



Pennsylvania Child Death Review Annual Report

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



2013 Annual Report
September 2013



The 2013 Child Death Review 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. Additionally, the Department would like to acknowledge the contribution of the following individuals for their assistance in advancing various CDR recommendations:

- Dr. Erich Batra, Child Death Review Medical Director
- Ms. Patricia Ross, Blair County Coroner
- Dr. Steven Shapiro, Pediatrician, Pediatric Medical Associates of Abington
- Dr. Sam Gulino, Chief Medical Examiner, City of Philadelphia
- Scott Grim, Lehigh County Coroner

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 presented in this report are the most recent available, representing deaths occurring in 2010. Vital death statistics were provided by the DOH, Bureau of Health Statistics and Research. Death review data was obtained through the web-based National Child Death Review Case Reporting System. This system was developed in collaboration between the National MCH Center for Child Death Review and state Child Death Review programs and was supported, in part, by a grant from the Maternal and Child Health Bureau (Title V, Social Security Act), Health Resources and Services Administration, U.S. Department of Health and Human Services.

For further information about the CDR Program, please contact:	For further information about the Pennsylvania CDR Annual Report, please contact:
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: jhohney@pa.gov	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: tnorwood@pa.gov

About this Report

This report differs from previous annual reports in two significant ways. First, it is based on death year and not the review year. It focuses on those deaths occurring in 2010 and the reviews of those deaths. Secondly, it incorporates data from multiple sources, including DOH, Bureau of Health Statistics and Research (BHSR), The National Center for Child Death Review Case Reporting System, The National Center for Health Statistics (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. There are 66 counties represented on state and local teams.

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 62 local review teams 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 2,138 deaths in children in 2010, and Pennsylvania's CDR Program reviewed 1,501 of them. A significant portion of all deaths, 48.4 percent, were deaths having occurred in children under 1 year of age (infants). Less than one quarter (22.5 percent) of all deaths was those having occurred in children 1 through 17 years of age. Available data related to cause, manner and review findings revealed death profiles unique to various age groupings. As expected, the leading causes of death changed with age. The following are the main conclusions:

- The infant mortality rate increased slightly from 7.2 per 1,000 live births in 2009 to 7.3 per 1,000 live births in 2010. When examined across two three-year periods, 2005–2007 and 2008–2010, the infant mortality rate decreased by 2.1 percent from 7.4 to 7.3 per 1,000 live births. This change was not statistically significant.
- The infant mortality rate within the Hispanic population increased 12.3 percent, from 6.5 to 7.3 per 1,000 live births; in the black population, it decreased 8.8 percent, from 16.6 to 15.1 per 1,000 live births, between the three-year periods 2005–2007 and 2008–2010. These changes were statistically significant.
- The leading causes of infant death (in rank order) were disorders related to length of gestation and fetal malnutrition; congenital malformations, deformations, chromosomal abnormalities; newborn affected by maternal factors and by complications of pregnancy, labor and delivery, and sudden infant death syndrome (SIDS). The leading cause of postneonatal deaths (infants aged 28 through 364 days) was SIDS. Of the deaths in this age group, 22.7 percent were caused by SIDS.
- The mortality rate in children aged 1 through 17 years decreased by 24.5 percent between 2005 and 2010. It decreased from 24.1 per 100,000 population in 2005 to 18.2 per 100,000 population in 2010. However, in 2010, the rate of deaths in black children within this age group (34.6 per 100,000 population) remained approximately twice the rate realized in white children (17.2 per 100,000 population). This disparity, in 2010, matched the disparity in 2005.
- The leading causes of death (in rank order) in children aged 1 through 17 years were accidents (unintentional injuries), cancer, assaults (homicides), and intentional self-harm (suicides). The leading cause of death among children 18 through 21 years were accidents (unintentional injuries), assaults (homicides), intentional self-harm (suicides), and cancer. In both age groups, motor vehicle accidents were the leading cause of injury deaths.
- In all children 21 years of age and under, for the period 2008–2010, the number of male injury deaths exceeded the number of female injury deaths in every injury category. Overall, the number of male injury deaths was three times the number of female injury deaths.
- In children aged 10 through 17 years, intentional self-harm (suicide) was the second leading cause of death during the three-year period 2008–2010.
- Among children aged 10 through 17 years, the suicide death rate was 1.5 times greater among black children than white children.

The CDR program is administered by the Pennsylvania Departments of Health and Public Welfare through a grant with the Pennsylvania Chapter of the American Academy of Pediatrics. Department of Health staff support for this program is provided through the Division of Child and Adult Health Services in the Bureau of Family Health.

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, 62 local review teams operate throughout the state. Collectively, they cover all but one (Cumberland) of the state’s 67 counties (see Appendix A). Local team members are comprised of community leaders that represent organizations and agencies that serve and protect children within their respective counties. Diverse organizational representation includes Department of Health agencies, law enforcement, emergency medical services, medical services, child protective services and others. CDR teams analyze data in order to develop the most effective prevention strategies to reduce preventable child deaths in Pennsylvania. The 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 in children 1 through 17 years of age, as well as deaths in children 18 through 21 years of age. These age groupings frequently appear separately because they represent periods in which the data reveals uniquely different behaviors, circumstances and death profiles.

Deaths occurring in 2010 and the reviews of those deaths are the basis for this report. Of the 2,138 total deaths in children 21 years of age and under occurring that year, 70.2 percent were reviewed (Table 1).

Table 1. Deaths and Reviews by Age, Pa., Death Year 2010			
Age Group	Number of Deaths in 2010	Number of Reviews of 2010 deaths	Percent of Deaths Reviewed
< 1 year (Infants)	1,035	722	69.8
Neonatal (< 28 days)	736	490	66.6
Postneonatal (28–364 days)	299	232	77.6
1–17 years	482	333	69.1
18–21 years	621	446	71.8
Total (< 22 years)	2,138	1,501	70.2
Data sources: DOH, BHSR and The National Center for Child Death Review Case Reporting System			

Population by Age

Based on population, Pennsylvania is the sixth largest state in the nation, with a population over 12.7 million in 2010. Of that total, approximately 3.6 million were children 21 years of age and under, representing 28 percent of the state’s total population. That was similar to, but slightly less than, that age group’s representation nationally (29.8 percent). The state’s child population under 18 years of age was 2,792,155 in 2010, and it represented 22.0 percent of the total population, which was similar to that subpopulation’s representation nationally (24.0 percent). With 729,538 children under 5 years of age, Pennsylvania ranked sixth in the nation in 2010 in population size within that age group. Examining Pennsylvania’s child population by select age groups revealed similar subpopulation representation as realized nationally in 2010 (Table 2).

Age	Number of Children		Percent of Child Population*	
	Pa.	U.S.	Pa.	U.S.
Infants (< 1 year)	141,550	3,944,153	5.1	5.3
1 – 4 years	587,988	16,257,209	21.1	21.9
5 – 9 years	753,635	20,348,657	27.0	27.4
10 – 14 years	791,151	20,677,194	28.3	27.9
15 – 17 years	517,831	12,954,254	18.5	17.5
Total (< 18 years)	2,792,155	74,181,467	100.0	100.0

* Percent of population of the specified age group
 Data source: U.S. Census Bureau, 2010 Census

Population by Race/Ethnicity

	Population (21 Years and Under)	Percent of Total
Total (all races)	3,554,589	
White	2,674,528	75.2
Black	491,768	13.8
Asian/Pacific Islander	109,943	3.1
Hispanic origin (all races)	318,993	9.0

Data source: DOH, BHSR

Pennsylvania’s population and economic indicators revealed wide variance across its 67 counties. Pennsylvania’s economic activity is unevenly distributed with high income counties concentrated in the southeastern region. In 2010, the state’s overall poverty rate (all ages) was 13.4 percent, and its child (under 18 years of age) poverty rate was 19.1 percent. Both were lower than national rates that year (U.S: overall, 15.3 percent; child, 21.6 percent). Child poverty rates by Pa. county ranged from 36.4 to 7.2 percent (Table 4).

Economic and Health Insurance Status

Table 4. Economic Status Indicators Comparison, Pa. and U.S., 2010				
	U.S.	Pa.	High Pa. County	Low Pa. County
Estimated median household income	\$50,046	\$49,245	\$83,829	\$34,026
Child poverty rate (< 18 years of age)	21.6%	18.9%	36.4%	7.2%
Data Source: U.S. Census Bureau, Small Area Income and Poverty Estimates				

Examined over a five-year period, Pennsylvania’s child (under 18 years) poverty rate rose 2.2 percentage points, representing a 13 percent increase, from 16.9 percent in 2006 to 19.1 percent in 2010.

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 2010 Small Area Health Insurance Estimates revealed that, while 91.5 percent of children under 19 years of age were covered by health insurance nationally, 94.6 percent were covered in Pennsylvania. That year, the uninsured rate by Pennsylvania county for that age group ranged from 9.8 percent to 3.7 percent (Table 5).

Table 5. Uninsured Comparison, Children Under 19 Years of Age, Pa. and U.S., 2010				
	U.S.	Pa.	High Pa. County	Low Pa. County
Uninsured (children under 19 years of age)	8.5%	5.4%	9.8%	3.7%
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 2 percentage points, representing a 27.0 percent decrease, from 7.4 percent in 2006 to 5.4 percent in 2010.

In 2010, there were 2,138 deaths in children under 22 years of age in Pennsylvania. Of those total deaths, 1,517 deaths were in infants and children under 18 years of age. Almost half of the overall total, 48.4 percent, were infant deaths. Infant deaths accounted for 68.2 percent of all deaths in children under 18 years (Table 6).

The infant mortality rate increased from 7.0 per 1,000 live births in 2000 to 7.3 per 1,000 live births in 2010 (Table 6). Between the years 2000 and 2010, Pennsylvania’s death rate in children aged 1 through 17 years declined by 24.2 percent, from 24.0 to 18.2 per 100,000 population (Table 7).

Table 6. Number of Infant Deaths with Mortality Rates, P.A., 2000–2010

Year	Number of Deaths	Rate per 1,000 live births
2000	1,023	7.0
2001	1,038	7.2
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

Data source: DOH, BHSR

It is important to note that many of these deaths in childhood could be prevented with appropriate interventions in both the public and private sectors.

A comparison of mortality rates in two recent three-year periods revealed an overall average infant mortality rate decrease of 2.1 percent. It also revealed a neonatal mortality rate decrease of less than one percent (0.9 percent) and a statistically significant 5.0 percent decrease in the postneonatal mortality rate. Within the infant mortality category, both the 8.8 percent decrease in the black subpopulation and the 12.3 percent increase in the Hispanic subpopulation represented statistically significant changes (Table 8).

Table 7. Number of Child Deaths (ages 1–17 years) with Associated Mortality Rates, Pa., 2000–2010

Year	Number of Deaths	Rate per 100,000 population
2000	668	24.0
2001	695	25.2
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

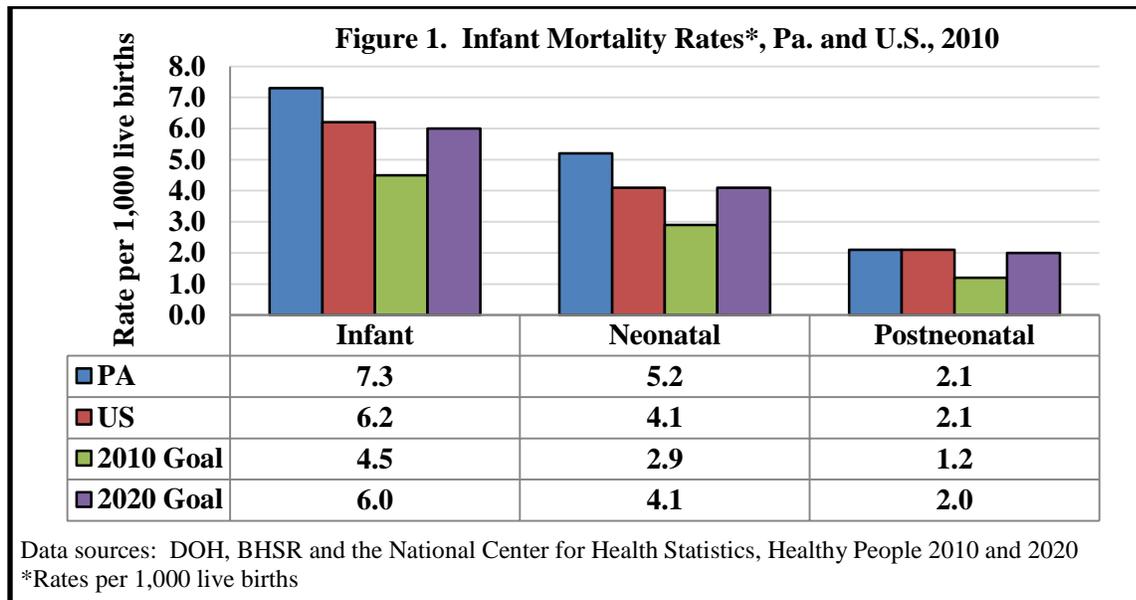
Data source: DOH, BHSR. Population source: U.S. Census Bureau, 2010 Census

Table 8. Number of Infant, Neonatal, and Postneonatal Deaths by Race/Ethnicity with Mortality Rates and Percent Change in Those Rates from 2005–2007 to 2008–2010, Pa.

