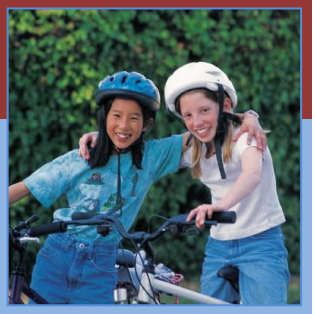
2021 Child Fatality Annual Report

Understanding and Preventing Child Deaths in Tennessee

Data in this report reflect deaths occurring in children under 18 years of age in calendar year 2019



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ACKNOWLEDGMENTS

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

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

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

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

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

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

DATA CONFIDENTIALITY

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

EXECUTIVE SUMMARY

The data contained in this report represent the review of deaths occurring in children under the age of 18 years during the calendar year of 2019. Local teams across the state reviewed all eligible 2019 deaths during 2019 and 2020. 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 912 child deaths in 2019, of which 808 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 2019, 912 deaths occurred in children under age 18 years in Tennessee. Tennessee's 2019 child mortality rate (60.5 per 100,000) is statistically unchanged from the 2018 rate (61.8 per 100,000) and continues to exceed the 2018 national rate (48.3 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 (58% vs. 42%, respectively). For the past five years, male children have had a higher proportion of mortality than females.

- In 2019, 563 deaths occurred in children under 1 year. The 2019 infant mortality rate of 7.0 deaths per 1,000 live births represents an increase, though not statistically significant, from the 2018 rate of 6.9 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 2019, Black children experienced a mortality rate twice that of White children.

- Prematurity was the leading cause of death among Tennessee infants (139 infant deaths, 30% of reviewed infant deaths), followed by congenital anomaly (76 infant deaths, 19%) in 2019. Sleep-related deaths include multiple causes and accounted for 22% of all infant deaths.

- There were 103 sleep-related infant deaths in 2019. This compares to 128 deaths in 2018. The rate of sleep-related infant deaths was 1.3 per 1,000 live births in 2019, which is statistically unchanged from the 2018 rate of 1.6 per 1,000 live births.

- In 2019, forty children (5% of all reviewed deaths) died by homicide. Most of homicide deaths occurred in the child's home (53%), and firearms accounted for 68% of child homicide deaths. There were also 55 child homicide deaths in 2018.

- Thirty-two children died by suicide in 2019 (4% of all reviewed deaths). Suicide occurred mostly in the child's home (91%), and firearms accounted for half (50%) of these deaths. Comparatively, there were 35 child suicide deaths in 2018.

- The rate of motor vehicle deaths increased from 4.1 per 100,000 children in 2018 to 5.0 in 2019; however, this change was not statistically significant.

The number of preventable deaths in children underscores the need for a continued focus on the careful review of every child death, thoughtful identification of opportunities for prevention, and implementation of strategies to prevent future child deaths. Data can be accessed through the TDH data dashboard. Below is a summary of prevention recommendations from the state team. A full description of the recommendations can be found on page 65.

Summary of 2021 recommendations:

1. **Safe Sleep –** Analyze data to determine areas with the largest disparities to specifically target 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 materials.

2. **Motor Vehicle –** Increase the number of schools in high-risk counties implementing virtual evidence-based motor vehicle crash prevention programs in local high schools. Provide education to schools, caregivers and the general public to prevent pedestrian deaths including information on back over prevention and pedestrian safety. Promote the use of protective measure including seatbelts, car seats and helmets.

3. **Prematurity -** Analyze data to determine the top circumstances around prematurity by region and promote appropriate programs in those areas including tobacco cessation, chronic disease prevention and family planning.

4. **Suicide -** Increase upstream suicide prevention for youth across the state with a focus in high-risk rural areas by implementing Good Behavior Game and increasing Gatekeeper training. Improve data collected on deaths by suicide.

STATE CHILD FATALITY TEAM MEMBERS

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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, it is from the careful study of each child's death that we can learn how best to respond to a fatality and prevent future deaths.

Between 2010 and 2018, an average of 37,240 children aged 0-17 years die every year in the United States.[1] 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 2019, every state and the District of Columbia had a system for reviewing child deaths.[2]

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

Overview of Child Fatality Review Teams

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

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

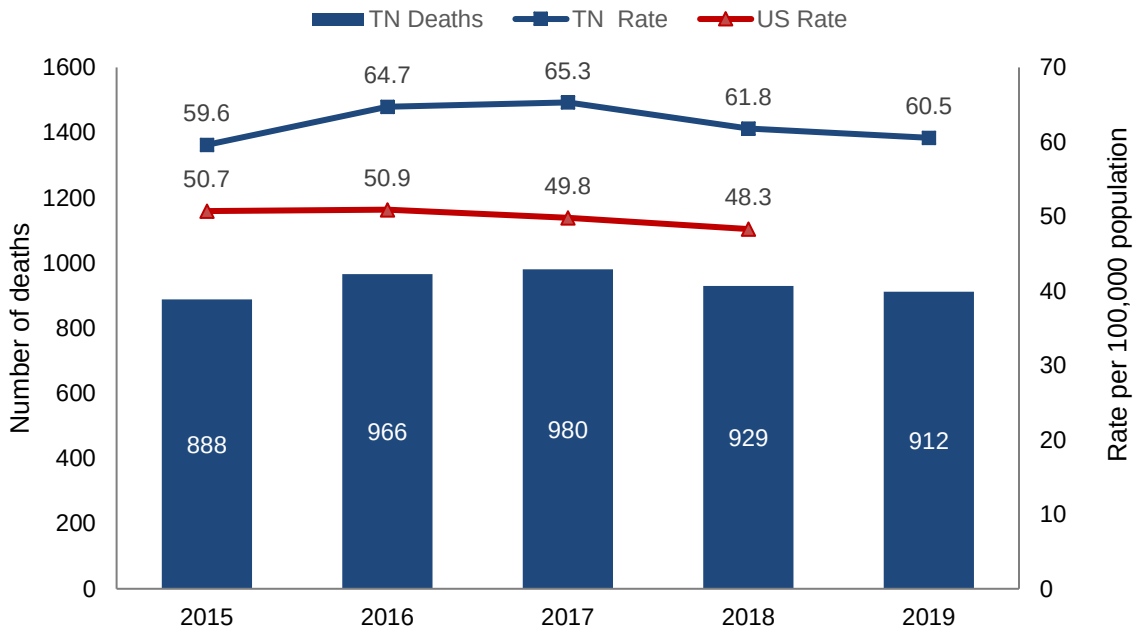
[1] Centers for Disease Control and Prevention, National Center for Health Statistics. Underlying Cause of Death 1999-2018 on CDC WONDER Online Database. Accessed at http://wonder.cdc.gov/ucd-icd10.html.

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

2021 CHILD FATALITY REPORT
OVERALL CHILD FATALITY TRENDS

This section presents data from vital records; it reflects all child deaths among Tennessee residents in 2019. The number and rate of child deaths in Tennessee and the U.S. for the past five years are shown in Figure 1. In 2019, the child mortality rate for Tennessee was 60.5 deaths per 100,000 children, a 2% decrease from the 2018 child mortality rate of 61.8 per 100,000 children. Tennessee's child mortality rate continues to exceed the national rate. The overall child mortality rate in Tennessee for 2019 was 25% higher than the 2018 child mortality U.S. rate, the latest year for which national data are available.

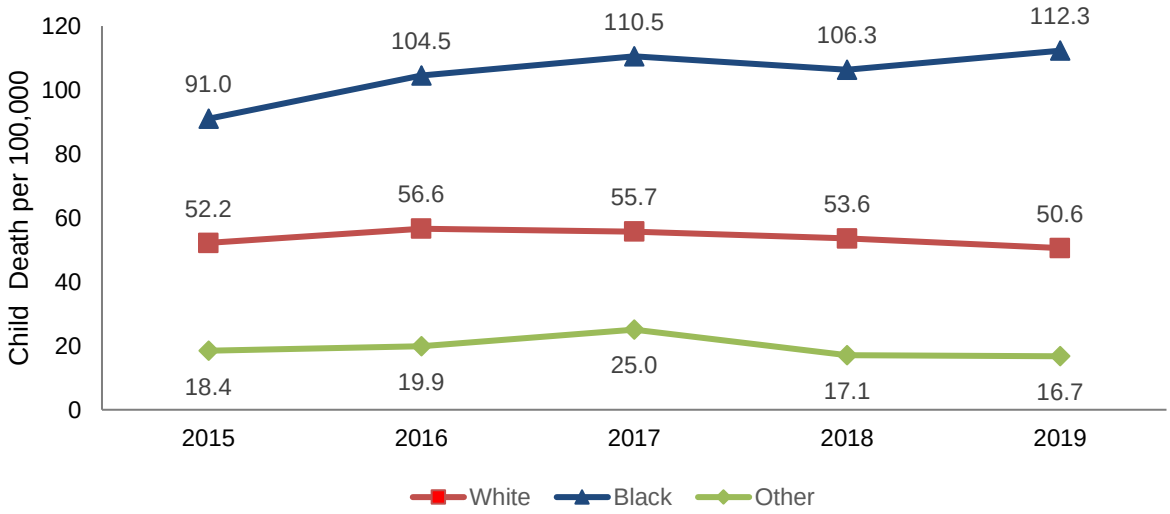
Figure 1. Number and Rate of Child Deaths (Ages 0-17 Years)
Tennessee, 2015-2019



Data source: Tennessee Department of Health, Office of Vital Records and Health Statistics, Death Statistical File, 2015-2019.
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 2015 and 2019, 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, 2015-2019*



*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, 2015-2019.Population estimates based on interpolated data from the U.S. Census's Annual Estimates of the Resident Population.

Table 1. Number and Rate of Child Deaths (per 100,000 child population) for Ages 0-17 Years by Race, Tennessee, 2015-2019

	Blacks			**White**			**Black/White Disparity**
Year	Number of Deaths	Child Population	Child Death Rate	Number of Deaths	Child Population	Child Death Rate	Disparity Ratio
2015	274	301,100	91.0	569	1,090,727	52.2	1.7
2016	313	299,487	104.5	619	1,093,476	56.6	1.8
2017	331	299,588	110.5	612	1,098,171	55.7	2.0
2018	317	298,106	106.3	589	1,099,446	53.6	2.0
2019	334	297,437	112.3	557	1,101,682	50.6	2.2

Data source: Tennessee Department of Health, Office of Vital Records and Health Statistics, Death Statistical File, 2015-2019

CHILD FATALITY REVIEW DATA

METHODOLOGY

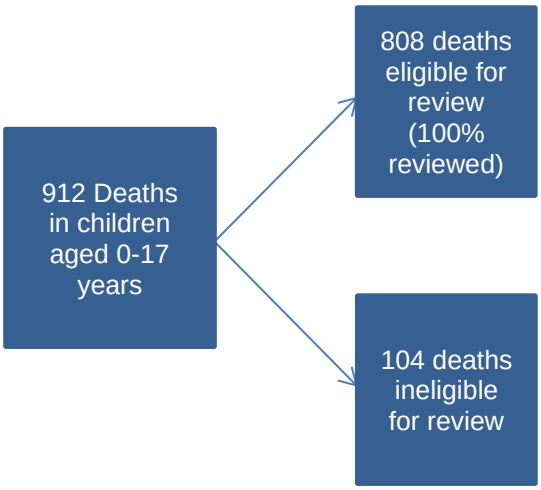
Review of Child Fatality Review Data

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 912 child deaths in 2019, 89% (n=808) met the review criteria. One hundred and four 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 2019 death reviews reflects the dedication of local CFR teams and partnering state agencies**.**

Deaths of infants are eligible for review if they are equal to or greater than 23 weeks of gestation and greater than 500 grams as they have been the accepted limits of viability established in TCA. Because of the review criteria, it is usually impossible to find an exact number-for-number match between CFR data and child death data from other sources, such as vital statistics. The unique role of CFR is to provide a depth of understanding of these eligible deaths and to augment other, more one-dimensional data sources. In 2019, there were 912 child deaths in Tennessee, of which 104 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 2019, there were 912 child deaths in Tennessee, of which 808 were reviewed by local CFR teams. The review of these child deaths demonstrated that the first year of life was the most perilous for Tennessee's children, with deaths of children younger than 1 year of age accounting for 57% of all reviewed deaths (Figure 3). Male children (58%) represented a higher proportion of all child fatalities than female children (42%) (Figure 4). Racial disparity exists among child fatalities as well (Figure 5). While most deaths were among White children (62%, Figure 5), Black children (50.6 deaths per 100,000) had a higher rate of mortality than White children (112.3 deaths per 100,000, Table 1).

Figure 3. Child Deaths Reviewed by Age Group, Tennessee, 2019 (n=808)

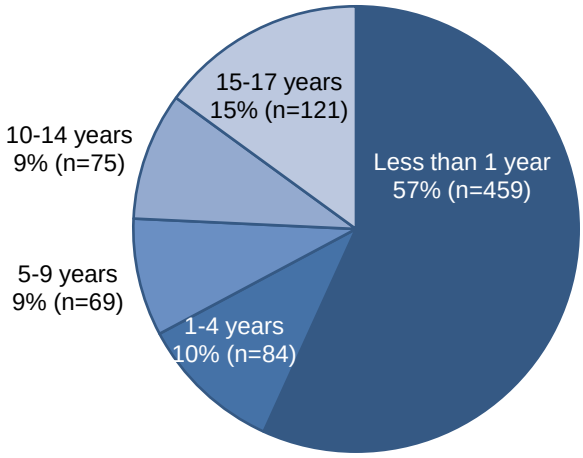


Figure 4. Child Deaths Reviewed for Ages 0-17 by Sex, Tennessee, 2019 (n=808)

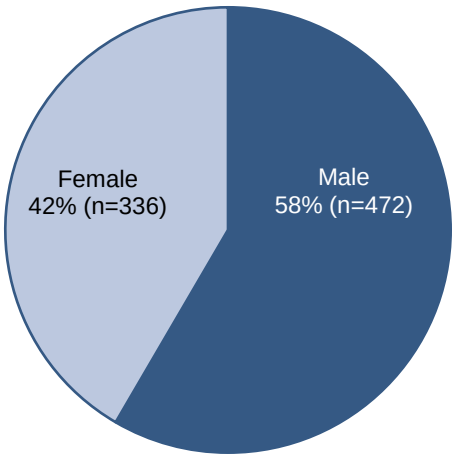
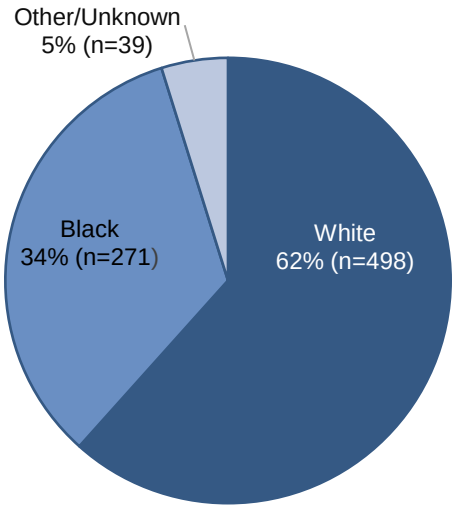


Figure 5. Child Deaths Reviewed for Ages 0-17 by Race, Tennessee, 2019 (n=808)



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

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

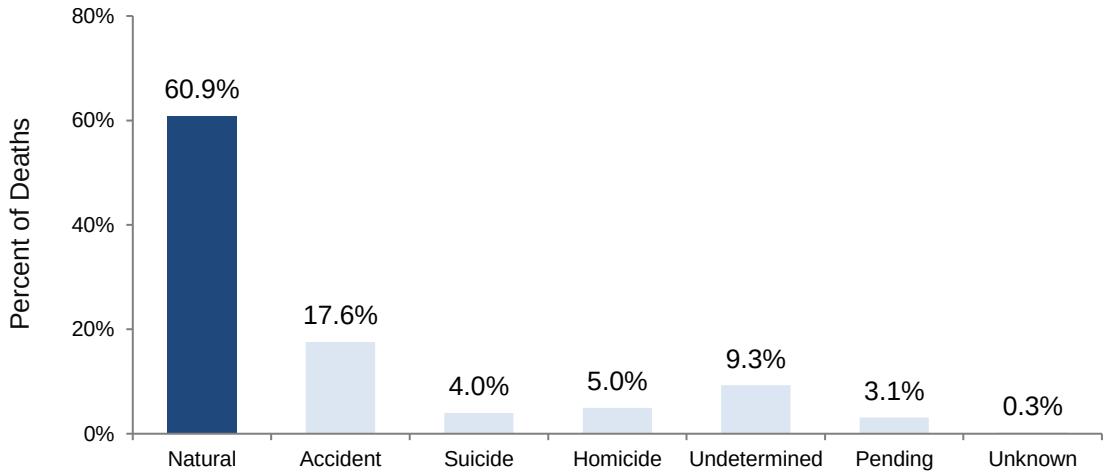
- **Cause of death** refers to the disease process or injury that set into motion the series of events which eventually lead to death. For the purposes of the CFR team, causes of death are categorized as medical, external (injuries or poisonings), undetermined, or unknown**.** Medical causes are then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

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

Manner of Death

Of the 2019 child deaths reviewed, 492 deaths (61%) were determined to be natural (from medical causes) and 142 deaths were determined to be accidental (Figure 6). By comparison, in 2018, there were 519 natural deaths and 156 accidental deaths. In 2019 the CFR, 40 children (5%) died by homicide while 32 children (4%) died by suicide (Figure 6).

Figure 6. Manner of Death Summary, Children Ages 0-17 Years, Tennessee, 2019 (n=808)



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

Table 2 shows the number and manner of death by child's age, race, and sex. At 338 deaths, infants—children less than 1 year—bear the largest burden of natural deaths; infants account for 69% of all natural forms of deaths. Accident (unintentional injuries) is the second leading manner of child death. Children aged 15-17 years (n=41), less than 1 year (n=37), and 1-4 years (n=28) have the highest proportion of accidental deaths. Deaths due to homicide occurs all age categories; children aged 15-17 years (n=19) have the highest proportion of deaths by homicide. Similarly, children aged 15-17 years (n=18) have a higher proportion of deaths of suicides than all other age categories. A breakdown of manner of death by child's race reveals that White children bear a larger portion of deaths by natural causes, accident, suicide, and homicide than Black children or children of 'Other racial category' (Table 2). Also, more male children died from natural causes, accidents, suicide, and homicide than female children (Table 2).

Table 2. Manner of Child (0-17 Years) Death, by Age, Race and Sex, Tennessee, 2019

	Manner of Death						
	Natural	Accident	Suicide	Homicide	Undetermined	Pending	Unknown
Age							
Less than 1 year	338	37	0	6	64	13	1
1-4 years	38	28	0	6	6	6	0
5-9 years	40	21	1	3	1	2	1
10-14 years	37	15	13	6	2	2	0
15-17 years	39	41	18	19	2	2	0
Race							
Black	147	47	3	21	41	11	1
White	320	89	29	15	30	14	1
Other	16	4	0	3	2	0	0
Unknown	9	2	0	1	2	0	0
Sex							
Male	262	90	19	33	52	15	1
Female	230	52	13	7	23	10	1
Total	**492**	**142**	**32**	**40**	**75**	**25**	**2**

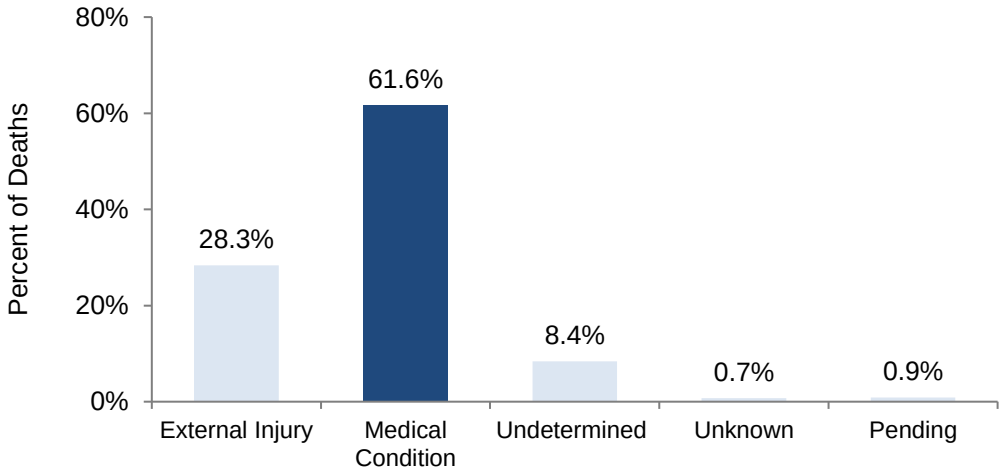
Data source: Tennessee Department of Health, Child Fatality Review Database System.

Cause of Death

Cause of death refers to the effect, illness, or condition leading to an individual's death. The cause may be due to a medical condition or an external cause (injury). Figure 7 shows a breakdown of causes of child death. Of the 860 deaths reviewed by the CFR teams in 2019:

- Medical causes represented 62 percent (498 cases) of deaths.
- External (injury) causes represented 28 percent (229 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", 80 percent (n=65) involved children under one year of age, thus reflecting the inherent complexities in determining the manner and cause of infant deaths.

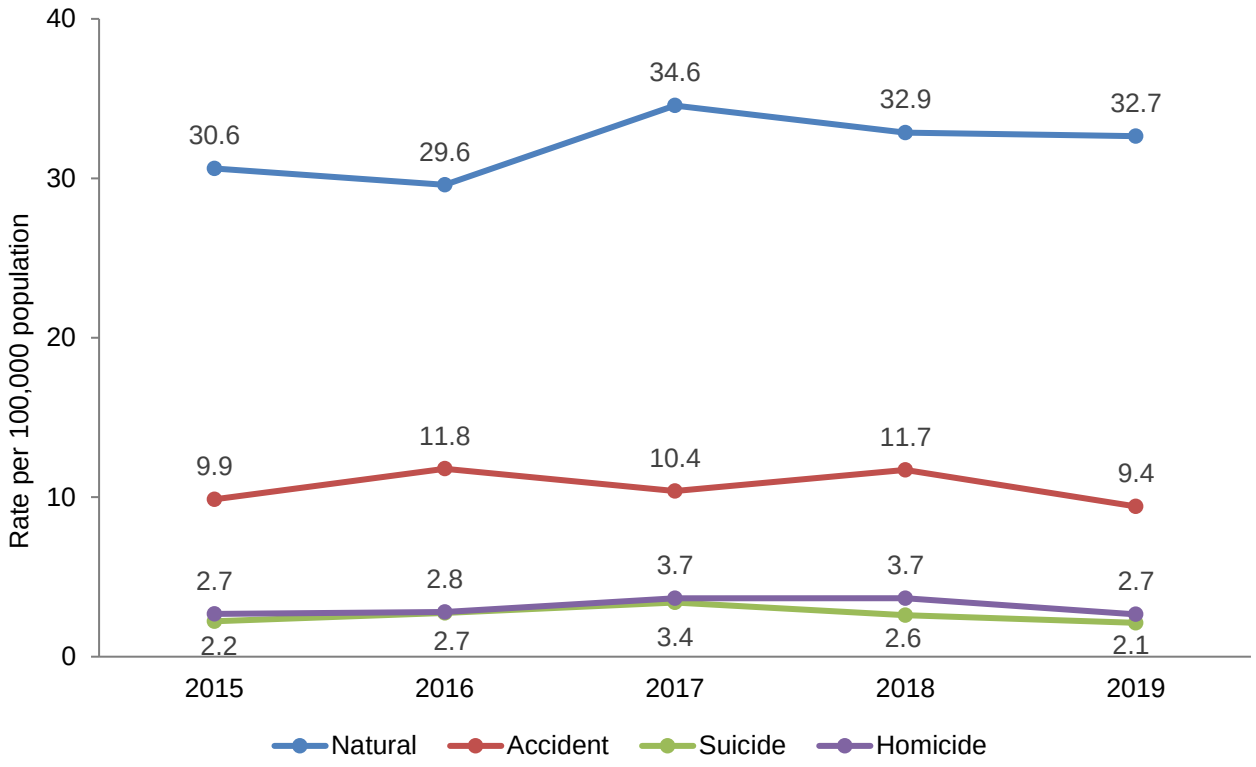
Figure 7. Cause of Death Summary, Children Ages 0-17 Years, Tennessee, 2019 (n=808)



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 (2015 to 2019), natural and accidents have been the first and second leading manners of death respectively. The child mortality rate for accidents decreased from 11.7 deaths per 100,000 population in 2018 to 9.4 deaths per 100,000 population in 2019. It is also worthy to note that deaths from suicide decreased in from 2.6 per 100,000 population in 2018 to 2.1 per 100,000 population in 2019. Furthermore, the rate of homicide decreased from 3.7 per 100,000 population in 2018 to 2.7 deaths per 100,000 population in 2019. On the contrary, the child mortality rate for natural manner of death between 2018 and 2019 remained relatively the same at 32.7 and 32.9 deaths per 100,000 population respectively.

