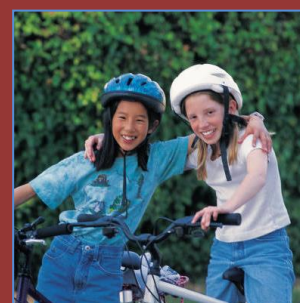
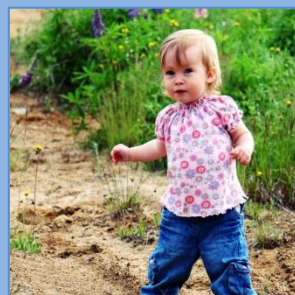




2016 Child Fatality Annual Report

Understanding and Preventing Child Deaths in Tennessee

Data in this report reflect deaths occurring in children under 18 in calendar year 2014



TABLE OF CONTENTS

TABLE OF CONTENTS	ii
ACKNOWLEDGMENTS	iii
DATA CONFIDENTIALITY	iii
EXECUTIVE SUMMARY	iv
<i>Key Findings from the 2014 Child Fatality Review</i>	v
STATE CHILD FATALITY TEAM MEMBERS (2014 CHILD FATALITY REPORT).....	1
INTRODUCTION.....	2
<i>The Child Fatality Review Process in Tennessee</i>	2
<i>Summary of Child Mortality Data</i>	5
<i>Specific Causes of Death</i>	12
<i>Summary of Infant Mortality Data</i>	13
<i>Prevention Analysis</i>	16
<i>Acts of Child Abuse or Neglect</i>	18
<i>Deaths to Children with Special Circumstances</i>	21
<i>Sudden Death in the Young (SDY) Registry Project</i>	23
DETAILED REVIEW: SPECIFIC CAUSES OF DEATH	26
<i>Sleep-Related Infant Deaths</i>	26
<i>Homicide Deaths</i>	31
<i>Suicide Deaths</i>	34
<i>Motor Vehicle and Other Transportation Deaths</i>	37
<i>Asphyxia Deaths</i>	40
<i>Weapon-Related Deaths</i>	42
<i>Drowning Deaths</i>	45
<i>Fire/Burn Deaths</i>	49
<i>Poisoning Deaths</i>	52
<i>Fall/Crush Deaths</i>	54
<i>Prevention Recommendations for 2016</i>	56
DATA TO ACTION, SUMMARY OF 2015 ACCOMPLISHMENTS.....	59
<i>State-Level Activities</i>	59
<i>Local Prevention Activities</i>	69
<i>Other Local CFR Team Accomplishments</i>	71
CONCLUSION	72
APPENDICES	73
<i>Appendix A—Table and Figures</i>	73
<i>Appendix B—Glossary</i>	77
<i>Appendix C—Child Deaths by County of Residence</i>	80
<i>Appendix D—Infant Deaths by County of Residence</i>	83
<i>Appendix F—Local Level Success Story</i>	89
<i>Appendix G—Local Child Fatality Review Team Members and Staff</i>	93

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 Center for Forensic Medicine, 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, and the National Center for Child Death Review.

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
<http://health.tn.gov/mch/childfatality.shtml>

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 represents review of deaths occurring in children under the age of 18 during the calendar year of 2014. Local teams across the state reviewed all eligible 2014 deaths (n=784) during 2014 and 2015. The state child fatality review team developed the following report and recommendations based on these reviews

Key Findings Overview:

- 1) The overall 2014 child mortality rate for Tennessee increased to 59.3/100,000 from 58.5 in 2013.¹ From 2010 to 2014, the overall mortality rate dropped by 11%. However, Tennessee's child mortality rate still exceeds the national rate of 50.4 (2013).
- 2) The 2014 infant mortality rate for Tennessee was 6.9/1,000 live births, up from 6.8 in 2013.² This is the first year since 2006 that the overall infant mortality rate in Tennessee has not numerically declined. However, the number of sleep-related infant deaths again decreased in 2014. Prematurity is a leading cause of death among Tennessee infants (58% or 269 of reviewed deaths).
- 3) A racial disparity exists among child and infant fatalities. While there was a 7% decrease in the mortality rate in African American children from 2010 to 2014, there was a 15% decline among White children. For infants, the rate declined among White but increased for African Americans from 2013-2014.
- 4) The number of deaths due to external causes is decreasing while the number of deaths due to medical causes is increasing. In 2014, 191 reviewed child deaths were classified as due to external causes, including motor vehicle, weapons, asphyxia, fire/burns, poisoning or overdose, and fall/crush. This represents a 19% decrease from the 236 cases observed in 2013. In 2014, the majority (67.2%) of the reviewed deaths (N=527) were due to a medical condition and most were infants (an increase of 13% compared to 2013).
- 5) Tennessee's male children accounted for a disproportionate percentage of child fatalities compared to females (60% vs. 40%, respectively). This pattern has been consistent for the past five years.

