

2019 Pennsylvania Child Death Review Annual Report

**Bureau of Family Health
Division of Bureau
Operations**

September 2019



pennsylvania
DEPARTMENT OF HEALTH

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Acknowledgements

The 2019 Child Death Review (CDR) Annual Report is a publication of the Pennsylvania Department of Health (DOH) under the requirements of Act 87 of 2008.

The CDR process begins when the Department of Health, Bureau of Health Statistics and Registries (BHSR), provides vital statistics information to local CDR teams on a monthly basis. Without BHSR's assistance, local teams would not receive the information as quickly, and their support is greatly appreciated.

The data collected by the local CDR teams are housed in the web-based National Child Death Review Case Reporting System (NCFRP-CRS). This data system was developed in collaboration with the National Center for Fatality Review and Prevention and state CDR programs and was supported, in part, by a grant from the Maternal and Child Health (MCH) Bureau (Title V, Social Security Act), Health Resources and Services Administration, U.S. Department of Health and Human Services. The National Center for Fatality Review and Prevention also graciously provides technical assistance to Pennsylvania. In addition, the Centers for Disease Control and Prevention (CDC) provides funding and assistance to the department to support the activities related to the Sudden Unexpected Infant Death (SUID) and Sudden Death in the Young (SDY) Registries.

This report presents information on the distribution and causes of child deaths in Pennsylvania and reflects information collected by the local teams during the CDR process. The CDR process and the data derived from it are the result of a collaboration between the department and local CDR teams. The local teams collaborate with their local prevention partners to develop programs, activities and education efforts aimed at preventing child deaths. The department would like to thank the statewide and local prevention partners for their assistance moving data into action.

The department would like to acknowledge the contribution of the local CDR teams and the state CDR Team, without whom this data and the entire CDR program in Pennsylvania would not be possible.

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About this Report

The data provided in this report are based on the year of death and not the review year. It focuses on those child deaths occurring in 2016 and 2017 and the reviews of those deaths. Primarily, the data outlined in this report were extracted from the NCFRP-CRS and supplemented by other sources where noted.

Introduction

The purpose of Pennsylvania's Child Death Review (CDR) Annual Report is twofold. The first is to summarize the findings from the reviews of child deaths and make recommendations about how to utilize those findings to inform prevention strategies and programming. Secondly, this report highlights some of the prevention work accomplished locally and at the state level throughout the year. Pennsylvania's CDR Program continues to explore and pursue opportunities for supporting local teams in their work. The department recognizes the importance of evidence-based prevention strategies and the value of effective death reviews to inform those strategies. Through this program, deaths among Pennsylvania's children can be better understood, and interventions designed to prevent future deaths can be identified.

The NCFRP-CRS is the primary source of data for the Pennsylvania CDR Annual Report. This data is based entirely on information collected and entered by local CDR teams. The report also includes child mortality rates from the CDC's Wide-Ranging Online Data for Epidemiologic Research (CDC WONDER) for context and comparison.

An effective child death review requires participation from agencies and individuals at a state and a local level. The review process is initiated when information collected from death certificates, birth certificates and traffic accident reports is compiled by department staff and securely transferred to local county teams on a quarterly basis. Local teams use this information to initiate collaborative, multidisciplinary reviews. The death review process includes gathering available information related to the child's death and is not limited to only those items contained within death certificates. This includes, among other data, information derived from law enforcement reports, coroner reports, children and youth services records, emergency medical services trip sheets, hospital records, and traffic accident reports.

As with any team, the local CDR teams cycle through the various stages of functionality for a variety of reasons. Act 87 of 2008 provides a mandate for establishment of child death review teams in each of Pennsylvania's 67 counties, and teams consist of professionals from organizations and local agencies. Local CDR teams do not have dedicated staff and operate with limited resources. Turnover of team members can mean that teams are frequently operating in the beginning stages of team development, which impacts the quality of the reviews and the completeness of the data collection and data reporting. The Department of Health's Bureau of Family Health, provides training, support and technical assistance to all of Pennsylvania's local CDR teams.

Executive Summary

The data collected during the reviews of children's deaths occurring in 2016 and 2017 are the basis for this report. As per Act 87 of 2008, a child is defined as an individual 21 years of age and under. Reviews are conducted on deaths of Pennsylvania residents occurring in this age group. It is important to recognize that the number of deaths reviewed will not equal the total number of statewide deaths that occurred, and caution is stressed in drawing conclusions from the data of the reviewed cases. The number of deaths of children has remained relatively constant from 2010 to 2017, but there was a slight decrease from 2015 to 2017. The Bureau of Health Statistics and Registries data shows there were 2,018 deaths of children in 2016, reflecting a 1.6 percent decrease from 2,050 deaths in 2015. In 2017, there was a 1.7 percent decrease in the number of deaths (1,984) from 2016. Of the 2,018 deaths in **2016, 1,142 (56.6 percent) were reviewed and entered** into the NCFRP-CRS by local CDR teams. In **2017, 1,164 (58.7 percent) of the deaths were reviewed and entered.**

In 2016, 572 black or African American children died. Of those deaths, 402 (70.3 percent) were reviewed by local CDR teams. In 2017, 547 black or African American children died. Of those deaths, 405 (74.0 percent) were reviewed by local CDR teams. In 2016, 1,314 white children died. Of those deaths, 604 (45.0 percent) were reviewed by local CDR teams. In 2017, 1,286 white children died. Of those deaths, 639 (49.7 percent) were reviewed by local CDR teams.

The Pennsylvania rate of death for all children 21 years of age and younger for 2016 was 57.5 per 100,000 population and for 2017 was 56.4 per 100,000 population. These **rates are slightly higher than the CDC WONDER national rates** of 56.4 per 100,000 population in 2016 and 55.5 per 100,000 population in 2017. Overall, rates in Pennsylvania have decreased from a high of 69.1 per 100,000 population in 2002 but are not as low as the lowest rate of 51.2 per 100,000 population in 2014.

In Pennsylvania and nationally, **deaths of black or African American children and youth occur at a higher rate than children of other races.** The 2016 Pennsylvania rate saw an increase in the rate of black or African American children's deaths from 92.1 per 100,000 population to 103.1 per 100,000 population. While the national rate remained consistent 93.1 per 100,000 population in 2016 compared to 90.8 per 100,000 population in 2015. Both the national rate and the Pennsylvania rate of African American children's deaths saw a decline in 2017. The Pennsylvania rate decreased from 103.1 per 100,000 population to 98.4 per 100,000 population. While the rate did decrease in 2017, the Pennsylvania rate of death for black or African American children has been trending upward since 2014. The national rate has remained consistent after a sharp rise from 86.2 per 100,000 population 2014 to 90.8 per 100,000 population in 2015. **Black or African American children die at a rate more than twice that of white children. Of the 532 deaths of black or African American children in 2016 57.9 percent (308) were infants. In 2017, 52.5 percent (287) of the 547 deaths of black or African American children were infants.**

In Pennsylvania, the **rate of death for white children remained relatively flat** after a slight rise in 2016 to 49.8 per 100,000 population from 47.9 per 100,000 population in 2015. In 2017, the Pennsylvania rate was 49.1 per 100,000 population, which is similar to the national rate of 48.9 per 100,000 population. The rate of death for Asian or Pacific Islander children

residing in Pennsylvania deceased from 37.4 in 2015 to 30.3 per 100,000 population in 2016. The rate in Pennsylvania rose again in 2017 to 34.0 per 100,000 population, which is below the national rate of 35.0 per 100,000 population.

Nearly half of the 2016/2017 deaths reviewed were deaths among infants. There were 1,000 total infant deaths reviewed for both 2016 and 2017, representing 43.4 percent of all cases reviewed. Of the total number of infant deaths (1,698) in Pennsylvania in 2016 and 2017, 58.9 percent were reviewed. Children age 18 years through 21 years of age accounted for 31.6 percent of child deaths reviewed. Combined, these two age groups represent 75.0 percent of all child deaths reviewed in Pennsylvania. Of the total number of deaths of youth age 18 to 21 years (1,162) in Pennsylvania in 2016 and 2017, 62.7 percent were reviewed.

Based on the review data contained within the NCFRP-CRS, 809 cases (35.1 percent) were determined to have been preventable by the local CDR teams in 2016/2017. **Of these preventable deaths reviewed, 437 cases (54.0 percent) were accidental.** It is important to note the determination of preventability is a subjective measure determined by local teams based on the information available at the time of the review. This analysis is based on the data available in the NCFRP-CRS at the time of this report.

The highest single cause of death identified among infant deaths reviewed was prematurity, wherein 498 cases were reviewed in 2016 and 2017 with that cause of death (49.8 percent of all infant deaths reviewed). Further examination of the infant deaths revealed 142 cases were reviewed in which the death was determined to be related to Sudden Unexpected Infant Death (SUID). According to CDC WONDER data for 2016 and 2017, black or African American infants are disproportionately the largest race group affected by SUID. Local CDR teams found that 74 (52.1 percent) of the SUID deaths reviewed were likely preventable.

There were 381 cases reviewed in 2016/2017 in which weapons were involved in the child's death. **Weapon-related deaths accounted for the largest number of external injury deaths.** The majority of the deaths involving a weapon (85.3 percent) occurred among children between 15 and 21 years of age. An examination of the deaths involving weapons by manner of death and type of weapon revealed that homicides accounted for most, 247 cases (66.8 percent), and firearms accounted for 278 cases (75.1 percent). Of the weapon-related deaths reviewed in 2016 and 2017, 198 (52.0 percent) of the deaths were determined by the teams to be preventable.

Motor vehicle deaths were identified in 212 cases reviewed. The data revealed that **76.4 percent of children involved in motor vehicle deaths were between the ages of 15-21 years.** Of the motor vehicle deaths reviewed, 149 (70.3 percent) deaths were determined by the teams to be preventable.

An examination of the reviewed 2016/2017 deaths revealed that, in 207 cases, children's deaths involved a reported **poisoning, overdose or acute intoxication.** Of those deaths reviewed, **96.1 percent involved children between the ages of 15-21 years of age.** **Teams found that 179 (86.5 percent) of the poisoning, overdose or acute intoxication deaths reviewed were preventable.**

Recommendations

Data quality

CDR program data quality should continue to be addressed with local CDR teams on an ongoing basis by the department. With complete data entered in a timely fashion by local CDR teams, state and local CDR teams could:

- Focus on implementing prevention strategies to address specific local needs;
- Provide data supported recommendations on prevention strategies to county executive staff;
- Offer support for policy/ordinance changes at the local level;
- Effect improved coordination/collaboration among local CDR team member agencies and with local entities such as local suicide task forces and other prevention partners, and
- Enhance the state CDR team's advocacy efforts for state level recommendations, such as legislation, policy and system changes or prevention efforts.

Data found in the NCFRP-CRS is the only data of its kind; there is nothing currently available that can provide this level of detail regarding the circumstances of a child's death. In addition to being valuable in identifying effective and appropriate prevention efforts, data obtained through death reviews is essential to monitoring and evaluating those efforts. To be effective, the quality and timeliness of this data needs to be addressed, and core variable fields with missing/unknown entries need to be drastically reduced or eliminated. The department will continue to provide technical assistance and training to local CDR teams, as well as participate in the NCFRP's Data Quality Initiative.