Figure 8. Child (0-17 years) Mortality Rate by Manner of Death in Tennessee. 2015-2019



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 229 deaths caused by an external (injury) cause of death, 136 deaths were categorized as accidental, 32 deaths were suicide, and 40 deaths were homicides. Of the 498 deaths caused by a medical condition, the manner of death was mostly natural (n=489).

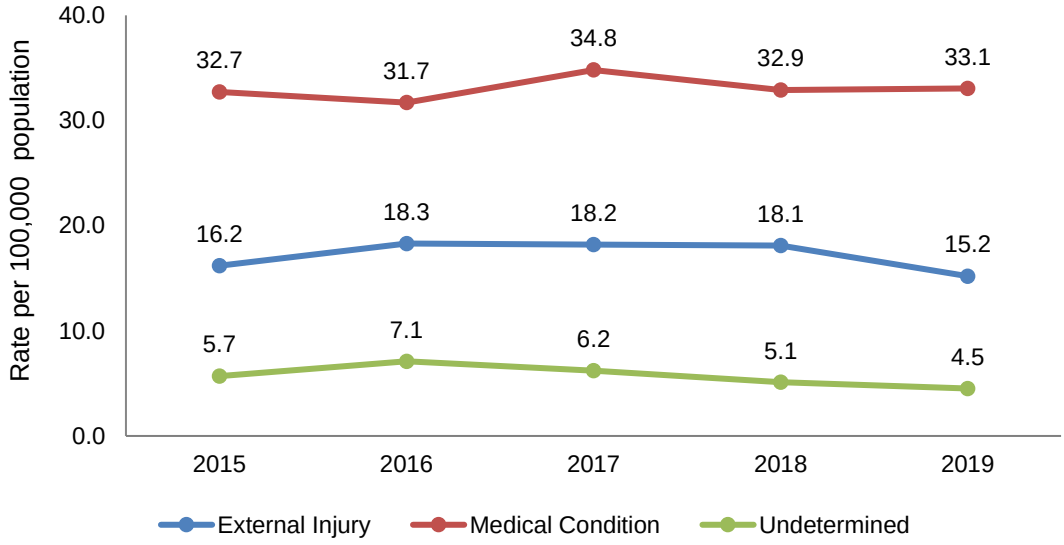
Table 3. Cause of Death by Manner of Death for Children Ages 0-17 Years Tennessee, 2019

	Manner of Death						
Cause of Death	Natural	Accident	Suicide	Homicide	Undetermined	Pending	Unknown
External Injury	1	136	32	40	13	5	2
Medical Condition	489	3	0	0	0	6	0
Undetermined	2	3	0	0	62	1	0
Unknown	0	0	0	0	0	6	0
Pending	0	0	0	0	0	0	7
TOTAL	**492**	**142**	**32**	**40**	**75**	**18**	**9**

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 2019 rates did not differ statistically when compared to their respective 2018 rates.

Figure 9. Rate of Child Mortality Ages 0-17 Years by Cause of Death Tennessee, 2015-2019



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 2019 child deaths, death due to medical conditions is highest among infants, children less than 1-year-old, while deaths from external causes (injury) is highest among children 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 2019 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, 2019

	Cause of Death				
	External Injury	Medical Condition	Undetermined	Unknown	Pending
Age					
Less than 1 year	49	339	63	2	6
1-4 years	40	40	2	2	0
5-9 years	27	41	0	1	1
10-14 years	34	39	1	0	0
15-17 years	79	39	2	1	0
Race					
Black	78	149	36	4	4
White	139	324	30	2	3
Other	7	16	2	0	0
Unknown	5	9	0	0	0
Sex					
Male	153	265	46	3	5
Female	76	233	22	3	2
Total	**229**	**498**	**68**	**6**	**7**

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 2019 is unchanged when compared to the 272 deaths due to external causes in 2018. Detailed analysis for each specific injury death is provided in later sections of this report.

- Seventy-five children died in motor vehicle crashes in 2019, a 21% **increase** from the 62 vehicular deaths in 2018.
- Sixty-seven children died from weapons-related injuries, a 17% **decrease** from the 81 children who died in 2018.
    - Thirty-seven (55%) of the weapons-related fatalities were homicides, 25 (37%) were suicides, and 7 (8%) were accidental, undetermined, or pending.
- Thirty-nine children died of unintentional asphyxia; 34 of these children died in a sleep-related environment. This represents an increase in unintentional asphyxia cases of 30% from 2018 (56 asphyxia deaths, 49 of which occurred in a sleep-related environment).
- Seven children died from a fire, burn or electrocution, a 53% decrease from 15 deaths in 2018.
- Sixteen children died by drowning, a 48% decrease from the 31 cases in 2018.
- Eleven children died from poisoning in 2019, an 22% increase from nine deaths in 2018.

Table 5. External Cause of Death (Injury Causes) for Children Ages 0-17 Years by Age Group Tennessee, 2019

Injuries	Total	Reviewed Deaths (%)	< 1 year	1-4 years	5-9 years	10-14 years	15-17 years
Motor Vehicle and other transport	75	9.3	3	16	16	10	30
Fire, burn, or electrocution	7	0.9	1	5	1	0	0
Drowning	16	2.0	0	5	5	2	4
Unintentional Asphyxia	39	4.8	34	3	0	1	1
Assault, weapon, or person's body part	67	8.3	5	5	4	18	35
Fall or crush	3	0.4	0	0	0	0	3
Poisoning, overdose, or acute intoxication	11	1.4	3	3	0	1	4
Undetermined	4	0.5	2	2	0	0	0
Other*	5	0.6	0	1	1	1	2
Unknown	2	0.2	1	0	0	1	0
TOTAL	**229**	**28.3**	**49**	**40**	**27**	**34**	**79**

*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 2019 reviewed deaths resulting from a medical cause. Within the medical classification, causes are further specified by particular conditions or disease entities. In 2019, 493 deaths (61%) 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 (29%). Other causes include infections, neurological conditions including seizures, and childhood cancers. In 2019, 61% of reviewed deaths were attributed to medical causes, a similar proportion of 57% (all deaths due to medical causes) in 2018. 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, 2019

Medical Cause	Total	Deaths Reviewed (%)	Less than 1 year	1-4 years	5-9 years	10-14 years	15-17 years
Prematurity	140	17.3	139	0	0	1	0
Congenital Anomaly	97	12.0	76	7	5	2	7
Other Medical Condition	59	7.3	32	6	8	8	5
Cancer	36	4.5	1	5	10	11	9
Cardiovascular	47	5.8	28	6	3	5	5
Asthma	26	3.2	16	3	4	3	0
Other Perinatal Condition	22	2.7	22	0	0	0	0
Other Infection	26	3.2	13	5	5	1	2
Pneumonia	16	2.0	5	2	1	4	4
Influenza	3	0.4	0	2	0	1	0
Diabetes	2	0.2	0	0	0	1	1
Neurological/Seizure Disorder	16	2.0	3	3	5	0	5
Low Birth weight	2	0.2	2	0	0	0	0
Undetermined Medical Cause	1	0.1	1	0	0	0	0
TOTAL	**493**	**61.0**	**338**	**39**	**41**	**37**	**38**

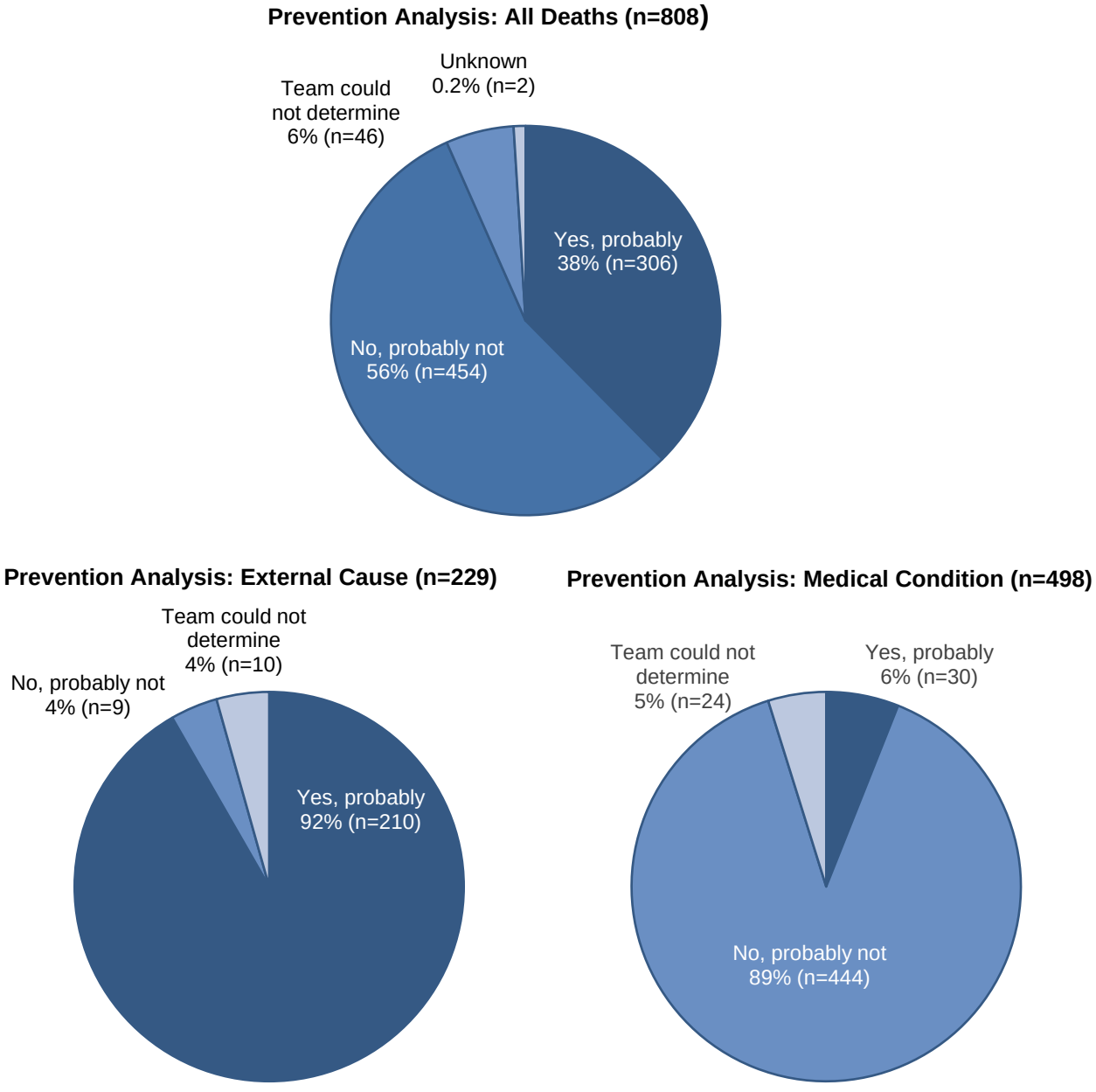
*Other medical condition includes all other conditions that fall under a different category than those listed above, e.g. myocarditis or intestinal infarction.
Data source: Tennessee Department of Health, Child Fatality Review Database System.

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 306 deaths (38%) were probably preventable, as shown in Figure 10. Most preventable deaths are caused by external causes of injury (210 cases; 69%) versus medical causes (30 cases; 10%).

Figure 10. Preventability of Child Deaths Ages 0-17 Years by Cause of Death Tennessee, 2019



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 CAUSES OF DEATH

Prevention opportunities include:

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

Current prevention efforts in Tennessee include:

- TDH funds smoking cessation programs and Nicotine Replacement Therapy (NRT) for the Tennessee Quit Line, a help line which offers smoking cessation services to anyone in the state and BABY & ME—Tobacco Free Program™, which provides support and incentives which encourage pregnant women who smoke to stop using tobacco.
- TDH promotes the "ABCs of Safe Sleep" campaign to reduce SIDS and other sleep-related infant deaths and continues to expand efforts with unconventional community partners in order to reach all infant caregivers with the safe sleep message.
- TDH family planning services provides non-coercive family planning education and birth control methods, including long acting reversible contraceptives 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.
- Nurture the Next served 403 families in the Healthy Families Tennessee (HFTN) program in fiscal year 2019-2020. Ninety-one percent of target children were connected to a medical home. Seventy-nine percent of children enrolled in the HFTN program were up to date on immunizations by 2 years of age, and 90 percent of women enrolled in the home visiting programs prenatally delivered full-term infants.
- TDH continues to promote CHANT referrals in all 95 counties, including phone call outreach to all medium to high risk births.

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ACTS OF CHILD ABUSE AND NEGLECT

In Federal Fiscal Year (FFY) 2018 (October 1, 2017 through September 30, 2018), it is estimated that 689,000 children were victims of child abuse and neglect in the U.S. Approximately 1770 of those children died as a result of their maltreatment. Of the children who died from child abuse, 75 percent experienced neglect and 46% experienced physical abuse. Children ages 0-3 years accounted for 71% of child abuse victims but were disproportionately represented among the fatalities, with almost 1 in 2 (47%) cases of child abuse fatalities having occurred in children under 1-year-old.[3]

According to the Children's Bureau's Administration on Children, Youth, and Families, in Tennessee, 8,608 (6.1 per 1,000) children were determined to have been victims of child abuse in 2018.[7] Of the children who were victims of child abuse in 2018, 11% experienced neglect, 26% experienced sexual abuse, 51% experienced physical abuse and 16% experienced multiple forms of maltreatment. Among child abuse victims, 52% were children ages 0-5 years.[4]

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 808 child deaths reviewed, 75 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, 2019*

	All Ages	Less than 1 year	1-17 years
Any form of Child Abuse Victimization	75	23	52
Physical Abuse	27	9	18
Neglect	50	15	35
Sexual Abuse	5	0	5
Emotional Abuse	3	0	3
Unknown	3	0	3

*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.

[3] U.S. Department of Health & Human Services, Administration for Children and Families, Administration on Children, Youth and Families, Children's Bureau. (2019). Child Maltreatment 2017. Available from https://www.acf.hhs.gov/cb/resource/child-maltreatment-2018

[4] Child Maltreatment 2018; 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.

- In calendar year 2019, 149 deaths and near deaths were reviewed by DCS. This included 102 non-custody deaths and 7 deaths of children in DCS custody. During this review period, 40 near deaths cases were also reviewed, including 38 non-custody near deaths and 2 custody near deaths.

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 51 of the 95 counties in Tennessee, expanding to all 95 counties in fiscal year 2021.

- 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 118,633 calls in 2019 resulting in 146,298 referrals. 44,524 were web referrals.

DEATHS TO CHILDREN WITH SPECIAL CIRCUMSTANCES

Children with special circumstances include those with a disability, chronic illness, or an open Child Protective Services (CPS) case at the time of death. At least one in four deaths (26%; n=213) in 2019 involved children known to have suffered from a disability or chronic illness (Table 8). Among children who reported disability or chronic illness, 18 were enrolled in the Tennessee Department of Health's Children's Special Services program (CSS). CSS is a voluntary program that provides families of children with special health care needs with care coordination and payments for medical services. The families of 36 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, 2019*

	Type of Disability or Chronic Illness			
Age	**Physical**	**Sensory**	**Mental**	**Cognitive****
Less than 1 year	89	1	1	13
1-4 years	26	0	0	3
5-9 years	34	2	1	7
10-14 years	32	1	5	11
15-17 years	32	1	6	8
Total	**213**	**5**	**13**	**42**

*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.
**A cognitive disability refers to a developmental disability vs. a mental disability refers to a mental health or substance abuse issue
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, 2019*

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	16	36

*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. In 2019, the CSS program merged with CHANT in order to add inclusive wrap around services for Tennessee families. Trained care coordinators work with children with special health care needs and their families. Families are referred to community resources that assist in meeting family-specific needs and assist families in coping with their child's condition.

- In 2019 the CSS program merged with the care coordination program and Tenncare Outreach program to form Community Health Access and Navigation in Tennessee (CHANT) to help individuals and families navigate complex health systems and social services. 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

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

Table 10. Summary of Year-to-Year Trends for Selected Causes of Deaths Reviewed Tennessee, 2018 vs 2019*

	2018	2019	2018	2019
	Number of Deaths		Rate per 100,000	
Categories showing Improvement				
Sleep-Related**	128	103	1.8	1.3
Congenital Anomaly**	107	97	1.6	1.2
Suicide	39	32	3.4	2.1
Homicide	55	40	3.7	2.7
Drowning	31	16	1.3	1.1
Unintentional Asphyxia	56	39	3.4	2.6
Categories showing small change				
Prematurity	140	140	8.8	9.3
Cancer	32	36	2.2	2.4
Categories showing worsening outcome				
Motor Vehicle Related	62	75	4.3	5.0

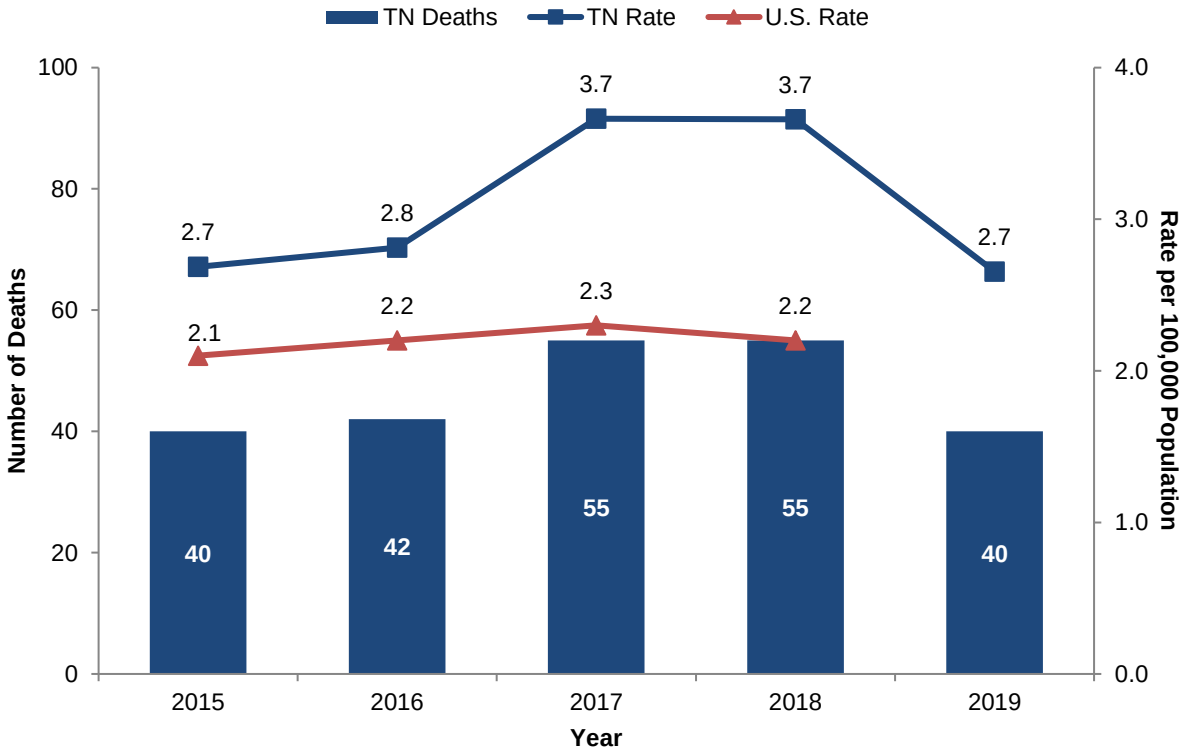
*Causes are not mutually exclusive
Data source: Tennessee Department of Health, Child Fatality Review Database System
** Deaths of infants less than 23 weeks gestation and less than or equal to 500 grams in weight are not reviewed because these deaths occur before the currently accepted limits of viability. Therefore, this number may differ from that published in other Departmental reports. Sleep-related and congenital anomaly death rates were calculated as deaths per 1000 live births in consistency with other death rates among infants.
***In the above table, trends in deaths are categorized into the three categories: those showing improvement from 2018 to 2019 (at least 10% improvement); those showing relatively no change from 2018 to 2019 (less than 10% change), and those showing worsening outcomes (at least a 10% change).

There was improvement in three areas of categories of death. Between 2018 and 2019, there was a considerable decrease in sleep-related child deaths, congenital anomaly, suicide, homicide, drowning, and unintentional asphyxia. On the other hand, deaths from motor vehicle crashes increased by at least 10% among Tennessee children. Lastly, there was a small change in deaths due to prematurity and cancer.

HOMICIDE DEATHS

Homicide is a serious problem nationally, affecting people across all stages of life. In 2018, 18,830 people nationwide were homicide victims, of which 1,597 were children under 18 years of age. In 2018, 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 2018.[5] Tennessee's child homicide rate has remained consistently above the national rate (Figure 11). In 2019, 40 children died of homicide in Tennessee, a 27% decrease in the number of deaths from 2018. This number represents 5% of all reviewed child deaths.

Figure 11. Homicide Deaths and Rates per 100,000 Population Ages 0-17 Years Tennessee and US, 2015-2019

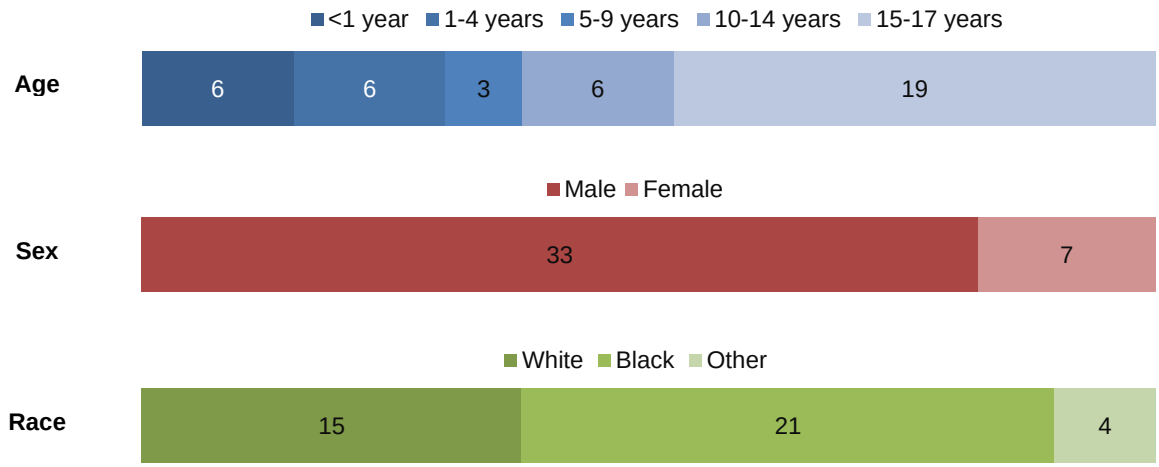


Data source: Tennessee Department of Health, Child Fatality Review Database System and population estimates based on interpolated data from the U.S. Census's Annual Estimates of the Resident Population.

