



# 2022 Child Fatality Annual Report

2022 Report to the 113<sup>th</sup> Tennessee General Assembly

Tennessee Department of Health | Division of Family Health and Wellness | February 2022



# Table of Contents

Table of Contents .....	1
Acknowledgements .....	3
Data Confidentiality .....	3
Executive Summary .....	4
State Child Fatality Team Members .....	7
Introduction .....	8
<b><i>The Child Fatality Review Process in Tennessee</i></b> .....	<b>8</b>
<b><i>Overview of Child Fatality Review Teams</i></b> .....	<b>8</b>
2022 Child Fatality Report .....	9
<b><i>Overall Child Fatality Trends</i></b> .....	<b>9</b>
Child Fatality Review Data .....	11
<b><i>Methodology</i></b> .....	<b>11</b>
<b><i>Breakdown of Child Fatality Review Data</i></b> .....	<b>12</b>
<b><i>Manner of Death</i></b> .....	<b>14</b>
<b><i>Cause of Death</i></b> .....	<b>15</b>
<b><i>Specific Causes of Death</i></b> .....	<b>18</b>
<b><i>Prevention Analysis</i></b> .....	<b>20</b>
<b><i>Acts of Child Abuse and Neglect</i></b> .....	<b>22</b>
<b><i>Deaths to Children with Special Circumstances</i></b> .....	<b>24</b>
Detailed Review: Specific Causes of Child Death .....	26
<b><i>Homicide Deaths</i></b> .....	<b>26</b>
<b><i>Suicide Deaths</i></b> .....	<b>29</b>
<b><i>Firearm Deaths</i></b> .....	<b>33</b>
<b><i>Asphyxia Deaths</i></b> .....	<b>36</b>
<b><i>Motor Vehicle and Other Transport Deaths</i></b> .....	<b>38</b>
<b><i>Drowning Related Deaths</i></b> .....	<b>42</b>
<b><i>Fire/Burn Deaths</i></b> .....	<b>45</b>
<b><i>Poisoning Deaths</i></b> .....	<b>48</b>
<b><i>Fall/Crush Deaths</i></b> .....	<b>51</b>
Overall Infant Mortality Trends .....	53
<b><i>Summary of Infant Mortality Data</i></b> .....	<b>55</b>
<b><i>Sleep-Related Infant Deaths</i></b> .....	<b>57</b>
Sudden Death in the Young (SDY) Case Registry Project .....	63
Prevention Recommendations for 2022 .....	68
Data to Actions .....	70
<b><i>Statewide Prevention Activities</i></b> .....	<b>70</b>
<b><i>Local Prevention Activities</i></b> .....	<b>73</b>

Conclusion ..... 75  
Appendices ..... 76  
**Appendix A—List of Tables and Figures..... 76**  
**Appendix B—Glossary..... 80**  
**Appendix C— Infant and Child Deaths by Region of Residence..... 82**  
**Appendix D—State Level Success Stories..... 84**  
**Appendix E—Local Success Stories ..... 87**  
**Appendix F—Local Child Fatality Review Team Members and Staff ..... 90**

## Acknowledgements

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 2020. Local teams across the state reviewed all eligible 2020 deaths during 2020 and 2021. 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 859 child deaths in 2020, of which 776 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 2020, 895 deaths occurred in children under age 18 years in Tennessee. Tennessee's 2020 child mortality rate (57.0 per 100,000) decreased but is statistically unchanged from the 2019 rate (61.2 per 100,000) and continues to exceed the 2019 national rate (47.4 per 100,000), the latest rate available for the United States.
- Tennessee's male children accounted for a disproportionate percentage of reviewed child fatalities compared to females (64% vs. 36%, respectively). For the past five years, male children have had a higher proportion of mortality than females.
- In 2020, 495 Tennessee children under 1 year died. The 2020 infant mortality rate of 6.3 deaths per 1,000 live births represents a 15% statistically significant decrease in infant mortality from 2016 (7.4 deaths per 1000 live births) though it is not statistically significant from the 2019 rate of 7.0 deaths per 1,000 live births.
- Racial disparity continues to exist among child fatalities in Tennessee. Although most deaths were comprised of White children, Black children suffered a significantly higher rate of mortality than Whites. In 2020, Black children experienced a mortality rate twice that of White children.
- Prematurity (56%) and low birthweight (57%) were leading risk factors for death among Tennessee infants in 2020. Sleep-related deaths include multiple causes and accounted for 23% of all infant deaths.
- There were 115 sleep-related infant deaths in 2020. This compares to 103 deaths in 2019. Although there was an increase in sleep-related deaths from 2019 to 2020, the increase in sleep-related death rate in 2020 (1.5 per 1,000 live births) was not statistically different compared to the rate in 2019 (1.3 per 1,000 live births).
- In 2020, 74 children (8% of all reviewed deaths) died by homicide. Forty-two percent of homicide deaths occurred in the child's home, and firearms accounted for 75% of child homicide deaths.
- Thirty-eight children died by suicide in 2020 (5% of all reviewed deaths). Suicide occurred mostly in the child's home (79%), and firearms accounted for more than half (65%) of these deaths.
- The rate of motor vehicle deaths decreased slightly from 5.0 per 100,000 children in 2019 to 4.9 in 2020. Teens ages 15-17 years accounted for 45% of these fatalities, and

not using proper protective measures such as seat belts account for 52% of the fatalities where the child was in a vehicle.

- In 2020, 70 children died by firearms at a rate of 4.6 deaths per 100,000 children. This number rebounded to levels seen 2-3 years ago after a decline to 47 deaths in 2019 (3.1 per 100,000 children). These fatalities accounted for 9% of all reviewed deaths in 2020.
- Four Tennessee children died from COVID-19 in 2020. Updated COVID-19 data including deaths in children can be found [here](#).

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](#). Below is a summary of prevention recommendations from the state team. A full description of the recommendations can be found on page 72.

### **Summary of 2022 recommendations:**

#### **Safe Sleep**

- Increase reach of the infant safe sleep diaper bag project through the EBHV programs and CHANT programs.
- Collaborate with local birthing hospitals to encourage them to meet the BEST (breastfeeding initiation, early elective delivery elimination, and safe sleep) criteria.
- Provide portable cribs, sleep sacks and educational materials for hospitals, local health departments, and community partners to distribute to families.
- Update safe sleep educational materials. Create a safe sleep educational awareness video to distribute to health departments, healthcare providers and media outlets.

#### **Intentional Violence- Homicide/Suicide/Firearm**

- Promote Counseling on Access to Lethal Means (CALM) across the state for health and mental health providers to assist patients with safe storage of medication and weapons.
- Promote suicide prevention efforts within the school systems. Train elementary school teachers to implement the “Good Behavior Game”. Offer Question Persuade, Refer (QPR) training to middle and high school educators, administrators, and support staff. Provide information to teachers, students, and parents about the 2-hour educational curricula through the Jason Foundation on signs of suicide as well as resources needed to identify youth at-risk of suicide.
- Utilize social media and infographics to distribute current statistics and messaging related to firearms and youth suicide and homicide. Promote suicide prevention PSAs on social media to increase awareness about free Gatekeeper training.
- Monitor weekly suicide attempts in ESSENCE (Electronic Surveillance System for the Early Notification of Community-based Epidemics) and notify community partners when there are alerts.

- Promote suicide prevention resources and screening through TN Voices implementation of Youth Screen, the Mental Health Association's Mental Health 101 program and mental health screenings.
- Promote partnerships with organizations to reduce gang and community violence by sharing data on firearms deaths with these agencies.

### **Motor Vehicle**

- Continue to recruit and train schools to implement evidence-based programs such as Checkpoints™ and Battle of the Belt in high fatality and crash counties.
- Distribute information about the importance of correct use of car seats.

# 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

Tobi Amosun, MD, FAAP  
Tennessee Department of Health

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

Howard Burley, MD  
Tennessee Department of Mental Health  
and Substance Abuse Services

Judge Donna Scott Davenport  
Tennessee Supreme Court

Bruce Davis, PhD.  
Tennessee Department of Intellectual and  
Developmental Disabilities

Kristen Davis, LAPSW  
Nurture the Next

April Hanners MPH  
Tennessee Department of Health

Elizabeth Harvey, PhD., MPH  
Tennessee Department of Health

Rachel Heitmann, MS  
Tennessee Department of Health

Richard Kennedy  
Tennessee Commission on Children and  
Youth

Misty Leitsch  
Tennessee Suicide Prevention Network

Adele Lewis, MD  
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

Senator Shane Reeves  
Tennessee Senate

Sue Sheldon  
Office of the Attorney General

Carla Snodgrass, BSW, MPA  
Tennessee Department of Health

Representative Brian Terry  
Tennessee House of Representatives



# Introduction

## *The Child Fatality Review Process in Tennessee*

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, careful study of each child's death gives additional context regarding how best to respond to a fatality and prevent future deaths.

Between 2010 and 2019, an average of 36,977 children aged 0-17 years died every year 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 2020, every state, the District of Columbia, and several Native American/Alaska Native tribes 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) Program. The mission of the CFR Program 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.

---

<sup>1</sup> Centers for Disease Control and Prevention, National Center for Health Statistics. Underlying Cause of Death 1999-2019 on CDC WONDER Online Database. Accessed at <http://wonder.cdc.gov/ucd-icd10.html>.

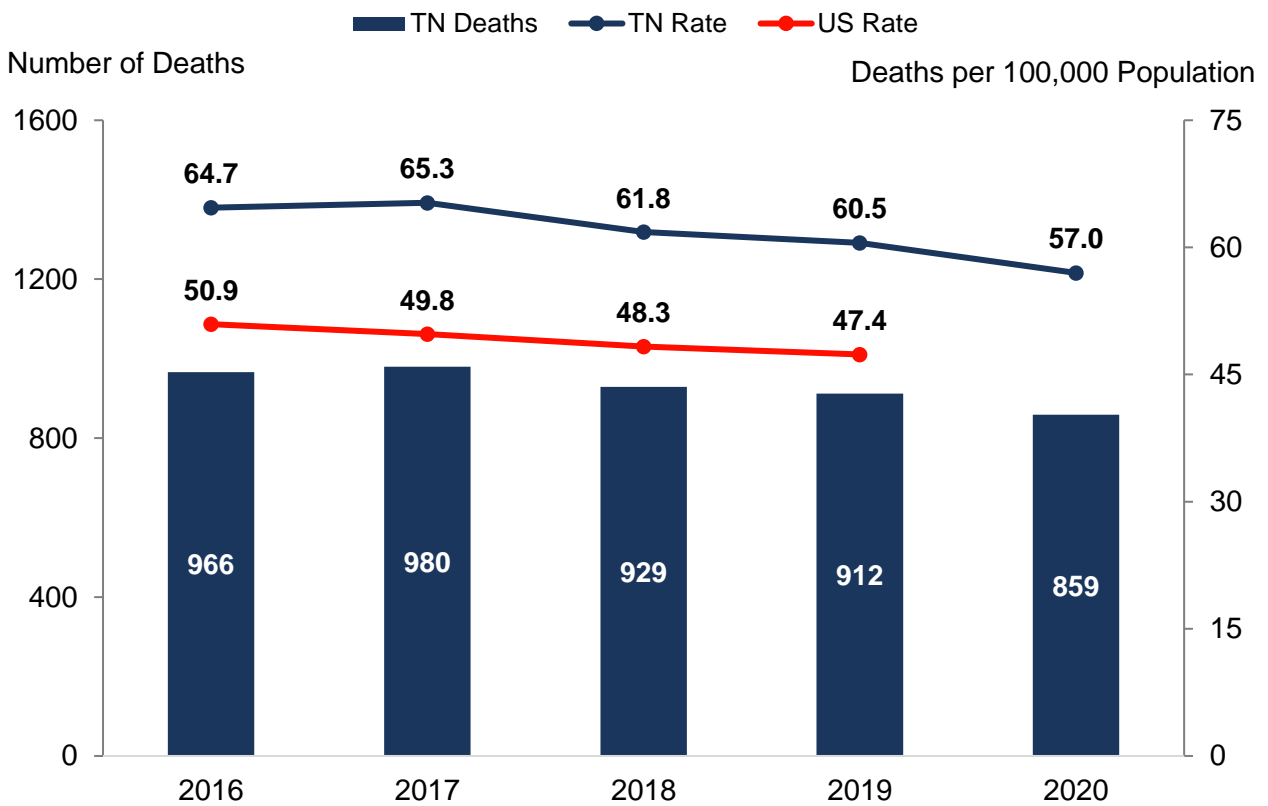
<sup>2</sup> National Center for the Review and Prevention of Child Deaths. Keeping Kids Alive: A Report on the Status of Child Death Review in the United States, 2020. Available at: [https://ncfrp.org/wp-content/uploads/Status\\_CDR\\_in\\_US\\_2020.pdf](https://ncfrp.org/wp-content/uploads/Status_CDR_in_US_2020.pdf)

# 2022 Child Fatality Report

## Overall Child Fatality Trends

This section presents data from vital records; it reflects all child deaths among Tennessee residents in 2020. The number and rate of child deaths in Tennessee and the U.S. for the past five years are shown in Figure 1. In 2020, the child mortality rate for Tennessee was 57.0 deaths per 100,000 children, a 6% decrease from the 2019 child mortality rate of 60.5 per 100,000 children. Tennessee's child mortality rate continues to exceed the national rate. The overall child mortality rate in Tennessee for 2020 was 17% higher than the 2019 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, 2016-2020**

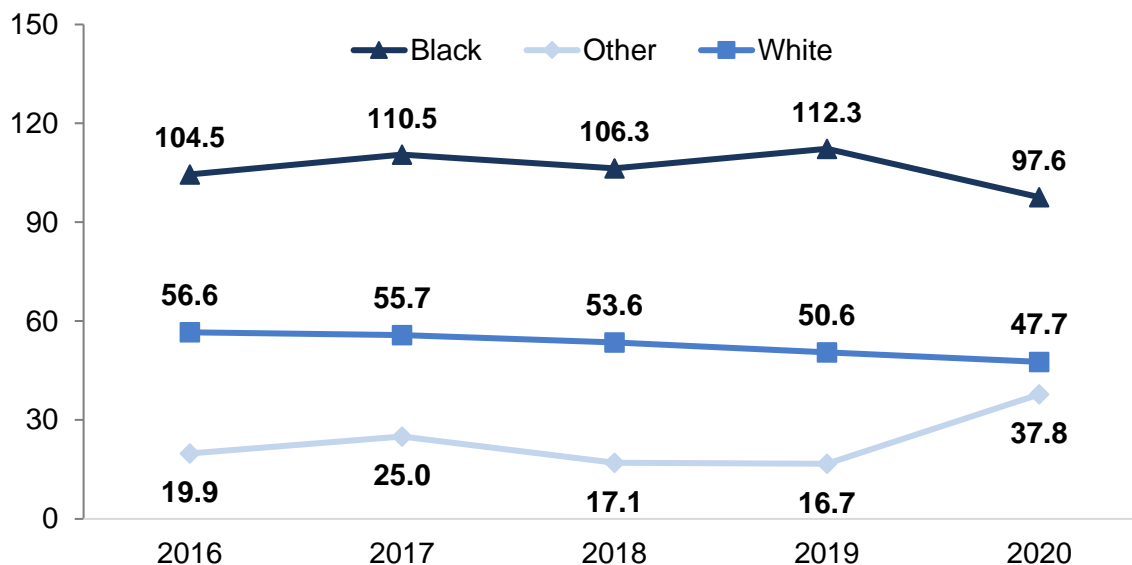


Data source: Tennessee Department of Health, Office of Vital Records and Health Statistics, Death Statistical File, 2016-2020.  
Population estimates based on interpolated data from the U.S. Census's Annual Estimates of the Resident Population; National Rates: CDC Wonder

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 mortality rate among Black Tennessee children is higher than that of White children or children belonging to 'Other' race/ethnic category (Figure 2). Between 2016 and 2020, the child mortality rate among Black children has been about twice that of White children (Table 1).

**Figure 2. Child Mortality Rate for Ages 0-17 Years by Race Tennessee, 2016-2020\***

Deaths per 100,000 Population



\*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, 2016-2020. Population estimates based on interpolated data from the U.S. Census's Annual Estimates of the Resident Population.

### Child Deaths (per 100,000 population) in Tennessee



In Tennessee, **Black children are twice** as likely to die than White children.

**97.6 Black Children vs 47.7 White Children** die in every 100,000 children of the same race.

**Table 1. Number and Rate of Child Deaths for Ages 0-17 Years by Race, Tennessee, 2016-2020**

	Black		White		Black/White Disparity
	n	rate	n	rate	
2016	313	104.5	619	56.6	1.8
2017	331	110.5	612	55.7	2.0
2018	317	106.3	589	53.6	2.0
2019	334	112.3	557	50.6	2.2
2020	291	97.6	522	47.7	2.0

Data source: Tennessee Department of Health, Office of Vital Records and Health Statistics, Death Statistical File, 2016-2020

# Child Fatality Review Data

## Methodology

### Review of Child Fatality Review Data

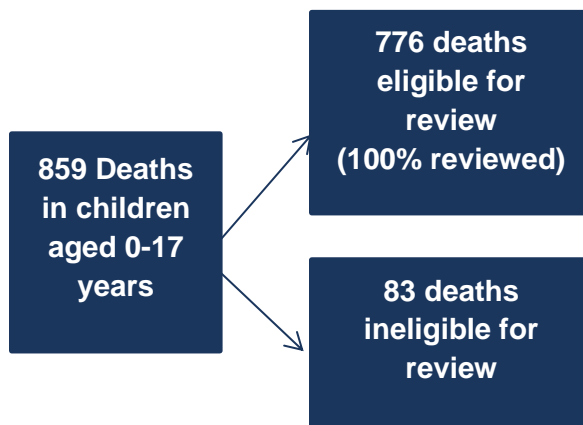
This section presents data on deaths that meet the CFR criteria. The CFR data included in this report represent thoughtful inquiry and discussion by a multi-disciplinary group of community leaders who consider all the circumstances surrounding the death of each child. These leaders provide information 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 859 child deaths in 2020, 89% (n=776) met the review criteria. Eighty-three 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 2020 death reviews reflects the dedication of local CFR teams and partnering state agencies.

Infant deaths 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 2020, there were 859 child deaths in Tennessee, of which 776 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

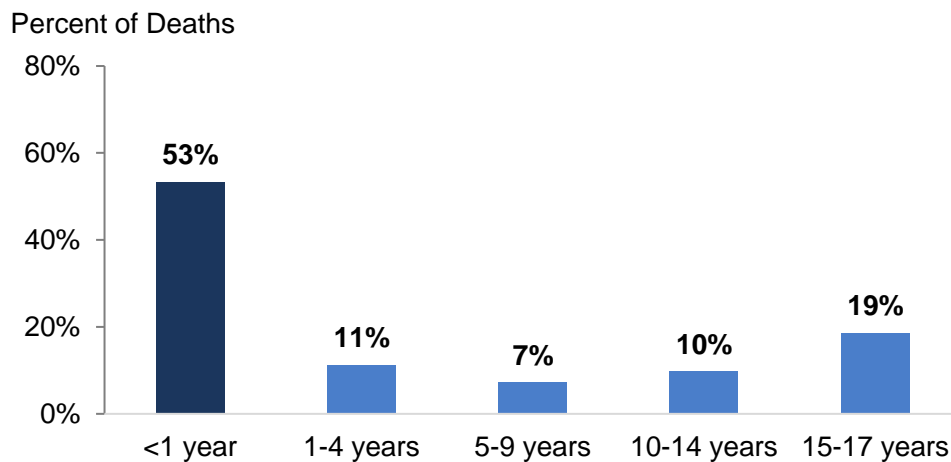
Results of the analysis of CFR data may vary from previous reports due to the nature of data collection and storage. If the CFR team obtains additional information on a child's death after the completion of an annual report, changes may be made to any of the reviewed data, which is then overwritten in 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.

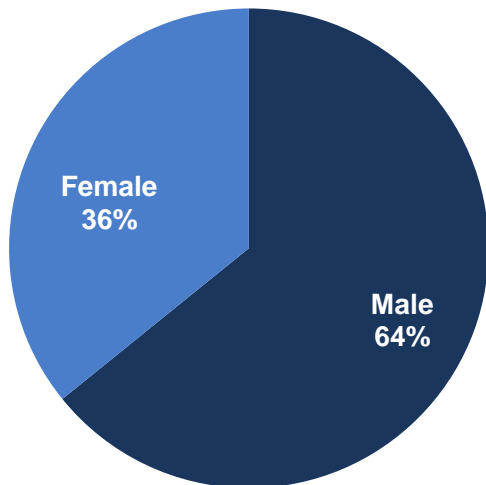
## Breakdown of Child Fatality Review Data

In 2020, there were 859 child deaths in Tennessee, of which 776 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 53% of all reviewed deaths (Figure 3). Male children accounted for almost two of every three child deaths (64%) while female children represented just over a third of child deaths (36%, Figure 4). Racial disparity exists among child fatalities as well (Figure 5). While most deaths were among White children (65%, Figure 5), Black children (97.6 deaths per 100,000) had a higher rate of mortality than White children (47.7 deaths per 100,000, Table 1).

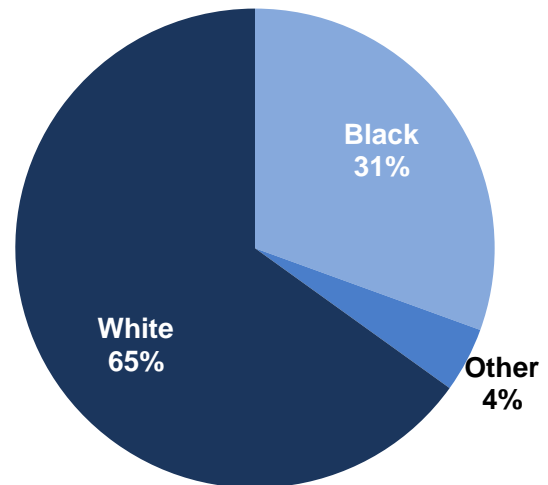
**Figure 3. Child Deaths Reviewed by Age Group, Tennessee, 2020 (n=776)**



**Figure 4. Child Deaths Reviewed for Ages 0-17 by Sex, Tennessee, 2020**



**Figure 5. Child Deaths Reviewed for Ages 0-17 by Race, Tennessee, 2020**



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.

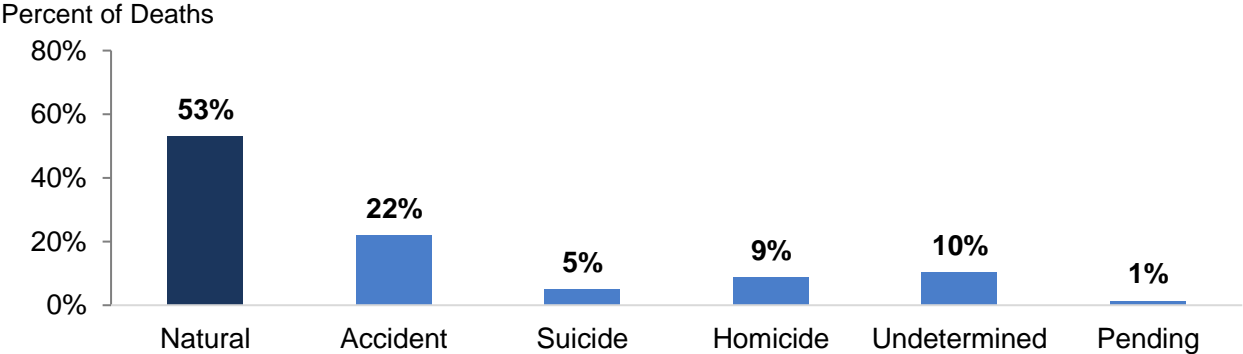
- **Cause of death** refers to the disease process or injury that set into motion the series of events which eventually lead to death. For the purposes of the CFR team, causes of death are categorized as medical, external (injuries or poisonings), undetermined, or unknown. Medical causes are then further 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 be unknown 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 2020 child deaths reviewed, 418 deaths (53%) were determined to be natural (from medical causes) and 170 deaths (22%) were determined to be accidental (Figure 6). By comparison, in 2019, there were 492 natural deaths and 142 accidental deaths. In 2020, 67 Tennessee children (9%) died by homicide while 32 children (4%) died by suicide (Figure 6).

