprise the largest group of child deaths. It is important to note, infant death rates are calculated differently than other child death rates. They are the number of deaths per 1,000 live births.

An examination of Pennsylvania’s infant mortality rate over a 10-year period revealed that it decreased from 7.6 per 1,000 live births in 2002 to 6.5 per 1,000 live births in 2011 (Table 6). Over that same period of time, Pennsylvania’s death rate in children ages 1 through 17 years declined by 26.7 percent from 25.5 to 18.7 per 100,000 population (Table 7).

**Table 6. Number of Infant Deaths with Mortality Rates, Pa., 2002–2011**

Year	Number of Deaths	Rate per 1,000 live births
2002	1,081	7.6
2003	1,060	7.3
2004	1,026	7.1
2005	1,047	7.2
2006	1,122	7.5
2007	1,123	7.5
2008	1,090	7.3
2009	1,044	7.2
2010	1,035	7.3
2011	930	6.5

Data source: DOH, BHSR

**Table 7. Number of Child Deaths (1–17 years) with Associated Mortality Rates, Pa., 2002–2011**

Year	Number of Deaths	Rate per 100,000 population
2002	701	25.5
2003	665	24.2
2004	660	24.1
2005	659	24.1
2006	579	21.3
2007	608	22.6
2008	547	20.5
2009	497	18.4
2010	482	18.2
2011	490	18.7

Data source: DOH, BHSR. Population source: U.S. Bureau of Census for 2010. Pennsylvania State Data Center at Penn State Harrisburg for non-census years.

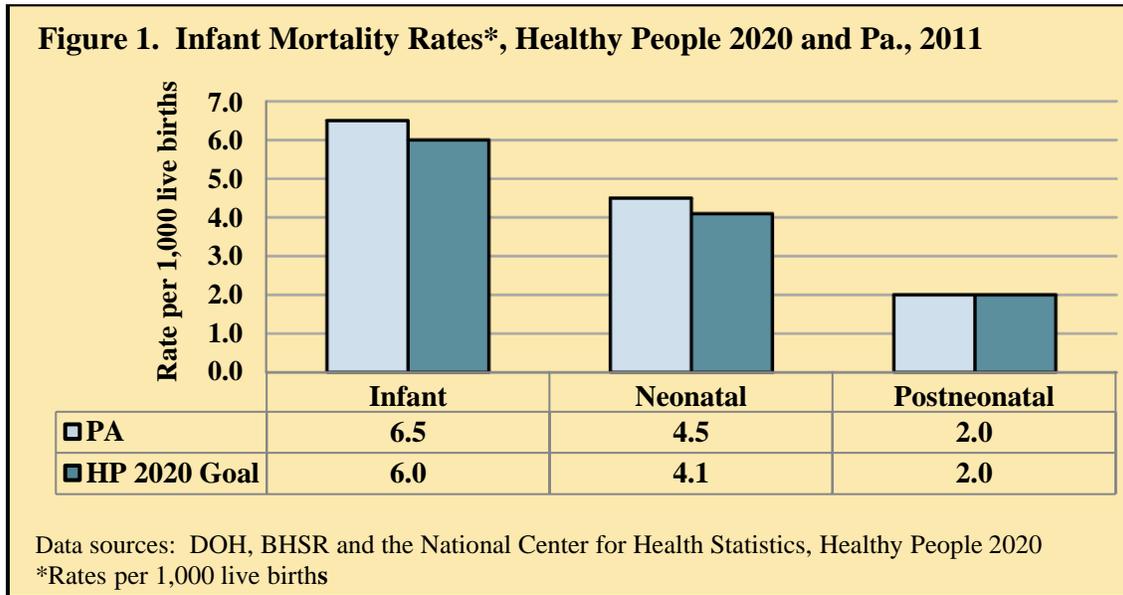
The death of a child is a community responsibility, and an effective child death review requires multidisciplinary participation. It is important to remember that many of the deaths in childhood could be prevented with appropriate interventions in both the public and private sectors. Improved maternal and prenatal health could lead to the prevention of many infant deaths. Expansion and enhancement of educational outreach and awareness campaigns could potentially lead to a reduction in deaths in children of all ages. Improved, well-coordinated services could lead to more effective and targeted intervention.

A comparison of mortality rates in two recent three-year periods (2006–2008 and 2009–2011) revealed an overall infant mortality rate decrease of 6.0 percent. This decrease was determined to be significant at the 95% confidence level. Examining the breakdown of infant mortality by infant age revealed the neonatal mortality rate decreased by 6.1 percent, and the postneonatal mortality rate decreased by 5.7 percent, both of which represented significant decreases. All races realized a significant decrease in overall infant mortality. However, between these two time periods, Hispanic infant deaths rose slightly by 1.5 percent (Table 8).

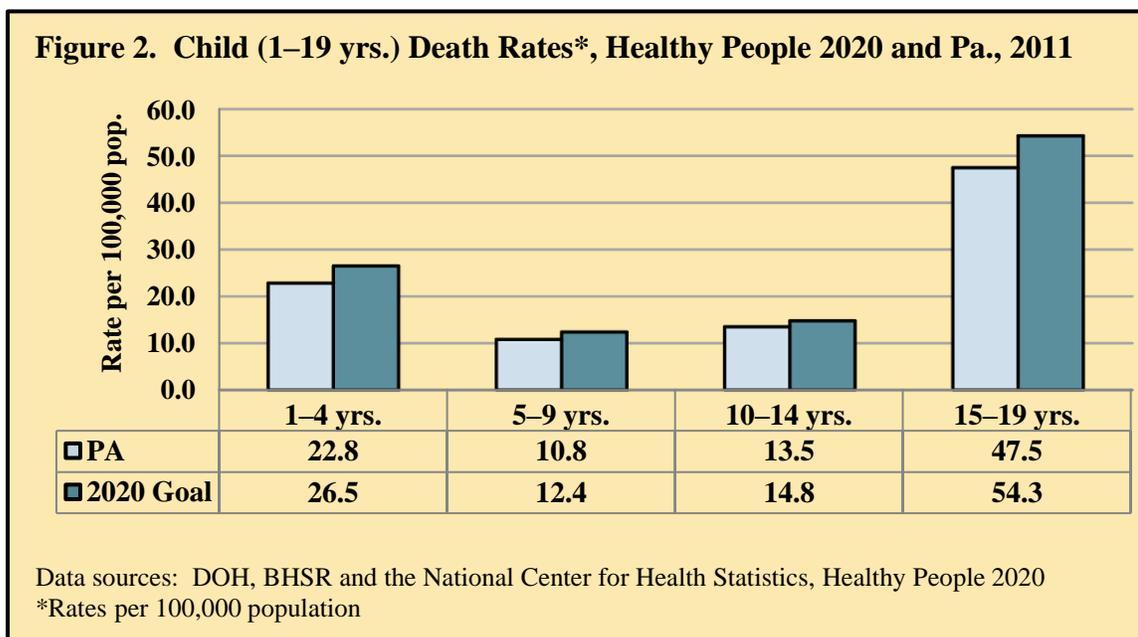
<b>Table 8. Number of Infant, Neonatal, and Postneonatal Deaths by Race/Ethnicity with Mortality Rates and Percent Change in Those Rates from 2006–2008 to 2009–2011, Pa.</b>						
	<b>Number of Deaths</b>		<b>Mortality Rates*</b>		<b>Percentage Change in Rate**</b>	<b>Rates Differ Significantly<sup>^</sup></b>
	<b>2006–2008</b>	<b>2009–2011</b>	<b>2006–2008</b>	<b>2009–2011</b>		
<b>Infant mortality (&lt; 1 year of age)</b>						
All races/ethnicities	3,335	3,009	7.4	7.0	– 6.0	Yes
White	2,081	1,871	6.4	6.1	– 4.6	Yes
Black	1,064	972	16.1	14.9	– 7.2	Yes
Asian/Pacific Islander	76	55	4.5	3.4	– 26.0	Yes
Hispanic (all races)	269	279	6.6	6.7	+ 1.5	No
<b>Neonatal mortality (birth through 27 days)</b>						
All races/ethnicities	2,324	2,094	5.2	4.9	– 6.1	Yes
White	1,436	1,313	4.4	4.3	– 3.0	No
Black	741	644	11.2	9.9	– 11.8	Yes
Asian/Pacific Islander	56	44	3.4	2.7	– 19.7	No
Hispanic (all races)	183	194	4.5	4.7	+ 3.8	No
<b>Postneonatal mortality (28 through 364 days)</b>						
All races/ethnicities	1,011	915	2.3	2.1	– 5.7	Yes
White	645	558	2.0	1.8	– 8.2	Yes
Black	323	328	4.9	5.0	+ 3.1	No
Asian/Pacific Islander	20	11	1.2	0.7	– 43.8	Yes
Hispanic (all races)	86	85	2.1	2.0	– 3.3	No
Note: Hispanic origin can be of any race						
* Rate per 1,000 live births						
** Percentage change is based on the exact rates and not the rounded rates presented here.						
<sup>^</sup> Significance is determined at the 95% confidence level.						

**Infant Mortality Rates Healthy People 2020 and Pennsylvania Comparison**

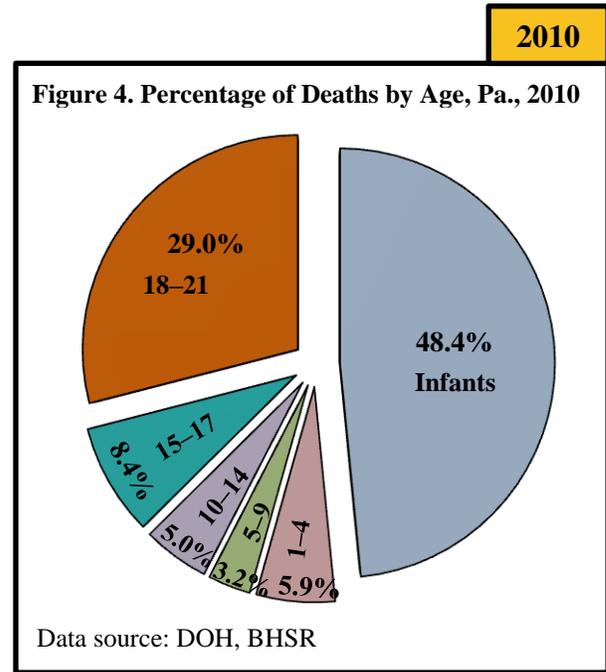
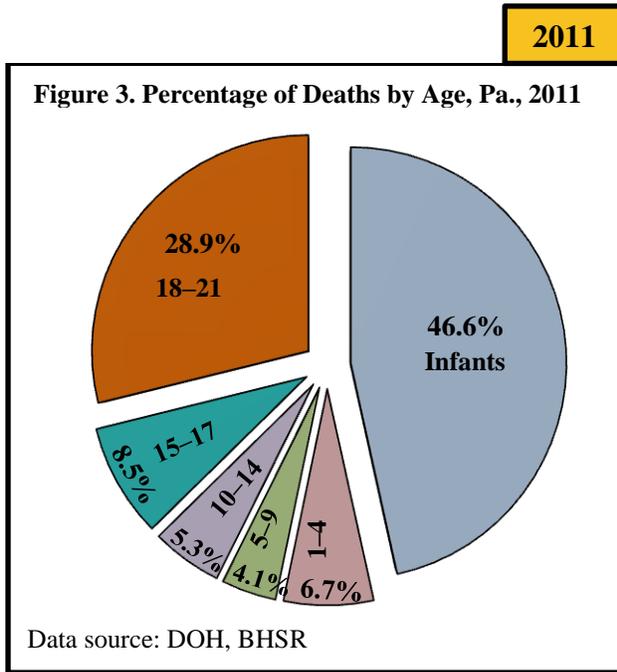
National objectives for infant and child mortality have been established in the Healthy People 2020 project of the United States Department of Health and Human Services. Pennsylvania’s 2011 infant mortality rates were higher in two of the three infant age categories. Pennsylvania achieved the Healthy People 2020 objective of reducing infant mortality to the target rate in only the postneonatal category (Figure 1).



Pennsylvania’s 2011 child death rates met and surpassed the Healthy People 2020 goals in all age groups (Figure 2).



While the percentage is down slightly from 2010, close to half of all 2011 deaths of persons 21 years of age and younger occurred during the first year of life. In 2011, 46.6 percent of all deaths were infant deaths. The next highest percentage of child deaths, 28.9 percent, occurred in children 18 through 21 years of age. As with the 2010 data, the 2011 data revealed falling mortality rates after infancy and rising rates during adolescence. This reflects the rise in unintentional and intentional injury deaths in older children.



Child death data examined by sex revealed that the number of deaths in boys was significantly higher than those in girls, in every age category. In 2011, 58.2 percent of the infant deaths with a known sex occurred in boys (Table 9). Of the total 1,066 deaths among children aged 1 through 21 years, 71.0 percent were in males (Table 10).

**Table 9. Infant Deaths by Sex, Pa., 2011**

Sex	Number of Deaths	Percent of Total
Male	539	58.2
Female	387	41.8
<b>Total</b>	<b>930</b>	<b>100.0</b>

\*Total number of deaths shown does not reflect sum due to unknowns.  
Data source: DOH, BHSR

**Table 10. Number of Deaths by Sex and Select Age Groups with Percent, Pa., 2011**

Sex	Number of Deaths by Age Group					Total (1-21 years)	Percent of Total
	1-4	5-9	10-14	15-17	18-21		
Male	75	48	66	115	453	757	71.0
Female	58	33	40	55	123	309	29.0
<b>Total</b>	<b>133</b>	<b>81</b>	<b>106</b>	<b>170</b>	<b>576</b>	<b>1,066</b>	<b>100.0</b>

Data source: DOH, BHSR

The 2011 data revealed black children remain at increased risk of dying across all age categories. While black infants comprised 15.2 percent of Pennsylvania’s 2011 infant population, black infant deaths comprised 31.6 percent of the state’s total infant deaths that same year (Table 11). In 2011, black infants died at 2.4 times the rate of white infants and 4.2 times the rate of Asian/Pacific Islander infants (Figure 5).

**Table 11. Infant Deaths by Race/Ethnicity, Pa., 2011**

Race/Ethnicity	Number of Infant Deaths	Percent of Total
All races	930	100.0
White	575	61.8
Black	294	31.6
Asian/Pacific Islander	18	1.9
Hispanic origin	77	8.3

Data source: DOH, BHSR  
Note: Hispanic origin can be of any race

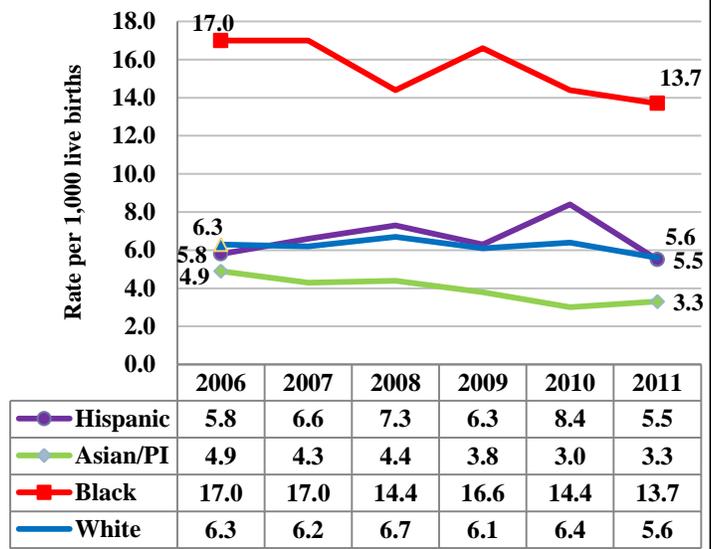
While black children ages 1 through 17 years comprised 14.4 percent of Pennsylvania’s overall child population within that age range, their deaths represented 21.2 percent of the total child deaths (Table 12). Examining the rate of death per 100,000 population revealed black children died at 1.6 times the rate of white children and 1.9 times the rate of Asian/Pacific Islander children in 2011.

**Table 12. Deaths by Race/Ethnicity in Children 1–17 years of age, Pa., 2011**

Age in Years	Race/Ethnicity	Number of Deaths	Percent of Total
1–17	All races	490	100.0
	White	364	74.3
	Black	104	21.2
	Asian/Pacific Islander	12	2.4
	Hispanic	30	6.1

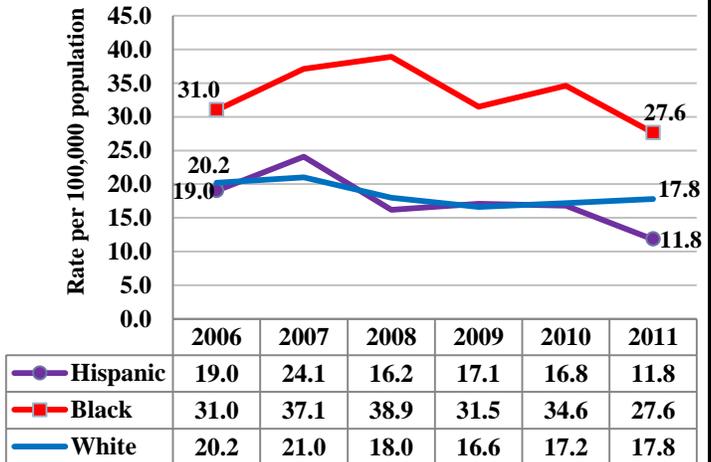
Data source: DOH, BHSR  
Notes: Hispanic origin can be of any race.