Thirty-three homicide victims were males; 7 were females. Over half of the victims (21 deaths) were Black children (Figure 12). Older teenagers (age 15-17 years) had the highest burden of homicide deaths (n=19; 48%). Sixty-eight percent of homicides (n=27) were committed using firearms (Figure 13) and 53% (n=21) of all homicides occurred in the child's home (Figure 14).

[5] 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

Figure 12. Demographic Distribution of Homicide Deaths for Children Ages 0-17 Years Tennessee, 2019



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

Figure 13. Weapon Type used in Homicide Deaths for Children Ages 0-17 Years, 2019 Tennessee, 2019*

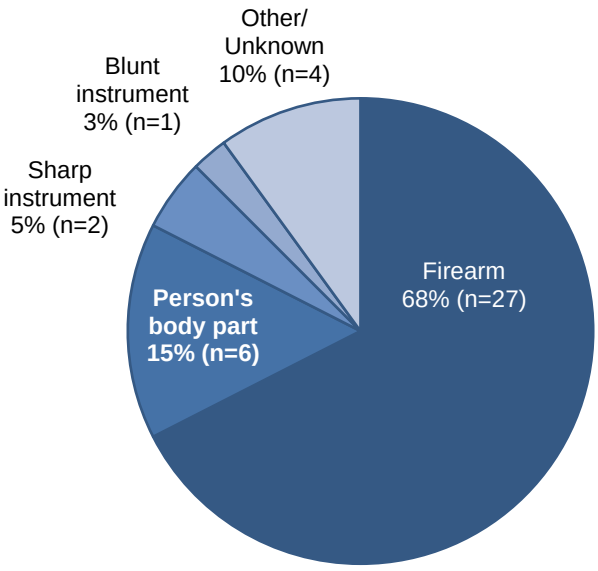
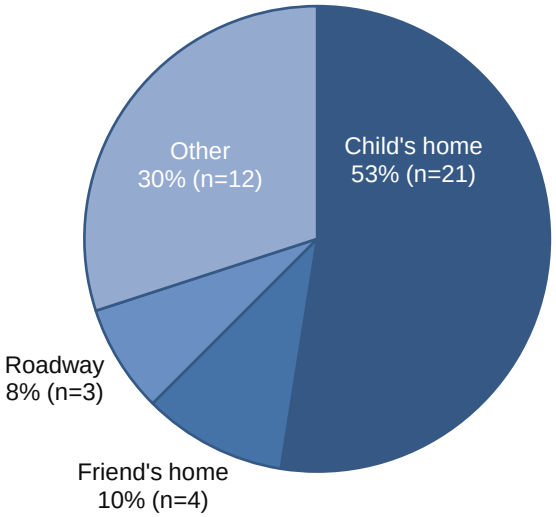


Figure 14. Homicide Deaths for Children Ages 0-17 Years by Victim's Location Tennessee, 2019



*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 Shaken Baby/Abusive Head Trauma Prevention project materials are disseminated statewide to every birthing hospital in Tennessee. In FY2020, Nurture the Next distributed over 90,000 materials (in English and Spanish) to 100 percent of birthing hospitals to educate parents about abusive head trauma prevention. Nurture the Next also conducted in-person and web-based trainings to Labor & Delivery/Maternity/NICU nurses in 8 hospitals around the state.
- 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 21st 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.
- Building Stronger Brains training has been provided to all TDH staff statewide.

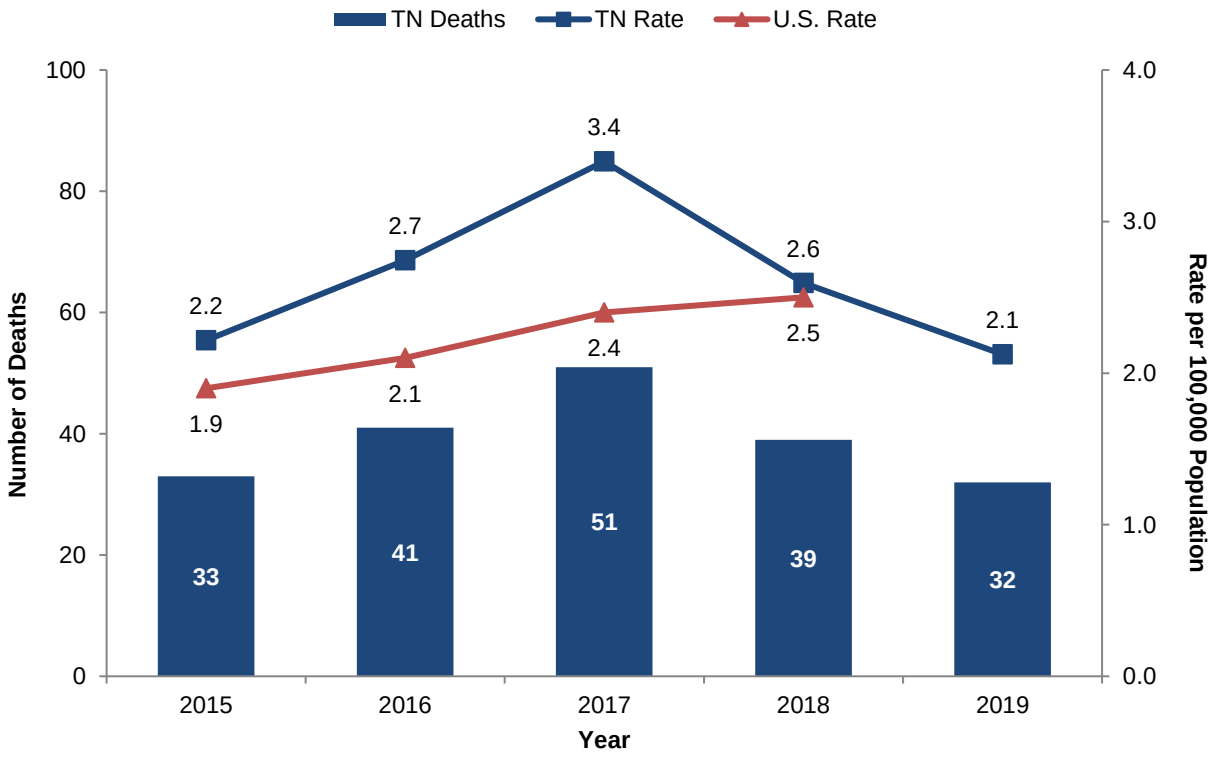
SUICIDE DEATHS

In 2018, 1,825 children between ages 10 and 17 years died by suicide (5.5 suicide deaths per 100,000 children) in the United States, making suicide the second leading cause of death for children in this age group. White (vs. Black) children and males (vs. females) had higher rates of suicide nationally in 2018.[6]

In 2019, firearms in the home are the leading mechanism and location for youth suicides.

In Tennessee, thirty-two children under 18 years of age died by suicide during 2019; this represents 4% of all reviewed deaths and a rate of 2.1 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, 2015-2019



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. Female children accounted for 41% of suicides in 2019 compared to 25% for 2014-2018 combined. Of the 32 suicide deaths in 2019, 29 (91%) were White children and the remaining 3 (9%) were Black children. Cases were spilt between the top two methods, with firearms used in 50% (n=16) of deaths and hanging representing 47% (n=15) of deaths (Figure 17). Most of the cases (91%) occurred in the child's home (Figure 18).

[6] 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

Figure 16. Demographic Distribution of Suicides for Children Ages 0-17 Years Tennessee 2019

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

Figure 17. Method of Suicides for Children Ages 0-17 Years, Tennessee, 2019

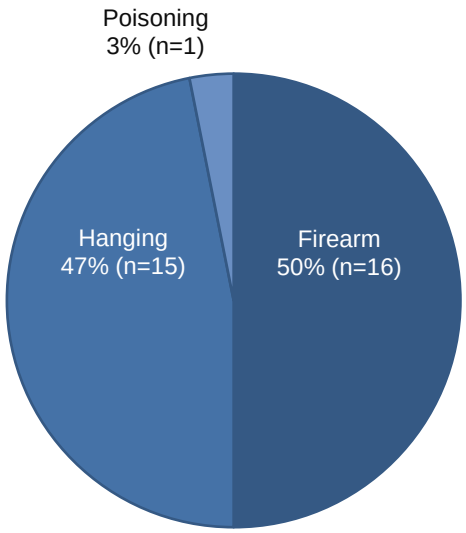
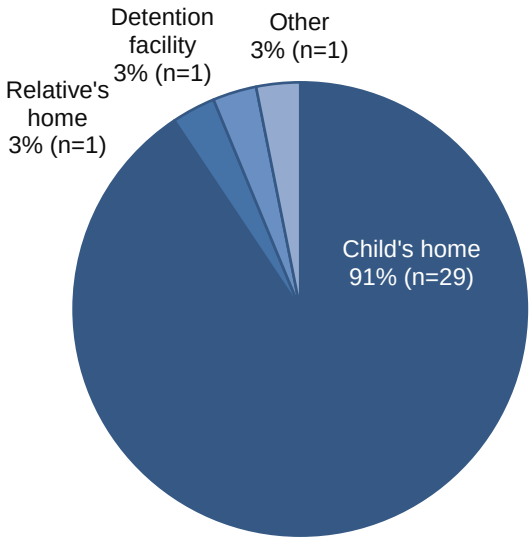


Figure 18. Location of Suicides for Children Ages 0-17 Years, Tennessee, 2019



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

As shown in Table 11, hanging was the most common method of suicide for children 14 years and younger while firearms were most common for children 15-17 years.

Table 11. Suicides among Children Ages 0-17 Years by Victim Age Groups and Method Tennessee, 2019*

Method of Suicide	5-9 years	10-14 years	15-17 years	Total
Firearm	0	6	10	16
Hanging	1	7	7	15
Poisoning, overdose or acute intoxication	0	0	1	1
Total	**1**	**13**	**18**	**32**

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

FOCUSING ON PREVENTION: SUICIDE DEATHS

Prevention opportunities include:

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

Current prevention efforts in Tennessee include:

- In collaboration with the Jason Foundation and Tennessee Department of Mental Health and Substance Abuse Services, the Tennessee Department of Education offers schools a no cost, web-based professional development training series on suicide prevention. The series can be accessed at: https://jasonfoundation.com/get-involved/educator-youth-worker-coach/professional-development-series/
- 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.
- In January 2019 the Suicide Prevention Act was established for TDH to convene suicide prevention stakeholders to review data and resources to develop statewide suicide prevention programs.
- The TDH Suicide Prevention Program developed a model for rapid prevention response using surveillance data from ESSENCE.
- 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.
- A needs assessment survey with an inventory of suicide prevention programs was conducted in 2019 that identified evidence-based programs being implemented, reach of the program, and opportunities for expansion or improvement of prevention programs.

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.

- TDH formed 32 recommendations for improvement to suicide prevention services and programs in TN based on gaps identified. These recommendations, as well as the inventory of all suicide prevention programs and services available across the state, are included in the first TDH Suicide Prevention Report, which can be found at: https://www.tn.gov/content/dam/tn/health/program-areas/vipp/TDH-2020-Suicide-Annual-Report.pdf or at preventsuicidetn.com

- The TDH Suicide Prevention Program continues to participate in a Suicide and Self Harm Prevention National Child Safety Learning Collaborative (CSLC) through the Children's Safety Network. 267 gatekeeper trainings have been provided to 8,137 youth impactors across the state from January 2019 to September 30, 2020.(If you need this data broken down by years, it is 111 trainings provided to 3,737 youth impactors in 2019 and 156 trainings provided to 4,400 youth impactors from January 1, 2020 to September 30, 2020)

- 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

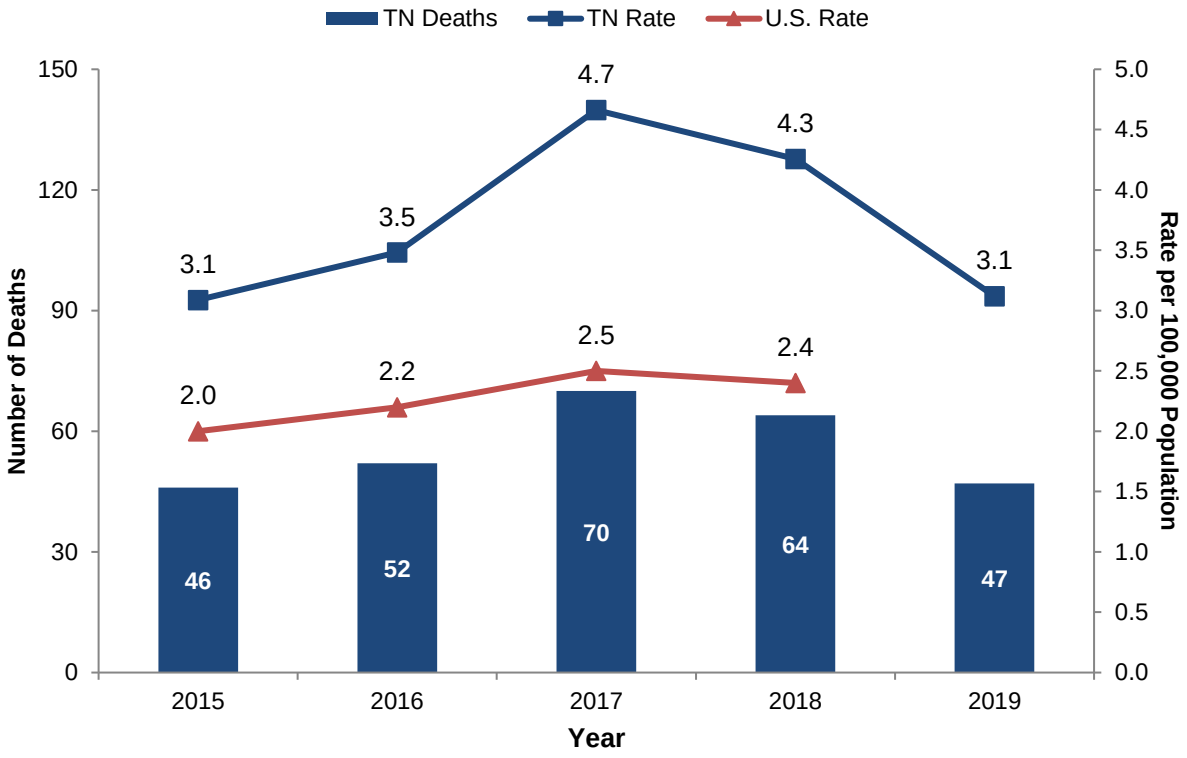
- TDH received funding through the CDC new Comprehensive Suicide Prevention Program. This funding will help TDH to provide a comprehensive public health approach based on data and science to address risk factors which contribute to suicide.

- TDH monitors suicide data weekly to inform reports.

FIREARM DEATHS

In 2018, firearms accounted for 1,729 deaths (2.4 per 100,000) of children ages 0 to 17 years nationally.[7] In 2019, 47 Tennessee children (3.1 per 100,000) died in incidents involving firearms, a 28% decrease compared to 2018 (Figure 19). This number represents 6% of all reviewed deaths. Though the rate of child firearm death has declined in Tennessee over the past three years, 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, 2015-2019

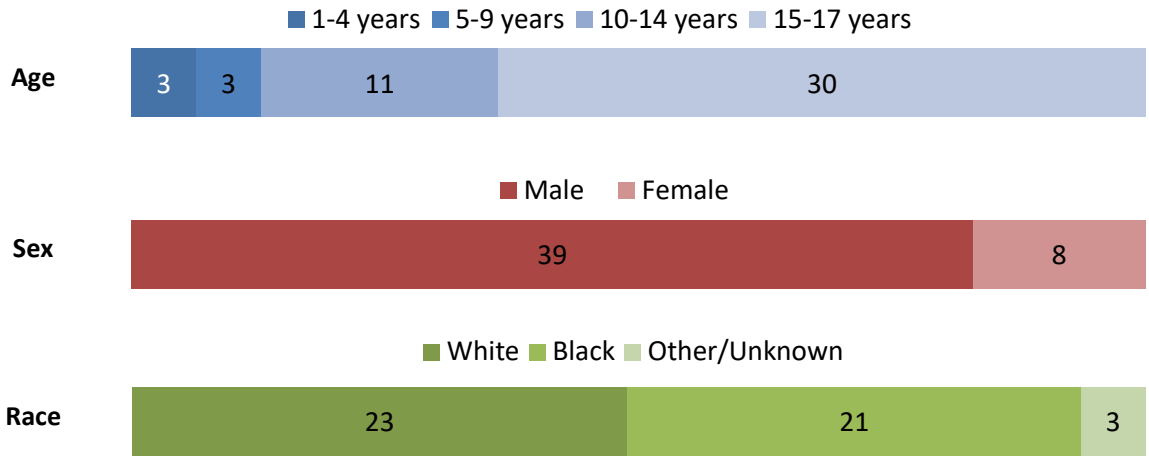


Data source: Tennessee Department of Health, Child Fatality Review Database System and population estimates based on interpolated data from the U.S. Census's Annual Estimates of the Resident Population.

Of the 47 deaths, 39 (83%) were males and 78 (17%) were females (Figure 20). Most firearm-related deaths (64%) occurred amongst the oldest age group, teenagers 15 to 17 years. Although the number of firearm-related deaths of White children was greater than that of Black children, the rate of firearm-related fatality is higher among Black children (data not shown). Among children 10-14 years, most firearm deaths were classified as suicides while most firearm deaths of children 15-17 years were homicides (Table 12).

[7] 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

Figure 20. Demographic Distribution of Firearm-Related Deaths for Children Ages 0-17 Years Tennessee, 2019



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

Table 12. Firearm-Related Deaths for Children Ages 0-17 Years by Manner of Death and Age Group, Tennessee, 2019

Manner of Death	<1 yr	1-4 yrs	5-9 yrs	10-14 yrs	15-17 yrs	Total
Accident	0	1	0	0	1	2
Suicide	0	0	0	6	10	16
Homicide	0	2	3	4	18	27
Undetermined	0	0	0	1	1	2
Total	**0**	**3**	**3**	**11**	**30**	**47**

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

Fifty-seven percent (n=27) of all firearm fatalities were homicides and 34% (n=16) were suicides (Figure 21). Of the 47 deaths involving firearms, 31 were handguns, 5 were shotguns, and the remaining 11 involved an unknown gun type (Figure 22).

For homicide and suicide fatalities in which the firearm owner was known, a parent (n=13) was the most common owner category listed. The owner of the firearm was listed as "unknown" for 42% (n=18) of homicide and suicide deaths caused by firearms (Table 13).

Figure 21. Firearm-Related Deaths for Children Ages 0-17 Years by Manner of Death, Tennessee 2019

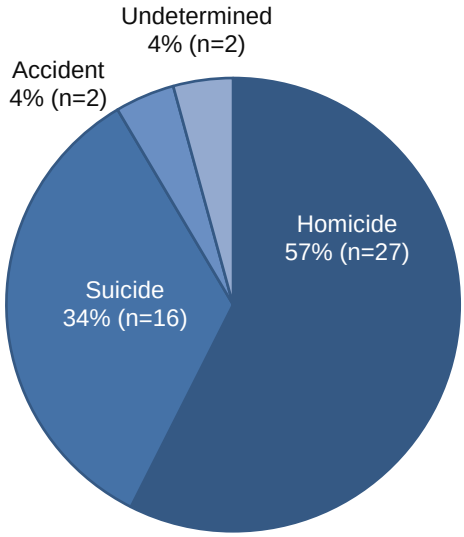
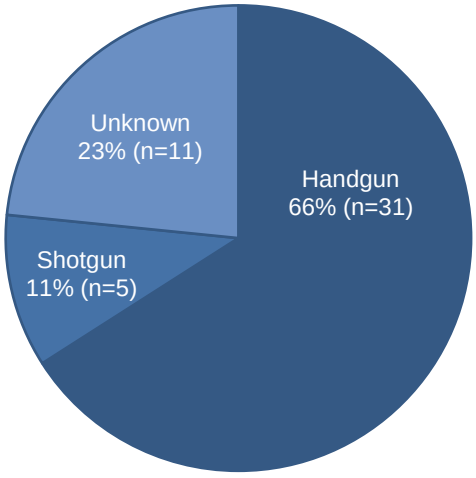


Figure 22. Firearm-Related Deaths for Children Ages 0-17 Years by Firearm Type, Tennessee, 2019



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

Table 13. Homicide and Suicide Deaths due to Firearms for Children 0-17 Years by Owner of Firearm, Tennessee, 2019

Owner of Firearm	Homicides	Suicides	Total
Parent (biological, stepparent, adoptive)	3	10	13
Other family member (grandparent, sibling)	2	2	4
Friend, acquaintance, child's boyfriend/girlfriend	2	0	2
Other (self, rival gang member, stranger)	3	1	4
Weapon stolen/found (owner is unknown)	2	0	2
Unknown	15	3	18
Total	**27 (63%)**	**16 (37%)**	**43**

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.

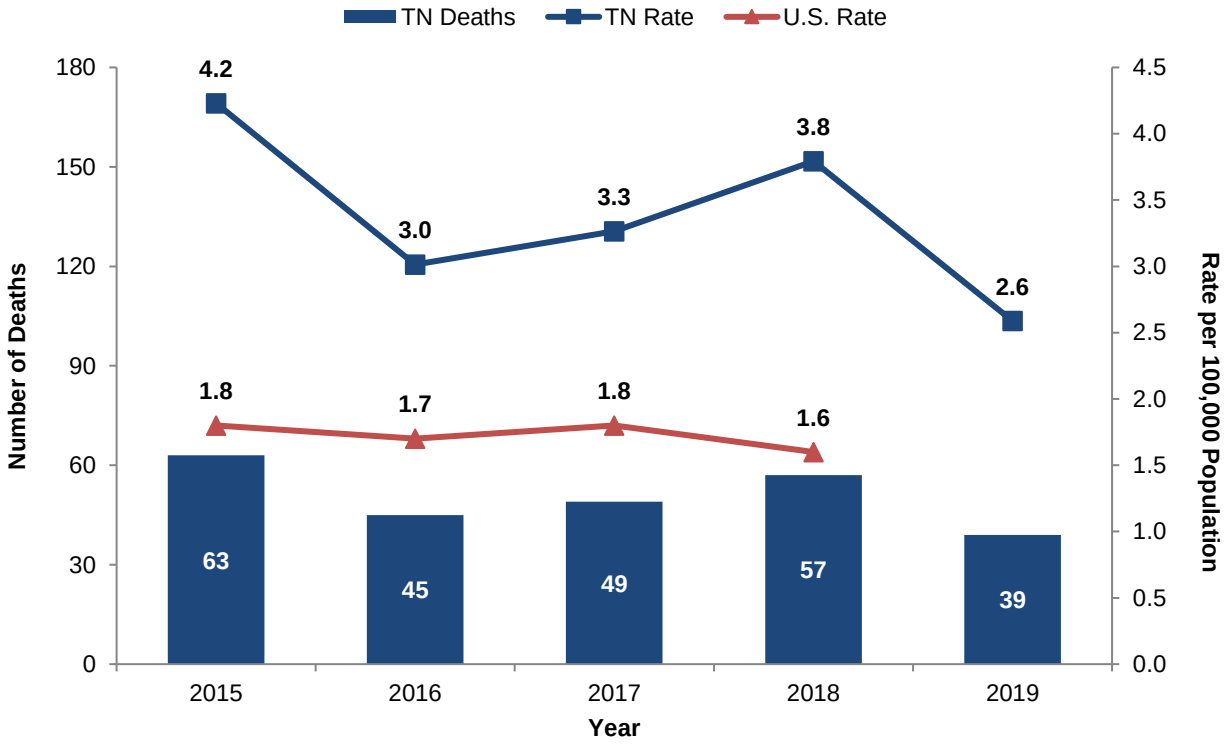
Current prevention efforts in Tennessee include:

- The Tennessee Department of Safety and Homeland Security distributes information on promoting safe firearm storage and practices.
- All new applicants for firearms must complete a safety course and submit proof within 6 months of application.
- 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.