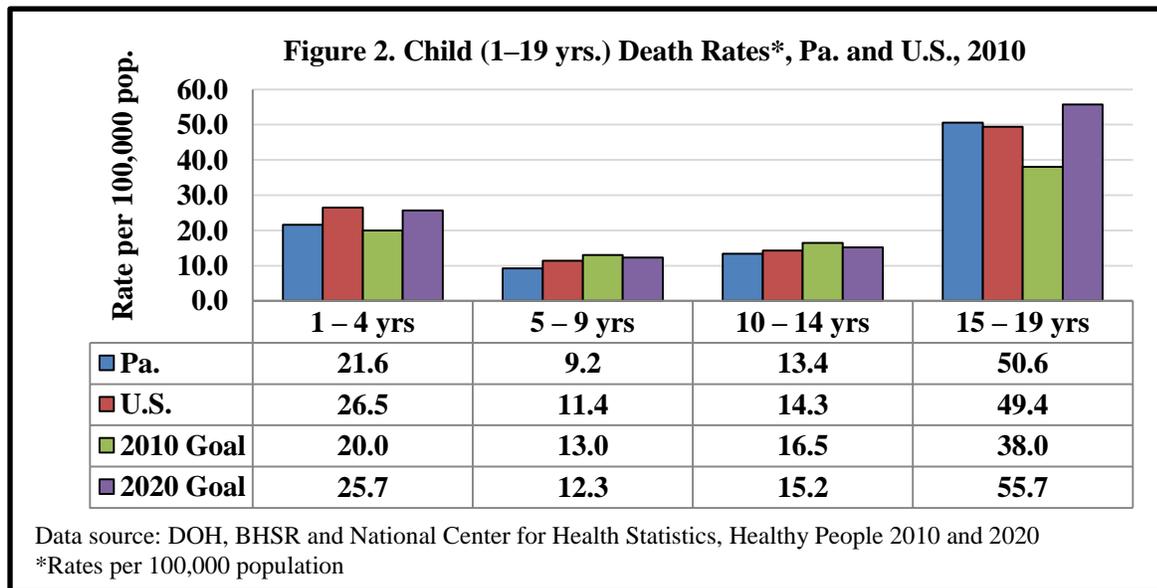
	Number of Deaths		Mortality Rates*		Percent Change**	Rates Differ Significantly^
	2005–2007	2008–2010	2005–2007	2008–2010		
Infant Mortality (< 1 year of age)						
All races/ethnicities	3,292	3,169	7.4	7.3	- 2.1	No
White	2,045	2,012	6.2	6.4	+ 2.8	No
Black	1,062	1,000	16.6	15.1	- 8.8	Yes
Asian/Pacific Islander	68	61	4.2	3.7	- 9.6	No
Hispanic (all races)	254	303	6.5	7.3	+ 12.3	Yes
Neonatal Mortality (birth through 27 days)						
All races/ethnicities	2,287	2,230	5.2	5.1	- 0.9	No
White	1,409	1,422	4.3	4.5	+ 5.5	No
Black	731	678	11.4	10.3	- 10.1	Yes
Asian/Pacific Islander	50	50	3.1	3.1	+ 0.7	No
Hispanic (all races)	172	215	4.4	5.2	+ 17.7	Yes
Postneonatal Mortality (28 through 364 days)						
All races/ethnicities	1005	939	2.3	2.1	- 5.0	Yes
White	636	590	1.9	1.9	- 3.0	No
Black	331	322	5.2	4.9	- 5.8	No
Asian/Pacific Islander	18	11	1.1	0.7	- 38.4	No
Hispanic (all races)	82	88	2.1	2.1	+ 1.0	No
Note: Hispanic Origin can be of any race						
* Rate per 1,000 live births						
** Percent change is based on the exact rates and not the rounded rates presented here.						
^ Significance is determined at the 95% confidence level.						
Data source: DOH, BHSR						

Infant Mortality United States and Pennsylvania Comparison

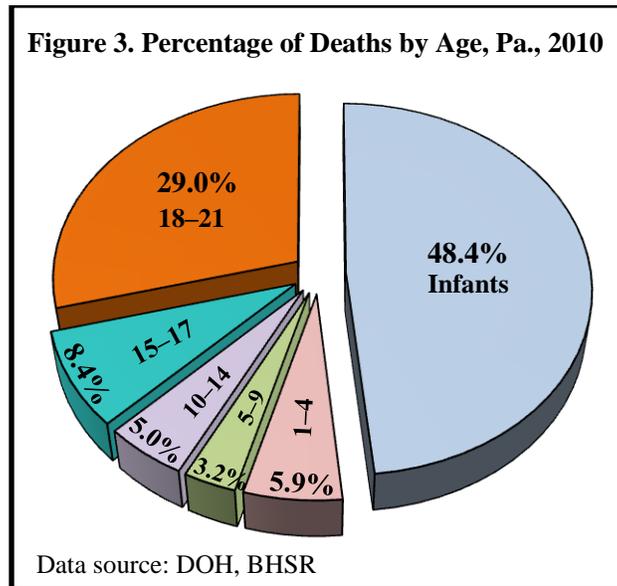
National objectives for infant and child mortality have been established in the Healthy People 2010 and 2020 projects of the United States Department of Health and Human Services. In Pennsylvania and nationally, infant mortality rates did not achieve the 2010 goals for all age groups. Pennsylvania’s 2010 rates were higher than the 2020 goals (Figure 1).



In Pennsylvania in 2010, child death rates did not meet the Healthy People 2010 goals in two age groups: ages 1 through 4 years and ages 15 through 19 years of age. Pennsylvania’s 2010 rates met the HP 2020 goals in all age groups (Figure 2).



There were 2,138 deaths in children 21 years of age and under in 2010, and compared to all other age groups, infant deaths were over-represented. Of the total deaths, infant deaths represented 48.4 percent, with the next highest representation (29.0 percent) occurring in the age group 18 through 21 years. Of Pennsylvania’s 1,517 deaths in children under 18 years of age in 2010, 68.2 percent (1,035) occurred in the first year of life. Efforts to lower child fatalities must be coordinated with activities aimed at addressing infant deaths (Table 9 and Figure 3).



Although mortality rates fall after infancy, they rise again during adolescence. This reflects a rise in unintentional and intentional injury deaths in older children. Efforts to reduce adolescent death rates should focus on injury deaths.

Table 9. Infant Deaths by Sex, Pa., 2010

Sex	Number of Deaths	Percent of Total
Male	557	53.9
Female	476	46.1
Total*	1,035	100.0

* Total shown does not reflect sum due to unknowns
Data source: DOH, BHSR

In 2010, 53.9 percent of the infant deaths with a known sex occurred in boys (Table 9). Of the 1,103 deaths among children aged 1 through 21 years, 70.3 percent male (Table 10).

Table 10. Number of Deaths by Sex and Select Age Groups with Percent, Pa., 2010

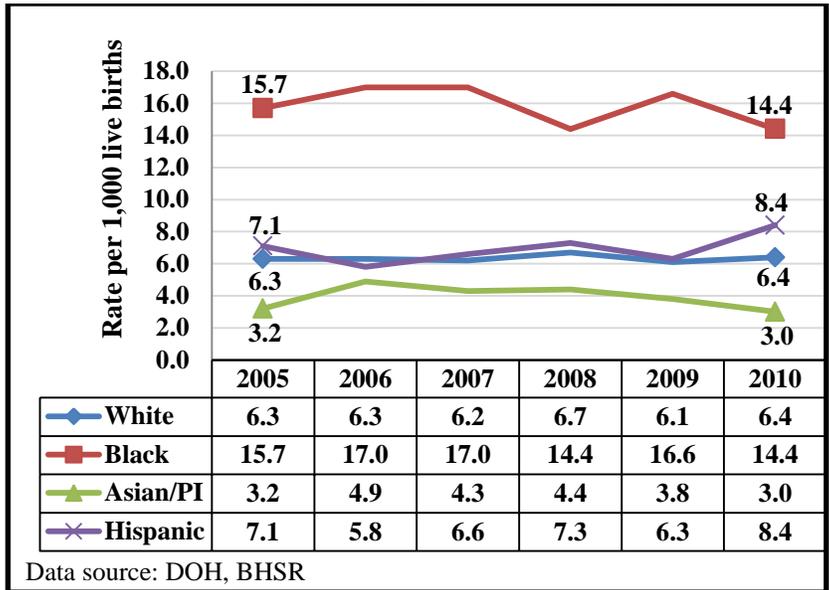
Sex	Number of Deaths by Age Group						Total (1-21 years)	Percent of Total
	1-4	5-9	10-14	15-17	18-21			
Male	75	43	62	123	472	775	70.3	
Female	52	26	44	57	149	328	29.7	
Total	127	69	106	180	621	1,103	100.0	

Data source: DOH, BHSR

Figure 4. Infant Mortality Rates by Race/Ethnicity, Pa., 2005–2010

Race / Ethnicity	Number of Deaths (< 1 year)	Percent of Total
All races	1,035	100.0
White	658	63.6
Black	312	30.1
Asian/Pacific Islander	16	1.5
Hispanic Origin	114	11.0

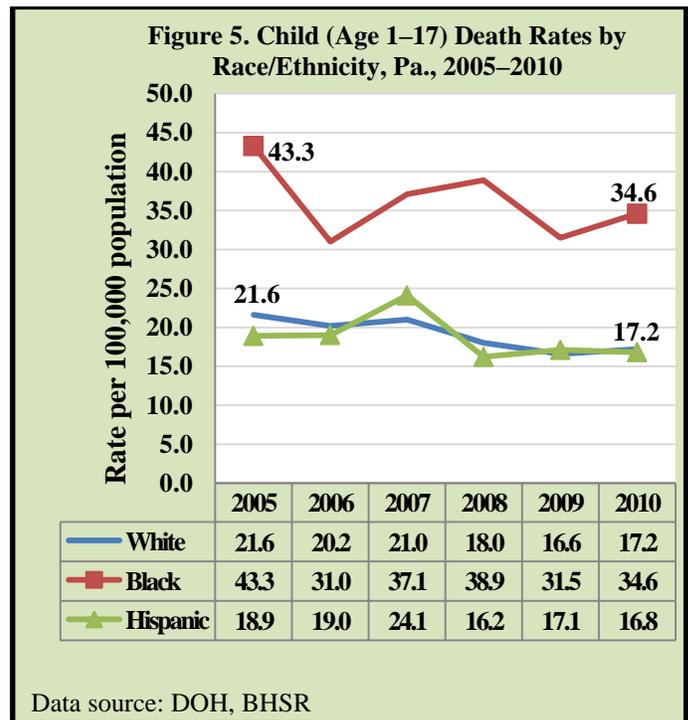
Data source: DOH, BHSR
Notes: Hispanic origin can be of any race.



Black children were at an increased risk of dying both in the first year of life and in later childhood. In 2010, black infants died at 2.3 times the rate of white infants and 4.8 times the rate of Asian/Pacific Islander infants (Figure 4). The rate of deaths in black children ages 1 through 17 years was approximately twice the rate reported in white children (Figure 5). Evidence-based strategies are needed to effectively address the racial disparities in infant and child mortality in Pennsylvania.

Age in Years	Race / Ethnicity	Number of Deaths	Percent of Total
1–17	All races	482	100.0
	White	343	71.2
	Black	126	26.1
	Asian/Pacific Islander	5	ND
	Hispanic	41	8.5
18–21	All races	621	100.0
	White	454	73.1
	Black	154	24.8
	Asian/Pacific Islander	8	ND
	Hispanic origin	33	5.3

Data source: DOH, BHSR
Notes: Hispanic origin can be of any race. Percentages based on less than 10 events are considered statistically unreliable and are not displayed (ND).



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. It is defined within the CDC Medical Examiner and Coroner Handbook on Death Registration and Fetal Death Reporting as: the disease or injury that initiated the train of morbid events leading directly to death.* 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.

Leading Causes of Infant Deaths

Rank	Cause of Death	Number of Deaths	Percent of Total
1	Disorders related to length of gestation and fetal malnutrition	193	18.6
2	Congenital malformations, deformations, chromosomal abnormalities	182	17.6
3	Newborn affected by maternal factors and by complications of pregnancy, labor and delivery	167	16.1
4	Sudden infant death syndrome (SIDS)	72	7.0
5	Other perinatal conditions	55	5.3
	All other causes	366	35.4

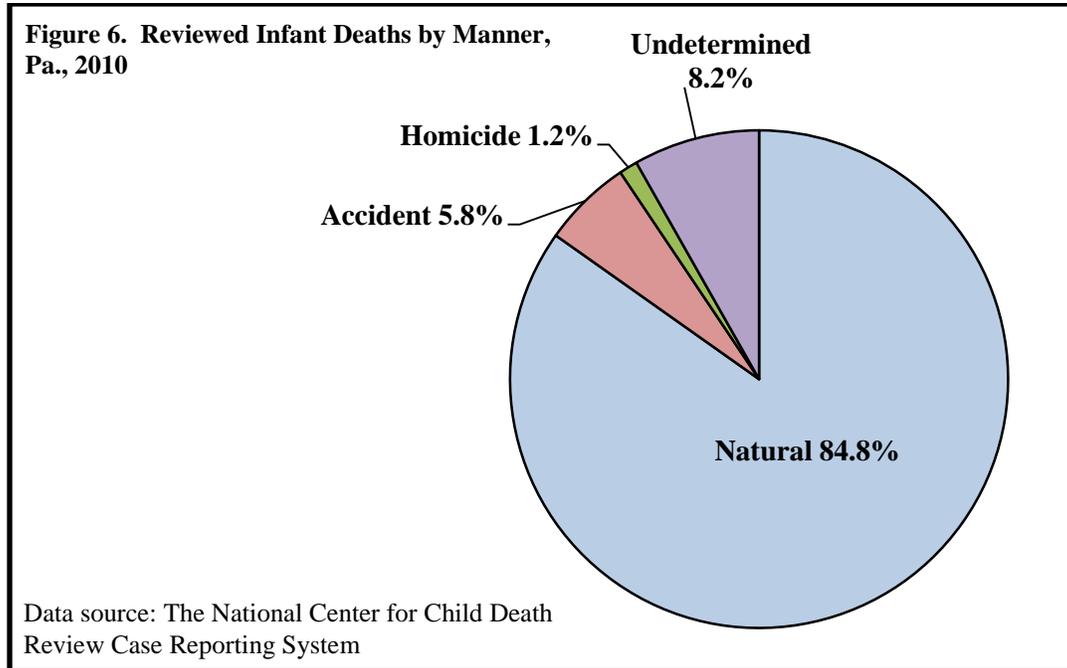
Data source: DOH, BHSR

It is important to understand the underlying causes of childhood deaths in order to develop strategies to prevent them. 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 was disorders related to length of gestation and fetal malnutrition (Table 13). Nationally, the leading cause of infant death in the United States in 2010 was congenital malformations, deformations and chromosomal abnormalities.