**Figure 5. Infant Mortality Rates by Race/Ethnicity, Pa., 2006–2011**



Data source: DOH, BHSR

**Figure 6. Child (1–17 yrs.) Death Rates by Race/Ethnicity, Pa., 2006–2011**



Data source: DOH BHSR

Notes: Hispanic origin can be of any race. Rates based on less than 10 events are considered statistically unreliable and are not displayed.

## Cause and Manner of Death

**The cause and manner of death are determinations made by either the coroner or medical examiner. Pennsylvania has county government medical examiner offices in Philadelphia and Pittsburgh (Allegheny County) and elected coroners in the other 65 counties. Conclusions are made following either an autopsy or medical review of the death. The cause of death is the physical condition that directly contributed to the person's death. The underlying cause of death is either the disease or injury that initiated the train of morbid events leading directly to death or the circumstances of the accident or violence that produced the fatal injury.<sup>1</sup> Causes of death on the death certificate represent a medical opinion that might vary among individual medical-legal officers. The manner of death relates to the circumstances of the accident or violence that produced the fatal injury. The five categories of manner of death are natural, homicide, suicide, accident and undetermined.**

## International Statistical Classifications of Diseases (ICD)

ICD codes are alphanumeric designations given to every diagnosis, description of symptoms and cause of death attributed to human beings. These classifications are developed, monitored and copyrighted by the World Health Organization (WHO). In the United States, the National Center for Health Statistics oversees all changes and modifications to the ICD codes, in cooperation with WHO. ICD codes are used to classify a cause of death. Every cause-of-death statement is coded and tabulated according to these classifications. The most current list of codes in use is ICD-10, reflecting the tenth revision.



One of the more difficult tasks of the medical examiner or coroner is to determine whether a death is an accident or the result of intent to end life. The medical examiner or coroner must use all information available to make a determination about the death. This may include information from his or her investigation, police reports, staff investigations, and discussions with the family and friends of the decedent. Determining the manner and cause of death can be straightforward, or it may take weeks to determine.

## Leading Causes of Infant Deaths

Understanding causes of childhood deaths is important when developing strategies to prevent them. A well-organized, multidisciplinary child death review process can ensure accurate and consistent reporting of the cause and manner of child deaths.

Specific causative factors vary significantly depending on the age of the child. In the first year of life, the leading cause of mortality in Pennsylvania in 2011 was disorders related to length of gestation and fetal malnutrition (Table 13). Nationally, the leading cause of infant death in 2011 was congenital malformations, deformations and chromosomal abnormalities.

Rank	Cause of Death	Number of Deaths	Percent of Total
1	Disorders related to length of gestation and fetal malnutrition	179	19.2
2	Congenital malformations, deformations, chromosomal abnormalities	167	18.0
3	Newborn affected by maternal factors and by complications of pregnancy, labor and delivery	147	15.8
4	Other symptoms, signs and abnormal clinical and laboratory findings not elsewhere classified	67	7.2
5	Sudden infant death syndrome (SIDS)	50	5.4
	All other causes	320	34.4

Data source: DOH, BHSR

An examination of the 2011 data for those infants less than 28 days of age revealed the same leading cause of death, disorders related to length of gestation and fetal malnutrition. As in 2010, this was followed by newborns being affected by maternal factors and by complications of pregnancy, labor and delivery (Table 14).

Rank	Cause of Death	Number of Deaths	Percent of Total
1	Disorders related to length of gestation and fetal malnutrition	175	27.2
2	Newborn affected by maternal factors and by complications of pregnancy, labor and delivery	146	22.7
3	Congenital malformations, deformations, chromosomal abnormalities	123	19.1
4	Other perinatal conditions	38	5.9
5	Infections specific to the perinatal period	27	4.2
	All other causes	134	20.8

Data source: DOH, BHSR

## Prematurity Developments and Strategies

Of the total number of 2011 neonatal deaths in Pennsylvania, over a quarter (175 deaths) were due to disorders related to length of gestation and fetal malnutrition (Table 14). As the leading cause of death, it comprised 27.2 percent of all neonatal deaths. In 2010, the category comprised 25.5 percent of the total.

In the deaths reviewed associated with prematurity, 81.2 percent were determined to have been likely not preventable, and only 2.2 percent were determined to have been likely preventable. Prematurity remains a significant health issue in Pennsylvania and the United States. According to the March of Dimes, more than half a million babies are born too soon in the United States, and our country's premature birth rate has risen by 36 percent over the last 25 years. Babies born just a few weeks early are at risk of severe health problems and lifelong disabilities.<sup>2</sup>

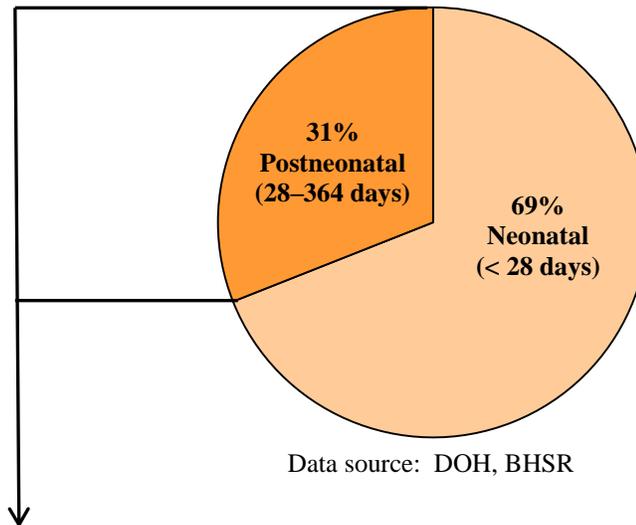
The March of Dimes Prematurity Campaign funds research and advocates for legislation that improves care for moms and babies. Their Healthy Babies are Worth the Wait® initiative is a comprehensive approach to preventing preterm births, with a focus on reducing elective deliveries before 39 weeks gestation. It involves an education and awareness campaign, hospital quality improvement and community intervention programs.

Based on PA PRAMS survey response data for the period five-year period 2007 through 2011, 18.0 percent of Pennsylvania's mothers obtain late or no entry into prenatal care service (total n = 4,831; total WSUM = 627,124). Early and adequate access to prenatal care may reduce the incidence of prematurity and low birth weight. The Bureau of Family Health is funding a partnership between Albert Einstein Healthcare Network and Enon Tabernacle Baptist Church to implement a CenteringPregnancy® program in an underserved area of Philadelphia. The program location was specifically chosen to provide prenatal services to women at-risk for poor birth outcomes living in medically underserved areas in an effort to increase access to prenatal care, improve birth outcomes and reduce infant mortality rates. The department continues to work with organizations to provide early and regular prenatal care services and home visitation programs and education to Pennsylvania's at-risk population.

Hospitals and birth centers across Pennsylvania continue to incorporate CenteringPregnancy® programs into their practices. CenteringPregnancy® is a multifaceted model of group health care that integrates the three major components of care: health assessment, education and support into a unified program. Women enrolled in the program receive health assessments, learn self-management skills, and receive education about healthy living and infant care, as well as information on available resources. Women enrolled in the program are less likely to have preterm births than their counterparts who receive standard prenatal care.

Sixty-nine percent of all infants' deaths in 2011 occurred during the neonatal period, and 31 percent occurred during the postneonatal period (Figure 7). Table 15 displays the five leading causes of death during the postneonatal period.

**Figure 7. Infant Deaths by Neonatal Stage, Pa., 2011**



**Table 15. Leading Causes of Postneonatal ( 28–364 days) Mortality, Pa., 2011**

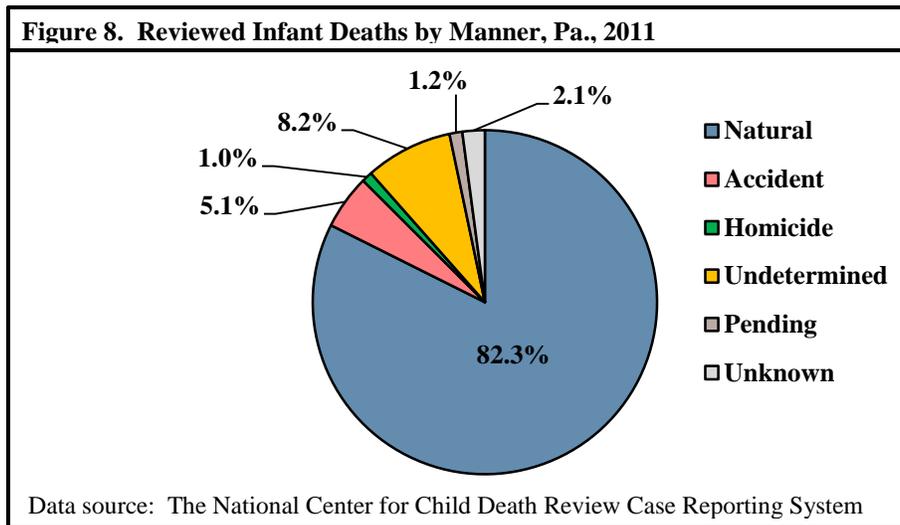
Rank	Cause of Death	Number of Deaths	Percent of Total
1	Other symptoms, signs and abnormal clinical and laboratory findings not elsewhere classified	50	17.4
2	Sudden infant death syndrome	47	16.4
3	Congenital malformations, deformations, chromosomal abnormalities	44	15.3
4	Accidents	31	10.8
5	Diseases of the respiratory system	26	9.1
	All other causes	89	31.0

Data source: DOH, BHSR

The data revealed a decrease from 2010 in the number and percentage of postneonatal deaths caused by sudden infant death syndrome (SIDS). Based on the 2010 infant death data, SIDS was the leading cause of postneonatal deaths. Based on the 2011 data, it was the second highest cause of postneonatal deaths (see section on SUID and SIDS, page 20).

**Reviewed Infant Deaths by Manner**

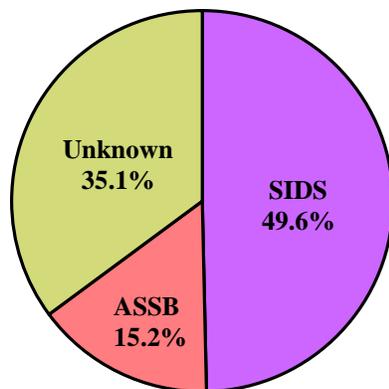
An examination of the data for the 572 infant deaths reviewed revealed 82.3 percent were ones in which the manner of death was determined to be natural (Figure 8). Most of these babies were born prematurely (before 37 weeks gestation) and/or born at a low birth-weight (under five pounds and 9 ounces). Both prematurity and low birth weight remain the greatest predictors of infant mortality. Of the 29 infant deaths reviewed wherein the manner of death was determined to be accident, most (21) involved asphyxia.



Sudden unexpected infant deaths (SUIDs) are defined as deaths in infants that occur suddenly and unexpectedly and whose cause of death is not immediately obvious prior to investigation. SUIDs are an expanded category of sudden infant deaths that include deaths due to SIDS, accidental suffocation and strangulation (including bed linen, mother’s body and pillow), and deaths of unknown causes. These causes of death are grouped together to help identify sleep-related deaths, including those where co-sleeping may have occurred. As a result of more thorough death scene investigations, some deaths which were previously attributed to SIDS are now being attributed to accidental suffocation.

According to the Centers for Disease Control and Prevention (CDC), each year in the United States, about 4,000 infants die suddenly of no immediately obvious cause. Half of these SUIDs are due to sudden infant death syndrome (SIDS), the leading cause of SUID. For the period 2009 through 2011, there were 427 SUIDs in Pennsylvania and, as nationally, SIDS comprised about half (Figure 9).

**Figure 9. Percent of SUIDs by Cause of Death, Pa., 2009–2011**



Data source: DOH, BHSR  
 Notes: SIDS (sudden infant death syndrome) and ASSB (accidental suffocation or strangulation in bed)

<b>Table 16. Number of SUIDs by Race and Ethnicity, Pa., 2009–2011</b>	
<b>Race/Ethnicity</b>	<b>Number of SUIDs</b>
All races	427
White	234
Black	178
Asian/PI	2
Hispanic	32

Data source: DOH, BHSR  
 Notes: SUIDs correspond to ICD-10 Codes R95, R99 and W75. Hispanic origin can be of any race.

An examination of Pennsylvania’s 2011 child death data revealed that SIDS is the second highest cause of death for infants in the postneonatal period (Table 15).

**SIDS is the sudden death of an infant that cannot be explained after a thorough investigation, including performance of a complete autopsy, examination of the death scene and review of the clinical history.**

There was a statistically significant decrease since 2010 in the number and percentage of postneonatal deaths caused by SIDS. In 2010, SIDS was the leading cause of postneonatal deaths with 68, comprising 22.7 percent of all postneonatal deaths that year. In 2011, it ranked second with 47, comprising 16.4 percent of postneonatal deaths, behind the leading cause category—other symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified. Across all infant deaths, SIDS dropped from the fourth leading cause of death in 2010 to the fifth leading cause in 2011.

Many SIDS deaths are associated with sleep, and infants who die of SIDS show no signs of trauma. SIDS can strike without warning, usually in seemingly healthy babies. SIDS remains of particular public health concern because it can be addressed through safe sleeping practices.

From 2009 through 2011, there were 212 infant deaths due to SIDS in Pennsylvania. Examining the rate per 1,000 live births revealed that over that three-year period, the state’s black infants died of SIDS at 2.8 times the rate of white infants (Table 17).

**Table 17. Infant Deaths and Mortality Rates Due to SIDS by Race/Ethnicity, Pa., 2009–2011**

Race/Ethnicity	Number of Deaths Due to SIDS	Infant Mortality Rate Due to SIDS
All races	212	0.5
White	132	0.4
Black	72	1.1
Asian/Pacific Islander	2	ND
Hispanic	17	0.4

Data source: DOH, BHSR  
 Notes: Hispanic origin can be of any race. ND: Not Displayed when count < 10

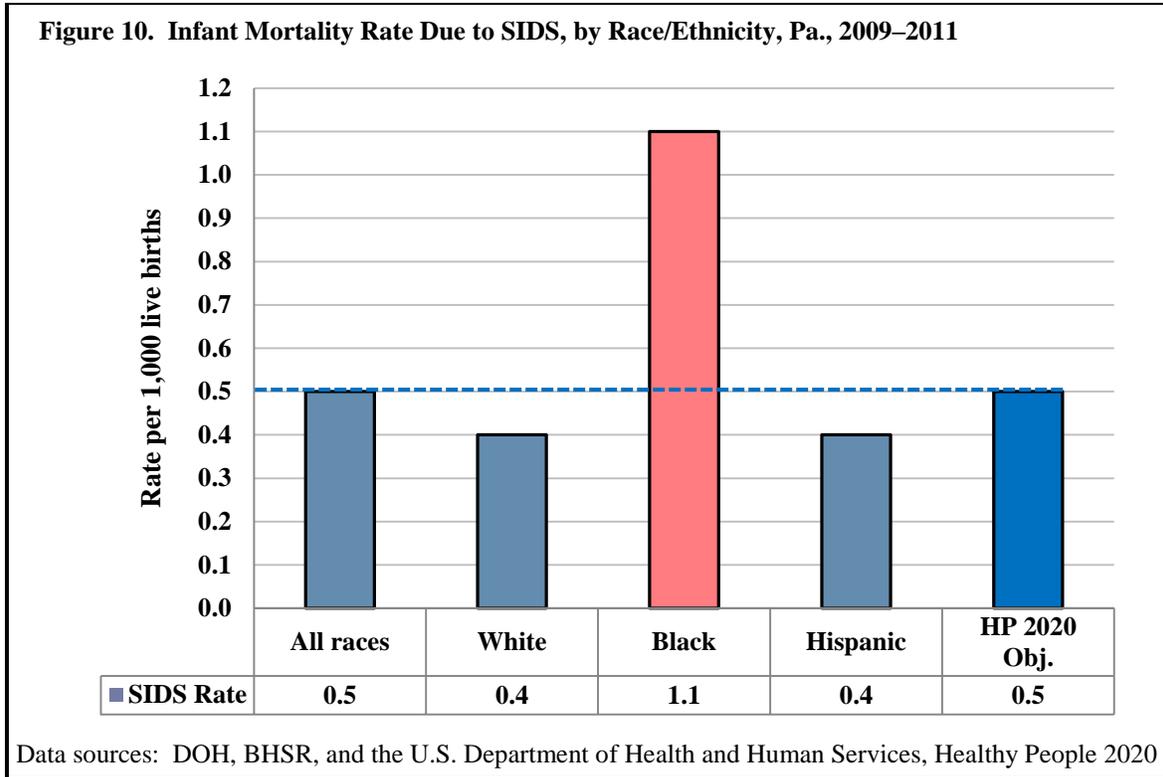
A comparison of three-year periods 2006–2008 and 2009–2011 revealed no significant difference in the number and rate of SIDS deaths (Table 18).

**Table 18. Comparison of Infant Deaths Due to SIDS, Pa., 2006–2008 and 2009–2011**

2006–2008		2009–2011	
Number of SIDS Deaths	Infant Mortality Rate Due to SIDS*	Number of SIDS Deaths	Infant Mortality Rate Due to SIDS*
213	0.5	212	0.5

Data source: DOH, BHSR  
 \* Per 1,000 live births

Pennsylvania’s overall SIDS mortality rate for the three-year period 2009 through 2011 matched the Healthy People 2020 target objective of 0.5 infant deaths per 1,000 live births. Only the state’s black infant mortality rate failed to achieve it (Figure 10).



