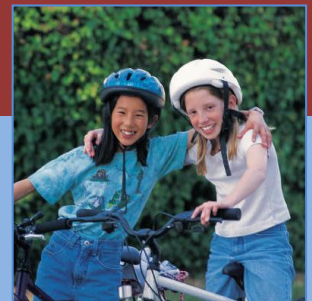


# 2020 Child Fatality Annual Report

## Understanding and Preventing Child Deaths in Tennessee

Data in this report reflect deaths occurring in children under 18 years of age in calendar year 2018



## TABLE OF CONTENTS

TABLE OF CONTENTS .....	ii
ACKNOWLEDGMENTS.....	iv
DATA CONFIDENTIALITY.....	iv
EXECUTIVE SUMMARY.....	v
STATE CHILD FATALITY TEAM MEMBERS .....	vii
INTRODUCTION.....	viii
<b>THE CHILD FATALITY REVIEW PROCESS IN TENNESSEE .....</b>	<b>viii</b>
2020 CHILD FATALITY REPORT.....	1
OVERALL CHILD FATALITY TRENDS.....	1
CHILD FATALITY REVIEW DATA .....	3
<b>METHODOLOGY .....</b>	<b>3</b>
<b>BREAKDOWN OF CHILD FATALITY REVIEW DATA.....</b>	<b>4</b>
<b>SPECIFIC CAUSES OF DEATH.....</b>	<b>11</b>
<b>PREVENTION ANALYSIS .....</b>	<b>13</b>
<b>ACTS OF CHILD ABUSE AND NEGLECT.....</b>	<b>16</b>
<b>DEATHS TO CHILDREN WITH SPECIAL CIRCUMSTANCES.....</b>	<b>18</b>
DETAILED REVIEW: SPECIFIC CAUSES OF CHILD DEATH.....	20
<b>HOMICIDE DEATHS.....</b>	<b>21</b>
<b>SUICIDE DEATHS .....</b>	<b>24</b>
<b>FIREARM DEATHS.....</b>	<b>28</b>
<b>ASPHYXIA DEATHS.....</b>	<b>32</b>
<b>MOTOR VEHICLE AND OTHER TRANSPORT DEATHS.....</b>	<b>35</b>
<b>DROWNING-RELATED DEATHS.....</b>	<b>38</b>
<b>FIRE/BURN DEATHS .....</b>	<b>41</b>
<b>POISONING DEATHS.....</b>	<b>44</b>
<b>FALL/CRUSH DEATHS.....</b>	<b>47</b>
OVERALL INFANT MORTALITY DATA TRENDS .....	49
<b>SUMMARY OF INFANT MORTALITY DATA .....</b>	<b>51</b>
<b>SLEEP-RELATED INFANT DEATHS.....</b>	<b>53</b>
SUDDEN DEATH IN THE YOUNG (SDY) CASE REGISTRY PROJECT .....	59
PREVENTION RECOMMENDATIONS FOR 2020 .....	62
DATA TO ACTION .....	64
<b>STATWIDE ACTIVITIES .....</b>	<b>64</b>
<b>LOCAL PREVENTION ACTIVITIES .....</b>	<b>68</b>
CONCLUSION .....	71
APPENDICES .....	72
<b>Appendix A—List of Tables and Figures.....</b>	<b>72</b>
<b>Appendix B—Glossary.....</b>	<b>75</b>

***Appendix C—Child Deaths by County of Residence..... 77***  
***Appendix D—Infant Deaths by County of Residence..... 80***  
***Appendix E—State Level Success Stories..... 83***  
***Appendix F—Local Success Stories..... 87***  
***Appendix G—Local Child Fatality Review Team Members and Staff..... 90***

## **ACKNOWLEDGMENTS**

The Tennessee Department of Health expresses its gratitude to the agencies and individuals who have contributed to this report and the investigations that preceded it.

Thank you to the 34 Child Fatality Review Teams in the judicial districts across the state who treat each case with reverence and compassion, working with a stalwart commitment to preventing future fatalities.

Thank you to the State Child Fatality Prevention Review Team members who find ways to put the recommendations in this report to work in saving lives.

Their efforts, and ours, are reinforced immeasurably by the support and cooperation of the following Tennessee agencies: the Commission on Children and Youth, the Department of Children's Services, the Office of the Attorney General, the Tennessee Bureau of Investigation, the Department of Mental Health and Substance Abuse Services, the Department of Intellectual and Developmental Disabilities, the Tennessee Medical Association, the Department of Education, the State General Assembly, the State Supreme Court, the Tennessee Suicide Prevention Network, Tennessee local and regional health departments, Tennessee Hospital Association, law enforcement, and the National Center for Fatality Review and Prevention.

It is with deepest sympathy and respect that we dedicate this report to the memory of those children and families represented within these pages.

This report may be accessed online at  
<https://www.tn.gov/health/article/MCH-childFatality-resources>

## **DATA CONFIDENTIALITY**

Please note: Portions of the information and data contained in this report were compiled from records that are confidential and contain information which is protected from disclosure to the public, pursuant to Tennessee Code Annotated 68-142-108.

## EXECUTIVE SUMMARY

The data contained in this report represent the review of deaths occurring in children under the age of 18 years during the calendar year of 2018. Local teams across the state reviewed all eligible 2018 deaths during 2018 and 2019. Given that only eligible child deaths are reviewed, this report also includes some of the latest mortality statistics for all child deaths occurring in Tennessee. There were a total of 929 child deaths in 2018, of which 860 were reviewed by local teams. The state child fatality review team developed the following report and recommendations based on these reviews.

### Key Findings Overview:

- In 2018, 929 deaths occurred in children under age 18 years in Tennessee. Tennessee's 2018 child mortality rate (61.8 per 100,000) is statistically unchanged from the 2017 rate (65.3 per 100,000) and continues to exceed the 2017 national rate (49.8 per 100,000), the latest rate available for the United States.
- In 2018, 559 deaths occurred in children under 1 year. The 2018 infant mortality rate of 6.9 deaths per 1,000 live births represents a decrease, though not statistically significant, from the 2017 rate of 7.4 deaths per 1,000 live births.
- Racial disparity continues to exist among child fatalities in Tennessee. Although the majority of deaths were comprised of White children, Black children suffered a significantly higher rate of mortality than Whites. In 2018, Black children experienced a mortality rate twice that of White children.
- Prematurity was the leading cause of death among Tennessee infants (140 infant deaths, 29% of reviewed infant deaths), followed by congenital anomaly (86 infant deaths, 18%) in 2018. Sleep-related deaths include multiple causes and accounted for 23% of all infant deaths.
- There were 128 sleep-related infant deaths in 2018. This compares to 144 deaths in 2017. The rate of sleep-related infant deaths was 1.6 per 1,000 live births in 2018, which is statistically unchanged from the 2017 rate of 1.8 per 1,000 live births.
- Tennessee's male children accounted for a disproportionate percentage of reviewed child fatalities compared to females (59% vs. 41%, respectively). For the past five years, male children have had a higher proportion of mortality than females.
- In 2018, fifty-five children (6% of all reviewed deaths) died by homicide. Most of homicide deaths occurred in the child's home (47%), and firearms accounted for 71% of child homicide deaths. There were also 55 child homicide deaths in 2017.
- Thirty-nine young people died by suicide in 2018 (5% of all reviewed deaths). Suicide occurred mostly in the child's home (72%), and firearms accounted for 67% of these deaths. Comparatively, there were 51 child suicide deaths in 2017.
- The rate of motor vehicle deaths decreased from 4.3 per 100,000 children in 2017 to 4.1 in 2018; however this change was not statistically significant.

The number of preventable deaths in children underscores the need for a continued focus on the careful review of every child death, thoughtful identification of opportunities for prevention, and implementation of strategies to prevent future child deaths. Data can be accessed through the TDH [data dashboard](#).

**Summary of 2020 recommendations:**

1. **Suicide-** Increase suicide prevention and mental health services in high-risk areas identified by the TDH suicide prevention program.
2. **Motor Vehicle-** Increase the number of schools in high-risk counties implementing evidence-based motor vehicle safety programs in local high schools.
3. **Prematurity-** Prioritize funding to reduce unintended pregnancies, reduce smoking during pregnancy and increase enrollment in group prenatal care, evidence-based home visiting (EBHV) and care coordination (Community Health Access and Navigation in Tennessee - CHANT).
4. **Birth Defects-** Increase prevention of the leading drivers of birth defects including diabetes, substance use, high blood pressure and high body mass index (BMI).
5. **Safe Sleep-** Partner with state and community agencies to promote safe sleep, with a particular focus on intergenerational caregivers, to provide consistent, culturally appropriate messaging to address disparities.
6. **Drowning-** Promote drowning prevention recommendations from the American Academy of Pediatric Drowning Prevention Toolkit through social media and press releases. Disseminate resources for swimming lessons.

## **STATE CHILD FATALITY TEAM MEMBERS**

### **Chair**

Lisa Piercey, MD, MBA, FAAP  
Commissioner  
Tennessee Department of Health

### **Co-Chair**

Morgan McDonald, MD, FAAP, FACP  
Deputy Commissioner for Population Health  
Tennessee Department of Health

### **Members**

Monique Anthony, MPH, CHES  
Office of Minority Health and  
Disparities Elimination  
Tennessee Department of Health

Valerie Arnold, MD  
Tennessee Medical Association

Ibitola Asaolu, DrPH, MPH  
Tennessee Department of Health

Senator Richard Briggs, MD  
Tennessee Senate

Judge Donna Scott Davenport  
Tennessee Supreme Court

Bruce Davis, Ph. D.  
Tennessee Department of Intellectual and  
Developmental Disabilities

Julia Goodin, MD, MPA\*  
Office of the State Chief Medical Examiner  
Tennessee Department of Health

Elizabeth Harvey, Ph. D., MPH  
Tennessee Department of Health

Rachel Heitmann, MS  
Tennessee Department of Health

Erin Hodson, MPH  
Tennessee Department of Health

Terry Holmes, MD  
Tennessee Department of Mental Health and  
Substance Abuse Services

Richard Kennedy  
Tennessee Commission on Children and Youth

April Kincaid, MPH  
Tennessee Department of Health

Kimberly Lamar, Ph.D., MPH, MSEH  
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Office of the State Chief Medical Examiner  
Tennessee Department of Health

Representative Mary Littleton  
Tennessee House of Representatives

Jennifer Nichols  
Department of Children's Services

Lori Paisley  
Department of Education

Kristen Davis, LAPSW  
Prevent Child Abuse Tennessee

Scott Ridgway, MS  
Tennessee Suicide Prevention Network

Sue Sheldon  
Office of the Attorney General

\*Special thanks to the late Dr. Julia Goodin for serving on the State Child Fatality Review team for the last 3 years. The impact of her efforts to champion the needs of our state's most vulnerable children will be felt for years to come.

## INTRODUCTION

### ***THE CHILD FATALITY REVIEW PROCESS IN TENNESSEE***

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

Annually, approximately 40,000 children aged 0-17 years die in the United States.<sup>1</sup> Through the child death review, community-based multidisciplinary teams convene to examine case information to better understand the cause of child deaths and recommend actions to prevent future deaths. The National Center for Fatality Review and Prevention provides national-level leadership for state and local child fatality review teams. As of 2018, every state and the District of Columbia had a system for reviewing child deaths.<sup>2</sup>

The Child Fatality Review and Prevention Act of 1995 established the Tennessee Department of Health's Child Fatality Review (CFR). The mission of the CFR is to review deaths in order to better understand the causes of child deaths and make and implement recommendations that will prevent future childhood deaths.

#### **Overview of Child Fatality Review Teams**

A local CFR team exists in each of Tennessee's judicial districts. These 34 teams cover all 95 counties, review all deaths of children 17 years of age or younger, and make recommendations to the State CFR Team for the reduction and prevention of child deaths statewide. Their careful review process results in a thorough description of the factors related to child deaths. Membership of the local teams is outlined in T.C.A. 68-142-106, and includes the Regional Health Officer, Supervisor of Children's Services, Medical Examiner, Prosecuting Attorney, a member of a local education agency, a mental health professional, a pediatrician or family practice physician, an emergency medical service provider or firefighter, and a juvenile court representative. While these members are required by law to attend CFR team meetings, other representatives of agencies that work with children and their families also frequently participate.

Aggregate data from local CFR teams are reviewed by the State CFR team. The composition of the State CFR Team is outlined in T.C.A. 68-142-103; it includes high-level officials such as the Health Commissioner, the Attorney General, and State Senators and Representatives. The State team analyzes data on the incidence and causes of child deaths and makes recommendations to the Governor and General Assembly. These recommendations inform the implementation of laws, policies, and practices and the improvement of protocols and procedures that may prevent future child deaths in Tennessee.

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<sup>1</sup> Centers for Disease Control and Prevention, National Center for Health Statistics. Underlying Cause of Death 1999-2015 on CDC WONDER Online Database, released 2017. Accessed at <http://wonder.cdc.gov/ucd-icd10.html>.

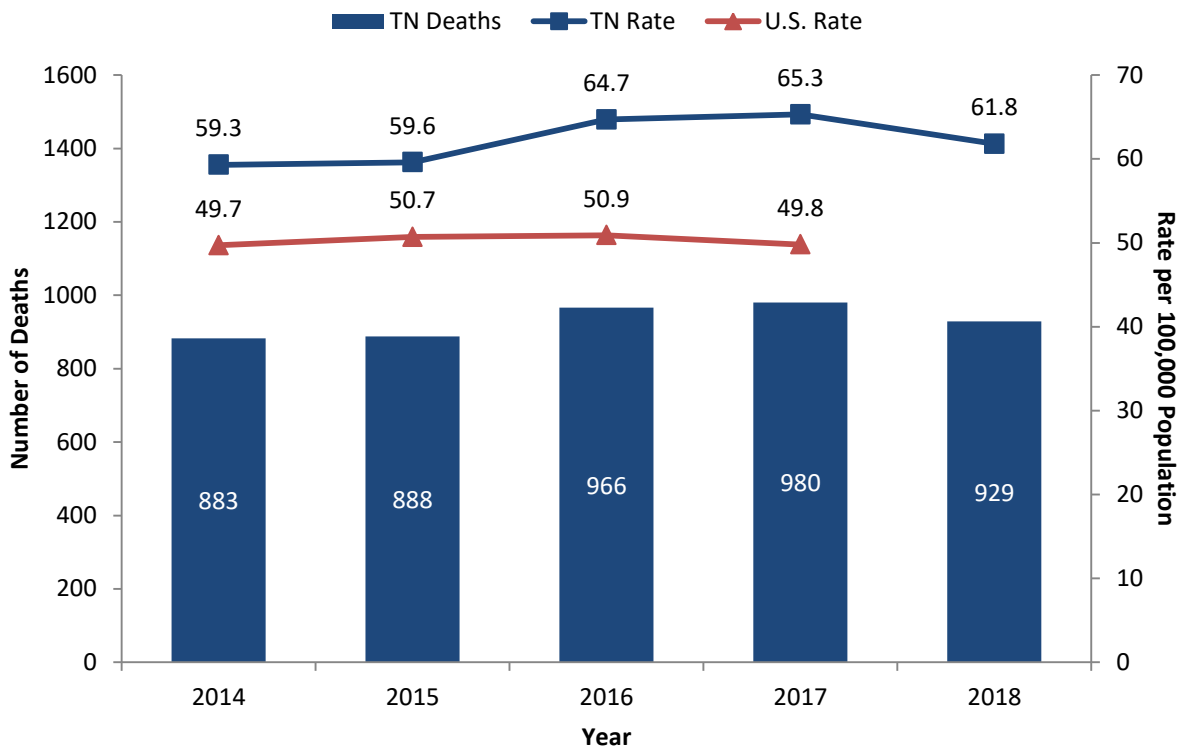
<sup>2</sup> National Center for the Review and Prevention of Child Deaths. Keeping Kids Alive: A Report on the Status of Child Death Review in the United States, 2017. Available at: [https://www.ncfrp.org/wp-content/uploads/NCRPCD-Docs/CDRinUS\\_2017.pdf](https://www.ncfrp.org/wp-content/uploads/NCRPCD-Docs/CDRinUS_2017.pdf)



## 2020 CHILD FATALITY REPORT OVERALL CHILD FATALITY TRENDS

This section presents data from vital records; it reflects all child deaths among Tennessee residents in 2018. The number and rate of child deaths in Tennessee and the U.S. for the past five years are shown in Figure 1. **The overall 2018 child mortality rate for Tennessee was 61.8 child deaths per 100,000 children, a 6% decrease from the 2017 child mortality rate of 65.3 per 100,000 children.** Tennessee's child mortality rate continues to exceed the national rate. The overall child mortality rate in Tennessee for 2018 was 24% higher than the 2017 child mortality U.S. rate, the latest year for which national data are available.

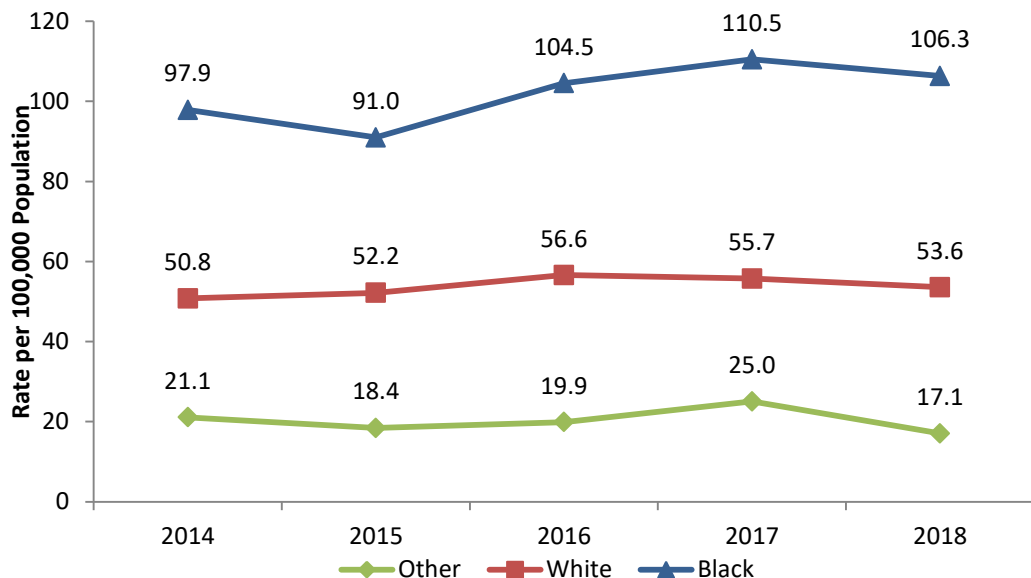
**Figure 1. Number and Rate of Child Deaths (Ages 0-17 Years)  
Tennessee, 2014-2018**



Data source: Tennessee Department of Health, Office of Vital Records and Health Statistics, Death Statistical File, 2014-2018.  
Population estimates based on interpolated data from the U.S. Census's Annual Estimates of the Resident Population;  
National Rates: CDC Wonder

The number and rate of child deaths in Tennessee and the U.S. by race for the past five years are shown in Figure 2 and Table 1. The child mortality rate among Black Tennessee children is higher than that of White children or children belonging to 'Other' race/ethnic category (Figure 2). The disparity between Black and White child mortality is consistent from 2014 to 2018. Over the past five years, the child mortality rate among Black children has been twice that of White children (Table 1).

**Figure 2. Child Mortality Rate for Ages 0-17 Years by Race Tennessee, 2014-2018\***



\*Other races include American Indian or Alaskan Native, Asian Indian, Chinese, Filipino, Japanese, Korean, Vietnamese, Other Asian, Native Hawaiian, Guamanian or Chamorro, Samoan, Other Pacific Islander, Other Race, Bridged White, Bridged Black, Bridged American Indian or Alaskan Native, Bridged Asian or Pacific Islander.

\*\*Data source: Tennessee Department of Health, Office of Vital Records and Health Statistics, Death Statistical File, 2014-2018. Population estimates based on interpolated data from the U.S. Census's Annual Estimates of the Resident Population.

**Table 1. Number and Rate of Child Deaths (per 100,000 child population) for Ages 0-17 Years by Race, Tennessee, 2014-2018**

Year	Blacks			White			Black/White Disparity
	Number of Deaths	Child Population	Child Death Rate	Number of Deaths	Child Population	Child Death Rate	Disparity Ratio
2014	295	301,419	97.9	555	1,092,578	50.8	1.9
2015	274	301,100	91.0	569	1,090,727	52.2	1.7
2016	313	299,487	104.5	619	1,093,476	56.6	1.8
2017	331	299,588	110.5	612	1,098,171	55.7	2.0
2018	317	298,106	106.3	589	1,099,446	53.6	2.0

Data source: Tennessee Department of Health, Office of Vital Records and Health Statistics, Death Statistical File, 2014-2018.

# CHILD FATALITY REVIEW DATA

## METHODOLOGY

### Review of Child Fatality Review Data

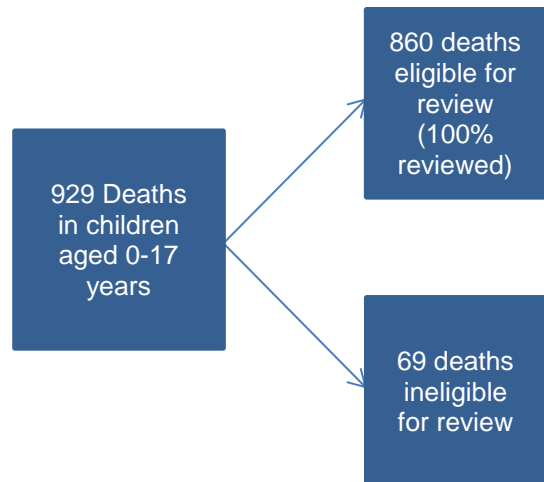
This section presents data on deaths that meet the CFR criteria. The CFR data included in this report represent thoughtful inquiry and discussion by a multi-disciplinary group of community leaders who consider all the circumstances surrounding the death of each child. These leaders provide information from a variety of agencies, documents, and areas of expertise. Their careful review process results in a thorough description of the factors related to child deaths.

Of the 929 child deaths in 2018, 93% (n=860) met the review criteria. Sixty-nine deaths did not meet the criteria for gestational age or weight (as defined below). Reviews were completed on all (100%) eligible cases and are represented in this annual report. For the past five years, all child deaths were reviewed before the annual report was released. The completion of all 2018 death reviews is a reflection of the dedication of local CFR teams and partnering state agencies.

Deaths of infants are eligible for review if they are equal to or greater than 23 weeks of gestation and greater than 500 grams as they have been the accepted limits of viability established in TCA. Because of the review criteria, it is usually impossible to find an exact number-for-number match between CFR data and child death data from other sources, such as vital statistics. The unique role of CFR is to provide a depth of understanding of these eligible deaths and to augment other, more one-dimensional data sources. In 2018, there were 929 child deaths in Tennessee, of which 860 were reviewed by local CFR teams.

The Tennessee Department of Health (TDH) staff oversees the statewide CFR as mandated in T.C.A. 68-142-101 et. seq. The CFR process incorporates best practices identified by the National Center for Fatality Review and Prevention, including central administration of statewide child fatality reviews, standardized data collection across review teams, and coordination of recommendations to prevent deaths.

Comparison data from the Centers for Disease Control and Prevention (CDC) and population data by county from the Tennessee Department of Health's Division of Population Health Assessment are included in this report.



### Limitations of Child Fatality Review Data

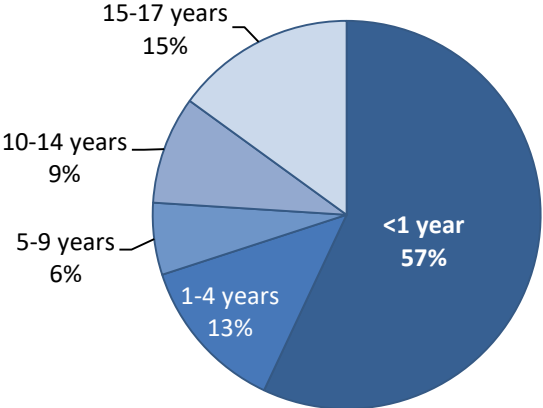
Results of the analysis of CFR data may vary from previous reports due to the nature of data collection and storage. If the CFR team obtains additional information on a child's death after the completion of an annual report, changes may be made to any of the reviewed data, which is then overwritten in the database system. Upon the availability of new evidence, local CFR teams can update a prior year's results even after the completion of a CFR report. Therefore, the previous year data depicted in this report may differ from numbers presented in prior years' reports.

Local CFR teams analyze each case using the best information available to them. Detailed case review may reveal information that results in classifications made in this report that differ from those contained within reports from other agencies or departments.

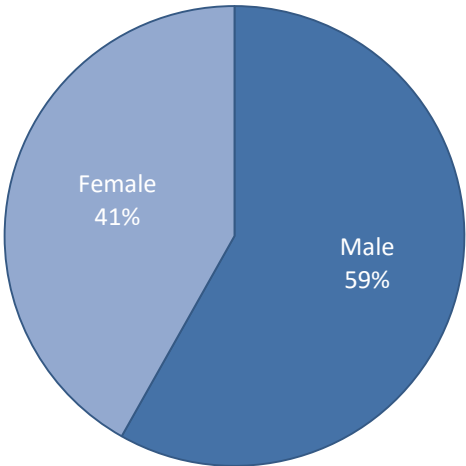
**BREAKDOWN OF CHILD FATALITY REVIEW DATA**

In 2018, there were 929 child deaths in Tennessee, of which 860 were reviewed by local CFR teams. The review of these child deaths demonstrated that the first year of life was the most perilous for Tennessee’s children, with deaths of children younger than 1 year of age accounting for 57% of all reviewed deaths (Figure 3). Male children (59%) represented a higher proportion of all child fatalities than female children (41%) (Figure 4). Racial disparity exists among child fatalities as well (Figure 5). While the majority of deaths were among White children (Figure 5), Black children had a higher rate of mortality than White children (Table 1).

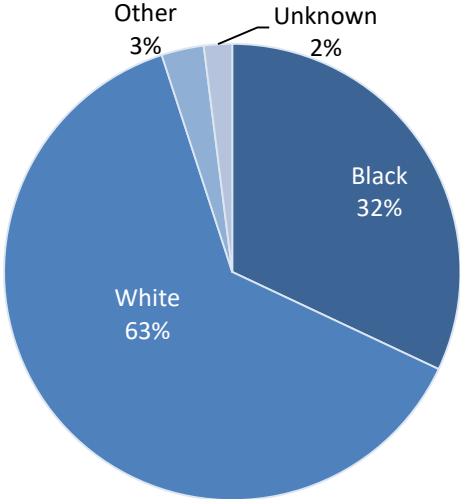
**Figure 3. Child Deaths Reviewed by Age Group, Tennessee, 2018 (n=860)**



**Figure 4. Child Deaths Reviewed for Ages 0-17 by Sex, Tennessee, 2018 (n=860)**



**Figure 5. Child Deaths Reviewed for Ages 0-17 by Race, Tennessee, 2018 (n=860)**



Other race includes all other non-White or non-Black races.  
 Data source: Tennessee Department of Health, Child Fatality Review Database System.

All deaths are classified according to cause and manner of death. There are many complexities involved in determination of cause and manner of death, beginning with the definition of each term.

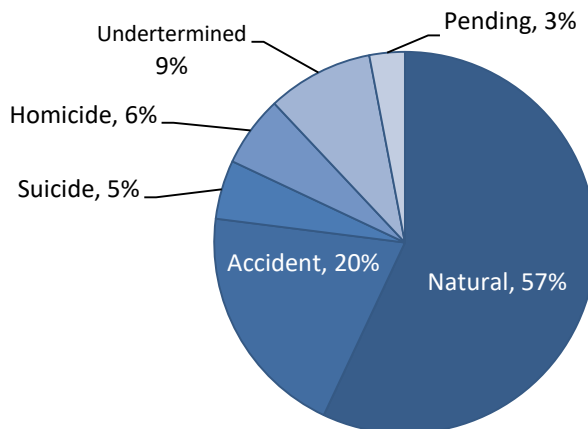
- **Cause of death** refers to the disease process or injury that set into motion the series of events which eventually lead to death. For the purposes of the CFR team, causes of death are categorized as **medical, external** (injuries or poisonings), **undetermined, or unknown**. Medical causes are then further classified by specific disease entities, and external causes are further described by the nature of the injury.
- **Manner of death** refers to the circumstances under which death occurred. In Tennessee, deaths must be classified on the death certificate as resulting from one of the following manners of death:
  - **Natural** (due to underlying medical conditions, unrelated to any external factors),
  - **Accident** (injury or poisoning without intent to cause harm or death),
  - **Suicide**
  - **Homicide**
  - **Could not be determined** (available information is insufficient to determine a manner of death, or there are two or more possible and equally compelling manners of death).
- The CFR case report tool categorizes the manner of death as **natural, accidental, homicide, suicide, pending, undetermined, and unknown**.
- When the manner of death is listed as "**pending**", further investigative, historical, or laboratory information is expected before a determination of manner of death can be made. In cases in which "pending" is listed on the death certificate filed at the time of death, a "Delayed Diagnosis of Death" form is submitted to Vital Records with a more definitive determination of manner of death, usually within three to six months of the death.

The CFR teams report the cause and manner of death as indicated on the death certificate. In those instances where a cause or manner of death is not indicated, CFR teams may make the determination upon conclusion of the review process. Local teams determine the cause and manner of death based on the sum of information available to them at the time of review. In some cases, an exact cause or manner of death may not be known to the team. An **undetermined** case is one in which the investigation of circumstances surrounding the death fails to reveal a clear determination of cause or manner. For example, the investigation of a sudden unexpected infant death (including autopsy, death scene investigation, and medical record review) may fail to reveal whether the death was due to a medical condition or external causes. Cases that are marked as **unknown** are those in which information necessary to determine the exact cause or manner of death is unattainable or unavailable to the team.

## Manner of Death

Of the 2018 child deaths reviewed, 491 deaths (57%) were determined to be natural (from medical causes) and 175 deaths were determined to be accidental (Figure 6). By comparison, in 2017, there were 519 natural deaths and 156 accidental deaths. In 2018 the CFR, 55 children (6%) died by homicide while 39 children (5%) died by suicide (Figure 6).

**Figure 6. Manner of Death Summary, Children Ages 0-17 Years, Tennessee, 2018 (n=860)**



Data source: Tennessee Department of Health, Child Fatality Review Database System.

Table 2 shows the number and manner of death by child's age, race, and sex. At 342 deaths, infants—children less than 1 year—bear the largest burden of natural deaths; infants account for 70% of all natural forms of deaths. Accident (unintentional injuries) is the second leading manner of child death. Children less than 1 year (n=57), 15-17 years (48), and 1-4 years (n=33) have the highest proportion of accidental deaths. Deaths due to homicide occurs all age categories; children aged 15-17 years (n=24) have the highest proportion of deaths by homicide. Similarly, children aged 15-17 years (n=28) have a higher proportion of deaths of suicides than all other age categories. A breakdown of manner of death by child's race reveals that White children bear a larger portion of deaths by natural causes, accident, suicide, and homicide than Black children or children of 'Other racial category' (Table 2). Also, more male children died from natural causes, accidents, suicide, and homicide than female children (Table 2).

**Table 2. Manner of Child (0-17 Years) Death, by Age, Race and Sex, Tennessee, 2018**

	Manner					
	Natural	Accident	Suicide	Homicide	Undetermined	Pending
<b>Age</b>						
< 1 year	342	57	0	7	66	17
1-4 years	56	33	0	12	4	5
5-9 years	28	21	0	5	1	1
10-14 years	39	16	11	7	0	1
15-17 years	26	48	28	24	3	2
<b>Race</b>						
Black	159	44	2	30	24	18
White	303	125	35	19	49	8
Other	16	5	2	5	1	0
Unknown	13	1	0	1	0	0
<b>Sex</b>						
Male	265	110	31	38	44	16
Female	226	65	8	17	30	10
<b>Total</b>	<b>491</b>	<b>175</b>	<b>39</b>	<b>55</b>	<b>74</b>	<b>26</b>

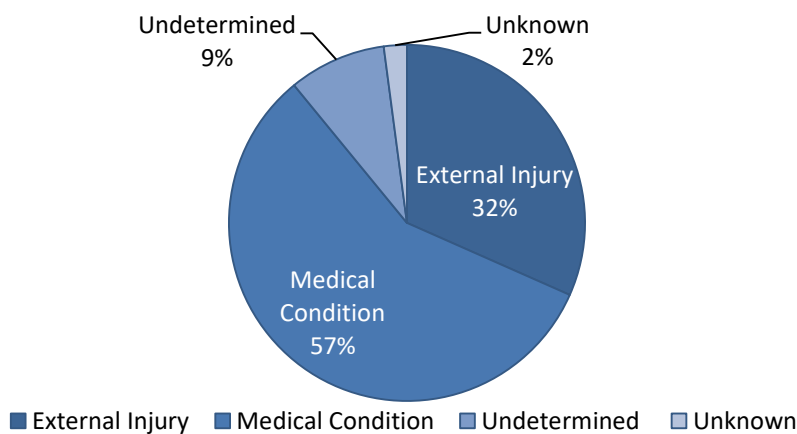
Data source: Tennessee Department of Health, Child Fatality Review Database System.