**Figure 6. Manner of Death Summary, Children Ages 0-17 Years, Tennessee, 2020 (n=776)**



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

Table 2 shows the number and manner of death in 2020 by child’s age, race, and sex. At 281 deaths, infants—children less than 1 year—bear the largest burden of natural deaths: infants account for 67% of all natural forms of deaths. Accident (unintentional injuries) is the second leading manner of child death. Children aged 15-17 years (n=49), less than 1 year (n=47), and 1-4 years (n=38) have the highest proportion of accidental deaths. Deaths due to homicide occurred across all age categories; children aged 15-17 years (n=30) bear the highest burden of deaths by homicide. Similarly, children aged 15-17 years (n=26) have a higher proportion of deaths by suicide 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 (Ages 0-17 Years) Death, by Age, Race and Sex, Tennessee, 2020**

	Manner of Death					
	Natural	Accident	Suicide	Homicide	Undetermined	Pending
<b>Age</b>						
Less than 1 year	281	47	0	9	70	7
1-4 years	34	38	0	9	5	1
5-9 years	28	21	0	5	2	0
10-14 years	31	15	12	14	1	2
15-17 years	37	49	26	30	2	0
<b>Race</b>						
Black	111	45	3	46	26	6
White	283	118	34	17	50	3
Other	17	7	1	4	4	1
<b>Sex</b>						
Male	250	113	29	50	49	7
Female	161	57	9	17	31	3
<b>Total</b>	<b>411</b>	<b>170</b>	<b>38</b>	<b>67</b>	<b>80</b>	<b>10</b>

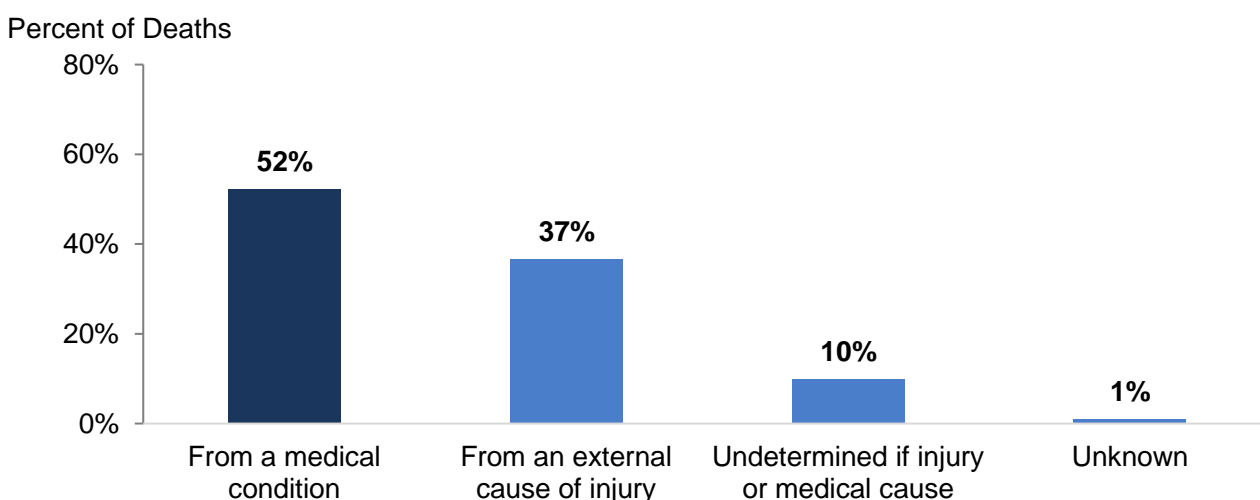
Data source: Tennessee Department of Health, Child Fatality Review Database System.

## 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 776 deaths reviewed by the CFR teams in 2020:

- Medical causes represented 52 percent (410 cases) of deaths.
- External (injury) causes represented 37 percent (280 cases) of deaths.
- Cases in which the cause of death remains “unknown”, “undetermined”, or “pending” represented ten percent (81 total cases) of deaths. Of the cases marked as “undetermined” or “unknown”, 88 percent (n=71) 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, 2020 (n=776)**



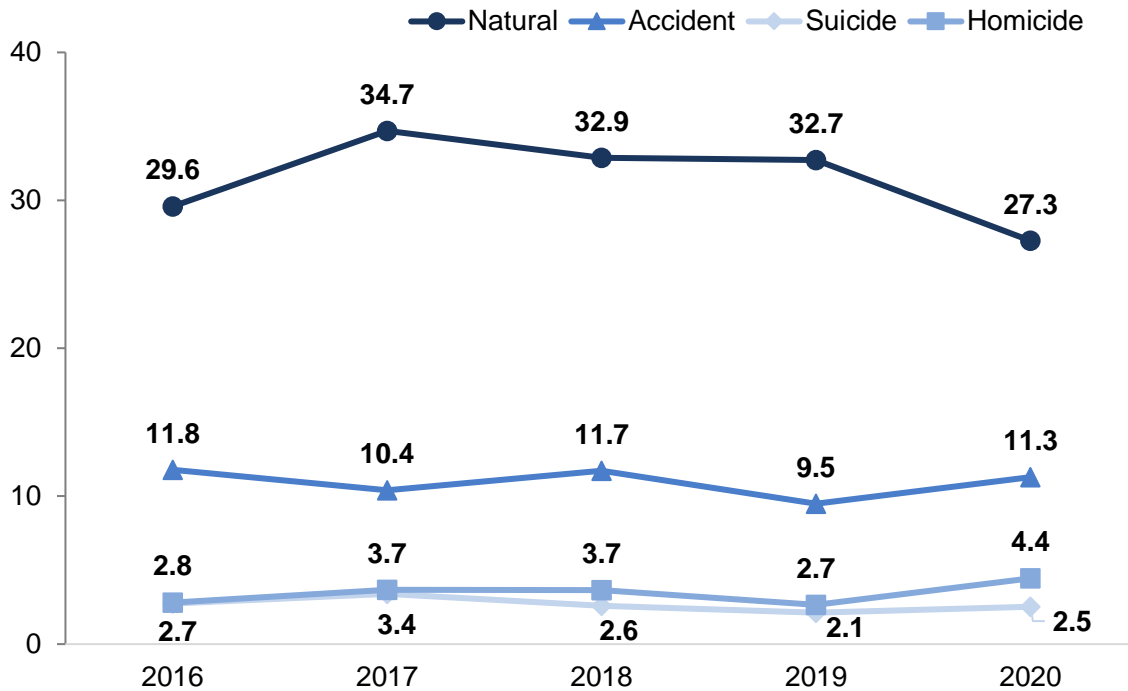
Data source: Tennessee Department of Health, Child Fatality Review Database System.

The child mortality rate by the manner of death and year of death are presented in Figure 8. Over the past five years (2016 to 2020), natural and accidents have been the first and second leading manners of death respectively. The child mortality rate for accidents increased from 9.5 deaths per 100,000 population in 2019 to 11.3 deaths per 100,000 population in 2020. It is worthy to note the child mortality rate for natural manner of death decreased from 32.7 deaths per 100,000 population in 2019 to 27.3 death per 100,000 population in 2020. The rate for homicide deaths increased from 2.7 per 100,000 population in 2019 to 4.4 per 100,000 population in 2020. Furthermore, the rate for suicide increased slightly from 2.1 per 100,000 population in 2019 to 2.5 per 100,000 population in 2020.



**Figure 8. Child (0-17 years) Mortality Rate by Manner of Death in Tennessee. 2016-2020**

Deaths per 100,000 Population



The rates presented above are based on update numbers derived from new evidence after the completion of previous CFR reports. Prior years' data depicted in this report differ from rate shown in previous reports. 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 275 deaths caused by an external (injury) cause of death, 168 deaths were categorized as accidental, 38 deaths were suicide, and 67 deaths were homicides. Of the 402 deaths caused by a medical condition, the manner of death was mostly natural (n=411).

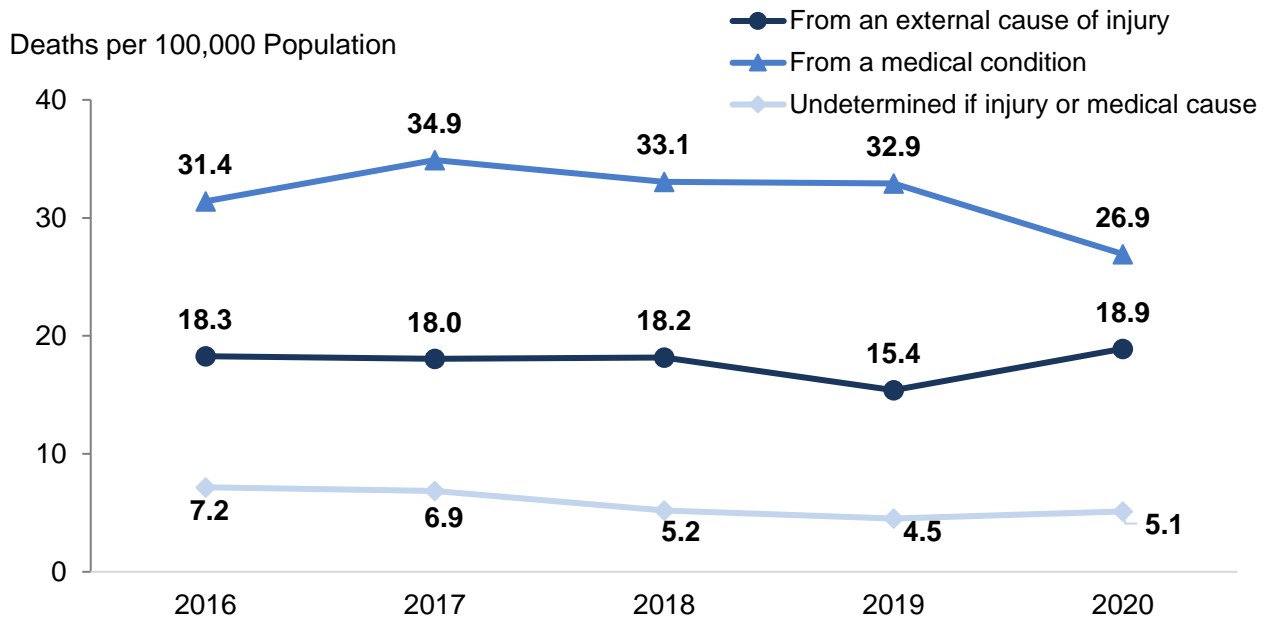
**Table 3. Cause of Death by Manner of Death for Children Ages 0-17 Years Tennessee, 2020**

Cause of Death	Manner of Death					
	Natural	Accident	Suicide	Homicide	Undetermined	Pending
External Injury	2	168	38	67	9	1
Medical Condition	402	1	0	0	2	1
Undetermined	3	1	0	0	69	4
Unknown	4	0	0	0	0	4
<b>TOTAL</b>	<b>411</b>	<b>170</b>	<b>38</b>	<b>67</b>	<b>80</b>	<b>10</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 2020 rates did not differ statistically when compared to their respective 2019 rates.

**Figure 9. Rate of Child Mortality Ages 0-17 Years by Cause of Death Tennessee, 2016-2020**



The rates presented above are based on update numbers derived from new evidence after the completion of previous CFR reports. Prior years' data depicted in this report differ from rate shown in previous reports. 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 2020 child deaths, death due to medical conditions is highest among Infants, children less than 1-year-old. Deaths from external causes (injury) is highest among children aged 10-14 years and 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 2020 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, 2020**

	Cause of Death			
	External Injury	Medical Condition	Undetermined	Unknown
<b>Age</b>				
Less than 1 year	59	274	74	7
1-4 years	50	34	2	1
5-9 years	27	29	0	0
10-14 years	43	32	0	0
15-17 years	106	37	1	0
<b>Race</b>				
Black	97	111	27	2
White	176	278	45	6
Other	12	17	5	0
<b>Sex</b>				
Male	197	246	50	5
Female	88	160	27	3
<b>Total</b>	<b>285</b>	<b>406</b>	<b>77</b>	<b>8</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.

This proportion of external cause of death in 2020 is higher than 272 deaths due to external causes in 2019. Detailed analysis for each specific injury death is provided in later sections of this report.

- Seventy-four children died in motor vehicle crashes in 2020, a 1% **slight decrease** from the 75 vehicular deaths in 2019.
- Ninety-nine children died from assaults, weapons, or person’s body part in 2020. This number is slightly lower than 2017 (n=109), but higher than 2018 (n=81) and 2019 (n=67) data.
  - Fifty-nine (60%) of the 2020 weapons-related fatalities were homicides, 32 (32%%) were suicides, and 6 (6%) were accidental.
- Forty-eight children died of unintentional asphyxia; 38 of these children died in a sleep-related environment. Deaths from unintentional asphyxia in 2020 is higher than 2019 (n=39), but lower than 2018 (n=57) data.
- Six children died from a fire, burn or electrocution in 2020. This number accounts for the lowest count in the past five years and a 60% **decrease** from 2018 data.
- Twenty-one children died by drowning in 2020, accounting for the second lowest count of drowning in the past five years.
- Thirteen children died from poisoning in 2020, representing the highest count in the past five years.

**Table 5. External Cause of Death (Injury Causes) for Children Ages 0-17 Years by Age Group Tennessee, 2020**

Injuries	Total	Reviewed Deaths (%)	< 1 yr	1-4 yrs	5-9 yrs	10-14 yrs	15-17 yrs
Motor Vehicle and other transport	74	9.5%	6	13	13	8	34
Fire, burn, or electrocution	6	0.8%	0	3	2	1	0
Drowning	21	2.7%	2	9	0	4	6
Unintentional Asphyxia	48	6.2%	39	4	2	2	1
Assault, weapon, or person's body part	99	12.8%	9	11	5	24	50
Fall or crush	5	0.6%	0	2	1	0	2
Poisoning, overdose, or acute intoxication	13	1.7%	0	1	1	1	10
Undetermined	2	0.3%	0	2	0	0	0
Other*	14	1.8%	2	3	3	3	3
Unknown	3	0.4%	1	2	0	0	0
<b>TOTAL</b>	<b>285</b>	<b>37%</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 2020 reviewed deaths resulting from a medical cause. Within the medical classification, causes are further specified by particular conditions or disease entities. In 2020, 406 deaths (52%) were attributed to medical causes. Medical causes may include those acquired congenitally (present at birth) or those that develop as the child grows. Most deaths from medical causes in Tennessee are related to prematurity and congenital anomalies (25%). Other causes include infections, neurological conditions including seizures, and childhood cancers. In 2020, 52% of reviewed deaths were attributed to medical causes, a slightly less proportion than the 61% (all deaths due to medical causes) in 2019. 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, 2020**

Medical Cause	Total	Reviewed Deaths (%)	< 1 yr	1-4 yrs	5-9 yrs	10-14 yrs	15-17 yrs
Prematurity	109	14.0%	109	0	0	0	0
Congenital Anomaly	85	11.0%	69	4	3	4	5
Other Medical Condition	43	5.5%	24	8	3	4	4
Cancer	33	4.3%	1	5	8	7	12
Cardiovascular	34	4.4%	16	7	2	4	5
Asthma	21	2.7%	11	0	3	4	3
Other Perinatal Condition	16	2.1%	16	0	0	0	0
Other Infection	21	2.7%	16	2	1	2	0
Pneumonia	10	1.3%	6	0	2	2	0
Influenza	7	0.9%	0	2	4	0	1
Diabetes	3	0.4%	1	0	0	1	1
Neurological/Seizure Disorder	18	2.3%	4	4	2	3	5
Covid-19	4	0.5%	0	1	1	1	1
Undetermined Medical Cause	2	0.3%	1	1	0	0	0
<b>Total</b>	<b>406</b>	<b>52.3%</b>	<b>274</b>	<b>34</b>	<b>29</b>	<b>32</b>	<b>37</b>

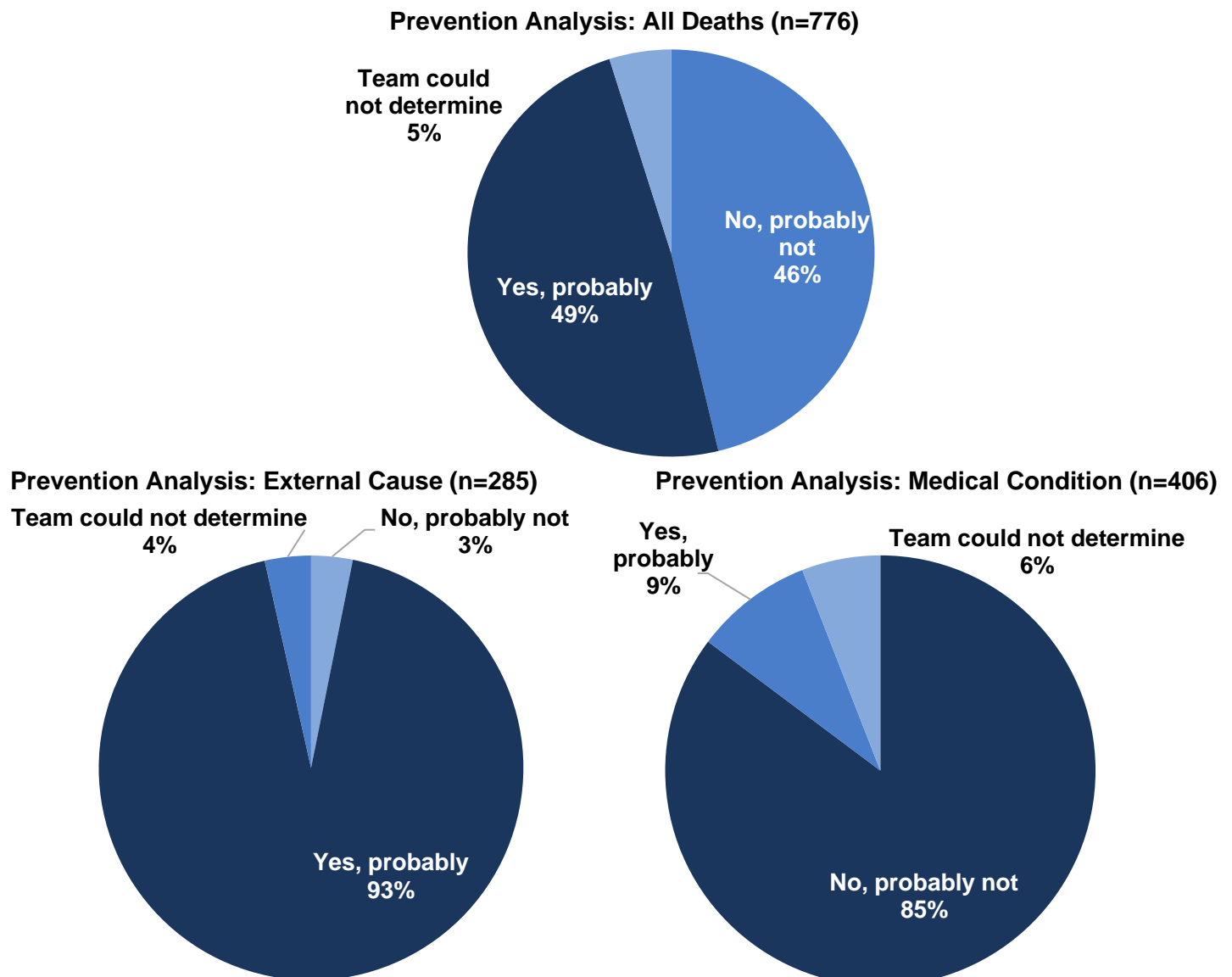
\*Other medical condition includes all other conditions that fall under a different category than those listed above, e.g. myocarditis or intestinal infarction.  
Data source: Tennessee Department of Health, Child Fatality Review Database System.

## 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 379 deaths (49%) were probably preventable, as shown in Figure 10. Most preventable deaths are caused by external causes of injury (266 cases; 70%) versus medical causes (73 cases; 19%).

**Figure 10. Preventability of Child Deaths Ages 0-17 Years by Cause of Death Tennessee, 2020**



Data source: Tennessee Department of Health, Child Fatality Review Data 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 specific causes of death, as well as highlights of current TN initiatives focused on preventing deaths within a particular category.

**FOCUSING ON PREVENTION: SPECIFIC**

Prevention opportunities include:

- Increasing 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.
- Providing access to 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 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 provides an award to birthing facilities meeting the BEST criteria including breastfeeding initiation, early elective delivery elimination, and infant safe sleep.
- TDH promotes the “ABCs of Safe Sleep” campaign to reduce sleep-related infant deaths and collaborates with community partners to promote the messaging and educate families.
- TDH family planning services provides non-coercive family planning education and birth control methods, including long acting reversible contraceptives 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 to encourage women of childbearing age to quit smoking.
- TDH continues to promote CHANT referrals in all 95 counties, including phone call outreach to all medium to high-risk births.
- TDH is working with mental health professional agencies to complete CALM (Counseling on Access to Lethal Means) training.

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

Prevention opportunities include:

- Increasing 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.
- Providing access to 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 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 provides an award to birthing facilities meeting the BEST criteria including breastfeeding initiation, early elective delivery elimination, and infant safe sleep.
- TDH promotes the “ABCs of Safe Sleep” campaign to reduce sleep-related infant deaths and collaborates with community partners to promote the messaging and educate families.
- TDH family planning services provides non-coercive family planning education and birth control methods, including long acting reversible contraceptives 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 to encourage women of childbearing age to quit smoking.
- TDH continues to promote CHANT referrals in all 95 counties, including phone call outreach to all medium to high-risk births.
- TDH is working with mental health professional agencies to complete CALM (Counseling on Access to Lethal Means) training.



## Acts of Child Abuse and Neglect

In Federal Fiscal Year (FFY) 2019 (October 1, 2018 through September 30, 2019), it was estimated that 656,000 children were victims of child abuse and neglect in the U.S. Approximately 1,840 of those children died as a result of their maltreatment. Of the children who died from child abuse, 72.9% experienced neglect and 44.4% experienced physical abuse. Children ages 0-3 years accounted for 70.3% of child abuse victims but were disproportionately represented among the fatalities, with nearly half (45.4%) cases of child abuse fatalities having occurred in children under 1-year-old.<sup>3</sup>

According to the Children’s Bureau’s Administration on Children, Youth, and Families, in Tennessee, 9,859 (6.5 per 1,000) children were determined to have been victims of child abuse in 2019.<sup>7</sup> Of the children who were victims of child abuse in 2019, 25% experienced neglect, 25% experienced sexual abuse, 61% experienced physical abuse and 15.4% experienced multiple forms of maltreatment. Among child abuse victims, 51% were children ages 0-5 years.<sup>4</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 776 child deaths reviewed, 100 (13%) 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, 2020\***

	All Ages	< 1 yr	1-17 yrs
Any Form of Child Abuse Victimization	100	26	74
Physical Abuse	41	13	28
Neglect	63	15	48
Sexual Abuse	8	0	8
Emotional Abuse	7	0	7

\*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.

<sup>3</sup> U.S. Department of Health & Human Services, Administration for Children and Families, Administration on Children, Youth and Families, Children’s Bureau. (2021). Child Maltreatment 2019. Available from <https://www.acf.hhs.gov/cb/report/child-maltreatment-2019>

<sup>4</sup> Child Maltreatment 2019; 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. There are evidence-based home visiting programs in all 95 counties.
- The Nashville Child Protection Coalition was integrated into the ACE Nashville Collective Impact Initiative founded by Nurture the Next. The Coalition's goal is to diminish the incidence and impact of child sexual abuse.
- DCS implemented a redesign of Child Protection including expanding the response to potential severe abuse and physical abuse cases involving young children.
- 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 103,397 calls in 2020 resulting in 130,647 referrals. 42,686 were web referrals.
- In calendar year 2020, 176 deaths and near deaths were reviewed by DCS. This included 144 non-custody deaths, 12 deaths of children in DCS custody, 19 non-custodial near deaths, and 1 near death of a child 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. Nearly one in four deaths (24%; n=188) in 2020 involved children known to have suffered from a disability or chronic illness (Table 8). Among children who reported disability or chronic illness, 11 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 39 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, 2020\***

Age	Type of Disability or Chronic Illness			
	Physical	Sensory	Mental	Cognitive
< 1 year	82	0	2	10
1-4 years	22	0	0	3
5-9 years	24	1	0	4
10-14 years	25	0	6	10
15-17 years	35	1	23	5
<b>Total</b>	<b>188</b>	<b>2</b>	<b>31</b>	<b>32</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, 2020\***

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	11	39

\*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:

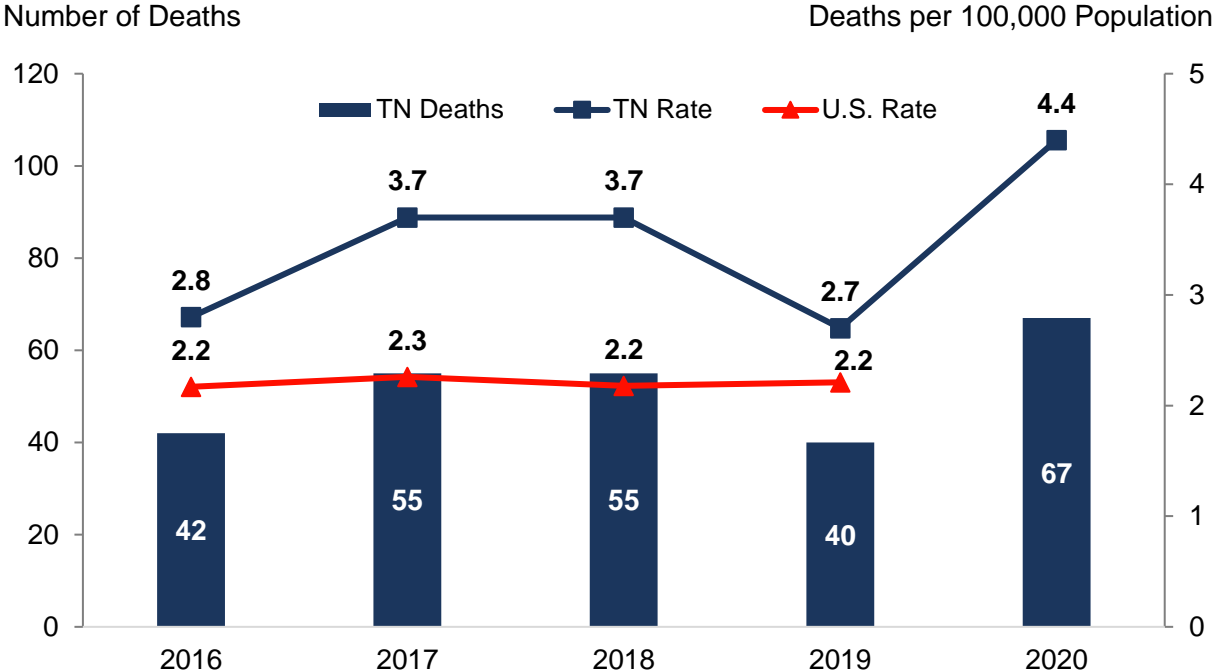
- The Tennessee Department of Health operates Children's Special Services (CSS) in all 95 counties.
- CSS continues to provide access and care coordination for children with special circumstances. CSS merged with other care programs within TDH in 2019 and this helped improve navigation and services for individuals and families. The 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

## Homicide Deaths

Homicide is a serious problem nationally, affecting people across all stages of life. In 2019, 19,141 people nationwide were homicide victims, of which 1,611 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 2019.<sup>5</sup> Tennessee’s child homicide rate has remained consistently above the national rate (Figure 11). In 2020, 67 children died of homicide in Tennessee (4.4 deaths per 100,000 children). 2020 firearm death data represents the highest number and rate in the past five years. This number represents over 8 percent of all reviewed child deaths.