Unintentional asphyxia is the leading cause of injury death for children under the age of one year, and accounts for approximately 1,000 infant deaths each year nationally. Asphyxia cases may be related to suffocation, strangulation, or choking. Accidental suffocation rates have increased fourfold since 1984.[8] Nationally, male infants and Black infants have higher rates of death due to asphyxia than female and White infants respectively. While infant asphyxia deaths are closely linked to unsafe sleep environment factors, deaths of older children are more likely to be related to choking on food or toys.

Figure 23 demonstrates the annual count and rate of unintentional asphyxia child death for 2015-2019. In 2019, 39 children died of unintentional asphyxia. This number represents 5% of all reviewed deaths.

Figure 23. Unintentional Asphyxia Deaths and Rates per 100,000 Children Ages 0-17 Years Tennessee and the US, 2015-2019*

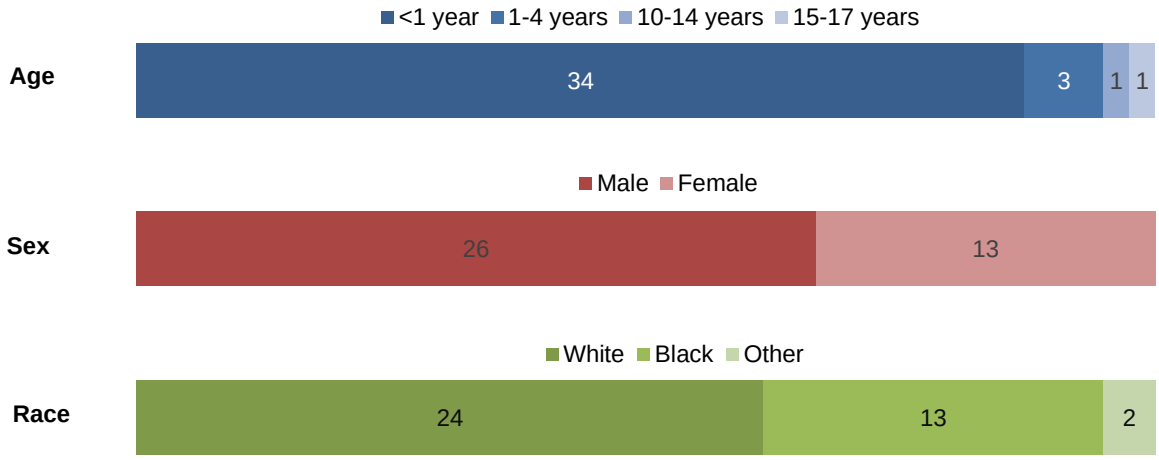


*Previous reports include intentional and unintentional asphyxia.
Data source: Tennessee Department of Health, Child Fatality Review Database System and population estimates based on interpolated data from the U.S. Census's Annual Estimates of the Resident Population.

Figure 24 demonstrates the demographic distribution of unintentional asphyxia fatality by age, sex, and race. More male (n=26) and White children (n=24) died from asphyxia than female (n=13) and Black children (n=13). As shown in Table 14, the majority (n=34; 87%) of asphyxia cases in 2019 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.

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

Figure 24. Demographic Distribution of Asphyxia Deaths for Children Ages 0-17 Years Tennessee, 2019



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

Table 14. Asphyxia Cause of Death for Children Ages 0-17 Years by Age Groups Tennessee, 2019

Cause of Asphyxia	<1 yr	1-4 yrs	5-9 yrs	10-14 yrs	15-17 yrs	Total
Sleep-related	34	0	0	0	0	34
Suffocation (not sleep-related)	0	2	0	0	1	3
Choking	0	1	0	0	0	1
Strangulation (not sleep-related)	0	0	0	1	0	1
Total	34	3	0	1	1	39

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:

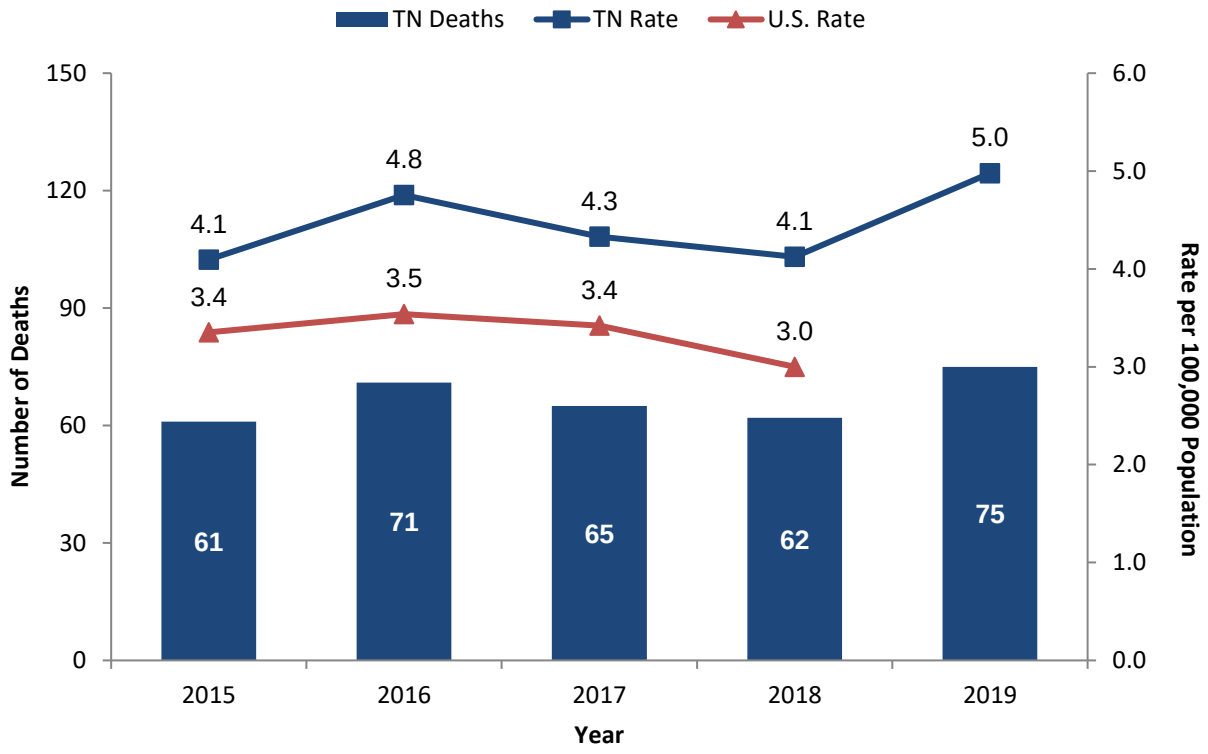
- The Tennessee Department of Health's "ABCs of Safe Sleep" campaign educates parents and other caregivers on the how to prevent asphyxia in the sleep environment. Multiple state and community agencies educate the community about the "ABCs of Safe Sleep" at various outreach events across Tennessee.
- 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.[9] In 2018, the most recent year for which national data is available, 2,201 children (ages 0-17 years) were killed in motor vehicle crashes. Nationally, teenagers (age 15-17) and males make up the majority (45% and 58%, respectively) of child motor vehicle fatalities.[10] 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 2019. Figure 25 demonstrates the annual count and rate of motor vehicle-related child deaths for 2015-2019. In 2019, 75 deaths were related to motor vehicles or transportation modalities, representing 9% 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, 2015-2019



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.

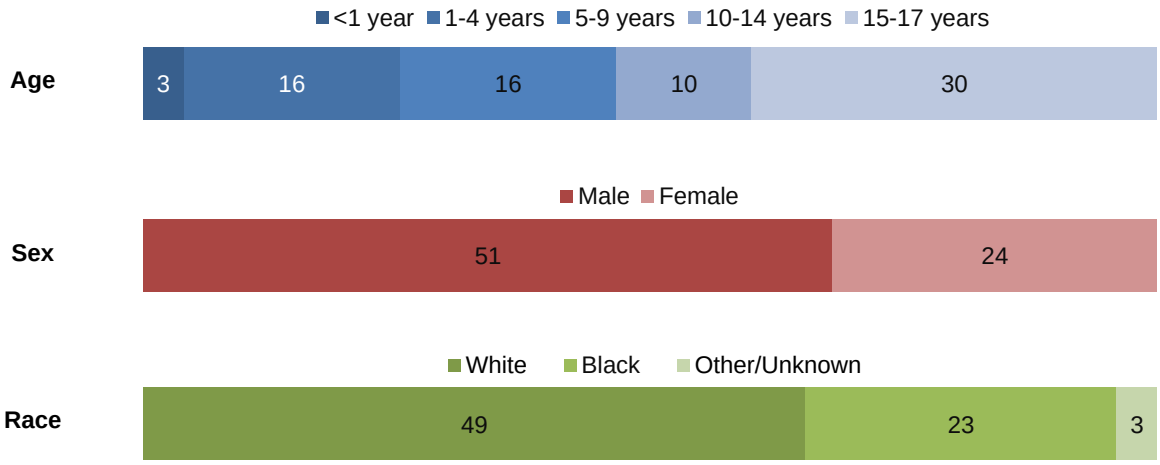
[9] Centers for Disease Control and Prevention: National Center for Injury Prevention and Control. Injury Prevention Web-based Injury Statistics Query System (WISQARS). 2018. Accessed at http://www.cdc.gov/injury/wisqars/fatal_injury_reports.html

[10] 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

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).

Motor vehicle-related deaths occurred among every age category although, predictably, those of driving age (within the 15-17 year age cohort) were most affected. Of the 30 fatalities in that cohort, half (15 cases) were driving at the time of the incident. Table 15 summarizes the position of the children relative to the vehicle by age group. The vast majority (90%) of children killed were drivers or passengers of a motor vehicle. An additional three children were pedestrians struck by motor vehicles.

Figure 26. Demographic Distribution of Motor Vehicle Fatalities for Children Ages 0-17 Years Tennessee, 2019



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

Table 15. Motor Vehicle/Other Transport Fatalities for Children Ages 0-17 Years by Age Groups and Position with Respect to Vehicle, Tennessee, 2019

Victim Position	<1 yr	1-4 yrs	5-9 yrs	10-14 yrs	15-17 yrs	Total
Driver	0	0	1	1	15	17
Passenger	3	9	14	6	12	44
Pedestrian	0	7	1	3	3	14
Total	3	16	16	10	30	75

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 16. Motor Vehicle Deaths among Children Ages 0-17 Years by Vehicle Type and Protective Measure*, Tennessee, 2019

Vehicle Type	Protection Not Used	Protection Used	Not Applicable	Total Deaths
Car, Truck, Sport Utility Vehicle (SUV),Van	30	23	0	53
All-Terrain Vehicle, Motorcycle, Other	2	5	1	8
Total	32	28	1	61***

*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:

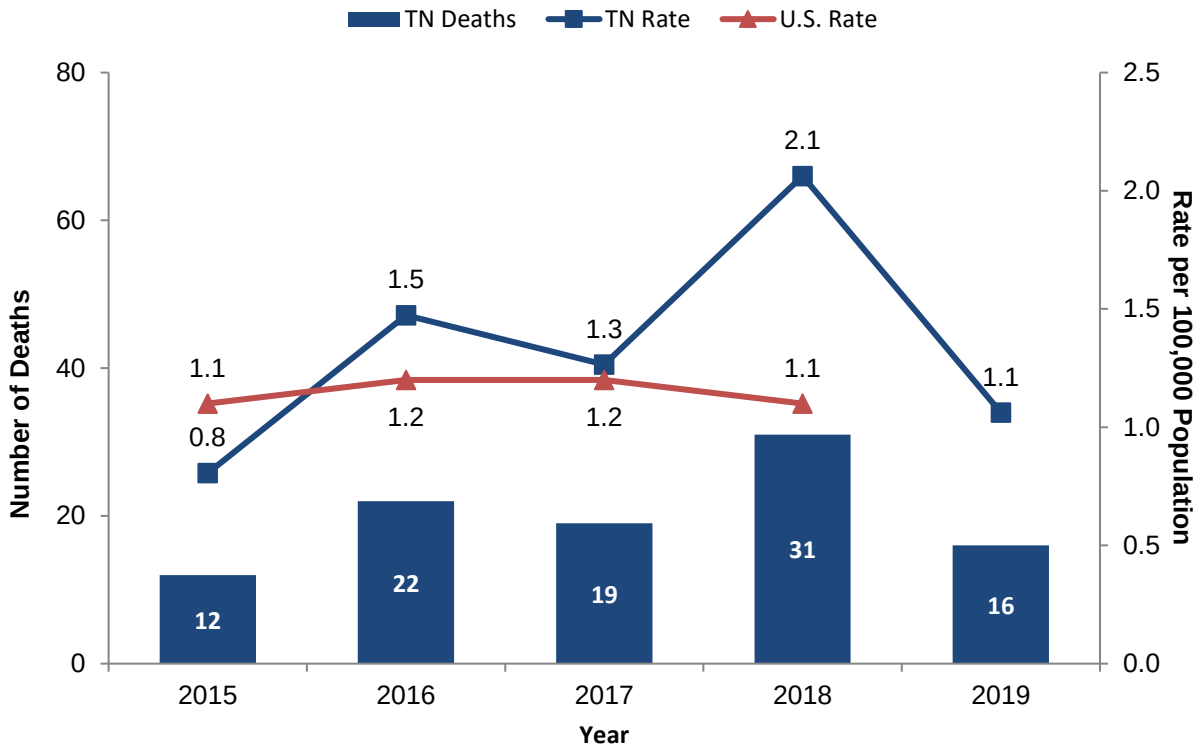
- The Tennessee General Assembly passed a Graduated Driver’s License (GDL) law in 2001. TDH has created educational programming for parents and teens to raise awareness of, and compliance with, the GDL law. This educational programming is an opportunity to strengthen the compliance with the GDL law.
- TDH, in conjunction with the regional trauma centers, sponsors “Battle of the Belt” and “Checkpoints™” programs to reduce teen motor vehicle-related injuries and fatalities.
- Developed a virtual learning version of Checkpoints™ to help reach a larger audience, including a virtual data collection tool.
- TDH encourages schools to participate in the Tennessee Highway Safety Office’s program “reducetncrashes.org”. Schools register on the website and receive points for each motor vehicle crash prevention activity they complete. Points may be redeemed for items schools can use to promote safe driving to their students.
- TDH provided funding to 27 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.[11] Between 2014 and 2018, an average of 842 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.[12] Nationwide, infant drownings occurred most often in bathtubs.[13]

Figure 27 demonstrates the annual count and rate of child deaths due to drowning for 2015-2019 in Tennessee and the US. In Tennessee, 16 children died by drowning in 2019. This number represents approximately 2% of all reviewed deaths. Of the 16 drowning case reports, there were three cases with definitive knowledge that the child was able to swim (data not shown).

Figure 27. Drowning Deaths and Rates per 100,000 Children Ages 0-17 Years Tennessee and the US, 2015-2019



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.

[11] 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

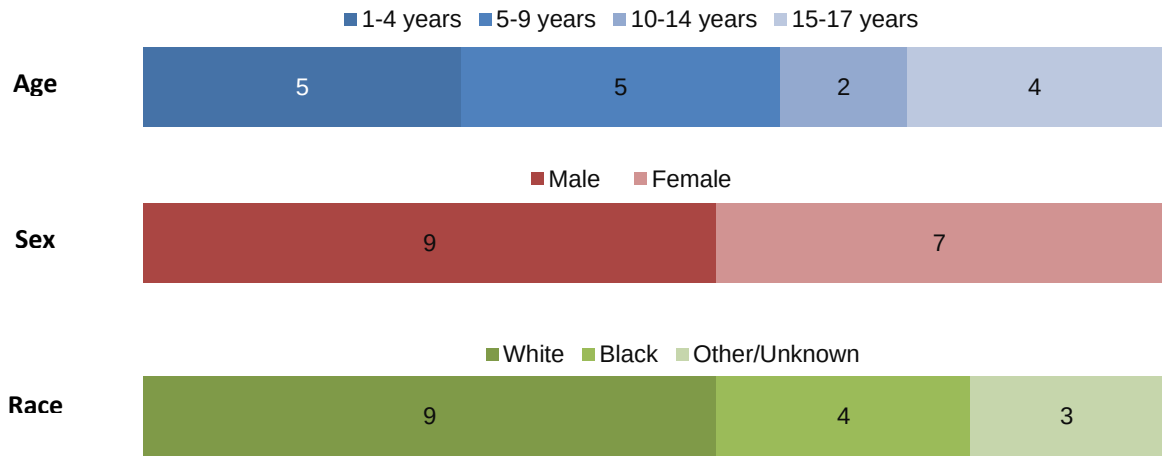
[12] Centers for Disease Control and Prevention: National Center for Injury Prevention and Control. Injury Prevention Web-based Injury Statistics Query System (WISQARS). 2017. Accessed at http://www.cdc.gov/injury/wisqars/fatal_injury_reports.html

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

Figure 28 summarizes drown-related deaths by age, sex, and race of child. For 2019, drowning deaths were most frequent among children 1-4 years and children 5-9 years, with these age groups each accounting for 31% (n=5) of cases. Drowning incidents were more frequent in males (n=9) compared to females (n=7) and in White children (n=9) compared to Black children (n=4).

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 2019



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

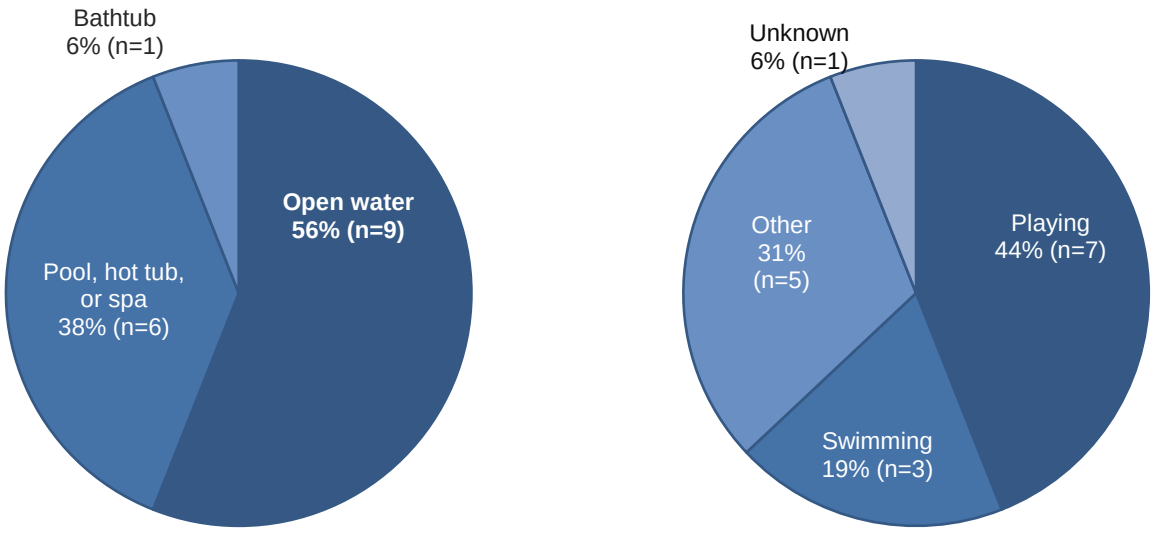
Table 17. Drowning Deaths for Children Ages 0-17 Years by Location and Age Groups Tennessee, 2019

Location of Accident	<1 yr	1-4 yrs	5-9 yrs	10-14 yrs	15-17 yrs	Total
Open Water	0	0	3	2	4	9
Pool, hot tub, spa	0	4	2	0	0	6
Bathtub	0	1	0	0	0	1
Total	**0**	**5**	**5**	**2**	**4**	**16**

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 (44%, n=7), followed by swimming (19%, n=3) (Figure 29). Other activities (35%) children performed prior to drowning included fishing, eating, and riding in a vehicle.

Figure 29. Drowning Deaths for Children Ages 0-17 Years, by Location and Activity at the Time of Death, Tennessee, 2019



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.

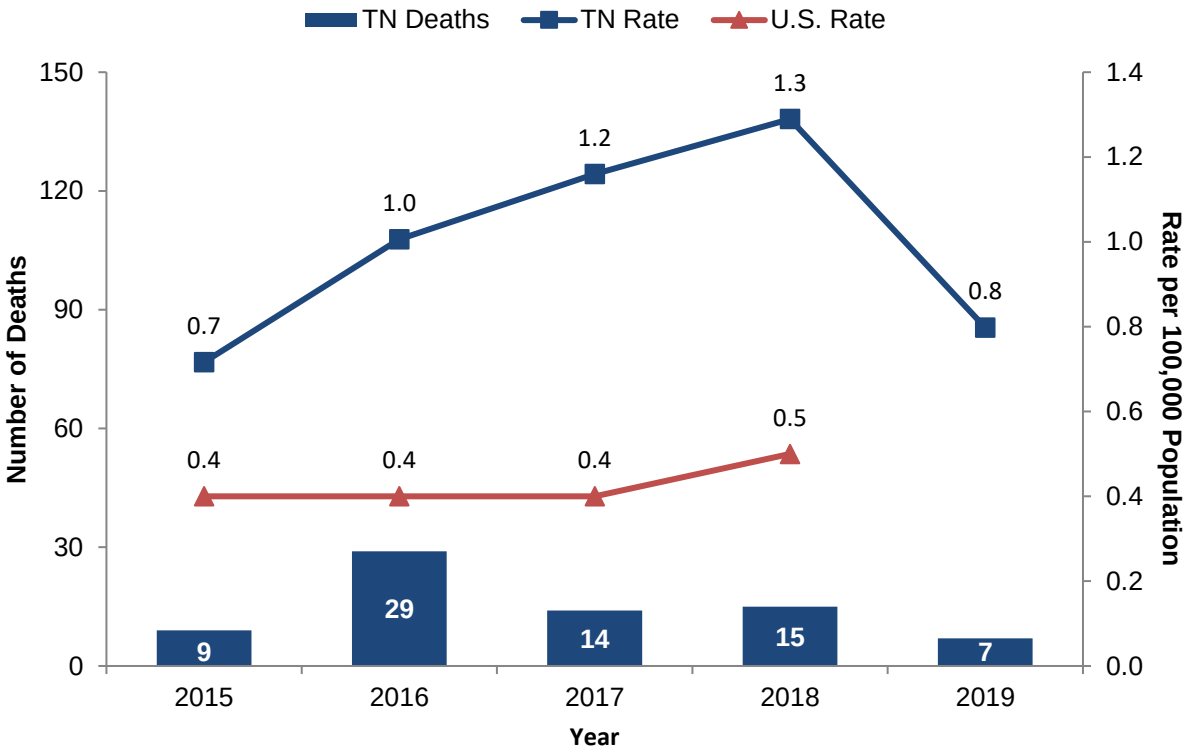
Current prevention efforts in Tennessee include:

- Safe Kids collaborates with community agencies throughout the spring and summer to provide water safety education to children and caregivers, including proper supervision of children in and around water, swimming with a friend, and use of properly fitting and approved flotation devices.
- Kidcentraltn.com provides education for parents on summer water safety to reduce the risk of drowning.
- Levi's Legacy established "Water-Guardians" to promote constant adult supervision in and around water when children are present.
- TDH developed social media messaging about water safety.