* Complete Definition: 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.

Reviewed Infant Deaths by Manner

An examination of the data related to manner of death for the 722 infant deaths reviewed revealed 84.8 percent were identified as natural (Figure 6). Most of these babies were born prematurely (before 37 weeks gestation) and/or born with a low birth-weight (under five pounds and nine ounces). Prematurity and low birth weight are the greatest predictors of infant mortality.



Leading Causes of Neonatal Deaths

Table 14. Leading Causes of Neonatal (< 28 days) Mortality, Pa., 2010			
Rank	Cause of Death	Number of Deaths	Percent of Total
1	Disorders related to length of gestation and fetal malnutrition	188	25.5
2	Newborn affected by maternal factors and by complications of pregnancy, labor and delivery	166	22.6
3	Congenital malformations, deformations, chromosomal abnormalities	140	19.0
4	Other perinatal conditions	53	7.2
5	Infections specific to the perinatal period	31	4.2
	All other causes	158	21.5

Data source: DOH, BHSR

Of the total number of neonatal deaths, over a quarter of them (188 deaths) were due to disorders related to length of gestation and fetal malnutrition (Table 14).

Prematurity Developments and Strategies

Prematurity remains a significant issue in both Pennsylvania and the United States. A premature birth is defined as a birth that is at least three weeks before a baby's due date. Babies that are born prematurely are not fully developed and often have health problems. Prematurity is the number one killer of newborns and can also result in severe health problems and lifelong disabilities. More than a half million babies in the United States are born prematurely each year.

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 Campaign educates mothers on factors that cause pre-term birth and why giving birth after 39 weeks of pregnancy is important. Many hospitals also have programs in place to educate pregnant women on prematurity. The Bureau of Family Health's Love 'em with a Check-up Program is a statewide outreach initiative that encourages pregnant women and women who might be pregnant to get medical care. The department has also created a network of services which focuses on reducing the rates of prematurity by supporting the creation of hospital prematurity prevention programs and programs that aim to reduce the risk factors associated with prematurity.

Hospitals and birth centers across Pennsylvania have been working to include CenteringPregnancy® programs into their practices. CenteringPregnancy® is a group prenatal care model shown to improve birth outcomes among participants. Participants enrolled in CenteringPregnancy® programs are less likely to receive inadequate prenatal care, have lowered odds of pre-term birth and are more likely to initiate breastfeeding.

Leading Causes of Postneonatal Deaths and SIDS

According to the Centers for Disease Control and Prevention (CDC), each year in the United States more than 4,500 infants die suddenly of no immediately, obvious cause. Half of these sudden unexpected infant deaths (SUIDs) are due to sudden infant death syndrome (SIDS), the leading cause of SUID and of all deaths among infants aged 28 through 364 days. An examination of Pennsylvania's 2010 child death data revealed that SIDS is the leading cause of death for infants within this postneonatal stage (Table 15).

Rank	Cause of Death	Number of Deaths	Percent of Total
1	Sudden infant death syndrome (SIDS)	68	22.7
2	Congenital malformations, deformations, chromosomal abnormalities	42	14.0
3	Accidents (unintentional injuries)	38	12.7
4	Other symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	37	12.4
5	Certain infectious and parasitic diseases	24	8.0
5	Diseases of the respiratory system	24	8.0
	All other causes	66	22.1

Data source: DOH, BHSR
Note: Percentages may not sum to 100 due to rounding

Race/Ethnicity	Number of Deaths
All Races	240
White	151
Black	84
Asian/Pacific Islander	1
Hispanic	18

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

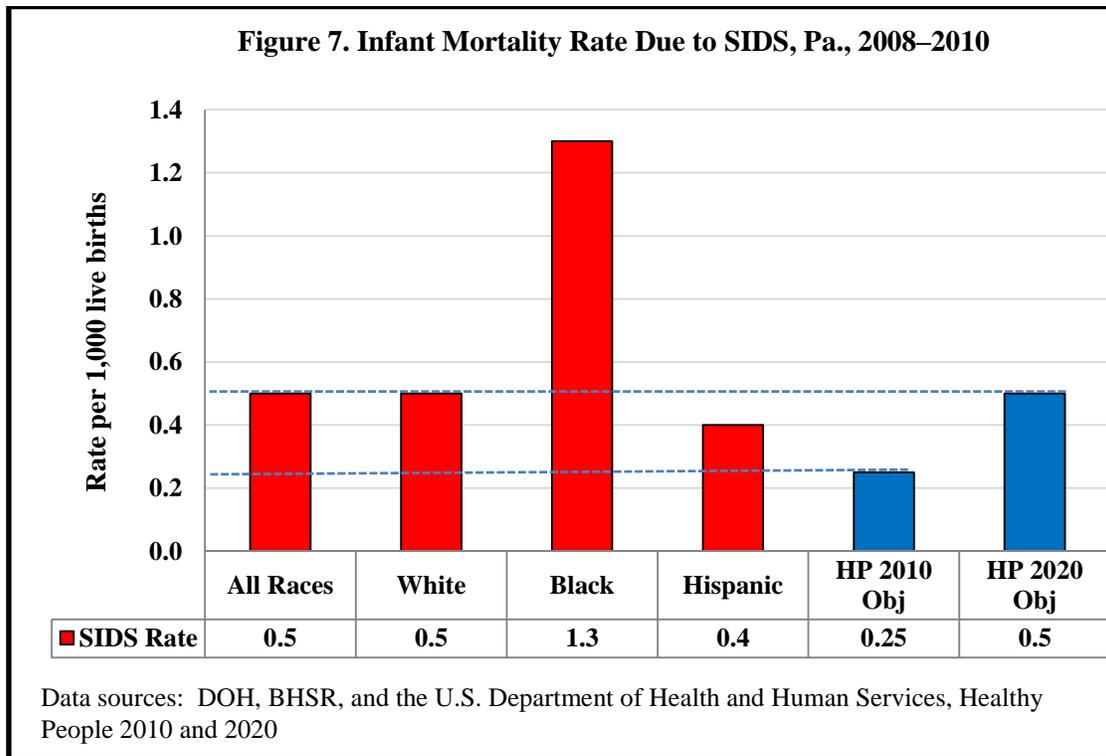
SIDS is the sudden death of an infant which cannot be explained after a thorough investigation, including performance of a complete autopsy, examination of the death scene and review of the clinical history. In 2010, SIDS was the fourth leading cause of overall infant mortality and the leading cause of death in the first year of life beyond the neonatal period. SIDS is of particular public health concern because it can be addressed through safe sleeping practices.

Infant Deaths due to SIDS

A comparison of three-year periods 2005–2007 and 2008–2010 reveals that, while the number of infant deaths due to SIDS increased by 23.7 percent (from 194 to 240), there was not a statistically significant increase in the SIDS mortality rate (Table 17). Nationally, in 2010, there were 2,063 SIDS deaths producing a SIDS mortality rate of 0.5. Pennsylvania’s black infants died from SIDS at 2.6 times the rate reported in white infants. Overall, Pa.’s 2008–2010 SIDS mortality rate was twice as high as the Healthy People (HP) 2010 objective, and was equal to the 2020 objective (Figure 7).

2005–2007		2008–2010	
Number of SIDS Deaths	Infant Mortality Rate Due to SIDS*	Number of SIDS Deaths	Infant Mortality Rate Due to SIDS*
194	0.4	240	0.5

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

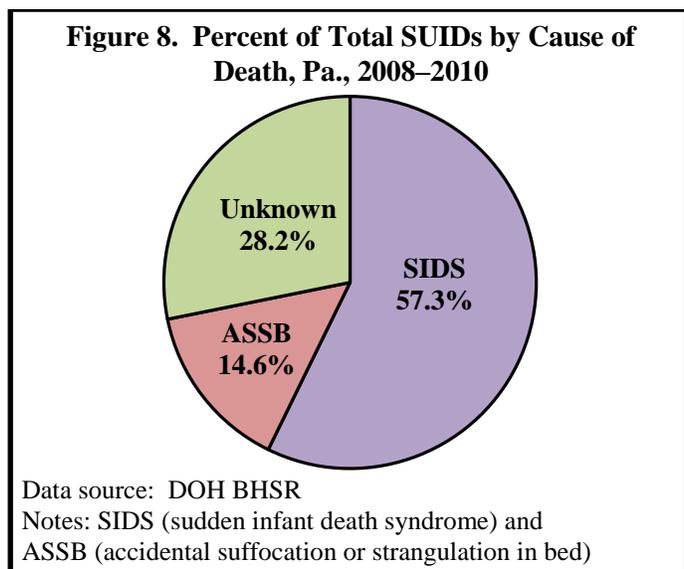


SUID and SIDS

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 which 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.

Race/Ethnicity	Number of Deaths
All races	419
White	230
Black	178
Asian/PI	ND
Hispanic	31

Data source: DOH, BHSR
 Notes: SUIDs correspond to ICD-10 Codes R95, R99 and W75. Hispanic origin can be of any race. ND: Not Displayed when count < 10

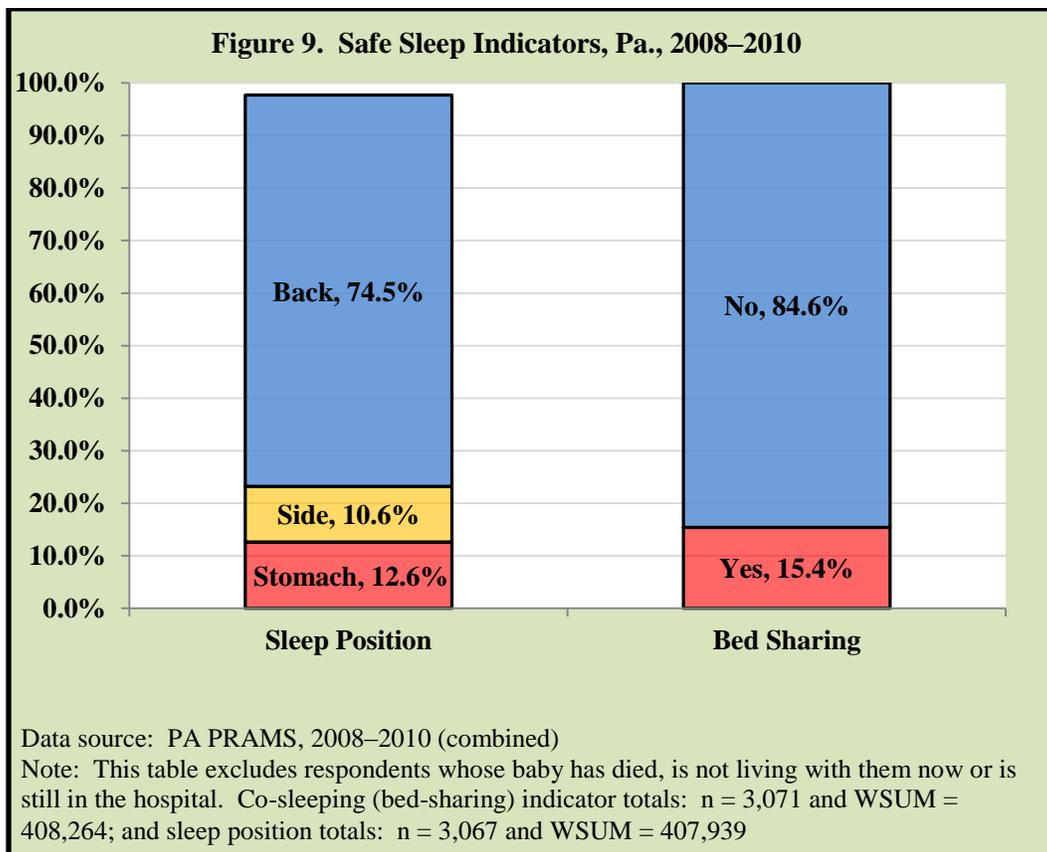


Safe Sleep

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.

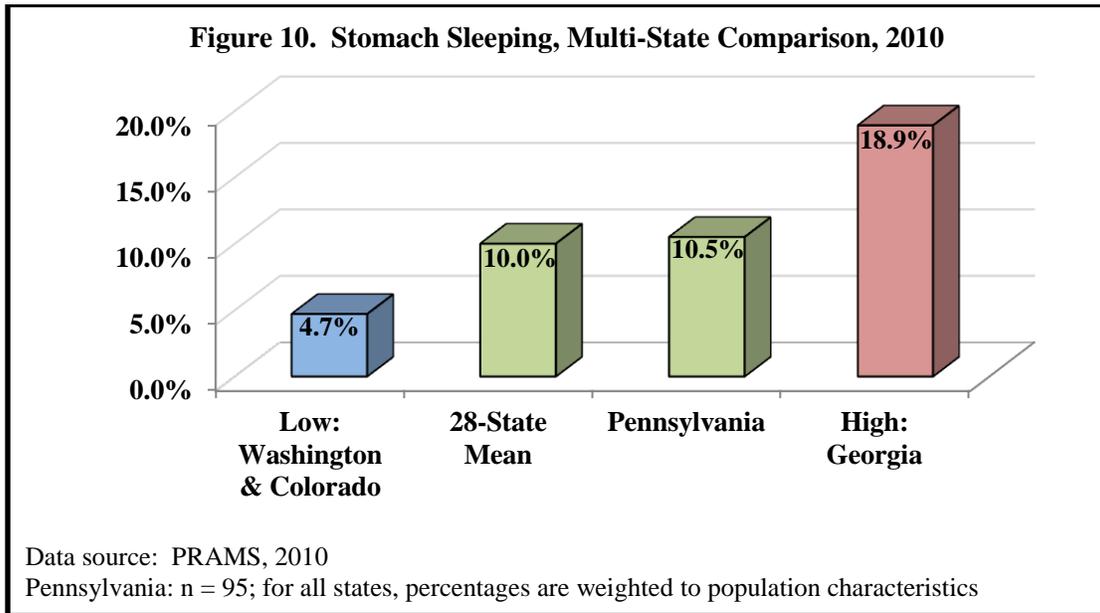
A cornerstone of these expanded recommendations is room-sharing without bed-sharing. An infants’ crib, portable crib, play yard or bassinet should be placed in the parents’ bedroom close to the parents’ bed. According to AAP, evidence supports this sleeping arrangement as decreasing the risk of SIDS by as much as 50 percent.¹

An examination of the Pennsylvania Department of Health’s weighted survey data from the Pregnancy Risk Assessment Monitoring System (PRAMS) for the period 2008–2010 revealed 74.5 percent of mothers indicated they most often lay their babies down to sleep on their backs. Also, within the PRAMS questionnaire, mothers were asked how often their baby sleeps in the same bed with them or anyone else. Of the 3,071 respondents, 15.4 percent indicated always or almost always (Figure 9).