Summary of 2016 recommendations:

Based on the key findings from the review, the State Child Fatality Review Team made these recommendations for 2016. A detailed explanation of each recommendation can be found on page 56.

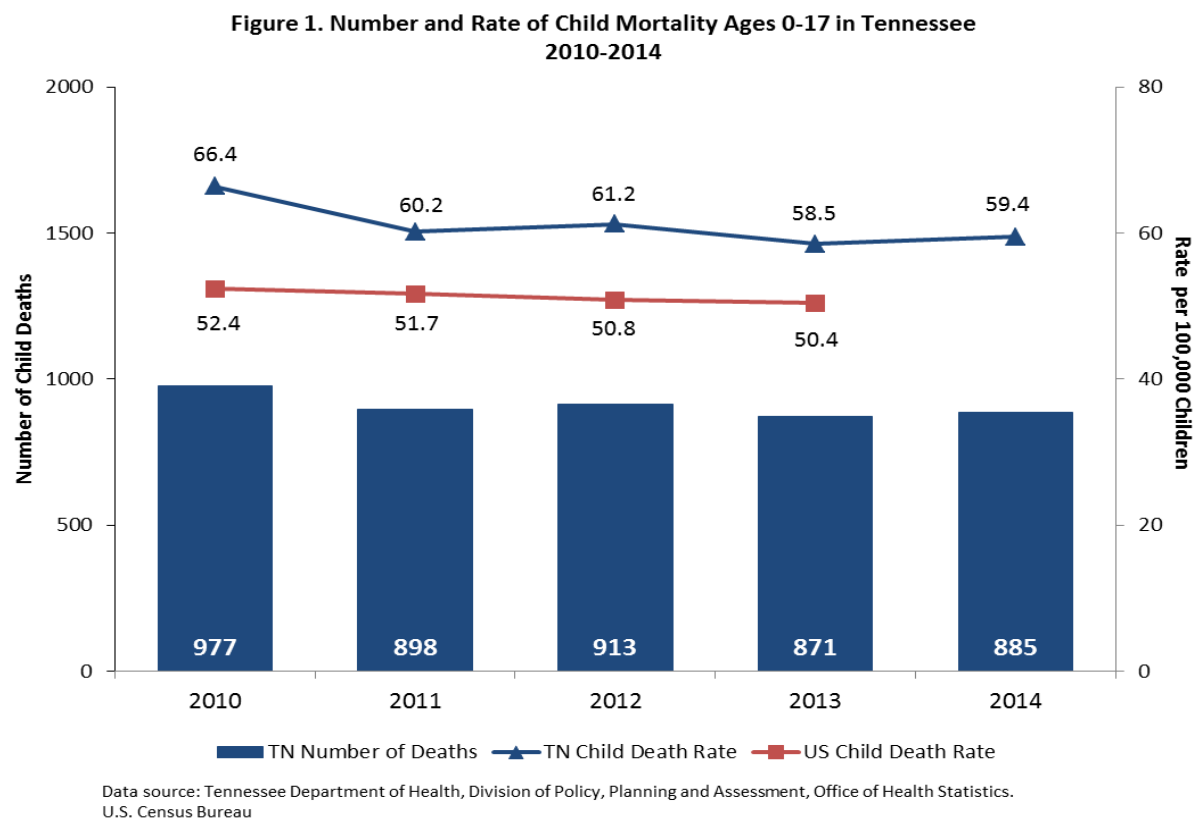
1. Safe Sleep: Aggressively continue the safe sleep campaign
2. Motor Vehicle: Expand educational efforts in schools
3. Suicide: Increase education to students, and identify barriers and address youth access to effective mental health services
4. Substance Abuse/Medical: Make Voluntary Reversible Long Acting Contraceptives (VRLACs) more readily available.
5. Racial Disparities: Identify strategies to target racial and ethnic disparities in child mortality

¹ This increase is not statistically significant ($p>0.05$).

² This increase is not statistically significant ($p>0.05$).

General

The overall 2014 child mortality rate for Tennessee was 59.3 child deaths per 100,000 child population, a slight increase from the rate of 58.5 in 2013.³ From 2010 to 2014, however, the overall mortality rate has dropped by 11% (statistically significant at $p\text{-value}<0.05$). Tennessee's 2014 child mortality rate (59.3) still exceeds the 2013 national rate of 50.4, the latest year for which the national rate is available. The number and rate of child mortality in Tennessee and the U.S. ages 0-17 for the last five years are shown in Figure 1.