**Figure 11. Homicide Deaths and Rates per 100,000 Population Ages 0-17 Years Tennessee and US, 2016-2020**



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>5</sup> Centers for Disease Control and Prevention: National Center for Injury Prevention and Control. Injury Prevention Web-based Injury Statistics Query System (WISQARS). 2018. Accessed at [http://www.cdc.gov/injury/wisqars/fatal\\_injury\\_reports.html](http://www.cdc.gov/injury/wisqars/fatal_injury_reports.html)

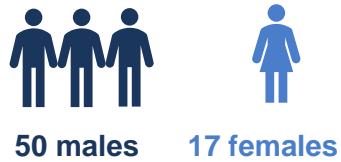
**Figure 12. Demographic Distribution of Homicide Deaths for Children Ages 0-17 Years, Tennessee, 2020**

Older teenagers (age 15-17 years) had the highest burden of homicide deaths (n=30; 48%) in 2020.



Fifty homicide victims were males; seventeen were females. Nearly three in every four victims (46 deaths) of homicides were Black children.

**The number of male victims of homicide is 3x that of females.**

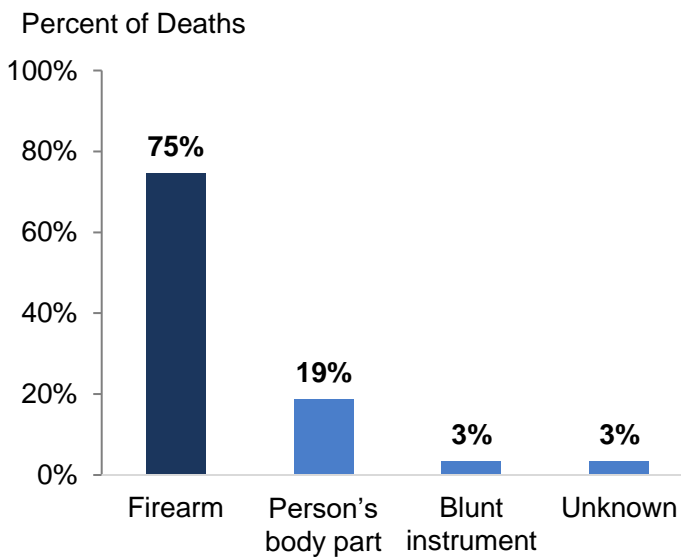


**The number of black victims of homicide is almost 3x White victims.**

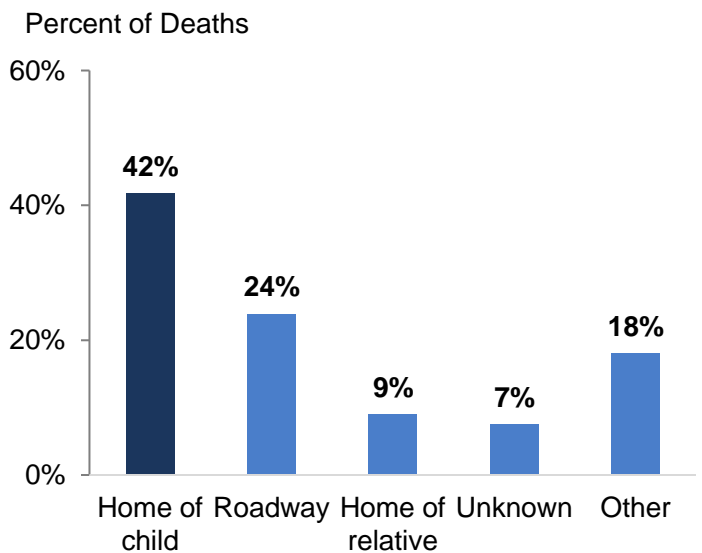
Data source: Tennessee Department of Health, Child Fatality Review Database System.

Seventy-five percent of homicides (n=50) were committed using firearms (Figure 13) and 53% (n=21) of all homicides occurred in the child's home (Figure 14).

**Figure 13. Weapon Type used in Homicide deaths for Children Ages 0-17 Years, Tennessee, 2020**



**Figure 14. Homicide Deaths Children Ages 0-17 Years by Victim's Location, Tennessee, 2020**



Other/unknown cases includes one case in which a motor vehicle was used as a deadly weapon and three cases where the weapon type could not be determined.  
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:

- Nurture the Next disseminated Shaken Baby/Abusive Head Trauma Prevention project materials every birthing hospital in Tennessee.
- 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.

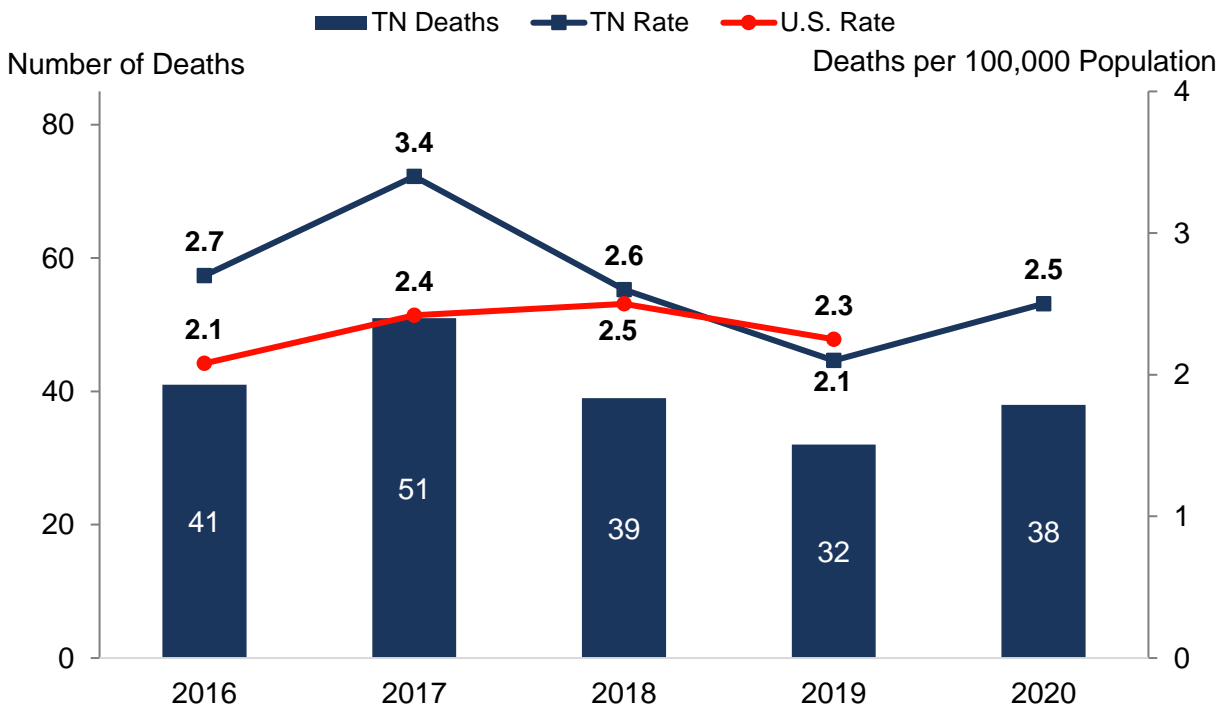
## Suicide Deaths

In 2019, 1,634 children between ages 10 and 17 years died by suicide (4.9 suicide deaths per 100,000 children) in the United States, making suicide the second leading cause of death for children in this age group. American Indian (vs. White or Black) children aged 10-17 and males (vs. females) had higher rates of suicide nationally in 2019.<sup>6</sup>

***In 2020, firearms in the home were the leading mechanism and location for youth suicides.***

In Tennessee, 38 children under 18 years of age died by suicide during 2020; this represents 5% of all reviewed deaths and a rate of 2.5 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, 2016-2020**



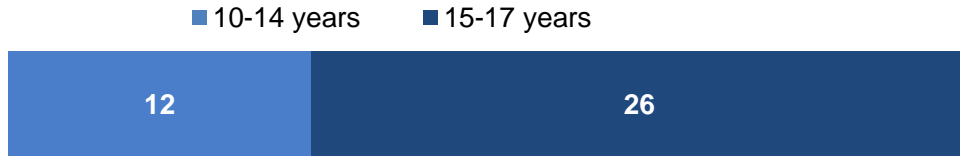
Data source: Tennessee Department of Health, Child Fatality Review Database System and population estimates based on interpolated data from the U.S. Census's Annual Estimates of the Resident Population.

Figure 16 demonstrates that suicides were more frequent among males (n=19) than females (n=13), though this difference was smaller than that seen in previous years. Male children accounted for 76% of suicides in 2020. Of the 38 suicide deaths in 2020, 34 (89%) were White children. Firearms (65%) were the leading means of suicide followed by hanging (26%) (Figure 17). Most of the cases (79%) occurred in the child's home (Figure 18).

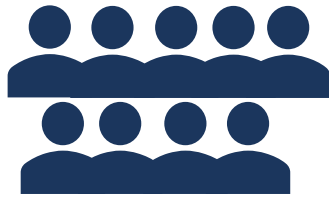
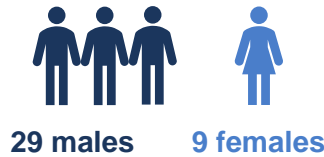
<sup>6</sup> Centers for Disease Control and Prevention: National Center for Injury Prevention and Control. Injury Prevention Web-based Injury Statistics Query System (WISQARS). 2018. Accessed at [http://www.cdc.gov/injury/wisqars/fatal\\_injury\\_reports.html](http://www.cdc.gov/injury/wisqars/fatal_injury_reports.html)

**Figure 16. Demographic Distribution of Suicides for Children Ages 0-17 Years Tennessee, 2020**

Suicides is higher among children aged 15-17 years (n=26) than children aged 10-14 years (n=12).



The number of male victims of suicide is 3x that of females.



34 White children

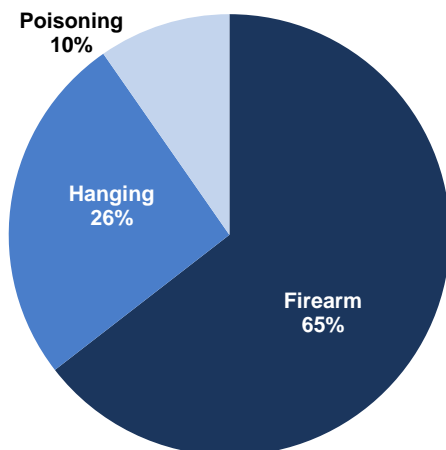


3 Black children

The number of White victims of suicide is almost 11x Black victims.

\*One decedent of suicide was listed as other race  
Data source: Tennessee Department of Health, Child Fatality Review Database System.

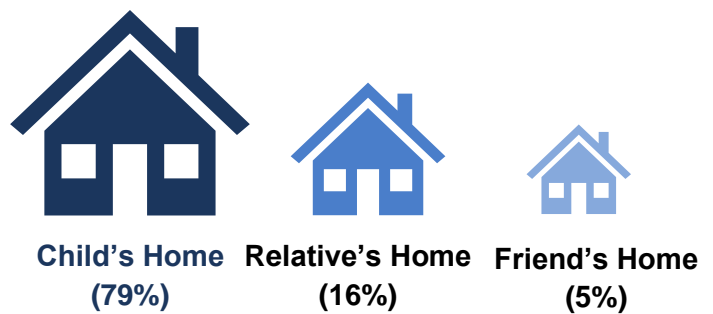
**Figure 17. Method of Suicides for Children Ages 0-17 Years, Tennessee, 2020**



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

**Firearm is the leading means of suicide in Tennessee children**

**Figure 18. Location of Suicides for Children Ages 0-17 Years, Tennessee, 2020**



Most cases of suicide occurred in child's home.

As shown in Table 11, firearm was the most common method of suicide for children.

**Table 10. Suicides among Children Ages 0-17 Years by Victim Age Groups and Method Tennessee, 2020\***

Method of Suicide	10-14 yrs	15-17 yrs	Total
Firearm	7	13	20
Hanging	2	6	8
Poisoning, overdose, or acute intoxication	1	2	3
<b>Total</b>	10	21	31

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.
- 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 suicidal ideation, intentional self-harm, and 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.
- The TDH Suicide Prevention Program developed a model for rapid prevention response using surveillance data from ESSENCE.
- TDH in collaboration with TDOE are implementing the “Good Behavior Game” in elementary schools in high-risk counties.

*Continued on next page*



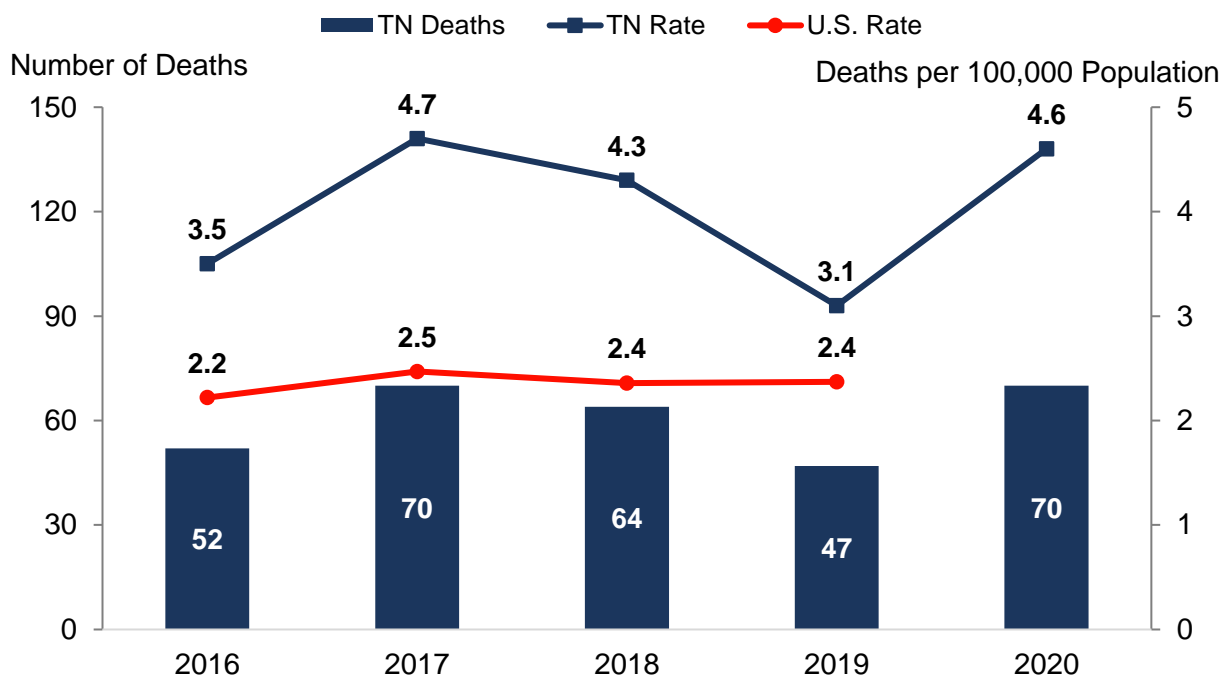
- The Tennessee Suicide Prevention Network has a number of efforts aimed at reducing suicide and supporting survivors, including distributing resources, connecting families to grief services, providing schools with the LEA Suicide Prevention Behavioral Checklist protocol, providing training sessions to schools, and promoting 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.
- The TDH Suicide Prevention Program provided Question, Persuade, Refer (QPR) suicide prevention gatekeeper trainings to all CHANT and EBHV staff across the state through a partnership with TDH's Early Childhood Program
- TDH received funding through the CDC new Comprehensive Suicide Prevention Program. This funding will help TDH to provide a comprehensive public health approach based on data and science to address risk factors which contribute to suicide.
- TDH collaborated with mental health professionals to provide CALM (Counseling on Access to Lethal Means).
- TDH developed a mental health resource guide for families and providers.

## Firearm Deaths

In 2019, firearms accounted for 1,732 deaths (2.4 per 100,000) of children ages 0 to 17 years nationally.<sup>7</sup> In 2020, 70 Tennessee children (4.6 per 100,000) died in incidents involving firearms, a 49% **increase** compared to 2019 (Figure 19). This number represents 9% of all reviewed deaths. Tennessee's rate continues to be higher than the national rate (Figure 19).

**Figure 19. Firearm-Related Deaths and Rates per 100,000 Children Ages 0-17 Years Tennessee, 2016-2020**

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

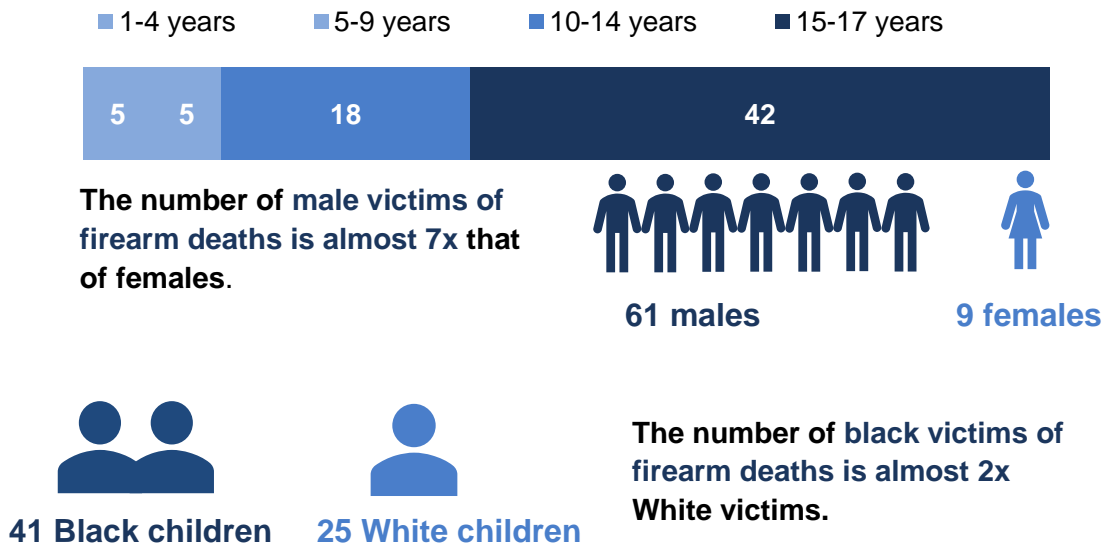


Estimates of the Resident Population.

Of the 70 deaths, 61 (87%) were males and 9 (13%) were females (Figure 20). Three out of five firearm-related deaths (n=42; 60%) occurred amongst the oldest age group, teenagers 15 to 17 years. The proportion of firearm-related deaths of Black children (59%) was greater than that of White children (36%), representing a disproportionate burden of firearm-related fatality among Black children (data not shown). The dominant manner of firearm-related death was homicide in children aged 5-9 years (n=4), 10 to 14 years (n=11), and 15-17 years (n=29) followed by suicide in 10 to 14 years (n=7) and 15-17 years (n=13).

<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). 2018. 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, 2020**



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

**Table 11. Firearm-Related Deaths for Children Ages 0-17 Years by Manner of Death and Age Group, Tennessee, 2020**

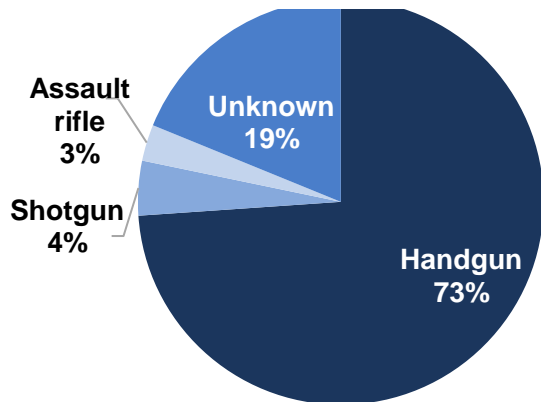
Manner of Death	1-4 yrs	5-9 yrs	10-14 yrs	15-17 yrs	Total
Accident	5	1	0	0	6
Suicide	0	0	7	13	20
Homicide	0	4	11	29	44
<b>Total</b>	<b>5</b>	<b>5</b>	<b>18</b>	<b>42</b>	<b>70</b>

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

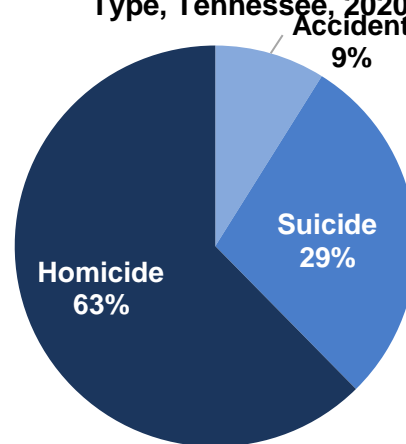
Sixty-three percent (n=44) of all firearm fatalities were homicides and 29% (n=20) were suicides (Figure 21). Of the 70 deaths involving firearms, 73% were handguns, 4% were shotguns, 3% assault rifle, and the remaining 19% involved an unknown gun type (Figure 22).

For homicide and suicide fatalities in which the firearm owner was known, a parent (n=9) was the most common owner category listed. The owner of the firearm was listed as “unknown” for 42% (n=29) of homicide and suicide deaths caused by firearms (Table 13).

**Figure 21. Firearm-Related Deaths for Children Ages 0-17 Years by Means of Death, Tennessee 2020**



**Figure 22. Firearm-Related Deaths for Children Ages 0-17 Years by Firearm Type, Tennessee, 2020**



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

**Table 12. Homicide and Suicide Deaths due to Firearms for Children 0-17 Years by Owner of Firearm, Tennessee, 2020**

Owner of Firearm	Homicides	Suicides	Total
Parent	7	2	9
Friend	2	4	6
Other	2	11	13
Other family member	2	0	2
Stolen	1	4	5
Unknown	6	23	29

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:

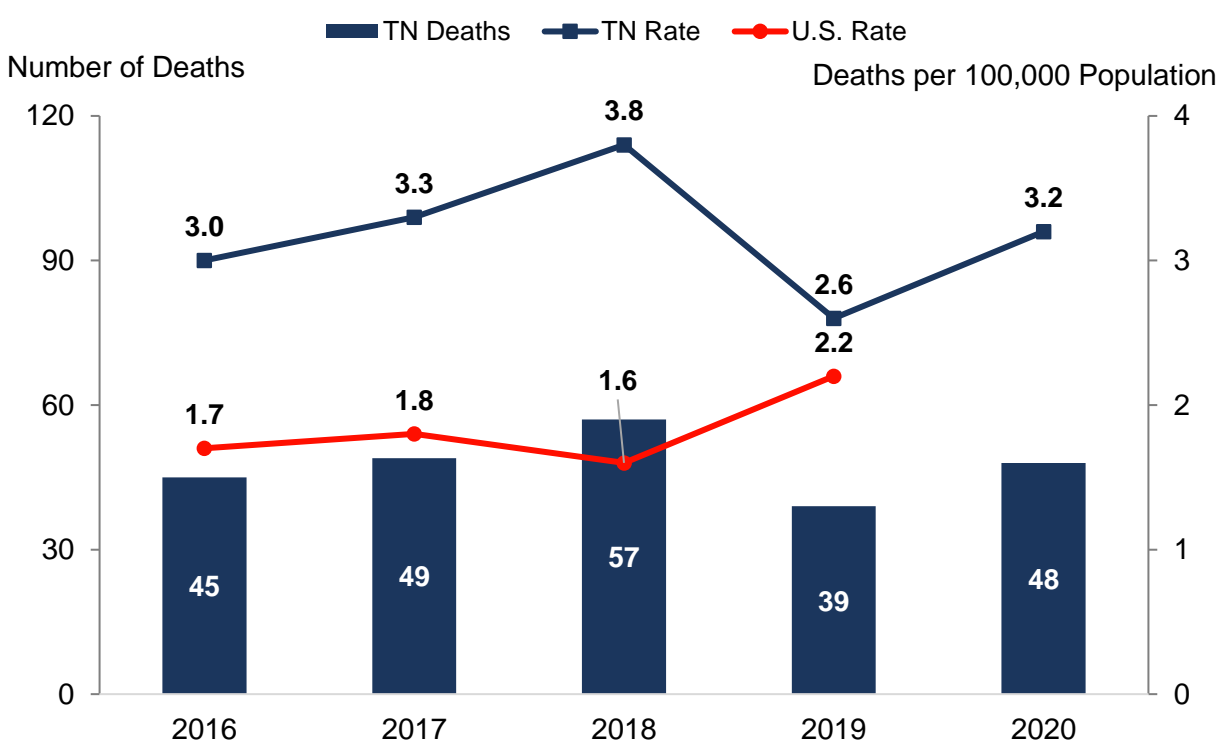
- The Tennessee Department of Safety and Homeland Security distributes information on promoting safe firearm storage and practices.
- The Tennessee Department of Health provides education in the schools on bullying and violence prevention.
- Coaching Boys into Men and Athletes as Leaders are adopted in middle and high schools to 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 it accounted for approximately 1,175 infant deaths nationally in 2019. Asphyxia cases may be related to suffocation, strangulation, or choking. Accidental suffocation rates have increased fourfold since 1984.<sup>8</sup> Nationally, male 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 2016-2020. In 2020, 48 children died of unintentional asphyxia. This number represents 6% of all reviewed deaths.