## Cause of Death

Cause of death refers to the effect, illness, or condition leading to an individual's death. The cause may be due to a medical condition or an external cause (injury). Figure 7 shows a breakdown of causes of child death. Of the 860 deaths reviewed by the CFR teams in 2018:

- **Medical causes** represented 57 percent (494 cases) of deaths.
- **External (injury)** causes represented 32 percent (272 cases) of deaths.
- **Cases in which the cause of death remains “unknown” or “undetermined”** represented 11 percent (94 total cases) of deaths. Of the cases marked as “undetermined” or “unknown”, 87 percent (n=82) involved children under one year of age, thus reflecting the inherent complexities in determining the manner and cause of infant deaths.

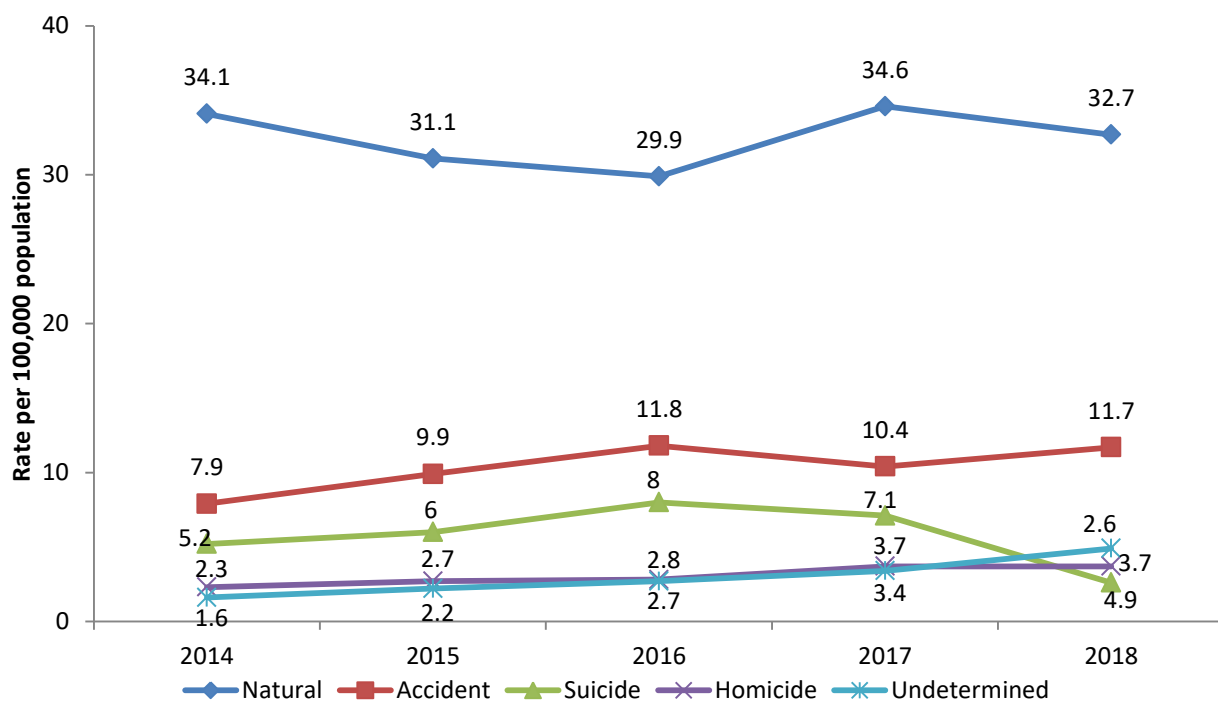
**Figure 7. Cause of Death Summary,  
Children Ages 0-17 Years, Tennessee, 2018 (n=860)**



Data source: Tennessee Department of Health, Child Fatality Review Database System.

The child mortality rate by the manner of death and year of death are presented in Figure 8. Over the past five years (2014 to 2018), natural and accidents have been the first and second leading manners of death respectively. Between 2017 and 2018, the child mortality rate for natural manner of death decreased from 34.6 deaths per 100,000 population to 32.7 deaths per 100,000 population. On the contrary, the child mortality rate for accidents increased from 10.4 deaths per 100,000 population in 2017 to 11.7 deaths per 100,000 population in 2018. It is worthy to note that deaths from suicide **decreased** in from 7.1 per 100,000 population in 2017 to 4.9 per 100,000 population in 2018 in comparison to 2017. There was no change in the child mortality rate due to homicide between 2017 (3.7 per 100,000 population) and 2018 (3.7 per 100,000 population).

**Figure 8. Child (0-17 years) Mortality Rate by Manner of Death in Tennessee. 2014-2018**



Data source: Tennessee Department of Health, Child Fatality Review Database System.  
Population estimates based on interpolated data from the U.S. Census's Annual Estimates of the Resident Population

Table 3 describes the cause of death by its manner. Among 272 deaths caused by an external (injury) cause of death, 172 deaths were categorized as accidental, 39 deaths were suicide, and 54 deaths were homicides. Of the 491 deaths caused by a medical condition, the manner of death was mostly natural (n=485).

**Table 3. Cause of Death by Manner of Death for Children Ages 0-17 Years Tennessee, 2018**

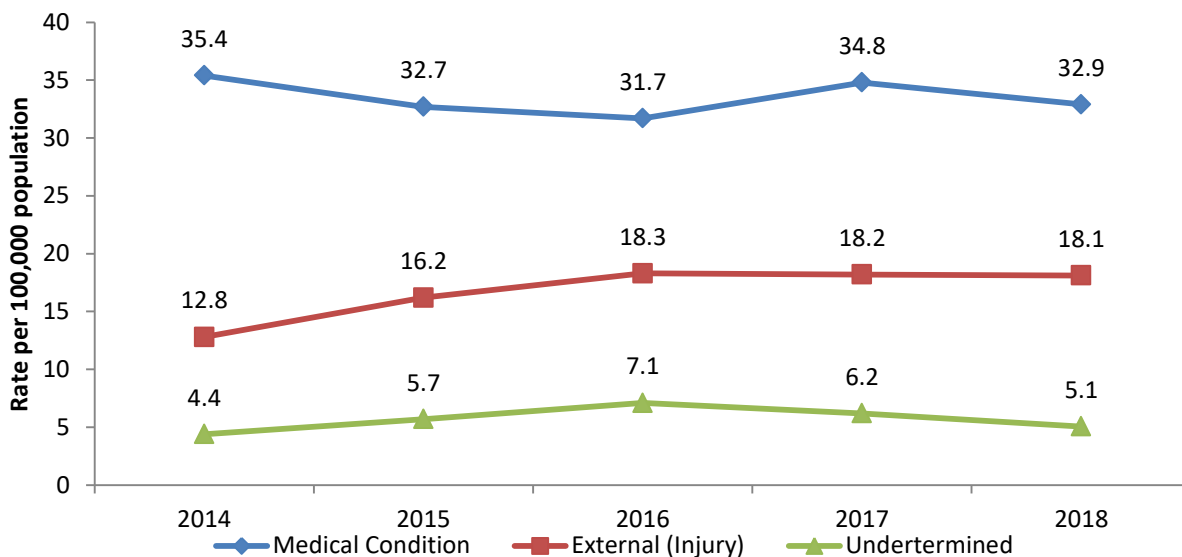
Cause of Death	Manner of Death					Pending
	Natural	Accident	Suicide	Homicide	Undetermined	
External (Injury)	3	172	39	54	4	0
Medical Condition	485	1	0	1	4	3
Undetermined	3	2	0	0	66	5
Unknown	0	0	0	0	0	1
<b>Total</b>	<b>491</b>	<b>175</b>	<b>39</b>	<b>55</b>	<b>74</b>	<b>26</b>

Data source: Tennessee Department of Health, Child Fatality Review Database System.



The five-year trend in death rates based on the cause of death are shown in Figure 9. The child mortality rate was highest for medical condition causes, followed by external causes of death and then undetermined cause of death. For each cause of death, the 2018 rates did not differ statistically when compared to their respective 2017 rates.

**Figure 9. Rate of Child Mortality Ages 0-17 Years by Cause of Death Tennessee, 2014-2018**



Data source: Tennessee Department of Health, Child Fatality Review Database System. Population estimates based on interpolated data from the U.S. Census's Annual Estimates of the Resident Population.

Table 4 describes the cause of death by age group, race, and sex of child. Among 2018 child deaths, death due to medical conditions is highest among Infants, children less than 1-year-old while deaths from external causes (injury) is highest among children between 15- to 17-years-old. Also, there were more White children who died external cause (injury) or medical conditions than Black children or children in the Other racial category. Of 2018 child deaths, male children had a higher proportion of deaths due to external cause (injury) or medical conditions than female children.

**Table 4. Cause of Death, Summary for Children Ages 0-17 Years, by Age, Race and Sex, Tennessee, 2018**

	Cause of Death				Total
	External (Injury)	Medical Condition	Undetermined	Unknown	
<b>Age Group</b>					
Less than 1 year	64	343	69	13	489
1-4 years	46	57	4	3	110
5-9 years	27	28	1	0	56
10-14 years	34	39	0	1	74
15-17 years	101	27	2	1	131
<b>Race</b>					
Black	75	162	26	14	277
White	183	303	49	4	539
Other	12	16	1	0	29
Unknown	2	13	0	0	15
<b>Sex</b>					
Male	182	266	46	10	504
Female	90	228	30	8	356
<b>Total</b>	<b>272</b>	<b>494</b>	<b>76</b>	<b>18</b>	<b>860</b>

Data source: Tennessee Department of Health, Child Fatality Review Database System.

**SPECIFIC CAUSES OF DEATH**

The cause of death includes two broad categories: external (injury) and medical. Within the external classification, individual deaths are further classified according to the nature of the injury. Table 5 provides a list of all external causes of death, the number of deaths represented by each classification, the classification’s percentage of all reviewed deaths, and the number of deaths by classification and age group.

Of the 860 reviewed child deaths in 2018, 32% (272 deaths) were classified as having been due to external causes, including motor vehicle crashes, weapons, asphyxia, fire/burns, poisoning or overdose, and fall/crush. This proportion of external cause of death is unchanged when compared to the 273 deaths due to external causes in 2017. Detailed analysis for each specific injury death is provided in later sections of this report.

In 2018, 272 reviewed child deaths were due to external causes, including motor vehicle crashes, weapons, asphyxia, fire/burns, poisoning or overdose, and fall/crush.

- Sixty-two children died in motor vehicle crashes in 2018, a 5% decrease from the 62 vehicular deaths in 2017.
- Eighty-one children died from weapons-related injuries, a 21% decrease from the 102 children who died in 2017.
  - Forty-nine (60%) of the weapons-related fatalities were homicides, 28 (35%) were suicides, and 4 (5%) were accidental, undetermined, or pending.
- Fifty-six children died of unintentional asphyxia; 49 of these children died in a sleep-related environment. This represents an increase in unintentional asphyxia cases of 12% from 2017 (50 asphyxia deaths, 41 of which occurred in a sleep-related environment).
- Fifteen children died from a fire, burn or electrocution, a 7% increase from 14 deaths in 2017.
- Thirty-one children died by drowning, a 63% increase from the 19 cases in 2017.
- Nine children died from poisoning in 2018, an 80% increase from 5 deaths in 2017.

**Table 5. External Cause of Death (Injury Causes) for Children Ages 0-17 Years by Age Group Tennessee, 2018**

	Total	Percent of Reviewed Deaths	Age				
			Less than 1 year	1-4 years	5-9 years	10-14 years	15-17 years
<b>Injuries</b>							
Motor Vehicle and other transport	62	7.2	3	7	11	12	29
Fire, burn, or electrocution	15	1.7	0	6	6	2	1
Drowning	31	3.6	4	14	2	1	10
Unintentional Asphyxia	56	6.5	51	3	2	0	0
Assault, weapon, or person's body part	81	9.4	5	10	5	14	47
Fall or crush	2	0.2	0	1	1	0	0
Poisoning, overdose, or acute intoxication	9	1.1	0	1	0	0	8
Other*	16	1.9	1	4	0	5	6
<b>TOTAL</b>	<b>272</b>	<b>31.6</b>	<b>64</b>	<b>46</b>	<b>27</b>	<b>34</b>	<b>101</b>

\*External causes listed as “Other” include animal bites or attacks and exposures.  
 Data source: Tennessee Department of Health, Child Fatality Review Database System.

Table 6 provides details on 2018 reviewed deaths resulting from a medical cause. Within the medical classification, causes are further specified by particular conditions or disease entities. In 2018, **492 deaths (57%) were attributed to medical causes.** Medical causes may include those acquired congenitally (present at birth) or those that develop as the child grows. The majority of deaths from medical causes in Tennessee are related to prematurity and congenital anomalies (29%). Other causes include infections, neurological conditions including seizures, and childhood cancers. In 2018, 57% of reviewed deaths were attributed to medical causes, a similar proportion of 58% (all deaths due to medical causes) in 2017. It is important to note that when SIDS and/or a Sudden Unexplained Infant Death (SUID) are identified on a death certificate, the cause is classified as “Medical” or “Undetermined.”

**Table 6. Medical Cause of Death for Children Ages 0-17 Years by Age Groups Tennessee, 2018**

Medical Cause	Total	Deaths Reviewed (%)	Less than 1 year	1-4 years	5-9 years	10-14 years	15-17 years
Prematurity	140	16.3	140	0	0	0	0
Congenital Anomaly	107	12.4	86	15	5	0	1
Other Medical Condition	71	8.3	39	12	1	9	10
Cancer	32	3.7	1	10	6	9	6
Cardiovascular	31	3.6	19	3	5	3	1
Asthma	30	3.5	11	5	4	6	4
Other Perinatal Condition	23	2.7	22	0	1	0	0
Other Infection	20	2.3	12	4	2	1	1
Neurological/Seizure Disorder	16	1.9	5	2	2	5	2
Pneumonia	8	0.9	3	4	0	0	1
Influenza	5	0.6	0	0	1	3	1
Diabetes	4	0.5	0	1	0	3	0
Malnutrition/Dehydration	2	0.2	1	1	0	0	0
SIDS	1	0.1	1	0	0	0	0
Undetermined Cause	1	0.1	1	0	0	0	0
Unknown	3	0.1	2	0	1	0	0
<b>TOTAL</b>	<b>494</b>	<b>57%</b>	<b>343</b>	<b>57</b>	<b>28</b>	<b>39</b>	<b>27</b>

\*Other medical condition includes all other conditions that fall under a different category than those listed above, e.g. myocarditis or intestinal infarction.

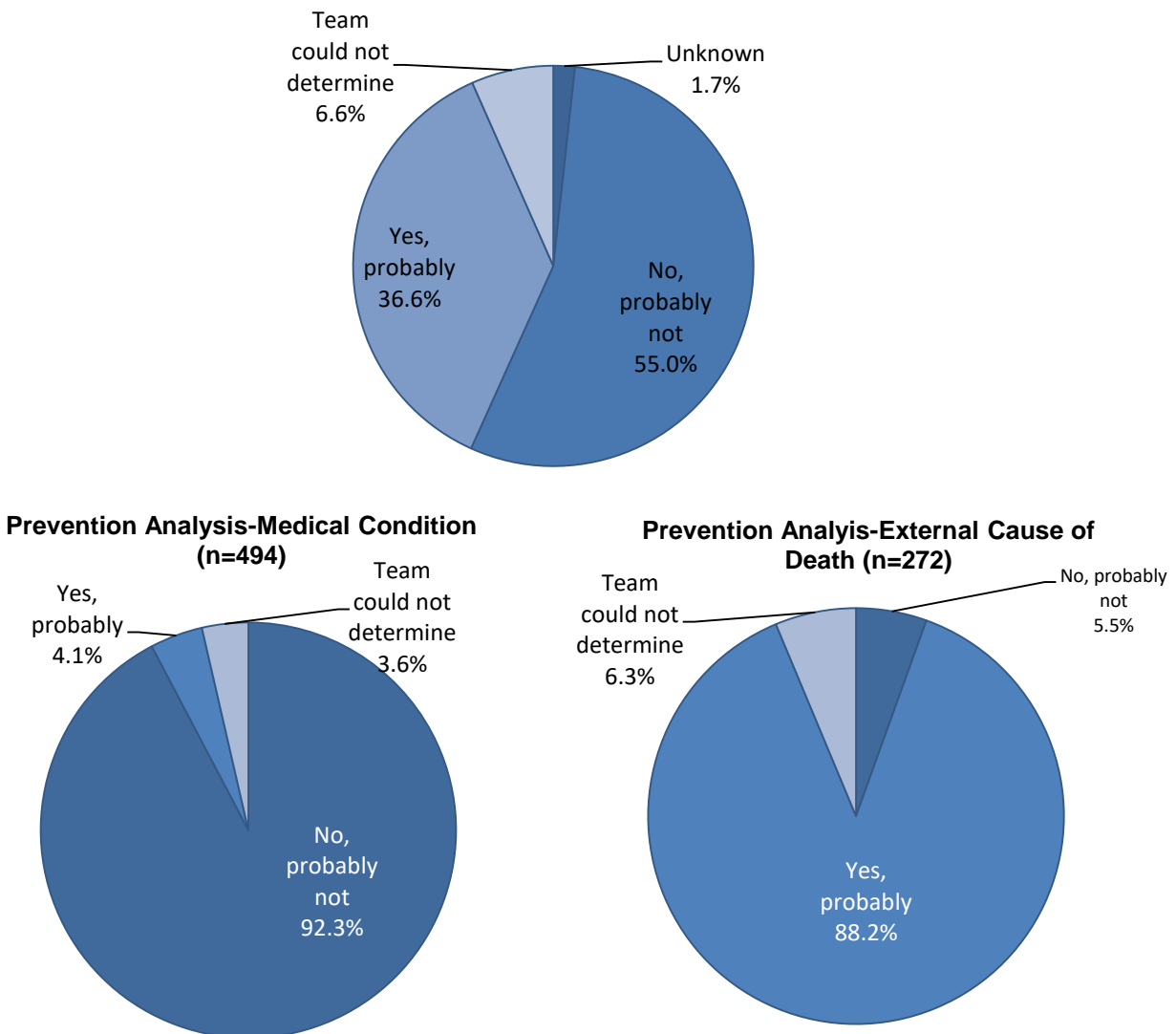
Data source: Tennessee Department of Health, Child Fatality Review Database System.

## PREVENTION ANALYSIS

The overarching goal of the Child Fatality Review Program is to craft and adopt recommendations for actions to prevent future child deaths. In Tennessee, the Child Fatality Review process has informed the implementation of several policies. If intervention by an individual or community could have reasonably changed the circumstances leading to a child's death, then that fatality is considered to have been **preventable**. CFR teams carefully examine each death to determine its preventability.

Of the cases reviewed, CFR teams determined that **315 deaths (37%) were probably preventable**, as shown in Figure 10. The majority of preventable deaths are caused by external causes of injury (240 cases) versus medical causes (20 cases).

**Figure 10. Preventability of Child Deaths Ages 0-17 Years by Cause of Death Tennessee, 2017**



Data source: Tennessee Department of Health, Child Fatality Review Database System.

Prevention of future child deaths is the primary goal of Child Fatality Review. Spread throughout this report are highlighted boxes labeled “**Focusing on Prevention.**”

These boxes contain nationally-recommended strategies for preventing a particular type of death, as well as highlights of current TN initiatives focused on preventing deaths within a particular category.

**FOCUSING ON PREVENTION: SPECIFIC CAUSES OF DEATH**

Prevention opportunities include:

- Increase referrals to CHANT. CHANT teams provide enhanced patient-centered engagement, navigation of medical and social services referrals, and impact pregnancy, child and maternal health outcomes.
- Immunizing infants and children against vaccine-preventable diseases such as pertussis, measles, and influenza.
- Accessing early and regular prenatal care for pregnant women.
- Avoiding tobacco exposure to children, infants, and pregnant women.
- Promoting social services for women who are of child-bearing age, pregnant, or of low socioeconomic status.
- Widespread messaging campaigns to promote the importance of safe sleep.
- Provider and patient education about, and utilization of, antenatal steroids, when appropriate.

Current prevention efforts in Tennessee include:

- TDH funds smoking cessation programs and Nicotine Replacement Therapy (NRT) for the Tennessee Quit Line, a help line which offers smoking cessation services to anyone in the state and BABY & ME—Tobacco Free Program™, which provides support and incentives which encourage pregnant women who smoke to stop using tobacco.
- TDH promotes the “ABCs of Safe Sleep” campaign to reduce SIDS and other sleep-related infant deaths and continues to expand efforts with unconventional community partners in order to reach all infant caregivers with the safe sleep message.
- TDH family planning services provides non-coercive family planning education and birth control methods, including long acting reversible contraceptives, to interested women and encourage spacing between pregnancies to improve birth outcomes.
- TDH provides NRT to FQHCs via the Tennessee Primary Care Association and some local health departments.
- Prevent Child Abuse Tennessee (PCAT) connected 90 percent of 364 families served by Healthy Families Tennessee (HFTN) to a medical home this fiscal year. Ninety percent of children enrolled in the HFTN program were up to date on immunizations by 2 years of age, and 89 percent of women enrolled in the home visiting programs prenatally delivered full-term infants.
- CHANT was expanded to all 95 counties in 2019. TDH has been promoting this program to increase referral to CHANT.

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## ACTS OF CHILD ABUSE AND NEGLECT

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In Federal Fiscal Year (FFY) 2017 (October 1, 2016 through September 30, 2017), it is estimated that 673,830 children were victims of child abuse and neglect in the U.S. Approximately 1720 of those children died as a result of their maltreatment. Of the children who died from child abuse, 75 percent experienced neglect and 42% experienced physical abuse. Children ages 0-3 years accounted for 72% of child abuse victims but were disproportionately represented among the fatalities, with approximately 50% of child abuse fatalities having occurred in children under 1-year-old.<sup>3,4</sup>

According to the Children's Bureau's Administration on Children, Youth, and Families, in Tennessee, 9,665 (6.4 per 1,000) children were determined to have been victims of child abuse in 2016.<sup>7</sup> Of the children who were victims of child abuse in 2016, 26% experienced neglect, 27% experienced sexual abuse and 61% experienced physical abuse. Among child abuse victims, 45% were children ages 0-5 years.<sup>5</sup>

A portion of preventable deaths are either directly or indirectly related to the lack of quality care or supervision provided by a child's parents, guardians, or supervisors at the time of, or the time leading up to, death. Supervision may be entirely absent or inadequate for the age or activity of the child or the child's supervisor may willfully endanger the child's health and welfare. CFR statistics on deaths due to abuse and neglect reflect all cases in which the local team determined there was poor supervision, abuse or neglect and do not necessarily represent the legal definition of poor supervision, abuse or neglect. These numbers may vary from DCS reports as DCS includes only those cases in which abuse or neglect are substantiated, while the CFR local teams examine deaths from a public health approach in order to determine whether there was opportunity for prevention.

Table 7 below describes the cases in which review teams determined there was poor or absent supervision or the presence of child abuse, child neglect, or other negligence. Of the 860 child deaths reviewed, 79 of them were a victim of at least of one form of child abuse.

**Table 7. Acts of Child Abuse and Neglect among Reviewed Deaths for Children Ages 0-17 Years Tennessee, 2018\***

	All Ages	Less than 1 year	1-17 years
<b>Any form of Child Abuse Victimization</b>	79	59	20
<b>Physical Abuse</b>	28	23	5
<b>Neglect</b>	41	33	8
<b>Sexual Abuse</b>	9	9	0
<b>Emotional Abuse</b>	9	9	0
<b>Unknown</b>	4	4	0

\*There will always be differences in the numbers of child abuse and neglect deaths reported by DCS and TDH because the reporting focus is different for each agency. DCS reporting is focused on child deaths based on standards of proof for legal culpability. TDH reporting is focused on identifying opportunities to **prevent** child deaths, regardless of culpability.

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<sup>3</sup> U.S. Department of Health & Human Services, Administration for Children and Families, Administration on Children, Youth and Families, Children's Bureau. (2019). Child Maltreatment 2017. Available from <https://www.acf.hhs.gov/cb/resource/child-maltreatment-2017>

<sup>4</sup> Centers for Disease Control and Prevention, National Center for Injury Prevention and Control: Division of Violence Prevention.

<sup>5</sup> Child Maltreatment 2016; Children's Bureau (Administration on Children, Youth and Families, Administration for Children and Families) of the U.S. Department of Health and Human Services.



## **FOCUSING ON PREVENTION: ACTS OF CHILD ABUSE AND NEGLECT**



Prevention opportunities include:

- Increasing child abuse awareness and recognition training in schools and childcare environments.
- Promoting family support programs for at-risk families which promote child social and cognitive development and increase parent-child interaction.

Current prevention efforts in Tennessee include:

- The Tennessee Department of Health (TDH) funds evidence-based home visiting programs that have been shown to reduce child maltreatment in high-risk counties.
- Prevent Child Abuse Tennessee (PCAT) continues to lead the Nashville Child Protection Coalition and serve on its steering committee. The Coalition's goal is to diminish the incidence and impact of child sexual abuse by teaching 5 percent of the adult population in Nashville to recognize and react responsibly to child sexual abuse. PCAT was designated as the organization responsible for coordinating efforts and facilitating Stewards of Children training opportunities for nonprofit organizations, businesses, congregations, and parents, providing 44 trainings for 795 adult attendees.
- The Second Look Commission (SLC) has the statutory duty to review an appropriate sampling of cases involving a second or subsequent incident of severe child abuse in order to provide recommendations and findings to the General Assembly regarding whether or not severe child abuse cases are handled in a manner that provides adequate protection to the children of this state. Child fatalities have been included in the case review since 2014. Many of the findings and recommendations of the SLC focus on areas that improve the quality of investigations and strengthen the collaboration and coordination among Child Protective Services team members. These activities have the potential to improve child safety and prevent child fatalities.
- The Tennessee Department of Children's Services, through the Title IV-E waiver ("the Waiver") has implemented services and supports impacting both in-home and foster care/placement services. Tennessee has initiated interventions that address the need for effective support services delivery to families in order to reduce admissions into foster care. In addition, interventions have been implemented for families experiencing foster care placement in order to reduce length of stay and expedite permanency.
- The DCS Child Abuse Hotline (CAH) handled 126,754 calls in 2018 resulting in 140,940 referrals. 35,858 were web referrals.
- In calendar year 2018, 153 deaths and near deaths were reviewed by DCS. This included 127 children not in DCS custody and 8 deaths of children in DCS custody. During this review period, 18 near death cases were also reviewed. None of the near-deaths involved children who were in DCS custody.

## DEATHS TO CHILDREN WITH SPECIAL CIRCUMSTANCES

Children with special circumstances include those with a disability, chronic illness, or an open Child Protective Services (CPS) case at the time of death. At least one in four deaths (26%; n=223) in 2018 involved children known to have suffered from a disability or chronic illness (Table 8). Among children who reported disability or chronic illness, 18 were enrolled in the Tennessee Department of Health's Children's Special Services program (CSS). CSS is a voluntary program that provides families of children with special health care needs with care coordination and payments for medical services. The families of 24 children were known by the local Child Fatality Review teams to have been involved in an open CPS case at the time of their child's death (Table 9).\*

**Table 8. Children with Disability for Reviewed Deaths of Children Ages 0-17 Years by Age Group Tennessee, 2018\***

Age	Type of Disability or Chronic Illness			
	Physical	Sensory	Mental	Cognitive
Less than 1 year	99	1	4	12
1-4 years	43	0	1	11
5-9 years	25	2	0	7
10-14 years	31	3	5	9
15-17 years	25	1	16	13
<b>Total</b>	<b>223</b>	<b>7</b>	<b>26</b>	<b>52</b>

\*Because more than one disability or chronic illness may be present in a child, the sum of the occurrences of disabilities and chronic illnesses exceeds the total number of child deaths.

Data source: Tennessee Department of Health, Child Fatality Review Database System.

**Table 9. Children with Special Circumstances for Reviewed Deaths of Children Ages 0-17 Years Tennessee, 2018\***

Circumstance	If disabled, child was enrolled in Children's Special Services (CSS)	Open child protective services (CPS) case at time of death
Number of Deaths	18	24

\*This number will vary from the data reported by DCS as child fatalities from DCS are based on the date of the abuse or neglect substantiation and not the date of death; thus the reporting timeframe for DCS is different than that of TDH. Local Child Fatality Review Teams make their determinations based upon information available to them at the time of the review.

Data source: Tennessee Department of Health, Child Fatality Review Database System.

## **FOCUSING ON PREVENTION: CHILDREN WITH SPECIAL CIRCUMSTANCES**



Prevention opportunities include:

- Providing respite care and other support services for families of children who are at high risk for abuse and neglect, including children and youth with special health care needs.




Current prevention efforts in Tennessee include:

- The Tennessee Department of Health operates Children's Special Services (CSS) in all 95 counties. Trained care coordinators work with children with special health care needs and their families. Families are referred to community resources that assist in meeting family-specific needs and assist families in coping with their child's condition.
- In 2019 the CSS program merged with the care coordination program and TennCare Outreach program to form Community Health Access and Navigation in Tennessee (CHANT) to help individuals and families navigate complex health systems and social services. CHANT teams provide enhanced patient-centered engagement, navigation of medical and social services referrals, and impact pregnancy, child and maternal health outcomes.

## DETAILED REVIEW: SPECIFIC CAUSES OF CHILD DEATH

Table 10 provides comparisons of child fatalities for selected causes of death. The graph specifically highlights causes that have increasing numbers of deaths or have shown very little improvement in the number of deaths over the past 5 years.

**Table 10. Summary of Year-to-Year Trends for Selected Causes of Deaths Reviewed Tennessee, 2017 vs 2018\***

	2017	2018	2017	2018
<b>Categories showing Improvement</b> 	Number of Deaths		Rate per 100,000	
Sleep-Related**	144	128	1.8	1.6
Congenital Anomaly**	121	107	1.6	1.3
Suicide	51	39	3.4	2.6
<b>Categories showing small change</b> 				
Prematurity	132	140	8.8	9.3
Homicides	55	55	3.7	3.7
Cancer	33	32	2.2	2.1
Motor Vehicle Related	65	62	4.3	4.1
<b>Categories showing worsening outcome</b> 				
Drowning	19	31	1.3	2.1
Unintentional Asphyxia	51	56	3.4	3.7

\*Causes are not mutually exclusive

Data source: Tennessee Department of Health, Child Fatality Review Database System

\*\* Deaths of infants less than 23 weeks gestation and less than or equal to 500 grams in weight are not reviewed because these deaths occur before the currently-accepted limits of viability. Therefore, this number may differ from that published in other Departmental reports. Sleep-related and congenital anomaly death rates were calculated as deaths per 1000 live births in consistency with other death rates among infants.

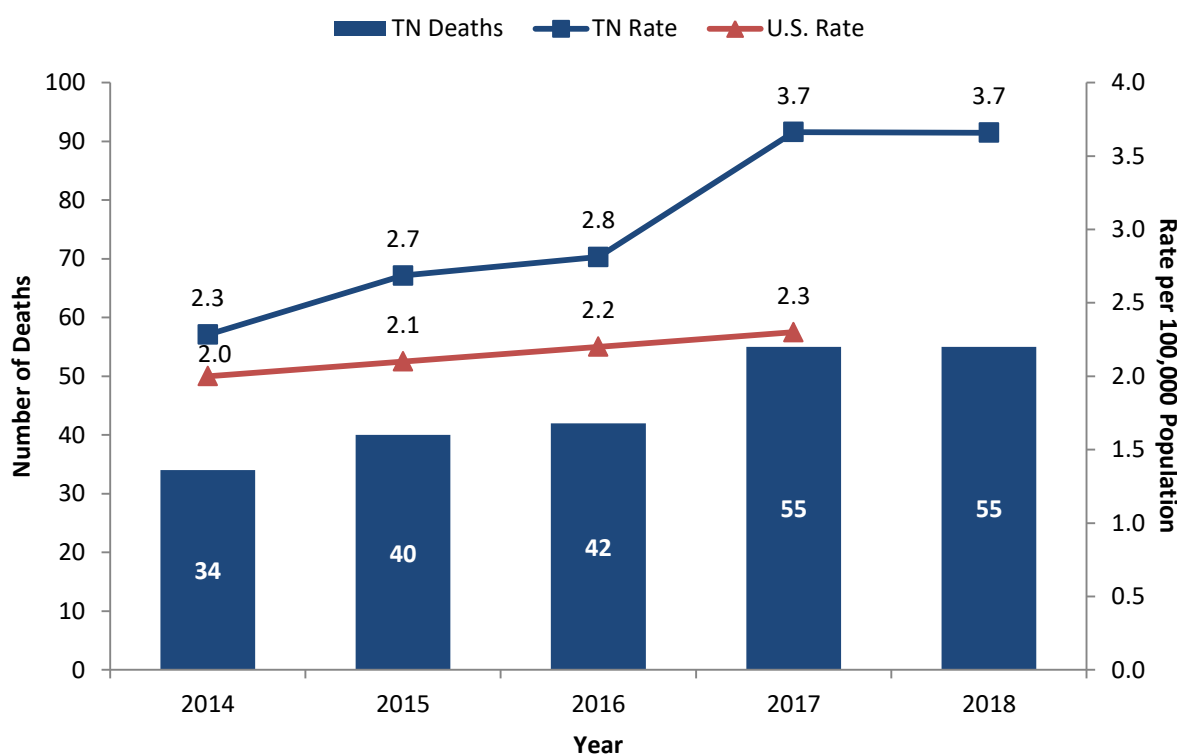
\*\*\*In the above table, trends in deaths are categorized into the three categories: those showing improvement from 2017 to 2018 (at least 10% improvement); those showing relatively no change from 2017 to 2018 (less than 10% change), and those showing worsening outcomes (at least a 10% change).