Local support

Local CDR teams need support from local jurisdictions and community partners in addition to the efforts of the Department of Health. Act 87 requires that teams exist and function but leaves the leadership and support at the local level open to what is available and supported at the county level. Teams continue to find creative ways to support their work with the use of in-kind services and interns. County leadership should better serve its community by providing for the duties of CDR membership as part of the job requirements of the team's membership rather than in addition to current job duties. Any support, such as meeting space, administrative support and in-kind staff time, that county leadership can provide will enhance the quality of the death reviews and subsequent prevention efforts, which in turn will strengthen and improve the health of communities.

Disparities

CDR provides a unique opportunity to examine all circumstances surrounding a child's death, including the environmental and social contexts. The data clearly shows children of color die at higher rates than white children. It behooves local CDR teams to ask questions during reviews about why these disparities exist and what social, environmental and societal factors influence the disparities, as well as to document their findings. The answers to these questions can help frame prevention recommendations and efforts that will help to address the social determinants of health and the disparities that exist. In addition, local practices and police should be examined to identify areas for improvement in order to reduce disparities.

The department will continue to provide and share training opportunities and technical assistance that focus on eliminating disparities and improving outcomes for all of Pennsylvania's children and youth.

Preventable deaths

To formulate recommendations about prevention efforts, local CDR teams must first reach a decision as to whether or not a death was preventable. Deaths should be considered preventable if something could have reasonably been done that would have changed the circumstances that led to the death. The circumstances that lead to a child's death can be complicated and nuanced, particularly when considering the impact of social determinants of health. Consequently, at times, local CDR teams struggle with a preventable determination. The department will bolster teams' capacity by providing education and technical assistance in adopting a public health approach to determining whether a death is preventable and developing recommendations.

Regional teams

To address the deficiencies that local teams have in meeting the obligations of Act 87, consideration should be given to organizing regional teams. County teams that are not meeting regularly, have little participation or limited expertise should have the opportunity to meet together to review all cases within their region. With support and technical assistance from DOH, this concept will combine resources, build expertise and lead to an increase in quality of data. In the next year, the department will pilot one regional team to support the local review approach and to provide the tools to help local teams develop effective strategies to prevent injury and death of children within their respective counties.

Methods

An effective review requires using the information about the set of circumstances leading up to and causing a child death to improve systems and prevent future child deaths. The process is initiated when information collected from death certificates, birth certificates and traffic accident reports is compiled by department staff and securely transferred to local CDR teams on a quarterly basis. Local teams use this information to initiate collaborative, multidisciplinary reviews. The death review process includes gathering available information regarding the circumstances related to the child's death and is not limited to only those items contained within death certificates. This includes, among other data, information derived from law enforcement reports, coroner reports, children and youth services records, emergency medical services trip sheets, hospital records, and traffic accident reports. Cases are specifically assessed for preventability.

Currently, 63 teams represent all 67 Pennsylvania counties. Data regarding local CDR reviews for this report are gathered through the NCFRP-CRS based on information provided by counties. Only data included in the system can be reviewed and analyzed. The following information is known regarding how many local teams are actively reviewing cases and entering data in the NCFRP-CRS:

- Thirty-four teams are meeting regularly and entering case data.
- Five teams are meeting and have not entered data for 2016/2017.
- Twenty-seven teams are not known to be meeting and have not entered data for 2016/2017.
- During 2016/2017, no deaths occurred in one county. Therefore, the local CDR team did not meet and did not enter data.

Local CDR team members are comprised of community leaders who represent organizations and agencies that serve and protect children within their respective counties. Local CDR teams' core membership includes representation from the (1) coroner's or medical examiner's office, (2) district attorney's office, (3) local law enforcement, (4) court of common pleas, (5) medical and emergency medical communities, (6) county children and youth agency, and (7) public health agency. Most teams also include representation from behavioral health services, substance use disorder treatment providers, education and prevention partners.

Local CDR teams enter the data collected through the child death review process into the NCFRP-CRS. Department staff as well as the local CDR teams can then export and analyze the CDR data to better understand the manner and cause of death and all the factors present that may have led to each reviewed death. Department staff analyzed the 2016 and 2017 data to determine the most common causes of death by age and gender and race/ethnicity, using frequencies of death by cause and manner to determine which deaths were considered preventable and to identify factors that contributed to the deaths that can be used to inform prevention efforts both locally and statewide. If it is not stated that the data has been analyzed as separate years, then the two years' data (2016 and 2017) were combined for analysis in this report.

This CDR data is then supplemented with data from the CDC WONDER. This is a free online database maintained by the CDC. For the purposes of the annual report, CDC WONDER provides mortality rates by age, race/ethnicity and gender for the state that would not otherwise be available through the NCFRP-CRS for context and comparison. Additionally, the annual report compares Pennsylvania mortality rates to the national rates to determine if Pennsylvania rates are analogous. Pennsylvania and national mortality rates derived from CDC WONDER were plotted over time from 2013 to 2017 to determine if rates were increasing or decreasing. The mortality rates in conjunction with the NCFRP-CRS are used to identify populations most at risk for child deaths and to inform development of targeted prevention efforts/strategies. Most deaths are reviewed six to nine months after they occur. In Pennsylvania, local CDR teams review all deaths of children who are Pennsylvania residents, from birth through age 21 years. This includes deaths due to any cause or manner. A comprehensive review of a child's death requires the sharing of information from multiple sources on the wide-ranging set of circumstances leading up to and causing a child's death. As teams meet to conduct reviews, available information is compiled for each case. Each team has a designated individual(s) who subsequently enter this information into the NCFRP-CRS. Review data downloaded from the NCFRP-CRS were used in the development of this report. The data from the NCFRP-CRS used in the creation of this report were current as of June 12, 2019.

Limitations

Given that reviews are triggered by the filing of death certificates, the information available on death certificates may affect the review process through any limitations associated with the accuracy and reliability of the information stated on death certificates. For example, when cause of death is pending, teams sometimes set aside the reviews of those cases temporarily or locate the information from a participating coroner before initiating the review process.

It is important to recognize the number of deaths reviewed will not equal the total number of statewide deaths that occurred. According to the Bureau of Health Statistics and Registries, there were 4,002 deaths in children 21 years of age and younger in 2016 and 2017. Based on the review data contained within the NCFRP-CRS, 2,306 (57.6 percent) deaths were reviewed. Local CDR teams review deaths of Pennsylvania residents age 21 years and younger after death investigations are completed and death certificates are filed with the Pennsylvania Department of Health, Bureau of Health Statistics and Registries. The total number of deaths includes children and youth who die in Pennsylvania but were not Pennsylvania residents. Typically, cases involving the judicial system are not reviewed until that process is concluded to avoid jeopardizing the judicial process. Cases are sometimes delayed in the review process when team members representing law enforcement or the district attorney's office determine conducting a child death review could potentially impact an investigation or a prosecution. In other cases, core information surrounding the circumstances of the death is unavailable; therefore, a complete review is not possible. This occurs for several reasons, including those cases wherein released records are not provided by an agency, county or state (if the death occurred out-of-state) or if the information on the death certificate is inadequate to proceed. It is important to note CDR data was captured based on what was available to the teams at the time of the review. As a result, the data would likely be more complete if all information was available.

The information captured by the review team is to be entered and stored in the NCFRP-CRS. Data downloaded from that system were used in developing this report, and it is important to note cases within the system are at varying levels of completeness. While some review of cases was initiated, not all the fields of information, or components, were completed during the review or by the time of this report. Data entry into NCFRP-CRS was dependent upon local CDR teams' ability to identify staff to complete this task. Discussion or findings during reviews that were not entered in NCFRP-CRS or other reports completed by local CDR teams were not included in this report. For these reasons, it is important to recognize frequencies and percentages based on available review data should be applied cautiously in drawing inferences on total deaths statewide.

Findings

Data collected from reviews of child deaths occurring in 2016 and 2017 are the basis for this report. Act 87 of 2008 defines a child as an individual 21 years of age and under. Reviews are conducted of children's deaths from birth through age 21 years. Overall, there were fewer deaths of children in 2016 and 2017 than in 2015. The Bureau of Health Statistics and Registries data shows that there were 2,018 deaths of children in 2016, reflecting a 1.6 percent decrease from 2,050 deaths in 2015. In 2017 there was a 1.7 percent decrease in the number of deaths (1,984) from 2016. Of the 2,018 deaths in 2016, 1,142 (56.6 percent) were reviewed and entered in the NCFRP-CRS by local CDR teams. In 2017, 1,164 (58.7 percent) of the deaths were reviewed and entered. Figure 1: Number of Child Deaths Reviewed, shows the number of Pennsylvania child deaths reviewed by local CDR teams over the past eight years.

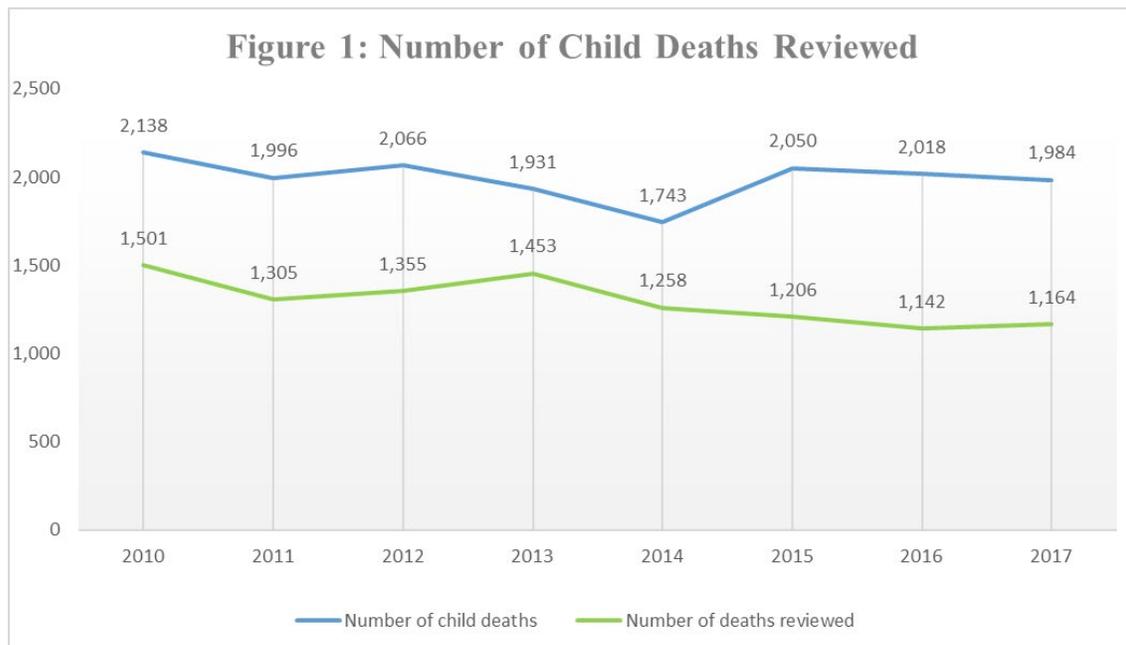


Figure 1 - 2016 and 2017 BHSR and NCFRP-CRS data, as well as 2014-2018 CDR annual reports *Numbers may have changed slightly since writing the report, as death certificates are entered, and cases are reviewed after the completion and issuance of the annual reports.