**Safe Sleep**

It is commonly recognized that babies placed on their stomach or sides to sleep are at greater risk for SIDS than babies who are placed on their backs to sleep. According to the American Academy of Pediatrics (AAP) Task force on Infant Sleep Position and Sudden Infant Death Syndrome, belly-sleep has up to 12.9 times the risk of death as back-sleep. In 1992, the American Academy of Pediatrics recommended placing babies on their backs to sleep. As a result of growing public awareness and successful intervention strategies, the rate of SIDS deaths has declined nationwide. Despite a reduction in the incidence of SIDS since 1992, the decline plateaued in recent years. Furthermore, according to the AAP, concurrently, other causes of SUID that occur during sleep (including suffocation, asphyxia and entrapment) and ill-defined or unspecified causes of death have increased in incidence. Consequently, in 2011, the AAP expanded the recommendations from focusing only on SIDS to focusing on a safe sleep environment.

There are ways for parents and caregivers to reduce the risk of SIDS and other sleep-related causes of infant death. The primary aim is to create the safest possible sleep environment.

A cornerstone of the AAP expanded recommendations is room-sharing without bed-sharing. Infants’ cribs, portable cribs, play yards or bassinets should be placed in the parents’ bedroom close to the parents’ bed. According to AAP, evidence supports this sleeping arrangement for decreasing the risk of SIDS by as much as 50 percent.<sup>3</sup>

**Sleep-Related Deaths Reviewed**

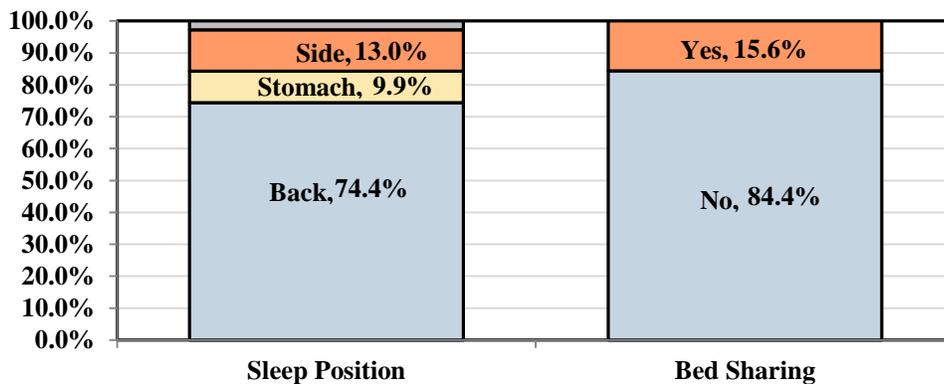
There were 81 sleep-related, infant deaths reviewed. Various circumstances and factors related to those deaths were captured during the investigations and review processes.

Of those sleep-related deaths reviewed:

- 63.0 percent were ones in which the infant was not in a crib or bassinette.
- 58.0 percent were ones in which the infant was sleeping with one or more other people.
- 43.2 percent were ones in which the infant was not sleeping on his/her back.
- 16.0 percent were ones in which an obese adult was sleeping with the child.
- 8.6 percent were ones in which unsafe bedding or toys were identified.
- 4.9 percent were ones in which the caregiver/supervisor fell asleep while breast feeding.
- 2.5 percent were ones in which an adult was alcohol impaired.
- 1.2 percent were ones in which an adult was drug impaired.

An examination of the weighed survey response data from PA PRAMS for the five-year period 2007–2011 revealed 74.4 percent of mothers indicated they most often lay their babies down to sleep on the backs. Surveyed mothers also responded to a question about how often their babies sleep in the same bed with them or someone else. Responses to that question revealed 84.4 percent of mothers do not allow their babies to share a bed with someone, including themselves (Figure 11).

**Figure 11. Safe Sleep Indicators, Pa., 2007–2011**



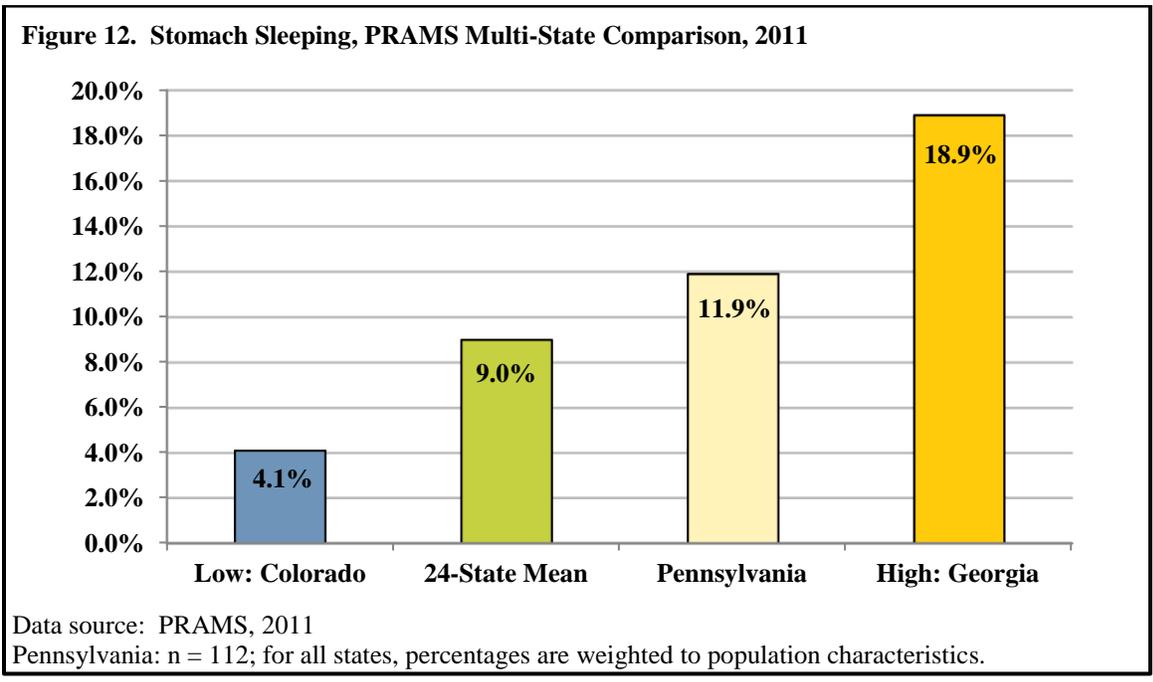
Data source: PA PRAMS, 2007–2011 (combined).

Notes: This table excludes respondents whose baby has died, is not living with them now or is still in the hospital.

Sleep position totals: n = 4,736 and WSUM = 624,009; bed sharing totals: n = 4,739 and WSUM = 624,005

An examination of the 2011 PA PRAMS response data for the 24 participating PRAMS states nationwide revealed a multi-state mean of 9.0 percent of mothers indicating they most often lay their baby down to sleep on the stomach. From the same dataset, 11.9 percent of Pennsylvania’s mothers indicated doing so (Figure 12). Stomach sleeping is a known risk factor for SIDS.

In regard to bed sharing, 15.6 percent of Pennsylvania’s mothers indicated that their baby usually sleeps in a shared bed. The 13-state mean for this variable was 20.3 percent, and the range was 12.1 percent (Wisconsin) to 33.7 percent (Hawaii). Based on these 2011 data, there appears to be room for improvement, particularly in regard to the percentage of Pennsylvania’s mothers who place their babies on their stomach to sleep.



**Reviewed deaths due to SIDS**

Of the 81 infant deaths reviewed, 15 were determined to have been caused by SIDS. All of those deaths occurred in infants 5 months of age or younger. Poor or absent supervision was identified and recorded in only one of the cases.

## Initiatives and Developments on Safe Sleep

In 2010, the Pennsylvania legislature enacted SIDS legislation (Act 73 of 2010, Sudden Infant Death Syndrome Education and Prevention Program Act) that requires hospitals to provide SIDS education to new parents.

In 2011, the Department of Health developed a statewide SIDS initiative aimed at developing a consistent message related to SIDS and safe sleep practices. This program conducts regional educational symposia, supports statewide collaboration to promote education and awareness, and facilitates a Safe Sleep Ambassador education/outreach program. It also provides grant opportunities for new Cribs for Kids chapters across the commonwealth. The Bureau of Family Health sustains a SIDS Awareness Program that establishes standards for educating new families on SIDS and safe sleep practices. Since risk factors associated with SIDS and ASSB are similar, strategies to prevent both SIDS and ASSB are also similar.



Prenatal care has been shown to reduce the risk of SIDS, while smoke exposure and illicit drug use remain major risk factors for SIDS. Infants should always be placed on their back to sleep, on a firm sleeping surface, and in an area free of soft objects and loose bedding. This strategy has proven effective in reducing the risk of SIDS and accidental suffocation or strangulation in bed (ASSB).

After planning and interagency collaboration at the Pa. Department of Health, in 2013, the department issued a policy statement on safe sleep that is closely aligned with the recommendations made by AAP. This policy statement provides the weight of department support for encouraging the use of techniques that reduce the risk of death due to SIDS and unsafe sleep practices and represents the first time the department has taken a formal position on safe sleep.

For the three-year period 2009–2011, accidents (unintentional injuries) were the leading cause of death in all children 1 through 21 years of age. For children 1 through 17 years of age, malignant neoplasms (cancer) was the second leading cause of death, and for those children 18 through 21 years of age, assault (homicide) was the second leading cause of death (Table 19). A further breakdown of these age groupings revealed intentional self-harm (suicide) was the second leading cause of death in children ages 10 through 17 years. Closer examination within that age group revealed suicides represented 13.9 percent of deaths in children ages 10 through 14 years, and 18.0 percent of deaths in children ages 15 through 17 years. As a proportion of overall deaths within specific age groups, accidents were the highest in the age group containing children 18 through 21 years of age, where they represented 44.4 percent of total deaths (Table 20).

<b>Age Group</b>	<b>Rank</b>	<b>Underlying Cause of Death*</b>	<b>Number of Deaths</b>	<b>Percent of Total</b>
1–17 years	1	Accidents <sup>^</sup>	522	35.5
	2	Malignant neoplasms	171	11.6
	3	Intentional self-harm (suicide)	139	9.5
	4	Assault (homicide)	127	8.6
	5	Congenital malformations, deformations and chromosomal abnormalities	74	5.0
		All other causes	436	29.7
		<b>Total</b>	<b>1,469</b>	<b>100.0</b>
18–21 years	1	Accidents	777	44.4
	2	Assault (homicide)	372	21.3
	3	Intentional self-harm (suicide)	245	14.0
	4	Malignant neoplasms	78	4.5
	5	Diseases of the heart	46	2.6
		All other causes	231	13.2
		<b>Total</b>	<b>1,749</b>	<b>100.0</b>
Data source: DOH, BHSR				
* The underlying cause of death is either the disease or injury that initiated the train of morbid events leading directly to death or the circumstances of the accident or violence that produced the fatal injury.				
<sup>^</sup> Accidents - Based on the ICD-10 codes within the following ranges: V01–X59, Y85–Y86				
Notes: Percentages may not total 100 due to rounding.				

Cause of Death Ranking	Age in Years				
	1–4	5–9	10–14	15–17	18–21
<b>1 (Most)</b>	Accidents	Accidents	Accidents	Accidents	Accidents
Number of deaths	124	78	104	216	777
Percent of deaths in age group	31.2	33.6	32.8	41.4	44.4
<b>2</b>	Malignant neoplasms	Malignant neoplasms	Intentional self-harm (suicide)	Intentional self-harm (suicide)	Assault (homicide)
Number of deaths	39	47	44	94	372
Percent of deaths in age group	9.8	20.3	13.9	18.0	21.3
<b>3</b>	CMD and CA*	CMD and CA*	Malignant neoplasms	Assault (homicide)	Intentional self-harm (suicide)
Number of deaths	38	13	42	72	245
Percent of deaths in age group	9.5	5.6	13.2	13.8	14.0
<b>4</b>	Assault (homicide)	Assault (homicide)	CMD and CA*	Malignant neoplasms	Malignant neoplasms
Number of deaths	34	11	15	43	78
Percent of deaths in age group	8.5	4.7	4.7	8.2	4.5
<b>5</b>	Diseases of heart	Influenza and pneumonia	Diseases of heart	Diseases of heart	Diseases of heart
Number of deaths	12	10	13	15	46
Percent of deaths in age group	3.0	4.3	4.1	2.9	2.6

Data source: DOH, BHSR  
 \*CMD and CA: Congenital malformations, deformations and chromosomal abnormalities

### Reviewed Deaths by Manner

Of the total 1,305 deaths reviewed (all ages), about half (654) were ones in which the manner of death was determined to be natural. An examination of the review data for persons 1 through 17 years of age revealed natural as the leading manner of death, and in children 18 through 21 years, accident was the leading manner of death (Table 21).

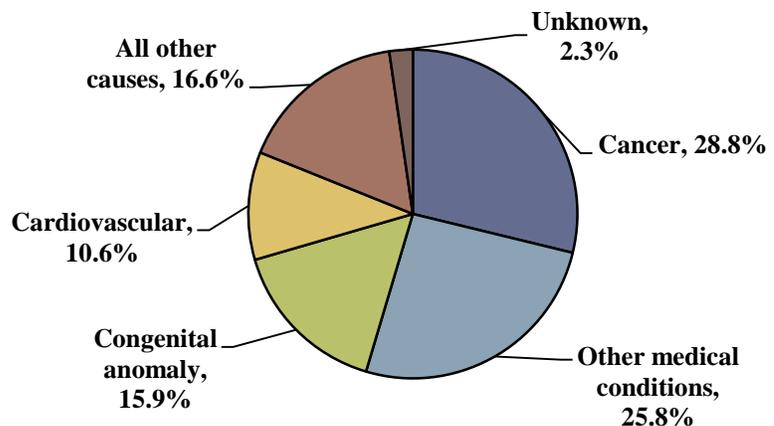
Manner of Death Ranking	Age in Years	
	1–17	18–21
<b>1 (Most)</b>	Natural	Accident
Number of deaths reviewed	132	157
Percent of deaths in age group	38.3	40.5
<b>2</b>	Accident	Homicide
Number of deaths reviewed	129	115
Percent of deaths in age group	37.4	29.6
<b>3</b>	Homicide	Suicide
Number of deaths reviewed	37	53
Percent of deaths in age group	10.7	13.7
<b>4</b>	Suicide	Natural
Number of deaths reviewed	30	51
Percent of deaths in age group	8.7	13.1
<b>5</b>	Undetermined + pending + unknown	Undetermined + pending + unknown
Number of deaths reviewed	17	12
Percent of deaths in age group	4.9	3.1
<b>Total</b>	<b>All manners of death</b>	<b>All manners of death</b>
Number of deaths reviewed	<b>345</b>	<b>388</b>
Percent of deaths in age group	<b>100.0</b>	<b>100.0</b>

Data source: The National Center for Child Death Review Case Reporting System

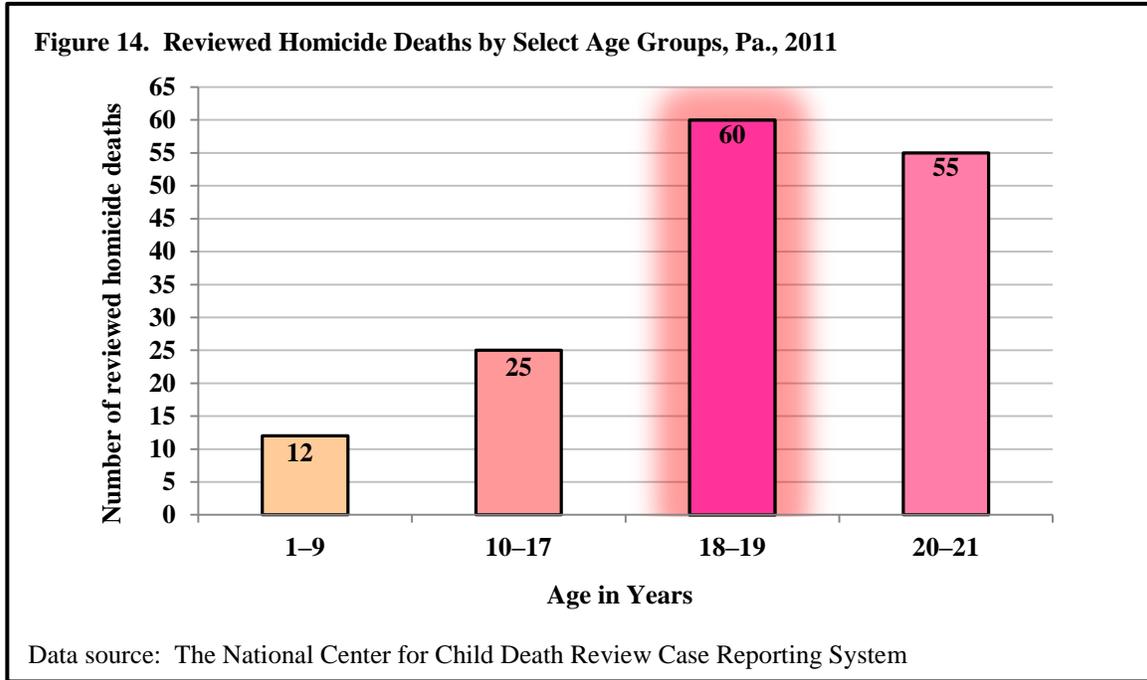
An examination of the 132 reviewed deaths in children 1 through 17 years of age in which the manner of death was determined to be natural revealed cancer (28.8 percent), followed next by other medical condition (25.8 percent), as the leading causes of death in that subgroup (Figure 13). Of the 157 reviewed deaths in children 18 through 21 years of age in which the manner of death was determined to be accident, the leading causes were motor vehicle accidents (52.9 percent) and poisoning, overdose or acute intoxication (38.2 percent).