- As expected, the first year of life continues to be the most perilous for Tennessee's children, accounting for 64% of all deaths through the age of 17. Children between the ages of 15-17 and 1-4 suffered the next highest percentage of deaths at 12% and 11% respectively.
- Tennessee's male children accounted for a disproportionate percentage of child fatalities compared to females (60% vs. 40%, respectively). This pattern has been consistent for the past five years.

³ This increase is not statistically significant ($p>0.05$).

- A racial disparity exists among child fatalities. Although the majority of the deaths are comprised of White children, African American children suffer a higher rate of mortality than Whites (Figure 2 and Table 1). **While there was a 7% decrease (not statistically significant) in the mortality rate in African American children from 2010 to 2014, there was a 15% statistically significant decline (p-value <0.05) among White children.**

Figure 2. Rate of Child Mortality Ages 0-17 in Tennessee 2010-2014

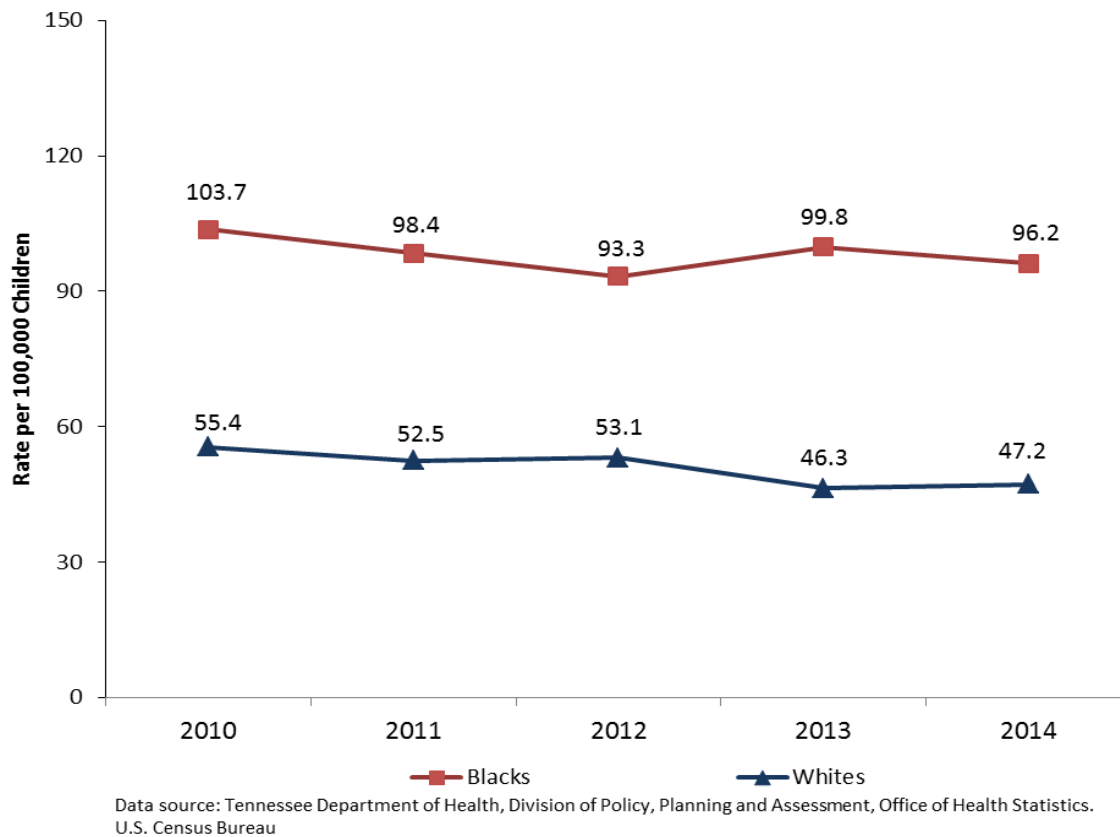


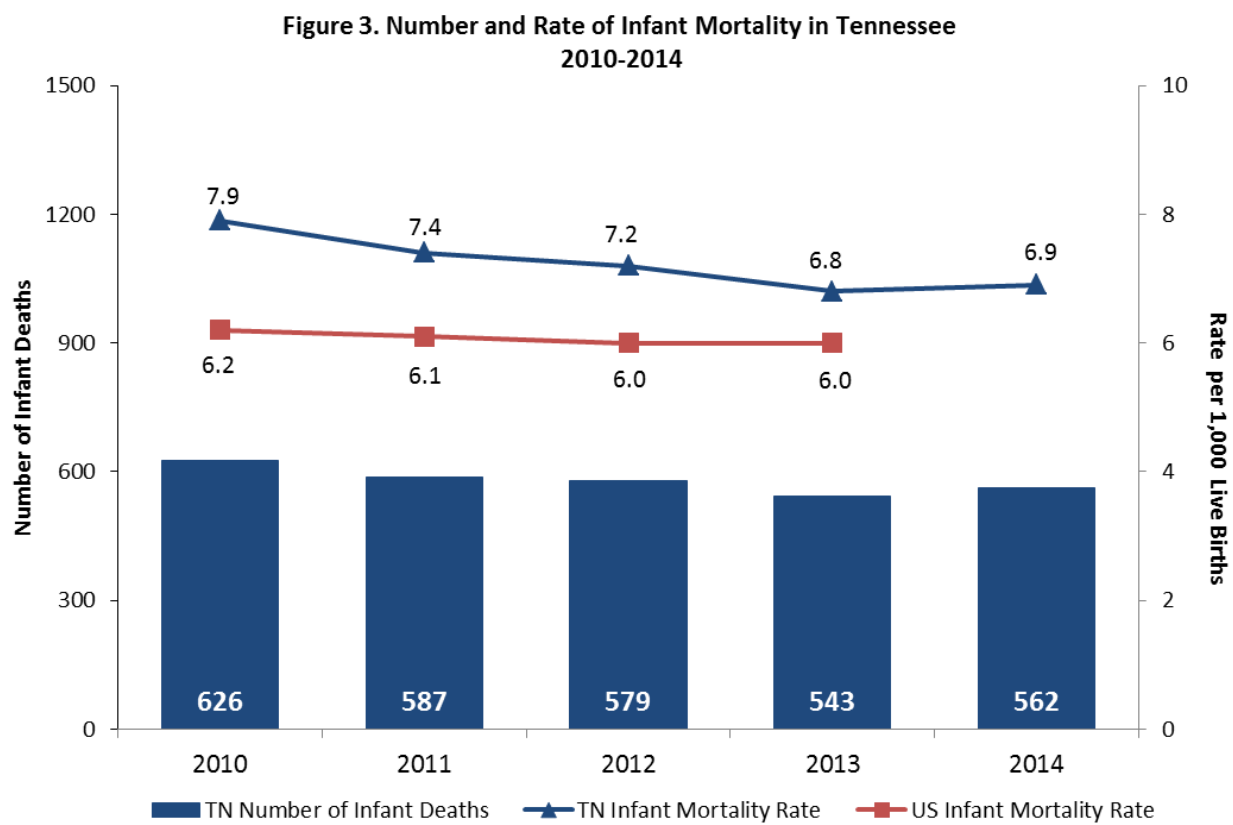
Table 1. Number and Rate of Child Mortality Ages 0-17 by Race in Tennessee, 2010-2014

Year	Blacks			Whites		
	Number of Deaths	Child Population	Rate per 100,000	Number of Deaths	Child Population	Rate per 100,000
2010	329	317,186	103.7	621	1,121,602	55.4
2011	301	306,034	98.4	579	1,102,142	52.5
2012	285	305,376	93.3	583	1,098,938	53.1
2013	302	302,655	99.8	507	1,095,152	46.3