There was improvement in three areas of categories of death. Between 2017 and 2018, there was a considerable **decrease** in sleep-related child deaths, congenital anomaly, and suicide. On the other hand, deaths due to drowning and unintentional asphyxia increased by at least 10% among Tennessee children. Lastly, there was a small change in deaths due to prematurity, homicides, cancer, and motor vehicle among children.

## HOMICIDE DEATHS

Homicide is a serious problem nationally, affecting people across all stages of life. In 2017, nearly 20,000 people nationwide were homicide victims, of which 1,661 were children under 18 years of age. This year, homicide was the fourth leading cause of death for children between the ages of 1 and 17 years in the United States. Nationally, Black children (vs. White) and males (vs. females) experienced the highest homicide rates in 2017.<sup>6</sup> Tennessee's child homicide rate has remained consistently above the national rate (Figure 11). In 2018, **55 children died of homicide in Tennessee**, the same as the number of deaths in 2017. This number represents **6% of all reviewed child deaths**.

**Figure 11. Homicide Deaths and Rates per 100,000 Population Ages 0-17 Years Tennessee and US, 2014-2018**

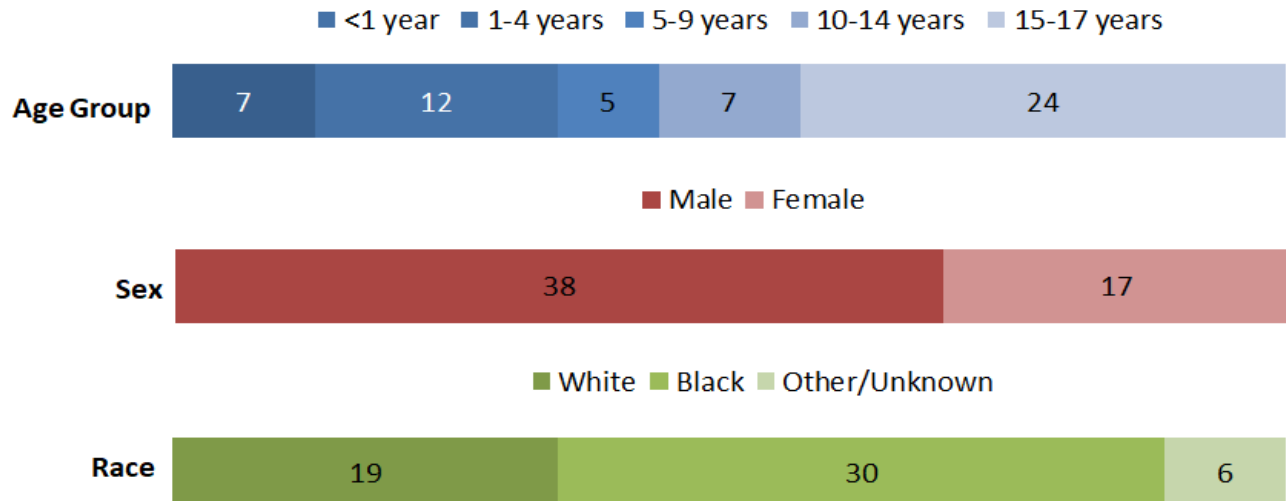


Data source: Tennessee Department of Health, Child Fatality Review Database System and population estimates based on interpolated data from the U.S. Census's Annual Estimates of the Resident Population.

Thirty-eight homicide victims were males; 17 were females. Over two-thirds of the victims (30 deaths) were Black children (Figure 12). Older teenagers (age 15-17 years) had the highest burden of homicide deaths (n=24; 44%) followed by children age 1 to 4 years (n=12; 22%). Sixty-four percent homicides were committed using firearms (Figure 13) and 47% of all homicides occurred in the child's home (Figure 14).

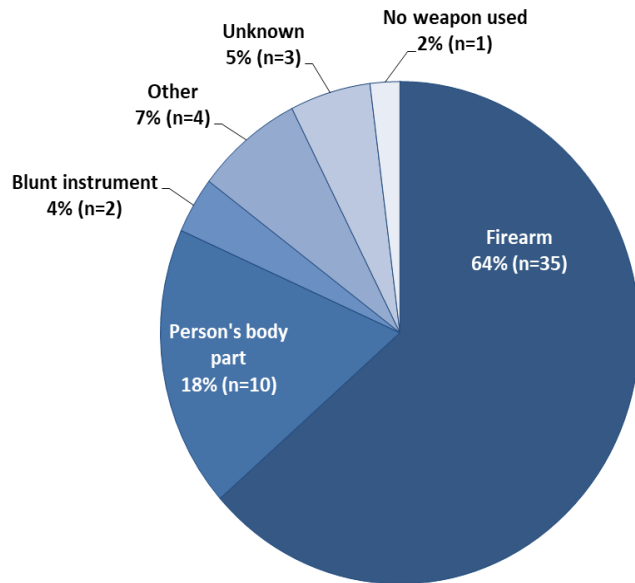
<sup>6</sup> Centers for Disease Control and Prevention: National Center for Injury Prevention and Control. Injury Prevention Web-based Injury Statistics Query System (WISQARS). 2017. Accessed at [http://www.cdc.gov/injury/wisqars/fatal\\_injury\\_reports.html](http://www.cdc.gov/injury/wisqars/fatal_injury_reports.html)

**Figure 12. Demographic Distribution of Homicide Deaths for Children Ages 0-17 Years Tennessee, 2018**

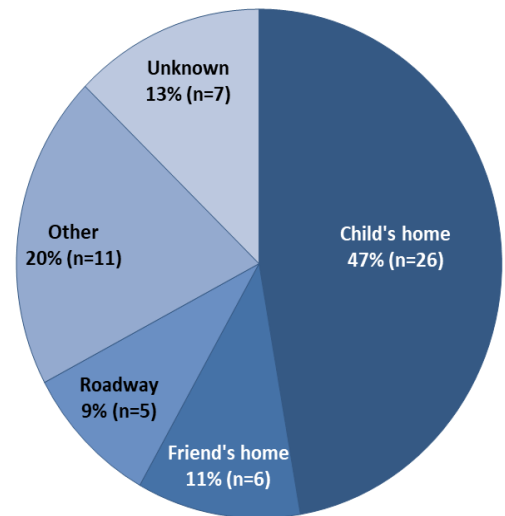


Data source: Tennessee Department of Health, Child Fatality Review Database System.

**Figure 13. Weapon Type used in Homicide Deaths for Children Ages 0-17 Years Tennessee, 2018\***



**Figure 14. Homicide Deaths for Children Ages 0-17 Years by Victim's Location Tennessee, 2018**



\*Other includes three cases in which motor vehicles were used as deadly weapons.

Data source: Tennessee Department of Health, Child Fatality Review Database System.

## **FOCUSING ON PREVENTION: HOMICIDE DEATHS**



Prevention opportunities include:

- Enhancing police presence, neighborhood watch and after school recreation programs in neighborhoods with high homicide rates.
- Increasing engagement of high-risk parents in intensive early intervention services.
- Practicing gun safety and safe storage of weapons.
- Raising public awareness around ACEs and their impact upon the risk of intentional injury.

Current prevention efforts in Tennessee include:

- Prevent Child Abuse Tennessee's (PCAT) Shaken Baby/Abusive Head Trauma Prevention project materials are disseminated statewide to every birthing hospital in Tennessee. In FY2019, PCAT distributed over 90,000 materials (in English and Spanish) to 100 percent of birthing hospitals to educate parents about abusive head trauma prevention. PCAT also conducted in-person and web-based trainings to Labor & Delivery/Maternity/NICU nurses in 8 hospitals around the state, as well as trainings for undergraduate and graduate nursing students at Belmont University, Trevecca University, and Vanderbilt University.
- The Tennessee Department of Health provides presentations on bullying and violence prevention in schools through initiatives such as Coaching Boys into Men and Athletes as Leaders.
- The Tennessee Commission on Children and Youth awards grants to agencies to provide interventions to at-risk youth and ensure that youth who commit offenses receive needed services.
- School districts and other non-profit agencies primarily serving low-income students receive federal funding from the 21<sup>st</sup> Century Community Learning Centers. This initiative supports afterschool programs designed to reinforce and complement the regular academic program. Approved activities include counseling programs and programs which encourage parental involvement, character education, and drug and violence prevention.
- ACES's training has been provided to all TDH staff statewide.

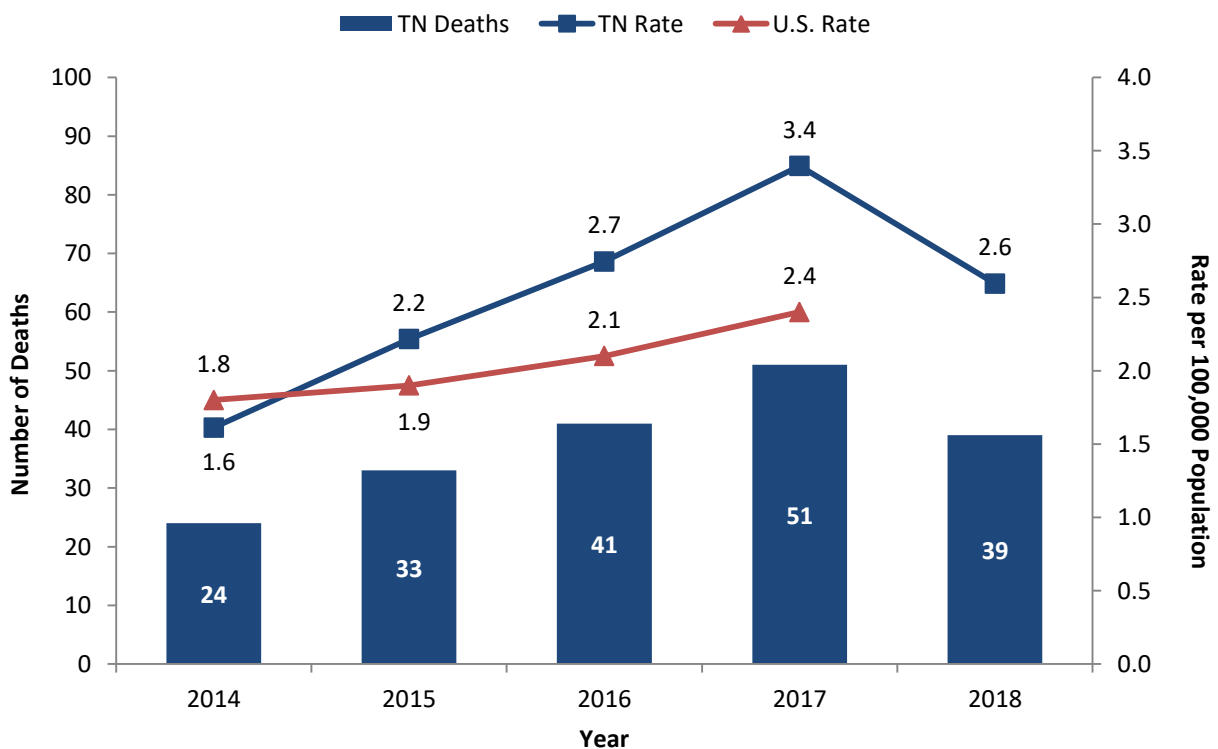
## SUICIDE DEATHS

In 2017, 1,773 children between ages 10 and 17 years died by suicide (5.3 suicide deaths per 100,000 children) in the United States, making suicide the second leading cause of death for children in this age group. White (vs. Black) children and males (vs. females) had higher rates of suicide nationally in 2017.<sup>7</sup>

***In 2018, firearms in the home are the leading mechanism and location for youth suicides.***

In Tennessee, thirty-nine children under 18 years of age died by suicide during 2018; this represents 5% of all reviewed deaths and a rate of 2.6 suicides per 100,000 population (Figure 15).

**Figure 15. Suicides and Suicide Rates per 100,000 Children Ages 0-17 Years Tennessee and the US, 2014-2018**



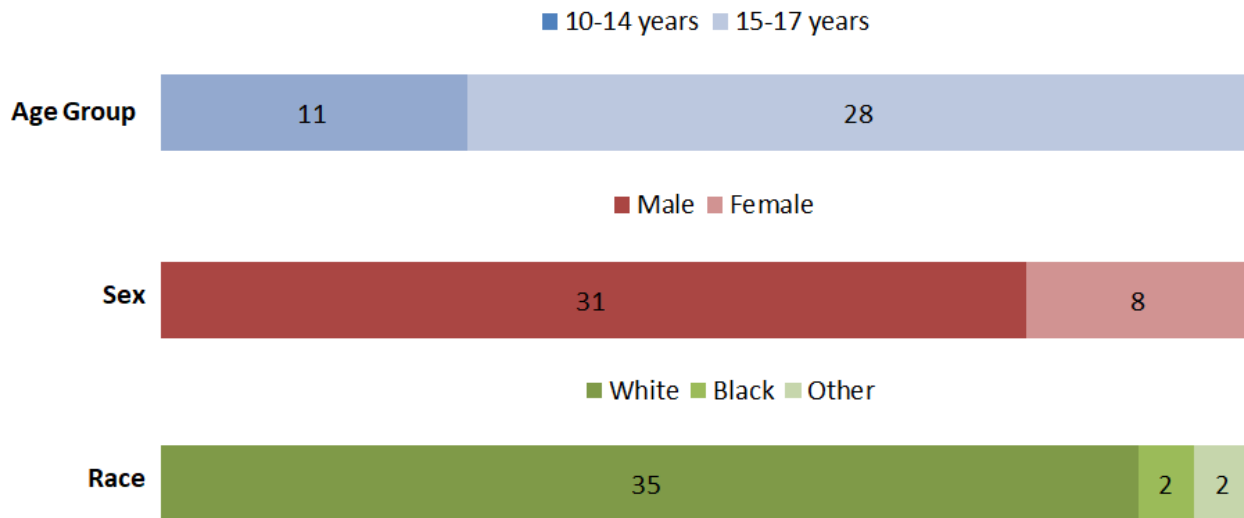
Data source: Tennessee Department of Health, Child Fatality Review Database System and population estimates based on interpolated data from the U.S. Census's Annual Estimates of the Resident Population.

Figure 16 demonstrates that suicides were more frequent among males (n=31) than females (n=8), and among Whites (n=35) than Blacks (n=2). Approximately two-thirds (67%) of all suicide cases involved a firearm (Figure 17). The majority of the cases (72%) occurred in the child's home (Figure 18). Firearms were the most common suicide method for children ages 10-14 and children ages 15-17, but were especially dominant in the older age group (Table 11).

<sup>7</sup> Centers for Disease Control and Prevention: National Center for Injury Prevention and Control. Injury Prevention Web-based Injury Statistics Query System (WISQARS). 2017. Accessed at [http://www.cdc.gov/injury/wisqars/fatal\\_injury\\_reports.html](http://www.cdc.gov/injury/wisqars/fatal_injury_reports.html)

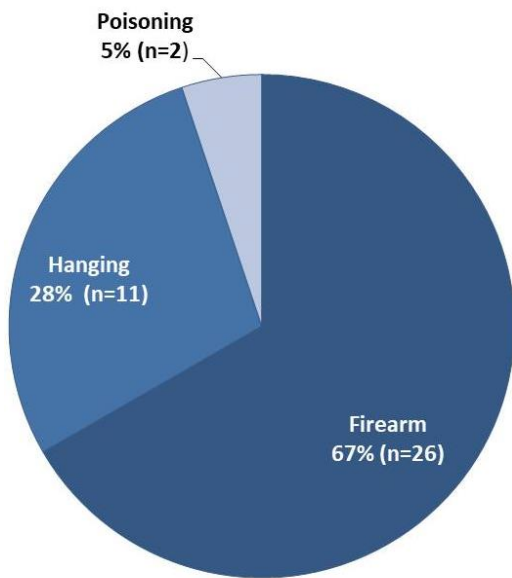


**Figure 16. Demographic Distribution of Suicides for Children Ages 0-17 Years Tennessee 2018**

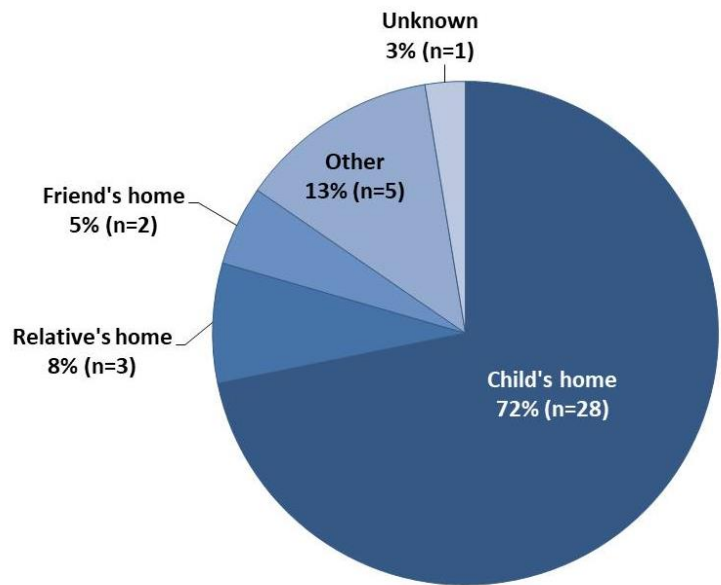


Data source: Tennessee Department of Health, Child Fatality Review Database System.

**Figure 17. Method of Suicides for Children Ages 0-17 Years, Tennessee, 2018**



**Figure 18. Location of Suicides for Children Ages 0-17 Years, Tennessee, 2018\***



\*Other includes child's school, roadway, and sports

Data source: Tennessee Department of Health, Child Fatality Review Database System.

**Table 11. Suicides among Children Ages 0-17 Years by Victim Age Groups and Method Tennessee, 2018**

<b>Method of Suicide</b>	<b>10-14 years</b>	<b>15-17 years</b>	<b>Total</b>
Firearm	6	20	26
Hanging	5	6	11
Poisoning, overdose or acute intoxication	0	2	2
<b>Total</b>	<b>11</b>	<b>28</b>	<b>39</b>

Data source: Tennessee Department of Health, Child Fatality Review Database System.

### **FOCUSING ON PREVENTION: SUICIDE DEATHS**



Prevention opportunities include:

- Increasing access to educational programs that teach teens to recognize the warning signs of suicide.
- Increasing opportunities to train school staff to identify and refer students at-risk for suicide, as well as how to appropriately respond to suicide and other crises in the school.
- Messaging the importance of safe storage of firearms to prevent their use as a lethal means of suicide.

Current prevention efforts in Tennessee include:

- In collaboration with the Jason Foundation and Tennessee Department of Mental Health and Substance Abuse Services, the Tennessee Department of Education offers schools a no cost, web-based professional development training series on suicide prevention.
- The Jason Foundation provides a no-cost curriculum to all schools to help teach teens to recognize warning signs of suicide.
- TDH continues to monitor suicide attempts through ESSENCE (Electronic Surveillance System for the Early Notification of Community-based Epidemics), a database designed for syndromic surveillance, and now monitors suicide attempt trends on a weekly basis. This monitoring allows for the identification of geographic or demographic populations that are experiencing increased numbers of suicide attempts and provides opportunities for real-time coordinated prevention efforts which target those populations.
- In January 2019 the Suicide Prevention Act was established for TDH to convene suicide prevention stakeholders to review data and resources to develop statewide suicide prevention programs.

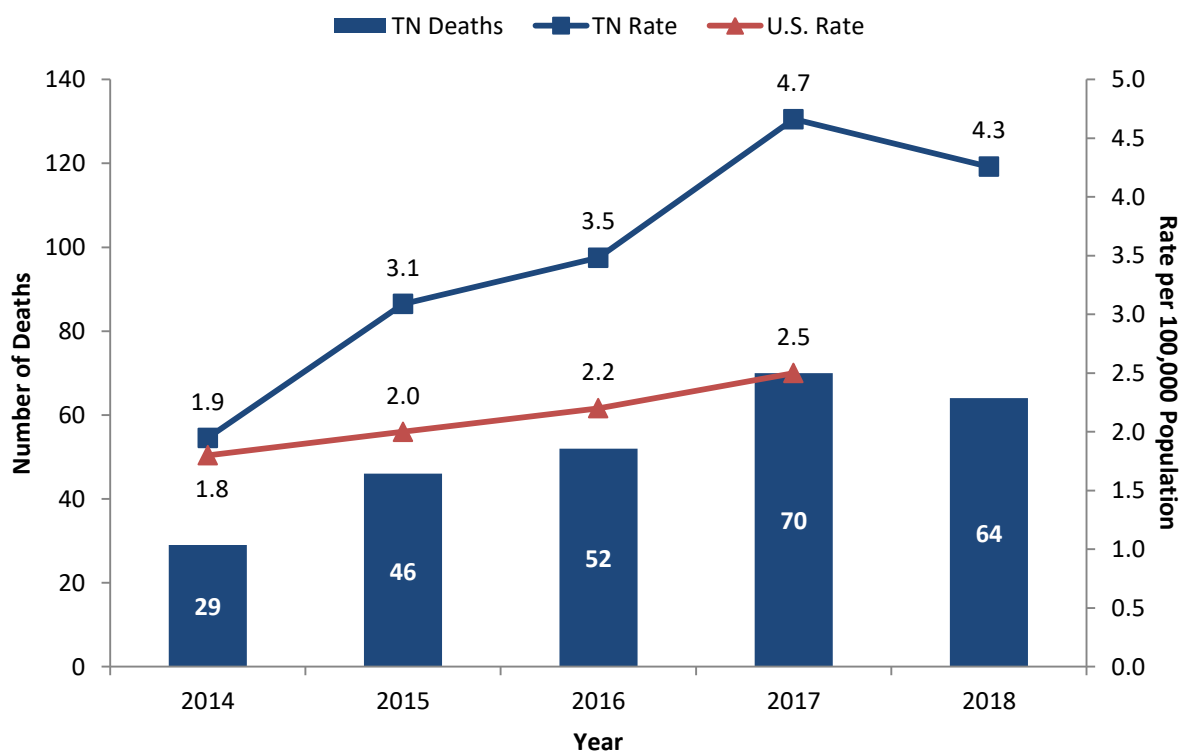
*Continued on next page*

- The Tennessee Suicide Prevention Network has a number of efforts aimed at reducing suicide and supporting survivors, including:
  - Distribution of resources on suicide grief across the state. These include the pamphlet Survivors of Suicide and regional resource directories, among others.
  - Provision of guidelines in best practices regarding postvention activities to schools affected by the suicide death of a teacher or student.
  - Provision of guidelines in best practices regarding how to intervene with a child in a school setting: LEA Suicide Prevention Behavioral Checklist protocol.
  - Connecting families who have recently experienced a suicide death with other survivors of suicide loss who can guide them through the grief and recovery process.
  - Provision of educational and support materials that funeral home staff may share with survivors of suicide loss. These include the brochures Survivors of Suicide, Gun Safety Project and Suicide-Proofing Your Home as well as Supporting Survivors of Suicide Loss, a guide for funeral home directors published by the U.S. Department of Health and Human Services.
  - Provision of technical assistance and no-cost training sessions to schools implementing policies to address suicide prevention and postvention as set forth in the Jason Flatt Act of 2007 and the Jared's Law amendment in 2016.
  - Promotion of the state toll-free crisis line (1-855-CRISIS-1; 1-855-274-7471), and the Crisis Text Line (text TN to 741741) as resources for young people in crisis.
  - Promotion of online resources and brochures to download from TSPN.org.

## FIREARM DEATHS

In 2017, firearms accounted for 1,814 deaths (2.5 per 100,000) of children ages 0 to 17 years nationally.<sup>8</sup> In 2018, 64 Tennessee children (4.3 per 100,000) died in incidents involving firearms (Figure 19). This number represents 7% of all reviewed deaths. In the most recent years, Tennessee's rate of child firearm death has far outstripped the national rate (Figure 19).

**Figure 19. Firearm-Related Deaths and Rates per 100,000 Children Ages 0-17 Years Tennessee, 2014-2018**



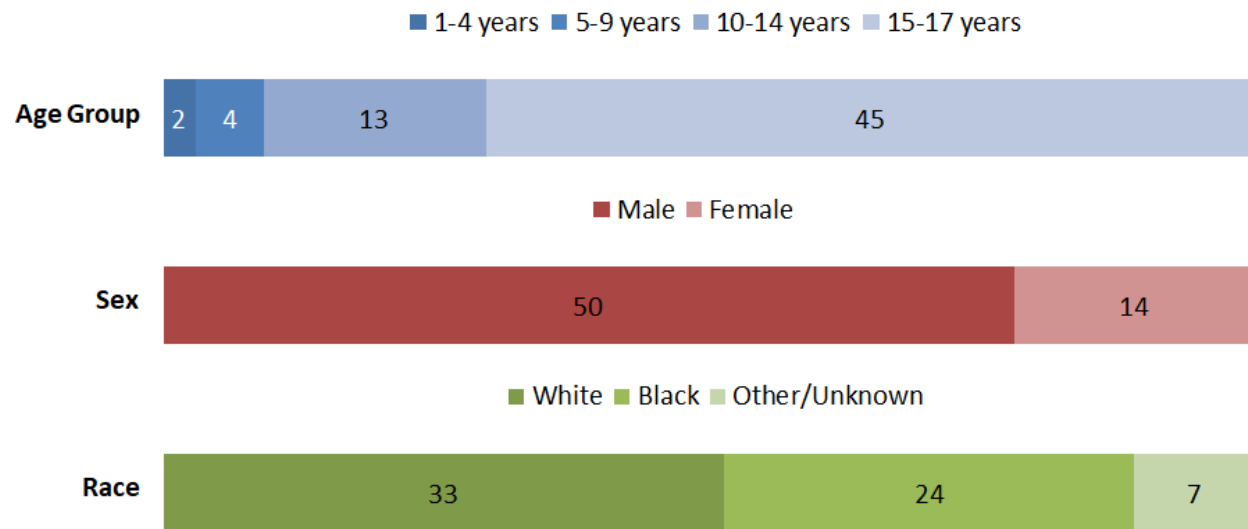
Data source: Tennessee Department of Health, Child Fatality Review Database System and population estimates based on interpolated data from the U.S. Census's Annual Estimates of the Resident Population.

Of the 64 deaths, 50 (78%) were males and 14 (22%) were females (Figure 21). Most firearm-related deaths (70%) occurred amongst the oldest age group, teenagers ages 15 to 17 years. Although the number of firearm-related deaths of White children was greater than that of Black children (Figure 20), the rate of firearm-related fatality is higher among Black children (data not shown).

The majority of firearm-related deaths (n=35; 55%) were classified as homicides followed by suicide (n=25; 39%); most of the firearm-related homicide and suicide occurred among children ages 15 to 17 years (Table 12).

<sup>8</sup> Centers for Disease Control and Prevention: National Center for Injury Prevention and Control. Injury Prevention Web-based Injury Statistics Query System (WISQARS). 2017. Accessed at [http://www.cdc.gov/injury/wisqars/fatal\\_injury\\_reports.html](http://www.cdc.gov/injury/wisqars/fatal_injury_reports.html)

**Figure 20. Demographic Distribution of Firearm-Related Deaths for Children Ages 0-17 Years Tennessee, 2018**



Data source: Tennessee Department of Health, Child Fatality Review Database System.

**Table 12. Firearm-Related Deaths for Children Ages 0-17 Years by Manner of Death and Age Group, Tennessee, 2018**

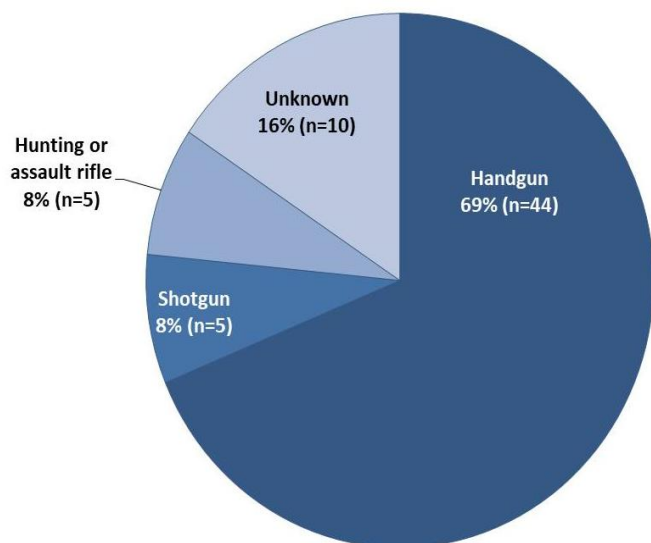
Manner of Death	<1 yr	1-4 yrs	5-9 yrs	10-14 yrs	15-17 yrs	Total
Accident	0	0	0	1	1	2
Suicide	0	0	0	5	20	25
Homicide	0	2	3	7	23	35
Undetermined	0	0	1	0	1	2
<b>Total</b>	<b>0</b>	<b>2</b>	<b>4</b>	<b>13</b>	<b>45</b>	<b>64</b>

Data source: Tennessee Department of Health, Child Fatality Review Database System.

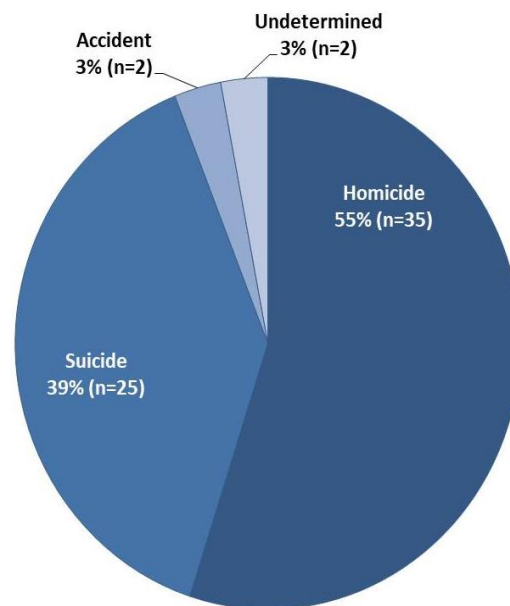
Of the 64 deaths involving firearms, 44 were handguns, 5 were shotguns, 5 were hunting or assault rifles, and the remaining 10 involved an unknown gun type (Figure 21). Fifty-five percent (n=35) of all firearm fatalities were homicides and 39% (n=25) were suicides (Figure 22).

For homicide fatalities in which the firearm owner was known, a parent (n=10) was the most common owner category listed. Parents were also the most frequent firearm owners for suicide cases (n=8). The owner of the firearm was listed as “unknown” for 37% (n=22) of homicide and suicide deaths caused by firearms (Table 13).

**Figure 21. Firearm-Related Deaths for Children Ages 0-17 Years by Firearm Type, Tennessee 2018\***



**Figure 22. Firearm-Related Deaths for Children Ages 0-17 Years by Manner of Death, Tennessee, 2018**



Data source: Tennessee Department of Health, Child Fatality Review Database System.

**Table 13. Homicide and Suicide Deaths due to Firearms for Children 0-17 Years by Owner of Firearm, Tennessee, 2018**

Owner of Firearm	Homicides	Suicides	Total
Parent (biological, stepparent, adoptive)	10	8	18
Other family member (grandparent, sibling)	2	1	3
Friend, acquaintance, child's boyfriend/girlfriend	3	0	3
Other (self, rival gang member, stranger)	7	3	10
Weapon stolen/found (owner is unknown)	2	2	4
Unknown	11	11	22
<b>Total</b>	<b>35 (58%)</b>	<b>25 (42%)</b>	<b>60</b>

Data source: Tennessee Department of Health, Child Fatality Review Database System.

## **FOCUSING ON PREVENTION: FIREARM-RELATED DEATHS**



Prevention opportunities include:

- Increasing awareness and promotion of safe firearm handling and storage practices to eliminate child access to firearms.
- Promoting safety programs which encourage parental supervision and prevent unsafe child-weapon interactions.