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.[14] In 2018, 346 children ages 0 to 17 years (0.5 per 100,000) died from burn-related injuries in the United States.[15] 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.[16] 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 2019, there were 7 fire-related child deaths.

Figure 30. Fire/Burn Deaths and Rates per 100,000 Children Ages 0-17 Years Tennessee and the US, 2015-2019



*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.

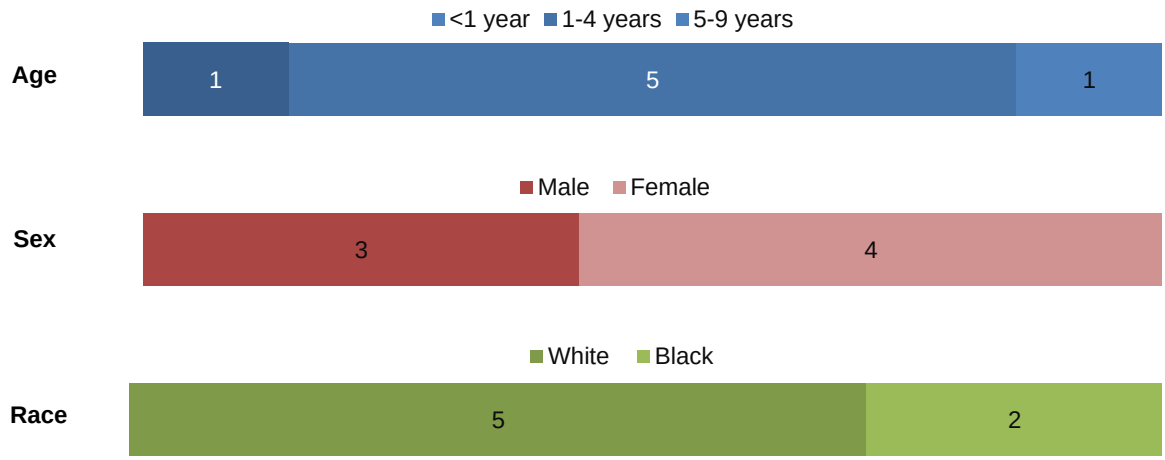
The majority of fire/burn-related deaths occurred among children who were 1-4 years (n=5), female (n=4), and White (n=5) (Figure 31). The most common fire source seen among the 7 cases was electrical wiring (n=3). Most fire/burn deaths occurred in single family homes (n=3) followed by apartments (n=1) and trailer/mobile homes (n=1).

[14] 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

[15] 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

[16] Federal Emergency Management Agency: Fire Death and Injury Rates. Accessed at https://www.usfa.fema.gov/downloads/xls/statistics/death_injury_data_sets.xlsx

Figure 31. Demographic Distribution of Fire/Burn Deaths for Children Ages 0-17 Years Tennessee, 2019



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, 2019

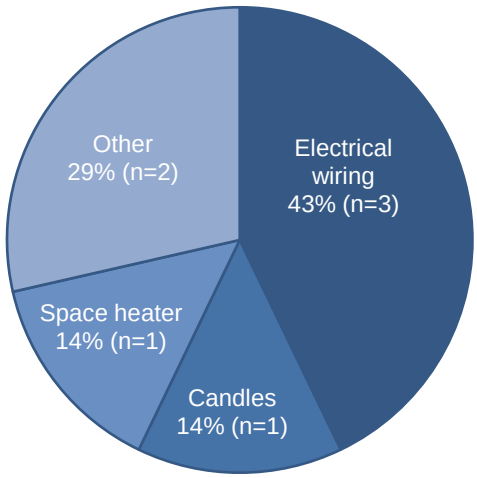
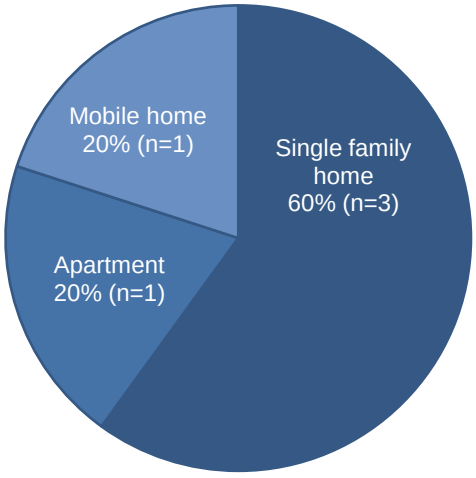


Figure 33. Fire/Burn Deaths for Children Ages 0-17 Years by Structure Type Tennessee, 2019*



* 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:

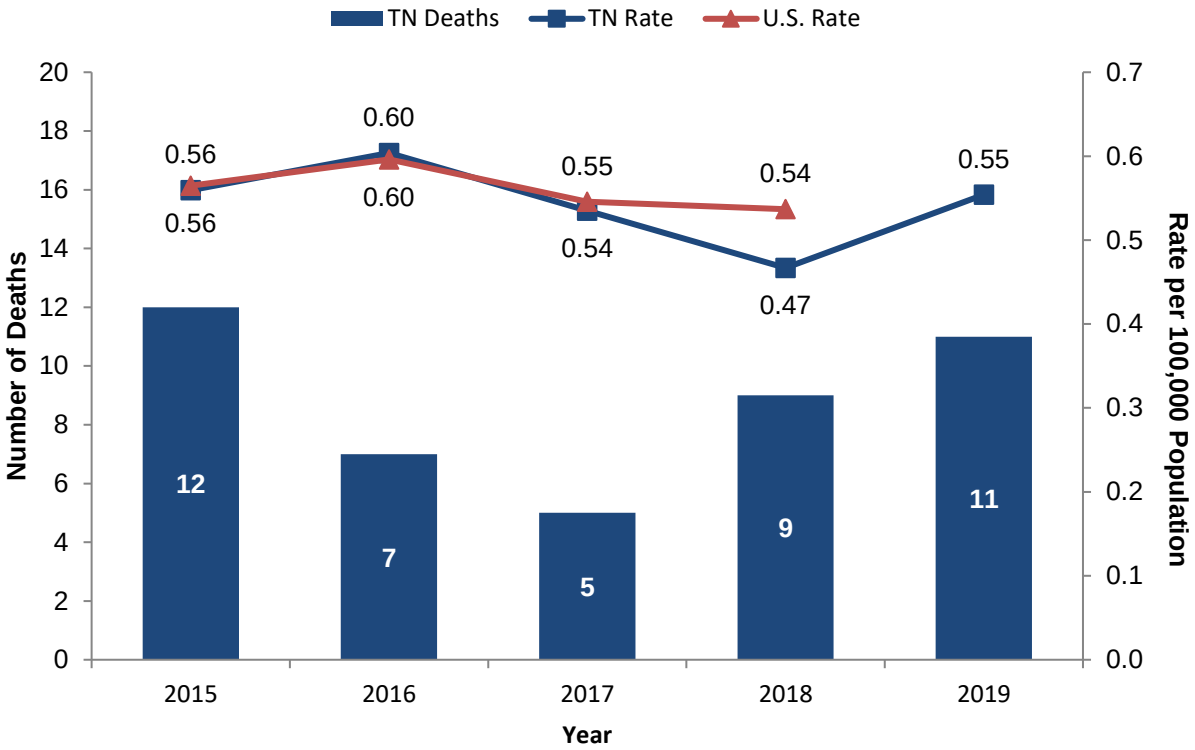
- "Get Alarmed, TN!" is a grant-funded fire safety education and smoke alarm installation program administered by the Tennessee Department of Commerce and Insurance's State Fire Marshall's Office (SFMO). The program provides fire safety education materials and smoke alarms to participating fire departments. 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 2020, the State Fire Marshal's office released a fire prevention plan for 2020-2021 that includes ensuring 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.

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 2018, 394 children ages 0 to 17 died by poisoning. This reflects a rate of 0.54 per 100,000 children in this age group. Fifty-six 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.[17]

In 2019, 11 children died from poisoning in Tennessee, representing 1% of all reviewed child fatalities. Figure 34 demonstrates the number and rate of poisoning deaths in Tennessee and the US from 2015 to 2019. 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, 2015-2019*

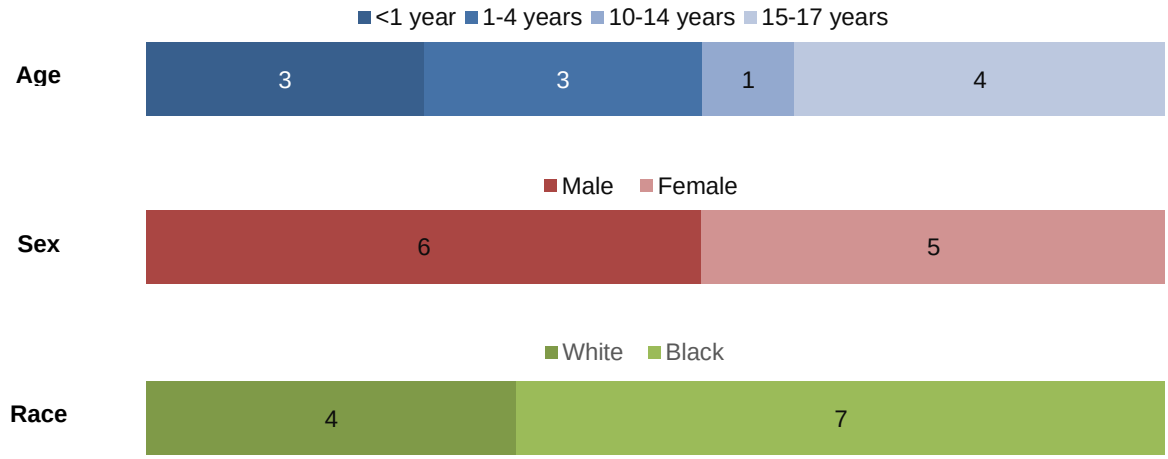


*Due to small annual numbers of cases, Tennessee rates represent three-year rolling averages.
Data source: Tennessee Department of Health, Child Fatality Review Database System and population estimates based on interpolated data from the U.S. Census's Annual Estimates of the Resident Population.

Teens 15-17 years made up the largest proportion of 2019 poisoning deaths (n=4) (Figure 35). Of the 11 poisoning deaths, six were males and seven were Black children. Six of the eleven poisoning fatalities involved prescription drugs while the remaining five 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.

[17] 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

Figure 35. Demographic Distribution of Intentional and Unintentional Poison-Related Deaths for Children Ages 0-17 Years Tennessee, 2019



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

Table 18. Poison-Related Deaths among Children Ages 0-17 Years by Substance and Age Groups Tennessee, 2019*

Type of Substances	<1 yr	1-4 yrs	5-9 yrs	10-14 yrs	15-17 yrs	Total
Prescription drug	1	2	0	1	2	6
Other substances	2	1	0	0	2	5
Total	3	3	0	1	4	11

*Other substances include alcohol, fentanyl, cocaine, and Benadryl.
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.

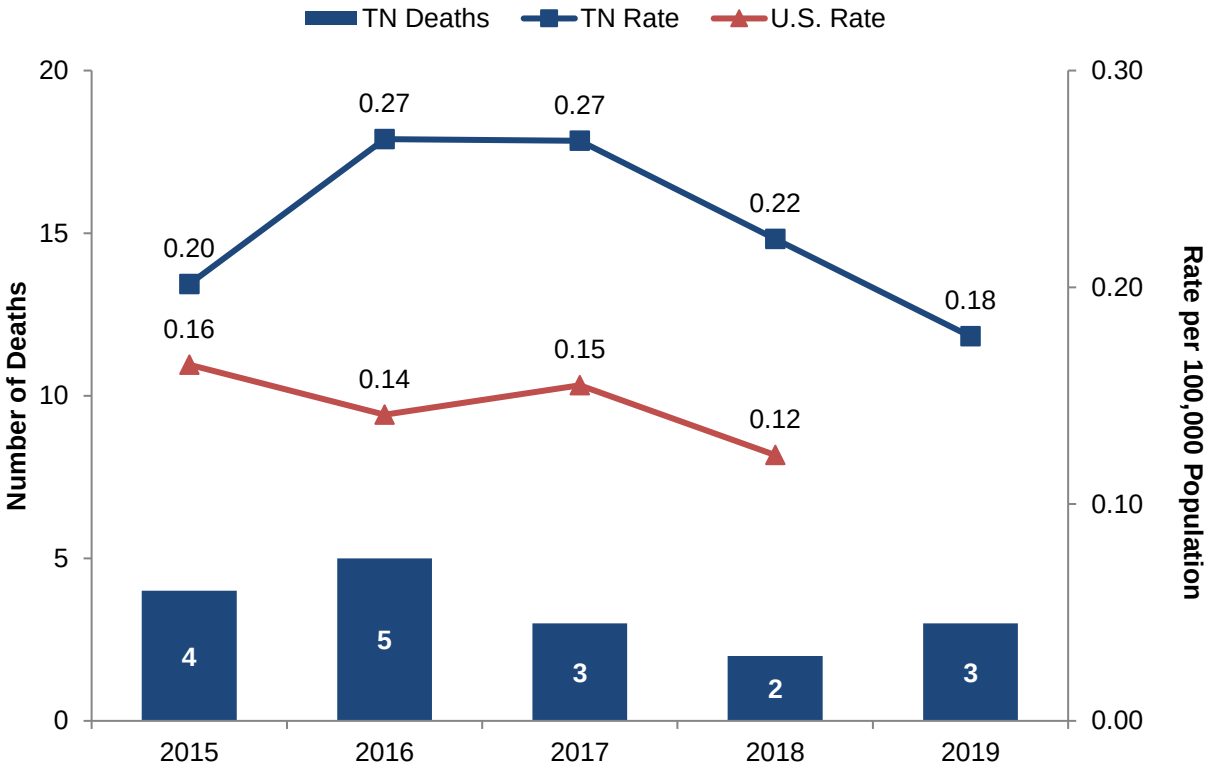
Current prevention efforts in Tennessee include:

- 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 356 medication drop boxes in all 95 counties in Tennessee. Pharmacies house 99 of the boxes, 9 universities, and 248 are at local law enforcement offices. As of September 2020, 543,473.07 pounds of medications have been collected since the start of the program.
- From October 1, 2019 to September 30, 2020, 70,193.74 pounds of medications were collected.
- The Department of Health partnered with the Prevention Alliance of Tennessee and the Department of Mental Health and Substance Abuse Services to promote the *Count It! Lock It! Drop It!*™program to substance abuse coalitions, county health councils, and other community groups. *Count It, Lock It, Drop It*™ is a program used to educate and encourage the community to count medications, lock them up, and dispose of medications properly once expired or no longer needed. All 95 counties have implemented the *Count It, Lock It, Drop It*™ program.
- The Tennessee General Assembly passed Tenn. Code Ann. § 53-11-308 to limit prescription opioid use by limiting supply, limiting strength and requiring all pharmacies to log prescriptions into a database.
- The poison control hotline continues to be on the infant safe sleep door hanger and is distributed to all families (approximately 80,000) with newborns annually.

FALL/CRUSH DEATHS

In Tennessee, three children died as the result of a fall or crush injury in 2019. Figure 36 demonstrates the number and rate of deaths due to fall or crush in Tennessee and the US from 2015 to 2019. These three 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, 2015-2019*



*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.

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.[18] Nationally, approximately 2.3 million children are treated in emergency rooms for fall-related injuries each year. In 2018, 90 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.[19]

In Tennessee, all three 2019 fall-related child deaths occurred in teens 15-17 years and all children were White (Figure 37). Two children were female and one was male.

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

Figure 37. Demographic Distribution of Fall/Crush Deaths for Children Ages 0-17 Years Tennessee, 2019

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.

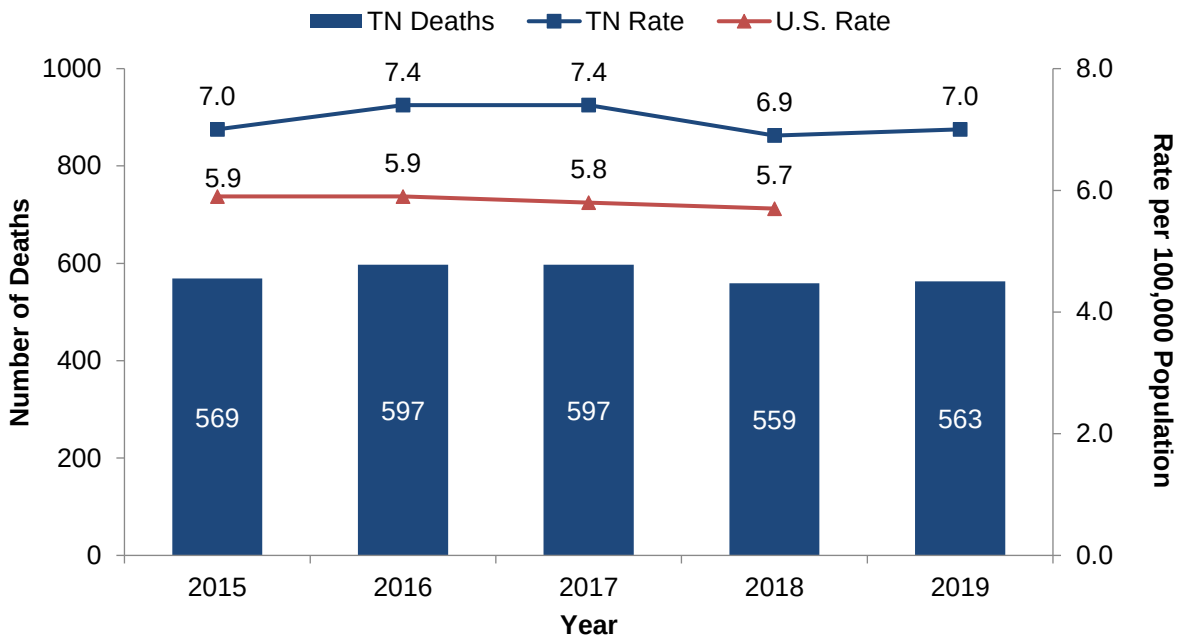
Current prevention efforts in Tennessee include:

- 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 DATA TRENDS

Infant mortality is the death in children less than 1-year-old**.** The overall 2019 infant mortality rate (IMR) was 7.0 infant deaths per 1,000 live births, a 1.4% increase from 2018 IMR of 6.9 deaths per 1,000 live births. Historically, the infant mortality rate decreased 8% from 2011 (7.4 per 1,000 live births) to 2013 (6.8 per 1,000 live births), then increased to 7.4 per 1,000 live births in 2016 and 2017. Similar to the overall child fatality rate, Tennessee's infant mortality rate continues to exceed the national rate. Tennessee's 2019 infant mortality rate is 19% higher than the 2018 US rate, the latest year for which the national rate is available. The number and rate of infant deaths in Tennessee and the U.S. for the last five years are shown in Figure 38.

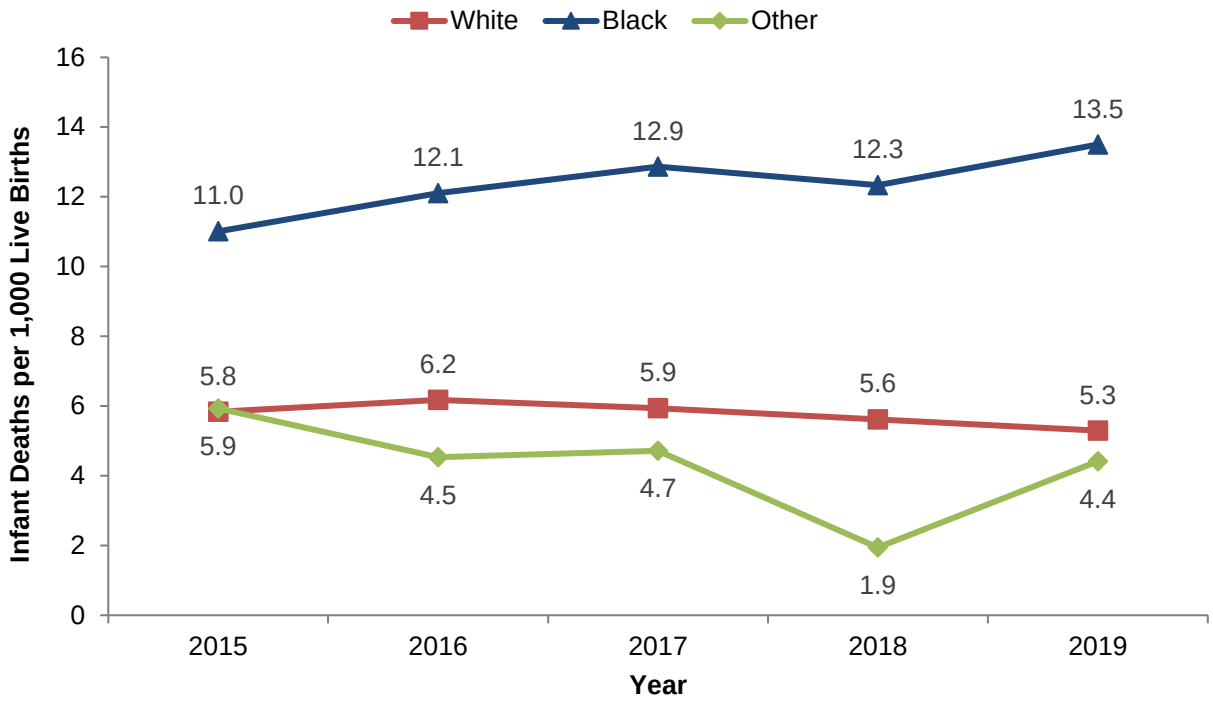
Figure 38. Number and Rate of Infant Deaths Tennessee, 2015-2019



Data source: Tennessee Department of Health, Office of Vital Records and Health Statistics, Death Statistical File, 2015-2019.

Racial disparity continues to exist among infants who suffer fatalities, with Black infants having a mortality rate that is consistently twice that of White infants (Figure 39 and Table 19). The 2019 White and Black infant mortality rates were not statistically significant in difference when compared to their respective 2015 rates.

Figure 39. Infant Mortality Rate by Race Tennessee, 2015-2019*



*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 2015-2019 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, 2015-2019.

Table 19. Number and Rate of Infant Deaths by Race
Tennessee, 2015-2019

	Black			White			Black/White Disparity
Year	n	Live Births (N)	Rate per 1000 live births	n	Live Births (N)	Rate per 1000 live births	Disparity Ratio
2015	184	16714	11.0	360	61648	5.8	1.9
2016	198	16359	12.1	377	61046	6.2	2.0
2017	213	16551	12.9	361	60770	5.9	2.2
2018	206	16698	12.3	343	61046	5.6	2.2
2019	227	16814	13.5	322	60817	5.3	2.5

Data source: Tennessee Department of Health, Office of Vital Records and Health Statistics, Death Statistical File, 2015-2019.