Safe Sleep State Comparison

Utilizing 2010 PRAMS data from participating PRAMS states nationwide, a comparison on these safe sleep indicators revealed Pennsylvania’s 15 percent of mothers indicating their baby always or almost always shares a bed with someone was below the 15-state mean of 21.9 percent. On this, Pennsylvania is doing comparatively well. However, on the indicator of sleep position, Pennsylvania’s 10.5 percent of mothers indicating they most often lay their baby down to sleep on their stomach is not statistically different than the 28-state mean of 10 percent (Figure 10). Given that babies placed on their stomachs to sleep are at greater risk for SIDS, Pennsylvania’s average status on this indicator reveals room for improvement.



Factors Involved in Sleep-Related Deaths (Deaths Reviewed)

There were 89 sleep-related, infant deaths reviewed. A significant portion (71.9 percent) were cases in which the infant was not in a crib or bassinette, and ones in which the infant was sleeping with someone else (64.0 percent). Slightly more than half (52.8 percent) were revealed to be cases in which the infant was not sleeping on his/her back (Table 19).

Factors Involved	Age in Months					Total < 1 Year
	0-1	2-3	4-5	6-7	8-11	
Deaths Reviewed	36	29	16	4	4	89
Not in a crib or bassinette	26	20	10	4	4	64
Not sleeping on back	23	13	5	3	3	47
Unsafe bedding or toys	10	8	2	1	2	23
Sleeping with other people	26	17	6	4	4	57
Obese adult sleeping with child	4	2	0	1	0	7
Adult was alcohol impaired	2	0	0	0	1	3
Adult was drug impaired	0	0	1	0	0	1
Caregiver/Supervisor fell asleep while bottle feeding	2	0	0	0	0	2
Caregiver/Supervisor fell asleep while breast feeding	1	0	0	0	0	1

Data source: The National Center for Child Death Review Case Reporting System
 Note: Columns do not add up to total deaths because the factors are not mutually exclusive. If factor is unknown, it is not included in these counts. Portable cribs may inadvertently be counted as not in a crib or bassinette since they are typically coded as "other". Unsafe bedding or toys include pillow, comforter, or stuffed toy.

Initiatives and Developments on Safe Sleep

The revised AAP recommendations, which expanded the focus to include safe sleep practices, such as room sharing without bed sharing, coincided with initiatives and programs underway at the Pennsylvania Department of Health. Room sharing without bed sharing fosters a healthy routine and environment. The close proximity facilitates breastfeeding, comforting and monitoring of the infant, and further reduces the risk of SIDS and accidental suffocation/strangulation in bed (ASSB). ASSB results in the death of an infant due to things such as blankets in cribs, sleeping with parents, infants getting wedged between the mattress and the wall, and sleeping in inappropriate places (such as a couch).

The Bureau of Family Health has a SIDS Awareness Program which 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 are 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 ASSB.

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

Age Group	Rank	Underlying Cause of Death ²	Number of Deaths	Percent of Total
1–17 years	1	Accidents (unintentional injuries) ³	543	35.6
	2	Malignant neoplasms (cancer)	171	11.2
	3	Assault (homicide)	138	9.0
	4	Intentional self-harm (suicide)	128	8.4
	5	Congenital malformations, deformations and chromosomal abnormalities	68	4.5
		All other causes	478	31.3
		Total	1,526	100.0
Age Group	Rank	Underlying Cause of Death	Number of Deaths	Percent of Total
18–21 years	1	Accidents (unintentional injuries)	837	46.3
	2	Assault (homicide)	362	20.0
	3	Intentional self-harm (suicide)	229	12.7
	4	Malignant neoplasms (cancer)	79	4.4
	5	Diseases of the heart	43	2.4
		All other causes	256	14.2
		Total	1,806	100.0

Data source: DOH, BHSR

For the three-year period 2008–2010, accidents were the leading cause of death in all children 1 through 21 years of age. Cancer was the second leading cause of death in children aged 1 through 17 years, and assault (homicide) was the second leading cause of death in children aged 18 through 21 years (Table 20). A further breakdown of these groupings revealed that intentional self-harm (suicide) is the second leading cause of death for children aged 10 through 17 years. Closer examination within that subpopulation revealed it represented 12.5 percent of the deaths within the age range 10 through 14 years and 15.8 percent of the deaths within the age range 15 through 17 years. As a proportion of overall deaths within specific age groups, accidents were the highest in the 18 through 21 years of age group, in which they represented 46.3 percent of deaths (Table 21).

² 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 injury. Please see the Endnotes at the end of the report for more detailed information.

³ Accidents: Based on the International Statistical Classification of Diseases and Related Health Problems (ICD)-10 codes within the following ranges: V01-X59, Y-85-Y86

An examination of the review data related to manner of death for persons 1 through 21 years of age revealed natural as the leading manner of death for children 1 through 17 years of age, and accident as the leading manner of death for children 18 through 21 years of age (Table 22).

Cause of Death Ranking	Age in Years				
	1–4	5–9	10–14	15–17	18–21
1 (Most)	Accidents (Unintentional Injuries)				
Number of deaths	133	78	102	230	837
Percent of deaths in age group	31.1	34.2	32.0	41.7	46.3
2	Malignant Neoplasms (Cancer)	Malignant Neoplasms (Cancer)	Intentional Self-harm (Suicide)	Intentional Self-harm (Suicide)	Assault (Homicide)
Number of deaths	45	38	40	87	362
Percent of deaths in age group	10.5	16.7	12.5	15.8	20.0
3	Assault (Homicide)	CMD and CA *	Malignant Neoplasms (Cancer)	Assault (Homicide)	Intentional Self-harm (Suicide)
Number of deaths	37	17	36	81	229
Percent of deaths in age group	8.6	7.5	11.3	14.7	12.7
4	CMD and CA	Diseases of the Heart	Diseases of the Heart	Malignant Neoplasms (Cancer)	Malignant Neoplasms (Cancer)
Number of deaths	34	12	15	52	79
Percent of deaths in age group	7.9	5.3	4.7	9.4	4.4
5	Influenza and Pneumonia	ND	Assault (Homicide)	Diseases of the Heart	Disease of the Heart
Number of deaths	12	ND	14	16	43
Percent of deaths in age group	2.8	ND	4.4	2.9	2.4

Data source: DOH, BHSR
 Note: ND = Data not displayed due to less than ten events or ties in rankings
 * CMD and CA: Congenital malformations, deformations and chromosomal abnormalities

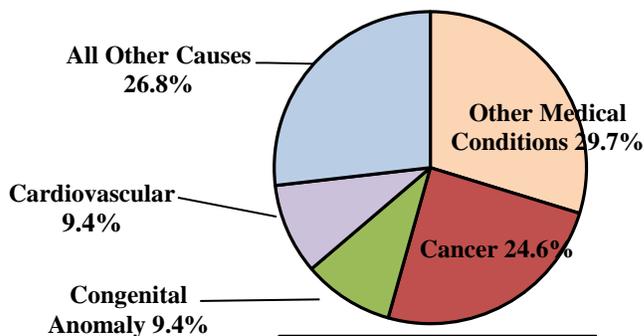
An examination of the 138 reviewed deaths in children (1 through 17 years of age) in which the manner of death was determined to be natural revealed other medical condition (29.7 percent) followed next by cancer (24.6 percent) as the leading causes of death in that subgroup (Figure 11). An examination of the 171 deaths in children 18 through 21 years of age in which the manner of death was determined to be accident revealed motor vehicle (59.6 percent) and poisoning, overdose or acute intoxication (32.2 percent) as the leading causes of death in that subgroup.

Manner of Death Ranking	Age in Years	
	1–17	18–21
1 (Most)	Natural	Accident
# Deaths	138	171
Percent of deaths in age group	41.4	38.3%
2	Accident	Homicide
# Deaths	119	123
Percent of deaths in age group	35.7	27.6
3	Homicide	Natural
# Deaths	37	72
Percent of deaths in age group	11.1	16.1
4	Suicide	Suicide
# Deaths	30	72
Percent of deaths in age group	9.0	16.1
5	Undetermined	Undetermined
# Deaths	9	8
Percent of deaths in age group	2.7	1.8

} Tie (16.1%)

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

Figure 11. Reviewed Cause of Death in Children (1–17 years) for which Manner of Death was Natural, Pa., 2010

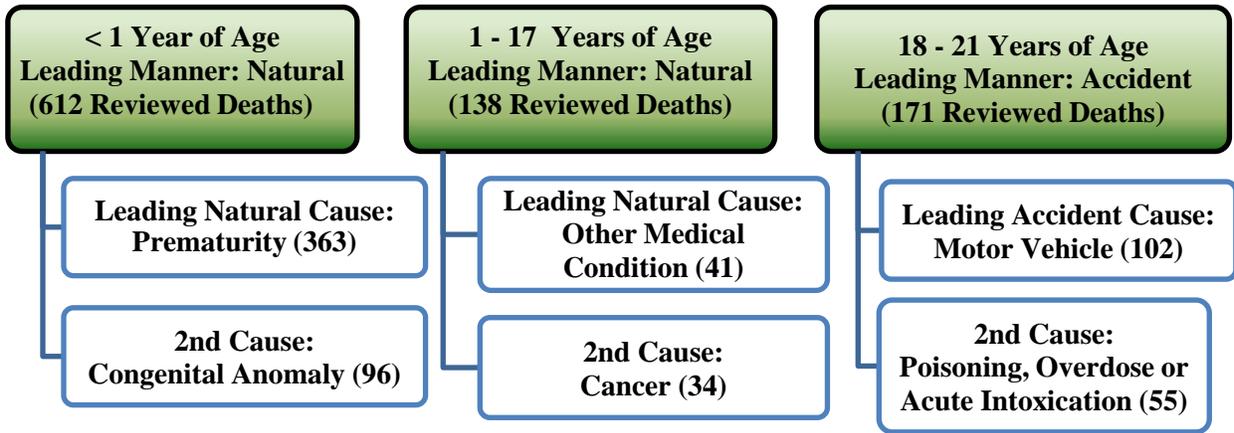


Data source: The National Center for Child Death Review Case Reporting System, Death Year 2010

Reviewed Deaths = 138

Reviewed Deaths among Older Children by Manner and Cause

Figure 12. Overview of Leading Manner and Cause of Deaths Reviewed by Age Group, Pa., 2010



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

Injury Related Deaths in Children (1–17 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 2008 through 2010, Pennsylvania’s 2,279 injury related deaths (ages 1–21 years) represented 68.4 percent of the 3,332 total deaths for that age group. During that period, accidents were the leading cause of injury deaths in all children 1 through 21 years of age, as well as within all age groups examined (Table 21). They represented 65.5 percent of injury deaths in children aged 1 through 17 years and 57.7 percent of injury deaths in children aged 18 through 21 years. Of those total unintentional injury deaths, motor vehicle accidents were associated with the highest number of deaths among children 1 through 17 years of age (Table 23). In children in that age range, motor vehicle accidents represented 32.2 percent of all injury deaths. For children 18 through 21 years of age, they represented 35.3 percent of all injury deaths. However, comparing intentional injury deaths in the two age groupings revealed different leading causes. For children 1 through 17 years, intentional self-harm (suicide) by other means was the leading intentional injury death, whereas it was assault (homicide) by firearm in children aged 18 through 21 years (Tables 23 and 24).

Table 23. Injury Related Deaths in Children 1 through 17 Years of Age by Intent, Pa., 2008–2010			
Intentional or Unintentional	Type of Injury	Number of Deaths	Percent of Total Injury Deaths
Unintentional (Accident)	Motor vehicle accidents	267	32.2
	Smoke, fire and flames	78	9.4
	Other non-transport accidents	63	7.6
	Drowning and submersion	61	7.4
	Accidental poisoning and exposure to noxious substances	40	4.8
	Other transport accidents	19	2.3
	Falls	15	1.8
Unintentional Injury Total =		543	65.5
Intentional	Intentional self-harm (suicide) by other means	90	10.9
	Assault (homicide) by firearm	89	10.7
	Assault (homicide) by other means	49	5.9
	Intentional self-harm (suicide) by firearm	38	4.6
	Legal intervention (law enforcement)	1	ND
Intentional Injury Total =		267	32.2
Undetermined Intent		19	2.3
Total Injury Deaths (1–17 years of age)		829	100.0

Data source: DOH, BHSR

Note: Percentages based on less than 10 events are considered statistically unreliable and are not displayed (ND). See technical notes (Appendix D) for the International Classification of Diseases (ICD) codes used for the cause of death categories shown.