2014	290	301,419	96.2	516	1,092,578	47.2

Data source: Tennessee Department of Health, Division of Policy, Planning and Assessment, Office of Health Statistics.
U.S. Census Bureau.

Infant Mortality

The overall 2014 infant mortality rate was 6.9 infant deaths per 1,000 live births, a slight increase from the rate of 6.8 in 2013.⁴ However, the infant mortality rate in 2014 dropped by 13% in comparison to 2010 (statistically significant at p-value <0.05). Similar to the overall child fatality rate, Tennessee's 2014 infant mortality rate still exceeds the national average of 6.0 in 2013,⁵ the latest year for which the national rate is available. The number and rate of infant mortality in Tennessee and the U.S. for the last five years are shown in Figure 3.



Data source: Tennessee Department of Health, Division of Policy, Planning and Assessment, Office of Health Statistics.
U.S. Census Bureau

- 99 infants died from suffocation, strangulation, or other causes in the sleep environment. This represents a 15% decrease from the 117 infants who died in 2013. A statewide hospital safe sleep policy project may have contributed to this decrease. In 2014, all birthing hospitals in Tennessee created a safe sleep policy to include education for all new mothers.
- A racial disparity also exists among infants who suffer fatalities. African American infants have a higher mortality rate than Whites or infants of other races (Figure 4 and Table 2).⁶ There has been a decline in the infant mortality rates for Whites