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 2019, Tennessee's infant mortality rate was 7.0 per 1,000 live births, a 1.4% increase from 2018's rate of 6.9 deaths per 1000 live births, not a statistically significant difference.

In Tennessee and across the United States, birth defects and low birthweight continue to be the leading causes of infant deaths. In Tennessee, however, accidents (unintentional injuries) are the third leading cause of death in infants compared to the fifth leading cause of death nationally. Among Tennessee infants, maternal complications of pregnancy were the fifth leading cause of death compared to the third leading cause nationally. Also, atelectasis, intrauterine hypoxia, and birth asphyxia were leading causes of infant deaths in Tennessee, but these three conditions did not contribute to the 10-leading cause of infant deaths in the United States.

Leading Causes of Infant Mortality, Tennessee vs United States

TN-2019	
Rank	**Condition**
1.	Birth Defects
2.	Preterm birth and low birth weight
3.	Accidents (Unintentional Injuries)
4.	Sudden Infant Death Syndrome
5.	Maternal Complications of Pregnancy
6.	Atelectasis
7.	Cord and placenta complications
8.	Respiratory distress of newborn
9.	Bacterial Sepsis
10.	Intrauterine hypoxia & birth asphyxia

US-2018	
Rank	**Condition**
1.	Birth Defects
2.	Low birth weight
3.	Maternal Complications of Pregnancy
4.	Sudden Infant Death Syndrome
5.	Accidents (Unintentional Injuries)
6.	Cord and placenta complications
7.	Bacterial sepsis
8.	Diseases of the circulatory system
9.	Respiratory distress of newborn
10.	Neonatal hemorrhage

Data source: Tennessee Department of Health, Office of Vital Records and Health Statistics, Death Statistical File; National Center for Health Statistics.
TN reports low birthweight and preterm birth in the same category: most infants who are born preterm are also of low birth weight.

In 2019, there were 563 Tennessee infant deaths and 459 (82%) were reviewed by local child fatality review teams. As indicated in Table 20, preterm birth and low birth weight were factors associated with many infant deaths. This is consistent with other analyses that indicate preterm birth and low birth weight are major contributors to Tennessee's infant mortality rate. Additionally, 28% of infant deaths were associated with known intrauterine smoke exposure. Smoking during pregnancy is known to be associated with both preterm birth and low birth weight, both of which are independent risk factors for infant mortality.

Table 20. Risk Factors Associated with Infant Deaths Reviewed by Tennessee CFR Teams, 2019*

Risk Factor	Total	% Infant Deaths Reviewed	Natural	Accident	Homicide	Undetermined	Pending	Unknown
Preterm Birth	293	63.8%	260	12	1	14	6	0
Low Birth Weight	288	62.7%	251	12	2	17	5	1
Known Intrauterine Smoke Exposure	130	28.3%	72	16	1	33	7	1
Late (>6 months) or No Prenatal Care**	58	12.6%	42	4	1	11	0	0
Known Intrauterine Drug (including alcohol) Exposure	118	25.7%	64	23	0	29	1	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

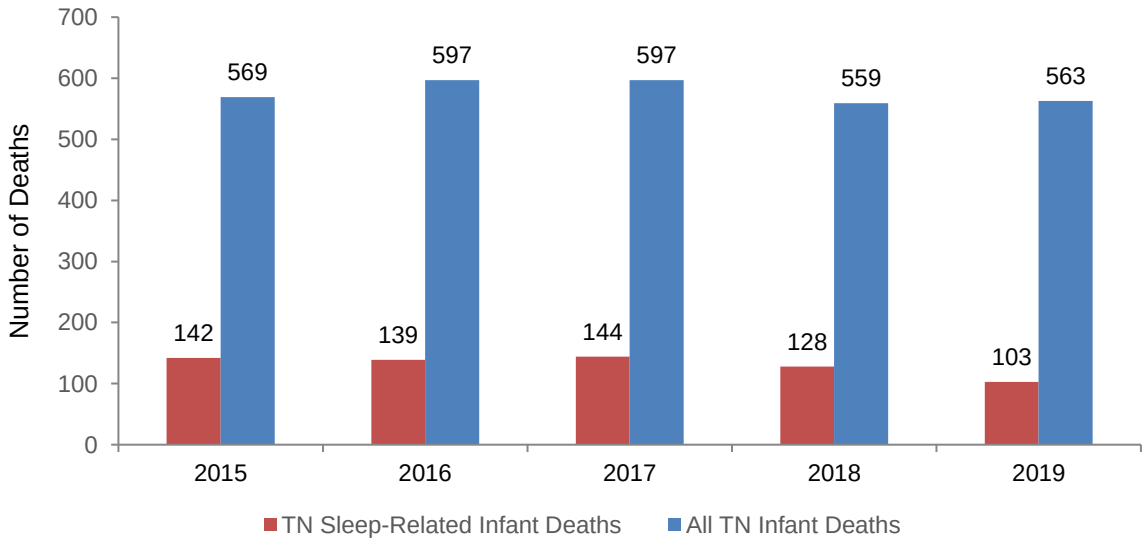
Sleep-related infant deaths are identified when a deceased baby is found:

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

In 2019, there were 103 infant deaths that resulted from, or were associated with an unsafe sleep environment.

Sleep-related infant deaths may be categorized as Sudden Infant Death Syndrome (SIDS). SIDS is considered an exclusionary cause of death for children less than one year of age. A diagnosis of SIDS indicates that all evidence (including an autopsy, death scene investigation, and review of the medical record) has failed to yield the specific cause of death. The cause and manner of death in these cases are determined from information obtained at the death scene investigation and after a medical examiner's autopsy. When seemingly healthy infants fail to awaken from sleep, their deaths may be considered to be due to SIDS, the result of suffocation related to the sleep environment, or as the result of an undiagnosed childhood malady. The exact cause of death may be difficult, if not impossible, to determine. In 2019, the cause of death in 63 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 2015 through 2019. During this time period, sleep-related deaths accounted for 23% of all infant fatalities in Tennessee. There was no statistically significant change in the rate of sleep-related infant deaths from 2018 to 2019.

Figure 40. Number of Sleep-Related Infant Deaths
Tennessee, 2015-2019



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, 2015-2019.

Of the 103 sleep-related deaths in 2019, 34 were confirmed as asphyxia in the sleep environment. The remaining 69 deaths occurred in the presence of unsafe sleep factors but could not be confirmed as asphyxia. In many cases, family members or others who find a deceased baby may not be able to provide a detailed history of what transpired. When investigators arrive on the scene, they often find that the baby has been moved and, therefore, accurately recreating the death scene may not be possible. Thus, despite autopsies and the efforts of Child Fatality Review teams, the exact cause of many infant sleep-related deaths will never be understood.

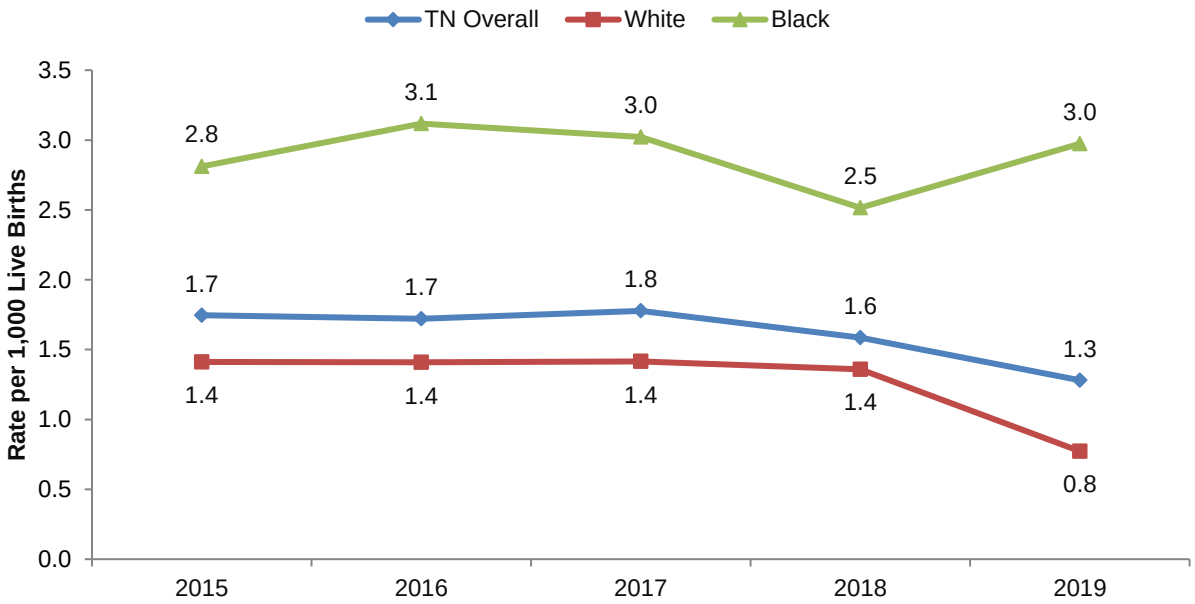
There is significant and longstanding racial disparity among sleep-related infant deaths. While White infants make up the majority of sleep-related infant deaths in Tennessee, over the past five years, Black infants were 2.3 times as likely to suffer a sleep-related fatality as White infants, as shown in Table 21. The reasons for this persistent disparity are not completely understood and may include socioeconomic factors (e.g., access to prenatal care), difference in prevalence of known risk behaviors (e.g., non-supine infant sleep position, bed-sharing), biological factors (e.g., genetic polymorphisms, metabolic disorders) and other factors (e.g. breastfeeding patterns, exposure to alcohol or tobacco). In 2019, the disparity between Black and White infants increased to its highest point in recent years: Black infants experienced 3.8 times the sleep-related mortality rate as White infants in 2019, up from 1.8 in 2018 (Figure 41).

Table 21. Number of Sleep-Related Infant Deaths and Rates by Race, Tennessee, 2015-2019

	Blacks		Whites		TN
Year	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
2015	47	2.8	87	1.4	1.7
2016	51	3.1	86	1.4	1.7
2017	50	3.0	86	1.4	1.8
2018	42	2.5	83	1.4	1.6
2019	50	3.0	47	0.8	1.3

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, 2015-2019.

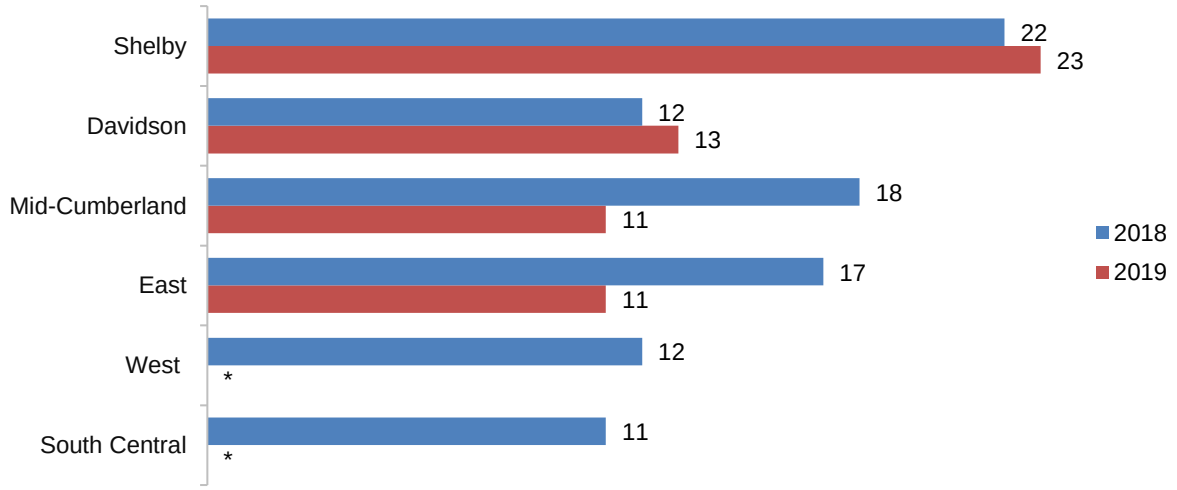
Figure 41. Sleep-Related Death Rates by Race, Tennessee, 2015-2019



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, 2015-2019.

A regional distribution of sleep-related infant deaths is provided in Figure 42. In 2019, 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%). The Mid-Cumberland region experienced the largest decrease in sleep-related infant deaths from 2018 to 2019.

Figure 42. Number of Sleep-Related Infant Deaths in Tennessee by Region, 2018 vs 2019



Data source: Tennessee Department of Health, Child Fatality Review Database System.
*Data suppressed due to confidentiality concerns.
Data source: Tennessee Department of Health, Child Fatality Review Database System.
Note: Both years of data are suppressed for Madison, Sullivan, Hamilton, Knox, Southeast, Northeast, and Upper Cumberland 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 (80%), infant not sleeping alone (67%), and infant not sleeping on the back (44%). 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 22. Contributing Factors in Sleep-Related Infant Deaths Tennessee, 2015-2019

Contributing Factors*	2015	2016	2017	2018	2019	2019 Percent of Sleep-Related Infant Deaths
Unsafe bedding or toys in sleeping area**	123	126	121	100	89	86%
Infant found not sleeping in crib or bassinet	114	107	103	79	82	80%
Infant sleeping with other people	88	76	82	60	69	67%
Infant found not sleeping on back	71	65	70	70	45	44%
Infant sleeping with obese adult	21	18	14	14	16	16%
Drug-impaired adult sleeping with infant	4	16	11	13	7	7%
Alcohol-impaired adult sleeping with infant	3	4	6	3	2	2%
Adult fell asleep while breastfeeding infant	6	3	5	4	0	0%
Adult fell asleep while bottle feeding infant	1	1	3	6	2	2%

*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, blanker, pillow, bumper pads, toys, plastic bags, and other.
Data source: Tennessee Department of Health, Child Fatality Review Database System.

FOCUSING ON PREVENTION: SAFE SLEEP

Prevention opportunities include:

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

Current prevention efforts in Tennessee include:

- TDH continues to partner with all 58 Tennessee's birthing hospitals and five non-birthing hospitals across Tennessee. All of these partner hospitals have developed and implemented safe sleep policies that include modeling of safe sleep behavior in the hospital and education for staff, parents and caregivers.
- TDH continues to provide safe sleep materials and *Sleep Baby Safe and Snug* board books for every newborn in Tennessee.
- Hospitals are encouraged to apply for national *Safe Sleep Certification* through the Cribs for Kids organization. Currently 28 hospitals have earned certification: 12 bronze, 2 silver, and 14 gold. Each level represents additional tasks required to educate and promote safe sleep to parents.
- Implementation of the *Direct On Scene Education (D.O.S.E.)* program has continued to expand across the state. When responding to an emergency or non-emergency call from a household which includes a pregnant woman or an infant, responders are trained to look for unsafe sleep conditions and offer the residents a safe sleep kit with information on the *ABCs of Safe Sleep*.
- TDH continues to expand on partnerships for infant safe sleep including Commission on Aging and faith-based communities.
- 18 hospitals awarded the Best for Babies award in 2019.
- Since 2019 TDH trained maintenance workers from seven housing authorities to educate families on safe sleep and provide materials and a portable crib, if needed.
- Hospitals are now able to participate in TIPQC's safe sleep quality improvement project by turning in crib audits and education families on safe sleep.

Continued on next page

- TDH created crib cards with the safe sleep message to distribute to birthing hospitals, with 29 birthing hospitals currently using the cards.

- 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 though voluntary home visitation, receive education on safe sleep and are provided with a portable crib. During the last fiscal year, 403 families were served through these important programs.

- Tennessee Commission on Children and Youth (TCCY) regional councils distribute safe sleep information at regional council meetings and conferences where they exhibit.

- Tennessee Department of Children's Services established a safe sleep collaborative group with multiple state agencies to distribute the safe sleep materials and education.

- The evidence-based home visiting and CHANT programs distributed 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.

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. Along with 22 other states and jurisdictions, Tennessee has received funding to support the SDY registry 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 17years 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 2019, the local teams reviewed circumstances surrounding SUID events, including autopsy and death scene investigation reports, to categorize these deaths into one of the seven categories shown in Table 25 the “excluded” category includes SUID cases in which the cause of death is ultimately not sleep related, such as those due to illness, trauma, or cardiac causes. Each SUID category is not a cause of death but categorizes the SUID based on what unsafe sleep factors were present, and if they seemingly contributed to the infant death. The category with the largest number of infant deaths was “Explained Suffocation: Unsafe sleep factors” with 30 deaths.

Table 23. Categorization for SUID Case Registry for Infants Tennessee, 2020

Categorization for SUID Case Registry	Number of Infant Deaths
Unexplained: Unsafe sleep factors	47
Explained Suffocation: Unsafe sleep factors	30
Unexplained: Possible suffocation with unsafe sleep factors	17
Excluded	4
Unexplained: No unsafe sleep factors	1
Unexplained: Incomplete Case Information	11
Total	**110**

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

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

Table 24. Unsafe Sleep Mechanism for Infants with a SUID Category of Explained Suffocation or Possible Suffocation Tennessee, 2019

Unsafe Sleep Mechanism	Number of Infant Deaths
Soft Bedding	33
Overlay	12
Wedging	5
Other	3

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

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

The advanced review teams review all medical and investigative records to categorize a death into one of the following seven categories: explained cardiac, explained neurological, possible cardiac, possible SUDEP, possible cardiac and SUDEP, unexplained death at or over one year of age or unexplained death under age one. Table 25 summarizes how the teams have categorized the 2019 SDY cases. Twenty-one child deaths were categorized as ‘explained infant suffocation’ while 37 child deaths among children 1 to 17 years-old were categorized as ‘explained other’. Eight deaths were labelled as ‘unexplained, possible cardiac’, 4 deaths labelled as ‘unexplained SUDEP’, and 40 deaths labelled as ‘unexplained death’.

Table 25. Categorization for SDY Case Registry for Children Ages 0-17 Years Tennessee, 2020

	Age		
Categorization for SDY Case Registration	**Less than 1 year***	**1-17 Years**	**Total**
Explained infant suffocation	21	0	21
Explained other	3	27	30
Incomplete case information	0	4	4
Unexplained, possible cardiac	3	5	8
Explained Cardiac	0	1	1
Unexplained, possible cardiac and SUDEP	0	2	2
Unexplained, SUDEP	0	2	2
Unexplained death	40	0	40
Total	**67**	**41**	**108**

*This total differs from the Table 23 SUID Categorization total because all 2019 deaths have not been categorized by the SDY Advanced Review team as of December 2020. The SUID categorization is completed by the local CFR teams, and the SDY categorization is completed by the SDY Advanced Review Teams.
Data source: Tennessee Department of Health, Child Fatality Review Database System.

Registry Prevention and Review Work

This year, funds from the SDY Registry project were allocated to improve upon prevention work and data collection for SDY. Prevention efforts included the purchase of portable cribs and safe sleep materials. Funds were also allocated to send 8 medical examiners to a conference in St. Louis, however this has been postponed due to COVID-19.

Among 2019 deaths to date, 157 SDY cases were identified and reviewed by the local teams. Of those cases, 123 were investigated by the Advanced Review Team. From January 2015 to date, 1,219 cases have been identified as potential SDY, 1,240 cases have been closed by local CFR teams, and 763 cases have been referred and closed with the Advanced Review Team.

PREVENTION RECOMMENDATIONS FOR 2021

Safe Sleep

Analyze data to determine areas with the largest disparities to specifically target 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 materials.

Infant sleep related deaths continue to be one of the leading preventable deaths for children under age 1. There were 103 infant sleep related deaths in 2019, a decrease from 128 in 2018. Infants not sleeping in a safety approved crib or bassinet and infants sleeping with other people, along with use of blankets continue to be the leading contributing factors associated with these deaths. While the overall numbers of sleep-related deaths have decreased, the disparity between black and white infants has widened, therefore the following strategies have a focus on addressing the disparity.

TDH will increase the number of hospitals meeting the safe sleep criteria for the BEST award by contacting each facility, a minimum of quarterly, about the program requirements. TDH will analyze data to determine the hospitals representing care for disproportionately affected communities and put a focus on these hospitals to meet the criteria.

TDH will continue to purchase portable cribs, sleep sacks and educational materials for hospitals, local health departments, and community agencies 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. TDH will provide data to collaborating agencies highlighting areas representing care for disproportionately affected communities to ensure additional emphasis in those areas to get families the resources they need to practice safe sleep.

The safe sleep diaper bag project will include the new evidence-based home visiting sites, expanding now to families in all 95 counties through both CHANT and EBHV. TDH will analyze data from those participants reporting a change to determine differences in race or place. This data will be utilized to provide more training to staff in areas that are not making changes to ensure consistent messaging to families. TDH will also look at regions with the highest disparities and do more education with CHANT and EBHV staff to ensure they are providing appropriate information to encourage a change in behavior.

Motor Vehicle

Increase the number of schools in high-risk counties implementing virtual evidence-based motor vehicle crash prevention programs in local high schools. Provide education to schools, caregivers and the general public to prevent pedestrian deaths including information on back over prevention and pedestrian safety. Promote the use of protective measure including seatbelts, car seats and helmets.

There were 75 motor vehicle crash deaths in Tennessee, an increase from 62 in 2018. There was an increase in pedestrian related deaths from 3 in 2018 to 14 in 2019. Almost half of these pedestrian deaths were due to children being runover in a driveway. Of the 61 deaths involving children in vehicles, 32 (52%) were not using protective measures including a seat belt, child/booster seat, and/or a helmet*.

TDH will recruit schools to implement evidence-based programs such as Checkpoints™ and Battle of the Belt in high fatality and crash counties by hosting 3 webinars. 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 utilize social media to promote personal stories around motor vehicle crash prevention to encourage teens to practice safe driving.

TDH, TCCY and DOE will promote the CDC pedestrian safety tips in local schools and on social media.

TDH will continue to fund the Child Safety Fund for the distribution of child safety seats through community non-profit agencies. Some of these deaths were due to children being runover in a driveway, therefore TDH

will provide a link to a back over prevention fact sheet to those receiving funds to distribute car seats. TDH, DOE, Nurture the Next and TCCY will also distribute information about back over prevention. The back over prevention fact sheet contains tips to ensure children are not near the vehicle before driving.

TDH will collaborate with Safe Kids Tennessee Chapters to promote helmet use in children when riding a bicycle helmet or operating a motorized vehicle such as a dirt bikes, motorcycles, or ATVs.

*MVC includes ATV and motorcycle deaths therefore helmet is included

Prematurity

Analyze data to determine the top circumstances around prematurity by region and promote appropriate programs in those areas including tobacco cessation, chronic disease prevention and family planning.

Prematurity continued to be the leading medical cause of infant death in 2019 with 140 deaths. Preventable risk factors for prematurity include tobacco use in addition to maternal health conditions such as diabetes and high blood pressure, lack of prenatal care, and pregnancy spacing. Social risk factors including stress and lack of social support are also risk factors. According to the CDC, the following are prevention activities for prematurity prevention: providing women access to health care before and between pregnancies, identifying women at risk for preterm delivery and offering effective treatments to prevent preterm birth, preventing unintended pregnancies and waiting at least 18 months between pregnancies;

TDH will conduct in-depth analysis on prematurity data to include top circumstances of prematurity by region. Efforts will be made to increase promotion of existing programs in the regions based on circumstances identified. For example, regions that have pregnancy smoking as a top contributing factor to prematurity will receive more information about smoking cessation programs available to them. Regions that have chronic diseases such as hypertension or diabetes as a top factor will receive more information about programs to prevent these conditions.