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

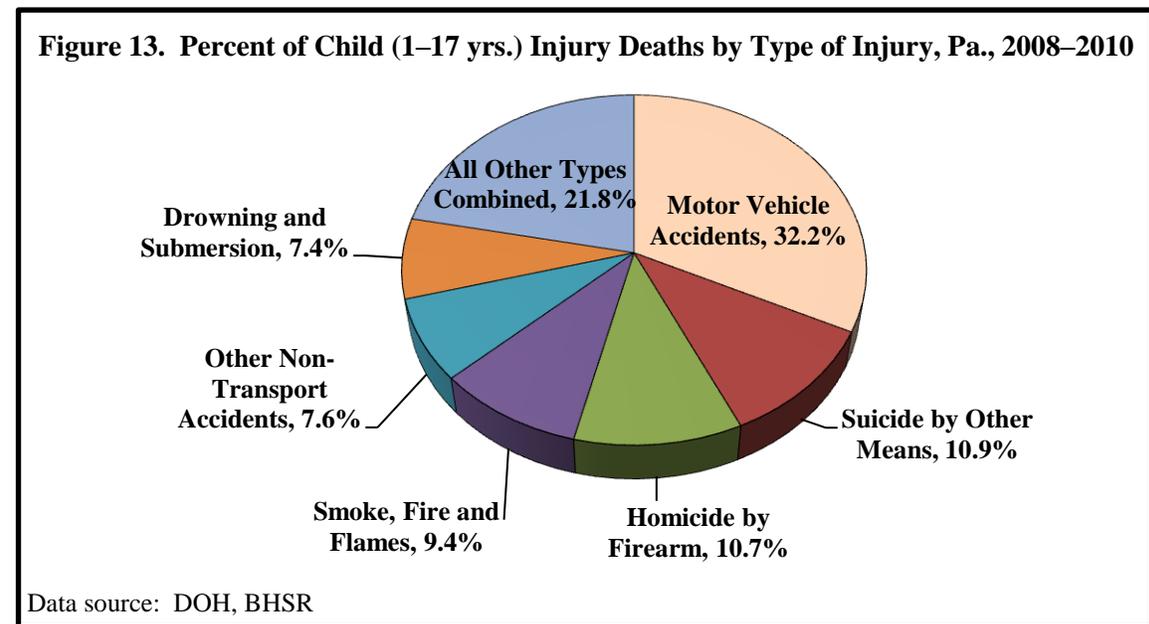
Intentional or Unintentional	Type of Injury	Number of Deaths	Percent of Total Injury Deaths
Unintentional (Accident)	Motor vehicle accidents	512	35.3
	Accidental poisoning and exposure to noxious substances	228	15.7
	Other non-transport accidents	37	2.6
	Drowning and submersion	20	1.4
	Other transport accidents	19	1.3
	Falls	11	0.8
	Smoke, fire and flames	10	0.7
Unintentional Injury Total =		837	57.7
Intentional	Assault (homicide) by firearm	322	22.2
	Intentional self-harm (suicide) by other means	142	9.8
	Intentional self-harm (suicide) by firearm	87	6.0
	Assault (homicide) by other means	40	2.8
	Legal intervention (law enforcement)	4	ND
Intentional Injury Total =		595	41.0
Undetermined Intent Total =		18	1.2
Total Injury Deaths (18–21 years of age)		1,450	100.0
Data source: DOH, BHSR			
Note: Percentages may not sum to 100 due to rounding. Percentages based on less than 10 events are considered statistically unreliable and are not displayed (ND). See technical notes (Appendix D) for the International Classification of Diseases (ICD) codes used for the cause of death categories shown.			

Injury Deaths by Type and Select Age Groups

A review of all injury deaths (intentional and unintentional) for the period 2008 through 2010 by select age groups revealed motor vehicle accidents as the leading cause of injury deaths in all age groups examined except in infants and children under five year of age. Examining child injury deaths in children 1 through 17 years of age by injury type revealed a wide range of frequencies across various types. Intentional self-harm (suicide) by other means is the second most frequent injury death in this age range, however, as would be expected, these deaths are skewed heavily toward older children with 99.0 percent of these occurring above 10 years of age (Table 25 and Figure 13). See Technical Notes section in Appendix D for the International Classification of Diseases (ICD) codes used for the cause of death categories shown.

Injury Type	Age in Years				
	1–4	5–9	10–14	15–17	1–17
Motor vehicle accidents	31	28	50	158	267
Intentional self-harm (suicide) by other means	0	1	34	55	90
Assault (homicide) by firearm	5	4	8	72	89
Smoke, fire and flames	30	23	19	6	78
Other non-transport accidents	27	14	13	9	63
Drowning and submersion	29	7	9	16	61
Assault (homicide) by other means	32	2	6	9	49
Accidental poisoning and exposure to noxious substances	5	2	2	31	40
Intentional self-harm (suicide) by firearm	0	0	6	32	38
Other transport accidents	5	1	7	6	19
Undetermined intent	8	1	4	6	19
Falls	6	3	2	4	15
Legal intervention	0	0	0	1	1
Total	178	86	160	405	829

Data source: DOH, BHSR
See technical notes (Appendix D) for the International Classification of Diseases (ICD) codes used for the cause of death categories shown.



Leading Cause of Injury Deaths: Unintentional

Between 2008 and 2010, unintentional injuries constituted the leading cause of injury deaths (60.6 percent) among all children 1 through 21 years of age. Homicide and suicide (intentional injuries) represented 37.6 percent of all fatal injuries.

Injury Deaths by Sex of Child

It is commonly recognized that male adolescents and young adults typically engage in behaviors which put them at risk for injury more often than females. According to the CDC, men are 10 percent less likely to wear seat belts than women (CDC, 2010, unpublished data).

An examination of the Pennsylvania data revealed that the number of deaths among males is higher than among females in every injury type category and three times as high overall. This is most noticeable within two categories of injury deaths. Based on the three-year data (2008–2010), the number of male suicides by firearm was 16.9 times higher than the number of female suicides by firearm. Male homicides by firearm were 10.7 times higher (Table 26).

Table 26. Injury Related Deaths in All Children 21 Years of Age and Under, by Type of Injury and Sex, Pa., 2008–2010

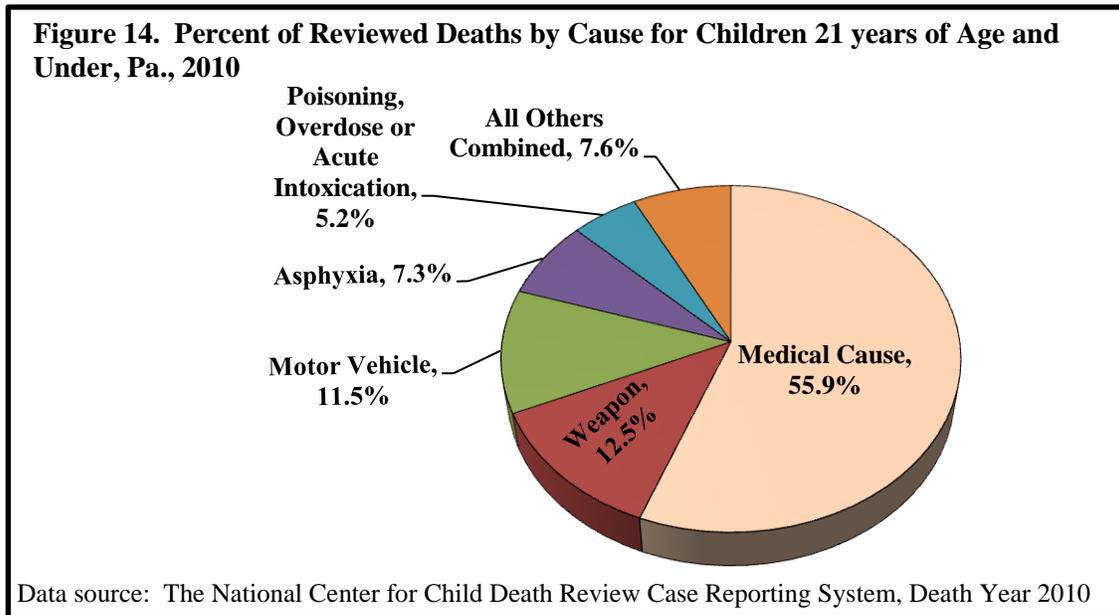
Type of Injury Death	Male	Female	Total Deaths	Percent of Total Injury Deaths	Male to Female Deaths Ratio
Motor vehicle accidents	523	256	779	34.2	2.0
Other transport accidents	28	10	38	1.7	2.8
Falls	16	10	26	1.1	1.6
Drowning and submersion	62	19	81	3.6	3.3
Smoke, fire and flames	52	36	88	3.9	1.4
Accidental poisoning and exposure to noxious substances	203	65	268	11.8	3.1
Other non-transport accidents	78	22	100	4.4	3.5
Intentional self-harm (suicide) by firearm	118	7	125	5.5	16.9
Intentional self-harm (suicide) by other means	165	67	232	10.2	2.5
Assault (homicide) by firearm	376	35	411	18.0	10.7
Assault (homicide) by other means	57	32	89	3.9	1.8
Legal intervention (law enforcement)	5	0	5	ND	ND
Undetermined intent	26	11	37	1.6	2.4
Total	1,709	570	2,279	100.0	3.0

Data source: DOH, BHSR.

Note: Percentages based on less than 10 events are considered statistically unreliable and are not displayed (ND). See technical notes (Appendix D) for the International Classification of Diseases (ICD) codes used for the cause of death categories shown.

Reviewed Injury Deaths

Of the total 2010 deaths reviewed (1,501 cases), 55.9 percent were cases in which the death was determined to have a medical cause. The next highest frequency of reviewed deaths was for injury deaths involving a weapon (12.5 percent) followed next by motor vehicle accident deaths (11.5 percent) [Figure 14].



Injury Deaths and Weapons

Most of the 188 reviewed deaths caused by a weapon occurred in older children with a firearm. In 2010, weapon deaths within the age group 15 through 21 years accounted for 89.4 percent of all weapon deaths in children 21 years of age and under. Examining this data by type of weapon revealed the same percentage (89.4 percent) associated with firearms (Table 27). Examining the data by sex revealed 92.8 percent of all firearm deaths occurred in males.

Table 27. Reviewed Weapon Deaths by Select Age Group and Type of Weapon, Pa., 2010

Age Group	Type of Weapon				Total
	Firearm	Sharp	Person's Body Part	Unknown	
< 1	0	1	2	0	3
1-4	4	0	3	1	8
5-9	4	0	0	1	5
10-14	3	1	0	0	4
15-17	25	1	1	0	27
18-19	70	2	0	0	72
20-21	62	3	3	1	69
Total (1-21)	168	8	9	3	188

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

Drowning Death Demographics

There were 22 drowning deaths reviewed. Examining those deaths by age revealed that the age group with the highest number of drowning deaths recorded (8) was the group 1 through 4 years of age. The drowning location with the highest recorded deaths (8) was the location category of lakes, or rivers, or ponds or creeks (Table 28).

Table 28. Reviewed Drowning Deaths by Age Group and Location, Pa., Death Year 2010

Age Group (In Yrs.)	Lake/River /Pond/ Creek	Ocean	Quarry/ Gravel Pit	Canal	Pool/ Hot Tub/ Spa	Well/ Cistern	Bath Tub	Other	Unknown	Total
< 1	0	0	0	0	0	0	1	1	0	2
1-4	1	0	0	0	4	0	2	1	0	8
5-9	0	0	0	0	1	0	1	0	0	2
10-14	1	0	0	0	0	0	0	0	0	1
15-17	4	0	0	0	0	0	0	0	0	4
18-19	0	0	0	0	0	0	1	0	1	2
20-21	2	0	0	0	0	0	1	0	0	3
Unknown	0	0	0	0	0	0	0	0	0	0
Total	8	0	0	0	5	0	6	2	1	22

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

Most drowning deaths (59.1 percent) occurred in males, and 87.5 percent of the drowning deaths in lakes, or rivers or ponds or creeks occurred in males. Most drowning deaths (72.7 percent) occurred in white children, followed next by black children with 22.7 percent (Table 29). There were two recorded drowning deaths in Hispanic children that were reviewed.

Table 29. Reviewed Drowning Deaths by Race and Location, Pa., Death Year 2010

Race	Lake/River /Pond/ Creek	Ocean	Quarry/ Gravel Pit	Canal	Pool/ Hot Tub/ Spa	Well/ Cistern	Bath Tub	Other	Unknown	Total
White	3	0	0	0	5	0	6	1	1	16
Black	4	0	0	0	0	0	0	1	0	5
Native Hawaiian	0	0	0	0	0	0	0	0	0	0
Pacific Islander	0	0	0	0	0	0	0	0	0	0
Asian	1	0	0	0	0	0	0	0	0	1
American Indian	0	0	0	0	0	0	0	0	1	0
Native Alaskan	0	0	0	0	0	0	0	0	0	0
Total	8	0	0	0	5	0	6	2	1	22

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

Poisoning, Overdose, or Acute Intoxication Death Demographics

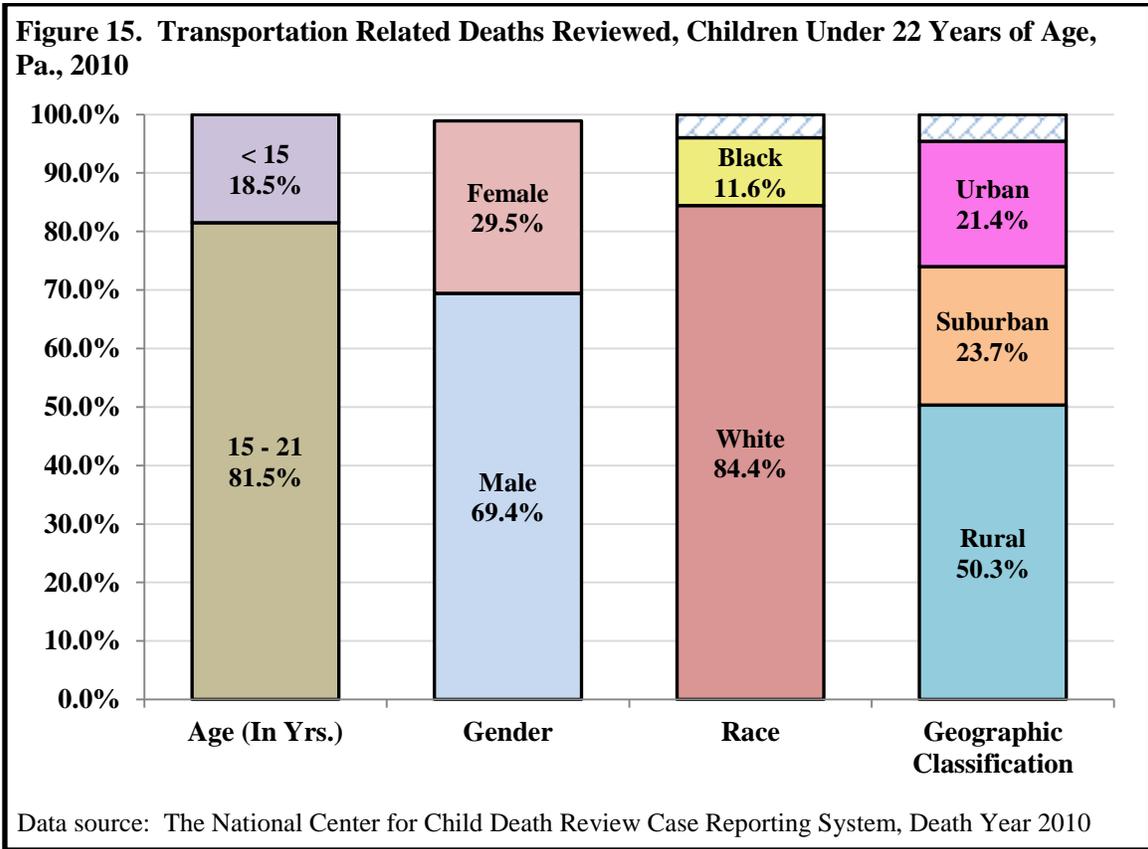
There were 84 deaths reviewed involving poisoning, overdose or acute intoxication. Most of these deaths occurred in children ages 18 through 21 years (77.4 percent) and almost half occurred in children 20 and 21 years (48.8 percent). Examining the types of substances involved revealed prescription drugs as the type associated with most cases (52) [Table 30].