**Figure 13. Reviewed Cause of Death in Children 1 through 17 years of age for which the Manner of Death was Natural, Pa., 2011**

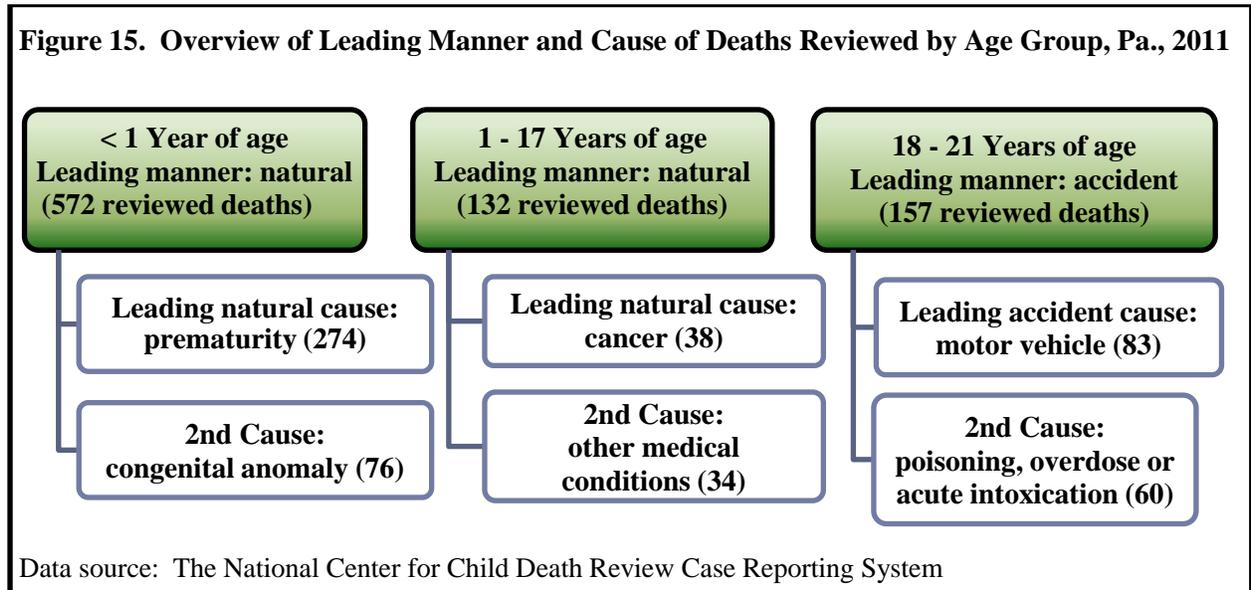
Data source: The National Center for Child Death Review Case Reporting System



While homicides were not the leading manner of death in 18 and 19 year old children, it is within that two-year age range that most homicides occurred (Figure 14).



**Reviewed Deaths by Manner and Cause**



**Injury-Related Deaths in Children 1 through 17 years of age by Intent**

In the public health context, intentional injury deaths are those occurring with the intent to cause harm. Unintentional injury deaths are those in which the act that resulted in death was one that was not deliberate, willful or planned.

In the three-year period 2009 through 2011, Pennsylvania’s 2,210 injury related deaths in children 1 through 21 years of age comprised 68.7 percent of the 3,218 total deaths in that age range. Accidents are unintentional injuries, and they were the leading cause of injury deaths in children 1 through 21 years of age over that three-year period. Accidents comprised 65.2 percent of all injury deaths in children 1–17 years. Of the total accident deaths in that age range, motor vehicle accidents comprised the largest category (Table 22).

<b>Intentional or Unintentional</b>	<b>Type of Injury</b>	<b>Number of Deaths</b>	<b>Percent of Total Injury Deaths</b>
Unintentional (accidents)	Motor vehicle accidents	257	32.1
	Smoke, fire and flames	70	8.7
	Other non-transport accidents	64	8.0
	Drowning and submersion	62	7.7
	Accidental poisoning and exposure to noxious substances	38	4.7
	Other transport accidents	21	2.6
	Falls	10	1.2
<b>Unintentional injury total =</b>		<b>522</b>	<b>65.2</b>
Intentional	Intentional self-harm (suicide) by other means	88	11.0
	Assault (homicide) by firearm	83	10.4
	Intentional self-harm (suicide) by firearm	51	6.4
	Assault (homicide) by other means	44	5.5
	Legal intervention (law enforcement)	1	ND
<b>Intentional injury total =</b>		<b>267</b>	<b>33.3</b>
<b>Undetermined intent =</b>		<b>12</b>	<b>1.5</b>
<b>Total injury deaths (1–17 years of age) =</b>		<b>801</b>	<b>100.0</b>
Data source: DOH, BHSR			
Notes: Percentages based on less than 10 events are considered statistically unreliable and are not displayed (ND). See technical notes (Appendix D) for the ICD codes used for the cause of death categories shown.			

**Injury-Related Deaths in Children 18 through 21 years of age by Intent**

Accidents comprised 55.1 percent of all injury deaths in children 18 through 21 years of age for the three-year period 2009 through 2011. As with the younger children, motor vehicle accidents comprised the highest category of accident deaths for this age group.

As expected, the proportion of all injury deaths comprised of those identified as intentional is higher in older children. Intentional injury deaths comprised 44.0 percent for children 18 through 21 years of age, compared to 33.3 percent for younger children. Assault (homicide) by firearm was the leading category of intentional injury deaths (Table 23).

<b>Intentional or Unintentional</b>	<b>Type of Injury</b>	<b>Number of Deaths</b>	<b>Percent of Total Injury Deaths</b>
Unintentional (accidents)	Motor vehicle accidents	466	33.1
	Accidental poisoning and exposure to noxious substances	230	16.3
	Other non-transport accidents	31	2.2
	Drowning and submersion	19	1.3
	Other transport accidents	14	1.0
	Falls	10	0.7
	Smoke, fire and flames	7	ND
<b>Unintentional injury total =</b>		<b>777</b>	<b>55.1</b>
Intentional	Assault (homicide) by firearm	339	24.1
	Intentional self-harm (suicide) by other means	149	10.6
	Intentional self-harm (suicide) by firearm	96	6.8
	Assault (homicide) by other means	33	2.3
	Legal intervention (law enforcement)	3	ND
<b>Intentional injury total =</b>		<b>620</b>	<b>44.0</b>
<b>Undetermined intent =</b>		<b>12</b>	<b>0.9</b>
<b>Total injury deaths (18–21 years of age) =</b>		<b>1,409</b>	<b>100.0</b>
Data source: DOH, BHSR			
Notes: Percentages based on less than 10 events are considered statistically unreliable and are not displayed (ND). See technical notes (Appendix D) for the ICD codes used for the cause of death categories shown.			

### **Injury Deaths by Sex of the Child**

Of the total 2,210 injury-related deaths in children 1 through 21 years of age, male injury deaths comprised 75.2 percent of the total. The number of male injury-related deaths exceeded the number of female injury-related deaths in every subcategory, unintentional and intentional. The number of deaths for males by motor vehicle accident was 2.1 times the number of motor vehicle deaths for females. The number of deaths for males by homicide by firearm was almost 10 times greater than the number of deaths for females by homicide by firearm. This disparity likely reflects, at least in part, the generally recognized assertion that male adolescents and young adults typically engage in behaviors which put them at risk for injury more than females.

### Injury Deaths by Type and Select Age Groups

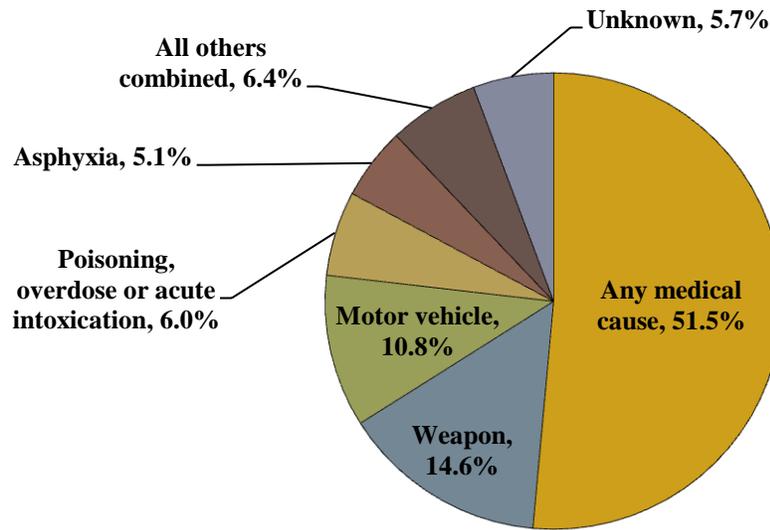
For the period 2009 through 2011, motor vehicle accidents represented the highest category of injury deaths across all age categories. An examination of these data within specific age ranges revealed specific categories of injury types more strongly associated with children of specific ages. For children 1 through 9 years of age, smoke, fire and flames was the second highest category (48 deaths). For children 10 through 17 years of age, intentional self-harm (suicide) by other means was the second highest category (87 deaths). For children 18 through 21 years of age, assault (homicide) by firearm was the second highest category (339 deaths) [Table24].

Injury Type	1–4	5–9	10–14	15–17	Total 1–17	Total 18–21	Total 1–21
Motor vehicle accidents	30	31	43	153	257	466	723
Assault (homicide) by firearm	6	6	6	65	83	339	422
Accidental poisoning and exposure to noxious substances	6	2	3	27	38	230	268
Intentional self-harm (suicide) by other means	0	1	34	53	88	149	237
Intentional self-harm (suicide) by firearm	0	0	10	41	51	96	147
Other non-transport accidents	23	12	20	9	64	31	95
Assault (homicide) by other means	28	5	4	7	44	33	77
Smoke, fire and flames	25	23	16	6	70	7	77
Drowning and submersion	29	8	9	16	62	19	81
Other transport accidents	6	1	10	4	21	14	35
Falls	5	1	3	1	10	10	20
Legal intervention (law enforcement)	0	0	0	1	1	3	4
Undetermined intent	5	1	2	4	12	12	24
<b>Total all types</b>	163	91	160	387	801	1,409	2,210
Data source: DOH, BHSR See technical notes (Appendix D) for the ICD codes used for the cause of death categories shown.							

**Reviewed Injury Deaths**

Of the total 2011 deaths reviewed (1,305 cases), there were 51.5 percent of cases in which the death was determined to have a medical cause. The next highest frequency of reviewed cases was for injury deaths involving a weapon (14.6 percent), followed next by motor vehicle accident deaths (10.8 percent) [Figure 16].

**Figure 16. Percent of Reviewed Deaths by Cause for Children 1 through 21 years of age, Pa., 2011**



Data source: The National Center for Child Death Review Case Reporting System  
 Year of Death: 2011

**Injury Deaths and Weapons**

Most of the 190 injury-related deaths caused by a weapon occurred in male children 18 through 21 years of age, and they involved a firearm. In 2011, weapon deaths within the age group 18 through 21 years of age comprised 72.1 percent of all weapon deaths in children 21 years of age and under (Table 25). Weapon deaths in males comprised 85.3 percent of all weapon deaths reviewed (Table 26).

**Table 25. Reviewed Weapon Deaths by Select Age Groups and Type of Weapon, Pa., 2011**

Age in Years	Type of Weapon					Total
	Firearm	Person's Body Part	Sharp	Blunt	Unknown	
< 1	0	1	0	0	1	2
1-4	5	3	0	0	0	8
5-9	2	1	1	1	0	5
10-14	5	0	2	0	0	7
15-17	31	0	0	0	0	31
<b>Total &lt; 17</b>	<b>43</b>	<b>5</b>	<b>3</b>	<b>1</b>	<b>1</b>	<b>53</b>
18-19	66	0	0	1	0	67
20-21	65	1	2	0	2	70
<b>Total 18-21</b>	<b>131</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>2</b>	<b>137</b>
<b>Overall total &lt; 22</b>	<b>174</b>	<b>6</b>	<b>5</b>	<b>2</b>	<b>3</b>	<b>190</b>

Data source: The National Center for Child Death Review Case Reporting System  
Year of Death: 2011

**Table 26. Reviewed Weapon Deaths by Sex of Child and Type of Weapon, Children 21 Years of Age and Under, Pa., 2011**

Sex	Type of Weapon					Total
	Firearm	Person's Body Part	Sharp	Blunt	Unknown	
Male	152	4	3	2	1	162
Female	22	2	2	0	2	28
Unknown	0	0	0	0	0	0
<b>Total</b>	<b>174</b>	<b>6</b>	<b>5</b>	<b>2</b>	<b>3</b>	<b>190</b>

Data source: The National Center for Child Death Review Case Reporting System  
Year of Death: 2011

**Firearms and Manner of Death**

Most deaths involving firearms were intentional deaths. Homicides and suicides together comprised over 95 percent of all deaths reviewed involving firearms. Homicides alone comprised 75.3 percent of all deaths reviewed involving firearms (Table 27).

**Table 27. Deaths Involving Firearms by Manner of Death, Children 21 Years of Age and Under, Pa., 2011**

Natural	Accident (unintentional)	Suicide	Homicide	Undetermined + Pending + Unknown
0	6	35	131	2

Data source: The National Center for Child Death Review Case Reporting System  
Year of Death: 2011

**Drowning Death Demographics**

Of the 27 drowning deaths reviewed, 44.4 percent of them occurred in children 1 through 4 years of age. Examined by location of death, the same percentage of the total is comprised of drowning deaths that occurred in a pool, hot tub or spa. Across all age groups and locations, the single highest frequency of drowning deaths occurred with young children in a pool, hot tub or spa. There were 8 deaths in children 1 through 4 years of age in pools, hot tubs or spas (Table 28).

**Table 28. Reviewed Drowning Deaths by Age Group and Location, Pa., 2011**

Age Group (In Yrs.)	Lake/River /Pond/ Creek	Ocean	Quarry/ Gravel Pit	Canal	Pool/ Hot Tub/ Spa	Well/ Cistern	Bathtub	Other	Unknown	Total
< 1	0	0	0	0	0	0	1	0	0	1
1-4	1	0	0	0	8	0	0	1	2	12
5-9	1	0	0	0	1	0	0	2	1	5
10-14	0	0	0	0	2	0	1	1	0	4
15-17	2	0	0	0	1	0	0	1	0	4
18-19	0	0	0	0	0	0	0	0	0	0
20-21	1	0	0	0	0	0	0	0	0	1
Unknown	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>0</b>	<b>2</b>	<b>5</b>	<b>3</b>	<b>27</b>

Data source: The National Center for Child Death Review Case Reporting System  
Year of Death: 2011

Most drowning deaths (74.1 percent) occurred in males. For both males and females, the location with the highest frequency of drowning deaths was pools, hot tubs and spas. In 4 of the 12 cases reviewed in which drowning occurred in a pool, hot tub or spa, the child was determined to be unsupervised, despite needing supervision. Examined by race, the review data revealed that 92.6 percent of child drowning deaths occurred in white children, followed next by black children with 7.4 percent.

**Poisoning, Overdose, or Acute Intoxication Death Demographics**

There were 78 deaths reviewed involving poisoning, overdose or acute intoxication. Most (83.3 percent) of these deaths occurred in children 18 through 21 years of age, and exactly half (50.0 percent) occurred in those between 20 and 21 years of age. Prescription drugs were the most frequent substance involved in these deaths, comprising 67.9 percent of the total deaths reviewed (Table 29).