In 2016, 572 black or African American children died. Of those deaths, 402 (70.3 percent) were reviewed by local CDR teams. In 2017, 547 black or African American children died. Of those deaths, 405 (74.0 percent) were reviewed by local CDR teams. In 2016, 1,314 white children died. Of those deaths, 604 (45.0 percent) were reviewed by local CDR teams. In 2017, 1,286 white children died. Of those deaths, 639 (49.7 percent) were reviewed by local CDR teams.

It is important to note, while two-thirds of child deaths involve white children, there is a larger population of white individuals in Pennsylvania. Rates are used when comparing populations because they standardize population size and provide a more meaningful comparison between population groups. Figure 2, Pennsylvania and National Death Rates per 100,000

Black or African American children die at a rate more than twice that of white children.

Population by Race for All Children Age 21 and Under, shows data from CDC WONDER and highlights rates of death for children in Pennsylvania and in the nation based on race. In Pennsylvania, deaths of black or African American children occur at a higher rate than those of other races. In 2016, the Pennsylvania rate of black or African American children's deaths increased from 92.1 per 100,000 population to 103.1 per 100,000 population. The national rate has remained consistent after a sharp rise from 86.2 per 100,000

population 2014 to 90.8 per 100,000 population in 2015. Both the national rate and the Pennsylvania rate of black or African American children's deaths saw a decline from 2016 to 2017 from 103.1 per 100,000 population to 98.4 per 100,000 population. Black or African American children die at a rate more than twice that of white children.

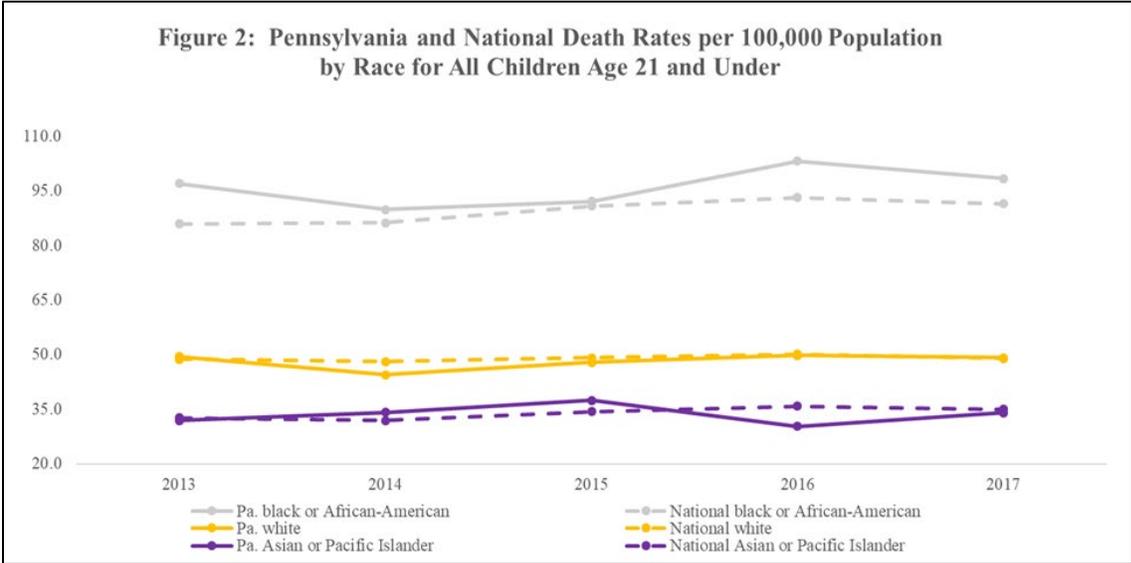


Figure 2 - Centers for Disease Control and Prevention, National Center for Health Statistics. Underlying Cause of Death 1999-2017 on CDC WONDER Online Database released December 2017. Data are from the Multiple Cause of Death Files, 1999-2017, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. Accessed at <http://wonder.cdc.gov/ucd-icd10.html> on July 18, 2018. 0.html on July 27, 2018

In Pennsylvania, the rate of death for white children remained relatively flat after a slight rise in 2016 to 49.8 per 100,000 population from 47.9 per 100,000 population in 2015. In 2017, the Pennsylvania rate was 49.1 per 100,000 population, which is similar to the national rate of 48.9 per 100,000 population. The rate of death for Asian or Pacific Islander children residing in Pennsylvania decreased in from 37.4 per 100,000 population in 2015 to 30.3 per 100,000 population in 2016. The rate in Pennsylvania rose again in 2017 to 34.0, which is similar to the national rate of 35.0 per 100,000 population.

An examination of the 2,306 reviewed 2016/2017 child death cases by race and ethnicity revealed that: 1) 53.9 percent of the children were identified as white; 2) 35.0 percent of the children were identified as black or African American; 3) in 2.5 percent of the cases, the children were identified as Asian or Pacific Islander; 4) in 2.1 percent of cases, the children were identified as multi-racial; and 5) in 3.0 percent, the children's races were unknown or no response was recorded. See Figure 3: Reviewed Deaths by Race of Child. In 153 cases (6.6 percent), the children's ethnicity was identified as Hispanic/Latino (all races).

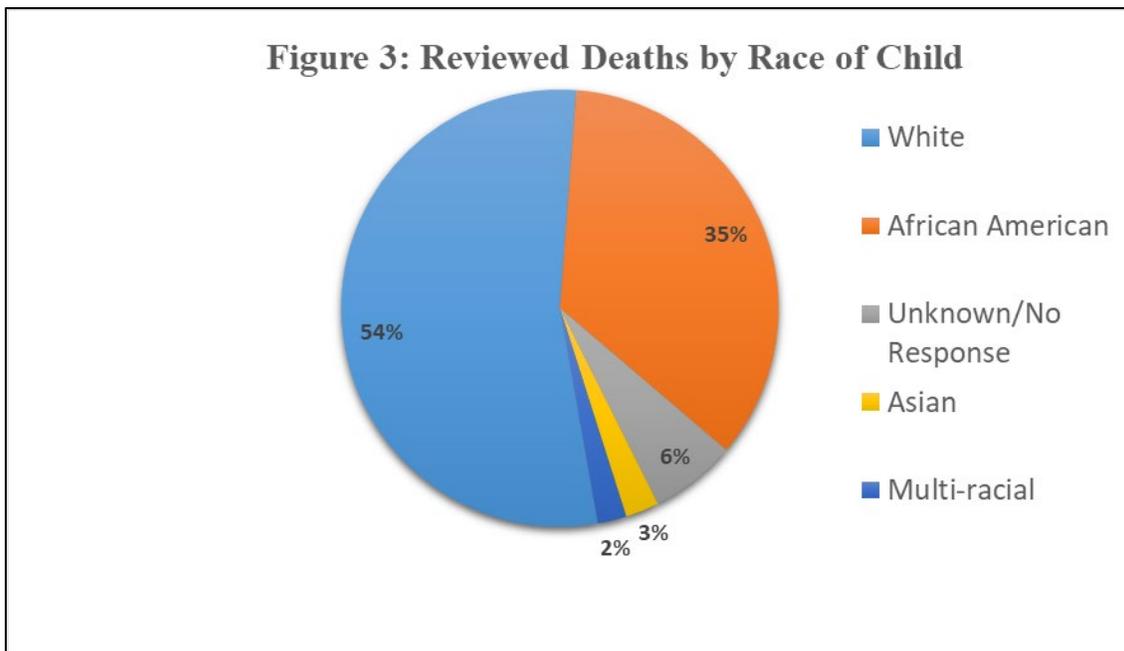


Figure 3 -- NCFRP-CRS, Year of Death: 2016 and 2017

Data from CDC WONDER reveals deaths of male children age 21 years and under in Pennsylvania occurred at a rate of 71.3 (2016) and 69.1 (2017) per 100,000 population, which is a higher than the rate of females (43.1 in 2016 and 43.2 in 2017). The Pennsylvania rate for females is relatively equal to the rate for females nationally. The Pennsylvania rate for males is slightly higher than the national rate for males (68.4 in 2016 and 67.5 in 2017). See Figure 4: Pennsylvania and National Death Rates per 100,000 Population by Gender for All Children Age 21 and Under.

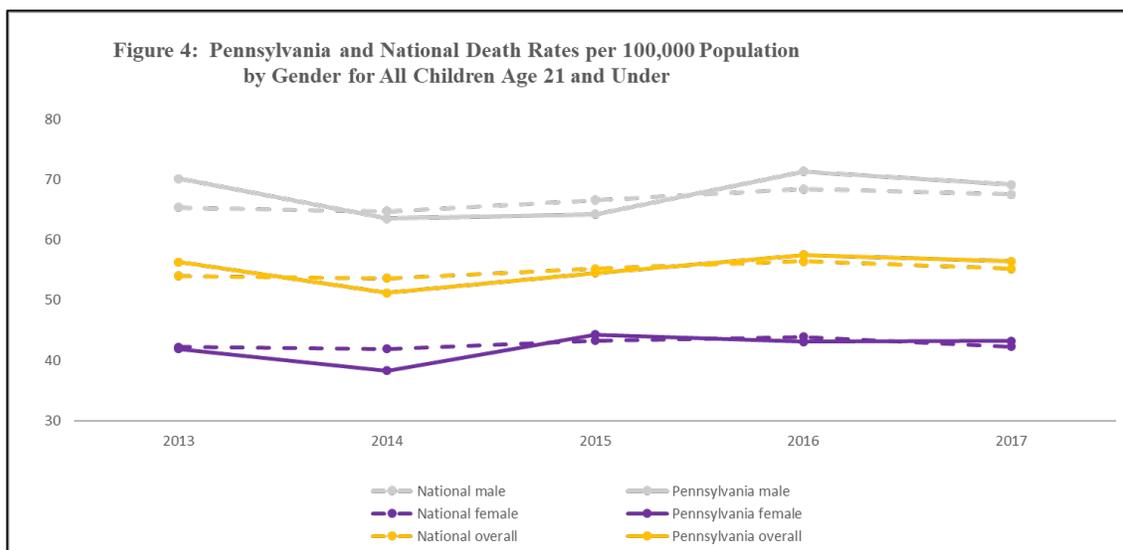


Figure 4 - Centers for Disease Control and Prevention, National Center for Health Statistics. Multiple Cause of Death 1999-2017 on CDC WONDER Online Database released December 2018. Data are from the Multiple Cause of Death Files, 1999-2017, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. Accessed at <http://wonder.cdc.gov/mcd-icd10.html> on Jul 25, 2019

Data from CDC WONDER shows that both nationally and in Pennsylvania, the largest rate of deaths by age group is infants (children less than 1 year old). The second largest number of deaths by age group is children age 18 to 21 years. Pennsylvania rates for both groups are higher than the national rates in 2016 and in 2017.

The rate of death for male children and youth is 1.6 times greater than female children and youth.