Current prevention efforts in Tennessee include:

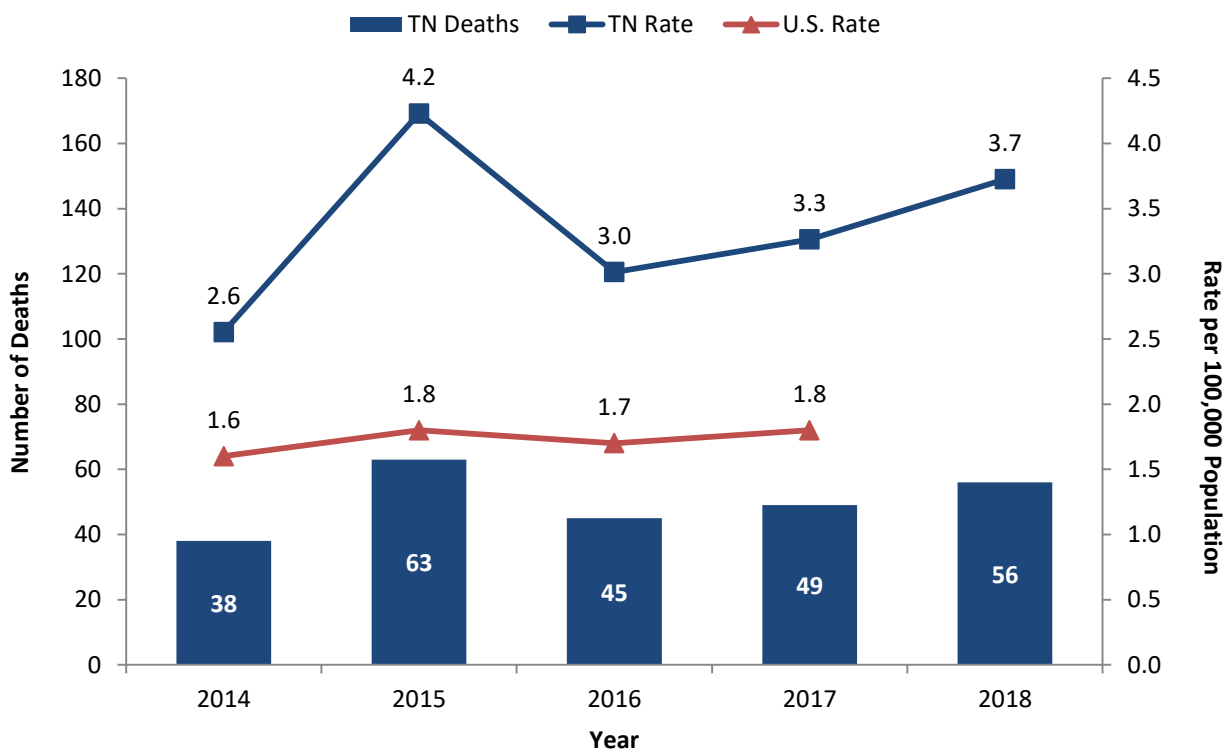
- The Tennessee Department of Safety and Homeland Security distributes information on promoting safe firearm storage and practices.
- The Tennessee Department of Health provides education in the schools on bullying and violence prevention.
- Coaching Boys into Men and Athletes as Leaders utilize the influence of coaches in the school to teach young athletes healthy relationship skills.

## ASPHYXIA DEATHS

Unintentional asphyxia is the leading cause of injury death for children under the age of one year, and accounts for approximately 1,000 infant deaths each year nationally. Asphyxia cases may be related to suffocation, strangulation, or choking. Accidental suffocation rates have increased fourfold since 1984.<sup>9</sup> Nationally, male infants and Black infants have higher rates of death due to asphyxia than female and White infants respectively. While infant asphyxia deaths are closely linked to unsafe sleep environment factors, deaths of older children are more likely to be related to choking on food or toys.

Figure 23 demonstrates the annual count and rate of unintentional asphyxia child death for 2014-2018. In 2018, 56 children died of unintentional asphyxia. This number represents 7% of all reviewed deaths.

**Figure 23. Unintentional Asphyxia Deaths and Rates per 100,000 Children Ages 0-17 Years Tennessee and the US, 2014-2018\***



\*Previous reports include intentional and unintentional asphyxia.

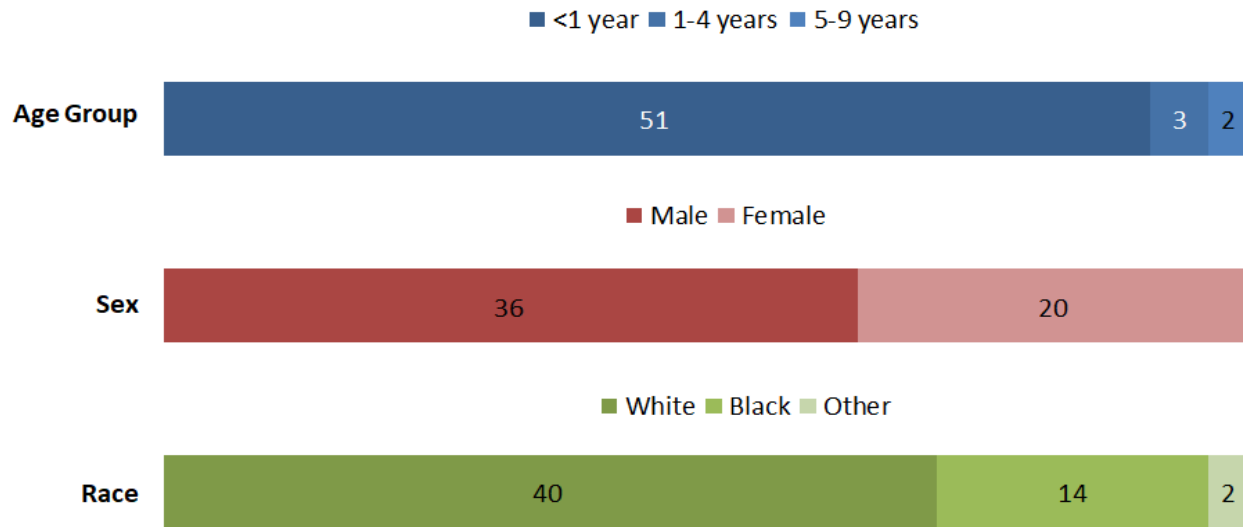
Data source: Tennessee Department of Health, Child Fatality Review Database System and population estimates based on interpolated data from the U.S. Census's Annual Estimates of the Resident Population.

Figure 24 demonstrates the demographic distribution of unintentional asphyxia fatality by age, sex, and race. More male (n=36) and White children (n=40) died from asphyxia than female (n=20) and Black children (n=14). As shown in Table 14, **the majority (n=49; 88%) of asphyxia cases in 2018 were infants, children under one year, who died due to an unsafe sleep environment.** Detailed information on infant sleep related deaths is included later in the report.

<sup>9</sup> Centers for Disease Control and Prevention. Morbidity and Mortality Weekly Report. Suffocation Deaths Associated with Use of Infant Sleep Positioners. Accessed at <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6146a1.htm>



**Figure 24. Demographic Distribution of Asphyxia Deaths for Children Ages 0-17 Years Tennessee, 2018**



Data source: Tennessee Department of Health, Child Fatality Review Database System.

**Table 14. Asphyxia Cause of Death for Children Ages 0-17 Years by Age Groups Tennessee, 2018**

Cause of Asphyxia	<1 yr	1-4 yrs	5-9 yrs	Total
Sleep-related (strangulation, suffocation)	49	0	0	49
Suffocation (not sleep-related)	0	0	0	0
Strangulation (not sleep-related)	0	0	1	1
Choking	2	2	0	4
Other	0	1	1	2
<b>Total</b>	<b>51</b>	<b>3</b>	<b>2</b>	<b>56</b>

Data source: Tennessee Department of Health, Child Fatality Review Database System.

## **FOCUSING ON PREVENTION: ASPHYXIA DEATHS**



Prevention opportunities include:

- Expanding the reach of education regarding the importance of infant safe sleep environments.
- Providing education to parents and other child caregivers around safe meal preparation and playtime (i.e. importance of monitoring toddlers during meal and playtime).
- Providing basic first aid and CPR education to child care professionals and parents, including skills needed to safely remove airway obstructions.
- Educating parents of young children to properly child-proof the home.

Current prevention efforts in Tennessee include:

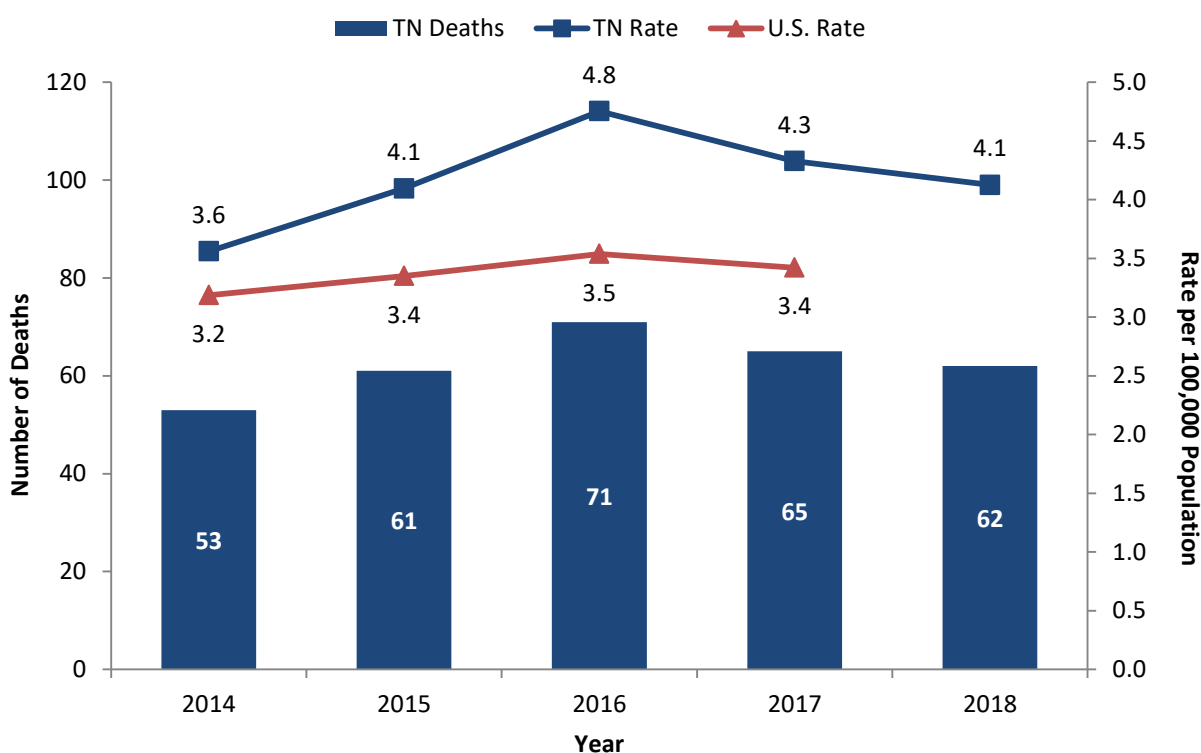
- The Tennessee Department of Health’s “ABCs of Safe Sleep” campaign educates parents and other caregivers on the how to prevent asphyxia in the sleep environment. Multiple state and community agencies educate the community about the “ABCs of Safe Sleep” at various outreach events across Tennessee.
- Safe Kids sends out a monthly email to alert parents and caregivers of recent safety recalls specific to children’s products.

## MOTOR VEHICLE AND OTHER TRANSPORT DEATHS

Motor vehicle crashes are the leading cause of death amongst children ages 1 to 17 in the U.S.<sup>10</sup> In 2017, the most recent year for which national data is available, 2,502 children (age 0-17 years) were killed in motor vehicle crashes. Nationally, teenagers (age 15-17) and males make up the majority (44% and 59%, respectively) of child motor vehicle fatalities.<sup>11</sup> Teens are more likely than older drivers to underestimate dangerous driving situations. In addition, teens have the lowest rate of seat belt use compared to that of other age groups.

In Tennessee, deaths from motor vehicle-related accidents represented the second greatest number of fatalities among all external causes of death. Figure 25 demonstrates the annual count and rate of motor vehicle-related child deaths for 2014-2018. In 2018, **62 deaths** were related to motor vehicles or transportation modalities, representing **7% of all reviewed child fatalities**. The rate did not change significantly from that of 2017.

**Figure 25. Motor Vehicle-Related Deaths and Rates per 100,000 Children Ages 0-17 Years Tennessee and the US, 2014-2018**



Data source: Tennessee Department of Health, Child Fatality Review Database System and population estimates based on interpolated data from the U.S. Census's Annual Estimates of the Resident Population.

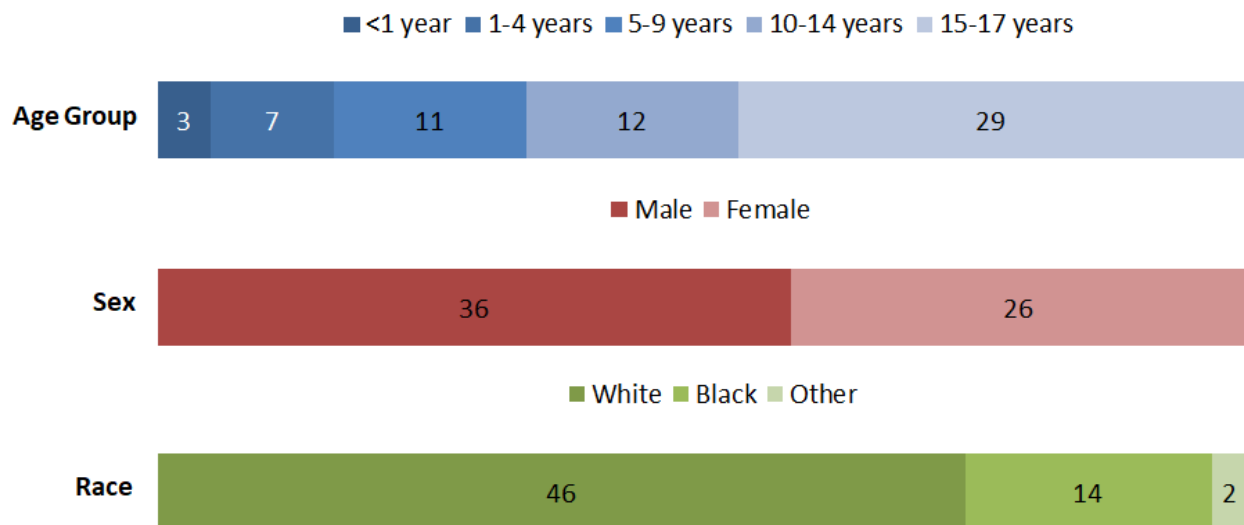
<sup>10</sup> Centers for Disease Control and Prevention: National Center for Injury Prevention and Control. Injury Prevention Web-based Injury Statistics Query System (WISQARS). 2017. Accessed at [http://www.cdc.gov/injury/wisqars/fatal\\_injury\\_reports.html](http://www.cdc.gov/injury/wisqars/fatal_injury_reports.html)

<sup>11</sup> Centers for Disease Control and Prevention: National Center for Injury Prevention and Control. Injury Prevention Web-based Injury Statistics Query System (WISQARS). 2017. Accessed at [http://www.cdc.gov/injury/wisqars/fatal\\_injury\\_reports.html](http://www.cdc.gov/injury/wisqars/fatal_injury_reports.html)

Figure 26 demonstrates the demographic distribution of motor vehicle fatality by age, sex, and race. Fatalities occurred more frequently among males (n=36) than females (n=26), and among Whites (n=46) than Blacks (n=14).

Motor vehicle-related deaths occurred among every age category although, predictably, those of driving age (within the 15-17 year age cohort) were most affected. Of the 29 fatalities in that cohort, 45 percent (13 cases) were driving at the time of the incident. Table 15 summarizes the position of the children relative to the vehicle. The vast majority (94%) of children killed were drivers or passengers of the motor vehicle at the incident. An additional three children were pedestrians struck by motor vehicles and one child was riding a bicycle.

**Figure 26. Demographic Distribution of Motor Vehicle Fatalities for Children Ages 0-17 Years Tennessee, 2018\***



Data source: Tennessee Department of Health, Child Fatality Review Database System.

**Table 15. Motor Vehicle/Other Transport Fatalities for Children Ages 0-17 Years by Age Groups and Position with Respect to Vehicle, Tennessee, 2018**

Victim Position	<1 yr	1-4 yrs	5-9 yrs	10-14 yrs	15-17 yrs	Total
Driver	0	0	0	4	13	17
Passenger	3	5	11	8	14	41
Pedestrian	0	2	0	0	1	3
On bicycle	0	0	0	0	1	1
Total	3	7	11	12	29	62

Data source: Tennessee Department of Health, Child Fatality Review Database System.

Of the children who were drivers or passengers in motor vehicles at the time of their death, 47% (n=27) were confirmed to not be using needed protective measures, such as a seat belt, helmet or child/booster seat (Table 16).

**Table 16. Motor Vehicle Deaths among Children Ages 0-17 Years by Vehicle Type and Protective Measure\*, Tennessee, 2018**

Vehicle Type	Protection Not Used	Protection Used	Unknown or N/A**	Total Deaths
Car, Truck, Sport Utility Vehicle (SUV), Van	23	19	6	48
All-Terrain Vehicle, Motorcycle, Other	4	2	4	10
<b>Total</b>	<b>27</b>	<b>21</b>	<b>10</b>	<b>58***</b>

\*Protective measures include seat belt, helmet, and child/booster seat.

\*\*Protective measures included here were determined to be irrelevant for a small number of cases due to the circumstances of the incident (e.g. a boating incident or a case of an unborn child involved in a motor vehicle crash that caused placental abruption).

\*\*\*Total deaths by vehicle type are lower than total motor vehicle deaths because pedestrian and bicycle deaths are excluded.

Data source: Tennessee Department of Health, Child Fatality Review Database System.

### **FOCUSING ON PREVENTION: MOTOR VEHICLE DEATHS**



Prevention opportunities include:

- Imposing stricter nighttime driving restrictions for teen drivers.
- Promoting of the importance of infant and child car seats and booster seats for infants, toddlers and young children.
- Enforcing laws which prohibit texting and driving.
- Encouraging school participation in teen driver safety programs such as “Battle of the Belt” or “Checkpoints™”.

Current prevention efforts in Tennessee include:

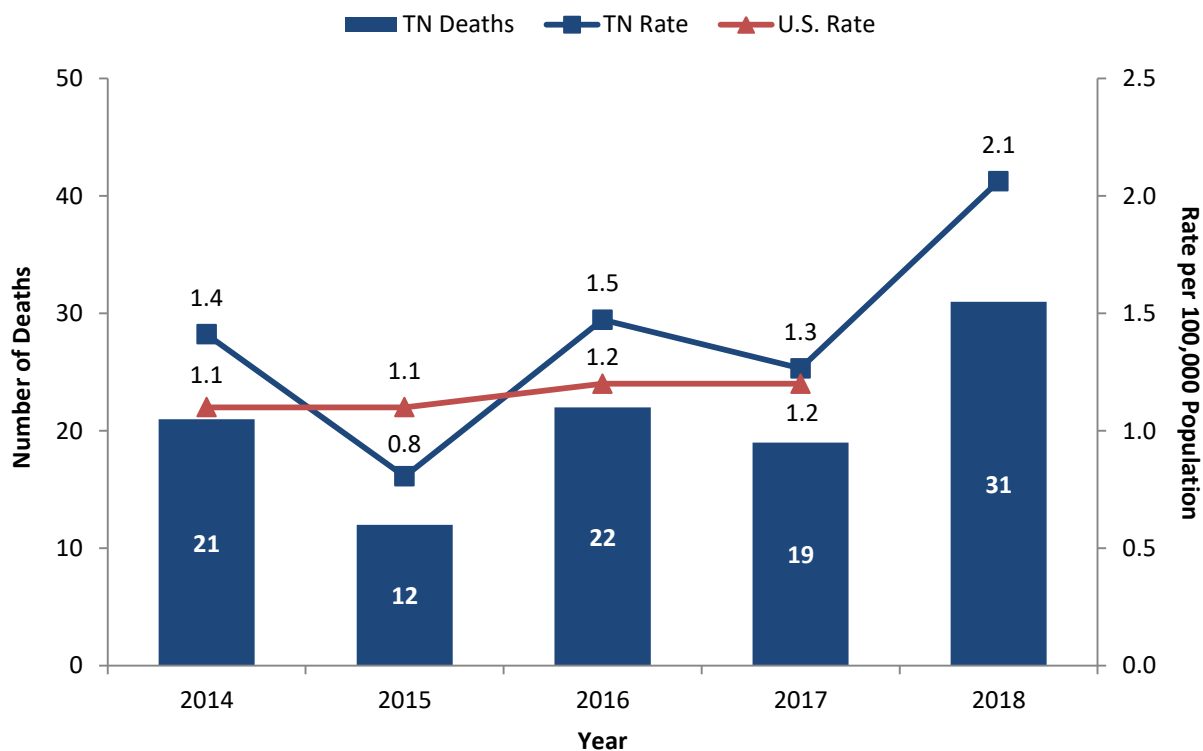
- The Tennessee General Assembly passed a Graduated Driver’s License (GDL) law in 2001. TDH has created educational programming for parents and teens to raise awareness of, and compliance with, the GDL law. This educational programming is an opportunity to strengthen the compliance with the GDL law.
- TDH, in conjunction with the regional trauma centers, sponsors “Battle of the Belt” and “Checkpoints™” programs to reduce teen motor vehicle-related injuries and fatalities.
- TDH encourages schools to participate in the Tennessee Highway Safety Office’s program “reducingcrashes.org”. Schools register on the website and receive points for each motor vehicle crash prevention activity they complete. Points may be redeemed for items schools can use to promote safe driving to their students.
- TDH provided funding to 26 agencies through the end of FY2019 to purchase and distribute child safety seats and booster seats to families that could not afford them.
- Safe Kids continues to provide seat checks in the community through their “Buckle Up” program.

## DROWNING-RELATED DEATHS

For all ages, drowning ranks fifth among the causes of unintentional injury death in the United States.<sup>12</sup> Between 2013 and 2017, an average of 834 fatal drownings of children ages 0 to 17 years occurred annually in the United States. During this period, drowning was the leading cause of death from unintentional injury for children ages 1 to 4 years and occurred most often in swimming pools.<sup>13</sup> Nationwide, infant drownings occurred most often in bathtubs.<sup>14</sup>

Figure 27 demonstrates the annual count and rate of child deaths due to drowning for 2014-2018 in Tennessee and the US. In Tennessee, 31 children died by drowning in 2018. This number represents approximately 4% of all reviewed deaths. Twenty-eight (90%) of the deaths were accidents and 3 (10%) were homicides. Of the 31 drowning case reports, there were three cases with definitive knowledge that the child was able to swim (data not shown).

**Figure 27. Drowning Deaths and Rates per 100,000 Children Ages 0-17 Years Tennessee and the US, 2014-2018**



Data source: Tennessee Department of Health, Child Fatality Review Database System and population estimates based on interpolated data from the U.S. Census's Annual Estimates of the Resident Population.

<sup>12</sup> Centers for Disease Control and Prevention: National Center for Injury Prevention and Control, Division of Unintentional Injury Prevention. Unintentional Drowning: Get the Facts. Accessed at <http://www.cdc.gov/HomeandRecreationalSafety/Water-Safety/waterinjuries-factsheet.html>

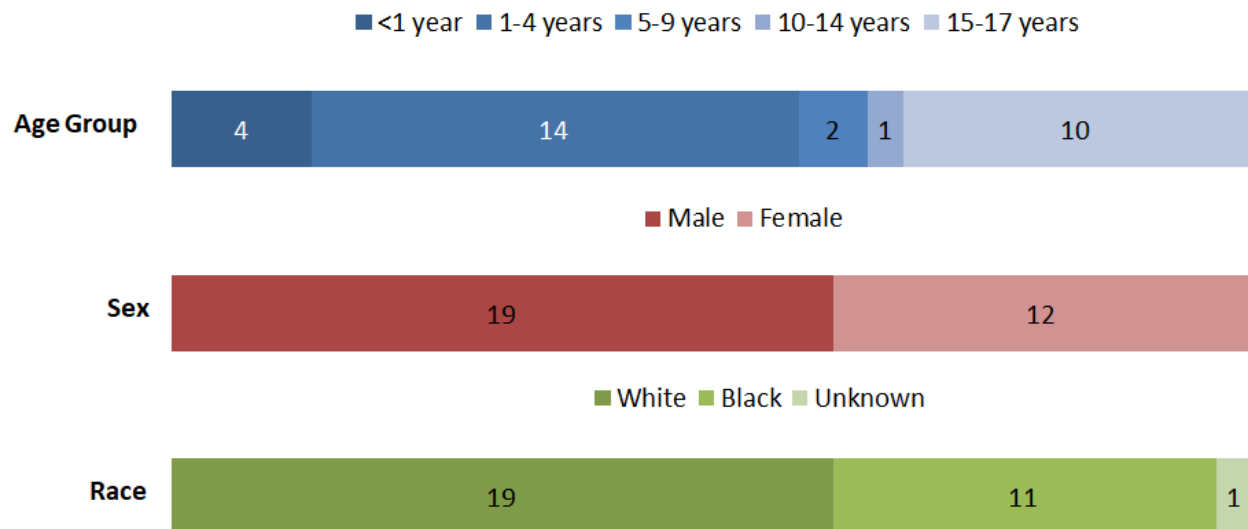
<sup>13</sup> Centers for Disease Control and Prevention: National Center for Injury Prevention and Control. Injury Prevention Web-based Injury Statistics Query System (WISQARS). 2017. Accessed at [http://www.cdc.gov/injury/wisqars/fatal\\_injury\\_reports.html](http://www.cdc.gov/injury/wisqars/fatal_injury_reports.html)

<sup>14</sup> Centers for Disease Control and Prevention: Racial/Ethnic Disparities in Fatal Unintentional Drowning Among Persons Aged ≤ 29 Years—United States, 1999-2010. Morbidity and Mortality Weekly report. May 16, 2014 Accessed at <https://www.cdc.gov/mmwr/pdf/wk/mm6319.pdf>

Figure 28 summarizes drown-related deaths by age, sex, and race of child. The age groups most represented among drowning deaths were children aged 1-4 years and children aged 15-17 years. As shown in Figure 28, drowning deaths were more frequent in males (n=19) and Whites (n=19) than females (n=12) and Blacks (n=11).

Among the younger group, pools were by far the most common site of drowning, while open water was a more prominent drowning location amongst the teen group (Table 17). Of the 13 drowning deaths that occurred in a pool, eight (62%) had evidence of a barrier or protection around the pool (data not shown).

**Figure 28. Demographic Distribution of Drowning Deaths for Children Ages 0-17 Years Tennessee 2018**



Data source: Tennessee Department of Health, Child Fatality Review Database System.

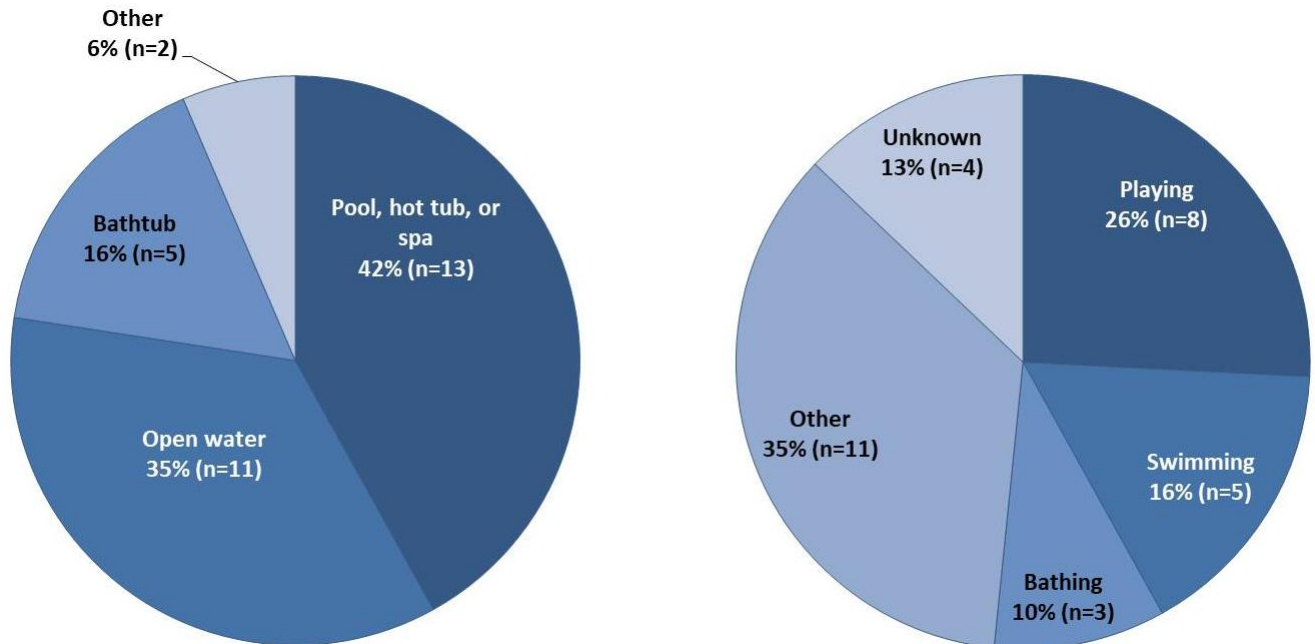
**Table 17. Drowning Deaths for Children Ages 0-17 Years by Location and Age Groups Tennessee, 2018**

Location of Accident	<1 yr	1-4 yrs	5-9 yrs	10-14 yrs	15-17 yrs	Total
Open Water	0	2	1	1	7	11
Pool, hot tub, spa	1	11	1	0	0	13
Bathtub	3	0	0	0	2	5
Other	0	1	0	0	1	2
<b>Total</b>	<b>4</b>	<b>14</b>	<b>2</b>	<b>1</b>	<b>10</b>	<b>31</b>

Data source: Tennessee Department of Health, Child Fatality Review Database System.

The most common activity children were seen engaging in prior to their drowning was playing (26%), followed by swimming (16%) and bathing (10%) (Figure 29). Other activities (35%) children performed prior to drowning included sleeping, riding in a vehicle, and performing yardwork.

**Figure 29. Drowning Deaths for Children Ages 0-17 Years, by Location and Activity at the Time of Death, Tennessee, 2018\***



Other category includes sleeping, riding in a vehicle, and performing yardwork  
 \*The last known or observed activity of child before incident leading to drowning.

Data source: Tennessee Department of Health, Child Fatality Review Database System.

**FOCUSING ON PREVENTION: DROWNING DEATHS**



Prevention opportunities include:

- Teaching children to utilize the buddy system when swimming.
- Promoting formal swimming lessons for young children.
- Teaching cardiopulmonary resuscitation (CPR) skills to child care providers and older children to reach those at the greatest risk for drowning.
- Installing four-sided isolation fences with self-closing and self-latching gates around pools.

Current prevention efforts in Tennessee include:

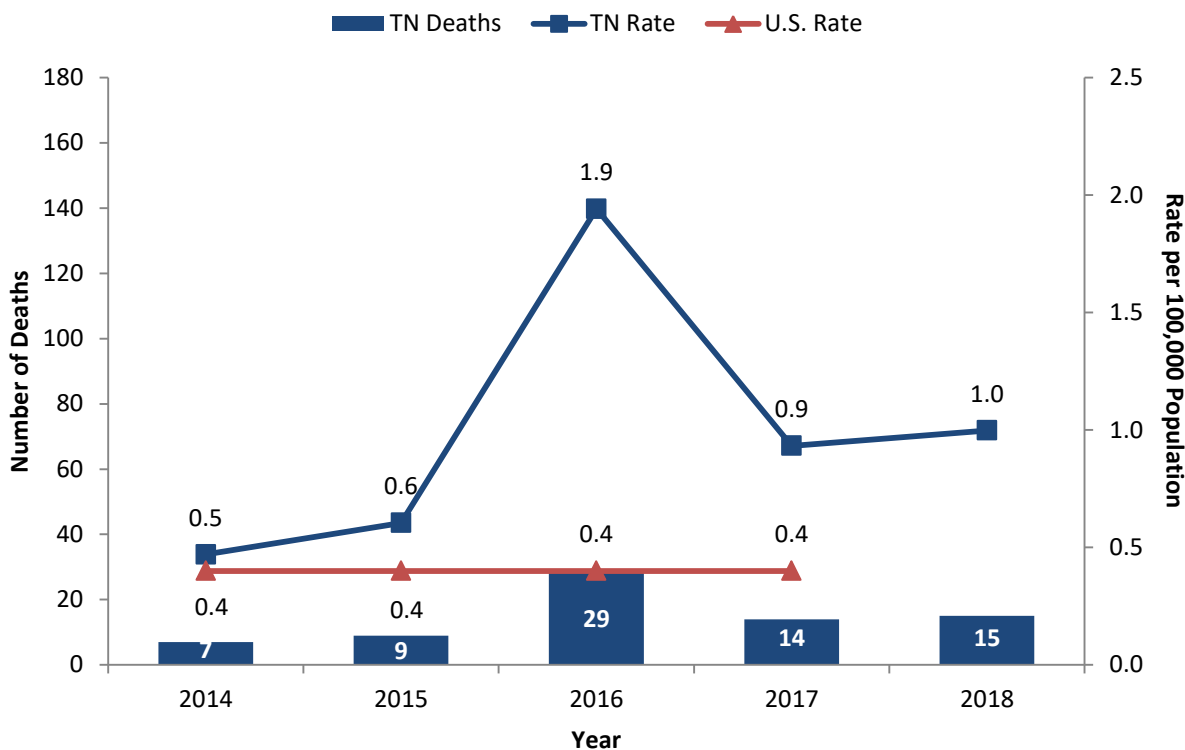
- Safe Kids collaborates with community agencies throughout the spring and summer to provide water safety education to children and caregivers, including proper supervision of children in and around water, swimming with a friend, and use of properly-fitting and approved flotation devices.
- Tennessee Valley Authority provides education and rules for open water swimming, fishing, wading, and boating.
- Kidcentraltn.com provides education for parents on summer water safety to reduce the risk of drowning
- Levi’s Legacy established “Water-Guardians” to promote constant adult supervision in and around water when children are present.