**Table 29. Reviewed Deaths Involving Poisoning, Overdose, or Acute Intoxication Deaths, by Select Age Groups and Type of Substance, Pa., 2011**

Age Group (In Years)	Deaths Reviewed	Type of Substance				
		Prescription Drug	Over the Counter Drug	Cleaning Substance	Other	Unknown
< 1	2	2	0	0	1	0
1-4	2	1	1	0	0	0
5-9	0	0	0	0	0	0
10-14	2	1	0	0	2	0
15-17	7	5	0	0	2	1
18-19	26	19	4	0	15	1
20-21	39	25	3	0	24	1
Unknown	0	0	0	0	0	0
<b>Total</b>	<b>78</b>	<b>53</b>	<b>8</b>	<b>0</b>	<b>44</b>	<b>3</b>

Data source: The National Center for Child Death Review Case Reporting System, Year of Death: 2010

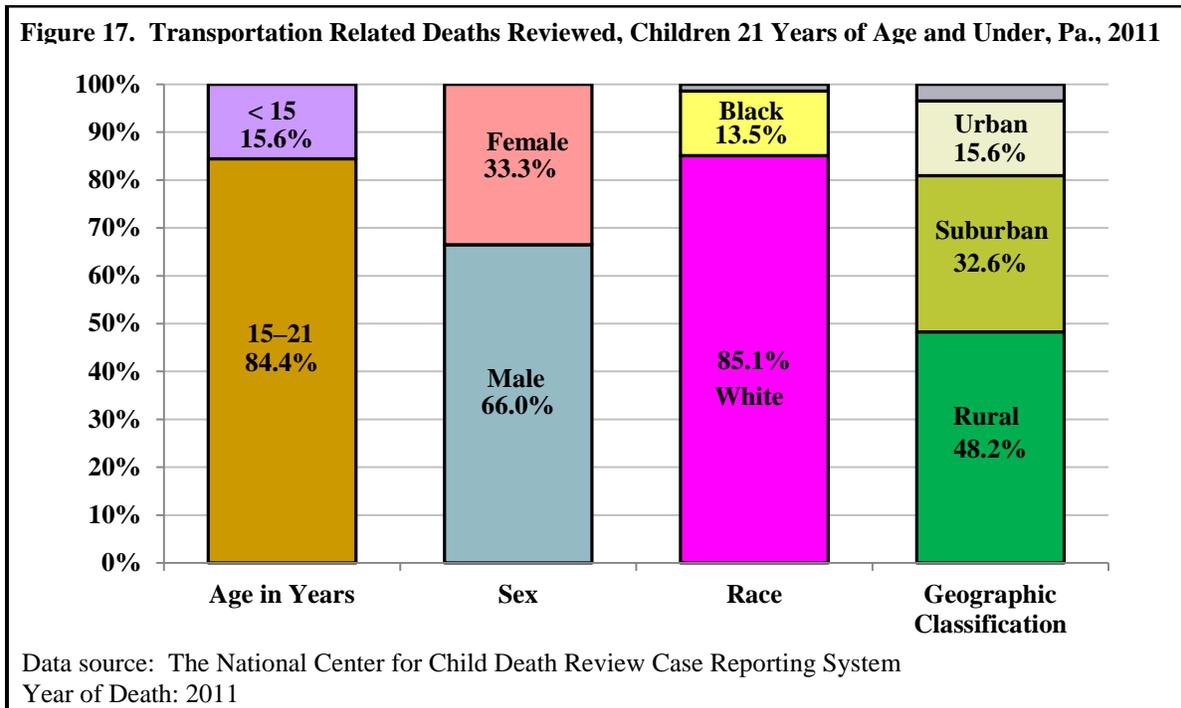
Note: Rows do not sum to totals because more than one type of poison could have been involved.

An examination of the review data related to this category revealed that most (79.5 percent) of deaths involving poisoning, overdose or acute intoxication occurred in male children, and most (97.4 percent) occurred in white children. There were two deaths reviewed among Hispanic children for this category. Of the 78 deaths reviewed, 56 were ones in which the incident resulted from an accidental overdose. Of the total, 70 were cases in which it was unknown where the substance was stored.

Based on results from a 2010 national survey on drug use and health, the CDC reports that almost all prescription drugs involved in overdoses (nationally) come from prescriptions. They report that very few come from pharmacy theft. Once prescribed and dispensed, prescription drugs are frequently diverted to people using them without prescriptions. More than three out of four people who misuse prescription painkillers use drugs prescribed to someone else.<sup>4</sup>



There were 141 transportation-related deaths reviewed in all children 21 years of age and under. Of those, 84.4 percent occurred in children 15 through 21 years of age. Transportation-related deaths in males comprised 66.0 percent of the total. White children comprised 85.1 percent of the total, followed next by black children with 13.5 percent. As with 2010 transportation-related deaths, almost half of the 2011 deaths occurred in rural areas of the state (Figure 17).



An examination of transportation-related deaths reviewed by vehicle type revealed that deaths involving vehicles comprised 83.0 percent of the total, and only 12.8 percent of the deaths involved a child not in a vehicle. Cars represented the vehicle type associated with the most deaths reviewed (73) [Table 30].

Vehicle Type	Position of Child (21 Years of Age and Under)				Total
	Driver	Passenger	Not in a Vehicle	Unknown	
Car	44	28	0	1	<b>73</b>
Van	0	1	0	0	<b>1</b>
Sport utility vehicle	8	8	0	0	<b>16</b>
Truck	4	2	0	0	<b>6</b>
Semi / tractor trailer	0	0	0	0	<b>0</b>
Recreational vehicle	0	0	0	0	<b>0</b>
School bus or other bus	0	0	0	0	<b>0</b>
Motorcycle	11	0	0	0	<b>11</b>
Tractor or other farm vehicle	0	0	0	0	<b>0</b>
All-terrain vehicle	3	1	0	0	<b>4</b>
Snowmobile	0	0	0	1	<b>1</b>
Train	0	0	0	0	<b>0</b>
<b>Total motor vehicle deaths reviewed</b>	<b>70</b>	<b>40</b>	<b>0</b>	<b>2</b>	<b>112</b>
Bicycle	0	0	2	0	<b>2</b>
Pedestrian	1	0	10	0	<b>11</b>
Other	1	0	0	0	<b>1</b>
Unknown	3	2	6	4	<b>15</b>
<b>Total transportation-related deaths reviewed</b>	<b>75</b>	<b>42</b>	<b>18</b>	<b>6</b>	<b>141</b>
Data source: The National Center for Child Death Review Case Reporting System. Year of Death: 2011 Notes: Other vehicle includes subway, trolley and others.					

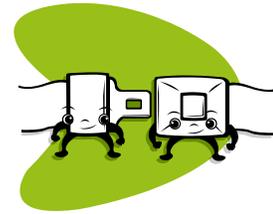
**Young Drivers**

Young drivers are at increased risk for involvement in vehicle accidents. This reflects the extra risk associated with inexperience, characteristics of youthful age and the interaction between these factors. Characteristics of adolescents include an appetite for strong sensations and excitement, emotionality, poor judgment and decision making, and strong peer influences.<sup>5 6</sup>

Based on the 2011 review data, there were 75 cases in which a child 15 through 21 years of age was the driver in his/her crash death. Of those, 77.3 percent were cases in which the child was responsible for causing the incident. Alcohol or drug impairment was a factor in 26.7 percent of those cases.

**Protective Measures**

An examination of the 2011 death review data revealed that in those 75 reviewed deaths in which the child (21 years of age and under) was identified as the driver of a motor vehicle, the following protective measures were identified to be present and not used:



- Lap belt                                27     (36.0%)
- Shoulder belt                        27     (36.0%)

The following protective measures were present but not used in those 42 deaths in which the child was identified as a passenger in a motor vehicle:

- Lap belt                                24     (57.1%)
- Shoulder belt                        22     (52.4%)

**Homicides in Children**

There were 163 homicides in the period 2009–2011 among children 18 years of age and under. In children 1 through 17 years of age, the overall homicide rate was 1.6 per 100,000 population. However, there remains significant disparity with the homicide rate between races.

**Homicide by Race**

The homicide rate is highest among black children. In black children 1 through 17 years of age, the homicide rate for the period 2009–2011 was 7.8 per 100,000 population. This was 13 times higher than the homicide rate in white children (Table 31).

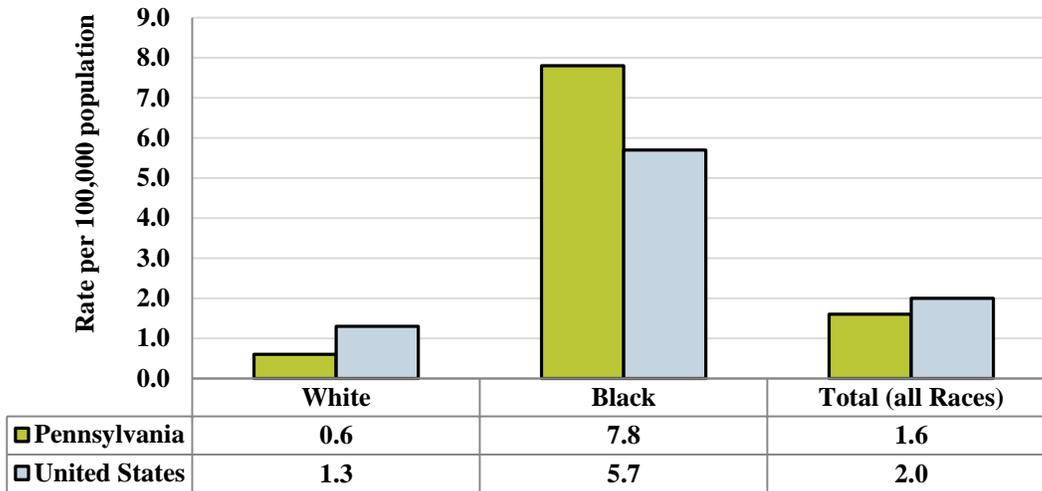
**Table 31. Homicides by Select Age Groups, Race/Ethnicity and Type, Pa., 2009–2011**

Age in Years	Race/Hispanic Origin	Homicide by Firearm		Homicide by Other Means		Total	
		Number	Rate*	Number	Rate	Number	Rate
Infants (< 1)	All races	1	ND	35	8.1	36	8.4
	White	0	ND	23	7.0	23	7.0
	Black	1	ND	12	19.0	13	20.6
	Asian/Pacific Islander	0	ND	0	ND	0	ND
	Hispanic	0	ND	8	ND	8	ND
1–17	All races	83	1.0	44	0.6	127	1.6
	White	18	0.3	18	0.3	36	0.6
	Black	63	5.7	23	2.1	86	7.8
	Asian/Pacific Islander	0	ND	2	ND	2	ND
	Hispanic	4	ND	2	ND	6	ND

Data source: DOH, BHSR  
 \* per 100,000 population  
 Notes: Hispanic origin can be of any race; rates based on less than 10 events are considered statistically unreliable and are not displayed (ND). See technical notes (Appendix D) for the ICD codes used for the cause of death categories shown.

The racial disparity in Pennsylvania’s child (1 through 17 years of age) homicide rate remains greater than the disparity that exists nationally. For the three-year period 2009 through 2011, on the national level, the homicide rate in black children was 4.4 times greater than the homicide rate in white children. In Pennsylvania over that same period, the homicide rate in black children was 13 times greater than the homicide rate in white children. Moreover, Pennsylvania’s homicide rate in white children was 2.2 times less than the homicide rate in white children nationally, and its homicide rate in black children was 1.4 times greater than the homicide rate in black children nationally (Figure 18).

**Figure 18. Death Rates Due to Homicide in Children 1 through 17 Years of Age, U.S. and Pa., 2011**



Data sources: U.S. data: CDC, The National Center for Health Statistics; Pa. data: DOH, BHSR

**Homicides in Children 1 – 17 Years of Age, by Sex**

For the period 2009 through 2011, almost three-quarters (74.0 percent) of all homicide deaths in children 1 through 17 years of age occurred in males. The homicide rate for males was almost three times (2.9) the homicide rate for females. The homicide rate in males was 2.3 per 100,000 population and the homicide rate for females was 0.8 per 100,000 population.

Cross tabulating the number of homicides by sex and homicide type revealed a homicide by firearm rate of 1.7 per 100,000 population for males, which was 5.7 times greater than the homicide by firearm rate for females (0.3)[Table 32].

**Table 32. Deaths Due to Homicide for Select Age Groups by Sex, Number and Rate, Pa. 2009–2011**

Age in Years	Sex	Homicides by Firearm		Homicides by Other Means		Total	
		Number	Rate*	Number	Rate	Number	Rate
Infants (< 1)	Male	1	ND	21	9.5	22	10.0
	Female	0	ND	14	6.7	14	6.7
	<b>Total</b>	<b>1</b>	<b>ND</b>	<b>35</b>	<b>8.1</b>	<b>36</b>	<b>8.4</b>
1–17	Male	71	1.7	23	0.6	94	2.3
	Female	12	0.3	21	0.5	33	0.8
	<b>Total</b>	<b>83</b>	<b>1.0</b>	<b>44</b>	<b>0.6</b>	<b>127</b>	<b>1.6</b>

Sources: DOH, BHSR; Population source: The Penn State Data Center at Penn State Harrisburg

\* per 100,000 population

Notes: Rates based on less than 10 events are considered statistically unreliable and are not displayed (ND).

**Homicides in Children 18–21 Years of Age**

Homicide deaths occur most frequently within the group of children ages 18 through 21 years. For the period 2009 through 2011, there were 535 deaths by homicide in all children 21 years of age and under. Of those, 69.5 percent occurred in children 18 through 21 years of age. The overall homicide rate in this age group, 16.0 per 100,000 population, was 10 times greater than the homicide rate in children 1 through 17 years of age. Most homicides within this older age group, 91.1 percent, were homicides involving firearms (Table 33).

**Table 33. Deaths Due to Homicide in Children 18 through 21 Years of Age, by Sex and Type of Homicide, Pa., 2009–2011**

Age in Years	Sex	Homicides by Firearm		Homicides by Other Means		Total	
		Number	Rate*	Number	Rate	Number	Rate
18–21	Male	312	26.6	23	2.0	335	28.6
	Female	27	2.3	10	0.9	37	3.2
	<b>Total</b>	<b>339</b>	<b>14.6</b>	<b>33</b>	<b>1.4</b>	<b>372</b>	<b>16.0</b>

Source: DOH, BHSR; Population Source: U.S. Census Bureau, American Community Survey  
 \* per 100,000 population

The disparity in homicide rates by sex is particularly significant within this age range. Of the total homicides (372), 90.1 percent occurred in males. The rate of homicide deaths for males in this age group is approximately 9 times greater than the rate for females (Table 34). Comparing the rates of homicide by firearm revealed a rate in males (26.6) that was 11.6 times greater than the rate in females (2.3).

**Table 34. Deaths Due to Homicide in Children 18 through 21 Years of Age, by Sex, Pa., 2009–2011**

Sex	Homicides	
	Number	Rate*
Male	335	28.6
Female	37	3.2
<b>Total</b>	<b>372</b>	<b>16.0</b>

Data source: DOH, BHSR  
 \* per 100,000 population

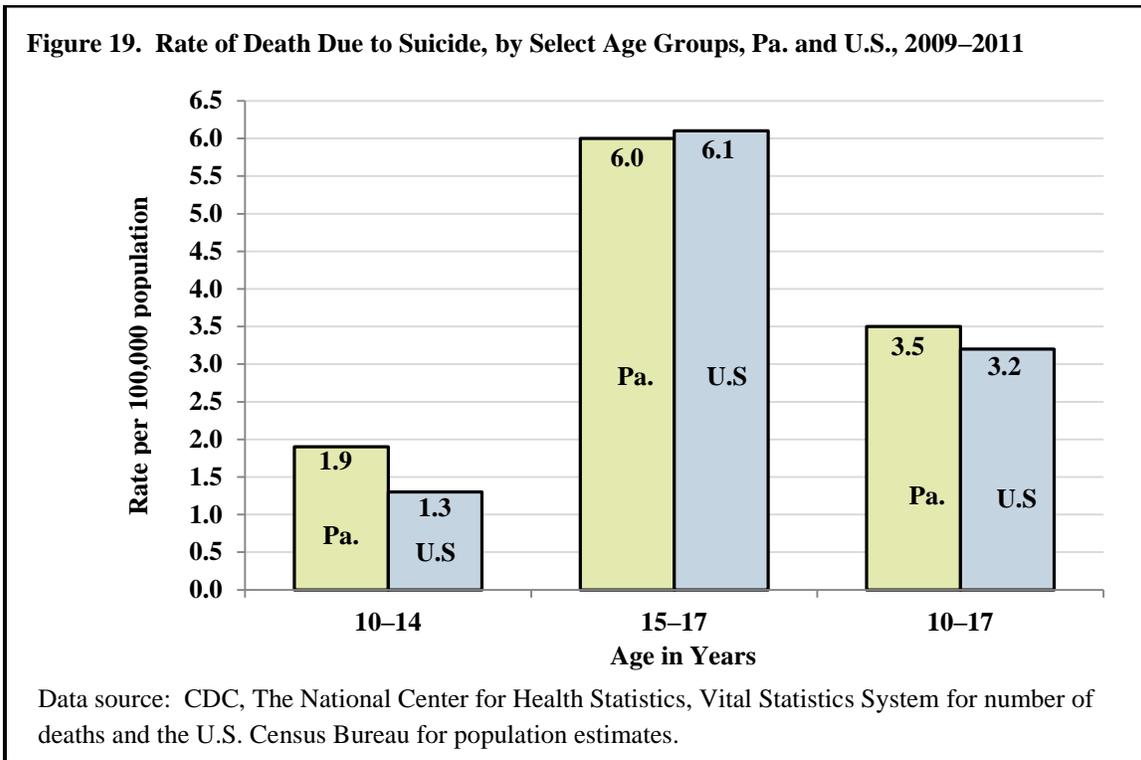
The overall homicide rate in children 1 through 17 years of age in Pennsylvania, 1.6 per 100,000 population, was lower than the homicide rate in children nationally, 2.0. The overall homicide rate in children 18 through 21 years of age in Pennsylvania, 16.0, was higher than the rate nationally, 12.8.

Pennsylvania’s child death review teams capture and record the circumstances and factors associated with the deaths they review. In doing so, they are sometimes able to make determinations regarding acts of omission or commission. Acts of omission or commission are defined as any act or failure to act which causes or contributes to the death.