Of the 2,306 children whose 2016/2017 deaths were reviewed, 1,474 (63.9 percent) were male and 827 (35.8 percent) were female. More deaths of males were reviewed than females for every age category. See Figure 5: Reviewed Deaths by Gender and Age of Child. This is consistent with the rates of death being higher for males than females as shown in Figure 4 - Pennsylvania and National Death Rates per 100,000 Population by Gender for All Children Age 21 and Under. In addition, the proportion of deaths reviewed for both males (61.3 percent) and females (58.4 percent) is consistent with the total percentage of deaths reviewed (60.4 percent) for 2016/2017.

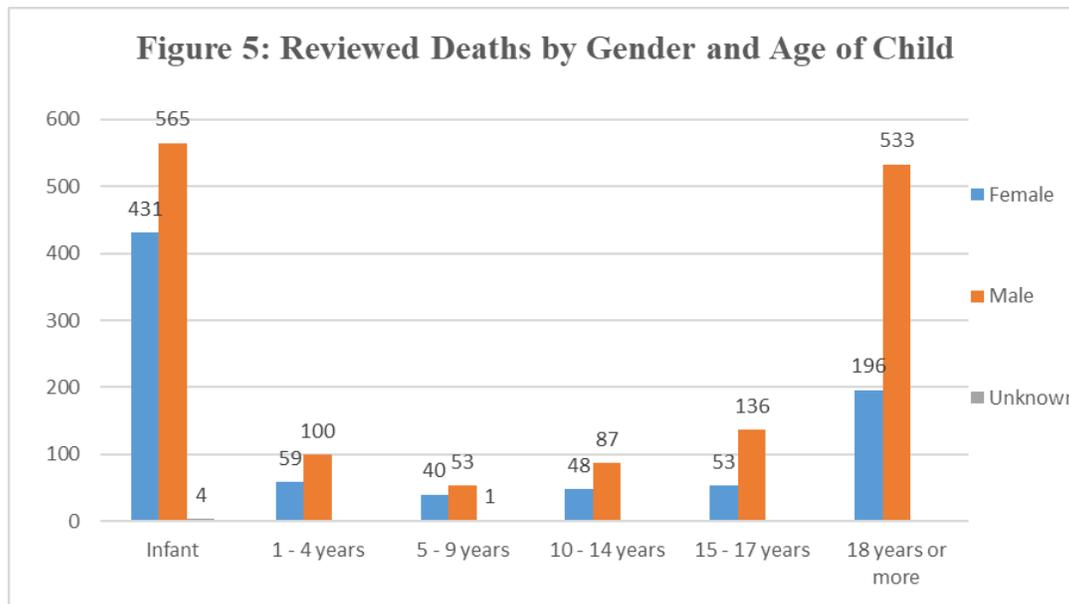


Figure 5- NCFRP_CRS 2016 and 2017

Nearly half of the 2016/2017 deaths reviewed were deaths among infants. There were 1,000 total infant deaths reviewed for both 2016 and 2017, representing 43.4 percent of all cases reviewed. Of the total number of infant deaths (1,698) in Pennsylvania in 2016 and 2017, 58.9 percent were reviewed. Children age 18 years through 21 years of age accounted for 31.6 percent of child deaths reviewed. Combined, these two age groups represent 75.0 percent of all child deaths reviewed in Pennsylvania. Of the total number of deaths of youth age 18 to 21 years (1,162) in Pennsylvania in 2016 and 2017, 62.7 percent were reviewed.

Based on CDC WONDER data for Pennsylvania, the death rate of infants decreased from 614.7 per 100,000 to 610.0 per 100,000 in 2016 and 607.9 per 100,000 in 2017. While the Pennsylvania rates are falling, the national rates are falling more quickly. In 2015, the national rate was 589.6 per 100,000 population. 2016 saw the rate drop to 583.4 per 100,000 and then to 567.2 per 100,000 in 2017. See Figure 6: Pennsylvania and National Death Rates per 100,000 Population - Infants.

Infants and young adults ages 18-21 years represent 75.0 percent of all child deaths reviewed in Pennsylvania.

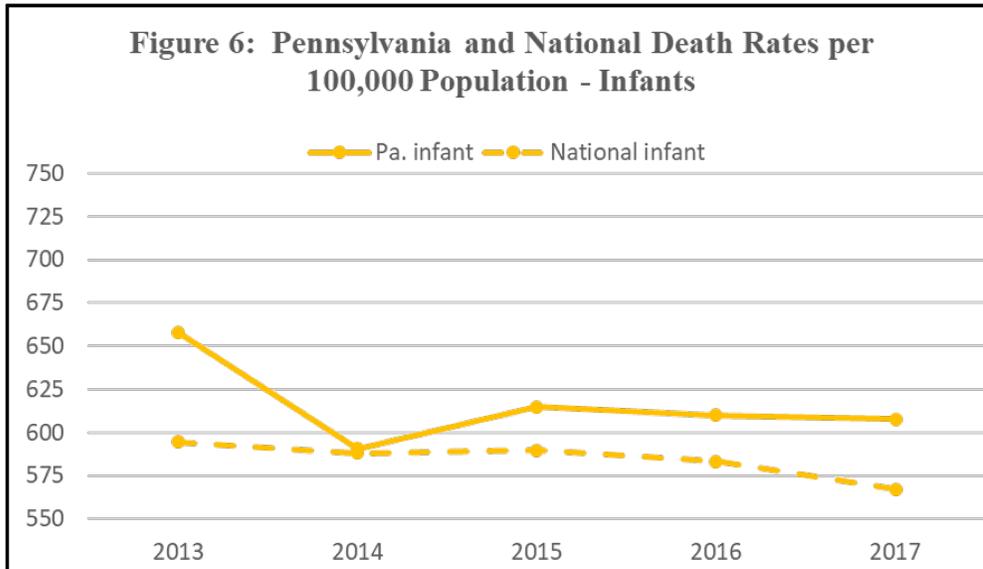


Figure 4 - Centers for Disease Control and Prevention, National Center for Health Statistics. Multiple Cause of Death 1999-2017 on CDC WONDER Online Database released December 2018. Data are from the Multiple Cause of Death Files, 1999-2017, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. Accessed at <http://wonder.cdc.gov/mcd-icd10.html> on Jul 25, 2019

An examination of the 2,306 reviewed deaths in Pennsylvania in 2016 and 2017 reflects what is seen in the national and state data for age categories. Infants (children less than 1 year of age) comprised the largest single age group of cases reviewed (43.3 percent). Infants and young adults age 18-21 years represent 75.0 percent of all child deaths reviewed in Pennsylvania.

In Pennsylvania, the death rate of young adults age 18-21 years old (74.2) in 2015 was similar to the national rate (74.3 per 100,000 population). In 2016, the national and the Pennsylvania rates increased to 79.9 per 100,000 population and 83.0 per 100,000 population, respectively. In 2017, the national rate remained about the same at 78.7 per 100,000 population, while the Pennsylvania rate again increased to 87.1 per 100,000 population. This is illustrated in Figure 7: Pennsylvania and National Death Rates per 100,000 Population - Individuals 18-21 years of age.

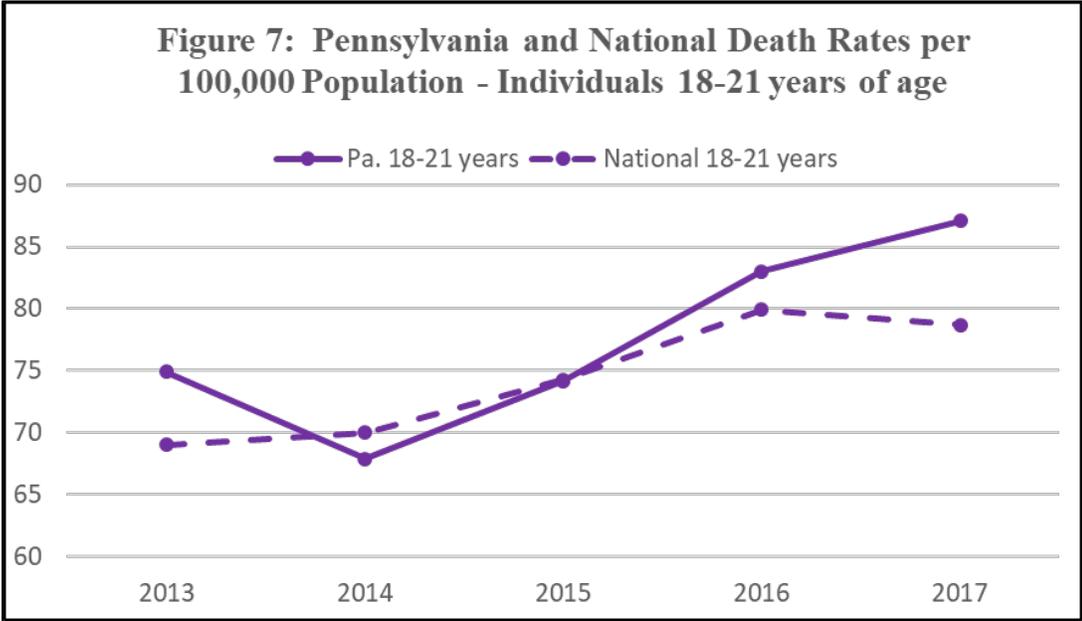


Figure 5 - Centers for Disease Control and Prevention, National Center for Health Statistics. Multiple Cause of Death 1999-2017 on CDC WONDER Online Database released December 2018. Data are from the Multiple Cause of Death Files, 1999-2017, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. Accessed at <http://wonder.cdc.gov/mcd-icd10.html> on Jul 25, 2019

Manner and Cause of Death

The manner and cause of death are determinations made by either the coroner or medical examiner. Pennsylvania has county government medical examiner offices in Philadelphia, Allegheny and Delaware counties and elected coroners in the other 64 counties. Conclusions regarding manner and cause of death are made following either an autopsy or medical review of the death. The manner of death relates to the categorization of circumstances of the death. The five categories of manner of death are natural, homicide, suicide, accident and undetermined. The cause of death is the physical condition that directly contributed to the person's death. The underlying cause of death is either the disease or injury that initiated the train of morbid events leading directly to death or the circumstances of the accident or violence that produced the fatal injury.² A cause of death on the death certificate represents a medical opinion that might vary among individual medical-legal officers.

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

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

It is important to note that within the NCFRP-CRS, manner of death is captured within seven (not five) possible categories. In addition to the five listed above, the system provides options for (1) pending and (2) unknown.

Child death review is a mechanism to describe the manners, causes and circumstances of child deaths more accurately. Understanding these elements is important when developing strategies to prevent deaths. The information in Figure 8: Manner of Deaths in Reviewed Cases shows the percentage of reviewed 2016/2017 deaths attributed to each of the five categories of the manner of death for all age categories. For children from birth to age 14 years, the most frequent manner of death identified is natural (74.4 percent). Whereas, for children age 15 years and up, deaths are most often identified as accidental (40.1 percent).