**Figure 23. Unintentional Asphyxia Deaths and Rates per 100,000 Children Ages 0-17 Years Tennessee and the US, 2016-2020\***



\*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.

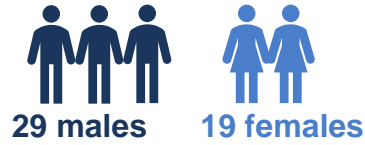
Figure 24 demonstrates the demographic distribution of unintentional asphyxia fatality by age, sex, and race. More male (n=29) and White children (n=29) died from asphyxia than female (n=19) and Black children (n=18). As shown in Table 14, the majority (n=39; 81%) of asphyxia cases in 2020 were infants, 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>8</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>

## 24. Demographic Distribution of Asphyxia Deaths for Children Ages 0-17 Years Tennessee, 2020



The number of male victims of asphyxia is 1.5x that of females.



The number of White victims of asphyxia deaths is almost 1.6x Black victims.

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

**Table 13. Asphyxia Cause of Death for Children Ages 0-17 Years by Age Groups  
Tennessee, 2020**

Cause of Asphyxia	<1 yr	1-4 yrs	5-9 yrs	10-14 yrs	15-17 yrs	Total
Sleep-related	38	0	0	0	0	38
Choking	1	4	0	2	0	7
Strangulation (not sleep related)	0	0	2	0	1	3
<b>Total</b>	<b>39</b>	<b>4</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>48</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 childcare 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:

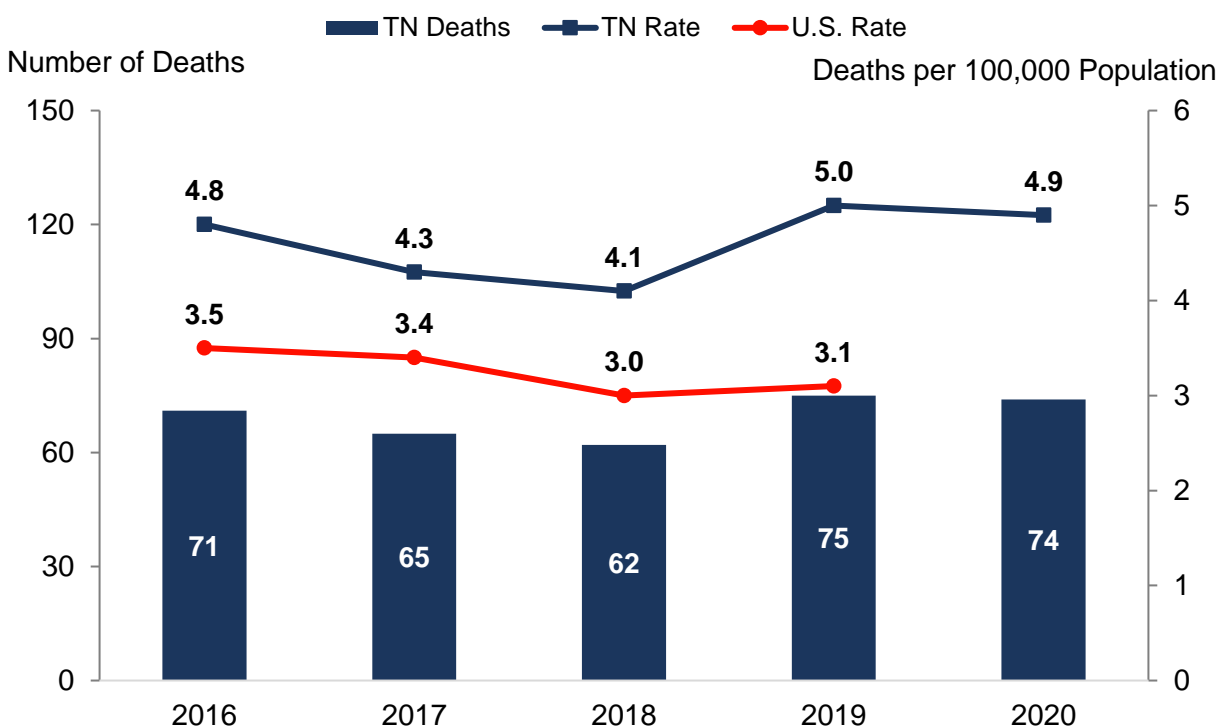
- The Tennessee Department of Health’s “ABCs of Safe Sleep” campaign educates parents and other caregivers on the how to prevent asphyxia in the sleep environment. Multiple state and community agencies educate the community about the “ABCs of Safe Sleep” at various outreach events across Tennessee.
- 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 among children ages 1 to 17 in the U.S.<sup>9</sup> In 2019, the most recent year for which national data is available, 1,988 children (ages 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>10</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 highest number of fatalities among all external causes of death in 2020. Figure 25 demonstrates the annual count and rate of motor vehicle-related child deaths for 2016-2020. In 2020, 74 deaths were related to motor vehicles or transportation modalities, representing almost every 1 in 10 (9.5%) of all reviewed child fatalities.

**Figure 25. Motor Vehicle-Related Deaths and Rates per 100,000 Children Ages 0-17 Years Tennessee and the US, 2016-2020**



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 26 demonstrates the demographic distribution of motor vehicle fatality by age, sex, and race. Fatalities occurred more frequently among males (n=51) than females (n=24), and among Whites (n=49) than Blacks (n=23).

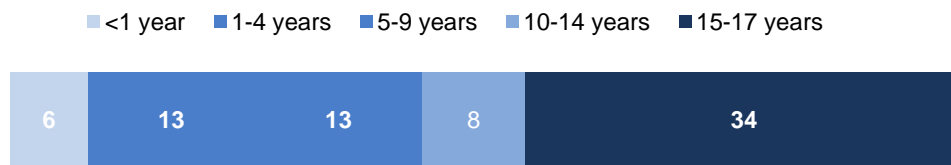
<sup>9</sup> Centers for Disease Control and Prevention: National Center for Injury Prevention and Control. Injury Prevention Web-based Injury Statistics Query System (WISQARS). 2019. Accessed at [http://www.cdc.gov/injury/wisqars/fatal\\_injury\\_reports.html](http://www.cdc.gov/injury/wisqars/fatal_injury_reports.html)

<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). 2019. Accessed at [http://www.cdc.gov/injury/wisqars/fatal\\_injury\\_reports.html](http://www.cdc.gov/injury/wisqars/fatal_injury_reports.html)



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. Table 15 summarizes the position of the children relative to the vehicle by age group. The majority (82%) of children killed were drivers or passengers of a motor vehicle. Additionally, 11 children were pedestrians struck by motor vehicles.

**Figure 26. Demographic Distribution of Motor Vehicle Fatalities for Children Ages 0-17 Years Tennessee, 2020**



The number of male victims of motor vehicle crash is almost 1.6x that of females.



The number of White victims of motor vehicle crash is 3x Black victims.

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

**Table 14. Motor Vehicle/Other Transport Fatalities for Children Ages 0-17 Years by Age Groups and Position with Respect to Vehicle, Tennessee, 2020**

Victim Position	<1 yr	1-4 yrs	5-9 yrs	10-14 yrs	15-17 yrs	Total
Driver	0	0	1	3	13	17
Passenger	6	9	8	2	19	44
On Bicycle	0	0	1	0	0	1
Pedestrian	0	4	2	3	2	11
Other	0	0	1	0	0	1
<b>Total</b>	<b>6</b>	<b>13</b>	<b>13</b>	<b>8</b>	<b>34</b>	<b>74</b>

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, 52% (n=32) were confirmed to not be using needed protective measures, such as a seat belt, helmet or child/booster seat (Table 16).

**Table 15. Motor Vehicle Deaths among Children Ages 0-17 Years by Vehicle Type and Protective Measure\*, Tennessee, 2020**

Vehicle Type	Protection needed, used incorrectly, not used	Protection Used Correctly	Unknown	Total
Car, Van, SUV, Truck	23	24	3	50
ATV and other	8	2	0	10
<b>Total</b>	<b>31</b>	<b>26</b>	<b>3</b>	<b>60</b>

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

\*\*Protective measures included here were determined to be irrelevant for one case which involved a fatal jet ski accident.

\*\*\*Total deaths by vehicle type are lower than total motor vehicle deaths because pedestrian 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:

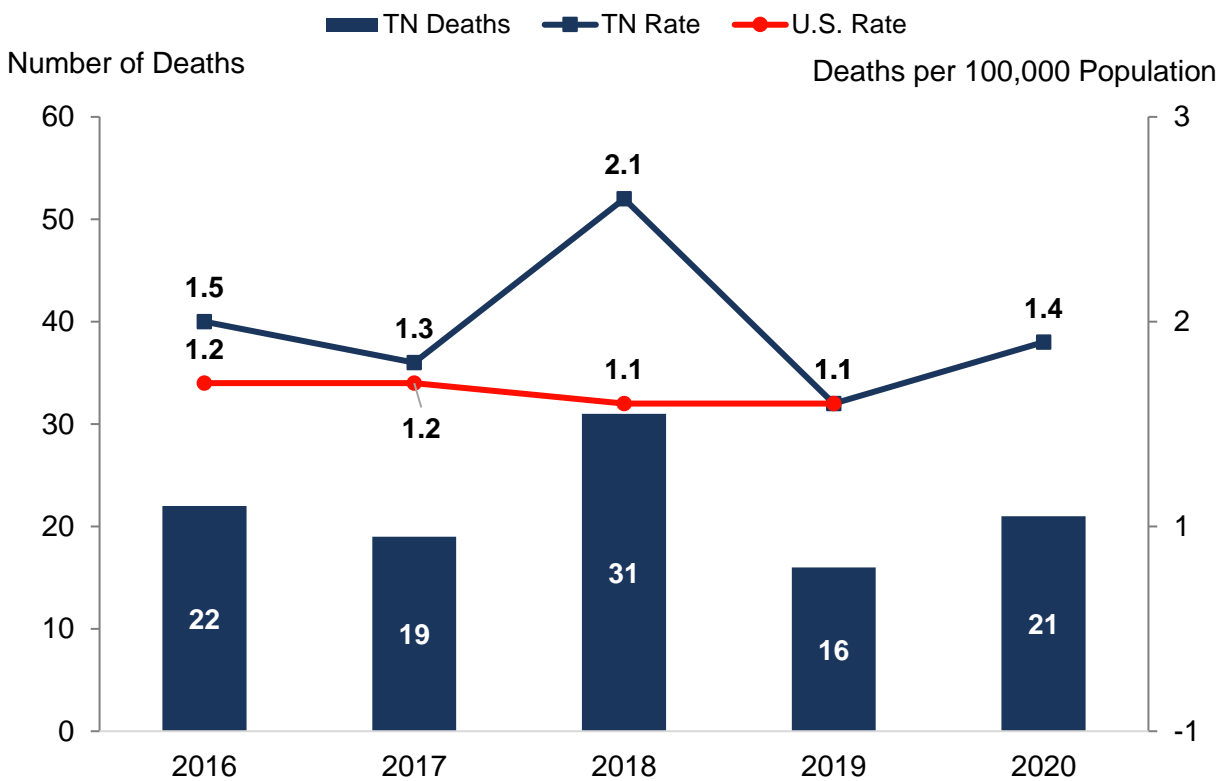
- The Tennessee General Assembly passed a Graduated Driver’s License (GDL) law in 2001. TDH has created educational programming for parents and teens to raise awareness of, and compliance with, the GDL law. This educational programming is an opportunity to strengthen the compliance with the GDL law.
- TDH developed a virtual version of Checkpoints™ to improve outreach. This also includes a virtual data collection tool.
- TDH provided funding to 24 agencies through the end of FY2020 to purchase and distribute child safety seats and booster seats to families that could not afford them.

## Drowning Related Deaths

For all ages, drowning ranks fifth among the causes of unintentional injury death in the United States.<sup>11</sup> Between 2015 and 2019, an average of 843 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>12</sup> Nationwide, infant drownings occurred most often in bathtubs.<sup>13</sup>

Figure 27 demonstrates the annual count and rate of child deaths due to drowning for 2016-2020 in Tennessee and the United States. In Tennessee, 21 children died by drowning in 2020. This number represents approximately 2% of all reviewed deaths. Of the 21 drowning case reports, about half (n=11) of the children could swim (data not shown).

**Figure 27. Drowning Deaths and Rates per 100,000 Children Ages 0-17 Years Tennessee and the US, 2016-2020**



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 28 summarizes drown-related deaths by age, sex, and race of child. For 2020, drowning deaths were most frequent among children 1-4 years (n=9). Drowning incidents were more

<sup>11</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>

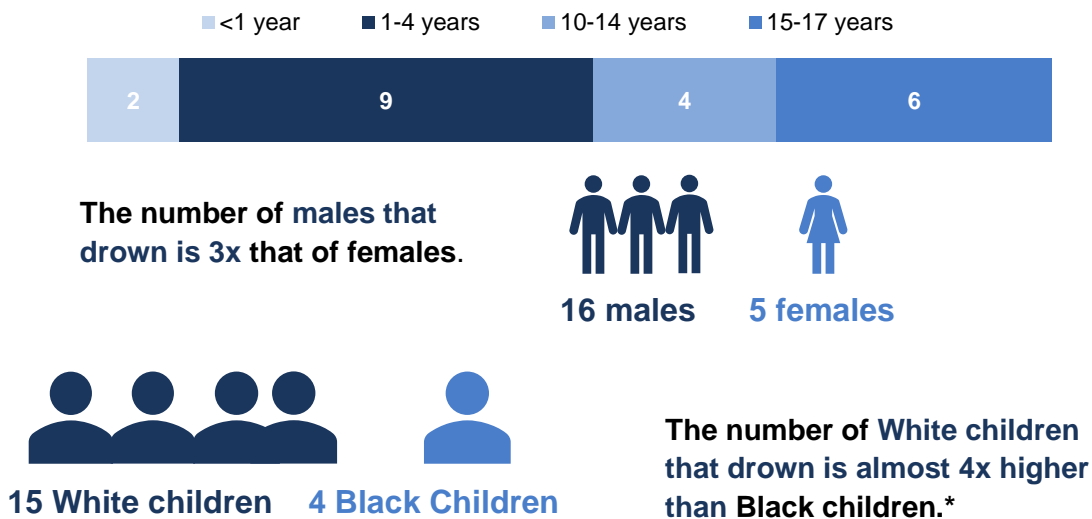
<sup>12</sup> Centers for Disease Control and Prevention: National Center for Injury Prevention and Control. Injury Prevention Web-based Injury Statistics Query System (WISQARS). 2019. Accessed at [http://www.cdc.gov/injury/wisqars/fatal\\_injury\\_reports.html](http://www.cdc.gov/injury/wisqars/fatal_injury_reports.html)

<sup>13</sup> Centers for Disease Control and Prevention: Drowning Prevention. Accessed at <https://www.cdc.gov/drowning/facts/index.html>

frequent in males (n=16) compared to females (n=5) and in White children (n=15) compared to Black or children of other race category children (n=2).

Among children 1-4 years, pools were the most common site of drowning, while open water was the most prominent drowning location for the older age groups (Table 17). Of the 6 drowning deaths that occurred in a pool, just one 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 2020**



There was one drowning victim where race was indicated as "other".  
 Data source: Tennessee Department of Health, Child Fatality Review Database System.

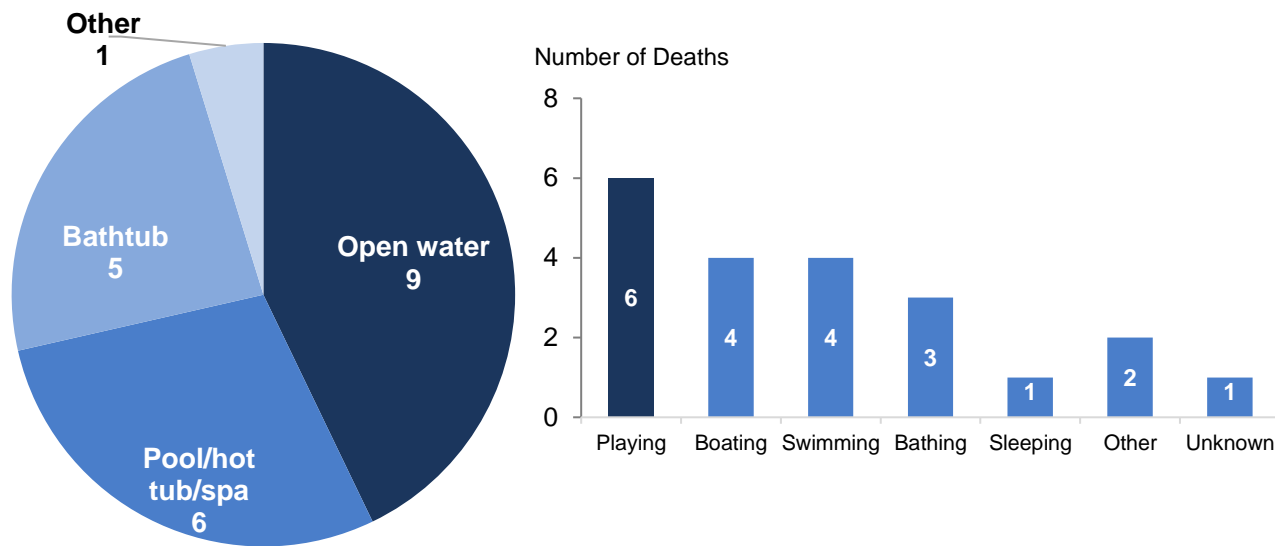
**Table 16. Drowning Deaths for Children Ages 0-17 Years by Location and Age Groups Tennessee, 2020**

Location of drowning	<1 yr	1-4 yrs	10-14 yrs	15-17 yrs
Open water	0	3	1	5
Pool/hot tub/spa	0	5	1	0
Bathtub	2	1	1	1
Other	0	0	1	0
<b>Total</b>	<b>2</b>	<b>9</b>	<b>4</b>	<b>6</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 (29%, n=6) followed by boating (19%, n=3) and swimming (19%, n=3) (Figure 29). Other activities children performed prior to drowning included bathing and sleeping.

**Figure 29. Drowning Deaths for Children Ages 0-17 Years, by Location and Activity at the Time of Death, Tennessee, 2020**



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 childcare 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.

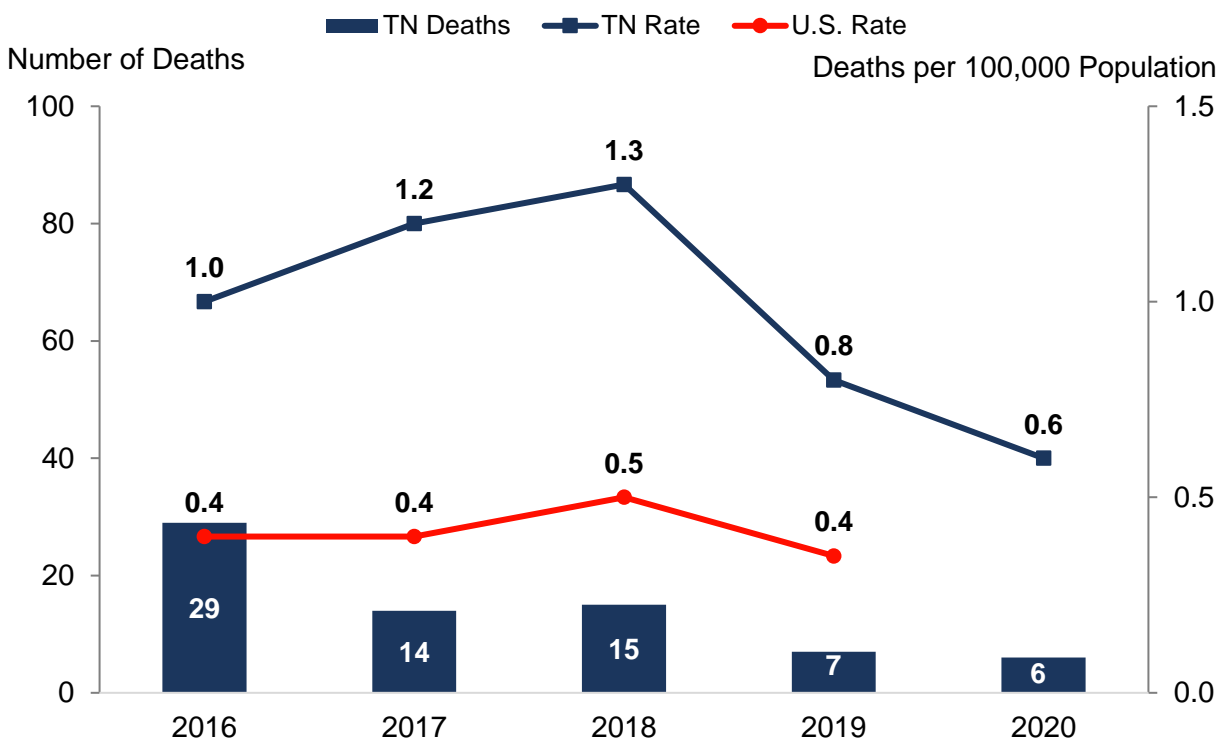
Current prevention efforts in Tennessee include:

- Safe Kids collaborated 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.
- Levi's Legacy was promoted through local children's hospitals and established "Water-Guardians" to promote constant adult supervision in and around water when children are present.
- TDH distributed water safety messaging through social media each Wednesday from June 2021-September 2021.

## 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 unintentional injury death among children 1-17 years.<sup>14</sup> In 2019, 259 children ages 0 to 17 years (0.35 per 100,000) died from burn-related injuries in the United States.<sup>15</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>16</sup> Rates for fire/burn deaths are also higher among Black (vs. White) children. Cooking is the leading cause of residential fires overall; however, most fatal fires are caused by smoking in the home. In 2020, there were six fire-related child deaths in Tennessee.

**Figure 30. Fire/Burn Deaths and Rates per 100,000 Children Ages 0-17 Years Tennessee and the US, 2016-2020**



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.

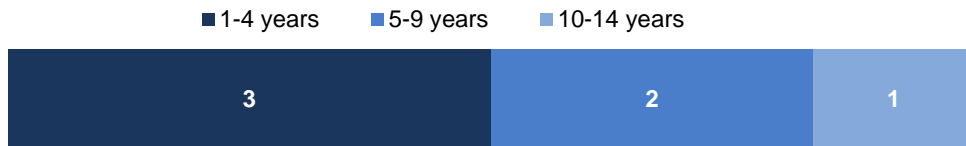
Fire/burn-related deaths occurred more among children who were 1-4 years (n=3), female (n=4), and White (n=2) (Figure 31). The most common fire source seen among the 7 cases was electrical wiring (n=3). Most fire/burn deaths occurred in single family homes (n=3) followed by apartments (n=1) and trailer/mobile homes (n=1).

<sup>14</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)

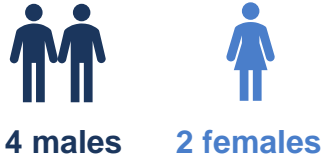
<sup>15</sup> Centers for Disease Control and Prevention: National Center for Injury Prevention and Control. Injury Prevention Web-based Injury Statistics Query System (WISQARS). 2018. Accessed at [http://www.cdc.gov/injury/wisqars/fatal\\_injury\\_reports.html](http://www.cdc.gov/injury/wisqars/fatal_injury_reports.html)

<sup>16</sup> Federal Emergency Management Agency: Fire Risk in 2019. Accessed at <https://www.usfa.fema.gov/downloads/pdf/statistics/v21i8.pdf>

**Figure 31. Demographic Distribution of Fire/Burn Deaths for Children Ages 0-17 Years Tennessee, 2020**



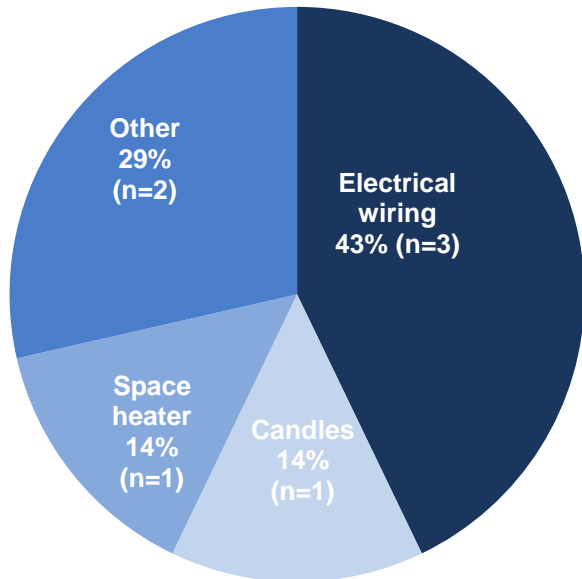
The number of male victims of fire/burns is 2x that of females.