Reviewed cases in which the team reported that an act of omission or commission caused or contributed to the death were examined. Of those 298 deaths reviewed for which the local teams identified an act of omission or commission having occurred (or was probable) the highest single act was assault (not child abuse), where 33.2 percent of the cases were categorized. Of those 99 cases, 97 involved assaults that were determined to have caused the death, and only two involved assaults determined to have contributed to the death (Table 35).

<b>Table 35. Acts of Omission/Commission Assault Information (Reviewed Deaths), Children 21 Years of Age and Under, Pa., 2011</b>			
	<b>Assault</b>		
	<b>Caused</b>	<b>Contributed</b>	<b>Total</b>
<b>Deaths reviewed</b>	97	2	99
<b>Child history:</b>			
History of substance abuse	55	1	56
Drug/alcohol impaired at time of incident	25	0	25
History of mental illness	47	1	48
Had transgendered identity	0	0	0
Was gay/lesbian/bisexual/questioning	1	0	1
Criminal history or delinquency	70	1	71
Spent time in juvenile detention	50	1	51
<b>Child Protective Services (CPS) involvement:</b>			
Open CPS case at time of death	2	0	2
Investigation found evidence of prior abuse	0	0	0
Child had history of maltreatment as victim	39	0	39
Child placed outside of home	22	2	24
History of intimate partner violence as victim	6	0	6
History of intimate partner violence as perpetrator	6	0	6
Data source: The National Center for Child Death Review Case Reporting System Year of Death: 2011			

Suicide (intentional self-harm) remains a significant health problem. For the three-year period 2009 through 2011, the number of suicides ranked third in the causes of death in children 1 through 21 years of age. Over that period, there were 384 suicide deaths, comprising 11.9 percent of the total deaths in that age group (3,218). In children 10 through 17 years of age, the number of suicides (138) ranked second in the causes of death over that three-year period. Closer examination of that age range revealed children 15 through 17 years of age had the highest rate of deaths due to suicide (Figure 19)



The rate of death by suicide in male children 10 through 17 years of age is over two times the rate of death by suicide in females, and the rate of death in Pennsylvania’s black children is over two times the rate of black children nationally (Table 36).

**Table 36. Rate\* of Death Due to Suicide, by Sex and Race, Children 10–17 Years of Age, Pa. and U.S., 2009–2011**

	Male	Female	Total Both Sexes	White	Black	Asian/Pacific Islander	Total All Races	Hispanic
<b>Pennsylvania</b>	4.8	2.2	3.5	3.6	4.4	ND	3.5	ND
<b>United States</b>	4.5	1.7	3.2	3.4	2.1	1.8	3.2	2.3

Data source: CDC, The National Center for Health Statistics, Vital Statistics System for number of deaths and the U.S. Census Bureau for population estimates.  
 \* per 100,000 population  
 Notes: Rates based on less than 10 events are considered statistically unreliable and are not displayed (ND).  
 Hispanic origin can be of any race.

**Suicides in Children 18–21 Years of Age**

Over the three-year period 2009–2011, most suicide deaths occurred in children 18 through 21 years of age. Over that period, there were 384 suicides in children 1 through 21 years of age, and 63.8 percent of them occurred in children 18 through 21 years of age (Table 37).

Age in Years	Number of Suicide Deaths	Percent of Total Deaths
1–17	139	36.2
18–21	245	63.8
<b>Total (1–21)</b>	<b>384</b>	<b>100.0</b>

Data source: DOH, BHSR

The rate of death due to suicide is highest within this older age group as well. For the period 2009–2011, the rate of death due to suicide was 1.8 times higher in children 18 through 21 years of age than it was in children 15 through 17 years of age, and it was 5.5 times higher than the rate in children 10 through 14 years of age (Table 38).

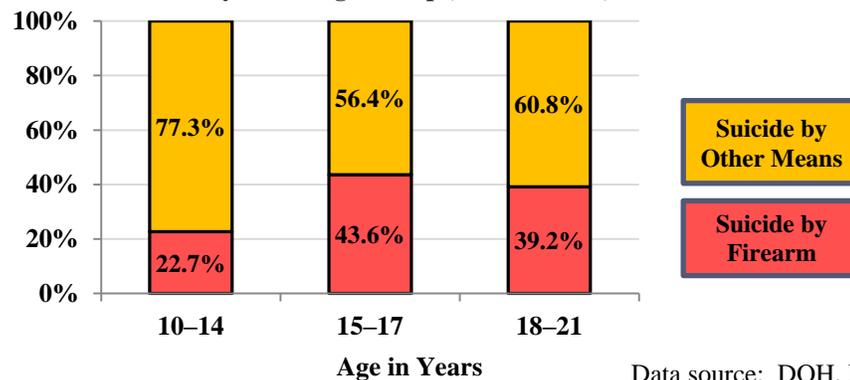
Age in Years	Number	Rate
10–14	44	1.9
15–17	94	6.0
18–21	245	10.5

Data source: DOH, BHSR  
\* per 100,000 population

**Firearms and Suicide**

An examination of data related to means of suicide by age revealed the use of firearms to commit suicide was most likely to occur in children 15 through 17 years of age (Figure 20).

**Figure 20. Means of Suicide by Select Age Groups, Pa. and U.S., 2009–2011**

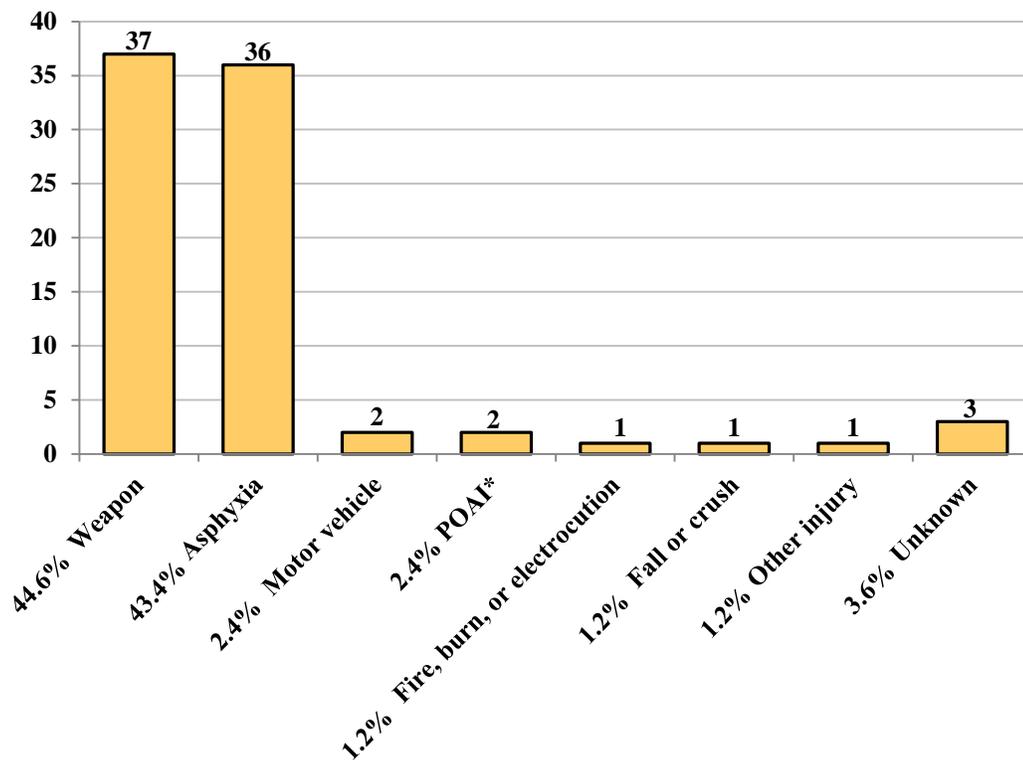


**Suicide Deaths Reviewed**

Of the 1,305 deaths reviewed, 83 were suicide deaths. Of those 83 suicide deaths, 30 occurred in children 10 through 17 years of age, and 53 occurred in children 18 through 21 years of age. Across all suicide deaths, the use of a weapon was the leading cause/factor with 37 cases, followed closely by asphyxia with 36 cases (Figure 21). Generally defined, deaths by asphyxia are those caused by a deprivation of oxygen as a result of strangulation, suffocation, choking or smothering.

In 2010, the leading cause of death in suicides reviewed was asphyxia with 55.9 percent of the cases. In 2010, weapon use comprised 27.5 percent of the cases reviewed, whereas in 2011, it comprised 44.6 percent of the cases.

**Figure 21. 83 Reviewed Suicide Deaths by Cause, Children 21 Years of Age and Under, Pa., 2011**



Data source: The National Center for Child Death Review Case Reporting System

\* POAI: Poisoning, overdose, or acute intoxication

Year of Death: 2011

**Contributing Factors and Circumstances in Reviewed Suicide Deaths**

During the child death review process, team members are sometimes able to identify and determine factors that either caused or contributed to the death under review. Within the child death review case reporting system, team members record specific factors and circumstances as either present or likely present in the case at hand.

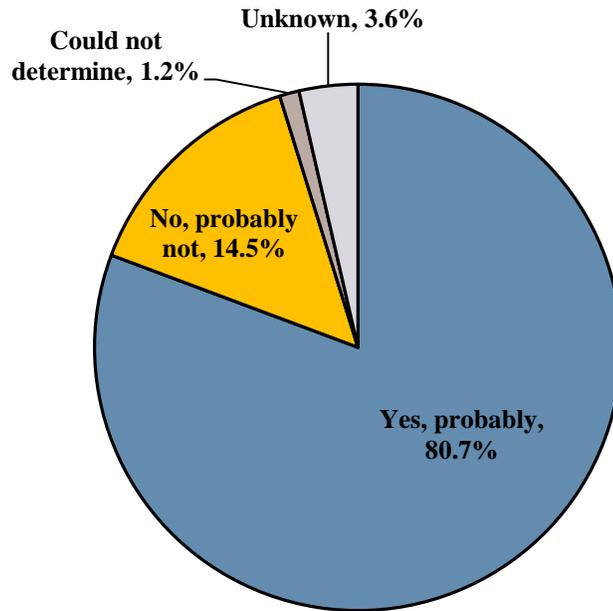
Of the 83 suicides reviewed, 51 were associated with factors and/or circumstances that either caused or contributed to those deaths. Select factors and circumstances recorded during those reviews are presented below in table 39.

Table 39. Reviewed Suicide Deaths by Selected Factors and Circumstances, Children 21 Years of Age and Under, Pa., Death Year 2010	Suicide		
	Caused	Contributed	Total
<b>Deaths Reviewed</b>	<b>48</b>	<b>3</b>	<b>51</b>
Child left a note	12	2	14
Drug/alcohol impaired at time of incident	10	2	13
Prior attempts were made	12	1	13
Family discord	13	0	13
History of mental illness	12	0	12
Child talked about suicide	12	0	12
Suicide was completely unexpected	10	2	12
Breakup with boyfriend/girlfriend	11	1	12
Criminal history or delinquency	10	0	10
Child was receiving mental health services at time of death	10	0	10
Child was on medications for mental illness	10	0	10
Drugs/alcohol	9	1	10
History of substance abuse	9	0	9
Prior suicide threats were made	8	0	8
Argument with parents/caregivers	7	0	7
Argument with boyfriend/girlfriend	6	0	6
Problems with the law	6	0	6
Spent time in juvenile detention	4	0	4
Child had history of maltreatment as victim	4	0	4
Child placed outside of home	4	0	4
Victim of bullying	4	0	4
Child had history of running away	3	0	3
Child had history of self-mutilation	3	0	3
Parents' divorce/separation	3	0	3
Open Child Protective Services case at time of death	2	0	2
History of intimate partner violence as victim	2	0	2
Child had received prior mental health services	2	0	2
Investigation found evidence of prior abuse	0	1	1

Data source: The National Center for Child Death Review Case Reporting System  
 Notes: Includes all cases where action of omission/commission caused or contributed to the death was reported by team as “yes” or “probable.” Child placed outside of home refers to placement in foster care, including licensed and relative/kinship foster homes.

In the 83 deaths due to suicide reviewed, reviewers made determinations about preventability. Most suicides were preventable (Figures 22).

**Figure 22. Reviewed Deaths Due to Suicide by Preventability, Children 21 Years of Age and Under, Pa., 2011**



Data source: The National Center for Child Death Review Case Reporting System  
Year of Death: 2011

**Suicide Prevention Initiatives and Strategies**

Suicide affects not only individuals but families and communities as well. The number of deaths from suicide reflects only a small portion of the impact of suicidal behavior. According to the CDC, in 2007, 165,997 people were hospitalized following suicide attempts. More than 395,320 were treated in hospital emergency departments for self-inflicted injuries.<sup>7</sup>

The causes of suicide are complex, consisting of multiple factors. The risk factors associated with suicide are well documented. They include having a history of mental disorders, previous suicide attempts, a family history of suicide, being a victim of child maltreatment, having impulsive and aggressive tendencies, and the presence of barriers to accessing mental health services.

Suicide prevention is primary prevention – stopping suicidal behavior before it occurs. This involves reducing the factors that put people at risk for experiencing violence. It also includes increasing the factors that protect people or buffer them from risk.

Due to the wide range of risk factors associated with suicide, prevention strategies must be multi-faceted, addressing individual, relationship, community and societal levels of influence. Identifying children who are at risk for suicide is a key component of any prevention strategy.

It is generally accepted that significant differences exist between males and females on the issue of suicide as a means of death. Statistics indicate that males die much more often by means of suicide than do females; however, reported suicide attempts and suicidal thoughts are much more common among females than males.<sup>8,9</sup> Therefore, strategies should be designed to accommodate these differences.

The AAP Task Force on Mental Health recommends screening children for mental health issues at every doctor visit and developing a network of mental health professionals in the community to whom physicians can refer patients if they suspect a child needs further evaluation.

Many of the risk factors associated with suicidal behaviors are also associated with bullying. Strategies to reduce bullying should be included in interventions that aim to reduce suicidal behavior among youths. Through programs such as the Student Assistance Program (SAP), Services for Teens at Risk (STAR-Center) and the Yellow Ribbon Program, Pennsylvania has made a commitment to preventing youth suicide. As a result of the passage of Act 71 of 2014 and beginning with the 2015-2016 school year, Pennsylvania's schools will be adopting age-appropriate awareness and prevention policies.

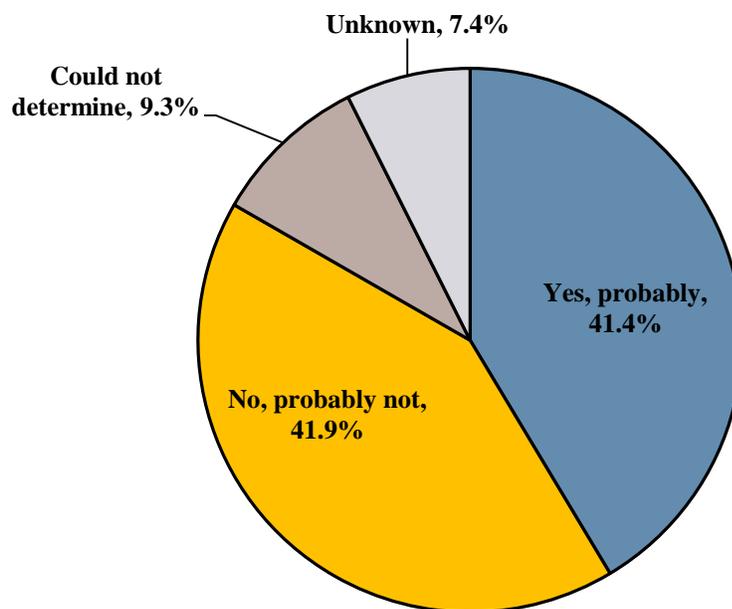
Negative attitudes toward lesbians, gays, bisexuals, and transgendered (LGBT) youth place them at increased risk for experiences with violence, compared to other students.<sup>10</sup> This includes bullying, teasing, harassment, physical assault and suicide-related behaviors. LGBT youth are at increased risk for suicidal thoughts and behaviors, suicide attempts and suicide. Attending schools that create safe and supportive learning environments for all students and having caring and accepting parents are important.<sup>11</sup>

The child death review process is one in which all of Pennsylvania’s 67 counties are represented by one of the state’s 63 local teams. Team members compile a lot of information over the course of conducting reviews within their jurisdiction, and in some cases, a determination regarding preventability is possible. Local factors, resources and circumstances impact this process. While there is an inherent element of subjectivity involved when determining preventability, the following definition serves as a guidepost:

**A child’s death is preventable if the community or an individual could reasonably have done something that would have changed the circumstances that led to the death.**

In 2011, there were a total of 1,996 deaths in children 21 years of age and under, and 65.4 percent of those were reviewed (Table 1). Of the reviewed deaths, 41.4 percent were determined to be ones that were probably preventable and 41.9 percent were probably not preventable (Figure 23).

**Figure 23. All Reviewed Deaths by Preventability, Children 21 Years of Age and Under, Pa., 2011**



Data source: The National Center for Child Death Review Case Reporting System  
 Year of Death: 2011

On closer examination of the 540 deaths determined to have been probably preventable, 48.5 percent were ones in which the manner of death was determined to be accident (unintentional injury). Homicides were the next highest category with 25.7 percent, followed by natural deaths comprising 7.2 percent.