TennCare has proposed extending postpartum coverage for Medicaid enrollees to 12 months to improve maternal health. Improving access to prevention and treatment of chronic conditions for mothers is known to decrease the risk of prematurity in subsequent pregnancies. TDH will increase the number of women of childbearing age participating in family planning by expanding and promoting telehealth to better reach those people living in rural areas. Family planning provides access to patient centered, culturally appropriate contraception and assistance with birth spacing in all counties. Healthcare providers should follow national guidance from the American College of Obstetricians and Gynecologists (ACOG) on prevention of preterm birth.

Suicide

Increase upstream suicide prevention for youth across the state with a focus in high-risk rural areas by implementing Good Behavior Game and increasing Gatekeeper training. Improve data collected on deaths by suicide.

In 2019, 32 children ages 9-17 took their lives in Tennessee, a decrease from 39 in 2018. Many suicide decedents displayed warning signs such as talking about suicide, displaying severe emotional pain and expressing hopelessness. In addition, life stressors were noted among many suicide decedents including experiencing racism, being victims of bullying, parents' divorce/separation, family discord and poverty.

TDH recommends 100% of hospitals report into ESSENCE (Electronic Surveillance System for the Early Notification of Community-based Epidemics). Currently, 95% of hospital emergency departments are reporting information into ESSENCE. TDH will continue to monitor weekly suicide attempts in ESSENCE and notify community partners when there are alerts. TDH 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 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 staff working with the National Violent Death Report System (NVDRS) will analyze data to determine specific fields that are often not collected by investigators on deaths by suicide. TDH will develop a plan to work with death investigators to better collect that information.

TDH, TCCY, TDMHSAS, DCS and Nurture the Next will provide Gatekeeper training to their staff along with promoting suicide prevention PSAs on social media and program websites to increase education to community members and professionals about free Gatekeeper training.

DATA TO ACTION

STATEWIDE ACTIVITIES

In December 2019, the State Child Fatality Review Team met to review aggregate child death data from the 2017 death reviews and to consider recommendations from local teams. State Team members considered the latest trends in the causes of child deaths and contemplated strategies for reducing future fatalities. The State Team decided to focus on key strategies for reducing child fatalities in Tennessee, a practice identified during a series of national meetings aimed at strengthening state child fatality reviews.

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

- Recommend that all hospitals report into the ESSENCE Reporting system.
- Develop suicide prevention recommendation report to submit to the General Assembly.
- Expand access to school-based mental health services for youth.
- Utilize evidence-based prevention programs such as QPR to train Evidence Based Home Visiting staff and CHANT Care Coordinators in recognizing signs of suicide and provide resources.
- Increase the number of schools in high risk-counties implementing evidence-based motor vehicle safety programs in local high schools.
- Implement Checkpoints™ in additional schools, including developing an online version.
- Prioritize funding to reduce unintended pregnancies.
- Reduce smoking during pregnancy by increasing enrollment in Baby and Me Tobacco Free.
- Increase enrollment in group prenatal care, evidence-based home visiting (EBHV) and care coordination (CHANT).
- Provide nicotine replacement therapy (NRT) to non-pregnant women of childbearing age.
- Increase prevention of leading drivers for birth defects including diabetes, substance use, high blood pressure, and high body mass index (BMI).
- Utilize social media and annual birth defects report to educate women of childbearing age on birth defects prevention.

- Prioritize funding to evidence-based programs such as WIC, access to safe places for physical activity, and school and day care obesity prevention programs.

- Partner with state and community agencies to promote infant safe sleep.

- Partner with the Tennessee Hospital Association (THA) to Increase the number of birthing hospitals completing crib audits with results of 90% or greater cribs safe.

- Support the Tennessee Initiative for Perinatal Quality Care in its implementation of the current opioid safety bundle as well as safe sleep as its next neonatal project focus.

- Purchase portable cribs and sleep sacks for hospitals and community agencies to distribute to families in need of safe sleep environment.

- Expand the safe sleep diaper bag project to the CHANT care coordinators in all 95 counties and the expanded Evidence- Based Home Visiting program to increase family education.

- Increase social media messaging around drowning prevention recommendations to include parental supervision around water as well as policy level recommendations.

- Develop and disseminate a list of resources for swimming lessons.

- Convene key stakeholders to develop prevention recommendations around youth suicide.

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

Suicide

- The number of hospitals reporting into ESSENCE expanded in 2020. Ninety-six hospitals are currently reporting emergency department data into the ESSENCE system, allowing for real time surveillance of suicide attempts and identification of areas in need of suicide prevention training and other resources.

- TDH submitted the suicide prevention legislative report in June 2020 that included several recommendations to reduce suicide among youth including the expansion of mental health services across the state, increased tele-mental health training and expansion of gatekeeper training.

- 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. Through collaborations with partners such as the Tennessee Suicide Prevention Network and Coordinated School Health and The Department of Education, this plan helps to increase suicide awareness and outreach by offering suicide prevention resources, services, and programs within a county seeing increases in near real time.

- 97 CHANT and EBHV staff were trained on QPR.

- TDH applied for the CDC Comprehensive Suicide Prevention Grant and was one of 9 applicants out of 84 awarded the funds to implement a public health approach to suicide prevention. This grant will fund several activities in the next 5 years to reduce suicide deaths and attempts with some activities specifically focusing on youth.

- A public service announcement was developed and broadcast to promote trainings for suicide prevention and encourage people to participate in gatekeeper training.

Motor Vehicle

- 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. Direct mail and emails were sent to all Tennessee public high schools. These communications shared teen crash data and invited schools to conduct seat belt use education.

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

- A teen driving task force, with representation from the Department of Health, Department of Education, Governor's Highway Safety Office, Mothers Against Drunk Driving, Tennessee Highway Patrol, Vanderbilt Trauma Center and UT Trauma Center continued to meet. The goal of this task force is to increase teen motor vehicle crash prevention education in schools. This year, the task force held talking sessions with students and community leaders in each Grand Region to learn what students felt would help prevent crashes.

- The Governor's Highway Safety Office's website promoted teen driving prevention activities within high schools. **www.reducetncrashes.org** allows anyone to click on a county and view a list of available motor vehicle prevention activities. Participating schools may also input prevention activities in which they are participating.

- TDH continued to fund community agencies to purchase and distribute child safety seats.

Prematurity

- Tennessee Primary Care Association (TPCA) provided training to Federally Qualified Health Centers (FQHCs) on long acting reversible contraceptives and nicotine replacement therapy in high risk areas.
- TDH provided support for the education of incarcerated women on topics such as LARCs, Neonatal Abstinence Syndrome, and reducing unwanted pregnancies.

- TDH provided funding to the March of Dimes for the sustainability and implementation of group prenatal care, Supportive Pregnancy Care (SPC) in partnership with healthcare providers across the state.
- TDH provided funding to the Primary Care Association for nicotine replacement therapy for women of childbearing age.

Birth Defects

- Baby and Me Tobacco Free expended to all 95 counties. Funds were provided to local health departments to purchase NRT to support smoking cessation for women of childbearing age.

- The TDH birth defects program created an infographic to highlight and disseminate key data around birth defects.

Safe Sleep

- As part of the Safe Sleep Policy project, another 84,000 *Sleep Baby, Safe and Snug* board books and other safe sleep educational materials were distributed to new parents prior to their discharge from the hospital.

- In 2020, TDH, along with the Tennessee Hospital Association, continued the *BEST for Babies* award for birthing hospitals. In 2019 there were 18 facilities that earned the award.
- TDH continued to promote D.O.S.E and expand the program to housing authorities and large property management associations where staff were trained on talking to families with infants about safe sleep and providing families who need a safe sleep environment a portable crib.
- Over 1,700 portable cribs and 1,200 infant sleep sacks were supplied to regional health departments, hospitals and evidence-based home visiting implantation agencies to distribute to families that could not afford to purchase a safe sleep environment for their infants.
- In FY2019, Prevent Child Abuse Tennessee (PCAT) served 364 first-time parents through the Healthy Families Tennessee (HFTN) program. HFTN is an evidence-based home visiting program serving twenty counties in Tennessee. During the assessment and initial home visit, families explore safe sleep information and options.
- TDH provided training to new community partners on infant safe sleep, including 16 housing authorities' agencies and the Safe Kids Coalition in West Tennessee.
- TDH collaborated with the Tennessee Commission on Aging and Disability to promote infant safe sleep to grandparents and nontraditional infant caregivers.
- TDH continued to collaborate with EBHV and CHANT to distribute the safe sleep diaper bag full of materials to teach the family about safe sleep. Data from the time a caregiver was provided the education and diaper bag was compared to data at a follow-up visit to measure the impact of the medium-term outcomes. Overall, 41% of participating families reported a change in behavior at the two-month follow-up visit based on the information they received.

Drowning

- FHW staff partnered with Communicable and Environmental Disease and Emergency Preparedness (CEDEP)'s vector borne disease section to include drowning prevention messages in their water safety social media messaging.
- FHW staff developed a list of non-profit low-cost swim lessons locations across the state.
- CHANT and EBHV provided depression screenings to participants.

LOCAL PREVENTION ACTIVITES

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
  - Provided education to women about Neonatal Abstinence Syndrome at clinics.
  - Promoted infant safe sleep at all local birthing hospitals and provided portable cribs to families in need.
  - Provided mental health training in local schools.
- Judicial District 2
  - Continued to educate female inmates and about Neonatal Abstinence Syndrome (NAS) and family planning services and provided contraceptives to interested inmates.
  - Provided portable cribs to local hospitals.
  - Distributed safe sleep materials to families in the CHANT and Home Visiting programs.
  - Promoted community mental health services for the youth.
- Judicial District 3
  - Provided portable cribs to local hospitals and home visiting agencies for families in need.
  - Presented local school nurses and staff and provided naloxone training.
- Judicial District 4
  - Collaborated with stakeholders to educate the community on infant safe sleep practices.
  - Hired a coordinator for Safe Baby Court.
  - Continued the *Journey* program curriculum through the juvenile court system, targeting local high schools and educating students about how substance use can inhibit the ability to care for a child.
  - TN ROCS training continuing in Jefferson Co Drug Court - (showing interest in the lives of those in their court rooms) other counties across the region wanting to mimic what Judge Sloan is doing in his court room.
  - Local District Attorney follows-up with juvenile judge on any family court referrals to ensure DCS is aware of situations involving children.
  - Presented to EMS staff at a conference on infant safe sleep and the D.O.S.E. program.
  - Worked with Coordinated School health to present on the dangers of vaping and tobacco use.
- Judicial District 5
  - Schools hosted an “Anti-vaping Campaign” called V3 “Vow to vanquish vaping”.
  - Worked with local fire and law enforcement agencies to conduct child safety seat checks monthly.
  - Safe sleep education provided to families at child safety seat checks.
  - Provided local hospitals with safe sleep information including crib cards.
- Judicial District 6
  - Distributed portable cribs to families in need and provided infant safe sleep education.
  - Continued education and meetings around suicide prevention in the community.
- Judicial District 7
  - Continued to distribute infant safe sleep materials to community members such as churches, schools, hospitals, and first responding agencies.
  - Family Drug Court is developing a new program in collaboration with local schools to identify children and families at risk for substance misuse and facilitate completion of the program.
  - Child Advocacy Center provides child safety seat checks and collaborates with TDH to distribute portable cribs to families in need.
  - Conducted two-hour training with EMS and DCS on the SUIDI Form and calling and making referrals to DCS.
  - Local children’s hospital has streamlined child mental health referrals to inpatient facility.

    - Promoting MIST program from improving parenting skills for mothers with infants diagnosed with NAS.
- Judicial District 8
    - TN Suicide Prevention Network committee member set up training with Campbell County School system for QPR training for staff.
    - Participated in Summer Nutrition program to provide safety information on car seats and seat belts.
    - Educating about motor vehicle safety in local schools.
    - Providing swim safety education within schools through the community action board and DCS.
    - Provided QPR training for staff in local schools.
- Judicial District 9
    - Started an anti-bullying campaign in local schools.
- Judicial District 10
    - Provided infant safe sleep education through their care coordination services, home visiting agencies, and local health departments.
    - Provided portable cribs to reduce on unsafe infant sleep and co-sleeping.
    - Conducted child safety seat checks through the CHANT program.
    - CHANT Outreach Director and Medical Director distributed portable cribs to local hospitals and agencies to increase access to a safe sleep environment to families.
    - Community education provided on infant safe sleep at local community events.
    - Worked with local fire department to educate community on proper smoke detector installation.
- Judicial District 11
    - Distributed portable cribs to families in need of a safe sleep environment.
    - Participated in urban health fair and distributed infant safe sleep materials and information on prenatal care.
    - Provide prenatal vitamins and folic acid to women in the family planning clinics.
- Judicial District 12
    - Continued to provide infant safe sleep education in their local health departments.
    - Promote the Baby and Me Tobacco Free program.
- Judicial District 1901
    - CHANT staff completed trauma-informed training.
- Judicial District 20
    - Provides list of resources to WIC participants this includes domestic violence resources in the community.
    - Presented to team members about youth suicide and bullying resources including laws on suicide training for mental health professionals, gun safety, and parental resources.
    - Continued to provide safe sleep education to families in the community with a focus on high risk zip codes.
    - Received Health Start grant that allowed for expansion of evidence-based home visiting services
- Judicial District 26
    - Demonstrated safe sleep practices and passed out safe sleep materials at local health department community baby shower.
    - Ran a safe sleep PSA through the month of January.

- Judicial District 30
    - Provided child safety seats in collaboration with local “Safe Kids” coalition. Included infant safe sleep education with the safety seat distribution.
    - 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 2019 child mortality rate for Tennessee was 60.5 child deaths per 100,000 children, a 2% decrease from 2018 child mortality rate of 61.8 per 100,000 children. Tennessee's 2019 child fatality rate is 25% above the 2018 national average, leaving important work to be done in order to protect our children.

Several key areas identified in this report warrant further attention, as recommended by the State Team. Deaths due to unsafe sleep, birth defects, suicide, homicide, drowning, and unintentional asphyxia all decreased from 2018 to 2019. 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 prematurity and cancer were unchanged from 2018 to 2019. Several strategies are recommended to reduce deaths due to prematurity including the reduction of unintentional pregnancies and reduction of smoking during pregnancy. Enrollment in programs such as group prenatal care, evidence-based home visiting and care coordination is also recommended. To reduce deaths due to motor vehicle crashes, the state team recommends increased participation in evidence-based motor vehicle prevention programming at the schools

The rate of death due to motor vehicle crash increased from 2018 to 2019. The state team recommends promotion of safe driving interventions and the correct use of infant and child car seats.

APPENDICES

Appendix A—List of Tables and Figures

Tables

Figures

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

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

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

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

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

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

Circumstances – Situational findings.

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

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

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

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

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

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

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

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

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

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

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

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

Hyperthermia – High body temperature.

Hypothermia – Low body temperature.

Infant – Child under one year of age.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Table 26. Child Fatalities (Number and Rate) by County, 2019

County	Deaths	Population, Ages 0-17 Years	Rate per 100,000
Anderson	11	16050	68.5
Bedford	5	12445	40.2
Benton	1	3181	31.4
Bledsoe	0	2164	0.0
Blount	9	26355	34.1
Bradley	8	23688	33.8
Campbell	3	8015	37.4
Cannon	3	3102	96.7
Carroll	3	6094	49.2
Carter	12	10042	119.5
Cheatham	5	8752	57.1
Chester	1	3923	25.5
Claiborne	4	6104	65.5
Clay	1	1518	65.9
Cocke	5	7161	69.8
Coffee	8	13479	59.4
Crockett	1	3294	30.4
Cumberland	4	10310	38.8
Davidson	107	144929	73.8
Decatur	2	2374	84.2
Dekalb	6	4349	138.0
Dickson	7	12179	57.5
Dyer	12	8717	137.7
Fayette	7	7526	93.0
Fentress	1	3740	26.7
Franklin	3	8534	35.2
Gibson	6	11710	51.2
Giles	1	6127	16.3
Grainger	3	4592	65.3
Greene	5	13231	37.8
Grundy	4	2814	142.1
Hamblen	7	14782	47.4
Hamilton	55	76498	71.9
Hancock	2	1351	148.0
Hardeman	2	4754	42.1
Hardin	3	5154	58.2
Hawkins	6	10931	54.9

Haywood	1	3833	26.1
Henderson	2	6279	31.9
Henry	3	6537	45.9
Hickman	3	5133	58.4
Houston	0	1715	0.0
Humphreys	2	3923	51.0
Jackson	2	2074	96.4
Jefferson	3	10530	28.5
Johnson	1	2964	33.7
Knox	54	99040	54.5
Lake	2	993	201.4
Lauderdale	7	5612	124.7
Lawrence	7	10860	64.5
Lewis	1	2629	38.0
Lincoln	7	7557	92.6
Loudon	4	10219	39.1
Macon	0	5945	0.0
Madison	18	22341	80.6
Marion	4	6000	66.7
Marshall	4	7851	50.9
Maury	13	22202	58.6
McMinn	3	11344	26.4
McNairy	1	5464	18.3
Meigs	1	2468	40.5
Monroe	4	9625	41.6
Montgomery	34	55694	61.0
Moore	1	1245	80.3
Morgan	1	3973	25.2
Obion	4	6421	62.3
Overton	1	4663	21.4
Perry	1	1773	56.4
Pickett	1	840	119.0
Polk	2	3186	62.8
Putnam	10	17068	58.6
Rhea	3	7433	40.4
Roane	7	9815	71.3
Robertson	10	16752	59.7
Rutherford	37	81487	45.4
Scott	5	5221	95.8
Sequatchie	0	3060	0.0
Sevier	10	19774	50.6

Shelby	204	231756	88.0
Smith	0	4463	0.0
Stewart	1	2807	35.6
Sullivan	20	29941	66.8
Sumner	16	44219	36.2
Tipton	3	14728	20.4
Trousdale	1	2162	46.3
Unicoi	2	3272	61.1
Union	3	4228	71.0
Van Buren	1	1141	87.6
Warren	9	9490	94.8
Washington	11	24825	44.3
Wayne	4	2739	146.0
Weakley	5	6672	74.9
White	3	5892	50.9
Williamson	19	63200	30.1
Wilson	13	33659	38.6
TENNESSEE	**912**	**1506706**	**60.5**

Note: Rates based on counts of less than 20 deaths are considered unstable and should be interpreted with caution.
Data source: Tennessee Department of Health, Office of Vital Records and Health Statistics, Death Statistical File, 2019
Population estimates based on interpolated data from the U.S. Census's Annual Estimates of the Resident Population.

Appendix D—Infant Deaths by County of Residence

Table 27. Infant Mortality (Number and Rate) by County, 2019

County	Death	Live Births	Infant death per 1000 Live Births
Anderson	6	810	7.4
Bedford	4	681	5.9
Benton	0	180	0.0
Bledsoe	0	125	0.0
Blount	3	1239	2.4
Bradley	3	1186	2.5
Campbell	2	467	4.3
Cannon	2	166	12.0
Carroll	2	336	6.0
Carter	7	441	15.9
Cheatham	2	484	4.1
Chester	0	176	0.0
Claiborne	2	336	6.0
Clay	0	77	0.0
Cocke	2	348	5.7
Coffee	5	684	7.3
Crockett	1	171	5.8
Cumberland	3	547	5.5
Davidson	76	10003	7.6
Decatur	2	108	18.5
Dekalb	3	240	12.5
Dickson	3	657	4.6
Dyer	7	453	15.5
Fayette	4	385	10.4
Fentress	0	171	0.0
Franklin	2	416	4.8
Gibson	3	571	5.3
Giles	1	330	3.0
Grainger	1	238	4.2
Greene	5	631	7.9
Grundy	2	159	12.6
Hamblen	5	750	6.7
Hamilton	38	4288	8.9
Hancock	2	63	31.7
Hardeman	2	237	8.4
Hardin	3	215	14.0

Hawkins	4	553	7.2
Haywood	0	202	0.0
Henderson	1	297	3.4
Henry	3	324	9.3
Hickman	0	278	0.0
Houston	0	80	0.0
Humphreys	0	187	0.0
Jackson	0	97	0.0
Jefferson	0	493	0.0
Johnson	1	138	7.2
Knox	37	5125	7.2
Lake	2	71	28.2
Lauderdale	4	293	13.7
Lawrence	5	523	9.6
Lewis	0	124	0.0
Lincoln	2	363	5.5
Loudon	2	522	3.8
Macon	0	322	0.0
Madison	8	1251	6.4
Marion	4	295	13.6
Marshall	3	416	7.2
Maury	9	1199	7.5
McMinn	2	591	3.4
McNairy	1	253	4.0
Meigs	1	132	7.6
Monroe	1	531	1.9
Montgomery	21	3493	6.0
Moore	0	47	0.0
Morgan	0	191	0.0
Obion	3	354	8.5
Overton	1	249	4.0
Perry	1	109	9.2
Pickett	0	40	0.0
Polk	1	171	5.8
Putnam	5	912	5.5
Rhea	1	371	2.7
Roane	2	443	4.5
Robertson	7	889	7.9
Rutherford	27	4230	6.4
Scott	2	259	7.7
Sequatchie	0	166	0.0

Sevier	7	1075	6.5
Shelby	126	12802	9.8
Smith	0	215	0.0
Stewart	1	145	6.9
Sullivan	15	1472	10.2
Sumner	10	2118	4.7
Tipton	2	738	2.7
Trousdale	1	119	8.4
Unicoi	0	133	0.0
Union	1	220	4.5
Van Buren	0	71	0.0
Warren	5	525	9.5
Washington	7	1220	5.7
Wayne	3	137	21.9
Weakley	3	329	9.1
White	2	295	6.8
Williamson	8	2227	3.6
Wilson	8	1634	4.9
TENNESSEE	**563**	**80431**	**7.0**

Note: Rates based on counts of less than 20 deaths are considered unstable and should be interpreted with caution.
Data source: Tennessee Department of Health, Office of Vital Records and Health Statistics, Death Statistical File, 2019.

Successful Virtual Adaptation of Safe Sleep Education

Unsafe sleep environments continue to be a leading cause of infant mortality. In 2019, infant sleep-related deaths accounted for one in five infant deaths in Tennessee. Studies show that behavior change associated with safe sleep education requires a multifaceted approach with education and access to resources such as a crib and infant sleep sack. This allows for families to follow the ABC's of safe sleep and ensure an infant is sleeping alone, on their back and in a crib. Parents with risk factors for infant death (e.g. characterized by certain socio-economic status, rate, age, or area of residence) may need extra support to practice safe sleep and care for their infant. In Tennessee, there are resources to help high risk families including evidence-based home visiting (EBHV) programs and the Community Health Access and Navigation in Tennessee (CHANT) Program.

In March 2020, new societal challenges arose due to COVID-19 with in-person meetings, conferences, home visits and community baby showers not available due to increased risk of exposure and illness. All forms of education and outreach had to quickly adapt due to the risks associated with COVID-19. Even though the world was changing, the need for education and resources was not. Infants are still being born and families still need a safe place for their babies to sleep. Direct contact with families to provide safe sleep education was limited. EBHV and CHANT staff were no longer able to go into the homes to provide the resources and education that families need for success. The staff for these programs found that phone calls and video chat were a way to provide the educational component, however, many families in need didn't have access to phone, computer, or resources to conduct virtual calls or meetings. EBHV and CHANT staff had to adapt and meet the families with the resources they have. Most families had access to a smart phone or internet even if they didn't have voice or text. In addition to meeting families virtually, EBHV and CHANT staff also had to figure out how to get resources to families, including portable cribs, sleep sacks, or safe sleep diaper bags. Staff were able to leave cribs and resources on front porches for contactless delivery to families. There were also videos provided online through Cribs for Kids for families to watch on how to assemble the portable cribs. Home visitors and care coordination staff have stated they are grateful for the opportunity to still be able to provide families with the resources they need. Although participation slowed at the start of COVID-19, it has increased as virtual learning and communication has become more normal.