## FIRE/BURN DEATHS

Fire deaths in the U.S. have declined gradually over the past several decades. However, fire deaths remain the third leading cause of fatal home injury.<sup>15</sup> In 2017, 331 children ages 0 to 17 years (0.4 per 100,000) died from burn-related injuries nationally.<sup>16</sup> Nationally, children ages 0 to 4 years have higher fire death rates compared to children aged 5 to 9 years and 10 to 14 years.<sup>17</sup> Also, the rates for fire/burn deaths are also higher among Black (vs. White) children in the United States nationally. Cooking is the leading cause of residential fires overall. However, most fatal fires are caused by smoking in the home. Tennessee experienced an unusually high number of fire-related child fatalities (n=29) in 2016 (Figure 30). Seven house fires involving two or more children accounted for 21 of the 29 deaths in 2016. In 2018, there were 15 fire-related child deaths.

**Figure 30. Fire/Burn Deaths and Rates per 100,000 Children Ages 0-17 Years Tennessee and the US, 2014-2018**



Data source: Tennessee Department of Health, Child Fatality Review Database System and population estimates based on interpolated data from the U.S. Census's Annual Estimates of the Resident Population.

The majority of fire/burn-related deaths occurred among children who were 1-9 years old (n=12), male (n=13), and White (n=9) (Figure 31). The fire source was unknown for a majority of incidents. Most

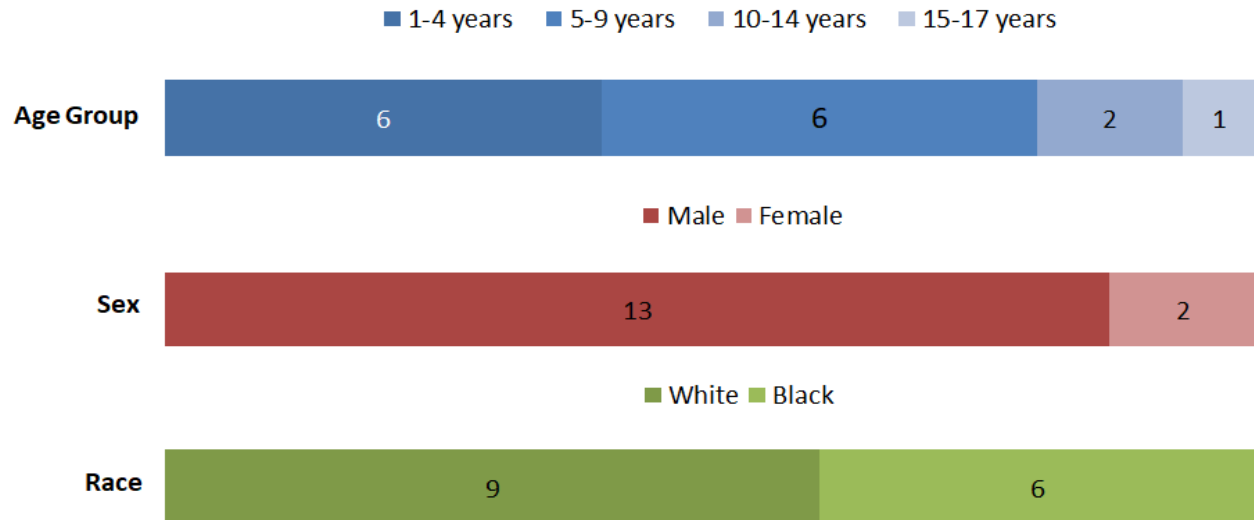
<sup>15</sup> Centers for Disease Control and Prevention: National Center for Injury Prevention and Control. Facts: Preventing Residential Fire Injuries. Available at <http://www.cdc.gov/injury/pdfs/Fires2009CDCFactSheet-FINAL-a.pdf>  
[http://www.usfa.fema.gov/data/statistics/fire\\_death\\_rates.html](http://www.usfa.fema.gov/data/statistics/fire_death_rates.html)

<sup>16</sup> Centers for Disease Control and Prevention: National Center for Injury Prevention and Control. Injury Prevention Web-based Injury Statistics Query System (WISQARS). 2017. Accessed at [http://www.cdc.gov/injury/wisqars/fatal\\_injury\\_reports.html](http://www.cdc.gov/injury/wisqars/fatal_injury_reports.html)

<sup>17</sup> Federal Emergency Management Agency: Fire Death and Injury Rates. Accessed at [https://www.usfa.fema.gov/downloads/xls/statistics/death\\_injury\\_data\\_sets.xlsx](https://www.usfa.fema.gov/downloads/xls/statistics/death_injury_data_sets.xlsx)

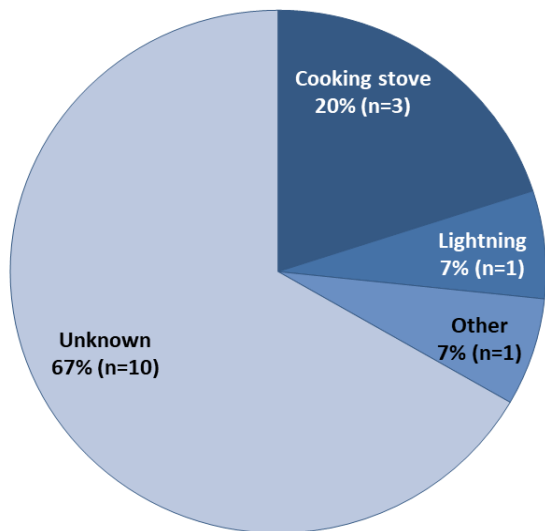
fire/burn deaths occurred in single family homes (n=8) followed by trailer/mobile homes (n=3), and apartments (n=1).

**Figure 31. Demographic Distribution of Fire/Burn Deaths for Children Ages 0-17 Years Tennessee, 2018**

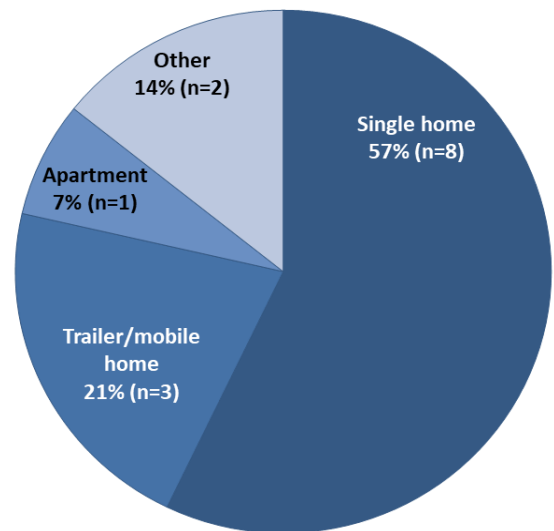


Data source: Tennessee Department of Health, Child Fatality Review Database System.

**Figure 32. Fire/Burn Deaths for Children Ages 0-17 Years by Fire Source Tennessee, 2018**



**Figure 33. Fire/Burn Deaths for Children Ages 0-17 Years by Structure Type Tennessee, 2018\***



\*One case of a child struck by lightning outdoors is excluded from the above figure.

Data source: Tennessee Department of Health, Child Fatality Review Database System.

## **FOCUSING ON PREVENTION: FIRE/BURN DEATHS**



Prevention opportunities include:

- Expanding the reach of education to create awareness of fire safety and the cost of fires.
- Incorporating fire-safe features into high-risk appliances and devices (e.g., stoves, lighters).
- Distributing smoke alarms to low income families.

Current prevention efforts in Tennessee include:

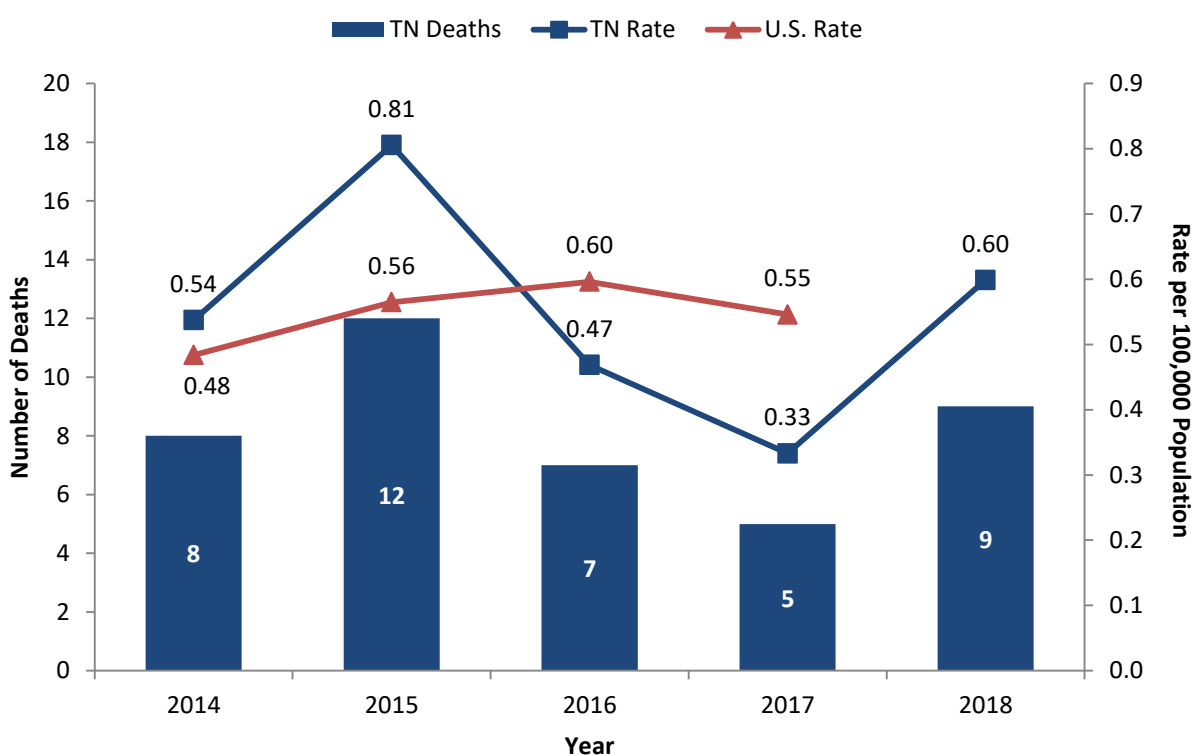
- "Get Alarmed, TN!" is a grant-funded fire safety education and smoke alarm installation program administered by the Tennessee Department of Commerce and Insurance's State Fire Marshal's Office (SFMO). The program provides fire safety education materials and smoke alarms to participating fire departments. The fire departments then deliver the education and install smoke alarms in at-risk homes across the state.
- The Fire Prevention and State Fire Marshal's Office conducts a "Close the Door!" campaign, teaching residents that if a room is on fire, simply closing the door can be a lifesaving act.
- The "Sound Off with Home Fire Safety" Patrol was implemented in six rural counties in Tennessee to provide fire safety education in elementary school classrooms.
- The State Fire Marshal's Office promotes community risk reduction by proactively promoting fire safety and prevention within communities.

## POISONING DEATHS

Poisoning is the leading cause of injury death in the United States for all ages. Drugs, both prescribed and illicit, cause the vast majority of poisoning deaths. In 2017, 402 children ages 0 to 17 died by poisoning. This reflects a rate of 0.55 per 100,000 children in this age group. Fifty-four percent of poisoning deaths among children were unintentional. Males (vs. females) and teens (vs. other age groups) are more likely to die from unintentional poisoning.<sup>18</sup>

In 2018, nine children died from poisoning in Tennessee, representing 1% of all reviewed child fatalities. Figure 34 demonstrates the number and rate of poisoning deaths in Tennessee and the US from 2014 to 2018. Opioid analgesic pain relievers are the most frequently involved substance in drug poisoning deaths in the United States.

**Figure 34. Poisoning Deaths and Rates per 100,000 Children Ages 0-17 Years Tennessee and the US, 2014-2018**



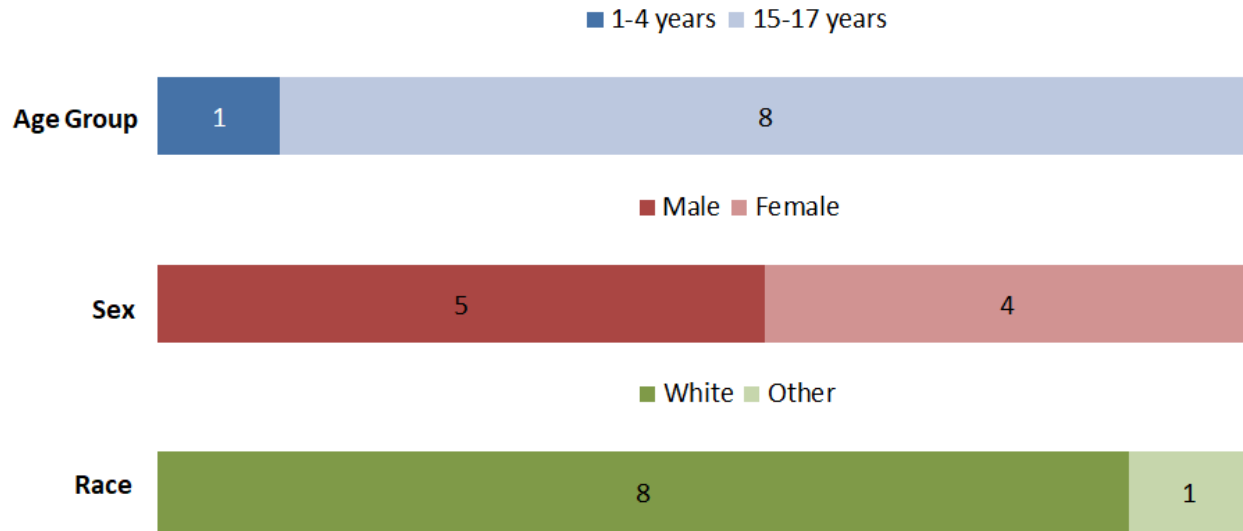
Data source: Tennessee Department of Health, Child Fatality Review Database System and population estimates based on interpolated data from the U.S. Census's Annual Estimates of the Resident Population.

All but one of the cases occurred amongst teens ages 15-17 years (Figure 35). Of all poison-related deaths, five were males and eight were White children (Figure 35). **Six of the nine poisoning fatalities involved prescription drugs** while the remaining three deaths were due to other substances (Table 18).

<sup>18</sup> Centers for Disease Control and Prevention: National Center for Injury Prevention and Control. Injury Prevention Web-based Injury Statistics Query System (WISQARS). 2017. Accessed at [http://www.cdc.gov/injury/wisqars/fatal\\_injury\\_reports.html](http://www.cdc.gov/injury/wisqars/fatal_injury_reports.html)

These deaths include both intentional and unintentional poisonings. Of the nine poisoning deaths, six were determined to be accidental, two were intentional, and the intent was unable to be determined in one death.

**Figure 35. Demographic Distribution of Intentional and Unintentional Poison-Related Deaths for Children Ages 0-17 Years Tennessee, 2018**



Data source: Tennessee Department of Health, Child Fatality Review Database System.

**Table 18. Poison-Related Deaths among Children Ages 0-17 Years by Substance and Age Groups Tennessee, 2018\***

Type of Substances	1-4 years	15-17 years	Total
Prescription drug	1	5	6
Other substances	0	3	3
<b>Total</b>	<b>1</b>	<b>8</b>	<b>9</b>

\*Other substances include alcohol, methamphetamine, amphetamine, and illicitly obtained opiates.

Data source: Tennessee Department of Health, Child Fatality Review Database System.

## **FOCUSING ON PREVENTION: POISONING DEATHS**



Prevention opportunities include:

- Expanding the reach of educational campaigns regarding prevention of prescription drug abuse and proper disposal of unused and expired medications.
- Increasing access to secure drop-off locations for unused medications.
- Encouraging healthcare providers to implement *Screening to Brief Intervention (S2BI)* at every opportunity, especially in interactions with teens. Such screening assists in identifying patients with substance abuse disorder, and provides opportunities for intervention and referral to appropriate treatment resources.

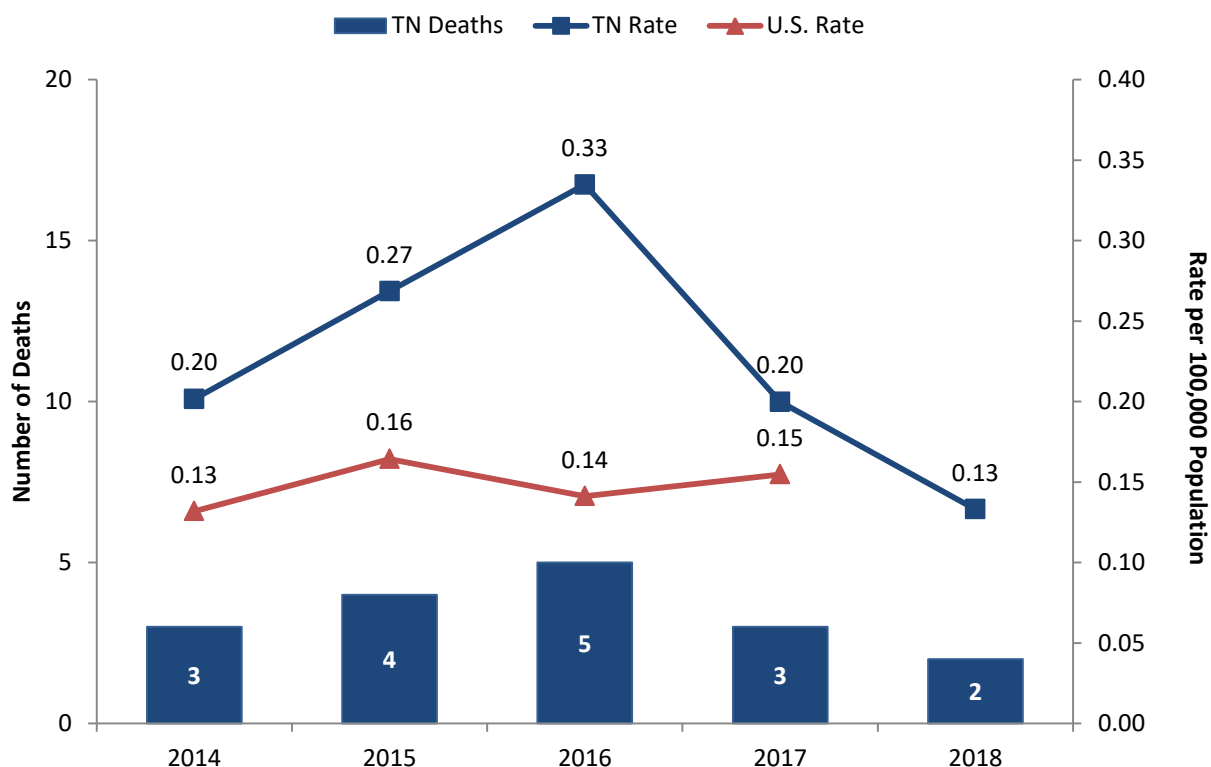
Current prevention efforts in Tennessee include:

- Tennessee Department of Health, Tennessee Department of Environment and Conservation, the Tennessee Department of Mental Health and Substance Abuse Services, and the Prevention Alliance of Tennessee have collaborated to place 349 medication drop boxes in all 95 counties in Tennessee. Pharmacies house 96 of the boxes, 9 universities, and 244 are at local law enforcement offices. As of September 2019, 392,043 pounds of medications have been collected since the start of the program.
- From October 1, 2018 to September 30, 2019, 78,403.58 pounds of medications were collected. .
- The Department of Health partnered with the Prevention Alliance of Tennessee and the Department of Mental Health and Substance Abuse Services to promote the *Count It! Lock It! Drop It!*<sup>™</sup> program to substance abuse coalitions, county health councils, and other community groups. *Count It, Lock It, Drop It*<sup>™</sup> is a program used to educate and encourage the community to count medications, lock them up, and dispose of medications properly once expired or no longer needed. All 95 counties have implemented the *Count It, Lock It, Drop It*<sup>™</sup> program.
- The Tennessee General Assembly passed Tenn. Code Ann. § 53-11-308 to limit prescription opioid use by limiting supply, limiting strength and requiring all pharmacies to log prescriptions into a database.
- From August 2018 through September 2019, TDH posted multiple social media messages regarding poisoning prevention, with emphasis of messages shared during National Poison Prevention Week.
- The poison control hotline continues to be on the infant safe sleep door hanger and is distributed to all families (approximately 80,000) with newborns annually.

## FALL/CRUSH DEATHS

In Tennessee, two children died as the result of a fall or crush injury in 2018. Figure 36 demonstrates the number and rate of deaths due to fall or crush in Tennessee and the US from 2014 to 2018. **These two deaths represent 0.3% of all reviewed child fatalities.**

**Figure 36. Fall/Crush Deaths and Rates per 100,000 Children Ages 0-17 Years Tennessee and the US, 2014-2018\***



\*Rates based on counts of less than 20 deaths are considered unstable and should be interpreted with caution. Data source: Tennessee Department of Health, Child Fatality Review Database System and population estimates based on interpolated data from the U.S. Census's Annual Estimates of the Resident Population.

While falls are the leading cause of both fatal and non-fatal injuries among older adults, falls are the leading cause of non-fatal injuries among children ages 0 to 19 years.<sup>19</sup> Nationally, approximately 2.3 million children are treated in emergency rooms for fall-related injuries each year. In 2017, 114 children ages 0 to 17 years experienced fatal falls (0.10 per 100,000) nationally. Males 0 to 17 years have higher rates of fall-related deaths than females of the same age range.<sup>20</sup>

In Tennessee, there were two fall- or crush-related deaths among children 1 to 4 years (n=1) and 5 to 9 year-old (n=1). The children who died from fall or crush were White: one male and one female (Figure 37).

<sup>19</sup> Centers for Disease Control and Prevention: National Center for Injury Prevention and Control. Protect the Ones You Love. Falls: The Reality <http://www.cdc.gov/safechild/Falls/index.html>

<sup>20</sup> Centers for Disease Control and Prevention: National Center for Injury Prevention and Control. Injury Prevention Web-based Injury Statistics Query System (WISQARS). 2017. Accessed at [http://www.cdc.gov/injury/wisqars/fatal\\_injury\\_reports.html](http://www.cdc.gov/injury/wisqars/fatal_injury_reports.html)

**Figure 37. Demographic Distribution of Fall/Crush Deaths for Children Ages 0-17 Years Tennessee, 2018**



Data source: Tennessee Department of Health, Child Fatality Review Database System.

### **FOCUSING ON PREVENTION: FALL/CRUSH DEATHS**



Prevention opportunities include:

- Implementing safety checks on playgrounds to ensure that playground equipment is safe and well-maintained.
- Encouraging child safety features, such as window guards, stair gates and guard rails, to prevent accidental falls in homes.
- Increasing awareness regarding the importance of supervision of children in home and outdoor settings.

Current prevention efforts in Tennessee include:

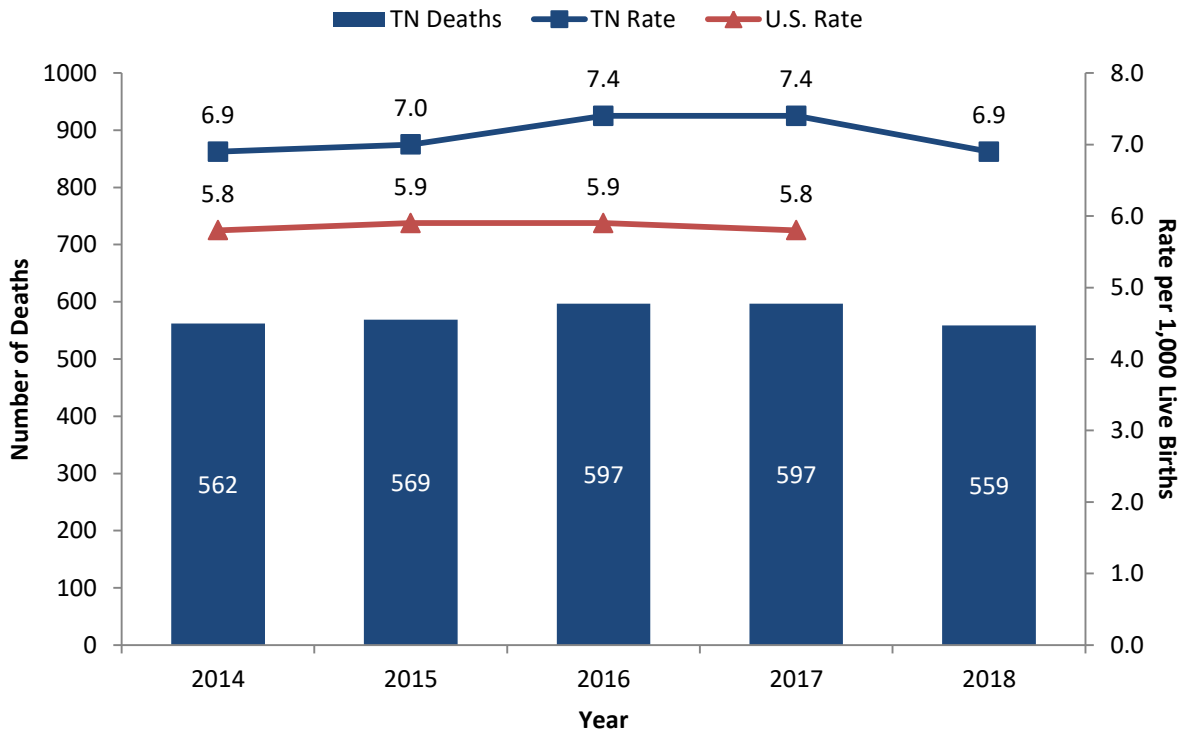
- Safe Kids provides education for parents and the community around home safety, including furniture safety (such as prevention of television and furniture tip overs) and child-proofing the home.
- Safe Kids publishes media reports about fall/crush injuries, including product safety recalls.
- Evidence-based Home Visiting programs provide child safety education to participants with young children.



## OVERALL INFANT MORTALITY DATA TRENDS

Infant mortality is the death in children less than 1 year-old. **The overall 2018 infant mortality rate (IMR) was 6.9 infant deaths per 1,000 live births, a decrease from 2017 IMR of 7.4 deaths per 1,000 live births.** Historically, the infant mortality rate decreased 8% from 2011 (7.4 per 1,000 live births) to 2013 (6.8 per 1,000 live births), then increased to 7.4 per 1,000 live births in 2016 and 2017. Similar to the overall child fatality rate, Tennessee's infant mortality rate continues to exceed the national rate. Tennessee's 2018 infant mortality rate is 19% higher than the 2017 US rate, the latest year for which the national rate is available. The number and rate of infant deaths in Tennessee and the U.S. for the last five years are shown in Figure 38.

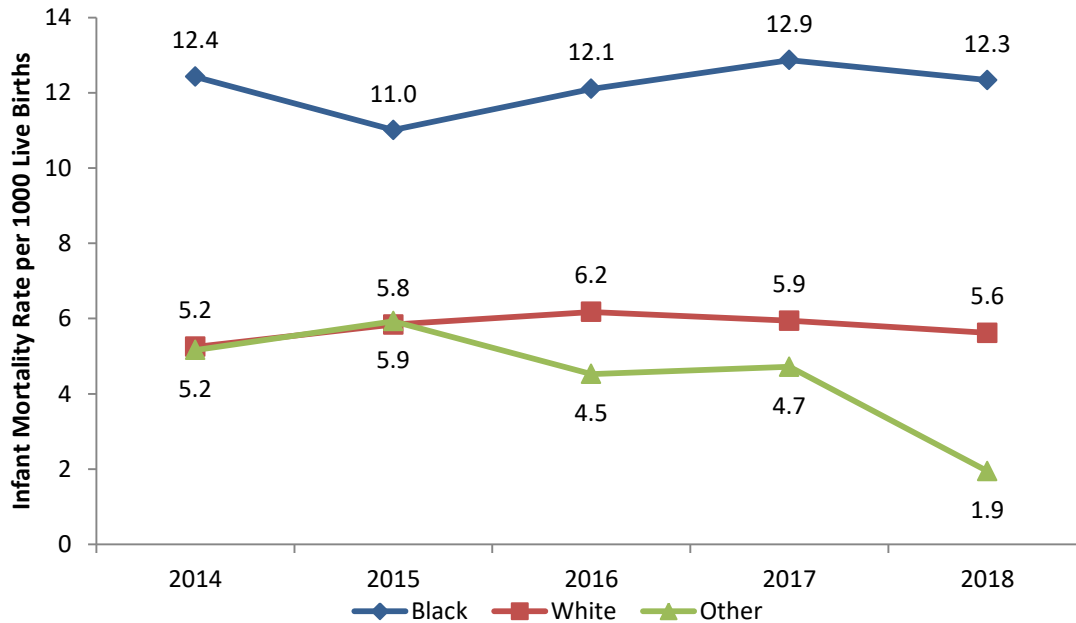
**Figure 38. Number and Rate of Infant Deaths Tennessee, 2014-2018**



Data source: Tennessee Department of Health, Office of Vital Records and Health Statistics, Death Statistical File, 2014-2018.

Racial disparity continues to exist among infants who suffer fatalities, with Black infants having a mortality rate that is consistently twice that of White infants (Figure 39 and Table 19). The 2018 White and Black infant mortality rates did not change significantly when compared to their respective 2014 rates.

**Figure 39. Infant Mortality Rate by Race Tennessee, 2014-2018\***



\*Other races include American Indian or Alaskan Native, Asian Indian, Chinese, Filipino, Japanese, Korean, Vietnamese, Other Asian, Native Hawaiian, Guamanian or Chamorro, Samoan, Other Pacific Islander, Other Race, Bridged White, Bridged Black, Bridged American Indian or Alaskan Native, Bridged Asian or Pacific Islander.  
 \*The number of child deaths in 'Other' racial category for 2018 was less than 20. Therefore, the child fatality rate for this racial category should be interpreted with caution.

Data source: Tennessee Department of Health, Office of Vital Records and Health Statistics, Death Statistical File, 2013-2017.

**Table 19. Number and Rate of Infant Deaths by Race Tennessee, 2014-2018**

YEAR	BLACK			WHITE			Black/White Disparity
	n	Number of Live Births	Rate per 1000 live births	n	Number of Live Births	Rate per 1000 live births	Disparity Ratio
2014	212	17,061	12.4	326	62,096	5.2	2.4
2015	184	16,714	11.0	360	61,648	5.8	1.9
2016	198	16,359	12.1	377	61,046	6.2	2.0
2017	213	16,551	12.9	361	60,770	5.9	2.2
2018	206	16,698	12.3	343	61,046	5.6	2.2

Data source: Tennessee Department of Health, Office of Vital Records and Health Statistics, Death Statistical File, 2013-2017.

**SUMMARY OF INFANT MORTALITY DATA**

Infant mortality is defined as a death occurring within the first 12 months of life. Infant mortality is the largest single contributor to child fatality.

Over the past years, Tennessee’s infant mortality has remained higher than the average national values. In 2018, Tennessee’s infant mortality rate was 6.9 per 1,000 live births, a 7% decrease from 2017’s rate of 7.4 deaths per 1000 live births.

In Tennessee and across the United States, birth defects and low birthweight continue to be the leading causes of infant deaths. In Tennessee, however, accidents (unintentional injuries) are the third leading cause of death in infants compared to the fifth leading cause of death nationally. Among Tennessee infants, necrotizing enterocolitis of newborn and atelectasis (partial lung collapse) contribute to infant death while diseases of the circulatory system and neonatal hemorrhage contribute to the leading cause of infants deaths nationally.