Age Group (In Years)	Deaths Reviewed	Type of Substance				
		Prescription Drug	Over the Counter Drug	Cleaning Substance	Other	Unknown
< 1	1	0	0	0	0	1
1-4	3	2	0	0	1	0
5-9	0	0	0	0	0	0
10-14	1	1	0	0	1	0
15-17	8	7	2	0	5	0
18-19	24	13	1	0	5	5
20-21	41	29	2	0	23	3
Unknown	6	0	0	0	0	0
Total	84	52	5	0	35	9

Data source: The National Center for Child Death Review Case Reporting System, Death Year 2010
 Note: Rows do not sum to totals because more than one type of poison could have been involved

Examining this data by the sex of the child revealed most were male (71.4 percent), with females accounting for 19.0 percent. Most of these deaths were in white children (86.9 percent), and 4.8 percent were in black children, and 4.8 percent in children identified as multi-racial. There were three reviewed deaths among Hispanic children (any race).

There were 173 reviewed transportation-related deaths that occurred in 2010 in children 21 years of age and under. Of those, 81.5 percent were deaths occurring in children 15 through 21 years of age. Of the total transportation deaths reviewed, 69.4 percent were male and 29.5 percent were female. White children accounted for 84.4 percent, and black children accounted for 11.6 percent of those reviewed deaths. Of note, half of those transportation-related deaths (50.3 percent) were ones that occurred in a rural area of the state (Figure 15).

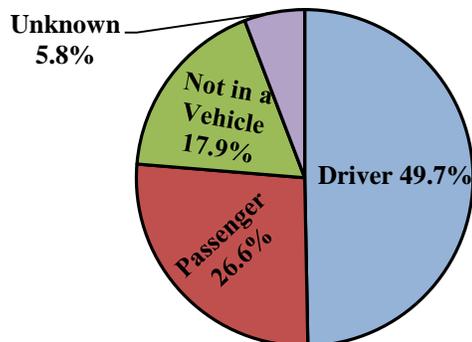


An examination of the 173 reviewed deaths by position of the child revealed an expected finding in line with the age demographic above. Given that 81.5 percent of transportation-related deaths reviewed were those occurring in persons 15 through 21 years of age and that Pennsylvania’s minimum driving age is 16 years, it is logical that the review data revealed most persons were either driving or riding in a car. As the vehicle type associated with most deaths reviewed, the 81 deaths occurring in cars (in all children 21 years of age and under) represented 63.3 percent of all motor vehicle deaths (128) and 46.8 percent of all transportation-related deaths (173) reviewed (Table 31 and Figure 16).

↓ Vehicle Type	Position of Child (21 Years of Age and Under)				Total
	Driver	Passenger	Not in a Vehicle	Unknown	
Car	48	33	0	0	81
Van	0	3	0	0	3
Sport utility vehicle	11	3	0	0	14
Truck	3	2	0	0	5
Semi / tractor trailer	0	0	0	1	1
Recreational vehicle	0	0	0	0	0
School bus or other bus	0	0	0	0	0
Motorcycle	11	2	0	0	13
Tractor or other farm vehicle	0	0	0	1	1
All-terrain vehicle	9	1	0	0	10
Snowmobile	0	0	0	0	0
Train	0	0	0	0	0
Total Motor Vehicle Deaths Reviewed →	82	44	0	2	128
Bicycle	0	0	8	0	8
Pedestrian	0	0	23	0	23
Other	1	0	0	1	2
Unknown	3	2	0	7	12
Total Transportation-Related Deaths Reviewed →	86	46	31	10	173

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

Figure 16. Transportation Related Deaths Reviewed by Position in Children 21 Years of Age and Under, Pa., 2010



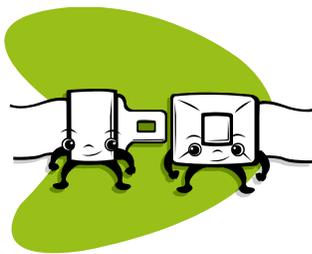
Data source: The National Center for Child Death Review Case Reporting System

Young Drivers

Young drivers are at increased risk for crash involvement. This extra risk is due to inexperience, characteristics associated with youthful age and the interaction between these factors. Characteristics of adolescence include an appetite for strong sensations and excitement, emotionality, poor judgment and decision making, and strong peer influences.^{4 5}

Based on Pennsylvania’s 2010 death review data, there were 83 reviewed deaths in which a child, 14 through 21 years of age, was the driver in his/her crash death. Of those, 88 percent were identified as ones in which he/she was responsible for causing the incident. Furthermore, alcohol and/or drug impairment was identified in 27.7 percent of those reviewed deaths.

Protective Measures



An examination of the 2010 death review data revealed that of the total 86 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:

- Airbag: 8 (9.3%)
- Lap Belt: 33 (38.4%)
- Shoulder Belt: 33 (38.4%)

The following protective measures were present and unused in those 46 child deaths (occurring in children 21 years of age and under) in which they were identified as a passenger in a motor vehicle:

- Airbag: 1 (2.2%)
- Lap Belt: 22 (47.8%)
- Shoulder Belt: 20 (43.5%)

There were eight bicycle deaths in 2010, and helmets were found to be absent in five cases (62.5 percent).

Homicides in Children

There were 169 homicides in the period 2008–2010 among children under 18 years of age producing a homicide rate of 2.0 per 100,000 for that period. An examination of the data in children 1 through 17 years of age revealed an overall homicide rate (all races) of 1.7 per 100,000 with significant disparity between the rates in white and black children.

Homicide and Race

The homicide rate among black children, aged 1 through 17 years, was 8.8 per 100,000 population which was nearly 14.7 times higher than the rate among white children (0.6 per 100,000) [Table 32].

Table 32. Homicides by Select Age Groups, Race/Ethnicity and Type, Pa., 2008–2010

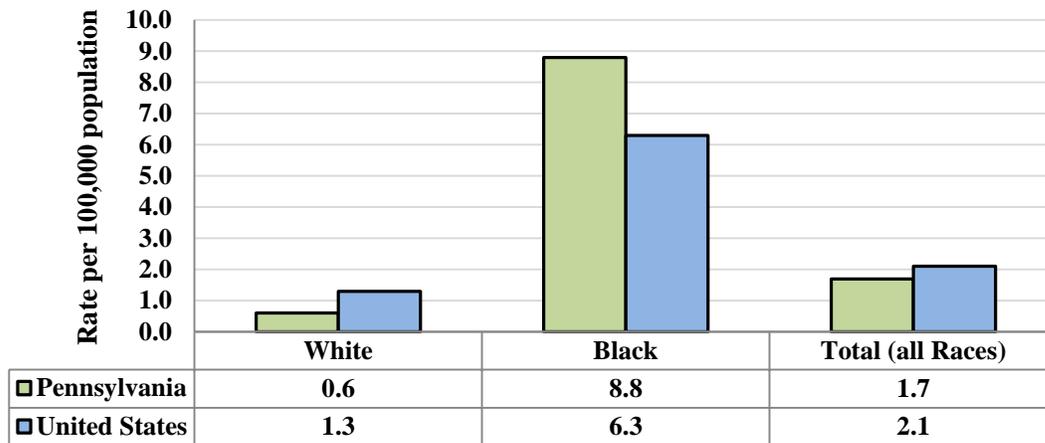
Age in Years	Race/Hispanic Origin	Homicide by Firearm		Homicide by Other Means		Total	
		Number	Rate*	Number	Rate	Number	Rate
Infants (< 1)	All races	1	ND	30	6.8	31	7.0
	White	0	ND	21	6.1	21	6.1
	Black	1	ND	8	ND	9	ND
	Asian/Pacific Islander	0	ND	0	ND	0	ND
	Hispanic	0	ND	7	ND	7	ND
1–17	All races	89	1.1	49	0.6	138	1.7
	White	17	0.3	22	0.3	39	0.6
	Black	72	6.6	24	2.2	96	8.8
	Asian/Pacific Islander	0	ND	1	ND	1	ND
	Hispanic	5	ND	2	ND	7	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 International Classification of Diseases (ICD) codes used for the cause of death categories shown.

The disparity between Pennsylvania’s black and white child homicide rates is further illuminated when it is compared to the racial disparity on the national level. For the period 2008 through 2010, Pennsylvania’s white child homicide rate (0.6) was over twice as low as the U.S. white child rate (1.3), and its black child homicide rate (8.8) was 1.4 times (28.4 percent) higher than the U.S. black child homicide rate (6.3). The disparity is greater within Pennsylvania than it is on the national level (Figure 17).

While the rates of homicide by firearm and homicide by other means were equal (0.3 per 100,000 population) for white children, they were different for black children. For black children, the rate of homicide by firearm (6.6 per 100,000) was three times higher than the rate of homicide by other means (2.2 per 100,000) during this period.

Figure 17. Death Rates Due to Homicide in Children Aged 1 through 17 Years, Pa., 2008–2010



Data source: DOH, BHSR

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

An examination of homicide deaths in children 1 through 17 years of age by sex revealed there were 106 male homicide deaths and 32 female homicide deaths for an overall total of 138 homicides for the three-year period 2008 through 2010. A comparison of the child homicide rates by sex for this same age group revealed an overall homicide rate for males age 1 through 17 years of 2.6 per 100,000 population, which was 3.3 times higher than the female homicide rate of 0.8 per 100,000 population. Cross tabulating the number of homicides by sex and homicide type revealed a homicide by firearm rate of 1.9 per 100,000 population for males, which was 6.3 times higher than the homicide by firearm rate of 0.3 per 100,000 population for females (Table 33).

Table 33. Deaths Due to Homicide for Select Age Groups by Sex, Number and Rate*, Pa. 2008–2010

Age in Years	Sex	Homicides by Firearm		Homicides by Other Means		Total	
		Number	Rate*	Number	Rate	Number	Rate
Infants (< 1)	Male	1	ND	19	8.4	20	8.9
	Female	0	ND	11	5.1	11	5.1
	Total	1	ND	30	6.8	31	7.0
1–17	Male	79	1.9	27	0.7	106	2.6
	Female	10	0.3	22	0.6	32	0.8
	Total	89	1.1	49	0.6	138	1.7

Source: DOH, BHSR; Population Source: U.S. Census Bureau, 2010 Census

* 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

Of the age categories examined, the greatest number of homicides occurred in children aged 18 through 21 years. To put this in context, for the period 2008 through 2010, 531 deaths by homicides occurred in all children under 21 years of age and under. Of that overall total, 68.2 percent occurred in children aged 18 through 21 years. In addition, most homicides within this age group, 89.0 percent, were homicides by firearm (Table 33a).

Age in Years	Sex	Homicides by Firearm		Homicides by Other Means		Total	
		Number	Rate*	Number	Rate	Number	Rate
18–21	Male	297	25.7	30	2.6	327	28.3
	Female	25	2.2	10	0.9	35	3.1
	Total	322	14.0	40	1.7	362	15.7

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

The disparity in homicide rates by sex is also found within this age group. An examination of those deaths revealed 90.3 percent of the total homicide deaths were among males. For Pennsylvania’s children in this age group, the homicide rate of 28.3 per 100,000 population for males was 9.1 times higher than the homicide rate of 3.1 per 100,000 population for females (Table 34).

Sex	Homicides	
	Number	Rate*
Male	327	28.3
Female	35	3.1
Total	362	15.7

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

Acts of Omission/Commission Assault Information (Reviewed Deaths)

Reviewed cases in which the review team reported an act of omission or commission caused or contributed to the child death were examined. Of those 372 cases in which the local team identified an act of omission or commission as having occurred or was probable, the highest single act was assault (not child abuse) where 34.9 percent of the cases were categorized. Of those 130 cases, 96.2 percent involved assaults that were determined to have caused the death and 3.8 percent were ones determined to have contributed to the death (Table 35).

Table 35. Acts of Omission/Commission Assault Information (Reviewed Deaths), Children 21 Years of Age and Under, Pa., Death Year 2010			
	Caused	Contributed	Total
Deaths Reviewed	125	5	130
History of substance abuse	69	2	71
Drug/alcohol impaired at time of incident	28	0	28
History of mental illness	47	0	47
Criminal history on delinquency	88	4	92
Spent time in juvenile detention	58	3	61
Child Protective Services (CPS) Involvement			
Open CPS case at time of death	1	0	1
Investigation found evidence of prior abuse	2	1	3
Child had history of maltreatment as victim	53	1	54
Child placed outside of home	27	2	29
History of intimate partner violence as victim	6	0	6
History of intimate partner violence as perpetrator	7	0	7
Data source: The National Center for Child Death Review Case Reporting System			

Suicide as the Cause of Death

Intentional self-harm, or suicide, in children ages 10 through 17 years is a significant health problem in the United States and Pennsylvania, where on both geographic levels it was the second leading cause of death for the three-year period 2008 through 2010 (Table 36). For children ages 18 through 21 years, suicide was the third leading cause of death (Table 37).