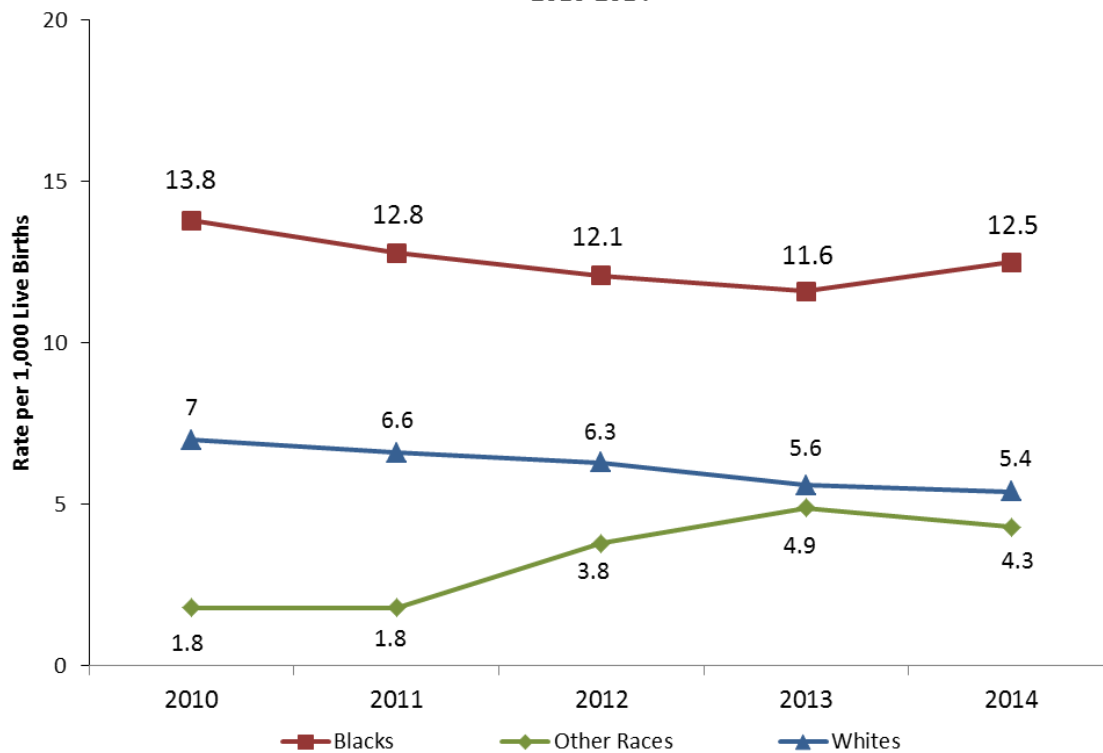
⁴ This increase is not statistically significant (p>0.05).

⁵ Mathews TJ, MacDorman MF, Thoma ME. Infant mortality statistics from the 2013 period linked birth/infant death data set. National vital statistics reports; vol 64 no 9. Hyattsville, MD: National Center for Health Statistics. 2015.

⁶ Other race includes all other non-white or non-black races.

since 2010. While the infant mortality rate for African American infants declined from 2010 to 2013, an increase is observed from 2013 to 2014.

**Figure 4. Rate of Infant Mortality by Race in Tennessee
2010-2014**



Data source: Tennessee Department of Health, Division of Policy, Planning and Assessment, Office of Health Statistics.
U.S. Census Bureau

Table 2. Number and Rate⁷ of Infant Mortality by Race in Tennessee, 2010-2014

Year	Blacks			Whites			Other		
	Number of Deaths	Live Births	Rate per 1,000	Number of Deaths	Live Births	Rate per 100,000	Number of Deaths	Live Births	Rate per 1,000
2010	229	16,599	13.8	382	54,593	7.0	15	8162	1.8
2011	211	16,482	12.8	361	54,765	6.6	15	8215	1.8
2012	200	16,560	12.1	348	55,548	6.3	31	8092	3.8
2013	196	16,863	11.6	307	54,877	5.6	40	8212	4.9
2014	207	16,574	12.5	306	56,238	5.4	37	8668	4.3

Data source: Tennessee Department of Health, Division of Policy, Planning and Assessment, Office of Health Statistics.
U.S. Census Bureau.

⁷ Rates for less than 20 deaths are unstable and must be used with caution.

Manner of Death

- Manner of death refers to the intent of a death (Natural, Accident, Suicide, Homicide, or Undetermined). Additional details are available in the “Data Overview” section of this report.
- In 2014, 507 deaths were by natural manner (medical causes); 117 deaths were accidents. By comparison, 480 of deaths in 2013 were attributed to natural manner while 159 were attributable to accidental manner.
- Thirty-four deaths of children in 2014 (4% of all deaths) were the result of homicide, a decrease from the 40 homicide deaths in 2013.
- Twenty-four young people took their own lives during 2014 (3% of all deaths); the same number of suicides observed in 2013.