**Leading Causes of infant Mortality, Tennessee vs United States**  
**TN-2018** **US-2017**

Rank	Disease	Rank	Condition
1	Birth Defects	1	Birth Defects
2	Low birth weight	2	Low birth weight
3	Accidents (unintentional injuries)	3	Maternal Complications
4	Sudden infant death syndrome	4	Sudden infant death syndrome
5	Maternal Complications	5	Accidents (Unintentional Injuries)
6	Cord and placenta complication	6	Cord and Placental Complications
7	Necrotizing enterocolitis of newborn	7	Bacterial sepsis of newborn
8	Atelectasis (partial lung collapse)	8	Diseases of the circulatory system
9	Respiratory distress of newborn	9	Respiratory distress of newborn
10	Bacterial sepsis of newborn	10	Neonatal Hemorrhage

Data source: Tennessee Department of Health, Office of Vital Records and Health Statistics, Death Statistical File; National Center for Health Statistics.

TN reports low birthweight and preterm birth in the same category: most infants who are born preterm are also of low birth weight.

In 2018, there were 559 Tennessee infant deaths and **489 (82%)** were reviewed by local child fatality review teams. As indicated in Table 20, preterm birth and low birth weight were factors associated with many infant deaths. This is consistent with other analyses that indicate preterm birth and low birth weight are major contributors to Tennessee’s infant mortality rate. Additionally, 25% of infant deaths were associated with known intrauterine smoke exposure. Smoking during pregnancy is known to be associated with both preterm birth and low birth weight, both of which are independent risk factors for infant mortality.

**Table 20. Risk Factors Associated with Infant Deaths Reviewed by Tennessee CFR Teams, 2018\***

Risk Factor	Total	% Infant Deaths Reviewed	Manner of Death				
			Natural	Accident	Homicide	Undetermined	Pending
Preterm birth	287	59%	256	12	0	14	5
Low Birth Weight	306	63%	276	9	0	15	6
Known Intrauterine Smoke Exposure	122	25%	62	26	3	30	1
Late or No Prenatal Care	77	16%	58	6		12	1
Known Intrauterine Drug (including alcohol exposure)	120	25%	62	26	0	31	1

\*Late prenatal care denotes prenatal care that begins at third trimester, 7 to 9 months of pregnancy. Intrauterine drug use describes any form of drug use including over-the-counter, prescription, and illicit drug use. Multiple risk factors may have been for any given death. As a result, the total risk factor occurrence exceeds the total number of deaths reviewed.

Data source: Tennessee Department of Health, Child Fatality Review Database System.\*Data are not mutually exclusive.

## SLEEP-RELATED INFANT DEATHS

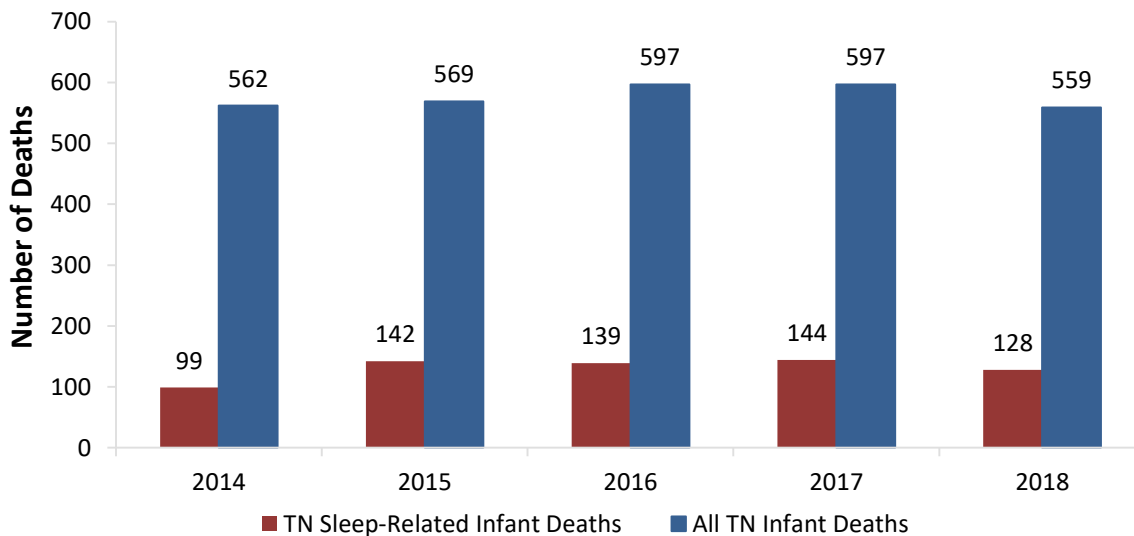
Sleep-related infant deaths are identified when a deceased baby is found:

- In a sleeping environment and is found with his or her head pressed into the mattress or pillow, is in the presence of a person
- Wedged against an object
- In other circumstances that may have contributed to the infant's suffocation or strangulation.

***In 2018, there were 128 infant deaths that resulted from, or were associated with an unsafe sleep environment.***

Sleep-related infant deaths may be categorized as Sudden Infant Death Syndrome (SIDS). SIDS is considered an exclusionary cause of death for children less than one year of age. A diagnosis of SIDS indicates that all evidence (including an autopsy, death scene investigation, and review of the medical record) has failed to yield the specific cause of death. The cause and manner of death in these cases are determined from information obtained at the death scene investigation and after a medical examiner's autopsy. When seemingly healthy infants fail to awaken from sleep, their deaths may be considered to be due to SIDS, the result of suffocation related to the sleep environment, or as the result of an undiagnosed childhood malady. The exact cause of death may be difficult, if not impossible, to determine. In 2018, the cause of death in 69 reviewed fatalities of children under the age of one year was classified as undetermined. This number reflects the complexities inherent in determining the exact cause of a sudden infant death. Figure 40 displays the number of sleep-related infant deaths and total number of infant deaths in Tennessee from 2014 through 2018. During this time period, sleep-related deaths accounted for 23% of all infant fatalities in Tennessee. There was no statistically significant change in the rate of sleep-related infant deaths from 2017 to 2018.

**Figure 40. Number of Sleep-Related Infant Deaths  
Tennessee, 2014-2018**



Data sources: Sleep-related infant death counts from Tennessee Department of Health, Child Fatality Review Database System. Total infant deaths from Tennessee Department of Health, Office of Vital Records and Health Statistics, Death Statistical File, 2014-2018.

Of the 128 sleep-related deaths in 2018, 49 were confirmed as asphyxia in the sleep environment. The remaining 79 deaths occurred in the presence of unsafe sleep factors, but could not be confirmed as asphyxia. In many cases, family members or others who find a deceased baby may not be able to provide a detailed history of what transpired. When investigators arrive on the scene, they often find that the baby has been moved and, therefore, accurately recreating the death scene may not be possible. Thus, despite autopsies and the efforts of Child Fatality Review teams, the exact cause of many infant sleep-related deaths will never be understood.

There is significant and longstanding racial disparity among sleep-related infant deaths. While White infants make up the majority of sleep-related infant deaths in Tennessee, over the past five years, Black infants were 2.1 times as likely to suffer a sleep-related fatality as White infants, as shown in Table 21. The reasons for this persistent disparity are not completely understood and may include socioeconomic factors (e.g., access to prenatal care), difference in prevalence of known risk behaviors (e.g., non-supine infant sleep position, bed-sharing), biological factors (e.g., genetic polymorphisms, metabolic disorders) and other factors (e.g. breastfeeding patterns, exposure to alcohol or tobacco). In 2018, the disparity between Black and White infants decreased to its lowest point in recent years: Black infants experienced 1.8 times the sleep-related mortality rate as White infants in 2018, down from 2.7 in 2014 (Figure 41).

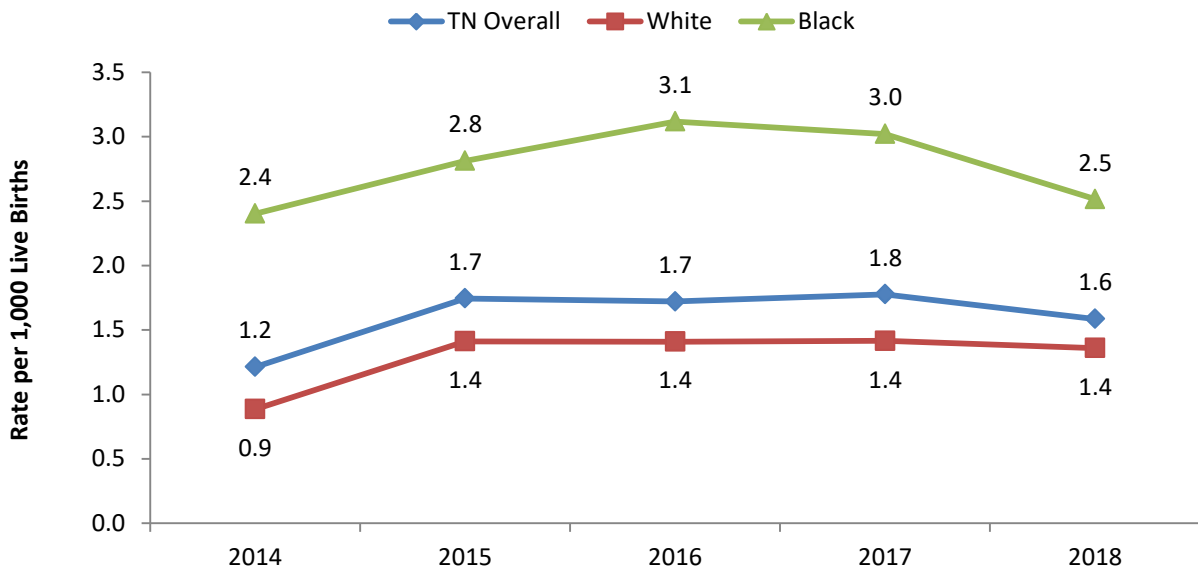
**Table 21. Number of Sleep-Related Infant Deaths and Rates by Race, Tennessee, 2014-2018**

Year	Blacks		Whites		TN
	Number of Sleep-Related Infant Deaths	Rate per 1,000 Live Births	Number of Sleep-Related Infant Deaths	Rate per 1,000 Live Births	Rate per 1,000 Live Births
2014	41	2.4	55	0.9	1.2
2015	47	2.8	87	1.4	1.7
2016	51	3.1	86	1.4	1.7
2017	50	3.0	86	1.4	1.8
2018	42	2.5	83	1.4	1.6

Data source: Sleep-related infant death counts from Tennessee Department of Health, Child Fatality Review Database System.

Birth data from Tennessee Department of Health, Office of Vital Records and Health Statistics, Birth Statistical File, 2013-2017.

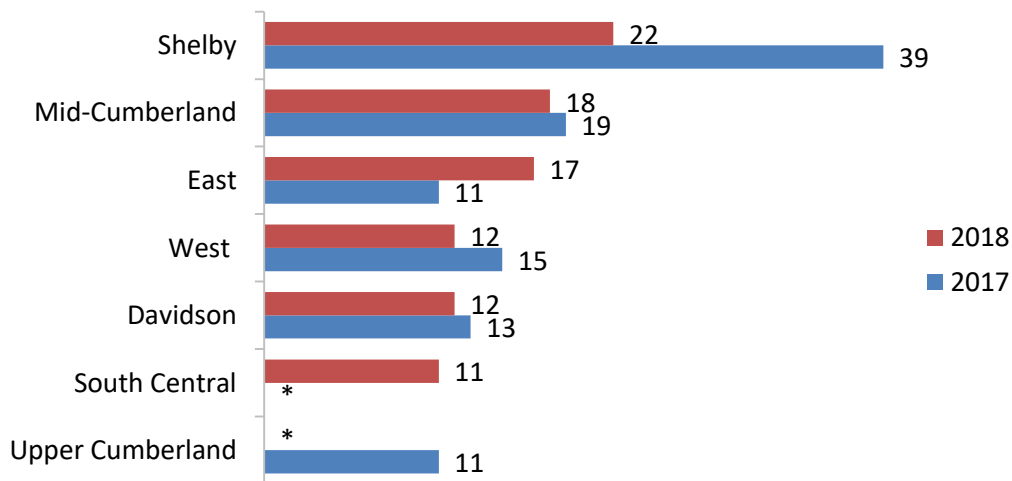
**Figure 41. Sleep-Related Death Rates by Race, Tennessee, 2014-2018**



Data source: Sleep-related infant death counts from Tennessee Department of Health, Child Fatality Review Database System. Birth data from Tennessee Department of Health, Office of Vital Records and Health Statistics, Birth Statistical File, 2013-2017.

Additionally, a regional distribution of sleep-related infant deaths is provided in Figure 42. In 2018, the region with the highest number of sleep-related infant deaths was Shelby County with 22 cases (17%), followed by the Mid-Cumberland region with 18 cases (14%) and the East region with 17 cases (13%). Although most sleep-related infant deaths occurred in Shelby, this region also experienced the largest percent decrease from 2017 to 2018 (44%).

**Figure 42. Number of Sleep-Related Infant Deaths in Tennessee by Region, 2017 vs 2018**



Data source: Tennessee Department of Health, Child Fatality Review Database System.

\*Data suppressed due to confidentiality concerns.

Data source: Tennessee Department of Health, Child Fatality Review Database System.

Note: Both years of data are suppressed for Madison, Sullivan, Hamilton, Knox, Southeast, and Northeast due to confidentiality concerns.

As indicated in Table 22, four main contributing factors are consistently present in sleep-related infant deaths: unsafe bedding or toys in sleeping area (78%), infant not sleeping in a crib or bassinet (62%), infant not sleeping alone (47%), and infant not sleeping on the back (55%). These risk factors are key points for education in the Tennessee Department of Health’s “ABCs of Safe Sleep” campaign--Babies should sleep Alone, on their Back, and in a Crib.

**Table 22. Contributing Factors in Sleep-Related Infant Deaths Tennessee, 2014-2018**

Contributing Factors*						2018 Percent of Sleep-Related Infant Deaths
	2014	2015	2016	2017	2018	
Unsafe bedding or toys in sleeping area**	70	123	126	121	100	78%
Infant found not sleeping in crib or bassinet	79	114	107	103	79	62%
Infant sleeping with other people	65	88	76	82	60	47%
Infant found not sleeping on back	40	71	65	70	70	55%
Infant sleeping with obese adult	7	21	18	14	14	11%
Drug-impaired adult sleeping with infant	12	4	16	11	13	10%
Alcohol-impaired adult sleeping with infant	3	3	4	6	3	2%
Adult fell asleep while breastfeeding infant	1	6	3	5	4	3%
Adult fell asleep while bottle feeding infant	3	1	1	3	6	5%

\*Because more than one factor may have contributed to a single death, the total number across the contributing factors exceeds the number of sleep-related infant deaths for a given year.

\*\*Includes comforter, blanket, pillow, bumper pads, toys, plastic bags, and other.

Data source: Tennessee Department of Health, Child Fatality Review Database System.



## **FOCUSING ON PREVENTION: SAFE SLEEP**



Prevention opportunities include:

- Promoting messaging campaigns, particularly intergenerational caregivers and faith communities.
- Providing portable cribs to families with limited resources.
- Modeling of correct safe sleep practices by trusted professionals, such as physicians and nurses.
- Directing safe sleep messaging to parents and communities of infants at greatest risk of sleep-related death.

Current prevention efforts in Tennessee include:

- TDH continues to partner with all 58 Tennessee's birthing hospitals and five non-birthing hospitals across Tennessee. All of these partner hospitals have developed and implemented safe sleep policies that include modeling of safe sleep behavior in the hospital and education for staff, parents and caregivers. In addition, hospitals are responsible for completing crib audits and submitting annual reports as part of the *Safe Sleep Policy Project's* ongoing monitoring to ensure compliance with safe sleep policies. TDH continues to provide safe sleep materials and *Sleep Baby Safe and Snug* board books for every newborn in Tennessee.
- Hospitals are encouraged to apply for national *Safe Sleep Certification* through the Cribs for Kids organization. Currently 28 hospitals have earned certification: 12 bronze, 2 silver, and 14 gold. Each level represents additional tasks required to educate and promote safe sleep to parents.
- Implementation of the *Direct On Scene Education (D.O.S.E.)* program has continued to expand across the state. When responding to an emergency or non-emergency call from a household which includes a pregnant woman or an infant, responders are trained to look for unsafe sleep conditions and offer the residents a safe sleep kit with information on the *ABCs of Safe Sleep*. Since the start of the program in 2014, 1928 safe sleep kits and 228 portable cribs have been distributed.
- TDH implemented the *Safe Sleep Floor Talker Project* in 2014. Partner sites display a large vinyl decal on the floor or other hard surface to promote the safe sleep message. Thus far, 804 floor talkers have been placed in various partner sites including stores, clinics, childcare centers and health departments.

*Continued on next page*

- In 2019 TDH trained maintenance workers from five housing authorities to educate families on safe sleep and provide materials and a portable crib, if needed.
- TDH created crib cards with the safe sleep message to distribute to birthing hospitals, with 29 birthing hospitals currently using the cards.
- Prevent Child Abuse Tennessee (PCAT) is educating families enrolled in the Healthy Families Tennessee (HFTN) and Nurturing Parenting programs about the importance of a safe sleep environment. Parents in the programs are offered coaching and empowerment through voluntary home visitation, receive education on safe sleep and are provided with a portable crib. During the last fiscal year, 586 families were served through these important programs.
- Tennessee Commission on Children and Youth (TCCY) regional councils distribute safe sleep information at regional council meetings and conferences where they exhibit.
- TCCY included information about the “ABCs of Safe Sleep” in a video released in conjunction with the national 2017 KIDS COUNT Data Book (<https://www.tn.gov/content/dam/tn/tccy/documents/kc/kc-soc/kcsoc17.pdf>).
- Tennessee Department of Children’s Services established a safe sleep collaborative group with multiple state agencies to distribute the safe sleep materials and education.
- The evidence-based home visiting program distributed diaper bags with infant safe sleep materials to educate families on the recommended safe sleep practices. The CHANT program started distributing the safe sleep diaper bags in September 2019.

## SUDDEN DEATH IN THE YOUNG (SDY) CASE REGISTRY PROJECT

In October 2014, Tennessee was one of eleven states and jurisdictions awarded a four year grant from the Centers for Disease Control and Prevention (CDC) to help establish the Sudden Death in the Young (SDY) Registry. Tennessee's SDY registry has received continuous funding through September 2023.

The goals of the SDY Registry are to: a) track the occurrence of sudden death in the young in the United States using a population-based approach through state public health offices, and b) investigate the etiologies and risk factors for sudden death in the young, including sudden unexpected infant death (SUID), sudden cardiac death (SCD), and sudden unexpected death in epilepsy (SUDEP).

All deaths in young people under age 20 years are considered for inclusion in the registry, with the following exceptions:

1. Accident in which the external cause was the obvious and only reason for the death; this excludes infant suffocation
2. Homicide
3. Suicide
4. Accidental or intentional overdose of drugs, even if this caused cardiac or respiratory arrest, when there is no prior history of other possible chronic disease or autopsy findings suggestive of another cause of death
5. Terminal illness in which the death was reasonably expected to occur within six months of the actual death

To accomplish these goals, TDH has partnered with three of the five regional forensic centers (RFCs) in Tennessee (ETSU William L. Jenkins, Middle Tennessee Center, and West Tennessee) and its 34 local CFR teams. The RFCs are responsible for: 1) identifying and notifying the state CFR program staff of any cases eligible for inclusion in the registry within 72 hours of death; 2) conducting a thorough investigation into the circumstances of the death; and 3) obtaining consent from families for participation in the registry. Bio-specimens are collected on consented cases for further research and genetic testing to better understand sudden child death. The local CFR teams are responsible for reviewing SUID/SDY deaths within 90 days of notification.

In cases of sudden infant deaths, teams follow the SUID algorithm provided by the CDC to categorize all cases indicated—on the death certificate—as unknown, undetermined, SIDS, SUID, unintentional sleep-related asphyxia/suffocation/strangulation, unspecified suffocation, cardiac or respiratory arrest without other well-defined causes, or unspecified causes with potentially contributing unsafe sleep factors.

For infant deaths occurring in 2018, the local teams reviewed circumstances surrounding SUID events, including autopsy and death scene investigation reports, to categorize these deaths into one of the seven categories shown in Table 25 the “excluded” category includes SUID cases in which the cause of death is ultimately not sleep related, such as those due to illness, trauma, or cardiac causes. Each SUID category is not a cause of death, but categorizes the SUID based on what unsafe sleep factors were present, and if they seemingly contributed to the infant death. The category with the largest number of infant deaths was “Explained Suffocation: Unsafe sleep factors” with 48 deaths.

**Table 23. Categorization for SUID Case Registry for Infants Tennessee, 2018**

<b>Categorization for SUID Case Registry</b>	<b>Number of Infant Deaths</b>
Unexplained: Unsafe sleep factors	46
Explained Suffocation: Unsafe sleep factors	48
Unexplained: Possible suffocation with unsafe sleep factors	9
Excluded	8
Unexplained: No Autopsy of Death Scene Investigation Incomplete case information	0
Unexplained: No unsafe sleep factors	6
Unexplained: Incomplete Case Information	25
<b>Total</b>	<b>142</b>

Data source: Tennessee Department of Health, Child Fatality Review Database System.

There must be strong evidence of the presence of factors contributing to the suffocation death of an infant in order for a SUID case to be categorized as “unexplained: possible suffocation with unsafe sleep factors” or “explained: suffocation with unsafe sleep factors,” including a mechanism for suffocation such as soft bedding, overlay, and/or wedging. Table 26 summarizes the primary mechanisms explaining the suffocation, or possible suffocation, as detailed in the autopsy and/or death scene investigation reports that are reviewed by local teams.

**Table 24. Unsafe Sleep Mechanism for Infants with a SUID Category of Explained Suffocation or Possible Suffocation Tennessee, 2018**

<b>Unsafe Sleep Mechanism</b>	<b>Number of Infant Deaths</b>
Soft Bedding	48
Overlay	9
Wedging	6
Other	2

Data source: Tennessee Department of Health, Child Fatality Review Database System.

Teams follow the SDY algorithm provided by the CDC to determine whether cases—including SUID cases—meet the criteria of having an “explained cause of death”. Cases that are not determined to have an explained cause of death are sent to an advanced review team if both an autopsy and death scene investigation were conducted. The advanced review teams are located in Memphis and Nashville and include pediatric neurologists, pediatric cardiologists, a neonatologist, and forensic pathologists.

The advanced review teams review all medical and investigative records to categorize a death into one of the following seven categories: explained cardiac, explained neurological, possible cardiac, possible SUDEP, possible cardiac and SUDEP, unexplained death at or over one year of age or unexplained death under age one. Table 27 summarizes how the teams have categorized the 2018 SDY cases. Forty-seven child deaths were categorized as ‘explained infant suffocation’ while 49 child deaths among children 1 to 17 years-old were categorized as ‘explained other’. Thirteen deaths were labelled as ‘unexplained, possible cardiac’, 4 deaths labelled as ‘unexplained SUDEP’, and 57 deaths labelled as ‘unexplained death’.

**Table 25. Categorization for SDY Case Registry for Children Ages 0-17 Years  
Tennessee, 2018**

Categorization for SDY Case Registration	Age		
	Less than 1 year	1-17 Years	Total
Explained infant suffocation	47	0	47
Explained other	10	49	59
Incomplete case information	6	5	11
Unexplained, possible cardiac	6	7	13
Unexplained, SUDEP	0	4	4
Unexplained death	51	6	57
<b>Total</b>	<b>120</b>	<b>71</b>	<b>191</b>

\*This total differs from the Table 26 SUID Categorization total because all 2017 deaths have not been categorized by the SDY Advanced Review team as of December 2018. The SUID categorization is completed by the local CFR teams, and the SDY categorization is completed by the SDY Advanced Review Teams.  
Data source: Tennessee Department of Health, Child Fatality Review Database System.

### **Registry Prevention and Review Work**

This year, funds from the SDY Registry project were allocated to improve upon prevention work and understanding of the SDY process. SDY prevention efforts included the purchase of portable cribs, automated external defibrillators (AEDs) and safe sleep materials. The AEDs are being used as a part of the “Safe Stars” youth sports league initiative to ensure that youth sports leagues in Tennessee have and AED on hand at all practices and games. Site visits were all conducted with all of the participating regional forensic centers to discuss barriers to attempting and obtaining consent for the SDY Registry.

Among 2018 deaths to date, 191 SDY cases were identified and reviewed by the local teams. Of those cases, **158** were investigated by the Advanced Review Team. From January 2015 to date, 849 cases have been identified as potential SDY, 666 cases have been closed by local CFR teams, and 472 cases have been referred and closed with the Advanced Review Team.

## **PREVENTION RECOMMENDATIONS FOR 2020**

### **Suicide**

**Increase suicide prevention and mental health services in high-risk areas identified by the TDH suicide prevention program.**

Suicide continues to be the 2nd leading cause of death in children 10-24 years of age in the United States. In 2018, 39 children ages 10-17 years took their lives in Tennessee, a decrease from 51 in 2017.

TDH recommends all hospitals report into ESSENCE (Electronic Surveillance System for the Early Notification of Community-based Epidemics) to better capture suicidal ideation and suicide attempts among youth. TDH monitors hospital Emergency Department (ED) visits through ESSENCE in order to target coordinated, timely outreach and to direct evidence-based prevention programs such as Question, Persuade, Refer (QPR) and Youth Mental Health First Aid.

TDH will develop the suicide prevention recommendation report to be submitted to the General Assembly in 2020 with a section on youth suicide prevention. TDH will collaborate with partners including Tennessee Suicide Prevention Network (TSPN), Tennessee Department of Mental Health and Substance Abuse Services (TDMHSAS), and Tennessee Department of Education (TDE) to increase education to families about firearm safety and medication storage. These agencies will also work on expanding access to school-based mental health services for youth. TDH and TSPN will utilize evidence-based suicide prevention programs such as QPR to train Evidence Based Home Visiting staff, CHANT Care Coordinators, and additional community partners to recognize the signs of suicide and provide resources including the suicide help line and crisis text line.

### **Motor Vehicle**

**Increase the number of schools in high-risk counties implementing evidence-based motor vehicle safety programs in local high schools.**

The number of motor vehicle crash deaths decreased from 71 deaths in 2016 to 62 deaths in 2018. There has been extensive outreach to high crash rate counties in the past years to address this leading cause of injury death for children 1-17 years. TDH will collaborate with TDE and Tennessee Highway Safety Office to increase evidence based programs such as Checkpoints™ in high fatality counties. TDH will provide training to additional schools to implement Checkpoints and will create and disseminate an online version of Checkpoints to parents in school districts that are not participating in the program.

### **Prematurity**

**Prioritize funding to reduce unintended pregnancies, reduce smoking during pregnancy and increase enrollment in group prenatal care, evidence-based home visiting (EBHV) and care coordination (Community Health Access and Navigation in Tennessee - CHANT).**

Prematurity was the leading cause of death among Tennessee infants (140 infant deaths, 29% of reviewed infant deaths), in 2018. Preventable risk factors for premature birth include tobacco use, maternal health conditions such as diabetes and high blood pressure, lack of prenatal care and pregnancy spacing. Additional risk factors include social factors such as stress and lack of social support.

To address these risks, TDH will increase referrals to CHANT and EBHV to facilitate coordination of medical care, social service support and enrollment in evidence based programs such as the Baby and Me Tobacco Free smoking cessation program. TDH will continue to partner with the Tennessee Primary Care Association to prevent both unintended pregnancy and smoking during pregnancy by addressing barriers to contraception where they exist and providing nicotine replacement therapy (NRT) to non-pregnant women of childbearing age. To address stress and lack of social support, TDH will partner with March of Dimes to increase enrollment in group prenatal care.

### **Birth Defects**

## **Increase prevention of the leading drivers of birth defects including diabetes, substance use, high blood pressure and high body mass index (BMI).**

Congenital anomalies were the second leading cause of death among Tennessee infants (86 infant deaths, 18% of reviewed deaths) in 2018. Preventable causes of birth defects include alcohol and substance use, infectious and environmental exposures, nutrition, and maternal health conditions such as diabetes, high blood pressure, and obesity.

The CDC recommends women make a “PACT” to reduce the risk of birth defects. A “PACT” is planning ahead, avoiding harmful substances, choosing a healthy lifestyle, and talking to your healthcare provider. TDH and TCCY will utilize social media and the annual birth defects report to educate women of childbearing age on CDC recommended strategies to reduce the risk of birth defects. TDH will prioritize primary prevention of obesity and chronic disease by funding evidence based programs such as WIC, access to safe places or physical activity, and school and daycare obesity prevention programs.

### **Safe Sleep**

**Partner with state and community agencies to promote safe sleep, with a particular focus on intergenerational caregivers, to provide consistent, culturally appropriate messaging to address disparities.**

Infant sleep-related deaths continue to be one of the leading preventable deaths for children under age 1. The use of blankets and toys in the sleep area along with infants not sleeping in a crib or bassinet continue to be the leading contributing factors associated with these deaths.

TDH will partner with the Tennessee Hospital Association (THA) to Increase the number of birthing hospitals completing crib audits with results of 90% or greater cribs safe. TDH will support the Tennessee Initiative for Perinatal Quality Care in its implementation of the current opioid safety bundle as well as safe sleep as its next neonatal project focus. TDH will purchase portable cribs and sleep sacks for hospitals and community agencies to distribute to families in need of safe sleep environment. TDH will complete an evaluation of safe sleep efforts to determine areas of the state needing greater distribution of portable cribs. TDH will expand the safe sleep diaper bag project to the CHANT care coordinators in all 95 counties and the expanded Evidence- Based Home Visiting program to increase family education. TDH will partner with the Commission on Aging to expand safe sleep education for grandparents. TDH Office of Minority Health will expand safe sleep outreach to faith-based communities. Tennessee Department of Children’s Services (DCS), Prevent Child Abuse Tennessee (PCAT), and Tennessee Commission on Children and Youth (TCCY) will provide safe sleep education to families they have contact with.

### **Drowning**

**TDH will promote drowning prevention recommendations from the American Academy of Pediatric Drowning Prevention Toolkit through social media and press releases. TDH will promote resources for swimming lessons.**

Child drowning deaths in Tennessee reached a 5 year high with 31 deaths in 2018. The leading locations for these deaths include pools or spas and open water such as rivers and lakes. Of the children that died in 2018 only three children are noted as being able to swim and 11 children did not have proper supervision around the water.

TDH will collaborate with TCCY, PCAT, TDE and DCS to increase social media messaging around drowning prevention recommendations to include parental supervision around water as well as policy level recommendations. TDH will develop and disseminate a list of resources for swimming lessons. TDH will work with TDMHSAS and internal programs to increase referrals to CHANT and EBHV to address maternal depression and other mental health issues that can contribute to parents/caregivers making choices that could harm children.

### STATWIDE ACTIVITIES

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In December 2018, the State Child Fatality Review Team met to review aggregate child death data from the 2017 death reviews and to consider recommendations from local teams. State Team members considered the latest trends in the causes of child deaths and contemplated strategies for reducing future fatalities. The State Team decided to focus on key strategies for reducing child fatalities in Tennessee, a practice identified during a series of national meetings aimed at strengthening state child fatality reviews.

The State Team made the following recommendations in the 2019 report:

- Convene key stakeholders to develop prevention recommendations around youth suicide.
- Continue to improve on real time monitoring and intervention for suicide indicators in youth. In addition, increase capacity of state departments to recognize and respond to adverse childhood experiences (ACEs).
- TDH will collaborate with Tennessee Suicide Prevention Network, Tennessee Department of Mental Health and Substance Abuse Services (TDMHSAS) and Tennessee Department of Education to identify high risk communities and populations and implement prevention efforts in identified areas. Education will include safe firearm storage and recognition of signs of suicidal ideation, along with efforts to increase the utilization of the suicide prevention checklist in schools.
- Increase the number of schools implementing evidence-based and evidence-informed motor vehicle crash (MVC) prevention programs.
- TDH will provide training to schools to implement *Checkpoints*<sup>™</sup> program and collect data from participation school to evaluate the effectiveness of the program.
- THD will work with all hospitals to encourage achieving the National Cribs for Kids Certification, have an infant safe sleep policy, and are teaching and modeling safe sleep in their facilities.
- Partner with state agencies such as TCCY, hospitals, PCAT, WIC, housing authorities and evidence-based home visiting to provide safe sleep education and portable cribs to families.
- Increase and encourage implementation of violence prevention programs such as Coaching Boys into Men<sup>™</sup>.
- TDH will expand efforts to increase utilization of effective contraception to assist women of child-bearing age in avoiding unintended pregnancy by funding provider training statewide, minimizing barriers to long acting reversible contraception, and by expanding family planning services to substance treatment facilities.
- TDH will partner with stakeholders to promote the appropriate use of 17-Hydroxyprogesterone to prevent preterm births.
- Tennessee has made significant improvements in prenatal smoking rates and additional focus will be on improving access to Baby and Me Tobacco Free and other tobacco prevention services.
- TDH will collaborate with the Tennessee Initiative for Perinatal Quality Care (TIPQC), Tennessee Hospital Association (THA), Tennessee Primary Care Association, and TennCare Managed Care Organizations to implement medical recommendations. TDH will also increase Supportive Pregnancy group prenatal care participation through collaboration with the March of Dimes.