Figure 8: Manner of Death in Reviewed Cases

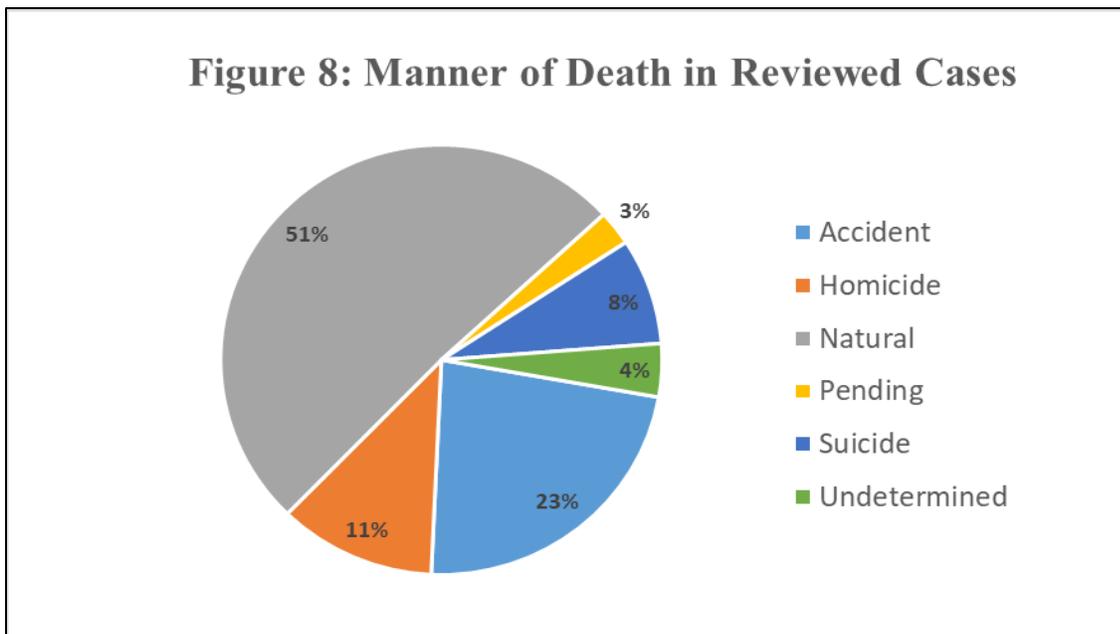


Figure 6 - NCFRP-CRS, Year of Death: 2016 and 2017

Once the manner of death is determined, the cause or physical condition that directly contributed to the death needs to be concluded. The causes of death are broken down into three broad categories:

- Medical conditions — deaths directly attributed to some type of disease or illness as the cause of death. The manner of these deaths is typically defined as natural.
- External causes — deaths which were directly a result of some external action against the body. The manner of these deaths can be accident, homicide or suicide.
- Unknown/undetermined — deaths for which a cause cannot be immediately identified.

Of the total 2,306 cases reviewed in 2016 and 2017, the category of medical conditions represented the single highest frequency with 1,162 cases (50.4 percent of the total deaths reviewed). The most frequent cause of death for these cases was prematurity (42.9 percent).

The next highest category of cause of death of reviewed cases was external causes, with 998 (43.3 percent) of the total deaths reviewed. The most frequent causes of death within external causes were weapons-related (38.2 percent), motor vehicle accidents (21.3 percent) and poison (20.7 percent), which includes intentional and unintentional overdose deaths.

An examination of the causes of death within the infant age group (less than 1 year old) revealed most reviewed infant deaths were due to prematurity. Of the total 1,000 infant deaths reviewed, 498 (49.8 percent) were due to prematurity. Of the 253 reviews conducted in deaths occurring in children aged 1 through 9 years, the most frequent causes of death reviewed were other medical conditions and external motor vehicle, identified in 32 (12.6 percent) and 31 (12.3 percent) cases, respectively. In the 324 reviews conducted on deaths occurring in children age 10 through 17 years, the most frequent cause of death was due to weapons, identified in 113 cases (34.9 percent). That was followed next in frequency by

motor vehicle accidents, identified in 50 cases (15.4 percent). An examination of the 729 reviews conducted on children age 18 through 21 years revealed the most frequently occurring cause of death was weapon-related, identified in 239 cases (32.8 percent). That was followed next by poisoning/overdose, identified in 187 cases (25.6 percent). Table 1: Causes of Death by Age Category shows child deaths as identified in the 2016 and 2017 CDR reviews by cause and age category.

	Cause of Death	Infant	1-4 years	5-9 years	10-14 years	15-17 years	18 years or older	Grand Total
External Causes	External-Weapon	7	16	6	27	86	239	381
	External-Motor Vehicle	2	20	11	17	33	129	212
	External-Poison	2	1	0	4	14	186	207
	External-Drown	1	15	8	4	6	15	49
	External-Asphyxia	31	3	4	2	2	6	48
	External-Fire, burn, elec	1	7	12	9	6	4	39
	External-Other	6	1	2	5	8	17	39
	External-Fall, crush	3	0	1	2	0	14	20
	External-Unknown	0	1	0	1	0	0	2
	External-Undetermined	1	0	0	0	0	0	1
	Subtotal external causes	54	64	44	71	155	610	998
Medical Conditions	MedCond-Prematurity	498	2	1	1	0	0	502
	MedCond-Congenital Anomaly	126	15	5	3	5	7	161
	MedCond-Other medical	61	21	11	13	9	23	138
	MedCond-Cancer	1	8	17	23	10	24	83
	MedCond-Other perinatal	61	3	0	0	1	0	65
	MedCond-Cardiovascular	21	9	2	6	2	20	60
	MedCond-Other Infection	20	6	3	3	0	6	38
	MedCond-Neurological, Seizure	3	6	4	4	1	11	29
	MedCond-Asthma	7	5	0	4	1	8	25
	MedCond-Pneumonia	7	7	1	0	1	3	19
	MedCond-SIDS	17	0	0	0	0	0	17
	MedCond-Other	2	2	1	1	2	1	9
	MedCond-Unknown	2	1	1	0	0	1	5
	MedCond-Influenza	1	0	1	2	0	0	4
	MedCond-Other med	0	0	0	2	0	0	2
	MedCond-Diabetes	0	0	0	0	0	1	1
	MedCond-Undetermined medical	1	0	0	0	0	0	1
	MedCond-Low Birth Weight	1	0	0	0	0	0	1
	MedCond-Malnutrition, Dehydration	0	1	0	0	0	0	1
	MedCond-HIV, AIDS	0	0	0	0	0	1	1
Subtotal medical condition	829	86	47	62	32	106	1,162	
Unknown	Undetermined if medical or external injury	72	3	0	0	0	2	77
	Unknown	43	6	3	2	2	11	66
	No Response	2	0	0	0	0	0	2
	Subtotal unknown/undetermined	117	9	3	2	2	13	145
	Grand Total	1,000	159	94	135	189	729	2,306

Prematurity

A premature birth is one that occurs before the 37th week of gestation. CDC WONDER data shows, in 2016/2017, there was a total 1,152 deaths of children who were born before 37 weeks gestation. The rate of death in 2016/2017 for children born to black or African American mothers (53.29 per 1,000 live births) is twice the rate for children born to white mothers (26.30 per 1,000 live births).

The rate of death of children born before the 37th week of gestation to black/African American mothers is twice the rate for children born to white mothers.

Local CDR teams reviewed 502 deaths where the cause was listed as prematurity. Of the 502 deaths in which prematurity was the cause, 340 (67.5 percent) of the mothers had some level of prenatal care. Of the deaths reviewed, 439 (87.5 percent) of the children resided in urban counties. Black or African American children deaths accounted for 214 (42.6 percent) of the deaths reviewed, and white children deaths accounted for 217 (43.2 percent) of the deaths reviewed.

Sudden Unexpected Infant Deaths (SUID)

According to the CDC, about 3,500 infants die suddenly and unexpectedly each year in the United States.³ These deaths are called sudden unexpected infant deaths. An autopsy alone cannot always explain these deaths without investigating the scene and reviewing the infant's medical history. The most common causes of SUID include the following:



- Sudden Infant Death Syndrome (SIDS) is the sudden death of an infant less than 1 year old that cannot be explained after a thorough investigation that includes a complete autopsy, examination of the death scene and a review of the medical history.
- Unknown cause is the sudden death of an infant less than 1 year old that cannot be explained. Often, a thorough investigation was not conducted, and cause of death could not be determined.
- Accidental suffocation and strangulation in bed (ASSB) includes suffocation by (1) soft bedding (for example, pillows covering an infant's nose and mouth), (2) overlays (for example, when a person rolls on top of or against an infant), (3) wedging or entrapment (for example, when an infant is wedged between two objects such as a mattress and wall, bed frame or furniture), and (4) strangulation (for example, when an infant's head and neck are caught between crib railings).

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. 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.⁴ Consequently, in 2011, the AAP expanded the recommendations from focusing only on SIDS to focusing on a safe sleep environment.

Safe Sleep ABCs

Alone -- Your baby should sleep by himself, never with another person or with anything else in the crib.

Back -- Your baby should always sleep on her back. Every time.

Crib -- Your baby should sleep in a crib in your room. The crib should have a firm mattress and a tightly fitted sheet.

An examination of Pennsylvania's reviewed infant deaths for 2016 and 2017 revealed that 142 (14.2 percent) of the 1,000 infant deaths were SUID-related cases. This is the second highest cause of death for infants, behind only prematurity. CDC WONDER data for Pennsylvania shows that black or African American infants die of SUID at more than twice the rate of white infants. This is illustrated in Figure 9: Pennsylvania and National Death Rates per 100,000 Live Births by Race for SUID-Related Deaths. While the overall SUID rate had seen a decline in 2014, it did rise slightly in 2015 and has remained relatively flat.

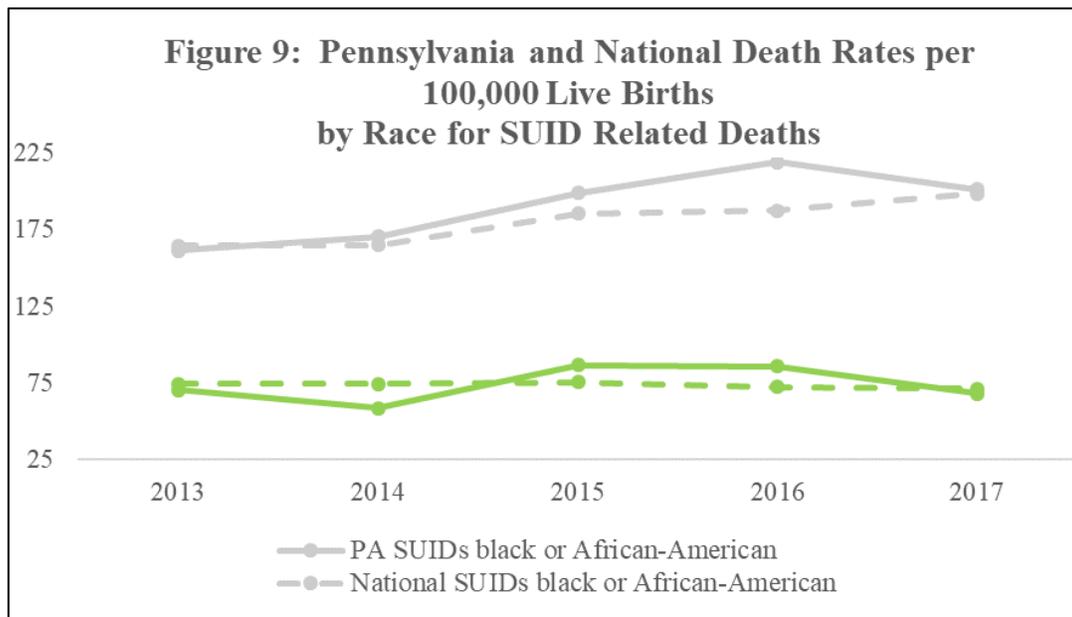


Figure 9 - CDC WONDER On-line Database. Accessed at <http://wonder.cdc.gov/lbd-current.html> on August 13, 2018

It is also important to note that black or African American and white children were the only population available for this comparison. Rates for American Indian or Alaskan Natives and Asian or Pacific Islanders are unavailable for Pennsylvania, as they are suppressed due to totals less than 9 children's deaths. However, national rates for American Indian or Alaska Natives are significantly higher than white and black or African American populations. Asian or Pacific Islander populations have the lowest rate of SUID-related deaths nationally.