## Recommendations and Actions Taken

Information gathered from the 2011 deaths that were reviewed resulted in specific recommendations developed by the local teams to address the primary causes of preventable child death in Pennsylvania, as well as ways to improve the CDR. Each year recommendations are considered at the state level, with a number of the recommendations being chosen for further action and implementation.

One of the most important efforts of the Pennsylvania CDR Team over the past several years has been an education program related to infant death scene investigation protocol. Local teams continue to recommend education and the development of child death scene protocols for each county. Thus far in 2014, the department has delivered one of two statewide trainings for those professionals involved in the investigation of child deaths, with the principal purpose of establishing guidelines and procedures for conducting a multi-disciplinary investigation into child-related deaths.

Local teams also continue to struggle with suicides in their communities and the development of effective initiatives to bring down the rate of children taking their own lives. On June 26, 2014, Act 71 of 2014 was signed into law, making Pennsylvania one of only 5 states to require comprehensive suicide prevention policies in schools statewide.

Under the new law, beginning with the 2015-2016 school year, Pennsylvania schools must adopt age-appropriate youth suicide awareness and prevention policies and include 4 hours of training in youth suicide awareness and prevention every 5 years in professional development plans for educators serving grades 6-12. Schools may incorporate a youth suicide awareness and prevention curriculum into existing instructional programs. The Department of Education will be required to develop a model youth suicide awareness and prevention policy and a model youth suicide awareness and prevention curriculum for use by schools and to make these and other guidance and resource materials publically available online.

The training and education requirements of Act 71 will ensure that all Pennsylvania educators are equipped with the skills and confidence to recognize when students may be at risk and to refer those students for additional help, and that students are empowered to seek help when they notice signs of mental illness or suicide in themselves or their peers. The required policies and procedures in the Act will also ensure that Pennsylvania schools are guided in responding safely when a suicide occurs in the school community and in supporting school staff, students, and families.

Teams continue to recognize that bullying plays a part in many suicide deaths. Recommendations have included providing additional funding for the Pennsylvania Creating an Atmosphere of Respect and Environment for Success (PA CARES) program, which provides materials, resources and funding for schools to implement the evidence-based Olweus Bullying Prevention Program (OBPP).

Additionally, it is recognized that lesbian, gay, bisexual, transsexual and questioning (LGBTQ) youth are at an increased risk of suicidal behavior. They are much more likely to be bullied and often feel isolated from their peers. To reduce the rates of suicide in LGBTQ youth, specific programs and interventions need to be developed. One promising program is the Safe Space Project, which provides places where LGBTQ youth can feel safe and receive health services. The department continues to work in conjunction with stakeholders involved with the Pennsylvania Youth Suicide Prevention Initiative, which is a multi-system collaboration to reduce youth suicide, as collaboration is key to implementing effective strategies for suicide prevention.

The incidence of sleep-related deaths continues to be a focus for local teams. Expansion of the Pennsylvania Infant Death Program's sudden infant death syndrome (SIDS), suffocation and strangulation public education campaign, particularly in low-income and minority communities, is an ongoing recommendation. As rates of SIDS and other sleep-related deaths are highest among these populations, public education activities should target those with the greatest risk. Funding for the distribution of cribs to low-income families, through "Cribs for Kids" or similar programs, is an avenue that many communities have adopted in order to address this issue.

Stakeholders have recently begun working with the Hospital Association of Pennsylvania to ensure that hospital-based safe sleep education adopted by the Pennsylvania Chapter, American Academy of Pediatrics and the Pa. Department of Health, is implemented in hospitals across the state.

Automobile collisions have been a leading cause of death for American teens for generations. In 2011, several changes were initiated to help junior drivers receive more comprehensive training, ease young driver distractions through limiting the number of passengers they may carry and improve general highway safety through improvements to passenger restraint laws. However, teams continue to see a number of teen driving deaths taking place in their communities, resulting in a heightened concern. The Impact Teen Drivers program works to reduce the rate of deaths related to teen driving through a nationwide educational program that confronts the dangers and consequences of reckless and distracted driving. The program offers free online materials, trainings, and a unique grassroots framework which empowers people to make meaningful behavioral changes in their own driving habits, as well as to promote safe driving in their community.

There were 1,996 deaths of children 21 years of age and under in 2011. Of the total deaths, 1,305 were reviewed. Close to half (46.6 percent) of all deaths were infant deaths. The infant mortality rate has dropped significantly by 13.3 percent from 7.5 in 2007 to 6.5 per 1,000 live births in 2011. Comparing the infant mortality rates by race in two recent three-year periods, 2006–2008 and 2009–2011, revealed statistically significant decreases for all races examined (white, black, and Asian/Pacific Islander). Within the Hispanic population there was a slight increase by 1.5 percent, which was not statistically significant. Despite the decrease in the rate of deaths among black infants, it remained 2.4 times higher than the rate of deaths among white infants, and 4.4 times higher than the rate of death among Asian/Pacific Islander infants.

Pennsylvania's overall infant mortality rate of 6.5 per 1,000 live births in 2011 did not achieve the Healthy People 2020 target objective of 6.0 per 1,000 live births. However, the state's postneonatal death rate of 2.0 per 1,000 live births did match the Healthy People 2020 target objective for that age category. As in 2010, the categories of prematurity and low birth weight were leading causes of death among infants in 2011. SIDS was the second highest cause of death in the postnatal period comprising 16.4 percent of deaths in that age group. Of the 930 infant deaths in 2011, 572 were reviewed. The leading manner of death was natural, comprising 82.3 percent of all reviewed infant deaths. Of the 29 infant deaths reviewed wherein the manner of death was determined to be accident, 72.4 percent were ones involving asphyxia.

There were 490 deaths in children 1 through 17 years of age and 576 deaths in children 18 through 21 years of age in 2011. From 2003 to 2011, the mortality rate in children 1 through 17 years of age decreased by 22.7 percent. From 2007, it decreased by 17.3 percent. Despite this overall decrease, the rate of death in black children continues to exceed the rates of death in white children. In 2011, the rate of death in black children in this age range (27.6 per 100,000 population) was 1.6 times the rate in white children (17.8 per 100,000 population). For the three-year period 2009–2011, accidents (unintentional injuries) were the leading cause of death among all children 1 through 21 years of age. They comprised 35.5 percent of all deaths among children 1 through 17 years of age and 44.4 percent of all deaths among children 18 through 21 years of age. Over that same period, intentional self-harm (suicide) ranked second behind accidents as a leading cause of death among children 10 through 17 years of age. Within the subgroup of children 15 through 17 years of age, deaths by suicide comprised 18.0 percent of all deaths. The rate of death by suicide in male children 10 through 17 years of age is over two times the rate of death by suicide in females. The rate of death by suicide in Pennsylvania's black children, within that age range, is over two times the rate of death by suicide in black children nationally.

Through death investigations, information and data collected can inform and drive specific strategies and activities designed to improve the health and safety of children. Of the total child deaths in 2011, 65.4 percent were reviewed. Of those, 41.4 percent were determined to be probably preventable. These data continue to illuminate a need for evidence-based strategies to address racial disparities in infant and child mortality. Efforts to lower overall child fatalities must be coordinated with activities aimed specifically at addressing infant deaths, given that they consistently comprise close to half of all deaths. The data presented here serve to inform the prevention efforts and policy recommendations made by the Pennsylvania State Child Death Review Team.

**2014 Local Team Chairs and Co-Chairs**

<p><b>Adams County Child Death Review Team</b> Melody Jansen Pa. Department of Health</p>	<p><b>Cameron County Child Death Review Team –</b> See Elk and Cameron County Child Death Review Team</p>
<p><b>Allegheny County Child Death Review Team</b> Jennifer Fiddner Allegheny County Health Department</p>	<p><b>Carbon County Child Death Review Team</b> Bruce Nalesnik Carbon County Coroner’s Office</p>
<p><b>Armstrong County Child Death Review Team</b> Denny Demangone Armstrong County CYF</p>	<p><b>Centre County Child Death Review Team</b> Judy Pleskonko Centre County Coroner's Office</p>
<p><b>Beaver County Child Death Review Team</b> Timmie Patrick Beaver County Detective Bureau</p>	<p><b>Chester County Child Death Review Team</b> Ashley Orr Chester County Health Department</p>
<p><b>Bedford County Child Death Review Team</b> Bonnie Bisbing / Jesse Gutshall Bedford County Children and Youth Services (Ms. Bisbing) and UPMC Bedford Memorial (Ms. Gutshall)</p>	<p><b>Clarion County Child Death Review Team</b> Kay Rupert Clarion County Children and Youth Services</p>
<p><b>Berks County Child Death Review Team</b> Brandy Neider / Mark Reuben Children and Youth Services County of Berks (Ms. Neider) and Reading Pediatrics Inc. (Mr. Reuben)</p>	<p><b>Clearfield County Child Death Review Team</b> Kelly Pentz / Kristina Fenton / Mary Brown PADOH-Clearfield County State Health Center (Ms. Pentz) and UCBH/The Meadows (Ms. Fenton) and Community Connections of Clearfield (Ms. Brown)</p>
<p><b>Blair County Child Death Review Team</b> Patricia Ross Blair County Coroner’s Office</p>	<p><b>Clinton County Child Death Review Team</b> Jennifer Sobjak / Autumn Miller Clinton County Child and Youth</p>
<p><b>Bradford County Child Death Review Team</b> Thomas Carman Bradford County Coroner Officer</p>	<p><b>Columbia County Child Death Review Team</b> Lori Mastelher Coroner’s Office Columbia County</p>
<p><b>Bucks County Child Death Review Team</b> Nancy Morgan Bucks County Children and Youth Services</p>	<p><b>Crawford County Child Death Review Team</b> Darlene Hamilton Crawford County State Health Center</p>
<p><b>Butler County Child Death Review Team</b> Leslie Johnson Butler County MH/MR Program</p>	<p><b>Cumberland County Child Death Review Team</b> Christina Roland / Lorraine Bock Cumberland County Children and Youth Services (Ms. Roland) and Bock Family Health Care (Ms. Bock)</p>
<p><b>Cambria County Child Death Review Team</b> Dennis Kwiatkowski / Jeffrey Lees / Stacie Holsinger Cambria County Coroner’s Office</p>	<p><b>Dauphin County Child Death Review Team</b> Joseph Whalen / Kathryn Crowell Dauphin County MH/MR (Mr. Whalen), and Penn State Children’s Hospital (Ms. Crowell)</p>

## 2014 Local Team Chairs and Co-Chairs

<b>Delaware County Child Death Review Team</b> Megan Fulton / David McKeighan (Ms. Fulton), and Delaware County Medical Society (Mr. McKeighan)	<b>Lancaster County Child Death Review Team</b> Carroll Rottmund / Barb Harvey Pennsylvania Shaken Baby Syndrome Prevention, Awareness and Education Program (Ms. Rottmund) Lancaster County RN (Ms. Harvey)
<b>Erie County Child Death Review Team</b> Patty Puline Erie County Department of Health	<b>Lawrence County Child Death Review Team</b> Sue Ascione Children's Advocacy Center
<b>Fayette County Child Death Review Team</b> Gina D'auria / John Fritts Fayette County Children and Youth Services	<b>Lebanon County Child Death Review Team</b> Janet Bradley First Aid and Safety Panel
<b>Forest and Warren County Child Death Review Team</b> Jan Burek Forest and Warren County Department of Human Services	<b>Lehigh County Child Death Review Team</b> Belle Marks Allentown Health Bureau
<b>Franklin and Fulton County Child Death Review Team</b> Paul (Ted) Reed Franklin County Coroner's Office	<b>Luzerne County Child Death Review Team</b> Mary Claire Mullen / Carol Crane / Donna Vrhel Victims Resource Center (Ms. Mullen), and Domestic Violence Service Center (Ms. Crane), and Luzerne County Children and Youth Services (Ms. Vrhel)
<b>Fulton County Child Death Review Team – See Franklin and Fulton County Child Death Review Team</b>	<b>Lycoming County Child Death Review Team</b> Charles Kiessling Lycoming County Coroner's Office
<b>Greene County Child Death Review Team</b> Jennifer Johnson Greene County Children and Youth Services	<b>McKean County Child Death Review Team</b> Vickie Skvarka Pennsylvania Department of Health
<b>Huntingdon County Child Death Review Team</b> Paul Sharum Huntingdon Coroner's Office	<b>Mercer County Child Death Review Team</b> Teri Swartzbeck Mercer County Children and Youth Services
<b>Indiana County Child Death Review Team</b> Paula McClure Indiana County Children and Youth Services	<b>Mifflin County Child Death Review Team</b> Nicole M Patkalitsky Mifflin County Children and Youth Services
<b>Jefferson County Child Death Review Team</b> Bernard P. Snyder Jefferson County Coroner's Office	<b>Monroe County Child Death Review Team</b> Geoffrey Roche / Paula Dahlenburg Pocono Health System
<b>Juniata County Child Death Review Team</b> Penni Abram Juniata County Children, Youth and Families	<b>Montgomery County Child Death Review Team</b> Barbara Hand Montgomery County Department of Health
<b>Lackawanna County Child Death Review Team</b> Jeanne Rosencrance / Eugene Talerico Lackawanna County District Attorney's Office	<b>Montour County Child Death Review Team</b> Scott Lynn Montour County Coroner's Office

**2014 Local Team Chairs and Co-Chairs**

<p><b>Northampton County Child Death Review Team</b> Sue Madeja Bethlehem Health Bureau</p>	<p><b>Venango County Child Death Review Team</b> Diana Erwin Pa. Department of Health</p>
<p><b>Northumberland County Child Death Review Team</b> Melissa DeBaro Geisinger Child Advocacy Center</p>	<p><b>Warren County Child Death Review Team – See Forest and Warren County Child Death Review Team</b></p>
<p><b>Perry County Child Death Review Team</b> Shelley Dreyer-Aurila Perry County Family Center, Inc.-Safe Kids</p>	<p><b>Washington County Child Death Review Team</b> Jennifer Lytton Washington County Children and Youth Services</p>
<p><b>Philadelphia County Child Death Review Team</b> David Bissell / Roy Hoffman Philadelphia Department of Public Health</p>	<p><b>Wayne County Child Death Review Team</b> Sharon Gumpfer / Edward Howell Wayne County Coroner’s Office</p>
<p><b>Pike County Child Death Review Team</b> Kevin Stroyan / Jill D. Gamboni Pike County Coroner's Office (Mr. Stroyan), and Pike-Safe Kids (Ms. Gamboni)</p>	<p><b>Westmoreland County Child Death Review Team</b> Kristine M Demnovich / Tracy Cremonese Westmoreland County Juvenile Probation</p>
<p><b>Potter County Child Death Review Team</b> Joy E Glassmire / Colleen Wilber Potter County Human Services</p>	<p><b>Wyoming County Child Death Review Team – See Susquehanna and Wyoming County Child Death Review Team</b></p>
<p><b>Schuylkill County Child Death Review Team</b> Heidi Eckert Schuylkill County Children and Youth Services</p>	<p><b>York County Child Death Review Team</b> Sheila Becker / David Turkewitz York Hospital</p>
<p><b>Snyder County Child Death Review Team</b> Heather Keister County of Snyder District Attorney's Office</p>	
<p><b>Somerset County Child Death Review Team</b> Doug Walters / Shannon Berkey Somerset County Children and Youth</p>	
<p><b>Sullivan County Child Death Review Team</b> Wendy Hastings Sullivan County Coroner's Office</p>	
<p><b>Susquehanna and Wyoming County Child Death Review Team</b> Cheryl McGovern Pa. Department of Health , Wyoming County State Health Center</p>	
<p><b>Tioga County Child Death Review Team</b> Patricia Riehl Tioga County Human Services</p>	
<p><b>Union County Child Death Review Team</b> Matt Ernest Union County Children and Youth Services</p>	
<p><b>Union County Child Death Review Team</b> Matt Ernest Union County Children and Youth Services</p>	

### **National and State Prevention Partners**

- American Psychiatric Nurses Association
- American Foundation for Suicide Prevention
- American Trauma Society, PA Division
- Bureau of Emergency Medical Services
- California University of Pennsylvania
- Clean Air for Healthy Children
- Consumer Product Safety Commission
- Cribs for Kids
- Pa. Department of Health, Bureau of Drug and Alcohol Programs
- Pa. Department of Health, Bureau of Family Health
- Pa. Department of Health, Bureau of Emergency Medical Services
- Pa. Department of Health, Bureau of Health Promotion and Risk Reduction
- Pa. Department of Public Welfare, Office of Mental Health and Substance Abuse Services
- Pa. Department of Public Welfare , Office of Children, Youth and Families, ChildLine
- FICAP – Firearm and Injury Center at Penn
- Gateway Health Plan
- Geisinger Medical Center
- Juvenile Court Judges’ Commission
- Keystone Smiles
- Lancaster County Cooperative Extension
- Milton S. Hershey Medical Center
- National Center for Child Death Review
- Nurse Family Partnership
- Office of Juvenile Justice
- Pa. Coalition Against Rape
- Pa. Academy of Family Physicians
- Pa. Chapter of Children’s Advocacy Centers
- PA Chapter, American Academy of Pediatrics
- Pa. Council of Children, Youth and Family Services
- Pa. Council of Churches
- Pa. Department of Agriculture, Bureau of Plant Industry
- Pa. Office of Rural Health
- Safe Kids Pennsylvania
- Pa. State Grange
- Pa. State Police, Bureau of Criminal Investigation
- Parents Involved Network of PA
- Pa. Department of Education – Postsecondary/Higher Education
- Pa. Emergency Health Services Council
- Penn State Agricultural Safety and Health

### **National and State Prevention Partners**

- Penn State Milton Hershey Medical Center, Shaken Baby Syndrome Prevention and Awareness Program
- Pennsylvania State University, Pesticide Education
- PennDOT Bureau of Highway Safety and Traffic
- PennSERVE
- Pa. Department of Corrections
- Pa. Office of the State Fire Commissioner
- Pennsylvania Network for Student Assistance
- Pennsylvania Operation Lifesaver
- Pennsylvania Psychiatric Society
- Pennsylvania State Police
- Pennsylvania Youth Suicide Prevention Initiative
- Pennsylvanians Against Underage Drinking
- Philadelphia Medical Examiner's Office
- Pinnacle Health/Hospice
- SIDS of Pa.
- Trauma Systems Foundation
- University of Pennsylvania, Department of Biostatistics and Epidemiology
- U.S. Consumer Product Safety Commission

**PUBLIC HEALTH CHILD DEATH REVIEW ACT - ENACTMENT**  
**Act of Oct. 8, 2008, P.L. 1073, No. 87 Cl. 35**  
**AN ACT**

Providing for child death review.