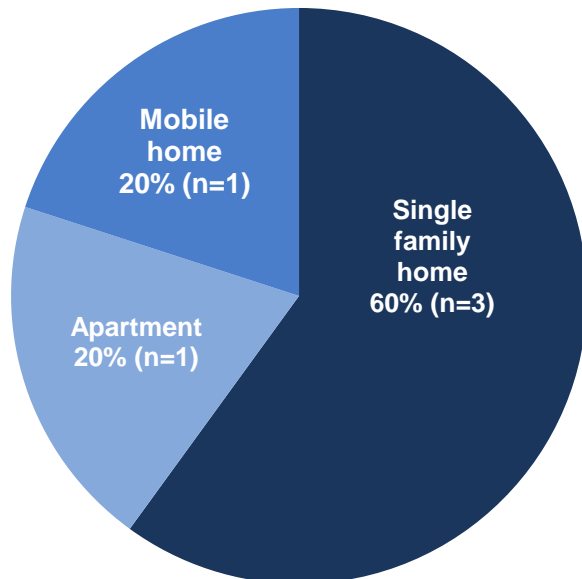
The number of White victims of fire/burns is 2x Black victims.

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, 2020**



**Figure 33. Fire/Burn Deaths for Children Ages 0-17 Years by Structure Type Tennessee, 2020\***



\* Two cases that did not involve house fires are excluded from the above figure, one case of electrocution and one hot car death.  
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.
- 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 Marshall'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 State Fire Marshal's Office promotes community risk reduction by proactively promoting fire safety and prevention within communities.
- In 2021, the State Fire Marshal's office completed the fire prevention plan for 2020-2021. This included all residential structures have working smoking alarms, conducting door to door education campaigns, education on what to do if there is a fire, and social media campaigns through each month.

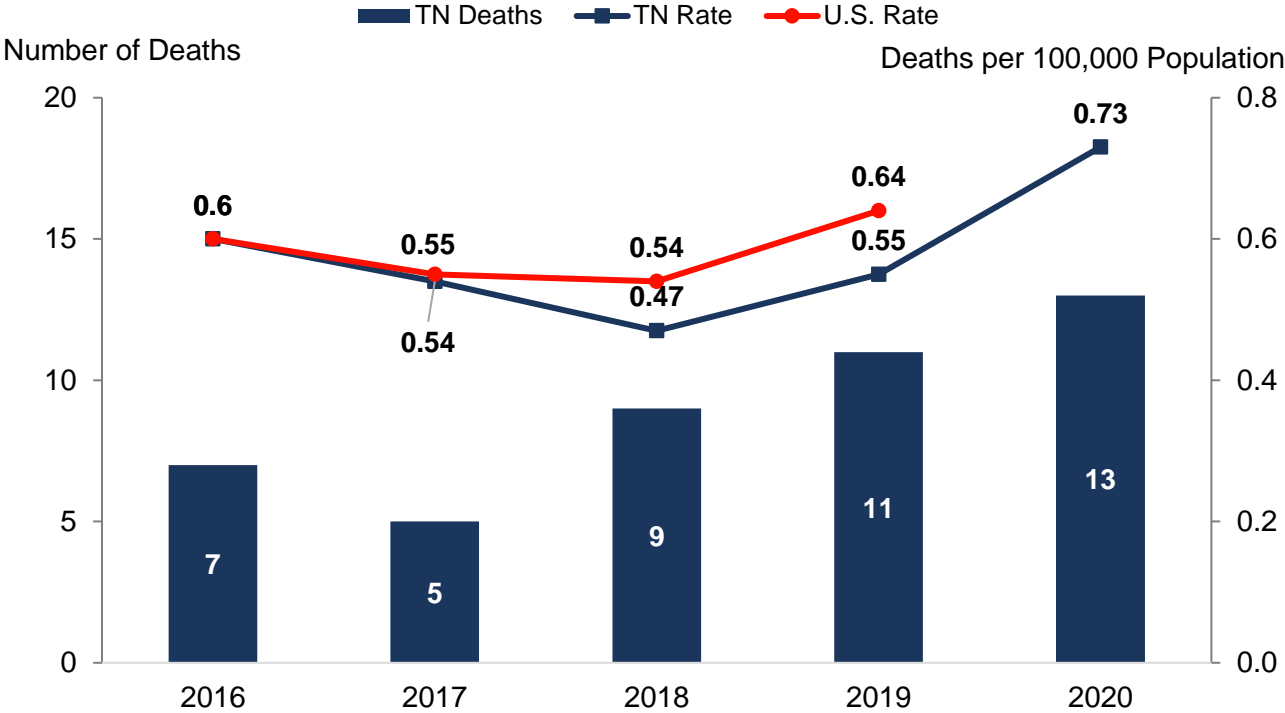


### Poisoning Deaths

Poisoning is the leading cause of injury death in the United States for all ages. Drugs, both prescribed and illicit, cause most poisoning deaths. In 2019, 471 children ages 0 to 17 died by poisoning. This reflects a rate of 0.64 per 100,000 children in this age group. Fifty-two percent of the national poisoning deaths among children were unintentional. Males (vs. females) and teens (vs. other age groups) are more likely to die from unintentional poisoning.<sup>17</sup>

In 2020, 13 children died from poisoning in Tennessee, representing almost 2% of all reviewed child fatalities. Figure 34 demonstrates the number and rate of poisoning deaths in Tennessee and the US from 2016-2020. 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, 2016-2020\***

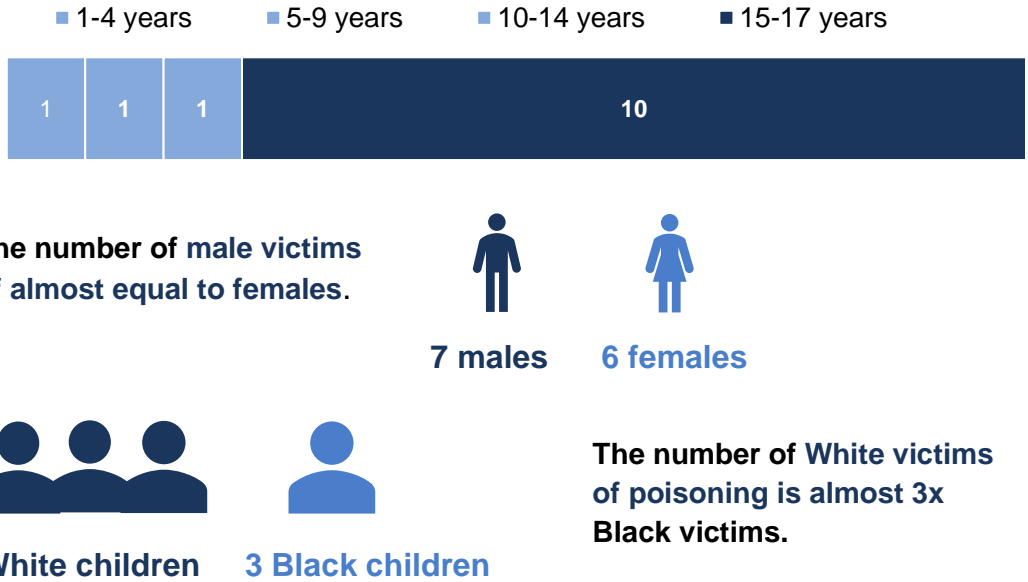


\*Due to small annual numbers of cases, Tennessee rates represent three-year rolling averages. Data source: Tennessee Department of Health, Child Fatality Review Database System and population estimates based on interpolated data from the U.S. Census's Annual Estimates of the Resident Population.

Teens 15-17 years made up the largest proportion of 2020 poisoning deaths (n=10) (Figure 35). Of the 13 poisoning deaths, seven were males and six were Black children. Three of the 13 poisoning fatalities involved prescription drugs while the remaining 10 deaths were due to other substances (Table 18). Six deaths were determined to be accidental, one was intentional, and the intent was unable to be determined in four deaths.

<sup>17</sup> Centers for Disease Control and Prevention: National Center for Injury Prevention and Control. Injury Prevention Web-based Injury Statistics Query System (WISQARS). 2019. Accessed at [http://www.cdc.gov/injury/wisqars/fatal\\_injury\\_reports.html](http://www.cdc.gov/injury/wisqars/fatal_injury_reports.html)

**Figure 35. Demographic Distribution of Intentional and Unintentional Poison-Related Deaths for Children Ages 0-17 Years Tennessee, 2020**



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

**Table 17. Poison-Related Deaths among Children Ages 0-17 Years by Substance and Age Groups Tennessee, 2020\***

Type of Substances	1-4 yrs	5-9 yrs	10-14 yrs	15-17 yrs	Total
Prescription	0	0	1	2	3
Other substances	1	1	0	8	10
<b>Total</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>10</b>	<b>13</b>

\*Other substances include carbon monoxide, fentanyl, and heroine.  
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:

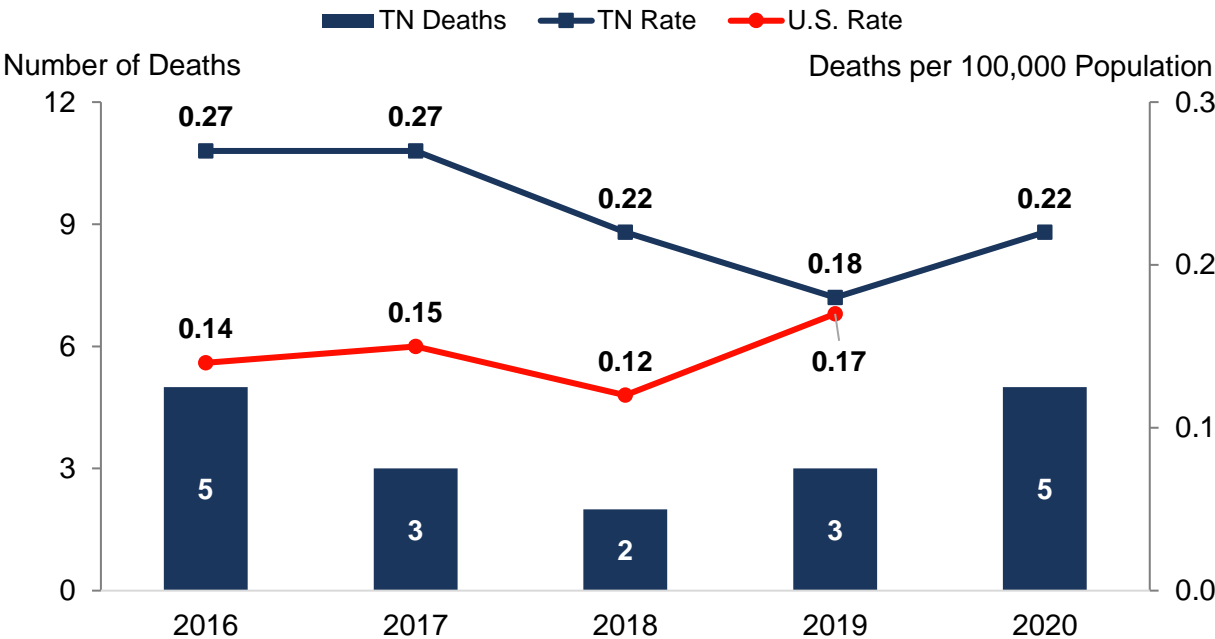
- Tennessee Department of Health, Tennessee Department of Environment and Conservation, the Tennessee Department of Mental Health and Substance Abuse Services, and the Prevention Alliance of Tennessee have collaborated to place 355 medication drop boxes in all 95 counties in Tennessee.
- The Tennessee 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.
- All Tennessee providers and pharmacies must electronically log the distribution on prescription medication.
- 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.
- Tennessee Suicide Prevention Network distributed lock boxes with education for families on safely storing prescription medications.

### Fall/Crush Deaths

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>18</sup> Nationally, approximately 2.3 million children are treated in emergency rooms for fall-related injuries each year. In 2019, 123 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>19</sup>

In Tennessee, five children died from fall or crush injury in 2020. Figure 36 demonstrates the number and rate of deaths due to fall or crush in Tennessee and the US from 2016-2020. These five deaths represent 0.25% of all reviewed child fatalities.

**Figure 36. Fall/Crush Deaths and Rates per 100,000 Children Ages 0-17 Years Tennessee and the US, 2016-2020\***



\*Due to small annual numbers of cases, Tennessee rates represent three-year rolling averages. 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.

In Tennessee, fall-related child deaths occurred in children aged 1-4 years (n=2), 5-9 years (n=1) and 15-17 years (n=2), all of whom were White (Figure 37). Four of the decedents were males and one was female.

<sup>18</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/safekid/Falls/index.html>

<sup>19</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, 2020**



The number of male fall/crush victims is 4x of females.



4 males



1 female



5 White children

All victims of fall/crush fatalities were White.

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:

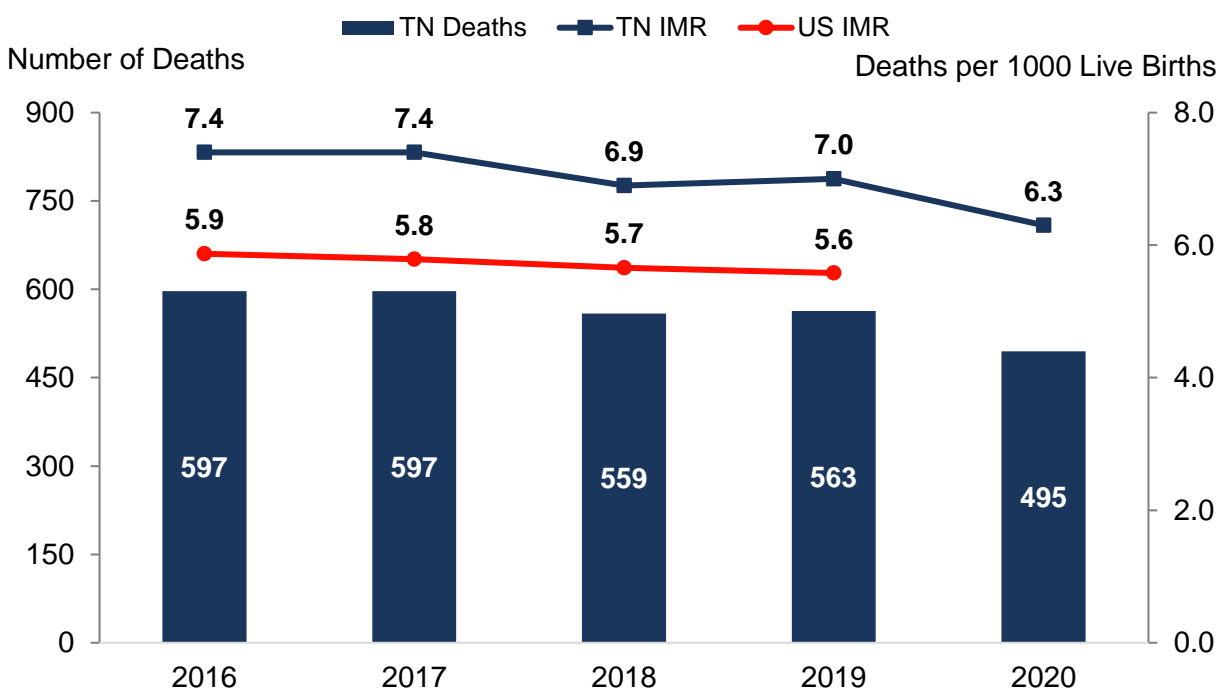
- Safe Kids provides education for parents and the community around home safety, including furniture safety (such as prevention of television and furniture tip overs) and child-proofing the home.
- Safe Kids publishes media reports about fall/crush injuries, including product safety recalls on their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

## Overall Infant Mortality Trends

Infant mortality is the death in children less than 1-year-old. Tennessee's 2020 infant mortality rate (IMR) was 6.3 infant deaths per 1,000 live births, a 15% decrease from 2016/2017 IMR of 7.4 deaths per 1,000 live births. **TN's 2020 IMR of 6.3 deaths per 1000 live births is the lowest reported over a 20-year period.** Similar to the child fatality rate, Tennessee's IMR continues to exceed the national rate. Tennessee's 2020 infant mortality rate is 11% higher than the 2019 US rate, the latest year for which the national rate is available. The 10% decrease in IMR between 2019 and 2020 may be explained by a decline in perinatal mortality. From 2019 to 2020, there was a 19% decrease in early neonatal mortality (death within the first seven days of life) and 10% reduction in perinatal mortality (fetal death at 28 or more weeks of pregnancy to first seven days of life; data not shown).

The number and rate of infant deaths in Tennessee and the U.S. for the last five years are shown in Figure 38.

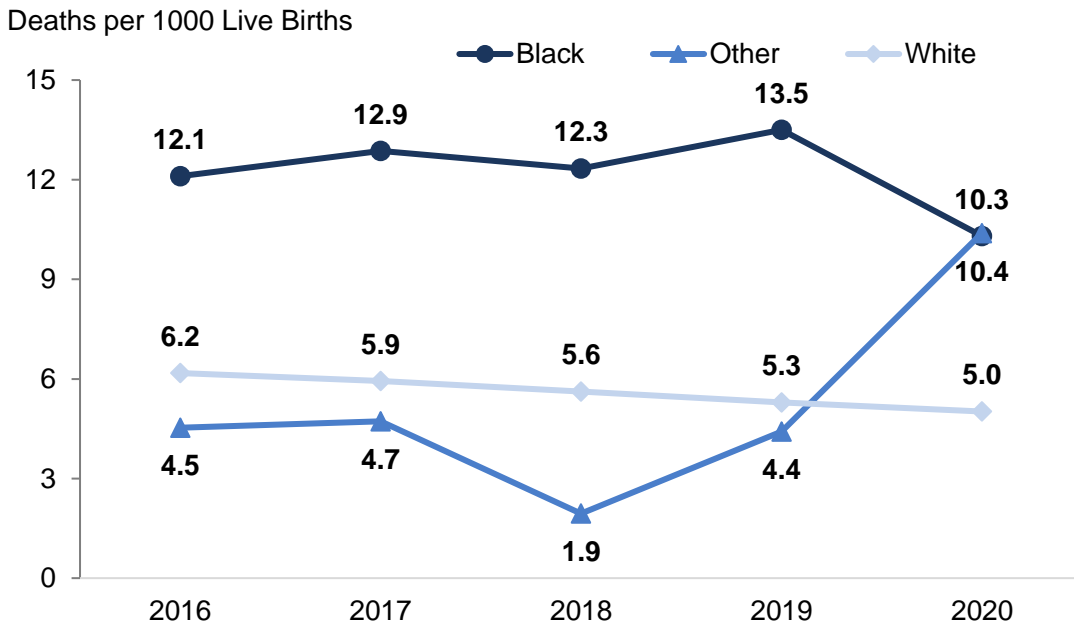
**Figure 38. Number and Rate of Infant Deaths Tennessee, 2016-2020**



Data source: Tennessee Department of Health, Office of Vital Records and Health Statistics, Death Statistical File, 2016-2020.

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). The 2020 White and Black infant mortality rates did not change significantly when compared to their respective 2016 rates.

**Figure 39. Infant Mortality Rate by Race Tennessee, 2016-2020\***



\*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 2020 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, 2016-2020.



**In Tennessee, Black infants are 2x as likely to die as White infants.**

Data source: Tennessee Department of Health, Office of Vital Records and Health Statistics, Death Statistical File, 2016-2020.

**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 2020, Tennessee’s infant mortality rate was 6.3 per 1,000 live births, a 10% decrease from 2019’s rate of 7.0 deaths per 1000 live births.

In Tennessee and across the United States, birth defects, preterm birth, low birthweight, accidents, and sudden infant death syndrome continue to be the leading causes of infant deaths. In Tennessee, however, maternal complications of pregnancy were the fifth leading cause of death compared to the eight leading cause nationally.

**Table 18. Leading Causes of Infant Mortality, Tennessee (2020) vs United States (2019)**

<b>TENNESSEE</b>		<b>UNITED STATES</b>	
1	Birth Defects	1	Birth Defects
2	Preterm Birth & Low Birthweight	2	Preterm Birth & Low Birth weight
3	Accidents (Unintentional Injuries)	3	Accidents (Unintentional Injuries)
4	Sudden Infant Death Syndrome	4	Sudden Infant Death Syndrome
5	Complications of placenta, cord, and membranes	5	Maternal complications of pregnancy
6	Atelectasis (partial lung collapse)	6	Complications of placenta, cord, and membranes
6	Bacterial sepsis of newborn	7	Bacterial sepsis of newborn
8	Maternal complications of pregnancy	8	Respiratory distress of newborn
9	Necrotizing enterocolitis of newborn	9	Diseases of the circulatory system
9	Respiratory distress of newborn	10	Necrotizing enterocolitis of newborn

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 2020, there were 495 Tennessee infant deaths and 414 (84%) were reviewed by local child fatality review teams. As indicated in Table 20, preterm birth (56%) and low birth weight (57%) were factors associated with more than half of 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, 26% of deaths occurred in infant whose mothers reported smoking during pregnancy. 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 19. Risk Factors Associated with Infant Deaths Reviewed by Tennessee CFR Teams, 2020\***

Risk Factors	Total	Reviewed Infant Deaths (%)					
			Natural	Accident	Homicide	Undetermined	Pending
Preterm Birth	231	56%	203	13	1	13	1
Low Birth Weight	235	57%	205	14	1	13	2
Known Intrauterine Smoke Exposure	109	26%	54	20	5	29	1
Late (>6 months) or No Prenatal Care**	54	13%	38	5	1	9	1
Known Intrauterine Drug (including alcohol) Exposure	132	32%	63	22	3	43	1

\*Data are not mutually exclusive. Multiple risk factors may have been for any given death. Reviewed. As a result, the total risk factor occurrence exceeds the total number of deaths

\*\*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.

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

## Sleep-Related Infant Deaths

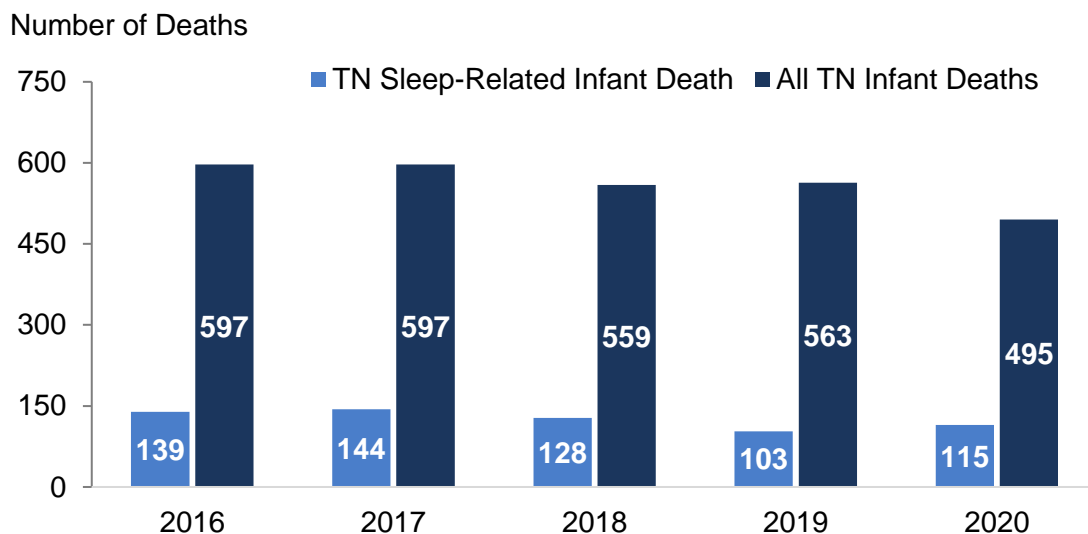
Sleep-related infant deaths are identified when a deceased baby is found:

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

***In 2020, there were 115 infant deaths that resulted from, or were associated with an unsafe sleep environment.***

Sleep-related infant deaths may be categorized as, undetermined, unexplained, Sudden Infant Death Syndrome (SIDS), or accidental suffocation or strangulation in bed. The cause and manner of death in these cases are determined from information obtained at the death scene investigation, including a caregiver interview and doll reenactment and after a medical examiner's autopsy toxicology, and histology are completed. When seemingly healthy infants fail to awaken from sleep, their deaths may be the result of an unsafe sleeping environment or as the result of an undiagnosed childhood malady. The exact cause of death may be difficult, if not impossible, to determine. In 2020, the cause of death in 66 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 2016 through 2020. During this 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 2019 to 2020.

**Figure 40. Number of Sleep-Related Infant Deaths Tennessee, 2016-2020**



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, 2015-2020.