Black or African American infants die of SUID at more than twice the rate of white infants.

The sleep locations for the 142 SUID-related deaths reviewed from the Case Reporting System varied. In 64.3 percent of these cases, the child was found in an adult bed, while 17.9 percent were found on a couch. Only 3.6 percent of the SUID cases occurred in the child's crib. Additionally, in 29.0 percent of the SUID deaths that were reviewed, the child was not sleeping on his/her back. In 46.9 percent of the SUID deaths reviewed, the child was sleeping with unsafe bedding or toys. Almost half (44.8 percent) of the cases identified as SUID-related deaths involved the child sleeping on the same surface with a person or an animal.

Deaths Involving a Weapon

During the child death review process, details pertaining to the circumstances surrounding the cases are discovered. Deaths associated with weapon use are examined to illuminate potential patterns and/or correlations on which subsequent prevention strategies can be developed.

There were 381 cases reviewed for 2016 and 2017 in which a weapon was identified and reported. Weapons-related deaths account for the largest number of external injury deaths and cross over multiple manner of death categories to include homicides, suicides and accidents. The majority of the deaths involving a weapon, 323 cases (87.3 percent), occurred among children between 15 and 21 years of age. See Figure 10: External-Weapon by Age Category. Death by weapons in males accounted for 312 (84.3 percent) of the cases, and deaths involving weapons among children and youth identified as black or African American accounted for 208 cases (56.2 percent).

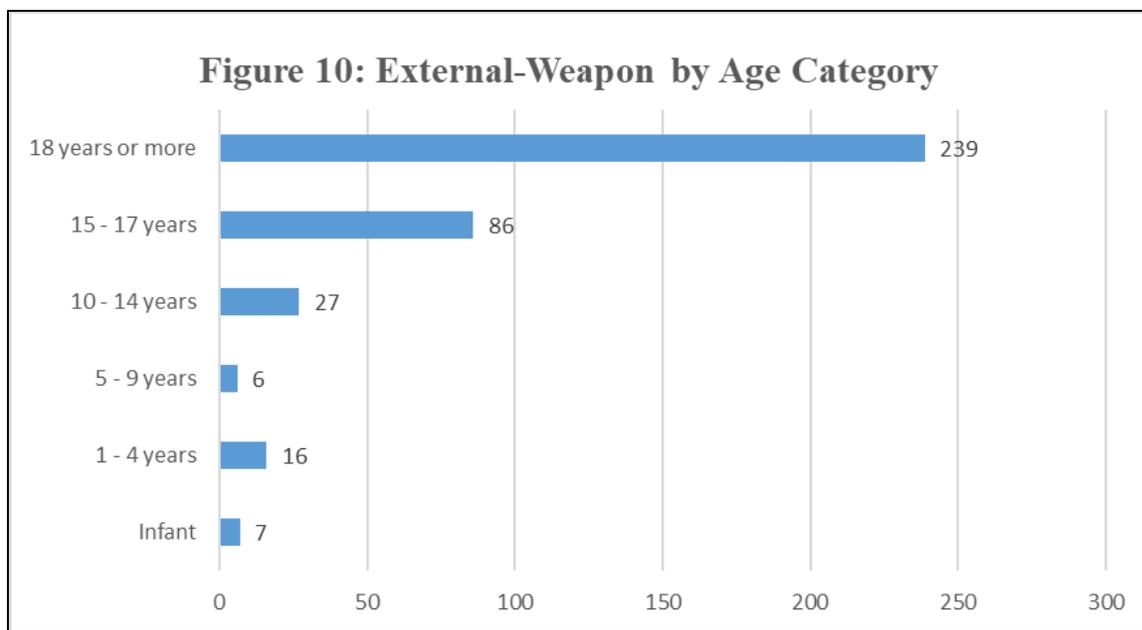


Figure 10 - NCFRP-CRS, Year of Death: 2016 and 2017

An examination of the deaths involving weapons by manner of death and type of weapon revealed that homicides accounted for most, 247 cases (66.8 percent), and firearms accounted for 278 cases (75.1 percent). Of the firearms-related deaths, 207 (74.5 percent) were determined to be homicide, while 60 (21.6 percent) were determined to be suicide. Additionally, 10 deaths were ruled accidental, and one was ruled undetermined.

Suicide Deaths

There were 184 cases reviewed for 2016 and 2017 in which suicide was the identified manner of death. In 118 of those cases (64.1 percent), weapons were the most prominent cause of death. The next most frequent cause of suicide deaths reviewed was asphyxia, which was used in 24 (36.8 percent) of suicide cases. Of the 118 suicide deaths reviewed involving a weapon, 47.4 percent (56) involved a firearm. A complete breakdown of these deaths is shown below in Figure 11: Reviewed Suicide Deaths by Cause.

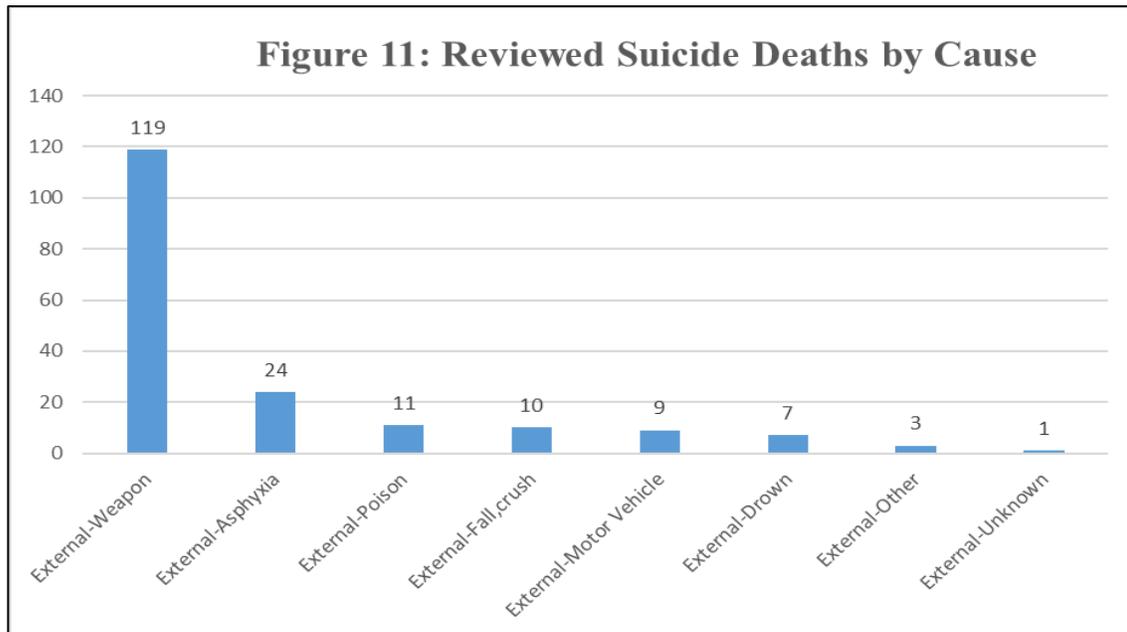


Figure 71- NCDR-CRS, Year of Death: 2016 and 2017

In 34 (18.5 percent) of the suicide cases reviewed, the child had talked about committing suicide. In 29 (15.89 percent) cases, the child made prior suicide threats. Lastly, in 35 cases (19.0 percent), the suicide was completely unexpected. While these questions have a significant portion of information listed as unknown or no response in the Case Reporting System, it is still important to note that, in more than 18.5 percent of the cases reviewed by teams, the child's suicidal ideation was known prior to the act.

Deaths Involving Poisoning, Overdose or Acute Intoxication

An examination of the reviewed 2016 and 2017 deaths revealed, in 207 cases, children's deaths involved a reported poisoning, overdose or acute intoxication. See a breakdown below in Figure 12: Reviewed Deaths Involving Poisoning by Circumstance. In 135 (66.2 percent) of those cases, the manner of death was determined to be accidental. Of these deaths, 187 (90.3 percent) of the children were 18 years old or older. Of the total reviewed deaths involving poisoning, 175 cases (83.1 percent) involved white children and 125 (60.4 percent) involved males.

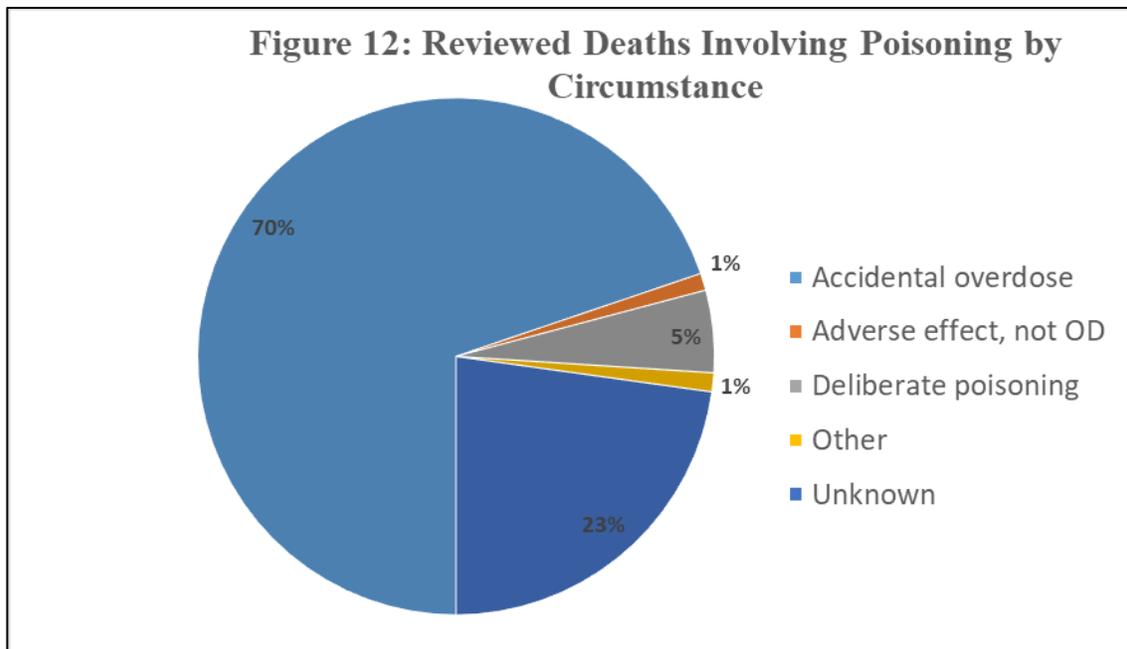


Figure 82-NCFRP-CRS, Year of Death: 2016 and 2017

Of the reviewed deaths related to poisoning, 71.5 percent listed illicit drugs and 55.1 percent listed prescription drugs as types of substance involved – see Figure 13. (Note: categories are not mutually exclusive. More than one type of poisoning could be involved in each case.)