Leading Causes of Death		Number of Deaths in:	
		Pennsylvania	United States
1	Unintentional injuries (accidents)	332	9,004
2	Intentional self-harm (suicide)	127	3,032
3	Assault (homicide)	95	2,904

Data source: Pa. data: DOH, BHSR; and U.S. data: the National Center for Health Statistics (NCHS), National Vital Statistics System
 Note: Counts are not for same codes for Pa., and U.S. See technical notes (Appendix D) for the International Classification of Diseases (ICD) codes used for the cause of death categories shown.

Leading Causes of Death		Number of Deaths in:	
		Pennsylvania	United States
1	Unintentional injuries (accidents)	837	18,377
2	Assault (homicide)	362	7,252
3	Intentional Self-harm (Suicide)	229	5,806

Data source: Pa. data: DOH, BHSR; and U.S. data: the National Center for Health Statistics (NCHS), National Vital Statistics System
 Notes: Counts are not for same codes for Pa., and U.S. See technical notes (Appendix D) for the International Classification of Diseases (ICD) codes used for the cause of death categories shown.

Suicide and the Sex of the Child

Of the 127 children aged 10–17 years who completed suicide during the three-year period 2008 through 2010, 70.9 percent were male and 29.1 percent were female. The child suicide death rate per 100,000 was over twice as high in males than females (Table 38).

Sex	Suicides by Firearm		Suicide By Other Means		Total	
	Number	Rate*	Number	Rate*	Number	Rate*
Male	35	1.7	55	2.7	90	4.4
Female	3	ND	34	1.7	37	1.9
Total	38	1.0	89	2.2	127	3.2

Data source: DOH, BHSR
 * per 100,000 population
 Notes: Rates based on less than 10 events are considered statistically unreliable and are not displayed (ND).
 See technical notes (Appendix D) for the International Classification of Diseases (ICD) codes used for the cause of death categories shown.

Suicide and Race/Ethnicity

An examination of the 127 child suicide deaths by race revealed a suicide death rate that was 1.5 times higher for black children than for white children aged 10 through 17 years. The means of suicide death appears to differ between the two races as well. Of the 99 suicide deaths reported among white children, 64.6 percent were suicides by some means other than firearm; in the 25 suicide deaths reported among black children, 88.0 percent were suicides by some means other than firearm (Table 39).

Race/Hispanic Origin	Suicide By Firearm		Suicide By Other Means		Total	
	Number	Rate*	Number	Rate*	Number	Rate*
All races	38	1.0	89	2.2	127	3.2
White	35	1.1	64	2.0	99	3.1
Black	3	ND	22	4.1	25	4.6
Asian/Pacific Islander	0	ND	3	ND	3	ND
Hispanic origin	0	ND	4	ND	4	ND

Data source: DOH, BHSR
 * per 100,000 population
 Notes: Rates based on less than 10 events are considered statistically unreliable and are not displayed (ND).
 See technical notes (Appendix D) for the International Classification of Diseases (ICD) codes used for the cause of death categories shown.

Suicide by Select Age Groups

In examining the suicide death rates for the three-year period 2008–2010, it was clear that the rate of suicide deaths per 100,000 population increased with age. Older children aged 15 through 17 years were over three times as likely to commit suicide as children aged 10 through 14 years (Table 40). In addition, children aged 18 through 21 years were 1.8 times more likely to commit suicide than children aged 15 through 17 years and 5.9 times more likely than children aged 10 through 14 years (Table 40a).

Age In Years	Suicide By Firearm		Suicide By Other Means		Total	
	Number	Rate*	Number	Rate*	Number	Rate*
10–14	6	ND	34	1.4	40	1.7
15–17	32	2.0	55	3.5	87	5.5

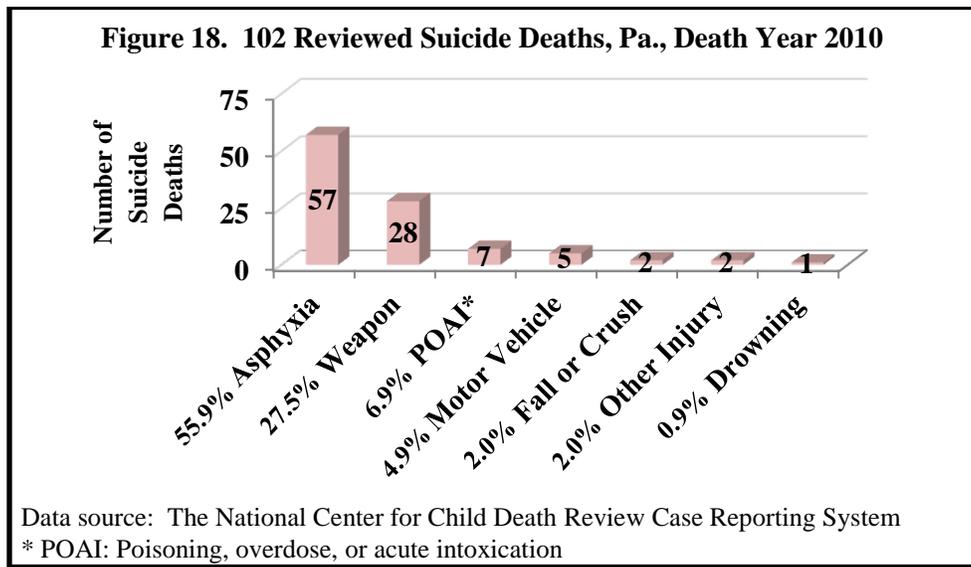
Source: DOH, BHSR; Population Source: U.S. Census Bureau, 2010 Census
 * per 100,000 population
 Notes: Rates based on less than 10 events are considered statistically unreliable and are not displayed (ND).
 See technical notes (Appendix D) for the International Classification of Diseases (ICD) codes used for the cause of death categories shown.

Age In Years	Suicide By Firearm		Suicide By Other Means		Total	
	Number	Rate*	Number	Rate*	Number	Rate*
18–21	87	3.8	142	6.2	229	10.0

Source: DOH, BHSR; Population Source: U.S. Census Bureau, American Community Survey
 * per 100,000 population
 See technical notes (Appendix D) for the International Classification of Diseases (ICD) codes used for the cause of death categories shown.

Reviewed Suicide Deaths

Of the 1,501 reviewed deaths, 102 (6.8 percent) were determined to have been suicides. Of the 102 suicide deaths, the leading cause was suicide by asphyxia, followed by suicide by weapon (Figure 18). Generally defined, deaths by asphyxia are those caused by a deprivation of oxygen, and can be caused by strangulation, suffocation, choking or smothering.



Of the 102 reviewed suicide deaths, most (70.6 percent) occurred in children 18 through 21 years of age. There were 29 suicide deaths reviewed in children 10 through 17 years of age, and one in children under 10 years. Asphyxia was the cause of death in 52.8 percent of the reviewed suicide deaths in children 18 through 21 years of age, and it was the cause in 62.1 percent of the reviewed suicide deaths in children 10 through 17 years (Table 41)

Table 41. Reviewed Suicide Deaths by Cause and Select Age Groups, Pa., Death Year 2010

Manner of Death	Cause of Death	Age Group (In Years)			Total	
		< 10	10-17	18-21		
Suicide	Any medical cause	0	0	0	0	
	Motor vehicle	0	3	2	5	
	Fire, burn, or electrocution	0	0	0	0	
	Drowning	0	1	0	1	
	Asphyxia	1	18	38	57	
	Weapon	0	4	24	28	
	Animal bite or attack	0	0	0	0	
	Fall or crush	0	1	1	2	
	Poisoning, overdose or acute intoxication	0	1	6	7	
	Exposure	0	0	0	0	
	Other injury	0	1	1	2	
	Undetermined injury	0	0	0	0	
	Unknown	0	0	0	0	
	Total		1	29	72	102

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

Contributing Factors and Circumstances in Reviewed Suicide Deaths

Of the 102 suicide deaths reviewed, 64 were cases in which the review process was able to determine and record factors that either caused or contributed to those deaths. Within the Child Death Review case reporting system, review team members recorded specific factors and circumstances as either present or likely present.

Of the 64 cases, 46.9 percent were identified to be persons who received prior mental health services. A history of substance abuse was present in 32.8 percent of those cases (Table 42).

Table 42. Reviewed Suicide Deaths by Selected Factors and Circumstances, Children 21 Years of Age and Under, Pa., Death Year 2010	Suicide		
	Caused	Contributed	Total
Deaths Reviewed	59	5	64
Child/Young Adult History			
History of substance abuse	17	4	21
Drug/alcohol impaired at time of incident	20	1	21
History of mental illness	20	0	20
Criminal history on delinquency	12	0	12
Spent time in juvenile detention	10	0	10
Child Protective Services			
Open Child Protective Services case at time of death	0	0	0
Child had history of maltreatment as victim	8	0	8
Child placed outside of home	6	0	6
Circumstances			
Child/young adult left a note.	16	3	19
Child/young adult talked about suicide.	15	3	18
Prior suicide threats were made.	19	2	21
Prior attempts were made.	10	2	12
Suicide was completely unexpected.	30	0	30
Child/young adult had received prior mental health services.	27	3	30
Child/young adult was receiving mental health services at time of death.	13	1	14
Child/young adult was on medications for mental illness.	12	1	13
Child/young adult had history of self-mutilation.	7	2	9
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" (Section I, Question 1 in CDR Case Reporting System). Child placed outside of home refers to placement in foster care including licensed and relative/kinship foster homes.			

Of the 102 suicide deaths reviewed, 84.3 percent were determined to have probably been preventable. Of those 86 preventable suicides, 55.8 percent were suicides by asphyxia, and 24.4 percent were suicides by weapon.

Suicide Prevention Initiatives and Strategies

Suicide affects not only individuals but families and communities as well. 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.

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.

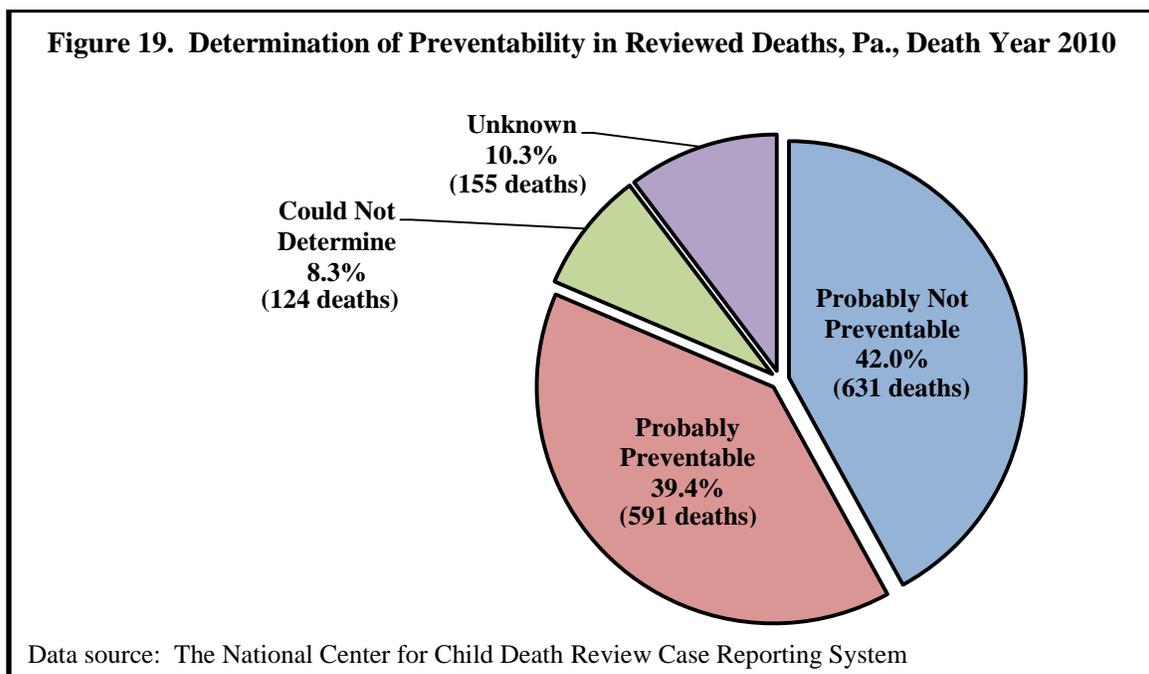
The AAP Task Force on Mental Health recommends screening children for mental health issues at every doctor visit and developing a network of mental health professionals in the community to whom physicians can refer patients if they suspect a child needs further evaluation.

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.