Of the 115 sleep-related deaths in 2020, 39 were confirmed as asphyxia in the sleep environment. The remaining 76 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.

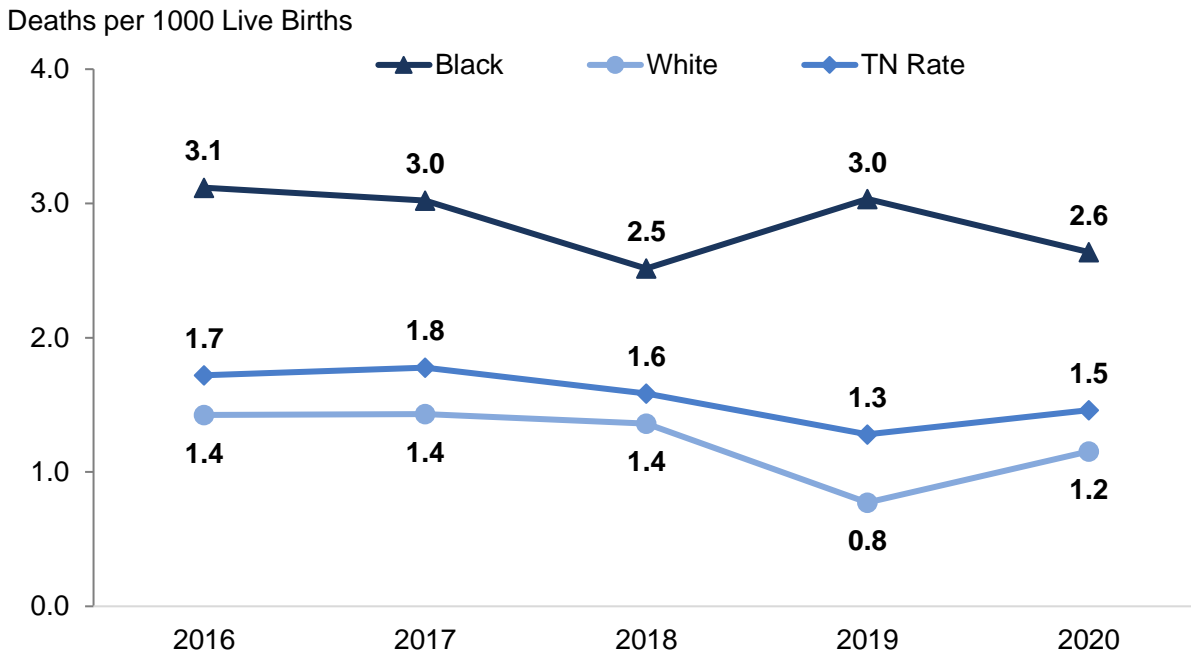
There is significant and longstanding racial disparity among sleep-related infant deaths. While White infants make up most of sleep-related infant deaths in Tennessee, over the past five years, Black infants were cumulatively 3 times as likely to suffer a sleep-related fatality as White infants (data not shown). 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 2020, the disparity between Black and White infants decreased from the highest point in recent years from 3.8 in 2019 to 2.2 in 2020. (Figure 41).

**Table 20. Number of Sleep-Related Infant Deaths and Rates by Race, Tennessee, 2016-2020**

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
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
2019	50	3.0	47	0.8	1.3
2020	43	2.6	69	1.2	1.5

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, 2016-2020.

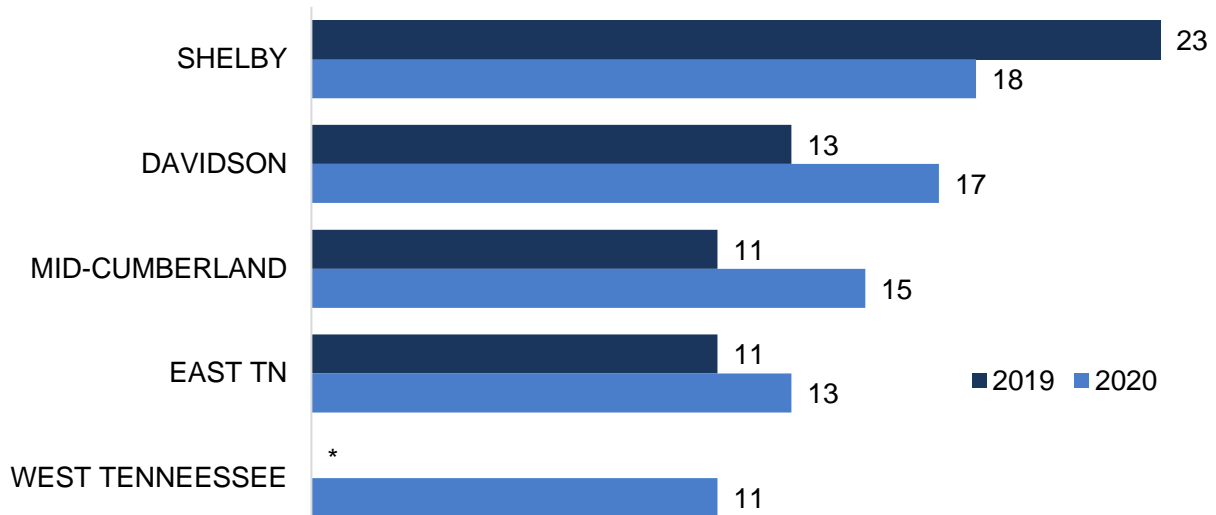
**Figure 41. Sleep-Related Death Rates by Race, Tennessee, 2016-2020**



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, 2016-2020.

A regional distribution of sleep-related infant deaths is provided in Figure 42. In 2020, the region with the highest number of sleep-related infant deaths was Shelby County with 23 cases (22%), followed Davidson County with 13 cases (13%). Shelby metro experienced the largest decrease in sleep-related infant deaths from 2019 to 2020.

**Figure 42. Number of Sleep-Related Infant Deaths in Tennessee by Region, 2019 vs 2020**



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

\*Data suppressed due to confidentiality concerns.

Note: Both years of data are suppressed for South East, South Central, Hamilton, Northeast, Upper Cumberland, Knox, Madison, and Sullivan regions 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 (86%), infant not sleeping in a crib or bassinet (69%), infant not sleeping alone (58%), and infant not sleeping on the back (56%). These risk factors are key points for education in the Tennessee Department of Health’s “ABCs of Safe Sleep” campaign--Babies should sleep **A**lone, on their **B**ack, and in a **C**rib.

**Table 21. Contributing Factors in Sleep-Related Infant Deaths Tennessee, 2016-2020**

Contributing Factors						2020 Percent of
	2016	2017	2018	2019	2020	Sleep-Related Infant Deaths
Unsafe bedding or toys in sleeping area**	126	121	100	89	99	86%
Infant found not sleeping in crib or bassinet	107	103	79	82	79	69%
Infant sleeping with other people	76	82	60	69	67	58%
Infant found not sleeping on back	65	70	70	45	64	56%
Infant sleeping with obese adult	18	14	14	16	17	15%
Drug-impaired adult sleeping with infant	16	11	13	7	8	7%
Alcohol-impaired adult sleeping with infant	4	6	3	2	3	3%
Adult fell asleep while breastfeeding infant	3	5	4	0	5	4%
Adult fell asleep while bottle feeding infant	1	3	6	2	4	3%

\*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 of Tennessee's birthing hospitals and five non-birthing hospitals across Tennessee. All birthing hospitals have developed and implemented safe sleep policies. The policies include information on safe sleep, ensuring that all infants are in a safe sleep environment, and educating staff, parents and caregivers.
- 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.
- 14 hospitals awarded the Best for Babies award in 2020.
- TIPQC's safe sleep quality improvement project ended with each hospital showing improvement in safe sleep through crib audits.
- The evidence-based home visiting and CHANT programs continued to distribute diaper bags with infant safe sleep materials to educate families on the recommended safe sleep practices. The data collected from the diaper bag project has shown to have a change in behavior on how caregivers place their infants to sleep.
- Three trainings for licensed in home childcare centers on infant safe sleep and rules on safe sleep practices by DHS.
- Tennessee Commission on Children and Youth (TCCY) regional councils distribute safe sleep information at regional council meetings and conferences where they exhibit.
- TDH developed and distributed infant safe sleep messaging on social media in October.

*Continued on next page*

- Nurture the Next 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, 515 families were served through these important programs.
- Safe Kids Mid-South in Tennessee started training with first responding agencies to train and implement DOSE across the state.

## 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 and SUID case 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 age 17 years and under 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 2020, 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 23 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 “Unexplained: Unsafe sleep factors” with 46 deaths.



**Table 22. Categorization for SUID Case Registry for Infants, Tennessee, 2020**

<b>Categorization for SUID Case Registry</b>	<b>Number of Infant Deaths</b>
Unexplained: Unsafe sleep factors	43
Explained Suffocation: Unsafe sleep factors	40
Unexplained: Possible suffocation with unsafe sleep factors	20
Excluded	15
Unexplained: No unsafe sleep factors	4
Unexplained: Incomplete Case Information	3
<b>Total</b>	<b>126</b>

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

**Table 23. Unsafe Sleep Mechanism for Infants with a SUID Category of Explained Suffocation or Possible Suffocation Tennessee, 2020**

<b>Unsafe Sleep Mechanism</b>	<b>Number of Infant Deaths</b>
Soft Bedding	49
Overlay	13
Wedging	3
Other	6

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

**Table 24. Categorization for SUID Case Registry for Infants, Tennessee, 2016-2020**

<b>Categorization for SUID Case Registry</b>	<b>Number of Infant Deaths</b>
Excluded	48
Unexplained: No autopsy or death scene investigation	4
Unexplained: Incomplete case info	57
Unexplained: No unsafe sleep factors	17
Unexplained: Unsafe sleep factors	271
Unexplained: Possible suffocation with unsafe sleep factors	74
Explained: Suffocation	199
<b>TOTAL</b>	<b>670</b>

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

Between 2016-2020, most (92%) of all SUID deaths were sleep related. SUID investigation was completed for more than 4 out of 5 (88%) of all deaths, and more than half (56%) of all SUID investigation had a doll reenactment.

**Table 25. Demographic Characteristics of SUID Registry for Infants, Tennessee, 2016-2020**

<b>Sex</b>	<b>Number of Infant Deaths</b>
Male	403
Female	267
<b>Race</b>	
Black	248
Other	22
White	400

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 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 28 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.

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 28 summarizes how the teams have categorized the 2020 SDY cases. Twenty-five child deaths were categorized as ‘explained infant suffocation’ while 33 child deaths among children 1 to 17 years-old were categorized as ‘explained other’. Seven deaths were labelled as ‘unexplained, possible cardiac’, 6 deaths labelled as ‘unexplained SUDEP’, and 48 deaths labelled as ‘unexplained death’.

**Table 26. Number of SDY Case Registry and Percentage of SUID Case Registry cases, Tennessee, 2016-2020**

Year	All SDY Registry Cases	SUID	SUID as Percent of SDY Cases
2016	210	153	73%
2017	234	154	66%
2018	232	141	61%
2019	177	116	66%
2020	154	106	69%
<b>Total</b>	<b>1007</b>	<b>670</b>	<b>67%</b>

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

**Table 27. Categorization for SDY Case Registry for Children Ages 0-17 Years Tennessee, 2020**

Categorization for SDY Case Registration	Age		
	< 1 yr*	1-17 Yrs	Total
Explained infant suffocation	25	0	25
Explained other	2	33	35
Incomplete case information	1	2	3
Unexplained, possible cardiac	3	4	7
Explained Cardiac	1	3	4
Unexplained, possible cardiac and SUDEP	0	1	1
Unexplained, SUDEP	1	5	6
Unexplained death	46	2	48
<b>Total</b>	<b>79</b>	<b>50</b>	<b>129</b>

\*This total differs from the Table 23 SUID Categorization total because all 2020 deaths have not been categorized by the SDY Advanced Review team as of December 2021. 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.

**Table 28. SDY Case Registry Demographic Characteristics, Tennessee, 2016-2020**

Age at Death	Number of Deaths	Percentage
<1 year	671	66.6%
1-4 years	106	10.5%
5-9 years	50	5.0%
10-14 years	66	6.6%
15-17 years	114	11.3%
<b>Sex</b>		
Male	615	61.1%
Female	392	38.9%
<b>Race</b>		
Black	352	35.0%
Other	32	3.2%
Unknown	2	0.2%
White	621	61.7%
<b>TOTAL</b>	<b>1007</b>	

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

**Table 29. Manner and Cause of Death Determination of SDY Case Registry Deaths, Tennessee, 2016-2020**

Manner of Death	Number of Deaths
Missing	1
Natural	241
Accident	324
Undetermined	407
Pending	32
Unknown	2
<b>Cause of Death</b>	
From an external cause of injury	333
From a medical condition	253
Undetermined if injury or medical cause	400
Unknown	21
<b>TOTAL</b>	<b>1007</b>

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

**Table 30. SDY Case Registry Categorization, Tennessee, 2016-2020**

SDY Categorization	Number of Deaths
Not yet Categorized	53
Excluded from SDY Registry	9
Incomplete case info	72
Explained cardiac	24
Explained neurological	12
Explained infant suffocation	176
Explained other	223
Unexplained, possible cardiac	49
Unexplained, possible cardiac and SUDEP	11
Unexplained, SUDEP	24
Unexplained death	354
<b>TOTAL</b>	<b>1007</b>

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

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

For the 2020-2021 year, funds from the SDY Registry project were allocated to continue ongoing prevention efforts. Prevention efforts included continuing with the Safe Sleep Diaper Bag Project in collaboration with the EBHV program and CHANT programs. Continue to collect data through those programs to understand behavior change with the education and materials provided with the project. The purchase of portable cribs and safe sleep materials. Funds were also allocated for 22 local medical examiners to attend the Death Scene Investigation Training hosted virtually from St. Louis.

Among the 2020 deaths, 172 SDY cases were identified and reviewed by local teams. Of those cases 109 were investigated by an Advanced Review Team. From the start of the SDY program in Tennessee in 2015 1,256 cases have been closed by the local CFR teams, and 865 cases have been referred and closed with the Advanced Review Team.

## Prevention Recommendations for 2022

### Safe Sleep

**Increase current safe sleep education efforts such as the safe sleep diaper bag project, hospital project, safe sleep education to intergenerational caregivers, faith communities and general distribution of safe sleep education materials while targeting outreach to areas with the largest disparities in infant sleep-related deaths.**

Infant sleep-related deaths continue to be one of the leading preventable deaths for children under one year of age. In 2020, there were 115 infant sleep-related deaths, a slight increase from 103 in 2019. The highest risk factors in these deaths are infants that are placed to sleep in an unsafe environment that includes soft bedding (86%), not sleeping in a safety approved crib or bassinet (69%), sharing sleep surface with another person (58%), or placed to sleep on their stomach (56%). The recommendation from the American Academy of Pediatrics (AAP) continues to be that infants should be placed alone, with no other soft bedding, blankets, stuffed animals or people, on their back, and in a safety approved crib. As the rate of infant sleep related deaths has slowly decreased from 1.7 in 2016 to 1.5 in 2020, the disparity of Black infant sleep related death rate (2.6 death per 1,000 live births) remains 2.2 times higher than white infants (1.2 deaths per 1,000 births). The following strategies have been recommended to continue to address the risk factors and disparities to infant safe sleep.

TDH will continue to promote and support the infant safe sleep diaper bag project through the EBHV and CHANT programs. The diaper bag project provides education on infant safe sleep along with items to promote safe sleep behaviors. Data collected before and after the education is provided has shown behavior change and the effectiveness of items to improve infant safe sleep practices.

TDH will continue to collaborate with local birthing hospitals to encourage the facilities to meet the BEST criteria. The BEST criteria consist of benchmarks for breastfeeding initiation, early elective delivery elimination, and safe sleep. The safe sleep criteria include modeling safe sleep in the facility by conducting crib audits with more than 90% of cribs modeling safe sleep.

TDH will continue to purchase portable cribs, sleep sacks and educational materials for hospitals, local health departments, and community stakeholders to distribute to families in need of safe sleep environment. TDH, DCS, TCCY, and Nurture the Next will provide safe sleep education and materials to caregivers of infants.

### Intentional Violence- Homicide/Suicide/Firearm

**Increase efforts to address intentional violence by implementing Good Behavior Game, increasing Gatekeeper training, promoting Counseling on Access to Lethal Means (CALM) training, increasing awareness of mental health resources in the community, promoting partnerships with gang violence prevention agencies, and implementing a trauma informed workplace designation.**

In 2020, there were 67 children that died by homicide, 75% of these deaths involved the use of a firearm and 38 children died by suicide, 65% of these deaths involved the use of a firearm. Total there were 70 deaths in Tennessee in 2020 that involved the use of a firearm with 6 of those fatalities determined to be accidental. Due to the increase in firearm, homicide, and suicide fatalities the following recommendations have been made.

TDH will promote CALM across the state for health and mental health providers. CALM is a free online training for professionals to learn how to help those at risk for suicide put time and distance between themselves and any lethal means. It encourages safe storage of lethal means, such as firearms and medications, during a suicidal crisis.

TDH will collaborate with DOE to provide training for a minimum of 100 elementary school teachers to implement the “Good Behavior Game” in three rural counties in TN. Students participating in the Good Behavior Game are less likely to need behavioral services, less likely to abuse drugs and alcohol and have lower suicide and depression.

TDH will collaborate with TSPN to provide Gatekeeper training to the community along with promoting suicide prevention PSAs on social media and program websites to increase education to community members and professionals about free Gatekeeper training.

TDH will continue to monitor weekly suicide attempts in ESSENCE (Electronic Surveillance System for the Early Notification of Community-based Epidemics) and notify community partners when there are alerts. TDH, TSPN, and TDMHSAS will collaborate with these partners to increase the number of actions taken, such as offering gatekeeper training, based on these alerts. Gatekeeper training teaches the layperson and professional the warning signs of suicide and how to respond.

TDH will promote partnerships, in collaboration with the Tennessee Bureau of Investigation (TBI), to reduce gang and community violence by sharing data on firearms deaths with these agencies.

TDH will work with East Tennessee State University to address adverse childhood experiences (ACEs) through implementation of a trauma informed workplace designation. Reducing ACEs can impact intentional violence.

### **Motor Vehicle Crashes**

**Increase the number of schools in high-risk counties implementing evidence-based motor vehicle crash prevention programs in local high schools and continue to promote the proper use of child safety seats and seat belts in youth.**

About half (52%) of children killed in motor vehicle collisions were not using protective measures or using them incorrectly, this includes a seat belt, child/booster seat, and/or a helmet\*. TDH will continue to recruit schools to implement evidence-based programs such as Checkpoints™ and Battle of the Belt in high fatality and crash counties. TDH will provide training to additional schools to implement the virtual version of Checkpoints in school districts that are not currently participating in the program.

TDH will continue to utilize the Child Safety Fund for the distribution of child safety seats through community non-profit agencies. TDH will develop and disseminate information on correct use of car seats.

\*MVC includes ATV and motorcycle deaths, therefore helmet is included

# Data to Actions

## ***Statewide Prevention Activities***

In December 2020, the State Child Fatality Review Team met to review aggregate child death data from the 2019 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 and, in conjunction with colleagues from other state agencies, local child fatality review teams and other community partners, accomplished the following:

### **Safe Sleep**

Increase the number of hospitals meeting the safe sleep criteria for the BEST award.

- In 2021, TDH, along with the Tennessee Hospital Association, continued the *BEST for Babies* award for birthing hospitals. In 2020 there were 14 facilities that earned the award. Five of the facilities had not been awarded previously.
- All birthing facilities were contacted to submit crib audits and determine the need for safe sleep materials.
- All facilities with a Cribs for Kids designation were re-certified in 2020-2021.

Analyze data to determine the hospitals representing care for disproportionately affected communities and focus on these areas.

- Heat map was created with showing the location of all the birthing facilities compared to the infant sleep related death rate by region.
- 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.

Purchase portable cribs, sleep sacks, and educational materials for hospitals, local health departments, and community agencies to distribute to families in need of a safe sleep environment.

- Over 1,700 portable cribs and 1,200 infant sleep sacks were supplied to regional health departments, hospitals and evidence-based home visiting agencies to distribute to families that could not afford to purchase a safe sleep environment for their infants.

Provide data to collaborating agencies highlighting areas representing care of disproportionately affected communities to ensure additional emphasis on those areas to get families the resources they need for safe sleep.

- Three educational sessions were conducted with licensed in-home childcare centers on infant safe sleep practices and DHS rules on infant sleep.
- Data was provided to partnering agencies including the child fatality data dashboard to highlight areas in the state with the highest rate of sleep-related deaths.

Include the diaper bag project in all new EBHV sites and analyze data from the diaper bag projecting by race and location to determine factors for behavior change.

- TDH continued to collaborate with EBHV and CHANT to distribute the safe sleep diaper bag with materials to educate families and infant caregivers about safe sleep.
- Data from the diaper bag project was analyzed by region to determine areas with largest behavior change.

### **Motor Vehicle Safety**

Recruit schools to implement evidence-based programs to reduce teen motor vehicle crashes by hosting 3 webinars.

- TDH continued 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. The 2020 school year did not have much involvement due to unique circumstances due to Covid-19.

Implement the virtual version of Checkpoints™ in school districts that are not currently participating in the program.

- TDH developed and distributed a virtual version of *Checkpoints*™.

Promote CDC pedestrian safety tips in schools and on social media. Distribute back over prevention fact sheet to those receiving funds to distribute car seats.

- Pedestrian safety tips were shared through the THSO's social media.

Fund the Child Safety Fund for the distribution of child safety seats.

- TDH continued to fund community agencies to purchase and distribute child safety seats.
- TDOT provided education to TDH Child Safety Fund partners on the dangers of leaving your children in a hot vehicle.

Promote helmet use when riding a bicycle or operating a motorized vehicle such as dirt bikes, motorcycles, or ATVs.

- Safe Kids continued to share bicycle helmet safety across the state during the spring and summer.

### **Prematurity**

Conduct in-depth analysis on prematurity data to include top circumstances of prematurity by region.

- Data analysis completed on premature births to identify modifiable risk factors by health department region.
- Data on prematurity shared with local community agencies.
- TPCA provided training to FQHCs on LARCs and NRT in high risk rural and urban areas.
- TDH provided support for the education on topics such as LARCs, Neonatal Abstinence Syndrome, and reducing unintended pregnancies.
- TDH provided funding to the Primary Care Association for nicotine replacement therapy for women of childbearing age.



Increase the number of women of childbearing age participating in family planning by expanding and promoting telehealth.

- Telehealth expanded within TDH to increase access for women in rural communities. PSAs and promotional ads run to promote telehealth services.

## **Suicide**

100% of hospitals report into the ESSENCE Reporting system.

- Approximately 95% of hospitals are reporting into ESSENCE.

Monitor weekly suicide attempts in ESSENCE and notify community partners when there are alerts and collaborate with community partners to increase the number of actions taken with an ESSENCE alert.

- Weekly emails are sent out to key stakeholders with data and information on where ESSENCE alerts are occurring, along with information on key factors associated with the alerts.
- The TDH Suicide Prevention Program developed a model for rapid prevention response using surveillance data from ESSENCE. The rapid prevention response plan assists state and local partners to target areas in the state showing increased emergency department visits for suicide-related behavior in children 18 and under.

Provide training for a minimum of 100 teachers for the “Good Behavior Game”.

- This recommendation is still in progress and in addition to this training the following has also been completed.
- TDH funded TSPN to expand agencies that are implementing the Zero Suicide Initiative to improve care and outcomes for individuals at risk for suicide in health and behavioral health care systems, specifically those who serve rural residents.

Analyze data from the National Violent Death Report System (NVDRS) to determine specific fields not collected by investigators on deaths by suicide.

Promote PSAs on social media and program websites to increase education to community members and professionals about free Gatekeeper training

- Applied Suicide Intervention Skills Training (ASIST) provided intensive suicide first-aid training, teaching participants how to identify persons with thoughts of suicide, seek a shared understanding of reasons for dying and living, develop a safety plan, and prepare for follow-up.
- TDH implemented Counseling on Access to Lethal Means Training (CALM), helping providers implement counseling strategies within their practices to assist clients at risk for suicide and their families to reduce access to lethal means, including medications and firearms.
- TDH received the CDC Comprehensive Suicide Prevention Grant last year to implement a public health approach to suicide prevention. This grant will fund several activities in the next 4 years to reduce suicide deaths and attempts with some activities specifically focusing on youth.

## ***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**

- Presented family planning education at local treatment clinics.
- Promoted infant safe sleep at all local birthing hospitals and provided portable cribs to families in need.

### **Judicial District 2**

- Collaborated with local OB providers to educate women about Neonatal Abstinence Syndrome (NAS) and
- Referred women from care coordination services to family planning services and provided contraceptives to interested women.
- Provided portable cribs to local hospitals to distribute to families in need.
- Distributed safe sleep materials to families in the CHANT and Home Visiting programs.

### **Judicial District 3**

- Provided portable cribs to local hospitals and CHANT staff for families in need.

### **Judicial District 4**

- Distributed materials to families to look and check for children before leaving a vehicle.
- Distributed diaper bags to families with information about child health and safety.

### **Judicial District 5**

- Hosted monthly car seat safety checks.
- Distributed safe sleep materials at car seat checkpoints for families with infants.
- Implemented safe sleep training at the local sheriff's academy.