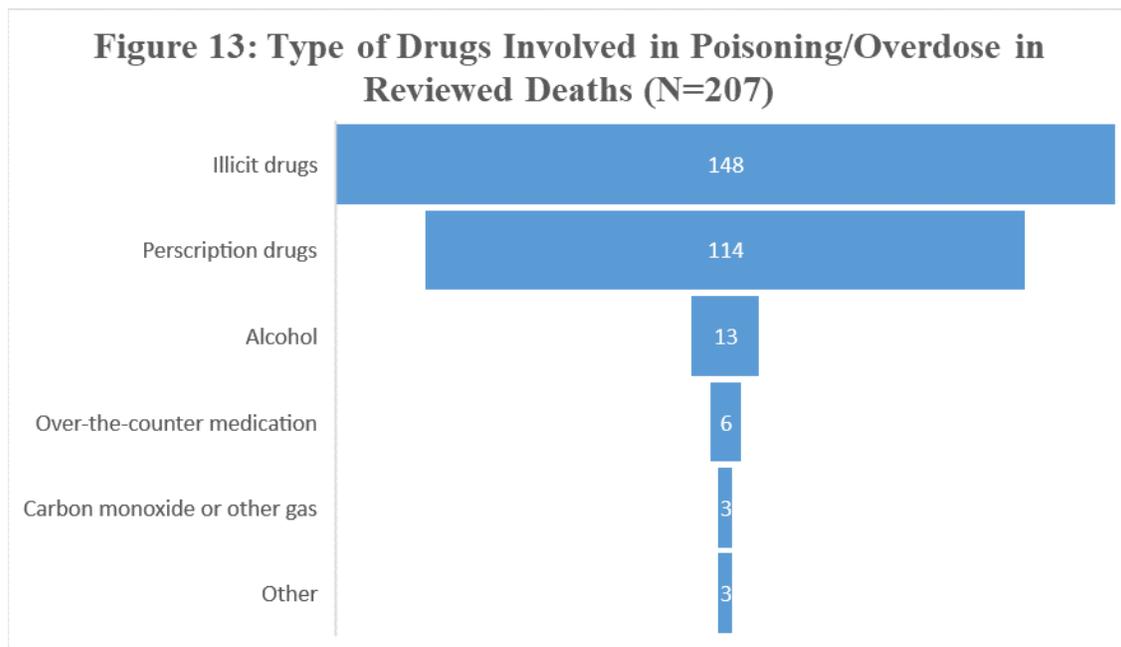


Figure 13- NCFRP-CRS: 2016 and 2017

Deaths Involving Motor Vehicles and Transportation

Of the total deaths in children reviewed for 2016 and 2017, 212 cases (9.2 percent) involved a motor vehicle or other means of transportation. Of those, 91 cases were determined to be accidental. Motor vehicle deaths accounted for the second highest number of accidental deaths, representing 21.2 percent of all the accidental deaths reviewed in 2016 and 2017. Based on the 212 accidental motor vehicle deaths reviewed, 162 (76.4 percent) involved youth age 15 years to 21 years. This breakdown is further shown below in Figure 14: Motor Vehicle Deaths by Age Category. The most common location for motor vehicle accidents were rural and suburban areas of the commonwealth (29.2 percent each). Of the reviewed deaths, the child was a driver or passenger in a car in 85 (40.1 percent) of the cases. The child was a pedestrian in 22 (10.4 percent) of the reviewed cases.

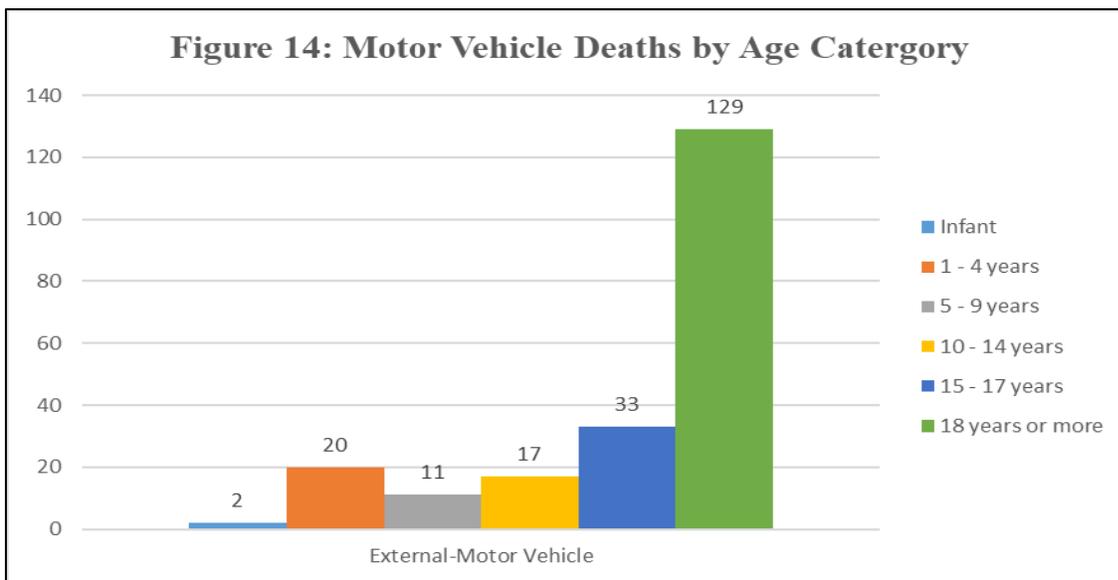


Figure 94- NCFRP-CRS, Year of Death: 2016 and 2017

Preventable Deaths

Based on the review data contained within the NCFRP-CRS for deaths occurring in 2016 and 2017, 809 cases (35.1 percent) were determined to have been preventable by the local CDR teams in 2016/2017. Figure 15: Top Five Causes of Death by Preventability illustrates the top five causes of death that teams found to be preventable. Of these preventable deaths reviewed, 437 cases (54.0 percent) were accidental. It is important to note the determination of preventability is a subjective measure determined by local teams based on the information available at the time of the review. This analysis is based on the data available in the NCFRP-CRS at the time of this report. In 2016-2017, weapons moved from second highest to the highest preventable type of death for the cases that were reviewed. External poison moved from third highest to second highest preventable type of death.

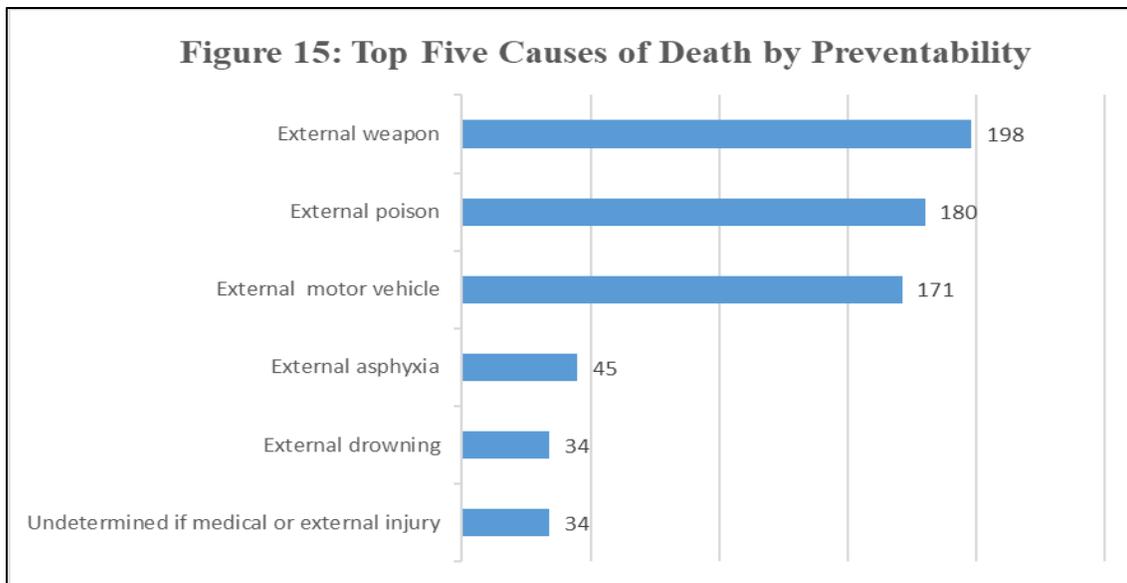


Figure 105 - NCFRP-CRS, Year of Death: 2016 and 2017

Child Death Review Team Activities and Recommendations

The purpose of the reviews conducted by local CDR teams is to gather and examine data regarding the circumstances surrounding child deaths to promote safety and to reduce child fatalities through various activities. Activities are led by the CDR teams, CDR team members or through collaborations with other local entities, including, but not limited to, coroners, local health departments, hospitals, law enforcement, home visitation programs, children's advocacy centers and schools. This section highlights some of the work being done at the local and state level.

Local CDR Team Activity

With prematurity being the leading cause of death in infants less than 1 year of age, some local CDR teams have opted to tackle this issue by creating subcommittees to review and discuss prevention of deaths due to prematurity. Chester County's Premature CDR Subcommittee formed in January 2009. The premature births subcommittee is able to discuss the clinical circumstances of the case in greater detail than the child death review team. In addition to the neonatal intensive care unit and other hospital representatives, the team has grown to include prenatal care providers and representatives from community-based agencies, such as the Special Supplemental Nutrition Program for Women, Infants, and Children and Healthy Start. The team has placed emphasis on social determinants of health.

Several recommendations have been identified and implemented:

1. Health care providers and practitioners are increasingly recognizing the role of the mother's obesity on prenatal outcomes.
2. With an increase in referrals by prenatal care providers to Chester County Health Department's (CCHD) nurse home visiting programs, monthly case conferences are being held with prenatal care providers from Chester County's three prenatal clinics and CCHD nurse home visitors to coordinate care for high-risk cases and to address social determinants of health.
3. A new recommendation that we will be a focus in the next year is exploring the possibility of implementing a more structured Perinatal Periods of Risk (PPOR) data review process to more fully assess factors influencing disparities in negative birth outcomes.