The General Assembly of the Commonwealth of Pennsylvania hereby enacts as follows:

**Section 1. Short title.**

This act shall be known and may be cited as the Public Health Child Death Review Act.

**Section 2. Definitions.**

The following words and phrases when used in this act shall have the meanings given to them in this section unless the context clearly indicates otherwise:

"Child." An individual 21 years of age and under.

"Child death review data collection system." A data collection system approved by the National MCH Center for Child Death Review or a similar national organization.

"Department." The Department of Health of the Commonwealth.

"Local public health child death review team." A team representing a county or two or more counties comprised of professionals from organizations and local agencies who review cases of child deaths in accordance with protocols established by the State public health child death review team.

"Person in interest." A person authorized to permit the release of the medical records of a deceased child.

"Program." The Public Health Child Death Review Program established in section 3.

"State public health child death review team." A State multidisciplinary team comprised of local professionals and representatives of State agencies who review data submitted by local public health child death review teams, develop protocols for child death reviews and develop child death prevention strategies.

**Section 3. Public Health Child Death Review Program.**

(a) Establishment.--The department shall establish the Public Health Child Death Review Program which shall facilitate State and local multiagency, multidisciplinary teams to examine the circumstances surrounding deaths in this Commonwealth for the purpose of promoting safety and reducing child fatalities.

(b) Powers and duties.--The department, in cooperation with the State public health child death review team, shall have the following powers and duties in relation to the program:

(1) Assist in the establishment and coordination of local public health child death review teams.

(2) Coordinate the collection of child death data, including the development and distribution of a form to be used by local public health child death review teams to report information and procedures for sharing the data with State and local agencies as appropriate.

(3) Develop protocols to be used in the review of child deaths. These protocols shall not conflict with requirements set forth in 23 Pa.C.S. Ch. 63 (relating to child protective services), including, but not limited to, provisions relating to the review of child fatalities and near fatalities.

(4) Provide training and technical assistance to local public health child death review teams, local agencies and individuals relating to child deaths.

(5) Review reports from local public health child death review teams.

6) Identify best prevention strategies and activities, including an assessment of the following:

- (i) Effectiveness.
- (ii) Ease of implementation.
- (iii) Cost.
- (iv) Sustainability.
- (v) Potential community support.
- (vi) Unintended consequences.

(7) Adopt programs, policies, recommendations and strategies based on collected data to prevent child deaths.

(8) Review statutes and regulations relating to confidentiality and access to information relating to children from agencies responsible for the health and safety of children and propose recommended changes to appropriate Commonwealth agencies and the General Assembly.

(9) Provide public information and education regarding the incidence and causes of child injury and death and the reduction of risks to children to agencies, health care professionals, child care professionals and the public.

(10) Submit an annual report to the Governor and the General Assembly by September of each year relating to the activities of the State child death review team, a summary of reports received from local child death review teams and recommendations relating to the reduction of risk of child injury or death.

#### Section 4. State public health child death review team.

(a) Composition.--A State public health child death review team shall be established by the department. The team shall consist of:

- (1) The following individuals or their designees:
  - (i) The Secretary of Health, who shall serve as chairman.
  - (ii) The Secretary of Public Welfare.
  - (iii) The Director of the Office of Children, Youth and Families within the Department of Public Welfare.
  - (iv) The Commissioner of the Pennsylvania State Police.
  - (v) The Attorney General.
  - (vi) The Pennsylvania State Fire Commissioner.
  - (vii) The Director of the Bureau of Emergency Medical Services of the Department of Health.
- (2) The following individuals who shall be appointed by the Secretary of Health:
  - (i) A physician who specializes in pediatric medicine.
  - (ii) A physician who specializes in family medicine.
  - (iii) A representative of local law enforcement.
  - (iv) A medical examiner.
  - (v) A district attorney.
  - (vi) A coroner.
- (3) Representatives from local public health child death review teams.
- (4) Any other individual deemed appropriate by the Secretary of Health.

(b) Powers and duties of the State public health child death review team.--The State public health child death review team shall:

- (1) Review data submitted by local public health child death review teams.
- (2) Develop protocols for child death reviews.
- (3) Develop child death prevention strategies.
- (4) Assist the department in implementing the program.

(c) Initial meeting.--The initial meeting of the State public health child death review team shall be held within 90 days of the effective date of this section.

(d) Additional meetings.--The department, in conjunction with the team, shall arrange for additional meetings to fulfill the duties of the team and goals of the program.

Section 5. Local public health child death review teams.

(a) Establishment.--Each county in this Commonwealth shall establish a local public health child death review team. Two or more counties may establish a local public health child death review team to operate on a regional basis to satisfy the requirements of this section.

(b) Local public health child death review team.—Local teams shall be comprised of the following:

- (1) The director of the county children and youth agency or a designee.
- (2) The district attorney or a designee.
- (3) A representative of local law enforcement appointed by the county commissioners.
- (4) A representative of the court of common pleas appointed by the president judge.
- (5) A physician who specializes in pediatric or family medicine appointed by the county commissioners.
- (6) The county coroner or medical examiner.
- (7) A representative of emergency medical services selected jointly by the supervisors of all emergency medical organizations in the county.
- (8) The director of a local public health agency or a designee.
- (9) Any other person deemed appropriate by a majority of the local public health child death review team.

(c) Chairman.--The members of the local public health child death review team shall elect a chairman annually.

Section 6. Powers and duties of local public health child death review teams.

(a) Review.--A local public health child death review team shall review all deaths of children and may review the following information:

- (1) Coroner's reports or postmortem examination records.
- (2) Death certificates and birth certificates.
- (3) Law enforcement records and interviews with law enforcement officials as long as the release of such records will not jeopardize an ongoing criminal investigation or proceeding.
- (4) Medical records from hospitals and other health care providers.
- (5) Information and reports made available by the county children and youth agency in accordance with 23 Pa.C.S. Ch. 63 (relating to child protective services).
- (6) Information made available by firefighters or emergency services personnel.
- (7) Reports and records made available by the court to the extent permitted by law or court rule.
- (8) Reports to animal control.
- (9) EMS records.
- (10) Traffic fatality reports.
- (11) Any other records necessary to conduct the review.

(b) Data collection.--The local public health child death review team shall utilize the child death review data collection system to report its findings in accordance with protocols established by the State public health child death review team. The name and home address of the deceased child shall not be reported to the child death review data collection system.

(c) Reports.--A local public health child death review team shall submit annual reports on deaths reviewed to the State public health child death review team. The report shall include the following:

- (1) Identification of factors which cause a risk for injury and death, including modifiable risk factors.
- (2) Recommendations regarding the following:
  - (i) The improvement of health and safety policies in this Commonwealth.
  - (ii) The coordination of services and investigations by child welfare agencies, medical officials, law enforcement and other agencies.
- (3) Any other information required by the department.

(d) Recommendations.--A local public health child death review team shall make recommendations to local agencies relating to the procedures and other actions to reduce injury and death of children.

#### Section 7. Access to records.

(a) Juvenile records.--When deemed necessary for its review, a State or local public health child death review team may review and inspect all files and records of the court relating to a child pursuant to a proceeding under 42 Pa.C.S. Ch. 63 (relating to juvenile matters) in accordance with 42 Pa.C.S. § 6307 (relating to inspection of court files and records). However, this subsection shall not apply to files and records of the court subject to a child fatality or near fatality review pursuant to 23 Pa.C.S. Ch. 63 (relating to child protective services).

(b) Medical records.--Notwithstanding any other provision of law and consistent with the Health Insurance Portability and Accountability Act of 1996 (Public Law 104-191, 110 Stat. 1936), health care facilities and health care providers shall provide medical records of a child under review without the authorization of a person in interest to the State public health child death review team and to a local public health child death review team for purposes of review under this act.

(c) Other records.--Other records pertaining to the child under review for the purposes of this act shall be open to inspection as permitted by law.

#### Section 8. Confidentiality.

(a) Maintenance.--State and local public health child death review teams shall maintain the confidentiality of any identifying information obtained relating to the death of a child, including the name of the child, guardians, family members, caretakers or alleged or suspected perpetrators of abuse, neglect or a criminal act.

(b) Agreement.--Each member of the State and local public health child death review team and any person appearing before the team shall sign a confidentiality agreement applicable to all proceedings and reviews conducted by the State or local public health child death review team.

(c) Liability.--An individual or agency that in good faith provides information or records to a State or local public health child death review team shall not be subject to civil or criminal liability as a result of providing the information or record.

(d) Discovery.--The proceedings, deliberations and records of a State or local public health child death review team are privileged and confidential and shall not be subject to discovery, subpoena or introduction into evidence in any civil or criminal action.

(e) Meetings.--Meetings of the State or local public health child death review team at which a specific child death is discussed shall be closed to the public and shall not be subject to the provisions of 65 Pa.C.S. Ch. 7 (relating to open meetings).

(f) Attendance.--Nothing in this act shall prevent a State or local public health child death review team from allowing the attendance of a person, including a parent, with information

relevant to a review, at a child death review meeting.

(g) Penalty.--A person who violates the provisions of this section commits a misdemeanor of the third degree.

Section 20. Regulations.

The department shall promulgate regulations as necessary to carry out the purposes of this act.

Section 21. Effective date.

This act shall take effect in 90 days.

## Technical Notes

### Definitions of Terminology and Rates

The following are definitions of terminology and rates that appear in this report:

#### Terminology:

**Infant Death** – Death of an infant under 1 year of age

**Neonatal Death** – An infant death occurring within the first 27 days of life

**Postneonatal Death** – An infant death occurring at one month (28 days) to 364 days of age

#### Rates:

**Infant Mortality Rate** - Deaths among infants under 1 year of age per 1,000 live births.

(Total deaths among infants under 1 year of age / total live births) x 1000

**Infant and Cause-Specific Mortality Rate** – Deaths among infants under 1 year of age due to a specific cause per 1,000 live births

(Total deaths among infants under 1 year of age due to a specified cause /total live births) x 1000

**Neonatal Mortality Rate** – Deaths among infants under 28 days of age per 1,000 live births

(Total deaths among infants <28 days of age / total live births) x 1000

**Postneonatal Mortality Rate** – Deaths among infants aged 1 month (28 days) to 364 days per 1,000 live births.

(Total deaths among infants 28–364 days of age / total live births) x 1000

### **Cause of Death International Classification of Diseases (ICD) Codes:**

The International Classification of Diseases codes for the selected causes of death shown in this report are as follows:

<u>Cause of Death</u>	<u>ICD-10</u>
Accidental Poisoning and Exposure to Noxious Substances	X40-X49
Aircraft Accident	V95-V97
All Terrain and Off-Road Vehicle Rider	V86

<u>Cause of Death</u>	<u>ICD-10</u>
Assault (Homicide)	U01-U02, X85-Y09, Y87.1
Assault (Homicide) by Firearm	U01.4, X93-X95
Assault (Homicide) by Other Means	U01.0-U01.3, U01.5-U02.9, X85-X92, X96-Y09, Y87.1
Driver of Vehicle (car, truck, van)	V40.5, V41.5, V42.5, V43.5, V44.5, V45.5, V46.5, V47.5, V48.5, V49.5, V50.5, V51.5, V52.5, V53.5, V54.5, V55.5, V56.5, V57.5, V58.5, V59.5
Drowning and Submersion	W65-W74
Falls	W00-W19
Intentional Self-harm (Suicide)	X60-X84, Y87.0, U03
Intentional Self-harm (Suicide) by Firearm	X72-X74
Intentional Self-harm (Suicide) by Other Means	X60-X71, X75-X84, Y87.0, U03
Legal Intervention	Y35, Y89.0
Motorcyclist	V20-V29
Motor Vehicle Accidents	V02-V04, V09.0, V09.2, V12-V14, V19.0-V19.2, V19.4-V19.6, V20-V79, V80.3-V80.5, V81.0-V81.1, V82.0-V82.1, V83-V86, V87.0-V87.8, V88.0-V88.8, V89.0, V89.2
Other Non-Transport Accidents	W20-W64, W75-W99, X10-X39, X50-X59, Y86
Other Transport Accidents	V01, V05-V06, V15-V18, V80.6-V80.9, V81.2-V81.9, V82.2-V82.9, V09.1, V09.3-V09.9, V10-V11, V19.3, V19.8-V19.9, V80.0-V80.2, V87.9, V88.9, V89.1, V89.3, V89.9, V90-V99, Y85
Passenger of Vehicle (car, truck, van)	V40.6, V41.6, V42.6, V43.6, V44.6, V45.6, V46.6, V47.6, V48.6, V49.6, V50.6, V51.6, V52.6, V53.6, V54.6, V55.6, V56.6, V57.6, V58.6, V59.6
Pedal Cyclist	V10-V19
Pedestrian (collision with car, truck, van)	V03
Pedestrian (collision with train)	V05
Smoke, Fire and Flames	X00-X09
Sudden Infant Death Syndrome (SIDS)	R95

**Cause of Death****ICD-10**

Sudden Unexplained Infant Deaths (SUID)

R95, R99, W75

Undetermined Intent

Y10-Y34, Y87.2, Y89.9

Unspecified Transport Accident

V98-V99

Watercraft Accident

V90-V94

## Endnotes

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<sup>1</sup> Underlying Cause of Death: The underlying cause of death is either the disease or injury that initiated the train of morbid events leading directly to death or the circumstances of the accident or violence that produced the fatal injury. The underlying cause of death is the one to be adopted as the cause for tabulation or mortality statistics. Source: Handbook of Vital Statistics Systems and Methods, Volume 1: Legal Organizational and Technical Aspects, United Nations Studies in Methods, Glossary, Series F, No. 35, United Nations, New York 1991

<sup>2</sup> March of Dimes. Prematurity: The serious problem of premature birth. Retrieved August 8, 2014 from <http://www.marchofdimes.com/mission/prematurity-campaign.aspx>

<sup>3</sup> Task Force on Sudden Infant Death Syndrome. (2011). SIDS and Other Sleep-Related Infant Deaths: Expansion of Recommendations for a Safe Infant Sleeping Environment. *Pediatrics*, Vol. 128 (5), November 1, 2011. pp. e1341-e1367. Available from URL: <http://pediatrics.aappublications.org/cgi/doi/10.1542/peds.2011-2284>

<sup>4</sup> Substance Abuse and Mental Health Services Administration. Results from the 2010 National Survey on Drug Use and Health: volume 1: summary of national findings. Rockville, MD: Substance Abuse and Mental Health Services Administration, Office of Applied Studies; 2011. Available from URL: <http://oas.samhsa.gov/NSDUH/2k10NSDUH/2K10Results.htm#2.16>

<sup>5</sup> Arnett J. Reckless behavior in adolescence: a developmental perspective. *Dev Rev* 1992. 12339-373.373.

<sup>6</sup> Jessor R, Turbin M S, Costa F M. Predicting developmental change in risky driving: the transition to young adulthood. *Applied Developmental Science* 1997. 14–16.16.

<sup>7</sup> The Centers for Disease Control and Prevention. Preventing Suicide: Program Activities Guide. Retrieved August 8, 2014 from <http://www.cdc.gov/violenceprevention/pub/preventingsuicide.html>

<sup>8</sup> “Suicide Statistics at Suicide.org”. *Suicide prevention, awareness, and support*. Suicide.org 2005

<sup>9</sup> Crosby AE, Han B, Ortega LaG, Parks SE, Gfoerer J. “Suicide thoughts and behaviors among adults aged 18 years or older – United States, 2008–2009.”

<sup>10</sup> Coker TR, Austin SB, Schuster MA. The health and health care of lesbian, gay, and bisexual adolescents. *Annual Review of Public Health* 2010;31:457–477.

<sup>11</sup> The Centers for Disease Control and Prevention. Content Source: National Center for Chronic Disease Prevention and Health Promotion, Division of Adolescent and School Health. Retrieved August 18, 2014 from: <http://www.cdc.gov/lgbthealth/youth.htm>



**Michael Wolf, Secretary**

**The department's mission is to promote healthy lifestyles, prevent injury and disease, and to assure the safe delivery of quality health care for all commonwealth citizens.**