### **Judicial District 6**

- Distributed portable cribs to families in need and provided infant safe sleep education.
- Collaborated with local doulas to increase awareness of their services and improve maternal and child health.

### **Judicial District 7**

- Continued to distribute infant safe sleep materials to community agencies.
- Collaborated with local children's hospital to distribute drowning prevention materials.
- Child Advocacy Center provides child safety seat checks and collaborates with TDH to distribute portable cribs to families in need.
- Local Child Advocacy Center implemented suicide prevention education and screening.

### **Judicial District 8**

- Distributed pack and plays through local CHANT program.

### **Judicial District 9**

- Teen pregnancy and STI prevention program started at local Child Advocacy Center.

### **Judicial District 10**

- Provided infant safe sleep education through CHANT services, home visiting agencies, and local health departments.
- Conducted child safety seat checks through the CHANT program.

Judicial District 11

- Distributed portable cribs to families in need of a safe sleep environment.
- Collaborated with local OB clinics to distribute prenatal vitamins, resources, and folic acid to pregnant women.

Judicial District 12

- Provided infant safe sleep education in their local health departments along with portable crib distribution.

Judicial District 1901

- Local health department distributing safe sleep education through CHANT program.

Judicial District 20

- Developed four workgroups to address various child fatality recommendations in the community.
- Continued to provide safe sleep education to families in the community with a focus on high-risk zip codes.

Judicial District 26

- Continued to distribute safe sleep materials and portable cribs to families in need.

Judicial District 30

- Collaborated with local Safe Kids Coalition to plan for DOSE trainings.
- 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 2020 child mortality rate for Tennessee was 57.0 child deaths per 100,000 children, a 6% decrease from 2019 child mortality rate of 60.5 deaths per 100,000 children. Tennessee's 2020 child fatality rate is 17% above the 2019 national average, leaving important work to be done to protect our children.

Several key areas identified in this report warrant further attention, as recommended by the State Team. Deaths due to prematurity, cancer, motor vehicle related, and congenital anomaly decreased from 2019 to 2020. 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 focus on intergenerational caregivers, increased suicide prevention and mental health services, and increased promotion of the leading drivers of birth defects.

Deaths due to drowning, homicide, sleep-related causes, suicide, and unintentional asphyxia increased from 2019 to 2020. Several strategies are recommended to reduce sleep-related deaths, homicide, and suicide including the reducing access to lethal means, safe sleep practices, and reduction of smoking during pregnancy. Enrollment in programs such as evidence-based home visiting, and care coordination is also recommended to prevent child death.

# Appendices

## *Appendix A—List of Tables and Figures*

### Tables

Table 1	Number and Rate of Child Death for Ages 0-17 Years by Race, Tennessee, 2016-2020
Table 2	Manner of Child (Ages 0-17 Years) Death, by Age, Race and Sex, Tennessee, 2020
Table 3	Cause of Death by Manner of Death for Children Ages 0-17 Years Tennessee, 2020
Table 4	Cause of Death, Summary for Children Ages 0-17 Years, Tennessee, 2020
Table 5	External Cause of Death (Injury Causes) for Children Ages 0-17 Years by Age Group Tennessee, 2020*
Table 6	Medical Cause of Death for Children Ages 0-17 Years by Age Groups Tennessee, 2020
Table 7	Acts of Child Abuse and Neglect among Reviewed Deaths for Children Ages 0-17 Years Tennessee, 2020*
Table 8	Children with Disability for Reviewed Deaths of Children Ages 0-17 Years by Age Group Tennessee, 2020*
Table 9	Children with Special Circumstances for Reviewed Deaths of Children Ages 0-17 Years Tennessee, 2020*
Table 10	Suicides among Children Ages 0-17 Years by Victim Age Groups and Method Tennessee, 2020*
Table 11	Firearm-Related Deaths for Children Ages 0-17 Years by Manner of Death and Age Group, Tennessee, 2020
Table 12	Homicide and Suicide Deaths due to Firearms for Children 0-17 Years by Owner of Firearm, Tennessee, 2020
Table 13	Asphyxia Cause of Death for Children Ages 0-17 Years by Age Groups Tennessee, 2020
Table 14	Motor Vehicle/Other Transport Fatalities for Children Ages 0-17 Years by Age Groups and Position with Respect to Vehicle, Tennessee, 2020
Table 15	Motor Vehicle Deaths among Children Ages 0-17 Years by Vehicle Type and Protective Measure, Tennessee, 2020
Table 16	Drowning Deaths for Children Ages 0-17 Years by Location and Age Groups Tennessee, 2020
Table 17	Poison-Related Deaths among Children Ages 0-17 Years by Substance and Age Groups Tennessee, 2020*
Table 18	Leading Causes of Infant Mortality, Tennessee (2020) vs United States (2019)
Table 19	Risk Factors Associated with Infant Deaths Reviewed by Tennessee CFR Teams, 2020*
Table 20	Number of Sleep-Related Infant Deaths and Rates by Race, Tennessee, 2016-2020
Table 21	Contributing Factors in Sleep-Related Infant Deaths Tennessee, 2016-2020*
Table 22	Categorization for SUID Case Registry for Infants Tennessee, 2020
Table 23	Unsafe Sleep Mechanism for Infants with a SUID Category of Explained Suffocation or Possible Suffocation Tennessee, 2020
Table 24	Categorization for SUID Case Registry for Infants Tennessee, 2016-2020
Table 25	Demographic Characteristics of SUID Registry for Infants, Tennessee, 2016-2020
Table 26	Number of SDY Case Registry and Percentage of SUID Case Registry cases, Tennessee, 2016-2020
Table 27	Categorization for SDY Case Registry for Children Ages 0-17 Years, Tennessee, 2020
Table 28	SDY Case Registry Demographic Characteristics, Tennessee, 2016-2020.
Table 29	Manner and Cause of Death Determination of SDY Case Registry Deaths, Tennessee 2016-2020
Table 30	SDY Case Registry Categorization, Tennessee, 2016-2020

Table 31 Infant Mortality (Number and Rate) by Region, 2020

Table 32 Child Fatality (Number and Rate) by Region, 2020

## Figures

- Figure 1 Number and Rate of Child Deaths (Ages 0-17 Years) Tennessee, 2016-2020
- Figure 2 Child Mortality Rate for Ages 0-17 Years by Race Tennessee, 2016-2020\*
- Figure 3 Child Deaths Reviewed by Age Group, Tennessee, 2020 (n=776)
- Figure 4 Child Deaths Reviewed for Ages 0-17 by Sex, Tennessee, 2020 (n=776)
- Figure 5 Child Deaths Reviewed for Ages 0-17 by Race, Tennessee, 2020 (n=776)
- Figure 6 Manner of Death Summary, Children Ages 0-17 Years, Tennessee, 2020 (n=776)
- Figure 7 Cause of Death Summary, Children Ages 0-17 Years, Tennessee, 2020 (n=776)
- Figure 8 Child (0-17 years) Mortality Rate by Manner of Death in Tennessee. 2016-2020
- Figure 9 Rate of Child Mortality Ages 0-17 Years by Cause of Death Tennessee, 2016-2020
- Figure 10 Preventability of Child Deaths Ages 0-17 Years by Cause of Death Tennessee, 2020
- Figure 11 Homicide Deaths and Rates per 100,000 Population Ages 0-17 Years Tennessee and US, 2016-2020
- Figure 12 Demographic Distribution of Homicide Deaths for Children Ages 0-17 Years, Tennessee, 2020
- Figure 13 Weapon Type used in Homicide Deaths for Children Ages 0-17 Years Tennessee, 2020
- Figure 14 Homicide Deaths for Children Ages 0-17 Years by Victim's Location Tennessee, 2020
- Figure 15 Suicides and Suicide Rates per 100,000 Children Ages 0-17 Years Tennessee and the US, 2016-2020
- Figure 16 Demographic Distribution of Suicides for Children Ages 0-17 Years Tennessee, 2020
- Figure 17 Method of Suicides for Children Ages 0-17 Years, Tennessee, 2020
- Figure 18 Location of Suicides for Children Ages 0-17 Years, Tennessee, 2020
- Figure 19 Firearm-Related Deaths and Rates per 100,000 Children Ages 0-17 Years Tennessee, 2016-2020\*
- Figure 20 Demographic Distribution of Firearm-Related Deaths for Children Ages 0-17 Years Tennessee, 2020
- Figure 21 Firearm-Related Deaths for Children Ages 0-17 Years by Manner of Death, Tennessee 2020\*
- Figure 22 Firearm-Related Deaths for Children Ages 0-17 Years by by Firearm Type, Tennessee, 2020
- Figure 23 Unintentional Asphyxia Deaths and Rates per 100,000 Children Ages 0-17 Years Tennessee and the US, 2016-2020\*
- Figure 24 Demographic Distribution of Asphyxia Deaths for Children Ages 0-17 Years Tennessee, 2020
- Figure 25 Motor Vehicle-Related Deaths and Rates per 100,000 Children Ages 0-17 Years Tennessee and the US, 2016-2020
- Figure 26 Demographic Distribution of Motor Vehicle Fatalities for Children Ages 0-17 Years Tennessee, 2020\*
- Figure 27 Drowning Deaths and Rates per 100,000 Children Ages 0-17 Years Tennessee and the US, 2014-2020
- Figure 28 Demographic Distribution of Drowning Deaths for Children Ages 0-17 Years Tennessee 2020
- Figure 29 Drowning Deaths for Children Ages 0-17 Years, by Location and Activity at the Time of Death, Tennessee, 2020\*
- Figure 30 Fire/Burn Deaths and Rates per 100,000 Children Ages 0-17 Years Tennessee and the US, 2014-2020
- Figure 31 Demographic Distribution of Fire/Burn Deaths for Children Ages 0-17 Years Tennessee, 2020
- Figure 32 Fire/Burn Deaths for Children Ages 0-17 Years by Fire Source Tennessee, 2020

- Figure 33 Fire/Burn Deaths for Children Ages 0-17 Years by Structure Type Tennessee, 2020
- Figure 34 Poisoning Deaths and Rates per 100,000 Children Ages 0-17 Years Tennessee and the US, 2016-2020
- Figure 35 Demographic Distribution of Poison-Related Deaths for Children Ages 0-17 Years Tennessee, 2020
- Figure 36 Fall/Crush Deaths and Rates per 100,000 Children Ages 0-17 Years Tennessee and the US, 2016-2020\*
- Figure 37 Demographic Distribution of Fall/Crush Deaths for Children Ages 0-17 Years Tennessee, 2020
- Figure 38 Number and Rate of Infant Deaths Tennessee, 2016-2020
- Figure 39 Infant Mortality Rate by Race Tennessee, 2016-2020\*
- Figure 40 Number of Sleep-Related Infant Deaths Tennessee 2016-2020
- Figure 41 Sleep-Related Death Rates by Race, Tennessee, 2016-2020
- Figure 42 Number of Sleep-Related Infant Deaths in Tennessee by Region, 2019 vs 2020
- Figure 43 Infant Mortality Rate across Tennessee Health Regions, 2020
- Figure 44 Child Fatality Rate across Tennessee Health Regions, 2020



## ***Appendix B—Glossary***

**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 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— Infant and Child Deaths by Region of Residence

Figure 43. Infant Mortality Rate across Tennessee Health Regions, 2020

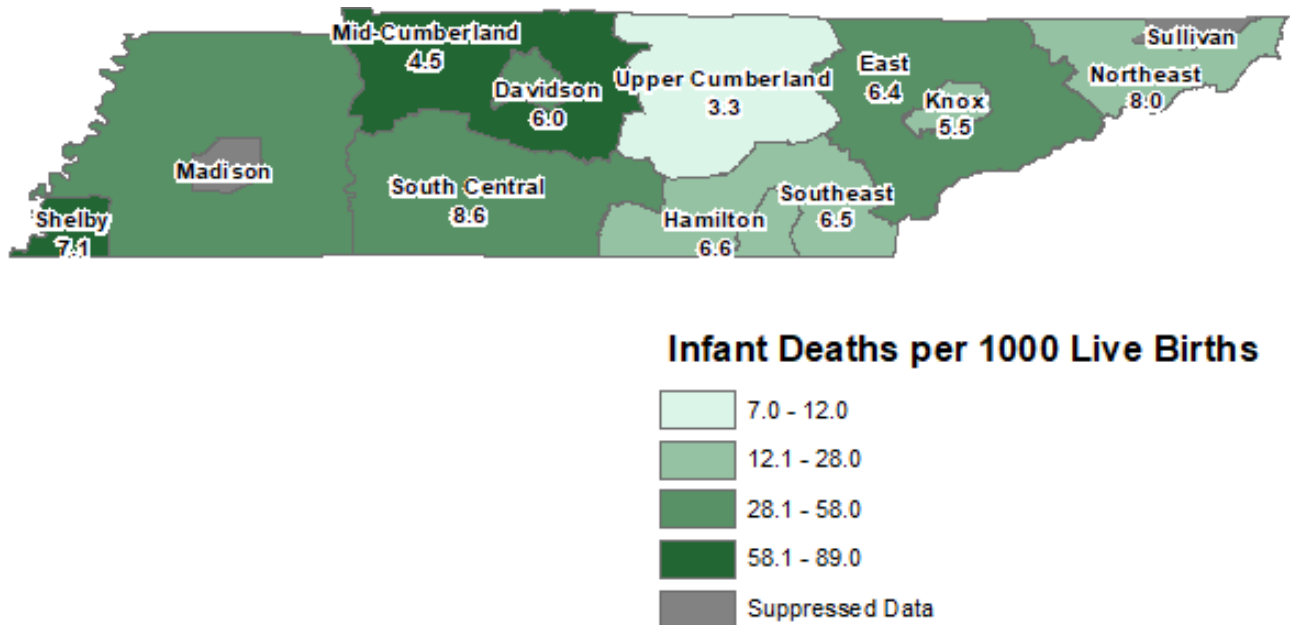


Table 31. Infant Mortality (Number and Rate) by Region, 2020

Region	Number	Deaths per 1000 Live Births
Davidson	58	6.0
East Tennessee	49	6.4
Hamilton	28	6.6
Knox	28	5.5
Madison	*	*
Mid Cumberland	72	4.5
North East	25	8.0
Shelby	89	7.1
South Central	43	8.6
South East	23	6.5
Sullivan	*	*
Upper Cumberland	12	3.3
West Tennessee	51	9.4
<b>Total</b>	<b>495</b>	<b>6.3</b>

Figure 44. Child Fatality Rate across Tennessee Health Regions, 2020

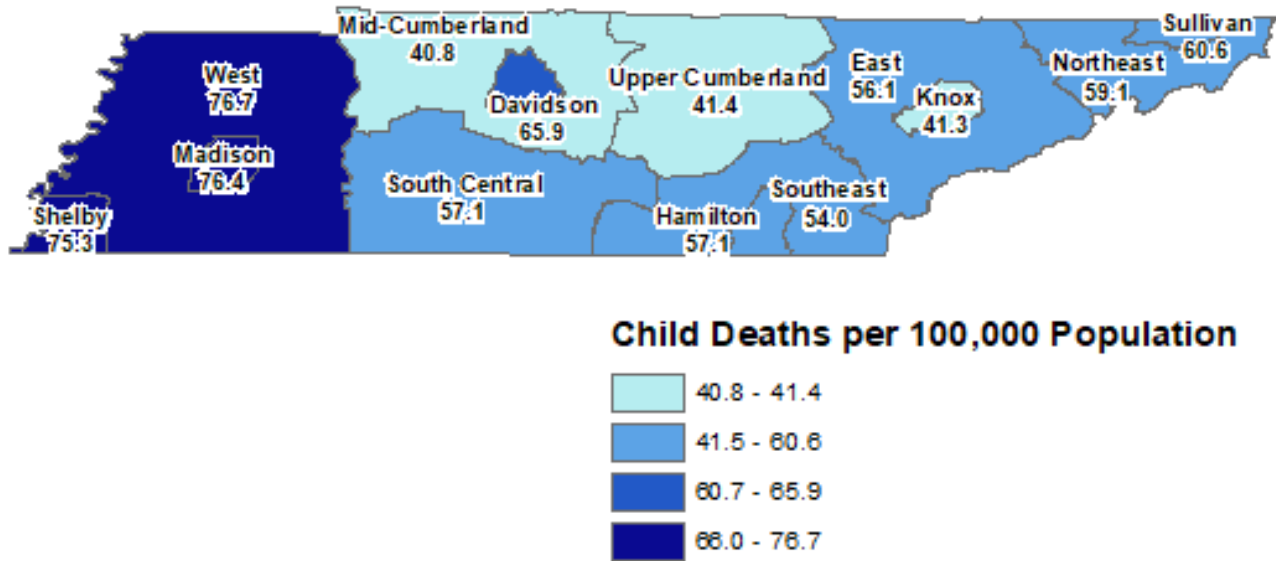


Table 32. Child Fatality (Number and Rate) by Region, 2020

Region	Number	Deaths per 100,000
Davidson	94	65.9
East Tennessee	88	56.1
Hamilton	44	57.1
Knox	41	41.3
Madison	17	76.4
Mid Cumberland	135	40.8
North East	39	59.1
Shelby	174	75.3
South Central	54	57.1
South East	38	54.0
Sullivan	18	60.6
Upper Cumberland	31	41.4
West Tennessee	86	76.7
<b>Total</b>	<b>859</b>	<b>57.0</b>

## Appendix D—State Level Success Stories

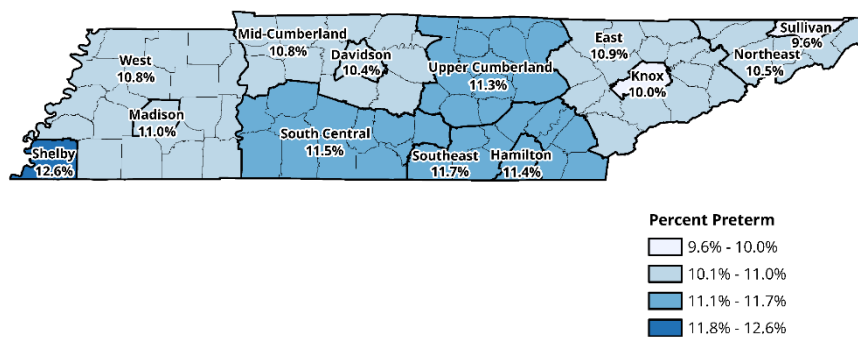
### Analyzing Prematurity Data to Increase Awareness of Modifiable Risk Factors

Based on the 2021 CFR Prevention recommendation TDH conducted an in-depth analysis on prematurity data including statistics on modifiable and preventable risk factors by the thirteen health department regions. Prematurity and low birthweight are the leading contributing factors in Tennessee's high infant mortality rate of 6.3 deaths per 1,000 births. These factors are present nearly two-thirds of all infant deaths and more than 10% of all births in Tennessee. Infant prematurity is defined as a birth that occurs prior to 37 weeks gestation and low birthweight is defined as an infant born weighing 2500 grams (5.5 lbs.) or less. The earlier a baby is born, the higher the risk of death or serious disability.

According to the CDC, risk factors that increase the chances a woman will have a preterm birth include: delivering a premature baby in the past, being pregnant with multiples, tobacco use and substance abuse, and short time (less than 18 months) between pregnancies, maternal weight, family history of preterm birth, short pregnancy intervals, connective tissue disorders, diabetes, high blood pressure and preeclampsia, infections such as STIs, intrahepatic cholestasis, thrombophilia, late or no prenatal care, not gaining enough weight, smoking, drinking alcohol, using street drugs, or abusing prescription drugs, having a lot of stress in your life, lower socioeconomic status, domestic violence, working long hours, high exposure to air pollution, chemicals, secondhand smoke, advance maternal age, or teen pregnancy. However, a woman can still have a premature birth even if she has no known risk factors. Many of these risk factors are preventable and according to the CDC and March of Dimes identifying women at risk for preterm delivery and offering effective treatments to prevent preterm birth.

The findings from the analysis included vastly different contributing risk factors when going from one end of the state to the other. For example, in Shelby County, 54.4% of all women who had a preterm birth from 2016-2019 had a household income less than \$25,000 annually versus just 14.9% in Knox County. Inversely, East and Northeast regions had the highest incidences of gestational diabetes in pregnant women at around 11% while Shelby County had the lowest at 5.2%. This data and information analyzed was shared with local Child Fatality Review teams as well as local Fetal and Infant Mortality Review (FIMR) teams. The local teams then shared the information with their community stakeholders and included the information in their local recommendations.

**Preterm Birth (<37 Weeks Gestation) by Region, 2015-2019**



## **New Safe Stars Act to Prevent Sudden Death in the Young**

In 2014, TDH received funding from the CDC for the Sudden Death in the Young (SDY) case registry. The SDY Case Registry builds on the child death review program and uses the National Center for Fatality Review and Prevention's Case Reporting System, bringing together information about the circumstances associated SDY cases, as well as information about investigations into these deaths. Participating states and jurisdictions use data about SDY trends and circumstances to develop strategies to reduce future deaths. The SDY component of the Case Registry was created to increase the understanding of the prevalence, causes, and risk factors for infants, children, and young adults who die suddenly and unexpectedly and to inform strategies to prevent future deaths. The Sudden Death in the Young (SDY) Case Registry gathers information to learn more about young people who die suddenly and unexpectedly. Often it is hard to determine the cause for many sudden deaths in young people. This means that doctors, scientists and families really do not have a good understanding of how often these deaths happen and what causes these deaths, which makes it more difficult to prevent more deaths like these. The SDY Case Registry gathers information to better understand these deaths.



One component of SDY is looking specifically at sudden death due to cardiac issues and sudden death due to epilepsy. Some of these deaths are the result of unknown cardiac issues which can often be genetic. These deaths are preventable through screenings and having available resources to address when a child goes unresponsive, such as an AED. To address the issues, the legislative session in 2021 passed the Safe Stars Act. This new policy builds on the current Safe Stars initiative to establish certain health and safety requirements in school youth athletic activities.

To address sudden death in the young and youth sport injury in TN schools, the Safe Stars Act was passed in 2021 and will require that starting in the 2022-2023 school year that every school with youth athletics must implement specific safety standards. These standards include providing information to parents and students via website, informational meeting, and a required signature form about sudden cardiac arrest and electrocardiogram (EKG) testing. Additionally, all coaches must acknowledge and complete a course on CPR and AED training.

Each year the schools will be required to hold an informational meeting for students, parents, coaches, and school officials to learn about the symptoms and warning signs of sudden cardiac arrest; heat illness; concussions and other head injuries; and other health, safety, and wellness issues related to sports participation, and to receive information about EKG testing and each of the safety plans and policies implemented in the LEA pursuant this bill. Physicians, pediatric cardiologists, and athletic trainers may participate in the informational meeting.

The Act also addresses prevention for specific child sports injury and safety of the adults working with the children. TDH will continue to collaborate with the DOE to ensure that schools have the resources to the provisions for the Safe Star Act. Students, coaches, parents, and community leaders will have the knowledge and resources to address sudden death in youth and injury. The Safe Stars Act is intended to provide a safer environment for children to prosper.

## Addressing Youth Suicide Through Hospitals and Healthcare Providers



According to the 2019 National Youth Risk Behavior Survey, nearly 1 in 5 adolescents reported having seriously considered attempting suicide. Suicide continues to be a leading cause of youth fatalities in Tennessee. Because of this, TDH is addressing youth suicide through many initiatives specifically focusing on hospitals and healthcare providers. The public health approach to address youth suicide involves collecting data and implementing evidence-based interventions in areas identified as high risk. TDH analyzes many data sources with the most real-time data coming from ESSENCE (Electronic Surveillance System for the Early Notification of Community-based Epidemics).

The TDH Suicide Prevention Program uses the ESSENCE database to monitor youth suicide attempts, suicidal ideation, and intentional self-harm emergency department (ED) visits for youth aged 17 and under. The system is set up to trigger an alert in areas that are seeing an increase in ED visits. When an alert is triggered notifications are sent to local agencies that can facilitate suicide prevention education in local schools.

In 2021, TDH received additional funding to address pediatric mental health services across the state. This funding will be used to:

1. Provide training for pediatric primary care providers on screening, management, and referral of behavioral health conditions.
2. Establish a pediatric mental healthcare team to assist with management of pediatric patients with behavioral health conditions via tele-consultations.
3. Assure equitable access and utilization of services for children across all demographics and factors that affect social vulnerability.

Pediatric primary care providers (PCPs), if provided with appropriate training and technical assistance, are well-positioned to screen, treat and refer children with behavioral health conditions.

Additional Suicide Prevention Services implemented include:

- The Zero Suicide Initiative: For professionals working in healthcare and behavioral health agencies to reduce suicide attempts/deaths through suicide prevention strategies, including rapid and enhanced follow-up services. Focus on training sessions in best-practice suicide prevention protocols following the Suicide Care in Systems Framework for all personnel.
- Applied Suicide Intervention Skills (ASIST) Training: For the general population. A two-day in-person training providing intensive suicide first-aid training, teaching participants how to identify persons with thoughts of suicide, seek a shared understanding of reasons for dying and living, develop a safety plan, and prepare for follow-up.
- CALM: Counseling on Access to Lethal Means Training: A two-hour online training to help providers implement counseling strategies within their care practices to assist clients at risk for suicide and their families reduce access to lethal means, particularly (but not exclusively) firearms. Audience: Mental health and healthcare providers, but also available for the general population.