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).
- In 2014, the majority (67.2%) of the reviewed child deaths (N=527) were due to a medical condition and most were infants. This is an increase of 13% of medical related child deaths compared to 2013 (N=467).
- Prematurity and congenital anomaly were the leading causes of death from a medical condition.
- 191 reviewed child deaths were classified as due to external causes, including motor vehicle, weapons, asphyxia, fire/burns, poisoning or overdose, and fall/crush. This represents a 19% decrease from the 236 cases observed in 2013.
 - Fifty-three children (6% of all deaths) died in motor vehicle crashes in 2014, a significant decrease from the 66 vehicular deaths in 2013.
 - Forty-six children (5% of all deaths) died of asphyxia; 31 of these children died in a sleep-related environment. This represents a decrease in overall asphyxia cases of 27% from 2013, when there were 63 asphyxia deaths, 46 of which occurred in a sleep-related environment.
 - Forty children (5% of all deaths) died from weapon injuries, a 27% decrease from the 55 children who died in 2013. Twenty-nine (73%) of the weapons-related fatalities were due to firearms, of which 16 were homicides, 9 were suicides, 2 were accidents and 2 were undetermined.
 - Twenty-one children (2% of all deaths) died by drowning, a 17% increase from the 18 cases in 2013.
 - Seven children (1% of all deaths) died from a fire, burn or electrocution, a 56% decrease in fatalities compared to the sixteen deaths in 2013.
 - Eight children (1% of all deaths) died from poisoning, the highest number of poisoning-related child deaths since 2011. Five of eight poisoning fatalities involved prescription drugs.

Table 3 summarizes the most recent year-to-year trends for child fatalities in Tennessee.

Table 3. Summary of Year-to-Year Trends for Child Fatalities in Tennessee, 2013-2014

Categories	Number of Child death	
	2013	2014
Categories Showing Improvement		
Sleep-Related	117	99
Motor vehicle or other transport	66	53
Asphyxia	63	46
Weapon,including body part	55	40
Homicide	40	34
Fire, burn, or electrocution	16	7
Categories Showing Small/No Changes		
Infant Mortality (<1 year of age)	543	562
Congenital anomaly	108	113
Cardiovascular	33	29
Suicide	24	24
Drowning	18	21
Pneumonia	17	15
Poisoning,overdose or acute intoxication	5	8
Asthma	8	5
SIDS	3	5
Influenza	4	3
Fall or crush	2	3
Exposure	1	0
Categories Showing Worsening Outcomes		
Prematurity	117	146
Cancer	34	42
Neurological/seizure disorder	12	27

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

In Table 3 above, trends in death rates are clustered in three categories: those showing improvements from 2013 to 2014 (more than 10% improvement and number of change >5); those showing relatively no change from 2013 to 2014 (less than 10% improvement and change of ≤ 5) and those showing worsening outcomes from 2013 to 2014 (more than 10% and number of change > 5).

The review of child fatalities in 2014 revealed decreases in most preventable deaths such as fire/burns, motor vehicle, homicide, asphyxia, sleep and weapon related cases. A few other preventable deaths, however, have increased from 2013 to 2014. These include poisoning, fall or crush and drowning. The rise of these preventable deaths 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.

STATE CHILD FATALITY TEAM MEMBERS **(2014 CHILD FATALITY REPORT)**

Chair

John J. Dreyzehner, MD MPH FACOEM
Commissioner
Tennessee Department of Health

Co-Chair

Michael D. Warren, MD MPH FAAP
Director, Division of Family Health and Wellness
Tennessee Department of Health

Members

Valerie Arnold, MD
Tennessee Medical Association

Ashley Brooks
Tennessee Department of Health

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

Thomas Cheetham, MD
Tennessee Department of Intellectual
and Developmental Disabilities

Donna Scott Davenport
Tennessee Supreme Court

Rachel Heitmann
Tennessee Department of Health

Mike Hermann
Tennessee Department of Education

Noel Hengelbrock
Tennessee Department of Children's
Services

Bonnie Hommrich
Tennessee Department of Children's
Services

Dewayne Johnson
Tennessee Bureau of Investigation

Senator Brian Kelsey
Tennessee Senate

Morgan McDonald, MD, FAAP, FACP
Tennessee Department of Health

Scott Modell, Ph.D.
Tennessee Department of Children's
Services

Linda O'Neal
Tennessee Commission on Children
and Youth

Senator Doug Overbey
Tennessee Senate

Representative Antonio Parkinson
Tennessee House of Representatives

Kristen Rector
Prevent Child Abuse Tennessee

Scott Ridgway
Tennessee Suicide Prevention
Network

Representative Ryan Williams
Tennessee House of Representatives

INTRODUCTION

The Child Fatality Review Process in Tennessee

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

Annually, approximately 40,000 children age 0-17 die in the United States.⁸ Through child death review, local multidisciplinary teams meet in communities across the country to review case information for deaths in the hopes of better understanding why children die and what action can be taken to prevent future deaths. The Maternal and Child Health National Center for Child Death Review provides national-level leadership for state and local child fatality review teams. As of July 2012, every state and the District of Columbia had a system for reviewing child deaths.⁹