The challenges of adapting to a new way of living in early 2020 increased opportunities for community partners and families to come together that might not have had access to do this in the past due to travel restrictions, lack of transportation, or time. In May 2020, TDH hosted a virtual infant safe sleep conference. In previous years this conference was in person. The keynote speaker, Dr. Michael Goodstein, presented current information on infant safe sleep and breastfeeding from a national perspective. Local partners presented on their work around safe sleep including Fatherhood engagement, the TIPQC Hospital Safe Sleep Project, and challenges in talking with families about safe sleep. The previous conferences had limitations including space and funding allowing for a maximum of 100 attendees. Due to the flexibility of a virtual conference, the invitation was opened to all our safe sleep partners and stakeholders resulting in over 400 participants. This was our most attended conference to date. Those who attended the conference stated that they had not been able to attend in past years due to travel or taking time off from work. Many participants stated they enjoyed the opportunity to learn from a diverse group about engaging families on safe sleep education.

These adaptations show that even in the most extreme circumstances we can help families by providing education and resources needed to give children the best start to life.

Adapting to COVID-19 to Continue MVC Prevention: Creating a Take Home/Virtual Option for Checkpoints™

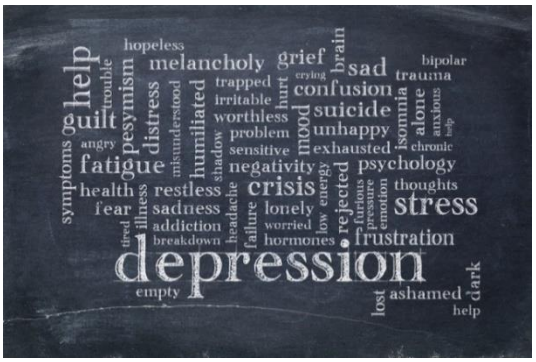
Motor vehicle crashes are the second leading cause of accidental death in children ages 15-17. In 2019, 75 children died from motor vehicle crashes in Tennessee. The Checkpoints™ program was implemented in Tennessee in 2017 for teen drivers and their parents to reduce the number of teen motor vehicle crashes. Checkpoints™ is a face-to face educational course for first-time teen drivers and their parents. The program discusses risks unique to teens, effective communication between teens and their parents, and elements to include in a parent-teen driving agreement. The driving agreement is completed at the end of the educational portion of the class and gives the parents and their teens the opportunity to discuss safe driving guidelines and fair consequences if they break the agreement. It also focuses on giving the teen drivers more privileges as they become more experienced drivers. However, with schools switching to virtual classes because of the COVID-19 pandemic, the Checkpoints program was no longer able to be done with in-person classes.

COVID-19 brought new challenges to the end of the 2019-2020 school year, and the start of the 2020-2021 school year, however it was important that the Checkpoints™ program continue. Checkpoints™ classes were adapted to a take home/virtual training format. In order to have a successful transition to this new way of learning several changes had to be made. Previously school staff were trained in-person to implement the program in their school. Staff are now trained by TDH personnel virtually via Webex. Prior to the online implementation, parents and teens were required to come to their child's school for the class. During this session they would take a pretest, view educational modules, take a post test, and complete their driving agreement. Teens are now provided with their take home booklet for Checkpoints™ to complete and sign their agreement. Educational modules and pre and post-tests are now offered online.

The new platform for Checkpoints™ was widely accepted by schools with multiple principals and driver's education teachers requesting to be trained in implementation of the new format. Online trainings allowed our staff to reach out to more schools and complete trainings more efficiently. The option to complete the training online made it more feasible to engage parents and schools in rural areas that were difficult to reach before. Parents found it easier to complete the take home version of Checkpoints™ rather than taking additional time to go to their teen's school. The take home version also gave parents and teens the opportunity to reflect on their agreement for a longer period, if needed, since they did not need to be completed while at the class.

While the COVID-19 pandemic presented us with many obstacles to traditional public health education; it also opened many opportunities for improving current practices. As of August 2020, individuals from 14 schools have been trained to implement Checkpoints™ virtually. Given the success of the new format and the broader impact than before the take home/virtual training format will continue to be an option for schools that would like to participate in Checkpoints™.

Increasing Capacity to Monitor and Address Suicide



Suicide is the 9th overall leading cause of death in Tennessee and the 2nd leading cause of death for youth 10-24 years of age. Due to the high rates of suicide in Tennessee the Suicide Prevention Act was passed in 2018 and implemented in 2019. This act allowed the Tennessee Department of Health to create a suicide prevention program. The act required TDH to study current data, assess available resources, determine gaps in prevention services and submit a report to the general assembly in June 2020 with recommendations for prevention of deaths by suicide.

The report included 32 recommendations to improve suicide prevention in Tennessee and can be accessed at: www.preventsuicidetn.com. The recommendations are grouped into seven categories including legislative policies, state and community agencies, clinics and hospital systems, healthcare providers, public safety and emergency response agencies, educational institutions, and individuals, families, and friends.

TDH received 2 grants in 2020 to address some of these recommendations. The first grant was supplemental funding through the Centers for Disease Control and Prevention injury grant. This funding was used to develop and broadcast a public service announcement (PSA) to promote suicide prevention trainings. The PSA is being broadcast in the Upper Cumberland, East, South Central and Northeast Tennessee regions. The goal of the PSA is to increase the number of people completing gatekeeper training.

The second grant is the CDC Comprehensive Suicide Prevention Grant received in September 2020. TDH was one of 9 states out of 84 applicants to receive this grant. This grant provides funding to implement a public health approach to suicide prevention. The grant focuses on all ages but some activities that will impact children include: implementation of the Good Behavior Game in select elementary schools, increase in individuals participating in Gatekeeper training, expansion of the Zero Suicide Initiative, promotion of education about the Mental Health Parity Law and training mental health providers on best practices for telehealth.

The COVID-19 pandemic has brought some challenges to suicide prevention. In March 2020, schools across Tennessee sent students home to participate in virtual school due to risk of spreading COVID-19. This created a loss of support for some students, loss of resources such as food and loss of a trusted person such as a teacher or coach. Teachers and other school staff are often the first to notice a change in a student's behavior that may indicate an increased risk for suicide.

The ESSENCE (Electronic Surveillance System for the Early Notification of Community-based Epidemics) database is being used 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. Counties that have an alert are notified and offered additional training at their schools. With schools being closed, it was a challenge to get resources to students when an alert was identified. Some schools were creative and provided suicide prevention resources to parents when lunches were distributed. Monitoring suicidal behavior and ensuring people have resources is always critical and even more critical during a pandemic.

City of Clarksville Strives to Reduce Deaths Due to Motor Vehicle Crashes in Children and Adolescents

Motor vehicle crashes are a leading cause of death among children 17 and under. In 2019, there were 75 child deaths related to motor vehicle crashes. The City of Clarksville, in the Mid-Cumberland Region, has utilized primary prevention efforts to address these deaths through car seat checks and promotion of Tennessee's Teen Graduated Driver License (GDL) program. In 2019, 35 children under age 9 died in Tennessee due to motor vehicle crashes and 30 adolescents aged 15-17 died in motor vehicle crashes. Car seats safety education and GDL promotion can help to decrease these numbers.

The City of Clarksville regularly hosts public car seat checks in which parents/caregivers can drive up to get their child's car seat checked for proper installation. Parents and caregivers are also able to make an appointment with any local police department on an individual basis. The staff checks the following things: ensures the seat is appropriate for the child's height and weight, ensures the proper seating position in the vehicle is being used, check for recalls, damage, and expiration dates, and guides the caregiver through the installation process. Staff also review state laws for car seats, vehicle safety, the next steps for your child, and when to switch to the next car seat or position. Parents or caregivers that did not have car seats were referred to agencies that provide them. Agencies participating continued to provide car seat checks during the COVID-19 pandemic. They adjusted their process by making appointments, wearing masks and gloves, and providing education virtually as well as in person.

In addition to protecting children through proper car seat installation and use, the City of Clarksville also addressed teen motor vehicle crashes by working with local law enforcement to promote Tennessee's Teen Graduated Driver License (GDL) program. The local law enforcement "search for ways to reduce injury and fatal crashes on a daily basis through education, enforcement, and engineering". The Tennessee Teen GDL program provides restrictions for teen drivers to promote safety. GDL requirements include a three-tier program starting with a Learner Permit, followed by an Intermediate Restricted License, and finally an Intermediate Unrestricted License. Starting out a new driver with a Learner Permit must be at least 15 years of age, pass a written exam, have the permit for a minimum of 180 days, drive with accompanied with someone 21 year or older, no driving between 10 P.M. and 6 A.M. and wear a safety belt. The Intermediate Restricted License, the driver must be 16 years or older and pass the driving skills test, have had 50 hours of driving experience, may not have more than one passenger, cannot drive between 11:00 PM and 6:00 AM, and must wear a seat belt. Violations of the rules for the GDL program increase the amount of time there are restrictions on the driver license. The City of Clarksville Police Department also offers free Student Traffic Awareness training classes for high school students 15 to 19 years that include topics on driving safety, preventing distracted driving, and rules of the road.

Reaching Families in New Ways During COVID-19: Drive-Thru and Virtual Baby Showers

In March 2020, the world changed with the onset of COVID-19. Social gatherings and group meetings became limited. This presented a challenge for getting critical information to families through traditional methods of disseminating information. Even during the time of a pandemic, babies are still being born, and families still need resources.

The health departments and other agencies developed some creative ways to reach families. In past years, community baby showers were a popular way to reach multiple families in one day. They were full of vender booths that handed out education and resources for moms. There were also decorations, food, door prizes, and the opportunity to attend educational sessions. Agencies have been creative to find contactless ways to continue to supply families with resources they need in order to reach families and make sure they have the tools to have a happy and healthy infant celebrate their first birthday. Several health departments and community agencies developed the “drive-thru baby shower”.

In multiple counties across the state “Drive-Thru” Community Baby Showers have become a new norm. These events are held for pregnant women and families with a young infant. Attendees are asked to remain in their car and wear a mask. A health department employee brings them resources and education on various topics. The information provided include topics such as tobacco cessation, safe sleep, breastfeeding, WIC, immunizations, TennCare, family planning, and dental care. Some of the baby showers also offered online courses and information for women, where they can connect and play games too. Many offered incentives for women that attended virtual events such as raffle drawings for door prizes.

Women benefit from these events because they can find access to information and resources for products needed. Women can be connected to medical provider information, resources for their baby and public health programs. In many of these events law enforcement or community partners also provide car seat checks. Areas that have hosted these types of baby showers include Nashville-Davidson County, Hawkins County (Rogersville Health Department), Hamilton County, Mountain Home VA Center in Johnson City, Maury County, Dyer County, and Carrol County.

East Region Addresses ACE's and Child Mental Health Through Various Programs

According to the Centers for Disease Control and Prevention (CDC), Adverse Childhood Experiences (ACEs) have a tremendous impact on future violence victimization and perpetration, and lifelong health and opportunity. ACEs are defined as potentially traumatic events that occur in childhood (0-17 years). This can include experiencing or witnessing violence abuse or neglect, having a family member attempt or die by suicide, substance misuse in the home, mental health problems, and instability due to separation from a parental figure. ACEs are linked to chronic health problems, mental illness and substance misuse. The CDC states that about 61% of adults report having at least one ACE. The positive side is that ACEs are preventable. Agencies within the state of Tennessee promote the "Building Stronger Brains Tennessee" to help build resilience in children by building up positive relationships around them in the community.

Community organizations in East Tennessee are working together to help mitigate the effect of ACEs on the youth in their communities. One program to help mitigate ACEs is the Journeys Program that leads truant kids toward a mentoring relationship and guidance. This program started in 2009 to keep children out of Juvenile Court and in school. The program focuses on the reasons for truancy issues rather than punishing children for the problem. The program found that many truancy issues arose around bullying, grades, and being excluded from sports and clubs. The program offers students outings, one on one time with mentors, assistance with college applications and help with the free application for student aid (FAFSA). Parents are also encouraged to participate in the program to support positive behavior. The program has an 87% success rate.

In addition to court programs, East Tennessee has been focusing on improving mental health in the young with activities such as connecting families to resources, education in the schools, and suicide prevention education. One of these activities is partnering with the largest children's hospital in the region, East Tennessee Children's Hospital, to streamline referrals for children with mental health concerns to the Helen Ross McNabb center. Another program, Mothers and Infants Sober Together (MIST), supports families by keeping mothers and infants born drug exposed together to help promote a stable, drug-free environment for mother, infant, and child. The MIST program also provides the mother knowledge to develop skills for positive parenting. Additionally, local schools in Roane and Campbell counties are reaching students through staff training on QPR and anti-bullying campaigns. This teaches staff to recognize signs of suicide and bullying and equips them with tools to be able to talk to children about these issues. Through multiple programs effecting multiple stages of childhood, hopefully ACEs can be reduced and improve the overall health and wellbeing for children.

MIST
MOTHERS & INFANTS SOBER TOGETHER

Appendix G—Local Child Fatality Review Team Members and Staff

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

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

Beth Bare	**David Kirschke, MD**	Patsy Pope
Regina Bowman	Brittany Lewis	Darshan Shah, MD
Inv. Shawn Brown	Ashley Lyons	Lori Shields, EdS
Heidi Casey, RN	Crystal Malone	Regan Tilson
Tara Chadwell	Samantha Maney	Cynthia Thomas, DO
Vicki Davis	Jenna Markland	Karen Thompson
Inv. Deborah Dunn	Eden Matheson	Mary Williams, RN
Shawn Hollinger, MD	Barry McGlothlin	Fay Willis, RN
Justin Jenkins	Bryan Wes McKinney	Rick Woodby

JD 2 (Sullivan County)

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

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

Tiffany Alder, RN	Vicki Davis	Crystal Malone
Carmelia Alexander, RN	Cynthia Doty	TJ Manis
Vicki Arnold	Crystal Gibson	Julie Minton
Tara Chadwell	Calvin Hawkins	Christian Newman
Diane Cofield	Deana Hicks	Laura Reneau-Dockery
Teddy Collingsworth	Shawn Hollinger, MD	Darshan Shah. MD
Rhonda Craft	Hannah Hunter, RN	Alisha Singley
Betty Davis	**David Kirschke, MD**	Cynthia Thomas, D.O.
Eddie Davis	Christy Lane	Mariah Williams
Tim Davis	Brittany Lewis	

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

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

JD 5 (Blount County)

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

JD 6 (Knox County)

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

JD 7 (Anderson County)

Emily Abbott	Traci Golbach	Angela Perez
Thomas Clary, MD	Bobbi Jo Henderson	Herbert Sexton
Kevin Craig	Kelly Johnson	Tracy Spitzer
Anthony Craighead	Kristi McBee	Jodi Stott
Margaret Durgin	Darinka Mileusnic-Polchan,	Tara Sturdivant, MD
Sasha Foust	MD, PhD	Rune Wright

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

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

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

Dr. William Bennett, MD	Sherriff Tim Guider	Millicent Thomas
Melanie Crook	James Guider, MD	Jodi Stott
Melissa Denton	Judge Dennis Humphrey	Tara Sturdivant, MD
Sasha Foust	Alyson Kennedy	Mona William-Hayes, PhD
James P. Guider, MD	Missy Layne	Rune Wright

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

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

JD 11 (Hamilton County)

Sharon Barker	Sheryl Fletcher, RN	James Metcalfe, MD
Barbara Breedwell	**Dr. Paul Hendricks**	Sgt. Victor Miller
Steven Cogswell, MD	Lt. James Holloway	Brent Morris, MD
Denise Cook	Atty. Leslie Longshore	Det. Trista Rice
Stacy Cook	Capt. Henry McElvain	Daryl Scholtens
Sgt Adam Emery	Shelley McGraw	

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

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

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

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

JD 14 (Coffee County)

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

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

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

JD 16 (Cannon and Rutherford Counties)

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

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	Kenneth Phelps, MD
Pam Browning, RN	Susan Ferencei	Darkis Selman
Brian Bruce	Joyce Green, RN	**Lang Smith, MD**
Stefanie Brown, RN	Rachel Hanson	Kyle Spears, MD
Robert J. Carter, DA	Penny Hawk	Megan Wakefield, RN
Mary Ann Christian	Amy Irvin	Richard Wright

JD 18 (Sumner County)

Alison Asaro, MD	Chief David Hindman	Jenni Smith
Jay Austin	Chief Mark Jenkins	Chief Richard Smith
Sgt. Lamar Ballard	Don Long	Jody Starks
Charlotte Cash	Tammy Kellogg	Robert Watson
Amy Daughtry	Gloria Morrison	Ray Whitley, DA
Neal Harris	Becca Page	
Jeff Helmintoller	Sgt. Travis Plotzer	

JD 1901 (Montgomery County)

Timothy Adair	Millard House II	Sgt. Travis Plotzer
Alison Asaro, MD	Danielle Kriminger	Sabrina Sanford
Eric Berg, MD	Misty Leitsch	Tina Scott
Christy Bing	Lt. Vincent Lewis	Fred Smith
John Carney, JD	Kimberly Lund, JD	Joey Smith
Norma Collazo	Det. Frederick McClintock	Jerome Viltz
Ashley Dale	David Mendoza, MD	Lori Waller
Mary Davila	Gloria Morrison	Judy Weimer
Karmen Davis	Domenick Nardi, MD	Sgt. Mark Wojnrek
Regina Duffie	Sgt. Nick Newman	Danette T. Woodcock
Cpt. Thomas Hamilton	Maj. Danielle Nichols	

JD 1902 (Robertson County)

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

JD 20 (Davidson County)

D'Yuanna Allen-Robb	Monica Coverson	Sarah Loch
Addie Askew	Trevor Crowder	**Brook McKelvey**
Rebecca Bruccoleri, MD	Emily Dennison, MD	Michael Meadors, MD
Amanda Burke	Erik Gallup	Gloria Morrison
Alison Butler	Tony Hayes	Renee Pratt
Amy Campbell-Pittz	Anthony Johnson	Mary Ann Smith
Erin Carney, MD	Margreete Johnson, MD	Dawn Smith
Ron Carter	Charlsi Legendre	Lisa Weakley
Anjenetta Cook	Misty Leitsch	

JD 2101 (Hickman, Lewis, and Perry Counties)

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

JD 2102 (Williamson County)

Sgt. Charles Achinger	Chris Holz	Det. Tameka Sanders
Alison Asaro, MD	Tommy Justus	Lauren Schuster
Alicia Campbell, DA	Shannon Lankford	Samuel Smith, MD
Det. Robert Cardan	Feng Li, MD	Tamara Swinson
George Collins	Zannie Martin	Lt. Monty Terry
Joe Cox	Angel Miller	Det. Matthew Thompson
Jeremy Crawford, RN	Gloria Morrison, RN	Lt. John P. Wood
Karmen Davis	Peggy Phillips	
Laruen Harrington	Dusty Rhoades	

JD 2201 (Giles, Lawrence, and Wayne Counties)

Pam Arnell	Devin Ezell	Lisa Hardison
Erica Barnett, RN	Susan Ferencei	Alicia Holt, RN
LeeAnne Boeringer	Sheriff Shane Fisher	Brigitte Massey
Dawn L. Bradley	Joe Fite, MD	Brook Mitchell
Tracy Brumit	Larry Glass	Tonya Nance
Mary Ann Christian	Joyce Green, RN	Shaun Noblit
Mike Clements	Roy Griggs	Denise Sanders
Chief John Dickey	Rachel Hanson	**Lang Smith, MD**

JD 2202 (Maury County)

Molly Anderson, RN	Susan Ferencei	Brook Mitchell
LeeAnne Boeringer	Tommy Goetz	Shaun Noblit
Katelyn Bojoquez	Joyce Green, RN	Corporal Jason Sanders
Jamie Brown	Jason Griggs	**Lang Smith, MD**
Mary Ann Christian	Rachel Hanson	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	Larina Corlew	Nicole Martin
Alison Asaro, MD	Karmen Davis	Inv. Ken Miller
Laleh Bahrami, MD	Regina Duffie	Barbara Smith
Amber Bailey	Christy Espey	Capt. Randy Starkey
Det. Mark Bausell	Robin Fairclough	Sheriff Kevin Suggs
Sgt. J.D. Blackwell	Maggie Filson	Brittany Tate
Sharrie Booker	Claudette Fizer	Judy Wilson
Comm. Eddie Breeden	Lawrence Jackson, MD	
Alana Carmical	Det. Brent Johnson	

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

Pansey Davis, MD	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
Shavetta Conner, MD	Jon Piercey	Tracy Worlds

JD 26 (Chester, Henderson, and Madison Counties)

Bradley Crouse	Tammy Hardee	Hannah Shelby-Kennedy,MD
Corie Currie	Donna Heatherington	Marcie Thornton
Ashley Deloach	Sgt. Danielle Jones	Blair Weaver
Lisa Dorrough	Sgt. T.J. King	Sgt Jena Eubanks
Inv. David Dowdy	Atty. Stuart Mills	
Nadia Graham	**Lindsey Nanney, RN**	

JD 27 (Obion and Weakley Counties)

Kate Bynum	Lt. Stan Haskins	Tommy Thomas
Lt. Bryan Chandler	Keith Jones	Drew Vernon
Shavetta Conner, MD	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
Shavetta Conner, MD	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
Shavetta Conner, MD	Terry McCreight	Tim Ware
Christy Espey	James Melding	Capt. Billy Williams
Jessica Lamkin	Chad Sipes	
Calvin Johnson	Brad Smith	

JD 30 (Shelby County)

Patricia Bafford, Ed.D.	Paula Humphrey	Marco Ross, MD
Scot Bearup	Afework Keskessa	Col. Mike Ryall
Sgt. D. Brunson	Tunishia Kuykindall	Andrea Sebastian
Mark Bugnitz, MD	Karen Lakin, MD	Sam Sheppard
Lauren Burge	Tarji LIttle	Gavin Smith
Gladys Burton	Jason Martin	Leilani Spence
Eric Christensen, JD	Daryle McConnell	Angie Sullivan
Benjamin Figura	Ashley McEachern	Kirtikumar Upadhyay
Arriell Gipson	Katie McKinnie	Det. Jason Valentine
Jamaica Glover	Kawanais Millign	Tiffany Ward
Kerry Griggs	Mychell Mitchell	Denise Webb
Meg Harmeier	Reggie Morgan	Regan Williams
Richard Harrell	Jennifer Nichols, JD	Brandi Willis
DeShawn Harris	Kurt Phillips	John Wright
Susan Helms, RN	**Bruce Randolph, MD**	Dorcas Young
Jennifer Hendrick	Tully Reed	Evelyn Young
Gannon Hill	Vanessa Roberts	
Ginny Hood	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
Tina Davis, RN	Jackie Mathney	Ty Webb
Preston Denney	Thomas Miner	Lisa Zavogiannis
Doris Denton	Lynn Mitchell	
Mindy Doyle	Charles Morgan, MD	
Andrea Fox	Kristi Paling	

Statement of Compliance with 2012 Tenn. Pub. Acts, ch. 1061 (the “Eligibility Verification for Entitlements Act”) as required by Tenn. Code Ann. § 4-57-106(b)
None of the Department’s activities relative to the Child Fatality Review Teams involve the provision of services to individuals who are subject to the SAVE Act.