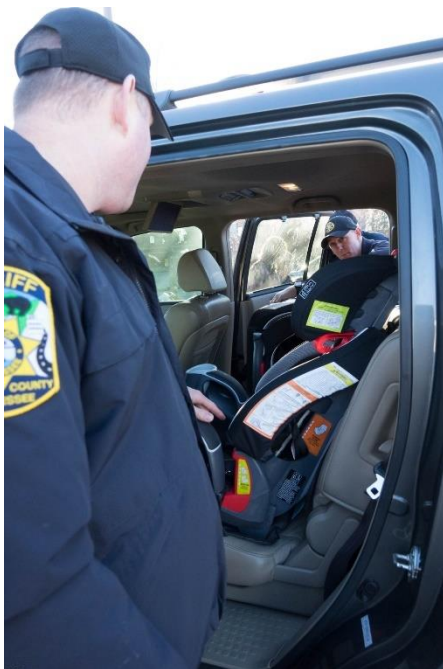
## ***Appendix E—Local Success Stories***

### **Blount County Sherriff's Office Keeping Children Safe**

Building community partnerships is an important part of child fatality prevention. The Blount County Sherriff's Office (BCSO) is an active member of the CFR team in East Tennessee. Officers that serve the BCSO are dedicated to not only protect the community but active in building relationships to reduce child deaths and ensure the safety of children. By building on evidence-based programs they know they can improve child safety. BCSO has been hard at work in the last year by conducting safety seat clinics, hosting informational meetings for parents and children on mental health advocacy and suicide prevention, and completing training on infant sleep related death prevention, pedestrian safety, safety belt use, and substance abuse prevention.



Throughout the last year the BCSO has continued to provide monthly car seat check clinics for families and provide child safety seats to those in need. During the child safety seat clinics, trained and certified child passenger safety seat technicians are on hand to provide child car seat installation. According to the BCSO, these clinics are an opportunity to ensure the child safety seat fits your vehicle and your child is safely secured in the vehicle. According to the National Highway Traffic Safety Administration, motor vehicle crashes are a leading cause of death of children, and in Tennessee, deaths related to motor vehicle incidents represented the highest number of fatalities among all external causes of death. However, child safety seats have been shown to reduce fatal injury by 71 percent for infants (under 1 year old) and by 54 percent for toddlers (1 to 4 years old) in passenger cars.

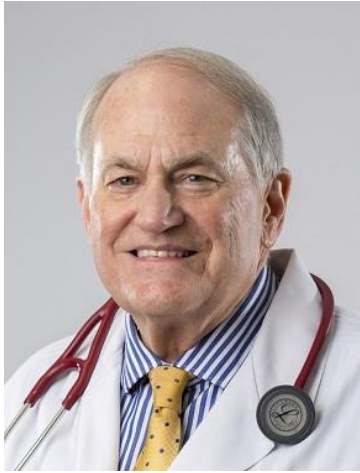


In addition to community outreach, the BCSO spends a lot of time working in local schools building relationships with the youth while providing education. The BCSO has also implemented infant safety and safe sleep training in the academy to help educate on the cause of infant sleep related deaths and how to speak to families on prevention. The BCSO has continue to be a pillar in the community to ensure that the citizens and children remain safe.

To learn more about the work of the BCSO and community action visit: <https://www.blountn.org/329/Sheriffs-Office>



## Partnering Together to Educate on Drowning Prevention



Drowning is the leading cause of injury death in children ages 1-4. Young children can drown in as little as an inch or two of water, and it can happen quickly and silently. The biggest drowning threat facing families with toddlers is unexpected, unsupervised access to water: swimming pools, hot tubs and spas, bathtubs, natural bodies of water such as ponds, and standing water in homes. For example, 69% of all drownings among children age 4 and younger happen during non-swim times. In 2021, Dr. Douglas Cobble and East Tennessee Children's Hospital (ETCH) collaborated to educate the public on child drowning prevention. The collaboration included a press release and community education on not only drowning prevention but overall water safety.

Dr. Cobble is a pediatrician with Greenville Pediatrics and, as a member of child fatality review, understands the importance of prevention measures to keep children from dying. He felt it was important to share the message of drowning prevention with the community who might let their guard down around water play in the warmer months. ETCH treats more than 50 children every year for near drowning events. After a local physician lost his son to drowning in 2018, physicians across the state have been increasing their conversations around drowning prevention in children.

In addition to Dr. Cobble, Dr. Shannon Cohen worked with local news media to publish stories about child drowning prevention. These included information about never leaving a child alone in or near water, even if the child has had swimming lessons. These messages remind parents that having multiple factors in place to prevent drowning can make it safe and fun for all involved. Dr. Cobble emphasizes that "a little knowledge goes a long way when it comes to water safety".

To learn more about water safety and injury prevention around water visit: <https://www.etch.com/about-us/news/2021/summer-is-coming-and-its-time-to-hit-the-water/>



# Knox County using Doula Collaborative to Improve Maternal and Infant Health



Infant mortality is a proxy indicator for the overall health of a community. In Knox County, the infant mortality rate for 2020 was 5.5 deaths per 1,000 live births, Over the last 5 years, it is found that black infants die at a rate more than four times of white infants in Knox County. Factors associated with this disparity include patient advocacy, education, accessing resources, maternal health before and during pregnancy, life stressors, and lack of support. With this data and lack of resources, Knox County applied for and received funding through CityMatCH to address the infant mortality disparity and improve overall maternal and

child health in the metropolitan area. One resource that can alleviate the factors associated with poor outcomes is ensuring that women have access to a doula.

A doula is someone who provides education as well as physical and emotional support to expectant women and their partners during the prenatal, labor and delivery, and postpartum phase. Doulas provide a space for a pregnant woman and her support partners to educate, provide support, and advocate for the patient to medical providers to ensure the best possible care is given to the mother and baby. Multiple studies show the impact of doulas in improving birth outcomes. Knox County CFR and FIMR teams have reached out to the doulas in the community and have invited them to serve on the multidisciplinary community action and review teams. The doulas will learn about the process of information collected to reduce infant death and provide prospective on women giving birth in the community and how to provide these women with resource to improve health and outcomes. This allows pivotal members in the community that have direct contact with mothers and infants to know the impact of fatality and what they can do to improve their practices and what resources women are truly missing in the community.

Know County will continue to build the relationship with the doulas in the community and utilize their knowledge and skills to help women and families prosper. Additionally, Knox County will continue to provide evidence-based knowledge to the doula groups to ensure the best possible care is available. One of the doula groups in Knoxville is specific to helping the black community improve overall infant and maternal health. They provide services knowing the biases that exist in the medical community to help mother advocate and provide support.

Black Doula Collaborative was formed in Knox County. The founder, Ty Roberts, started her doula training after learning there were no black doulas in Knox County and after she had given birth she felt isolated, and did not want other mothers to go through what she did. She and other doulas started a collective to help pregnant people navigate the medical system through education and emotional support. On a bigger scale, Roberts wants to make sure Black women are alive to see their babies grow up. They want to ensure women have the best tools and knowledge to speak up for themselves.

## **Appendix F—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	<b>David Kirschke, MD</b>	Trisha Mullins
Regina Bowman	Brittany Lewis	Darshan Shah, MD
Inv. Shawn Brown	Ashley Lyons	Karissa Shepard
Heidi Casey, RN	Crystal Malone	Lori Shields, EdS
Tara Chadwell	Samantha Maney	Regan Tilson
Emily Cook, MD	Jenna Markland	Cynthia Thomas, DO
Vicki Davis	Eden Matheson	Mary Williams, RN
Inv. Deborah Dunn	Barry McGlothlin	Rick Woodby
Shawn Hollinger, MD	Bryan Wes McKinney	
Justin Jenkins	Meagan Meisenzahl	

### JD 2 (Sullivan County)

Kevin Allison	Capt. Joel Jones	Teresa Nelson, JD
Andrea Black, JD	Ashley Justice	Tim Perry
Justin Bush	Christina Keen	Jim Perry
Julie Canter, JD	<b>Stephen May, MD</b>	Patsy Pope
Lt. Sean Chambers	Gary Mayes	Jessica Ritchie
Steven Combs, MD	Angela McGee	Amy Scott, MD
Breanna Doss	Jessica McGuire	Emily Smith, JD
Danielle Eller	Darrell Mears	Barry Stabus, JD
Jason English	Janice Miller	Michelle Steadman
Gena Frye	Marjorie Miller	Sgt. Martin Taylor
Sheriff Michelle Gilliam	Heather Mullins	Fredia Tombs
William Harper, JD	Jim Nash	
William Hudson, MD	Karen Nave	

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

Tiffany Alder, RN	Cynthia Doty	Crystal Malone
Carmelia Alexander, RN	Kayla Faulkner	TJ Manis
Vicki Arnold	Rodney Freeman	Meagan Meisenzahl
Tara Chadwell	Crystal Gibson	Julie Minton
Teddy Collingsworth	Calvin Hawkins	Amy Mullins
Emily Cook, MD	Deana Hicks	Christian Newman
Rhonda Craft	Shawn Hollinger, MD	Laura Reneau-Dockery
Betty Davis	Hannah Hunter, RN	Darshan Shah, MD
Eddie Davis	<b>David Kirschke, MD</b>	Alisha Singley
Tim Davis	Christy Lane	Cynthia Thomas, D.O.
Vicki Davis	Brittany Lewis	Mariah Williams

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

---

Juli Allen, RN	Kristin Dean, PhD	Josh Roberts
Charles Arms	Rita Hillhouse, RN	Rodney Satterfield
Amy Ball	Paula Lowe, RN	Jodi Stott
Jeremy Ball	David McConnell, MD	Tara Sturdivant, MD
Susan Blair, RN	Maggie McNally	Derrick Woods
Steve Branton	Darinka Mileusnic, MD	
<b>Boling Brawley, MD</b>	Teresa Moyers Atty.	

JD 5 (Blount County)

---

Felecia Adams	Melanie Dixon	Dt. Kris Sanders
Det. Stephen Anderson	Mike Flynn, JD	Det. Mike Seratt
Charles Arms	Erika Barnette, RN	Det. Doug Sparks
Kelsi Armstrong	Charles Johnson	Jodi Stott
<b>Lori Baxter, MD</b>	Amanda May	Tara Sturdivant, MD
Robin Cook	Darinka Mileusnic, MD	Capt. Mark Taylor
Tabitha Damron	Jonathon Rodgers	Michael Teague, MD

JD 6 (Knox County)

---

Kayla Anderson	Katie Larsen	Nate Ogle, JD
Mona Blanton-Kitts, LCSW	Christopher Lochmuller, MD	<b>Mary Palmer, MD</b>
Janice Cook	Christopher McLain	David Teaster, MD
Tammy Hicks, JD	Det. Tonia McFarland	Stacey Turpin
Rita Hillhouse, RN	Darinka Mileusnic	Alicia Verlinde, MPH
Paige Huggler	Polchan, MD	Lisa Wagoner, MSN, RN
David Kitts, PhD	Jason Myers	
Amber Knapper, NP		

JD 7 (Anderson County)

---

Emily Abbott	Traci Golbach	Herbert Sexton
<b>Thomas Clary, MD</b>	Bobbi Jo Henderson	Tracy Spitzer
Kevin Craig	Kelly Johnson	Jodi Stott
Anthony Craighead	Kristi McBee	Tara Sturdivant, MD
Margaret Durgin	Darinka Mileusnic, MD	
Sasha Foust	Angela Perez	

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

---

Jeff Acres	Stacey Heatherly	Darinka Mileusnic, MD
Paula Lowe, RN	Det. Ricky Jeffers	John Norris
<b>Dr. Lindsey Bull</b>	Rosemary Jeffers	Bruce Perkins
Lindsey Cadle	Pam Jines	Jodi Stott
Steven Collins	Det. Randy Lewallen	<b>Tara Sturdivant, MD</b>
Kim Hammock	Jeff Mann, D.O.	

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

---

Dr. William Bennett, MD	<b>James P. Guider, MD</b>	Darinka Mileusnic, MD
Lt. Charlie Cosner	Sherriff Tim Guider	Millicent Thomas
Melanie Crook	James Guider, MD	Jodi Stott
Melissa Denton	Judge Dennis Humphrey	Tara Sturdivant, MD
Erika Barnette	Alyson Kennedy	Mona William-Hayes, PhD
Amy Gray	Missy Layne	

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

---

Jeannie Bentley	Carol Henson	Dana Mulcahy, RN
Eric Blach	Det. Cody Hinson	Calvin Rockholt
Deanna Brooks	Brittany Hopkins	Teresa Rogers, RN
<b>Allyson Cornell, MD</b>	Nita Jernigan	Dewayne Scoggins
Greg Earn	Travis Jones	Lt. David Shoemaker
Brandon Edwards	Danny Lawson	Courtney Stapp
Roger Freeman	Joye Layman	Nadine Stone
Daniel Gibbs	Debra Macon-Robinson	Millicent Thomas
Mark Gipson	Ingrid Long, RN	Andy Wattenbarger
Missy Halley, RN	Jeffery Miller, MD	Laura Wittmaier, MEI

JD 11 (Hamilton County)

---

Sharon Barker	Sgt Adam Emery	Mark Miller
Barbara Breedwell	Bev Fullbright	Sgt. Victor Miller
Sgt. Rodger Brown	Lt. James Holloway	Brent Morris, MD
Steven Cogswell, MD	Takesha Jones	Daryl Scholtens
Kara Coleman	Atty. Leslie Longshore	Fernando Urrego, MD
Denise Cook	Capt. Henry McElvain	
Stacy Cook	James Metcalfe, MD	

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

---

<b>Allyson Cornell, MD</b>	Nita Jernigan	Rhonda Sills
Lindsay Hathcock	Julie Anna Johnson	D.A. Mike Taylor
Carol Henson, RN	Joye Layman	Bryan Walker
Haley Colvin	Kelly Lusk	
Joseph Giskel	Ingrid Long, RN	
Missy Halley, RN	Dana Mulcahy, RN	

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

---

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

JD 14 (Coffee County)

---

LeeAnne Boeringer	Joyce Green, RN	Darla Sain, RN
Michael Bonner	Hannah Henson	Clifford Seyler, MD
Al Brandon, DO	Kellie Lusk	Stephen Sharketti
Pam Browning, RN	Jackie Matheny, Jr.	Lang Smith, MD
<b>Cedrina Calder, MD</b>	Susan Minger	Paul Tibbs
Mary Ann Christian	Brook Mitchell	Frank Watkins
Mike Clements	Shaun Noblit	L.B. Windley, Jr., DVM
Leanne Eaton	Jennifer Owens	
Susan Ferencei	Atty. Jason Ponder	

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

---

Alison Asaro, MD	Rielley Gray	Michael Railing
Alexander Badru, MD	Don Grisham, MD	Scott Ridgeway
Matt Batey	Dawna Gurierrez	Ray Russell
Robert Bryan	Marty Hinson	Richard Rutherford, MD
Darlene Brown	Steve Hopper	Ricky Slack
Patrick Cockburn	Hanna Ilia, MD	R. Stafford
Jean Coffee	Heather Jefferies	Tom Swink
Jeff Crockett	Shirley Jennings	Mark Taylor
<b>Tina Davis, RN</b>	Lou Martinez	Matt Tuck
Doug Dycus, MD	Jennifer Mekelburg	Tommy Thompson, JD
Jennifer Edward	Christina Moody	Mark Tuck
Stephanie Elliot	Brian Newberry	Sharice Williams
Mike Ethridge	Donald Nuessle, MD	Chaney Wright
Mark Gammons	Kristi Paling	
Scott Giles, DO	James Payne	

JD 16 (Cannon and Rutherford Counties)

---

Hugh Ammerman	Denise Martin	Det. Will Pinson
<b>Alison Asaro, MD</b>	Sgt. Tommy Massey	Sgt. Travis Plotzer
Doris Denton	Capt. Nathan McDaniel	Sharon Reddick
Tina Farr, RN	Lorraine MacDonald, MD	Lt. Britt Reed
Chris Glover	Nathan Miller	Det. Tommy Roberts
Don Grisham, MD	Lashon Miller	Angie Smith
Carl Hudgens	Christina Moody	Michael Thomas, MD
Jennings Jones	Gloria Morrison	Jeff Wright

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

---

Sara Bates, RN	Mike Clements	Brook Mitchell
LeeAnne Boeringer	Stephanie Dunn	Jill Murdock, RN
Det. Scott Braden	Angie Faulkner	Shaun Noblit
Christy Brown	Jeremy Ezell	Jennifer Owens
Pam Browning, RN	Susan Ferencei	Kenneth Phelps, MD
Brian Bruce	Joyce Green, RN	Darkis Selman
Stefanie Brown, RN	Rachel Hanson	Lang Smith, MD
Cedrina Calder, MD	Penny Hawk	Kyle Spears, MD
Robert J. Carter, DA	Hannah Hinson	Megan Wakefield, RN
Mary Ann Christian	Amy Irvin	Richard Wright

JD 18 (Sumner County)

---

<b>Alison Asaro, MD</b>	Amy Daughtry	Becca Page
Jay Austin	Neal Harris	Sgt. Travis Plotzer
Sgt. Lamar Ballard	Jeff Helmintoller	Jenni Smith
Amy Burke-Salyers	Chief David Hindman	Chief Richard Smith
Charlotte Cash	Misty Leitsch	Jody Starks
Charles Consiglio	Gloria Morrison	Ray Whitley, DA

JD 1901 (Montgomery County)

---

Timothy Adair	Courtney Henderson	Sgt. Travis Plotzer
<b>Alison Asaro, MD</b>	Angela Huff	Molly Pope
Eric Berg, MD	Edward Jackson	Krystal Pulley
Christy Bing	Danielle Kriminger	Sabrina Sanford
Amanda Burke	Misty Leitsch	Fred Smith
John Carney, JD	Lt. Vincent Lewis	Joey Smith
Ashley Dale	Kimberly Lund, JD	Jerome Viltz
Mary Davila	Det. Frederick McClintock	Lori Waller
Karmen Davis	David Mendoza, MD	Judy Weimer
Savanna Davis	Gloria Morrison	Sgt. Mark Wojnrek
Cpt. Thomas Hamilton	Sgt. Nick Newman	Danette T. Woodcock

JD 1902 (Robertson County)

---

<b>Alison Asaro, MD</b>	Regina Duffie	Sgt. Travis Plotzer
Det. Chick Bogle	Rachel Ellis	Molly Pope
Hunter Butler, MD	J. Scott Jordan	Det. Jake Ryan
Rebecca Chafatelli	Misty Leitsch	Phyllis Smith
Karmen Davis	Gloria Morrison	

JD 20 (Davidson County)

---

D'Yuanna Allen-Robb	Monica Coverson	<b>Brook McKelvey</b>
Addie Askew	Gina Crean	Michael Meadors, MD
Nicole Barr	Amie Crolley	Gloria Morrison, RN
Willie Brown	Emily Dennison, MD	Lody Powers
Rebecca Bruccoleri, MD	Erik Gallup	Renee Pratt
Alison Butler	Tony Hayes	Raquel Shutze
Amy Campbell-Pittz	Anthony Johnson	Mary Ann Smith
Erin Carney, MD	Margreete Johnston, MD	Heather Snell
Rand Carpenter	Charlsi Legendre	Lisa Weakley
Ron Carter	Misty Leitsch	Gill Wright, MD
Anjenetta Cook	Sarah Loch	

JD 2101 (Hickman, Lewis, and Perry Counties)

---

Jim Bates	Joyce Green, RN	Brook Mitchell
LeeAnne Boeringer	Jennifer Harris	Shaun Noblit
Katelyn Bojorquez	Hannah Hinson	Charles Pierce
Dawn L. Bradley	Kara Hobbs	Sarah Russell
Brittan Breeding, RN	Dee Hoover, TN	Lang Smith, MD
<b>Cedrina Calder, MD</b>	Zachary Hutchens, MD	Jim Tanner
Mary Ann Christian	Felicia Love, RN	Tabitha Whitehead
Mike Clements	Brandi Mackin, RN	
Stacey Edmondson	Vickey Mangrum, RN	

JD 2102 (Williamson County)

---

Sgt. Charles Achinger	Sarah Harmon	Gloria Morrison, RN
<b>Alison Asaro, MD</b>	Laruen Harrington	Peggy Phillips
Alicia Campbell, DA	Chris Holz	Sgt. Travis Plotzer
Det. Robert Cardan	Tommy Justus	Dusty Rhoades
George Collins	Misty Leitsch	Det. Tameka Sanders
Joe Cox	Feng Li, MD	Lauren Schuster
Jeremy Crawford, RN	Zannie Martin	Samuel Smith, MD
Karmen Davis	Angel Miller	Det. Matthew Thompson

JD 2201 (Giles, Lawrence, and Wayne Counties)

---

Pam Arnell	Susan Ferencei	Brook Mitchell
Erica Barnett, RN	Sheriff Shane Fisher	Tonya Lance
LeeAnne Boeringer	Joe Fite, MD	Shaun Noblit
Dawn L. Bradley	Larry Glass	Denise Sanders
Tracy Brumit	Kayla Ridley, RN	Devin Ezell
<b>Cedrina Calder, MD</b>	Roy Griggs	Lang Smith, MD
Mike Clements	Lisa Hardison	Hannah Hinson
Chief John Dickey	Brigitte Massey	Jennifer Owens

JD 2202 (Maury County)

---

Molly Anderson, RN	Susan Ferencei	Brook Mitchell
LeeAnne Boeringer	Tommy Goetz	Shaun Noblit
Katelyn Bojoquez	Joyce Green, RN	Jennifer Owens
Jamie Brown	Jason Griggs	Corporal Jason Sanders
<b>Cedrina Calder, MD</b>	Rachel Hanson	Lang Smith, MD
Mary Ann Christian	Hannah Hinson	Lt. Roscoe Voss
Mike Clements	Andy Jackson	Lisa Williamson
Brent Cooper, DA	Andrew Kenney	
Det. Terry Dial	Gayle Martin	

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

---

Karen Anderson	Karmen Davis	Det. Brent Johnson
<b>Alison Asaro, MD</b>	Regina Duffie	Misty Leitsche
Det. Mark Bausell	Rachel Ellis	Inv. Ken Miller
Sgt. Jacob Blackwell	Christy Espey	Kyle Moore
Sharrie Booker	Robin Fairclough	Barbara Smith
Comm. Eddie Breeden	Maggie Filson	Capt. Randy Starkey
Alana Carmical	Claudette Fizer	Sheriff Kevin Suggs
Larina Corlew	Lawrence Jackson, MD	

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

---

<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)

---

Chris Baker	Det. Scottie DeLashmit	Rives Seay
Kinney Bridges	Richard Griggs	James Shelton
Tonia Bruno	Raven M. Icaza	Stephen Shopher
Christy Chandler	Ginny Jaco	Inv. David Webb
Falen Chandler	Kristy King	Captain Chris Williams
<b>Shavetta Conner, MD</b>	Jon Piercey	Tracy Worlds

JD 26 (Chester, Henderson, and Madison Counties)

---

Bradley Crouse	Nadia Graham	Atty. Stuart Mills
Corie Currie	Tammy Hardee	<b>Ginger Rogers</b>
Ashley Deloach	Donna Heatherington	Marcie Thornton
Lisa Dorrrough	Sgt. Danielle Jones	Blair Weaver
Inv. David Dowdy	Sgt. T.J. King	Sgt. Jena Eubanks

JD 27 (Obion and Weakley Counties)

---

Kate Bynum	Lt. Stan Haskins	Tommy Thomas
Lt. Bryan Chandler	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

JD 28 (Crockett, Gibson, and Haywood Counties)

---

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

JD 29 (Dyer and Lake Counties)

---

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

JD 30 (Shelby County)

---

Hawa Abdalla	Kala Ison	Marco Ross, MD
Patricia Bafford, Ed.D.	Afework Keskessa	Col. Mike Ryall
LaShunda Barrett	Tunishia Kuykindall	Andrea Sebastian
Scot Bearup	Karen Lakin, MD	Rebecca Shappley
Sgt. Dennis Brunson	Tarji Little	Sam Sheppard
Mark Bugnitz, MD	Jason Martin	Gavin Smith
Lauren Burge	Daryle McConnell	Leilani Spence
Sara Burnett	Ashley McEachern	Angie Sullivan
Gladys Burton	Katie McKinnie	Jennifer Taylor
Eric Christensen, JD	Kawanais Milligan	Kirtikumar Upadhyay, MD
Jennifer Davidson	Mychell Mitchell	Det. Jason Valentine
Benjamin Figura	Reggie Morgan	Katrina Van Pelt
Arriell Gipson	Jennifer Nichols, JD	Brittany Valentine
Jamaica Glover	Cynthia Nunnally	Tiffany Ward
Kerry Griggs	Col. Kurt Phillips	Denise Webb
DeShawn Harris	<b>Bruce Randolph, MD</b>	Regan Williams
Jennifer Hendrick	Lt. Tully Reed	John Wright
Gannon Hill	Vanessa Roberts	Dorcas Young
Paula Humphrey	James Ross	

JD 31 (Van Buren and Warren County)


---

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>	Jackie Mathney	Angela Slaven
Preston Denney	Charles Morgan, MD	Ty Webb
Andrea Fox	Kristi Paling	Lisa Zavogiannis

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.



	Department of Health Authorization No. 355827. This Electronic publication was promulgated at zero cost. March 2022
---	---