Pennsylvania's child death review process is one in which 62 local teams determine preventability for the deaths they review within their jurisdictions. Local factors, resources and circumstances impact these determinations. While there is an inherent element of subjectivity involved, all teams adhere to the following definition when making this determination:

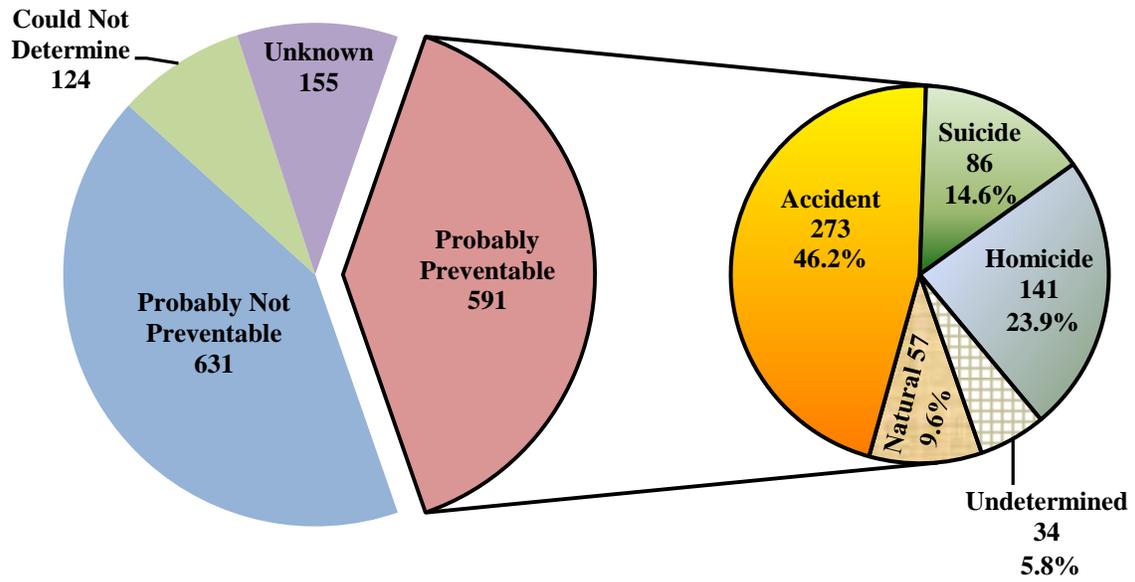
A child's death is preventable if the community or an individual could reasonably have done something that would have changed the circumstances that led to the death.

In 2010, there were a total of 2,138 child deaths, and 70.2 percent of those were reviewed (Table 1). Of the reviewed deaths, 39.4 percent were identified as ones that were probably preventable and 42 percent identified as probably not preventable (Figure 19).



A closer examination of those 591 deaths determined to have been probably preventable revealed 46.2 percent were deaths in which the manner was determined to be accidental. Homicides were the next highest category with 23.9 percent, which was followed by suicides with 14.6 percent (Figure 20).

Figure 20. Reviewed Deaths Determined to be Probably Preventable, Pa., Death Year 2010



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

Recommendations and Actions Taken

Information gathered from the 2010 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 for coroners, emergency responders and law enforcement on the Centers for Disease Control and Prevention (CDC) infant death scene investigation protocol. Adherence to the CDC protocol is critical to ensure the preservation of death scene evidence and consistent infant death investigation. Local teams continue to recommend education and the development of child death scene protocols for each county. In 2014 the department, in cooperation with the PA Chapter of the American Academy of Pediatrics as well as other stakeholders, will deliver two statewide trainings for coroners and medical examiners, as well as other professionals involved in the investigation of child deaths. Re-enactment dolls and tool kits will be provided to all those coroner and medical examiner offices that participate in the training. The principal purpose of developing the training and accompanying protocols is to establish 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. As bullying is seen to play a part in many suicide deaths, recommendations have included providing additional funding for the 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 on-going 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.

Conclusion

There were 2,138 child deaths in Pennsylvania in 2010. Almost half, 1,035 (48.4 percent), were infant deaths. While the infant mortality rate had risen slightly from 7.0 per 1,000 live births in 2000, it had changed little since 2005, when it was 7.2 per 1,000 live births. However, within the Hispanic population, a statistically significant increase in the infant mortality rate of 12.3 percent, from 6.5 to 7.3, was realized between the three-year periods 2005–2007 and 2008–2010. Across those same periods, a statistically significant decrease of 8.8 percent, from 16.6 to 15.1, was realized within the black population. Despite that significant decrease in the black infant mortality rate, it remained over two times as high as the overall (all races) infant mortality rate of 7.3 per 1,000 live births, as well as the white infant mortality rate of 6.4 per 1,000 live births. Pennsylvania's overall 2010 infant mortality rate of 7.3 did not achieve the Healthy People 2010 goal of 4.5, as well as the Healthy People 2020 goal of 6.0. Prematurity and low birth weight is a leading cause of all infant deaths. The leading cause of postneonatal deaths was sudden infant death syndrome.

There were a total of 1,517 deaths in children under 18 years of age in 2010. Of those, 482 were deaths in children aged 1 through 17 years. Of the total deaths in children 1 through 17 years of age, 62.9 percent were deaths in males and 37.1 percent were deaths in females. The mortality rate in all children aged 1 through 17 years decreased by 24.5 percent between 2005 and 2010. In 2005, the mortality rate was 24.1 per 100,000 population and in 2010 it was 18.2 per 100,000 population. Despite this overall decrease, in 2010, the rate of deaths in black children, 34.6 per 100,000 population, remained approximately two times the rate realized in white children, 17.2 per 100,000 population. For the three-year period 2008–2010, accidents (unintentional injuries) were the leading cause of death among all children 1 through 21 years of age. For that same period, as a cause of death, intentional self-harm (suicide) ranked highest (second place) within the age group 10 through 17 years. Within the age group 18 through 21 years, assault (homicide) ranked second and suicide ranked third. Among children aged 10 through 17 years, the suicide death rate was 1.5 times greater among black children than among white children.

Approximately 70 percent of the 2010 child deaths were reviewed by Pennsylvania's local Child Death Review teams. Of those reviewed deaths, 39.4 percent were identified as ones that were probably preventable. Evidenced-based strategies are needed to address racial disparities in infant and child mortality. In addition, any efforts to lower overall child fatalities must be coordinated with activities aimed at addressing infant deaths. The data presented here serve to inform the prevention efforts and policy recommendations made by the Pennsylvania State Child Death Review Team.

2013 Local Team Chairs and Co-Chairs

<p>Adams County Child Death Review Team Melody Jansen State Health Department</p>	<p>Centre County Child Death Review Team Judy Pleskonko Centre County Coroner's Office</p>
<p>Allegheny County Child Death Review Team Renee Joiner / Jennifer Fiddner / Bobbi Patrizio Allegheny County Health Department</p>	<p>Chester County Child Death Review Team Ashley Orr Chester County Health Department</p>
<p>Armstrong County Child Death Review Team Denny Demangone Armstrong County CYF</p>	<p>Clarion County Child Death Review Team Kay Rupert Clarion County Children and Youth Services</p>
<p>Beaver County Child Death Review Team Timmie Patrick Beaver County Detective Bureau</p>	<p>Clearfield County Child Death Review Team Kelly Pentz PADOH-Clearfield County State Health Center</p>
<p>Bedford County Child Death Review Team Bonnie Bisbing Bedford County Children and Youth Services</p>	<p>Clinton County Child Death Review Team Jennifer Sobjak Clinton County Child and Youth</p>
<p>Berks County Child Death Review Team Brandy Neider / Mark Reuben Children and Youth Services County of Berks (Ms. Neider) and Reading Pediatrics Inc. (Mr. Reuben)</p>	<p>Columbia County Child Death Review Team Lori Mastelher Coroner's Office Columbia County</p>
<p>Blair County Child Death Review Team Patricia Ross Blair County Coroner's Office</p>	<p>Crawford County Child Death Review Team Darlene Hamilton Crawford County State Health Center</p>
<p>Bradford County Child Death Review Team Thomas Carman Bradford County Coroner Officer</p>	<p>Cumberland County Child Death Review Team – Currently, there is no team in this county.</p>
<p>Bucks County Child Death Review Team Nancy Morgan Bucks County Children and Youth Services</p>	<p>Dauphin County Child Death Review Team Joseph Whalen / Kathryn Crowell Dauphin County MH/MR (Mr. Whalen), and Penn State Children's Hospital (Ms. Crowell)</p>
<p>Butler County Child Death Review Team Leslie Johnson Butler County MH/MR Program</p>	<p>Delaware County Child Death Review Team Megan Fulton / David McKeighan Delaware County Children and Youth Services (Ms. Fulton), and Delaware County Medical Society (Mr. McKeighan)</p>
<p>Cambria County Child Death Review Team Dennis Kwiatkowski / Jeffrey Lees Cambria County Coroner's Office</p>	<p>Elk and Cameron County Child Death Review Team Robert Lion PADOH Elk County State Health Center</p>
<p>Cameron County Child Death Review Team – See Elk and Cameron County Child Death Review Team</p>	<p>Erie County Child Death Review Team Patty Puline Erie County Department of Health</p>
<p>Carbon County Child Death Review Team Bruce Nalesnik Carbon County Coroner's Office</p>	<p>Fayette County Child Death Review Team Gina D'auria / John Fritts Fayette County Children and Youth Services</p>

2013 Local Team Chairs and Co-Chairs

<p>Forest and Warren County Child Death Review Team Jan Burek / Kevin Lundeen Forest and Warren County Department of Human Services</p>	<p>Lehigh County Child Death Review Team Belle Marks / Darbe George Allentown Health Bureau (Ms. Marks), and Lehigh County Drug and Alcohol (Mr. George)</p>
<p>Franklin and Fulton County Child Death Review Team Paul (Ted) Reed Franklin County Coroner's Office</p>	<p>Luzerne County Child Death Review Team 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)</p>
<p>Fulton County Child Death Review Team – See Franklin and Fulton County Child Death Review Team</p>	<p>Lycoming County Child Death Review Team Charles Kiessling Lycoming County Coroner's Office</p>
<p>Greene County Child Death Review Team Jennifer Johnson Greene County Children and Youth Services</p>	<p>McKean County Child Death Review Team Vickie Skvarka Pennsylvania Department of Health</p>
<p>Huntingdon County Child Death Review Team Paul Sharum Huntingdon Coroner's Office</p>	<p>Mercer County Child Death Review Team Teri Swartzbeck Mercer County Children and Youth Services</p>
<p>Indiana County Child Death Review Team Michael A. Baker / Paula McClure Indiana County Coroner's Office (Mr. Baker), and Indiana County Children and Youth Services (Ms. McClure)</p>	<p>Mifflin County Child Death Review Team Mackenzie Seiler / Daniel Lynch Mifflin County Children and Youth Services (Ms. Seiler), and Mifflin County Coroner's Office (Mr. Lynch)</p>
<p>Jefferson County Child Death Review Team Bernard P. Snyder Jefferson County Coroner's Office</p>	<p>Monroe County Child Death Review Team Geoffrey Roche / Paula Dahlenburg Pocono Health System</p>
<p>Juniata County Child Death Review Team Linda Allen Pa. Department of Health</p>	<p>Montgomery County Child Death Review Team Barbara Hand Montgomery County Department of Health</p>
<p>Lackawanna County Child Death Review Team Jeanne Rosencrance / Eugene Talerico Lackawanna County District Attorney's Office</p>	<p>Montour County Child Death Review Team Scott Lynn Montour County Coroner's Office</p>
<p>Lancaster County Child Death Review Team Carroll Rottmund Lancaster County Coroner's Office</p>	<p>Northampton County Child Death Review Team Sue Madeja Bethlehem Health Bureau</p>
<p>Lawrence County Child Death Review Team Sue Ascione Children's Advocacy Center</p>	<p>Northumberland County Child Death Review Team Melissa DeBaro Geisinger Child Advocacy Center</p>
<p>Lebanon County Child Death Review Team Janet Bradley First Aid and Safety Panel</p>	<p>Perry County Child Death Review Team Shelley Dreyer-Aurila Perry County Family Center, Inc.-Safe Kids</p>

2013 Local Team Chairs and Co-Chairs

<p>Philadelphia County Child Death Review Team David Bissell / Roy Hoffman Philadelphia Department of Public Health</p>	<p>Union County Child Death Review Team Matt Ernest Union County Children and Youth Services</p>
<p>Pike County Child Death Review Team Kevin Stroyan / Jill D. Gamboni Pike County Coroner's Office (Mr. Stroyan), and Pike-Safe Kids (Ms. Gamboni)</p>	<p>Venango County Child Death Review Team Diana Erwin Pa. Department of Health</p>
<p>Potter County Child Death Review Team Joy E Glassmire Potter County Human Services</p>	<p>Warren County Child Death Review Team – See Forest and Warren County Child Death Review Team</p>
<p>Schuylkill County Child Death Review Team Katherine Schuck / Heidi Eckert / Marion Lech Schuylkill County Coroner's Office (Ms. Schuck), and Schuylkill County Children and Youth Services (Ms. Eckert), and PADOH, Schuylkill County State Health Center (Ms. Lech)</p>	<p>Washington County Child Death Review Team Jennifer Lytton Washington Children and Youth Service</p>
<p>Snyder County Child Death Review Team Heather Keister County of Snyder District Attorney's Office</p>	<p>Wayne County Child Death Review Team Sharon Gumper / Edward Howell Wayne County Coroner Office</p>
<p>Somerset County Child Death Review Team Doug Walters Somerset County Children and Youth</p>	<p>Westmoreland County Child Death Review Team Kristine M Demnovich Westmoreland County Juvenile Probation</p>
<p>Sullivan County Child Death Review Team Wendy Hastings Sullivan County Coroner's Office</p>	<p>Wyoming County Child Death Review Team – See Susquehanna and Wyoming County Child Death Review Team</p>
<p>Susquehanna and Wyoming County Child Death Review Team Cheryl McGovern PADOH, Wyoming County State Health Center</p>	<p>York County Child Death Review Team Sheila Becker / David Turkewitz York Hospital</p>
<p>Tioga County Child Death Review Team Patricia Riehl Tioga County Human 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 one 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

Table 29 and Table 30:

ICD-10 codes associated with Intentional Self-harm (Suicide) for:

Pennsylvania: X60-X71, X72-X74, X75-X84, Y87.0, U03

United States: X60-X64, X66-X69, X70-X74, X76, X78, X80-X84

Endnotes

¹ 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. This policy statement and technical report is available at <http://pediatrics.aappublications.org/cgi/doi/10.1542/peds.2011-2284>

² 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 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

³ Accidents: Based on International Statistical Classification of Diseases and Related Health Problems (ICD)-10 codes within the following ranges: V01–X 59, Y85–Y86

⁴ Arnett J. Reckless behavior in adolescence: a developmental perspective. *Dev Rev* 1992. 12339–373.373.

⁵ 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.



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.

Division of Child and Adult Health Services
Bureau of Family Health