Tennessee Department of Health staff, in conjunction with colleagues from other state agencies, local child fatality review teams and other community partners, accomplished the following related to the priorities outlined above:

### **Suicide**

- Ninety-five hospitals are currently reporting emergency department data to the ESSENCE system, allowing for real time surveillance of suicide attempts and identification of areas in need of suicide prevention training and other resources.
- TDH convened stakeholders to assess the resources, data, and needs for suicide prevention in the community.
- A needs assessment survey was sent out to community stakeholders to assess gaps in community resources and training. There were 281 responses.
- Approximately 2,400 youth impactors have been trained in Question, Persuade, Refer (QPR) across the state.

### **Motor Vehicle**

- TDH continues to collaborate with the Department of Education and the State's trauma centers to promote involvement in the *Battle of the Belt* seat belt program to high schools. Direct mail and emails were sent to all Tennessee public high schools. These communications shared teen crash data and invited schools to conduct seat belt use education. In 2018, the program website was updated and online tools were created to increase the efficiency of the program. Currently, there are twelve schools registered for Battle of the Belt.
- TDH has implemented a pilot of the **Checkpoints™** program in Williamson County schools which has resulted in more than 3,000 parent-teen driving agreements. The **Checkpoints™** program educates parents and teens about teen driving risks, Graduated Driver License (GDL) requirements, and how compliance with GDL requirements helps reduce teen driving risks. This program also facilitates the creation and implementation of a parent-teen driving agreement and informs parents of what they can do to help their teens become safer drivers. In 2018, the **Checkpoints™** curriculum was updated to include the most recent teen crash data and to include information regarding drowsy driving. An electronic tool was created to collect data on **Checkpoints™** to streamline the data collection process.
- A teen driving task force, with representation from the Department of Health, Department of Education, Governor's Highway Safety Office, Mothers Against Drunk Driving, Tennessee Highway Patrol, Vanderbilt Trauma Center and UT Trauma Center continued to meet. The goal of this task force is to increase teen motor vehicle crash prevention education in schools. This year, the task force held talking sessions with students and community leaders in each Grand Region to learn what students felt would help prevent crashes.
- The Governor's Highway Safety Office's website promotes teen driving prevention activities within high schools. **www.reducetncrashes.org** allows anyone to click on a county and view a list of available motor vehicle prevention activities. Participating schools may also input prevention activities in which they are participating.
- TDH continues to fund community agencies to purchase and distribute child safety seats. There were 24 agencies participating from 2018-2019.

## Safe Sleep

- Birthing hospitals submitted updated safe sleep policies in 2019 to align with the most up to date AAP recommendations. As part of the Safe Sleep Policy project, another 84,000 *Sleep Baby, Safe and Snug* board books and other safe sleep educational materials were distributed to new parents prior to their discharge from the hospital.
- In 2019, TDH, along with the Tennessee Hospital Association, continued the **BEST for Babies** award for birthing hospitals. The BEST criteria were updated to encourage more hospitals to meet the criteria. This included asking hospitals to submit crib audits in the 1<sup>st</sup> and 3<sup>rd</sup> quarter of the year, submitting a safe sleep policy that meets AAP guidelines for infant safe sleep, and increasing the breastfeeding initiation rate to 82%.
- TDH continues to promote the **Direct on Scene Education** (D.O.S.E.) program. When responding to an emergency or non-emergency call from a household which includes a pregnant woman or an infant, first responders are trained to look for unsafe sleep conditions and offer the residents a safe sleep kit with information on the *ABCs of Safe Sleep*. Over the past year, four new first responder agencies implemented the D.O.S.E. program, increasing the total number of actively participating departments to sixteen.
- Since implementation, agencies have distributed 1,928 safe sleep kits and 122 portable cribs.
- TDH implemented the **Safe Sleep Floor Talker** project in 2014 and continued to place floor talkers across the state in 2018. The floor talkers are large vinyl decals designed to be placed on the floors of businesses, daycare centers, clinics and other agencies. To date, 1,494 floor talkers have been distributed and placed.
- Over 1,700 portable cribs and 1,200 infant sleep sacks were supplied to regional health departments, hospitals and evidence-based home visiting programs to distribute to families that could not afford to purchase a safe sleep environment for their infants.
- In FY2019, Prevent Child Abuse Tennessee (PCAT) served 364 first-time parents through the Healthy Families Tennessee (HFTN) program. HFTN is an evidence-based home visiting program serving twenty counties in Tennessee. During the assessment and initial home visit, families explore safe sleep information and options.
- TDH provided training to new community partners on infant safe sleep, including 16 housing authorities agencies and the Safe Kids Coalition in West Tennessee.
- TDH collaborated with the Tennessee Commission on Aging and Disability to promote infant safe sleep to grandparents and nontraditional infant caregivers.

## Health Disparities

- TDH provided funding for family planning clinics and Federally Qualified Health Centers (FQHCs) to provide Long Acting Reversible Contraceptives (LARCs) to interested and eligible women.
- TDH provided funding to the March of Dimes for the sustainability and implementation of group prenatal care, Supportive Pregnancy Care (SPC) in partnership with healthcare providers across the state.
- There were two high risk sites added for SPC model in Davidson and Shelby County.
- TDH expanded safe sleep partnerships to include additional housing developments and faith based organizations.
- TDH provided funding to the Primary Care Association for nicotine replacement therapy for women of child bearing age.

## Medical

- TPCA provided training to FQHCs on LARCs and NRT in high risk rural and urban areas.
- TDH provides support for the education of incarcerated women on topics such as LARCs, Neonatal Abstinence Syndrome, and reducing unwanted pregnancies.
- Baby and Me Tobacco Free expended to all 95 counties. Funds were provided to local health departments to purchase NRT to support smoking cessation for women of child bearing age.

## LOCAL PREVENTION ACTIVITIES

As part of the CFR process, the review of each case and the discussions that follow identify opportunities for preventing future child deaths. In addition to submitting recommendations for state-level policy or program changes, local teams also engage in prevention efforts in their own communities.

Examples of local prevention activities implemented over the past year by local CFR teams include:

- Judicial District 1
  - Continued to educate female inmates about Neonatal Abstinence Syndrome (NAS) and family planning services, and provided contraceptives to interested inmates.
  - Distributed asthma care plan information to local providers after the death of a child with asthma.
  - Provided mental health training in local schools.
- Judicial District 2
  - Participated in site visit in East Region to learn about collaborations with judicial system to increase resources and access for families with addiction issues.
  - Continued to educate female inmates about Neonatal Abstinence Syndrome (NAS) and family planning services, and provided contraceptives to interested inmates.
- Judicial District 4
  - Collaborated with stakeholders to educate the community on infant safe sleep practices.
  - Continued the *Journey* program curriculum through the juvenile court system, targeting local high schools and educating students about how substance use can inhibit the ability to care for a child.
  - TN ROCS training continuing in Jefferson Co Drug Court - (showing interest in the lives of those in their court rooms) other counties across the region wanting to mimic what Judge Sloan is doing in his court room.
  - DCS presented to teachers at a local school in Jefferson County during teacher in-service on process, referrals, and awareness.
  - Department of Children's Services provides infant safe sleep education to any family in need.
  - Local District Attorney follows-up with juvenile judge on any family court referrals to ensure DCS is aware of situations involving children.
- Judicial District 5
  - Schools hosted an "Anti-vaping Campaign" called V3 "Vow to vanquish vaping".
  - Conducted a D.O.S.E. training during an EMS in-service day.
  - Worked with local fire and law enforcement agencies to conduct child safety seat checks monthly.
  - Safe sleep education provided to families at child safety seat checks.
  - Distributed infant safe sleep church bulletin inserts to local faith organizations and at community baby showers and provided portable cribs to families in need.
- Judicial District 6
  - Distributed portable cribs to families in need and provided infant safe sleep education.
  - Continued education and meetings around suicide prevention in the community.
- Judicial District 7
  - The Child Advocacy Center (CAC) provided information throughout the community on "Sleep in Heavenly Peace" bedding drive. <https://www.shpbeds.org>
  - Continued to distribute infant safe sleep materials to community members such as churches, schools, hospitals, and first responding agencies.
  - Family Drug Court is developing a new program in collaboration with local schools to identify children and families at risk for substance misuse and facilitate completion of the program.

- Child Advocacy Center provides child safety seat checks and collaborates with TDH to distribute portable cribs to families in need.
- Judicial District 8
  - TN Suicide Prevention Network committee member set up training with Campbell County School system for QPR training for staff.
  - Continued Safe Sleep Education local DCS trains all staff members to recognize and appropriately address child abuse situations.
  - Regional Health Office delivers infant safe sleep education to prenatal classes and in pediatricians' offices.
- Judicial District 10
  - Provided infant safe sleep education through their care coordination services, home visiting agencies, and local health departments.
  - Conducted child safety seat checks and trained all CHANT team members to be child safety seat technicians.
  - CHANT Outreach Director and Medical Director distributed portable cribs to local hospitals and agencies to increase access to a safe sleep environment to families.
  - Community education provided on infant safe sleep at local community events.
- Judicial District 11
  - Distributed portable cribs to families in need of a safe sleep environment.
  - Participated in urban health fair and distributed infant safe sleep materials and information on prenatal care.
- Judicial District 12
  - Continued to provide infant safe sleep education in their local health departments.
- Judicial District 1901
  - CHANT staff completed trauma-informed care training.
- Judicial District 20
  - Team member presented on gang involvement in Davidson County and GRIP (Gang Resistance Intervention Program) that focuses on showing community members the value in their lives.
  - Team participated in an advocacy training that was targeted to breastfeeding discrepancies in the African American community including ending stigmas in the community around breastfeeding and including fatherhood engagement.
  - A joint effort between Metro Nashville Public Schools and the Metro Nashville Police Department called Handle with Care to improve on communications when a child is involved in an accident.
  - MNPS reevaluated their attendance and truancy to shift focus on providing higher intervention for chronic absenteeism.
  - Continued to work with area housing authorities on infant safe sleep and over all infant health.
- Judicial district 24
  - Provided information on the importance of smoke detectors within the community.
- Judicial District 26
  - Hosted a safe sleep education date for local housing authorities maintenance crew.
  - Hosted DOSE training for first responders all over West Tennessee.
- Judicial District 30

- Provided child safety seats in collaboration with local “Safe Kids” coalition. Included infant safe sleep education with the safety seat distribution.
- Presented bus wraps on public transport with infant safe sleep information.
- Continued to distribute portable cribs to families in need in the community.
- Collaborating with local agencies to promote safe sleep education to other caregivers including grandparents, fathers/males, and siblings.

## **CONCLUSION**

The goal of child fatality review is to better understand the causes of death of children in Tennessee and to identify strategies for preventing future deaths. The overall 2018 child mortality rate for Tennessee was 61.8 child deaths per 100,000 children, a 6% decrease from 2017 child mortality rate of 65.3 per 100,000 children. Tennessee's 2018 child fatality rate is 24% above the 2017 national average, leaving important work to be done in order to protect our children.

Several key areas identified in this report warrant further attention, as recommended by the State Team. Deaths due to unsafe sleep, suicide, and birth defects all decreased from 2017 to 2018. Despite this decrease, the numbers remain higher than the national average and therefore the state team recommends continued education around these topics. The team recommends continued promotion of safe sleep with a particular focus on intergenerational caregivers, increased suicide prevention and mental health services, and increased promotion of the leading drivers of birth defects.

Deaths due to prematurity and motor vehicle crashes were unchanged from 2017 to 2018. Several strategies are recommended to reduce deaths due to prematurity including the reduction of unintentional pregnancies and reduction of smoking during pregnancy. Enrollment in programs such as group prenatal care, evidence-based home visiting and care coordination is also recommended. To reduce deaths due to motor vehicle crashes, the state team recommends increased participation in evidence-based motor vehicle prevention programming at the schools

The rate of death due to drowning increased from 2017 to 2018. The state team recommends promotion of drowning prevention recommendations and dissemination of resources for swimming lessons.

We encourage all who read this report to utilize the data contained herein to explore opportunities for improving the health and well-being of children within their own communities.

## APPENDICES

### Appendix A—List of Tables and Figures

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#### Tables

Table 1	Number and Rate of Child Deaths (per 100,000 child population) for Ages 0-17 Years by Race Tennessee, 2014-2018
Table 2	Manner of Death, Summary for Children Ages 0-17 Years Tennessee, 2018
Table 3	Cause of Death by Manner of Death for Children Ages 0-17 Years Tennessee, 2018
Table 4	Cause of Death, Summary for Children Ages 0-17 Years Tennessee, 2018
Table 5	External Cause of Death (Injury Causes) for Children Ages 0-17 Years by Age Group Tennessee, 2018*
Table 6	Medical Cause of Death for Children Ages 0-17 Years by Age Groups Tennessee, 2018
Table 7	Acts of Child Abuse and Neglect among Reviewed Deaths for Children Ages 0-17 Years Tennessee, 2018*
Table 8	Children with Disability for Reviewed Deaths of Children Ages 0-17 Years by Age Group Tennessee, 2018*
Table 9	Children with Special Circumstances for Reviewed Deaths of Children Ages 0-17 Years Tennessee, 2018*
Table 10	Summary of Year-to-Year Trends for Selected Causes of Deaths Reviewed Tennessee, 2017 vs 2018*
Table 11	Suicides among Children Ages 0-17 Years by Victim Age Groups and Method Tennessee, 2018
Table 12	Firearm-Related Deaths for Children Ages 0-17 Years by Manner of Death and Age Group, Tennessee, 2018
Table 13	Homicide and Suicide Deaths due to Firearms for Children 0-17 Years by Owner of Firearm, Tennessee, 2018
Table 14	Asphyxia Cause of Death for Children Ages 0-17 Years by Age Groups Tennessee, 2018
Table 15	Motor Vehicle/Other Transport Fatalities for Children Ages 0-17 Years by Age Groups and Position with Respect to Vehicle, Tennessee, 2018
Table 16	Motor Vehicle Deaths among Children Ages 0-17 Years by Vehicle Type and Protective Measure, Tennessee, 2018
Table 17	Drowning Deaths for Children Ages 0-17 Years by Location and Age Groups Tennessee, 2018
Table 18	Poison-Related Deaths among Children Ages 0-17 Years by Substance and Age Groups Tennessee, 2018*
Table 19	Number and Rate of Infant Deaths by Race Tennessee, 2014-2018
Table 20	Risk Factors Associated with Infant Deaths Reviewed by Tennessee CFR Teams, 2017*
Table 21	Number of Sleep-Related Infant Deaths and Rates by Race, Tennessee, 2014-2018
Table 22	Contributing Factors in Sleep-Related Infant Deaths Tennessee, 2014-2018*
Table 23	Categorization for SUID Case Registry for Infants Tennessee, 2018
Table 24	Unsafe Sleep Factors for Infants with a SUID Category of Explained Suffocation or Possible Suffocation Tennessee, 2018
Table 25	Categorization for SDY Case Registry for Children Ages 0-17 Years Tennessee, 2018
Table 26	Child Fatalities (Number and Rate) by County, 2018
Table 27	Infant Deaths (Number and Rate) by County, 2018



## Figures

- Figure 1 Number and Rate of Child Deaths (Ages 0-17 Years) Tennessee, 2014-2018
- Figure 2 Child Mortality Rate for Ages 0-17 Years by Race Tennessee, 2014-2018\*
- Figure 3 Child Deaths Reviewed by Age Group, Tennessee, 2018
- Figure 4 Child Deaths Reviewed for Ages 0-17 by Sex, Tennessee, 2018 (n=860)
- Figure 5 Child Deaths Reviewed for Ages 0-17 by Race, Tennessee, 2018 (n=860)
- Figure 6 Manner of Death Summary, Children Ages 0-17 Years, Tennessee, 2018 (n=860)
- Figure 7 Cause of Death Summary, Children Ages 0-17 Years, Tennessee, 2018 (n=860)
- Figure 8 Child (0-17 years) Mortality Rate by Manner of Death in Tennessee. 2014-2018
- Figure 9 Rate of Child Mortality Ages 0-17 Years by Cause of Death Tennessee, 2014-2018
- Figure 10 Preventability of Child Deaths Ages 0-17 Years by Cause of Death Tennessee, 2017
- Figure 11 Homicide Deaths and Rates per 100,000 Population Ages 0-17 Years Tennessee and US, 2014-2018
- Figure 12 Demographic Distribution of Homicide Deaths for Children Ages 0-17 Years Tennessee, 2018
- Figure 13 Weapon Type used in Homicide Deaths for Children Ages 0-17 Years Tennessee, 2018
- Figure 14 Homicide Deaths for Children Ages 0-17 Years by Victim's Location Tennessee, 2018
- Figure 15 Suicides and Suicide Rates per 100,000 Children Ages 0-17 Years Tennessee and the US, 2014-2018
- Figure 16 Demographic Distribution of Suicides for Children Ages 0-17 Years Tennessee 2018
- Figure 17 Method of Suicides for Children Ages 0-17 Years, Tennessee, 2018
- Figure 18 Location of Suicides for Children Ages 0-17 Years, Tennessee, 2018\*
- Figure 19 Firearm-Related Deaths and Rates per 100,000 Children Ages 0-17 Years Tennessee, 2014-2018\*
- Figure 20 Demographic Distribution of Firearm-Related Deaths for Children Ages 0-17 Years Tennessee, 2018
- Figure 21 Firearm-Related Deaths for Children Ages 0-17 Years by Firearm Type, Tennessee 2018\*
- Figure 22 Firearm-Related Deaths for Children Ages 0-17 Years by Manner of Death, Tennessee, 2018
- Figure 23 Unintentional Asphyxia Deaths and Rates per 100,000 Children Ages 0-17 Years Tennessee and the US, 2014-2018\*
- Figure 24 Demographic Distribution of Asphyxia Deaths for Children Ages 0-17 Years Tennessee, 2018
- Figure 25 Motor Vehicle-Related Deaths and Rates per 100,000 Children Ages 0-17 Years Tennessee and the US, 2014-2018
- Figure 26 Demographic Distribution of Motor Vehicle Fatalities for Children Ages 0-17 Years Tennessee, 2018\*
- Figure 27 Drowning Deaths and Rates per 100,000 Children Ages 0-17 Years Tennessee and the US, 2014-2018
- Figure 28 Demographic Distribution of Drowning Deaths for Children Ages 0-17 Years Tennessee 2018
- Figure 29 Drowning Deaths for Children Ages 0-17 Years, by Location and Activity at the Time of Death, Tennessee, 2018\*
- Figure 30 Fire/Burn Deaths and Rates per 100,000 Children Ages 0-17 Years Tennessee and the US, 2014-2018
- Figure 31 Demographic Distribution of Fire/Burn Deaths for Children Ages 0-17 Years Tennessee, 2018
- Figure 32 Fire/Burn Deaths for Children Ages 0-17 Years by Fire Source Tennessee, 2018
- Figure 33 Fire/Burn Deaths for Children Ages 0-17 Years by Structure Type Tennessee, 2018
- Figure 34 Poisoning Deaths and Rates per 100,000 Children Ages 0-17 Years Tennessee and the US, 2014-2018
- Figure 35 Demographic Distribution of Poison-Related Deaths for Children Ages 0-17 Years Tennessee, 2018

- Figure 36 Fall/Crush Deaths and Rates per 100,000 Children Ages 0-17 Years Tennessee and the US, 2014-2018\*
- Figure 37 Demographic Distribution of Fall/Crush Deaths for Children Ages 0-17 Years Tennessee, 2018
- Figure 38 Number and Rate of Infant Deaths Tennessee, 2014-2018
- Figure 39 Infant Mortality Rate by Race Tennessee, 2013-2018\*
- Figure 40 Number of Sleep-Related Infant Deaths Tennessee 2014-2018
- Figure 41 Sleep-Related Death Rates by Race, Tennessee, 2014-2018
- Figure 42 Number of Sleep-Related Infant Deaths in Tennessee by Region, 2017 vs 2018

**Asphyxia** – Oxygen starvation of tissues. Asphyxia is a broad cause of death that may include more specific causes, such as strangulation, suffocation, or smothering.

**Autopsy** – Medical dissection of a deceased individual for the purpose of determining or confirming an official manner and cause of death.

**Birth Certificate** – Official documentation of human birth, filed with the Tennessee Office of Vital Records.

**Cause of Death** – The effect, illness, or condition leading to an individual's death: Medical Condition or External Cause (Injury). A different classification from Manner of Death.

**Child Fatality Review (CFR) Team**– Tennessee's local/regional groups, comprised of representatives from such agencies as public health, law enforcement, social services, and others, that work together to examine the deaths of children, ages 17 years and under, with the ultimate goal of preventing future fatalities.

**Child Maltreatment** – Intentional injury of a child, involving one or more of the following: neglect, physical harm, sexual abuse or exploitation, or emotional abuse.

**Circumstances** – Situational findings.

**Commission (Act of)** – Willfully endangering a child's health and welfare.

**Congenital anomaly** – A medical or genetic defect present at birth.

**Contributing Factors** – Actions or circumstances that may elevate the risk of fatality.

**Coroner** – Jurisdictional official charged with determining the manner and cause of death for individuals perishing in sudden, violent, or suspicious circumstances. Performs much the same function as a Medical Examiner, but may or may not be a physician.

**Children's Special Services (CSS)** – Tennessee Department of Health program that provides payment for medical care and coordination of services for families with severely ill or disabled children under the age of 21 years.

**Death Certificate** – Official documentation of an individual's death, indicating the manner and cause of death.

**Death Scene Investigation** – Portion of the Child Fatality Review process that gathers relevant information and interviews at the site of a child's death for the purpose of determining or confirming the manner and cause of death.

**Department of Children's Services**- Social service system engaged in protecting children from maltreatment.

**Exposure** – Cause of death directly related to environmental factors. May also refer to death from hyper- or hypothermia from prolonged or extreme exposure to environmental temperatures.

**External** – Categorization of non-medical manners of death: i.e., accident, homicide, or suicide.

**Full-term** – A gestation of 37 or more weeks.

**Homicide** – Death perpetrated by another with the intent to kill.

**Hyperthermia** – High body temperature.

**Hypothermia** – Low body temperature.

**Infant** – Child under one year of age.

**Manner of Death** – The intent of a death, i.e. whether or not a death was caused by an act carried out on purpose by oneself or another person(s): Natural, Accident, Suicide, Homicide, or Undetermined.

**Medical Examiner** – Physician charged with determining the manner and cause of death for individuals perishing in sudden, violent, or suspicious circumstances.

**Missing** – Case information or data that has not been included on the Child Fatality Review reporting form.

**Natural** – Categorization of death indicating a medical cause, such as congenital condition, illness, prematurity, or SIDS.

**Neglect** – Failure to provide basic needs, such as food, shelter, and medical care.

**Omission (Act of)** – Supervision entirely absent or inadequate for the age or activity of the child.

**Pending** – Indication that an official manner of death awaits further investigation.

**Preterm** – Birth occurring at a gestation of less than 37 weeks.

**Preventability** – Indicates the likelihood that a death could have been averted with reasonable efforts on the part of an individual or community.

**Sudden Death in the Young (SDY)** – Refers to any death that occurs within 24 hours of symptoms or death in a hospital after cardiac resuscitation from cardiac arrest. The decedent is someone who was believed to be in good health, someone who had a stable chronic condition, or someone with an acute illness which would not be expected to cause death.

**Sudden Infant Death Syndrome (SIDS)** – An exclusionary manner of death for children less than one year of age, indicating that all evidence (including an autopsy, death scene investigation, and review of the medical record) has failed to yield the specific cause of a natural death.

**Supervisor** – Individual charged with the care of a child at the time of his or her death.

**Undetermined** – Default manner of death when circumstances and/or investigation fail to reveal a clear determination.

**Unknown** – Case information or data that is unattainable or unavailable after review by the CFR team.

## Appendix C—Child Deaths by County of Residence

**Table 26. Child Fatalities (Number and Rate) by County, 2018**

County	Deaths	Population, Ages 0-17	Rates per 100,000 Population
Anderson	8	15872	50.4
Bedford	13	12313	105.6
Benton	1	3212	31.1
Bledsoe	0	2219	0.0
Blount	13	26328	49.4
Bradley	9	23405	38.5
Campbell	7	8037	87.1
Cannon	2	3061	65.3
Carroll	3	6141	48.9
Carter	5	10231	48.9
Cheatham	3	8871	33.8
Chester	2	3964	50.5
Claiborne	2	6073	32.9
Clay	2	1538	130.0
Cocke	10	7162	139.6
Coffee	6	13251	45.3
Crockett	6	3338	179.7
Cumberland	9	10353	86.9
Davidson	109	145668	74.8
Decatur	0	2424	0.0
DeKalb	2	4296	46.6
Dickson	4	12172	32.9
Dyer	5	8825	56.7
Fayette	5	7586	65.9
Fentress	1	3780	26.5
Franklin	7	8576	81.6
Gibson	4	11767	34.0
Giles	3	6253	48.0
Grainger	2	4621	43.3
Greene	10	13338	75.0
Grundy	2	2825	70.8
Hamblen	14	14710	95.2
Hamilton	44	76024	57.9
Hancock	0	1328	0.0
Hardeman	3	4885	61.4

Hardin	4	5235	76.4
Hawkins	3	11117	27.0
Haywood	1	3815	26.2
Henderson	3	6283	47.7
Henry	3	6577	45.6
Hickman	7	5166	135.5
Houston	0	1774	0.0
Humphreys	1	3923	25.5
Jackson	1	2095	47.7
Jefferson	5	10666	46.9
Johnson	1	2958	33.8
Knox	44	98512	44.7
Lake	2	1027	194.7
Lauderdale	5	5758	86.8
Lawrence	5	10742	46.5
Lewis	1	2574	38.9
Lincoln	9	7489	120.2
Loudon	4	10200	39.2
McMinn	11	11267	97.6
McNairy	4	5542	72.2
Macon	5	5935	84.2
Madison	16	22449	71.3
Marion	3	5956	50.4
Marshall	5	7810	64.0
Maury	13	21841	59.5
Meigs	3	2510	119.5
Monroe	11	9683	113.6
Montgomery	45	54709	82.3
Moore	0	1207	0.0
Morgan	3	4069	73.7
Obion	4	6491	61.6
Overton	1	4596	21.8
Perry	1	1771	56.5
Pickett	0	896	0.0
Polk	3	3269	91.8
Putnam	3	16910	17.7
Rhea	2	7489	26.7
Roane	5	9836	50.8
Robertson	8	16770	47.7

Rutherford	39	80122	48.7
Scott	4	5273	75.9
Sequatchie	2	3061	65.3
Sevier	5	19892	25.1
Shelby	191	231701	82.4
Smith	2	4456	44.9
Stewart	2	2800	71.4
Sullivan	17	30139	56.4
Sumner	22	43482	50.6
Tipton	9	14946	60.2
Trousdale	0	2080	0.0
Unicoi	3	3260	92.0
Union	2	4227	47.3
Van Buren	1	1085	92.2
Warren	6	9466	63.4
Washington	24	24950	96.2
Wayne	3	2796	107.3
Weakley	2	6718	29.8
White	2	5878	34.0
Williamson	14	62337	22.5
Wilson	18	32989	54.6
Tennessee	929	1503022	61.8

Note: Rates based on counts of less than 20 deaths are considered unstable and should be interpreted with caution.

Data source: Tennessee Department of Health, Office of Vital Records and Health Statistics, Death Statistical File, 2018.

Population estimates based on interpolated data from the U.S. Census's Annual Estimates of the Resident Population.

**Appendix D—Infant Deaths by County of Residence**

**Table 27. Infant Mortality (Number and Rate) by County, 2018**

<b>County</b>	<b>Deaths</b>	<b>Live Births</b>	<b>Infant Mortality Rate per 1,000 Live Births</b>
Anderson	6	820	7.3
Bedford	9	679	13.3
Benton	0	164	0.0
Bledsoe	0	116	0.0
Blount	6	1305	4.6
Bradley	4	1261	3.2
Campbell	3	432	6.9
Cannon	1	173	5.8
Carroll	2	275	7.3
Carter	3	481	6.2
Cheatham	3	450	6.7
Chester	0	182	0.0
Claiborne	1	330	3.0
Clay	1	62	*
Cocke	6	371	16.2
Coffee	4	721	5.5
Crockett	2	161	12.4
Cumberland	7	552	12.7
Davidson	71	9982	7.1
Decatur	0	112	0.0
DeKalb	2	213	9.4
Dickson	2	622	3.2
Dyer	4	447	8.9
Fayette	4	393	10.2
Fentress	1	202	5.0
Franklin	7	403	17.4
Gibson	1	574	1.7
Giles	0	292	0.0
Grainger	1	235	4.3
Greene	5	698	7.2
Grundy	0	160	0.0



Hamblen	9	807	11.2
Hamilton	25	4249	5.9
Hancock	0	82	0.0
Hardeman	1	207	4.8
Hardin	2	242	8.3
Hawkins	2	508	3.9
Haywood	0	182	0.0
Henderson	3	309	9.7
Henry	0	304	0.0
Hickman	2	257	7.8
Houston	0	86	0.0
Humphreys	1	237	4.2
Jackson	0	91	0.0
Jefferson	2	479	4.2
Johnson	1	165	6.1
Knox	28	5155	5.4
Lake	0	63	0.0
Lauderdale	5	282	17.7
Lawrence	4	590	6.8
Lewis	1	154	6.5
Lincoln	4	379	10.6
Loudon	2	461	4.3
McMinn	7	567	12.3
McNairy	3	269	11.2
Macon	1	335	3.0
Madison	11	1196	9.2
Marion	2	320	6.3
Marshall	4	410	9.8
Maury	6	1184	5.1
Meigs	2	124	16.1
Monroe	5	507	9.9
Montgomery	29	3512	8.3
Moore	0	63	0.0
Morgan	2	200	10.0
Obion	4	345	11.6
Overton	0	238	0.0

Perry	0	107	0.0
Pickett	0	38	0.0
Polk	3	163	18.4
Putnam	2	870	2.3
Rhea	2	383	5.2
Roane	3	494	6.1
Robertson	8	889	9.0
Rutherford	32	4146	7.7
Scott	2	249	8.0
Sequatchie	1	177	5.6
Sevier	5	1023	4.9
Shelby	114	13122	8.7
Smith	2	218	9.2
Stewart	1	145	6.9
Sullivan	7	1506	4.6
Sumner	11	2149	5.1
Tipton	5	656	7.6
Trousdale	0	122	0.0
Unicoi	1	175	5.7
Union	1	212	4.7
Van Buren	0	67	0.0
Warren	3	460	6.5
Washington	16	1247	12.8
Wayne	2	117	17.1
Weakley	1	315	3.2
White	1	286	3.5
Williamson	2	2321	0.9
Wilson	10	1651	6.1
Tennessee	559	80737	6.9

Note: Rates based on counts of less than 20 deaths are considered unstable and should be interpreted with caution.

Data source: Tennessee Department of Health, Office of Vital Records and Health Statistics, Death Statistical File, 2018.

## **Expanding Suicide Prevention Efforts in Tennessee**

Suicide is the 9<sup>th</sup> overall leading cause of death in Tennessee and the 2<sup>nd</sup> leading cause of death for children 10-24 years of age. Due to high rates of suicide deaths in Tennessee, the Suicide Prevention Act of 2018 gave the Tennessee Department of Health (TDH) the authorization to develop a suicide prevention program. The act took effect January 1, 2019 and a program director was hired at TDH to accomplish five main goals:

1. Convene a key stakeholder group to identify opportunities to improve data collection, data analysis, and programming and policies related to suicide prevention
2. Compile existing data on suicide attempts and deaths
3. Review existing resources and programs related to suicide prevention
4. Identify evidence-based or promising practices related to the prevention of suicide
5. Submit a report to the general assembly by June 30, 2020 with recommendations to implement necessary programs or policies to prevent suicide deaths in the state



There are many risk factors associated with suicide including, but not limited to, a family history of suicide, a history of child maltreatment, a personal or family history of alcohol or substance abuse or mental health disorders, particularly clinical depression, a major relational or social loss, easy access to lethal means, and feelings of isolation and hopelessness. The Suicide Prevention Act of 2018 is in place to help mitigate risk factors in the community. One way in which this is happening is by participating in the Child Safety Network's Suicide and Self-Harm Prevention collaborative. The collaborative strategic aim is to increase the amount of youth impactors within Tennessee who are trained in Question, Persuade, and Refer (QPR). QPR trains individuals to recognize the warning signs of suicide and teaches its participants how to question, persuade, and refer a person experiencing a mental health or suicidal crisis to help. As of September 2019, through the help of TSPN, approximately 2,400 youth impactors have been trained in QPR across the state.

Another way to reduce suicide in youth is to look at trends in the community. The TDH Suicide Prevention Program Director does weekly syndromic surveillance through the use of the ESSENCE (Electronic Surveillance System for the Early Notification of Community-based Epidemics) database to monitor suicide attempts, suicidal ideation, and intentional self-harm emergency department visits in children 18 years of age and under across the state. As of September 2019, there are 95 hospitals within the state reporting into ESSENCE. In early 2019, TDH met with the Tennessee Suicide Prevention Network (TSPN), the Tennessee Department of Mental Health and Substance Abuse Services (TDMHSAS), and the Tennessee Department of Education to discuss what efforts can be done when increased levels of suicide-related behavior in children/youth are seen within the state through the use of ESSENCE.