The Child Fatality Review and Prevention Act of 1995 established the Tennessee Department of Health's Child Fatality Review (CFR). The mission of the Child Fatality Review is to review deaths in order to promote understanding of the causes of childhood deaths and make and carry out 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 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 the local education agency, a mental health professional, a pediatrician or family practice physician, an emergency medical service provider or firefighter, and juvenile court representative. While these members are required to attend by law, other agencies that work with children and their families also attend.

The composition of the State CFR Team is outlined in T.C.A. § 68-142-103, and includes high level officials such as the Health Commissioner, the Attorney General, and political leaders such as State Senators and Representatives. This team reviews the aggregate data from the local teams, analyzes statistics of the incidence and causes

⁸ Centers for Disease Control and Prevention, National Center for Health Statistics. Underlying Cause of Death 1999-2013 on CDC WONDER Online Database, released 2015. Accessed at <http://wonder.cdc.gov/ucd-icd10.html>.

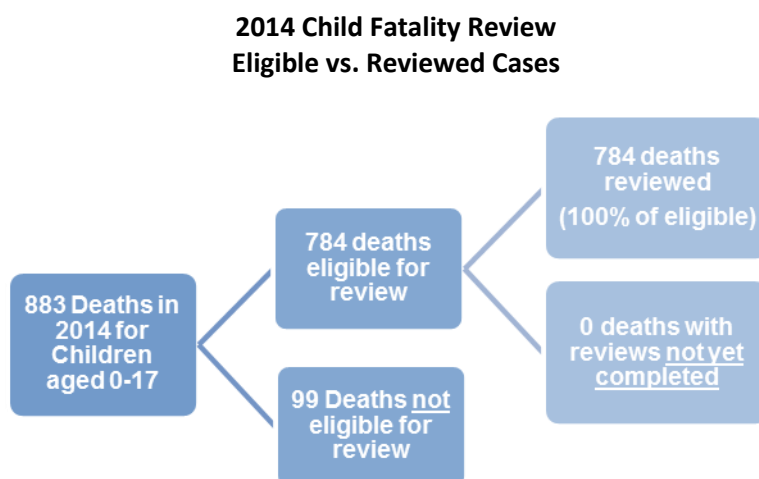
⁹ National Center for the Review and Prevention of Child Deaths. Keeping Kids Alive: A Report on the Status of Child Death Review in the United States, 2011. Available at: http://www.childdeathreview.org/reports/CDRinUS_2011.pdf.

of child deaths, and makes recommendations to the Governor and General Assembly for their consideration in implementing laws, policies, and practices to prevent child deaths in Tennessee and to make improvements in protocols and procedures.

Review of Child Fatality Review Data

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. They bring to the review table 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 883 deaths in 2014, 784 met the review criteria. Another 99 cases 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. In previous years, not all child deaths were reviewed before the annual report was released. Such case reviews were considered ongoing and awaited results of contributing information, such as legal investigations or autopsy results. The completion of all 2014 death reviews is a reflection of the significant efforts put in by the local CFR teams and other partnering State agencies.



Fetal deaths of 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. Because of these variables, it is usually impossible to find an exact number-for-number match between CFR data and data from other sources such as vital statistics. The unique role of CFR is to provide a comprehensive depth of understanding of the deaths which may have been prevented to augment other, more one-dimensional data sources.

Tennessee Department of Health (TDH) staff oversee 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 the Review and Prevention of Child Death, 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 Division of Policy, Planning, and Assessment are used in many of the analyses included in this report.

Limitations of Child Fatality Review Data

Results for the analysis of the CFR data may vary from previous reports due to the nature of how the data is collected and stored. If the CFR team obtains additional information on a child's death after the completion of the annual report, they are allowed to make changes to any of the already reviewed data, which is then overwritten in the database system. Because local CFR teams may have added additional information to cases described in previous CFR reports after the completion of the reports for those years, the results of prior year data in this year's report may not exactly match numbers in prior years' reports.

Local CFR teams analyze each case based on the best information available to them. As such, there may be additional facts not available to the team that would result in a different classification or conclusion; therefore, the numbers contained in this report may not match reports from other agencies or departments.

DATA OVERVIEW

Summary of Child Mortality Data

The overall rate of child fatalities for 2014 was 59.3 per 100,000 in the population of children less than 18 years of age.