Allegheny CDR Team has structured its reviews around the different types of deaths. Subject matter experts and ad hoc members join core members for review meetings and to discuss prevention efforts. The team has found that significant improvement in neonatal mortality cannot occur without addressing and reducing deaths due to preterm deliveries. Strategies should include efforts to prolong pregnancy duration, improve the condition of mothers and babies at the time of birth, and improve the outcome of babies born preterm. The Allegheny CDR Team recommendations include:

- New models for the delivery of prenatal care should be developed and evaluated for their effectiveness in improving pregnancy outcomes, especially in the African American population.
- Systems should be implemented that allow health care providers to have access to information on family involvement in human service agencies so they can facilitate referral to family support services.
- Adequate numbers of social workers and behavioral health providers must be available in all hospital-based obstetric clinics to meet the psychosocial needs of patients.
- Interconception care must be promoted and readily available, including ready access to family planning services.
- Education of providers to refer and incentives for women to participate in- home visiting programs should be developed.
- Women with high-risk medical conditions must be universally referred to maternal fetal medicine specialists and delivery units at hospitals equipped to care for the high-risk conditions.
- Education must be provided to all women who have experienced a preterm birth as to the risk of subsequent preterm delivery.
- Neonatal intensive care units (NICU) should initiate quality improvement initiatives aimed at reducing bloodstream infections and identify best practices within each NICU in minimizing such infections.
- Submitters should be held responsible for filing birth and death certificates that are complete and accurate.

Local CDR Recommendations

Analysis showed that reviews of 728 cases (31.6 percent) of the 2,306 reviewed deaths resulted in recommendations. Not all the recommendations are captured in the case reporting system. The recommendations below may have been made by more than one local CDR team and are in various stages of implementation.

Safe sleep:

- Provide ongoing parenting education regarding safe sleeping during pregnancy, during hospitalization for birth and pediatric visits.
- Provide information to new mothers about the Nurse Family Partnership Program.
- Encourage the use of doll reenactments in death scene investigations.

Motor vehicle safety:

- Reinstate driver's education at local high schools.
- Provide education program for teens on the dangers of impaired and distracted driving.
- Provide awareness programs for youth on wearing helmets while riding bicycles, scooters, etc.
- Provide access to helmets for youth.
- Recommend the review and enforcement of policies on motor vehicle pursuits by law enforcement.
- Educate teens about the dangers of riding dirt bikes on roadways.

- Provide awareness on night time safety for pedestrians.
- Provide community education on the dangers of driving drunk.

Overdose prevention:

- Continue to host parent/community town halls providing opioid use disorder information.
- Continue community and school prevention programs.
- Continue drug take-back box initiative for unused, unwanted or expired prescriptions.
- Form a subcommittee to work on initiatives to prevent opioid-related deaths.
- Continue to support heroin task force initiatives.
- Continue to provide naloxone to police and families.

Suicide prevention:

- Enhance media coverage of depression symptoms and firearm safety.
- Continue efforts through the suicide prevention task force throughout the commonwealth.
- Revise policy to ensure that the mobile crisis responds to traumatic events that involve children.
- Explore limiting purchase of firearms to those with significant mental health conditions.
- Continue to provide community education on suicide prevention, signs and symptoms; continue Youth and Adult Mental Health First Aid and awareness events.
- Provide awareness on the effects of concussions on youth athletes.

Drowning prevention

- Increase access to swimming lessons.
- Increase warning signage at public bathing places and low head dams.
- Develop a public service announcement and educational materials about dangers of the river and pools to be provided to county schools.
- Increase access to water safety products and education.

Fire safety

- Provide information about the importance of fire safety measures with children with special healthcare needs and/or intellectual disabilities.
- Develop educational campaign on the use of smoke detectors.
- Develop educational campaign in how to make a family escape plan.

Gun safety

- Provide education to parents and the community on safe firearm storage.
- Support local hospital's efforts to provide firearm safety information and free trigger locks.

Statewide CDR Activities

SUID/SDY

Pennsylvania applied for and was accepted into the CDC's new Sudden Unexpected Infant Death (SUID) and Sudden Death in the Young (SDY) Case Registry. The SUID/SDY Case Registry builds upon the existing CDR program and the previous three-year SUID grant work. The new SUID/SDY grant award expands Pennsylvania's surveillance of SUID deaths to include the broader category of SDY deaths. SDY deaths include infants as well as children and young adults through 21 years old who die unexpectedly. Although very little is known about the incidence of SDY, it is commonly associated with unexpected death, cardiac conditions such as cardiomyopathy or arrhythmias, and possible genetic forms of epilepsy. The SDY work began early in 2019. Data from these reviews will be included in 2020's annual report. The five-year grant-funded program for both components will run from October 2018 to August 2023.

Safe sleep

In 2016, the department awarded a three-year grant to the Trustees of the University of Pennsylvania to develop and implement an evidence-informed infant safe sleep initiative in the southeastern area of the state that was renewed until 2021. The focus of this approach is to move safe sleep education from discharge to arrival in the postpartum unit to allow for reinforcement of risk reduction methods for the duration of the hospital stay. In conjunction with the hospital-based programming, a social marketing plan will be developed and implemented to increase population awareness of infant accidental suffocation and strangulation and risk reduction methods in the community at large. The model safe sleep program for well newborns in the hospital setting development is complete, and implementation of the program is complete in six hospitals in the southeastern region and in process in six more stretching into the southcentral region. The preliminary findings of the model safe sleep program include an 84 percent reduction in the incidence of unsafe items in infants' hospital cribs.

CDR State Team

The CDR State Team began to meet in November 2018. The membership of the CDR State Team mirrors that of effective local teams. While the CDR State Team does not review cases, the vision of the group is to join with key government officials to work on policy and legislative recommendations regarding reduction of preventable child deaths and injury prevention strategies.

The CDR State Team has discussed its mission and vision and set goals for the upcoming year. The goals include:

- Improved data quality;
- Death scene investigation training;
- Development of guidance for teams on maintaining confidential information;
- Training for new CDR team members;
- Improved participation on teams; and
- Review of data and local CDR team recommendations to determine if any statewide recommendations need to be made.

Statewide CDR Recommendations

Data quality

CDR program data quality should continue to be addressed with local CDR teams on an ongoing basis by the department. With complete data entered in a timely fashion by local CDR teams, state and local CDR teams could:

- Focus on implementing prevention strategies to address specific local needs;
- Provide data supported recommendations on prevention strategies to county executive staff;
- Offer support for policy/ordinance changes at the local level;
- Effect improved coordination/collaboration among local CDR team member agencies and with local entities such as local suicide task forces and other prevention partners; and
- Enhance the state CDR team's advocacy efforts for state level recommendations, such as legislation, policy and system changes or prevention efforts.

Data found in the NCFRP-CRS is the only data of its kind; there is nothing currently available that can provide this level of detail regarding the circumstances of a child's death. In addition to being valuable in identifying effective and appropriate prevention efforts, data obtained through death reviews is essential to monitoring and evaluating those efforts. To be effective, the quality and timeliness of this data needs to be addressed, and core variable fields with missing/unknown entries need to be drastically reduced or eliminated. The department will continue to provide technical assistance and training to local CDR teams, as well as participate in the NCFRP's Data Quality Initiative.

Local support

Local CDR teams need support from local jurisdictions and community partners in addition to the efforts of the Department of Health. Act 87 requires that teams exist and function but leaves the leadership and support at the local level open to what is available and supported at the county level. Teams continue to find creative ways to support their work with the use of in-kind services and interns. County leadership should better serve its community by providing for the duties of CDR membership as part of the job requirements of the team's membership rather than in addition to current job duties. Any support, such as meeting space, administrative support and in-kind staff time, that county leadership can provide will enhance the quality of the death reviews and subsequent prevention efforts, which in turn will strengthen and improve the health of communities.

Disparities

CDR provides a unique opportunity to examine all circumstances surrounding a child's death, including the environmental and social contexts. The data clearly shows children of color die at higher rates than white children. It behooves local CDR teams to ask questions during reviews about why these disparities exist and what social, environmental and societal factors influence the disparities, as well as to document their findings. The answers to these questions can help frame prevention recommendations and efforts that will help to address the social determinants of health and the disparities that exist. In addition, local practices and

police should be examined to identify areas for improvement in order to reduce disparities. The department will continue to provide and share training opportunities and technical assistance that focus on eliminating disparities and improving outcomes for all of Pennsylvania's children and youth.

Preventable deaths

To formulate recommendations about prevention efforts, local CDR teams must first reach a decision as to whether or not a death was preventable. Deaths should be considered preventable if something could have reasonably been done that would have changed the circumstances that led to the death. The circumstances that lead to a child's death can be complicated and nuanced, particularly when considering the impact of social determinants of health. Consequently, at times, local CDR teams struggle with a preventable determination. The department will bolster teams' capacity by providing education and technical assistance in adopting a public health approach to determining whether a death is preventable and developing recommendations.

Regional teams

To address the deficiencies that local teams have in meeting the obligations of Act 87, consideration should be given to organizing regional teams. County teams that are not meeting regularly, have little participation or limited expertise should have the opportunity to meet together to review all cases within their region. With support and technical assistance from DOH, this concept will combine resources, build expertise and lead to an increase in quality of data. In the next year, the department will pilot one regional team to support the local review approach and to provide the tools to help local teams develop effective strategies to prevent injury and death of children within their respective counties.

Appendix A: Public Health Child Death Review Act (Act 87 Of 2008)

PUBLIC HEALTH CHILD DEATH REVIEW ACT Act of Oct. 8, 2008, P.L. 1073, No. 87 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.

Compiler's Note: The Department of Public Welfare, referred to in this section, was redesignated as the Department of Human Services by Act 132 of 2014.

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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.

Appendix B: Definitions

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

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 a specified group

Sudden unexpected infant death (SUID): SUID is the death of an infant less than 1 year of age that occurs suddenly and unexpectedly and whose cause of death is not immediately obvious before investigation. Most SUIDs are reported as one of three types: sudden infant death syndrome (SIDS); unknown cause; or accidental suffocation and strangulation in bed.

SUID death rate: Number of SUID-related deaths per 100,00 live births

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

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

Pennsylvania State Child Death Review Team: The Pennsylvania CDR Team is comprised of representatives from agencies and organizations that focus on children in Pennsylvania. Aggregated information is shared with legislators and state policy makers 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 to develop prevention strategies. There are currently 63 local review teams covering all 67 counties statewide.

Appendix C: Technical Notes

Definitions of Terminology

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

Terminology:

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

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:

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

End Notes

¹ CDC WONDER online database, <https://wonder.cdc.gov/>, accessed July 27, 2018.

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 fatal injury. The underlying cause of death is the one to be adopted as the cause for tabulation or mortality statistics. Source: Handbook of Vital Statistics Systems and Methods, Volume 1: Legal Organizational and Technical Aspects, United Nations Studies in Methods, Glossary, Series F, No. 35, United Nations, New York 1991

³ CDC - Sudden Infant Death Syndrome (SIDS). <https://www.cdc.gov/sids/AboutSUIDandSIDS.htm>. August 13, 2018. Content Source: National Center for Chronic Disease Prevention and Health Promotion, Division of Reproductive Health

⁴ American Academy of Pediatrics Announces New Safe Sleep Recommendations to Protect Against SIDS, Sleep-Related Infant Deaths. From American Academy of Pediatrics website: <https://www.aap.org/en-us/about-the-aap/aap-press-room/pages/american-academy-of-pediatrics-announces-new-safe-sleep-recommendations-to-protect-against-sids.aspx> . September 3, 2017