In September 2019, a suicide prevention needs assessment survey was distributed to key mental health and suicide prevention stakeholders across the state. The needs assessment was developed in order to identify gaps in suicide prevention services and accurately determine what support is needed within local Tennessee communities for those at-risk for suicide. The survey also assesses the extent in which organizations across the state collaborate in regards to mental health and suicide prevention. There were 281 responses to the needs assessment survey and 21% of those responses came from individuals who work directly with children/youth within Tennessee and 51.3% of those serve children 17 and under always. By taking this multifaceted approach to youth suicide we are hoping to make an impact on the community and reduce youth suicide.

## Providing Safe Sleep Education to Families in the Home



In 2018, 128 infants died in Tennessee due to an unsafe sleep environment, which accounted for over 1 in 5 infant deaths. These deaths are preventable by ensuring infant caregivers follow the ABC's of safe sleep and are **A**lone without blankets, pillows, on their **B**ack, not on their stomach or side, and in a **C**rib or their own sleep surface. While the infant safe sleep message is simple, infants are still dying due to unsafe sleep practices. Reaching families in the home to provide education and the tools to be successful such as a portable crib and wearable blankets is critical to changing behavior

In 2018, TDH initiated the Safe Sleep Diaper Bag Project in collaborations with the Evidence Based Home Visiting Program. The project then expanded to the Community Health Access and Navigation in Tennessee (CHANT) program in Fall 2019. CHANT is a care coordination program in Tennessee. The goal of this collaboration is to expand our infant safe sleep efforts in the home and standardize our education technique. The project included a diaper bag with an imprinted safe sleep message "Remember the ABC's of Safe Sleep: I should sleep Alone, on by Back, and in a Crib" and several safe sleep items in the bag including:

- Calm Baby Gently Book
- Infant Sleep Sack
- Infant Onesie
- Infant Nightlight
- Sleep Baby Safe and Snug Book
- Two-sided Door Hanger

For this project, the home visitor provides a pregnant or new mother and family members with education on safe sleep via the safe sleep flipchart, and then gives the family the diaper bag as a gift. The bag is given to the family no earlier than 4 weeks before the mother's expected due date or at the first encounter visit after birth for infants less than 1 month of age. If the family does not have a safe sleep environment, the home visitor is also able to provide a portable crib. The home visitor then notes the sleep habits for the infant. When the baby is two months old, the following questions:

Did your home visitor give you a safe sleep diaper bag?

Did you read the books and written materials in the diaper bag?

Did any items in the diaper bag cause you to change the way you put your baby to sleep?

Which items in the diaper bag caused you to change the way you put your baby to sleep?

**As of October 2019, 332 diaper bags have been distributed with 33% of families that received a bag stating an item in the diaper bag caused them to change a behavior in how they place their infant to sleep.** The data collected has shown the infant sleep sack has been the primary item that has caused for families to make a change and remove blankets from the sleep environment. According to the CFR data, blankets and soft bedding in the sleep environment is the number one contributing factor in sleep related infant deaths therefore it is critical to provide families with resources other than blankets.

## Coaching Boys into Men and Athletes as Leaders

# Coaching Boys INTO MEN

CoachesCorner.org

Youth violence, including homicide and suicide, is one of the leading causes of preventable deaths in children ages 10-17 years. One of the strategies to improve and prevent these deaths is to influence the youth outside of the home. One of the largest influences in youth comes from their athletic coaches. Coaches impact players by teaching life skills in hopes of developing positive relationships. Establishing a positive athlete-coach relationship is critical to achieving effective communication on and off the playing field.

One of the programs used to influence change in youth behavior and promote positive choices is Coaching Boys Into Men (CBIM). CBIM is an evidence-based violence prevention program that trains and motivates high school coaches to teach their young male athletes healthy relationship building skills and that “violence never equals strength”. CBIM facilitates relationships between players and their coaches by providing coaches with resources to promote respectful behavior among their players and help prevent relationship abuse, harassment, and sexual assault. In 2017, TDH adopted this model to use in local high schools and middle schools to promote positive behavior and reduce violent injuries and death.

Currently, TDH supports 17 coaches trained at Siegel High School and 8 coaches trained at Nashville East Metro High School as they implement CBIM. A total of over 140 coaches have been trained from May 2019 to July 2019, totaling 165 coaches trained in the last year. TDH also presented on the program to Bledsoe County, the East Regional Coordinated School Health Meeting in Milan Tennessee, 2019 and the West Regional Coordinated School Health Meeting in Cookeville, Tennessee, and Wilson County Coaches.

## Athletes As Leaders™

Males have a higher rate of youth violent deaths, female deaths still account for nearly 25% of violent and weapon related deaths. To accompany the unique issues that occur with the female youth a second prevention program was developed called Athletes as Leaders (AAL). AAL is specific to high

school girls’ sports teams. The program empowers female students to take an active role in promoting healthy relationships and ending sexual violence. AAL charges athletes to be leaders in changing the culture into a culture of safety and respect. All genders should take an active role in promoting a health and safe community. For the first time in 2019, TDH is able to offer the new program for girl athletes, “Athletes As Leader” as part of these training sessions. In both of these programs athletes are encouraged to be leaders in changing social norms at the school to a culture of safety and respect.

## BIG NEWS! TDH RELEASES DATA DASHBOARD

On November 1<sup>st</sup>, 2019 TDH published the child and infant mortality data dashboard. This is an interactive page that displays data for infant and child deaths across the state. The dashboard consists of the overall number and rate of infant and child deaths over the last five years along with data on specific causes of death. The infant dashboard includes specific data on sleep-related deaths, preterm birth and birth defects. The child dashboard includes specific data on suicide, homicide and motor vehicle crashes. Each dashboard has a Tennessee map at the top. When you hover over each region facts appear including leading causes of death and rates compared to the state and nationally. Under the map you can break down the overall child and infant data by race, gender, and age: The dashboard can be accessed [here](#).



## Suicide Prevention in Local High Schools

To say football is sport in Knoxville, Tennessee is an understatement. This is a community in Tennessee where everyone comes together over sports including the bright lights over a Friday night high school football field in the fall. The Knox County Health Department, Tennessee Suicide Prevention Network (TSPN) and Knox County Coordinated School Health have come together to use this time of community as an opportunity to address youth risk behavior and suicide prevention.



According to statistics from Knox County Health Department Youth Risk Behavior Survey, 1 in 4 high school students report feelings helplessness and 1 in 7 students seriously considering suicide in the last year. These numbers are concerning and require a community approach to youth suicide prevention. According to the TSPN, one of the strategies to decrease suicide is to encourage the community to talk about suicide. It's often a myth that talking about suicide will plant the idea in someone's mind, when the truth is that talking about suicide opens up communication and can encourage individuals to get help. Oftentimes youth who talk about suicide or harming themselves can be seen as "attention seeking" or being "overly dramatic" but getting communities, leaders, and peers to talk about suicide prevention can help mitigate these myths and provide support and resources to youth in need.

In response to multiple youth suicides in the schools in Knox County from 2017-2018 the Knox County Health Department and Child Fatality Review Team collaborated with the local area high school's coordinated school health program to encourage suicide prevention. The Knox County Health Department provided educational materials on mental health awareness and resources to students, teachers, and parents. In 2019 resources were provided to nearly 2,000 students at multiple football games during the fall season. These resources are used as a tool to get the community informed on the impact of suicide in their area and to start the conversation about the resources available to the youth. This has been an ongoing project since 2017 to provide information and open up communication around suicide.



To expand on their suicide prevention efforts an ongoing collaboration with Knox County schools and TSPN encourages students to "Speak Up Save Lives" to reinforce the value of speaking up if you recognize the warning signs of suicide. The idea behind these conversations occurring in the schools is that youth suicide is preventable and most suicides have warning signs. If a student or teacher notices any warning signs they should talk to a trusted adult if you notice someone is acting out of character, talking about suicide, showing signs of low self-esteem, or showing signs of depression. Suicide impacts the community and building on the ability to talk about suicide and knowing the resources available help with prevention.

## Community Engagement to Reduce Infant Mortality Disparities

Infant mortality is a key indicator of the overall health of a community. The infant mortality rate has a close linear association with the overall health and wellbeing in a community including socioeconomic status, education, access to healthcare, and employment. Infant mortality is also linked to overall maternal and family health. In Tennessee, Black infants die at a rate two times higher than White infants, and in some communities, such as Davidson County, the disparity between White and Black infants is even higher. One community particularly impacted is the Napier-Sudekum Community. This is a low income based housing authority in the heart of Metropolitan Davidson County Nashville. In 2018 a collaboration with the local infant mortality team and the social worker on site for this housing authority presented education to the maintenance staff on infant safe sleep. At the time, the staff knew immediately where there were families in need of safe sleep materials or a safe sleep environment. This helped nurture a relationship with in the community where the health department could continue to provide education and resources. Due to this collaboration, this was also turned into a state initiative where over 17 housing authorities have now been trained statewide.



Later in 2018 the infant mortality reduction team and child fatality review team utilized local families from the Napier-Sudekum housing community in a campaign to educate all of the Metropolitan Nashville Davidson County on infant safe sleep. Through a casting call, families photos, including fathers with their infants, were used in advertisements all over Nashville to promote infant health and infant safe sleep.



The advertising campaign rolled out August 26, 2018 and ran through December 31, 2018. The ABCs of infant safe sleep were promoted on MTA buses, benches, and shelters around the city. The families depicted in the campaign were local families from the Napier-Sudekum housing community. In order to continue to provide resources and education to the community, Davidson County CFR team members participated in a community baby shower in the Napier-Sudekum and titled it "It Takes a Village". The baby shower was well attended by expectant mothers in the community and vendors from social service organizations. There were presentations on car seat safety, home visiting programs, breastfeeding, tobacco cessation, and the Fetal Infant Mortality Review team presented on infant safe sleep.



## Promoting Prevention through Education to Medical Professionals



Research shows that students learn best when they are healthy, safe and connected to their school. School nurses play an important role in the health of students and can provide them with daily and emergent health care support during the school day. This can help students avoid unnecessary absences and reach their full academic potential. On July 25, 2019 Northeast Regional Child Fatality Team Lead was invited to present data on “School-Aged Child Fatalities in Northeast Tennessee” to a School Nurse Conference hosted by Indian Path Medical Center in Kingsport, TN. The intention of this conference is to enhance the knowledge of school nurses and other

school personnel regarding common childhood illnesses, injuries, and provide updated knowledge in care for children with chronic medical conditions. In addition to the presentation by Dr. Kirschke, the regional health officer, the conference included mental health first aid, childhood mental illness, ACE’s, a session on children spending too much time on electronic devices, and the impact of addiction on children.

Dr. Kirschke presented a two part presentation on overall child fatality and preventable child deaths. The first part of the presentation included information on child fatality data for the state including the child fatality review process, death data, and data that impact the community including teen motor vehicle crashes, poisoning, homicide, suicide, combined weapons related deaths, prevention efforts that are currently being done, and what the audience can do to contribute to the prevention efforts in the state. Highlighted in the presentation was adolescent suicide and access to firearms with a look at a peer reviewed study on owners of firearms in youth suicides. The presentation concluded with list of prevention efforts for the community including education on firearm safety and increased communication with adolescents.

A second half of the presentation included more detailed information on opioid use, teen motor vehicle crashes, teen suicide, homicide, mass shootings, and fire arm deaths in youth in the community. Dr. Kirschke explained that firearm deaths are a public health concern as well as a mental health concern and the school, where children spend the majority of their waking hours, is a place where child should be able to connect with trusted adults and build strong community relationships.



## Appendix G—Local Child Fatality Review Team Members and Staff

(Team leaders are in **bold** print. JD=Judicial District)

### JD 1 (Carter, Johnson, Unicoi, and Washington Counties)

Beth Bare	Shawn Hollinger, MD	Lori Shields, EdS
Audrey Blecha	<b>David Kirschke, MD</b>	Kristen Spencer
Regina Bowman	Brittany Lewis	Edward Tester
Inv. Shawn Brown	Nicole Masian, MD	Regan Tilson
Heidi Casey, RN	Samantha Maney	Cynthia Thomas, DO
Tara Chadwell	Sheree Pierce	Karen Thompson
Inv. Deborah Dunn	Patsy Pope	Mary Williams, RN
Aaron Ensor	Inv. Nicki Salyer	Fay Willis, RN
Kim Garland	Martina Schmidt, MD	Rick Woodby
Michelle Hansen, RN	Darshan Shah, MD	

### JD 2 (Sullivan County)

Kathy Benedetto	Barry Honeycutt	Heather Mullins
Andrea Black, JD	William Hudson, MD	Karen Nave
Justin Bush	Capt. Joel Jones	Teresa Nelson, JD
Julie Canter, JD	Ashley Justice	Jim Perry
Lt. Sean Chambers	Christina Keen	Jessica Ritchie
Steven Combs, MD	<b>Stephen May, MD</b>	Emily Smith, JD
Breanna Doss	Gary Mayes	Barry Stabus, JD
Danielle Eller	Jessica McGuire	Michelle Steadman
Sheriff Michelle Gilliam	Darrell Mears	Sgt. Martin Taylor
William Harper, JD	Janice Miller	Fredia Tombs
Ashlie Harrod	Marjorie Miller	Greg Walters

### JD 3 (Hancock, Hawkins, Hamblen, and Greene Counties)

Carmelia Alexander, RN	Kendra Hammonds, RN	Nicole Masian, MD
Vicki Arnold	Calvin Hawkins	Julie Minton
Tara Chadwell	Deana Hicks	Christian Newman
Diane Cofield	Scott Hollenbeck	Laura Reneau-Dockery
Teddy Collingsworth	Shawn Hollinger, MD	Martina Schmidt, MD
Rhonda Craft	Hannah Hunter, RN	Darshan Shah, MD
Betty Davis	Rob Jacobs	Kristen Spencer
Eddie Davis	<b>David Kirschke, MD</b>	Brandon Stipes, RN
Tim Davis	Christy Lane	Cynthia Thomas, D.O.
Cynthia Doty	Brittany Lewis	
Crystal Gibson	TJ Manis	

### JD 4 (Cocke, Grainger, Jefferson, and Sevier Counties)

Juli Allen	Boling Brawley, MD	Teresa Moyers Atty.
Charles Arms	Derek Chambers	Rodney Satterfield
Amy Ball	Kristin Dean, PhD	Jodi Stott
Jeremy Ball	Josh Hall	Tara Sturdivant, MD
Susan Blair, RN	Rita Hillhouse, RN	Derrick Woods
Steve Branton	David McConnell, MD	

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JD 5 (Blount County)

Felecia Adams	Mike Flynn, JD	Det. Mike Seratt
Charles Arms	Amanda May	Jodi Stott
Lori Baxter, MD	Autumn Mays	Tara Sturdivant, MD
Robin Cook	Jonathon Rodgers	Capt. Mark Taylor
Tabitha Damron	Det. Kris Sanders	Michael Teague, MD

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JD 6 (Knox County)

Lt. Brad Anders	Katie Larsen	Det. Matthew Schlosshan
Mona Blanton-Kitts, LCSW	Christopher Lochmuller, MD	David Teaster, MD
Savannah Davis, MSSW	Melissa Massie	Stacey Turpin
Amy Hawes	Christopher McLain	Alicia Verlinde, MPH
Tammy Hicks, JD	Det. Tonia McFarland	Lisa Wagoner, MSN, RN
Rita Hillhouse, RN	Darinka Mileusnic, MD	Capt. Mark Wilbanks
Paige Huggler	Cheryl Nix	Zachary Young-Lutz, RN
David Kitts, PhD	Nate Ogle, JD	Sarah Zimmerman
Amber Knapper, NP	<b>Mary Palmer, MD</b>	

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JD 7 (Anderson County)

Emily Abbott	Bobbi Jo Henderson	Angela Perez
<b>Thomas Clary, MD</b>	Kelly Johnson	Jodi Stott
Anthony Craighead	Autumn Mays	Tara Sturdivant, MD
Melanie Davies	Darinka Mileusnic-Polchan,	Rune Wright
Margaret Durgin	MD, PhD	
Traci Golbach	Det. Victor Owen	

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JD 8 (Campbell, Claiborne, Fentress, Scott, and Union Counties)

Jeff Acres	Stacey Heatherly	Bruce Perkins
Christina Ayers, RN	Det. Ricky Jeffers	Jodi Stott
Dr. Lindsey Bull	Rosemary Jeffers	<b>Tara Sturdivant, MD</b>
Lindsey Cadle	Det. Randy Lewallen	Zachary Young-Lutz, RN
Kristi Clark	Jeff Mann, D.O.	
Kim Hammock	John Norris	

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JD 9 (Loudon, Meigs, Morgan, and Roane Counties)

Dr. William Bennett, MD	James Guider, MD	Millicent Thomas
Melanie Crook	Judge Dennis Humphrey	Jodi Stott
Melissa Denton	Alyson Kennedy	Tara Sturdivant, MD
<b>James P. Guider, MD</b>	Missy Layne	Mona William-Hayes, PhD
Sherriff Tim Guider	Autumn Mays	

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JD 10 (Bradley, McMinn, Monroe, and Polk Counties)

Jeannie Bentley	Det. Cody Hinson	Calvin Rockholt
Deanna Brooks	Sandra Holder	Teresa Rogers
<b>Allyson Cornell, MD</b>	Brittany Hopkins	Dewayne Scoggins
Brandon Edwards	Nita Jergian	Lt. David Shoemaker
Det. Shaunda Efaw	Travis Jones	Nadine Stone
Tina Florey	Danny Lawson	Millicent Thomas
Roger Freeman	Debra Macon-Robinson	Andy Wattenbarger
Daniel Gibbs	Susan Merriman	Laura Wittmaier
Mark Gipson	Jeffery Miller, MD	
Carol Henson	Dana Mulcahy	

JD 11 (Hamilton County)

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Beverly Allen	Ashley Haynes, PNP	Keith Nilsen
Sharon Barker	Jackie Jolley	Atty, Boyd Patterson
<b>Valerie Boaz, MD</b>	Atty. Leslie Longshore	Elizabeth Peeler, MD
Barbara Breedwell	Lisa Lowery-Smith, MD	Det. Henry Ritter
Steven Cogswell, MD	Debbie McKeehan	Det. Mickey Rountree
Denise Cook	Capt. Henry McElvain	Lt. Glenn Scruggs
Amber Dennison	Shelley McGraw	
Sheryl Fletcher, RN	James Metcalfe, MD	

JD 12 (Bledsoe, Franklin, Grundy, Marion, Rhea, and Sequatchie Counties)

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Vicki Carr	Nita Jergian	Charlene Nunley
<b>Allyson Cornell, MD</b>	Julie Anna Johnson	Rhonda Sills
Kimberly A. Dean	Joye Layman	Bryan Walker
Carol Henson, RN	Kelly Lusk	D.A. Mike Taylor,
Jessica Hill	Susan Merriman	
Sandra Holder	Dana Mulcahy	

JD 13 (Clay, Cumberland, DeKalb, Overton, Pickett, Putnam, and White Counties)

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Bobby Anderson	Andrea Fox	Kristi Paling
Michael Anderson	Lloyd Franklin, MD	James Payne
Brandon Boone	John Garrett	Tracy Plant
Greg Bowman	Tammy Goolsby	Mark Pressley, MD
David Bowman	Don Grisham, MD	Billy Price
Lisa Bumbalough	Hoyte Hale	Michael Railling
JoAnn Clouse	Joel Henry	Sheriff Patrick Ray
Jean Coffee	Tom Howard	Sheriff Oddie Shoupe
Tommy Copeland	Caroline Knight	Sullivan Smith, MD
Casey Cox	Andy Langford	Brian Tompkins
<b>Tina Davis, RN</b>	Tara LeMarie, MD	James Tompkins, MD
Lindsey Dennis	Ralph Mayercik	Carolyn Valerio, PsyD
Doris Denton	Mickey McCullough	J.C. Wall, MD
Dana Dowdy	Lynn Mitchell	Richard Williams
Mindy Doyle	Georgia Modreck	James Wojcik, MD
Bryant Dunaway	Jim Morgan	Nikki Wright
Stephanie Elliot	Chad Norris	
Eddie Farris	Sheriff Steve Page	

JD 14 (Coffee County)

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LeeAnne Boeringer	Kellie Lusk	Darla Sain, RN
Michael Bonner	Jackie Matheny, Jr.	Clifford Seyler, MD
Al Brandon, DO	Susan Minger	<b>Lang Smith, MD</b>
Debbie Dickey	Brook Mitchell	Paul Tibbs
Mike Clements	Shaun Noblit	Frank Watkins
Leanne Eaton	Atty. Jason Ponder	L.B. Windley, Jr., DVM
Susan Ferencei	Kimberley Primm, RN	

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JD 15 (Jackson, Macon, Smith, Trousdale, and Wilson Counties)

Alison Asaro, MD	Mike Ethridge	Nathan Miller
Kathy Atwood	Mark Gammons	Christina Moody
Alexander Badru, MD	Pam Gannon	Brian Newberry
Matt Batey	Scott Giles, DO	Donald Nuessle, MD
Kimberly Brindley	Don Grisham, MD	Kristi Paling
Robert Bryan	Dawna Gurierrez	James Payne
Darlene Brown	Bonnie Harris	Michael Railing
Patrick Cockburn	Marty Hinson	Ray Russell
Jean Coffee	Steve Hopper	Richard Rutherford, MD
Jeff Crockett	Hanna Iliia, MD	Ricky Slack
Allison Daniel	Heather Jefferies	R. Stafford
<b>Tina Davis, RN</b>	Lou Martinez	Tom Swink
Doug Dycus, MD	Carrie McCrary	Mark Taylor
Stephanie Elliot	Jennifer Mekelburg	Tommy Thompson, JD

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JD 16 (Cannon and Rutherford Counties)

Hugh Ammerman	Capt. Nathan McDaniel	Sharon Reddick
<b>Alison Asaro, MD</b>	Lorraine MacDonald, MD	Lt. Britt Reed
Tina Davis, RN	Lashon Miller	Det. Tommy Roberts
Doris Denton	Sgt. Paul Mongold	Audrey Sherer
Dana Garrett	Christina Moody	Angie Smith
Don Grisham, MD	Sheneka Morgan	Det. Kevin Stolinsky
Carl Hudgens	Gloria Morrison	Lt. Monty Terry
Jennings Jones	Katishia Perry	Michael Thomas, MD
Sgt. John Liehr	Will Pinson	Jeff Wright
Sgt. Tommy Massey	Sgt. Travis Plotzer	

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JD 17 (Bedford, Lincoln, Marshall, and Moore Counties)

Sara Bates, RN	Stephanie Dunn	Kenneth Phelps, MD
LeeAnne Boeringer	Angie Faulkner	Kimberley Primm, RN
Det. Scott Braden	Jeremy Ezell	Darkis Selman
Christy Brown	Susan Ferencei	<b>Lang Smith, MD</b>
Debbie Dickey	Penny Hawk	Kyle Spears, MD
Brian Bruce	Amy Irvin	Megan Wakefield, RN
Stefanie Brown, RN	Brook Mitchell	Richard Wright
Robert J. Carter, DA	Jill Murdock, RN	
Mike Clements	Shaun Noblit	

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JD 18 (Sumner County)

<b>Alison Asaro, MD</b>	Chief David Hindman	Scott Ryan
Jay Austin	Chief Mark Jenkins	Jenni Smith
Tim Bailey	Don Long	Chief Richard Smith
Sgt. Lamar Ballard	Tammy Kellogg	Jody Starks
Amy Burke-Salyers	Chief Mickey Miller	Timothy Stavely
Charlotte Cash	Capt. Jeff Mingledorff	Robert Watson
Amy Daughtry	Gloria Morrison	Ray Whitley, JD
Neal Harris	Becca Page	
Jeff Helmintoller	Sgt. Travis Plotzer	

JD 1901 (Montgomery County)

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<b>Alison Asaro, MD</b>	Millard House II	Sgt. Travis Plotzer
Eric Berg, MD	Danielle Kriminger	Sabrina Sanford
Christy Bing	Misty Leitsch	Fred Smith
John Carney, JD	Lt. Vincent Lewis	Joey Smith
Norma Collazo	Kimberly Lund, JD	Judy Springer
Ashley Dale	Det. Frederick McClintock	Jerome Viltz
Mary Davila	David Mendoza, MD	Lori Waller
Regina Duffie	Gloria Morrison	Sgt. Mark Wojnrek
Cpt. Thomas Hamilton	Maj. Danielle Nichols	Danette T. Woodcock

JD 1902 (Robertson County)

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<b>Alison Asaro, MD</b>	Regina Duffie	Sgt. Travis Plotzer
Laleh Bahrami	J. Scott Jordan	Molly Pope
Det. Chick Bogle	Misty Leitsch	Det. Jake Ryan
Hunter Butler, MD	Nicole Martin	Gale Smith
Rebecca Chafatelli	Gloria Morrison	Phyllis Smith

JD 20 (Davidson County)

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D'Yuanna Allen-Robb	Trevor Crowder	<b>Brook McKelvey</b>
Amanda Burke	Emily Dennison, MD	Michael Meadors, MD
Alison Butler	Erik Gallup	Gloria Morrison, RN
Susan Campbell, MD	Tony Hayes	Jan Norman
Amy Campbell-Pittz	Donna Jean-Jumeau	Scott Ridgway
Erin Carney, MD	Margreete Johnson, MD	Mary Ann Smith
Ron Carter	Charlsi Legendre	Dawn Smith
Anjenetta Cook	Sarah Loch	Lisa Weakley
Monica Coverson	Wendy J Long, MD	Jennifer Weatherly, RN

JD 2101 (Hickman, Lewis, and Perry Counties)

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Jim Bates	Dee Hoover, TN	Kimberley Primm, RN
LeeAnne Boeringer	Zachary Hutchens, MD	Sarah Russell
Katelyn Bojorquez	Felicia Love, RN	<b>Lang Smith, MD</b>
Dawn L. Bradley	Brandi Mackin, RN	Jim Tanner
Mike Clements	Vickey, Mangrum, RN	Renee Whaley, RN
Stacey Edmondson	Brook Mitchell	Tabitha Whitehead
Jennifer Harris	Shaun Noblit	
Kara Hobbs	Charles Pierce	

JD 2102 (Williamson County)

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Sgt. Charles Achinger	Jeff Long	Tamara Swinson
<b>Alison Asaro, MD</b>	Zannie Martin	Lt. Monty Terry
Det. Robert Cardan	Peggy Phillips	Lt. John P. Wood
Alicia Hardemon	Det. Tameka Sanders	Brittany Youngblood
Shannon Langford	Samuel Smith, MD	
Feng Li, MD	Capt. Cindy Strange	

JD 2201 (Giles, Lawrence, and Wayne Counties)

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Pam Arnell	Sheriff Shane Fisher	Tonya Nance
Erica Barnett, RN	Joe Fite, MD	Shaun Noblit
LeeAnne Boeringer	Larry Glass	Kimberly Primm, RN
Dawn L. Bradley	Alicia Holt, RN	Denise Sanders
Tracy Brumit	Roy Griggs	<b>Lang Smith, MD</b>
Mike Clements	Lisa Hardison	Devin Toms
Chief John Dickey	Brigitte Massey	
Susan Ferencei	Brook Mitchell	

JD 2202 (Maury County)

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Molly Anderson, RN	Susan Ferencei	Shaun Noblit
LeeAnne Boeringer	Tommy Goetz	Kimberley Primm, RN
Katelyn Bojoquez	Jason Griggs	Corporal Jason Sanders
Jamie Brown	Andy Jackson	April Scott
Mike Clements	Andrew Kenney	<b>Lang Smith, MD</b>
Brent Cooper, DA	Gayle Martin	Lt. Roscoe Voss
Det. Terry Dial	Brook Mitchell	Lisa Williamson

JD 23 (Cheatham, Dickson, Houston, Humphreys, and Stewart Counties)

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Karen Anderson	Alana Carnical	Det. Brent Johnson
<b>Alison Asaro, MD</b>	Larina Corlew	Venk Mani, MD
Laleh Bahrami, MD	Regina Duffie	Nicole Martin
Amber Bailey	Christy Espey	Inv. Ken Miller
Det. Mark Bausell	Det. James Eubank	Capt. Randy Starkey
Andrea Beck	Robin Fairclough	Sheriff Kevin Suggs
Sgt. J.D. Blackwell	Maggie Filson	Brittany Tate
Sharrie Booker	Claudette Fizer	Judy Wilson
Comm. Eddie Breeden	Lawrence Jackson, MD	

JD 24 (Benton, Carroll, Decatur, Hardin, and Henry Counties)

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<b>Pansey Davis, MD</b>	Kristy King	Representative from local
Phillip Christopher	Danny Tucker	D.A.'s office
Christy Espey	Becky Butler White	Matt Stowe
Lt. Johnny Hill	Johnny Wilson	

JD 25 (Fayette, Hardeman, Lauderdale, McNairy, and Tipton Counties)

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Kinney Bridges	Richard Griggs	Stephen Shopher
Christy Chandler	Raven M. Icaza	Det. Sheri Wassel
Falen Chandler	Ginny Jaco	Inv. David Webb
<b>Shavetta Conner, MD</b>	Kristy King	Tracy Worlds
Det. Scottie DeLashmit	Rives Seay	
Sherika Goodman	James Shelton	

JD 26 (Chester, Henderson, and Madison Counties)

---

Bradley Crouse	Tammy Hardee	<b>Lindsey Nanney, RN</b>
Corie Currie	Valerie Haynes	Hannah Shelby-Kennedy,
Ashley Deloach	Donna Heatherington	MD
Lisa Dorrrough	Sgt. Danielle Jones	Marcie Thornton
Inv. David Dowdy	Sgt. T.J. King	Blair Weaver
Nadia Graham	Atty. Stuart Mills	Lt. Brad Wilbanks

JD 27 (Obion and Weakley Counties)

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Kate Bynum	Keith Jones	Drew Vernon
<b>Shavetta Conner, MD</b>	Kristy King	Chief Randall Walker
Christy Espey	Marty Plunk	Angie Workman
James Robert Halter	Laura Toney	Rick Workman
Lt. Stan Haskins	Tommy Thomas	

JD 28 (Crockett, Gibson, and Haywood Counties)

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Gary Brown, JD	Chief Roger Jenkins	Elashia Ramsey
<b>Shavetta Conner, MD</b>	Kristy King	Tony Rankin
John Copeland	Inv. Dennis Mitchell	Maigon Shanklin
Christy Espey	Lt. Roy Mosier	Selina Williams

JD 29 (Dyer and Lake Counties)

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Jerry Ballhagen	Calvin Johnson	Chad Sipes
Phil Bivens, JD	Kristy King	Brad Smith
<b>Shavetta Conner, MD</b>	Jack Mauldin	Lisa Stanley, RN
Christy Espey	Terry McCreight	Stephen Sutton
Jessica Lamkin	James Melding	Tim Ware
Capt. Billy Williams		

JD 30 (Shelby County)

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Patricia Bafford, Ed.D.	Paula Humphrey	Vanessa Roberts
Scot Bearup	Afework Keskesa	Marco Ross, MD
Cornelia Bobo	Tunishia Kuykindall	Col. Mike Ryall
Sgt. D. Brunson	Karen Lakin, MD	Andrea Sebastian
Mark Bugnitz, MD	Tarji Little	Sam Sheppard
Gladys Burton	Jason Martin	Gavin Smith
Eric Christensen, JD	Daryle McConnell	Leilani Spence
Benjamin Figura	Ashley McEachern	Angie Sullivan
Jamaica Glover	Katie McKinnie	Ajay Talati, MD
Kerry Griggs	Mychell Mitchell	Det. Jason Valentine
Meg Harmeier	Reggie Morgan	Denise Webb
DeShawn Harris	Jennifer Nichols, JD	Regan Williams
Susan Helms, RN	Kurt Phillips	Brandi Willis
Gannon Hill	<b>Bruce Randolph, MD</b>	John Wright
Ginny Hood	Tully Reed	Evelyn Young

JD 31 (Van Buren and Warren County)

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Alicia Cantrell	Don Grisham, MD	Shannon Railing
Eddie Carter	Venessa Hyer	RoseAnn Riddle
Jean Coffee	Brian Madewell	Robert Sabo, MD
<b>Tina Davis, RN</b>	Thomas Miner	Ty Webb
Preston Denney	Lynn Mitchell	Lisa Zavogiannis
Doris Denton	Charles Morgan, MD	
Mindy Doyle	Tommy Myers	
Andrea Fox	Kristi Paling	

Statement of Compliance with 2012 Tenn. Pub. Acts, ch. 1061 (the "Eligibility Verification for Entitlements Act") as required by Tenn. Code Ann. § 4-57-106(b)

None of the Department's activities relative to the Child Fatality Review Teams involve the provision of services to individuals who are subject to the SAVE Act.