In 2014, there were 883 child deaths in Tennessee, of which 784 were reviewed by local CFR teams. Among the reviewed child deaths, the first year of life is the most perilous for Tennessee's children, accounting for 59% of all reviewed deaths through the age of 17 (depicted in Figures 5-7). Boys died more frequently than girls (accounting for 60% of child fatalities). A racial disparity exists among child fatalities as well. While the majority of the deaths are among White children, African American children suffer a higher rate of mortality than Whites or other races.¹⁰

Figure 5. Child Deaths by Age Groups in Tennessee, 2014

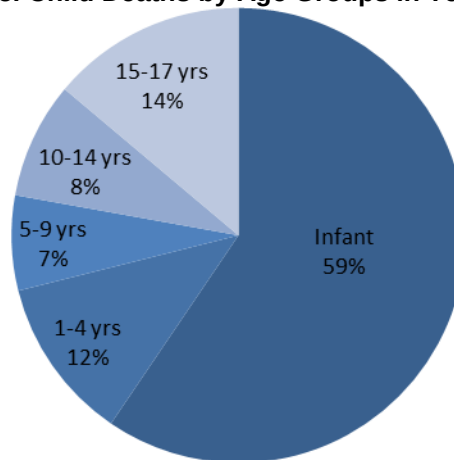


Figure 6. Child Deaths Ages 0-17 by Gender in Tennessee, 2014

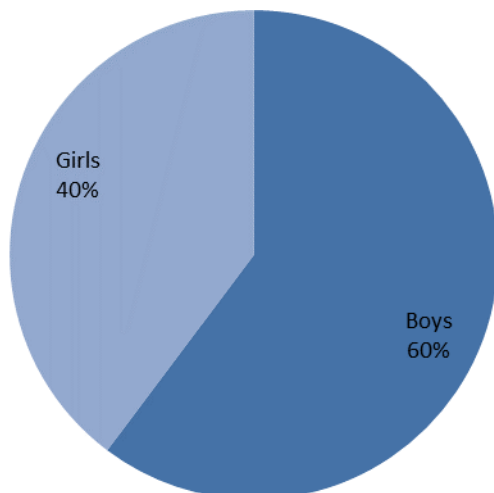
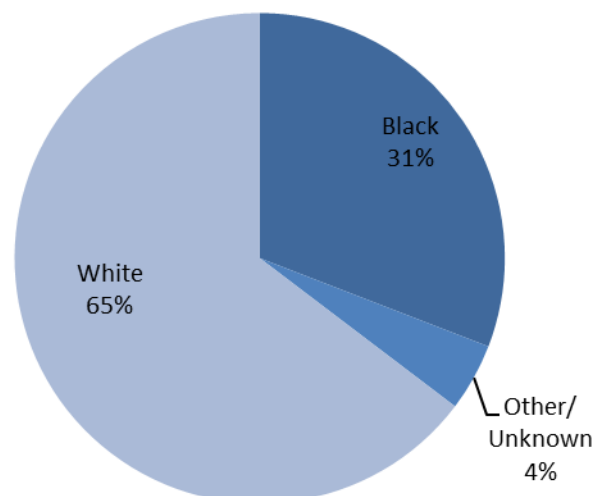


Figure 7. Child Deaths Ages 0-17 by Race in Tennessee, 2014



¹⁰ Other race includes all other non-white or non-black races.

Child deaths are classified by cause and manner of death. There are many complexities involved in determining these classes, and it begins with the difference in their definitions. **Manner of death** describes the intent of a death, i.e. whether a death was caused by an act carried out on purpose by oneself or another person(s). The CFR case report tool classifies the manner of death as natural (from medical conditions), accidental (unintentional injuries), homicide, suicide, pending, undetermined, and unknown. **Cause of death** is a specific classification of the effect, illness, or condition leading to an individual's death. The causes of death categories are medical, external (injuries), undetermined or unknown. Medical causes are then further delineated by specific disease entities, while external causes are further delineated by the nature of the injury. In general, determining the cause of death can be easier if a death certificate and an autopsy are available, whereas the manner of death may have a pending investigation and cannot be determined until the investigation is finalized.

For deaths being reviewed, 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 left blank, CFR teams may make the determination upon conclusion of the review process. Local child fatality review 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. **Undetermined** cases are those in which the investigation of circumstances surrounding a death fails to reveal a clear determination. 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. **Pending** cases are those in which further information is anticipated to be forthcoming. 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.

Of the 784 deaths reviewed by the CFR teams in 2014:

- 527 cases (67%) were due to **medical** causes.
- 191 cases (24%) were due to **external** (injury) causes of death.
- 66 cases (8%) were **unknown or could not be determined** as a medical or external cause. Of 66 cases marked as “Undetermined” or “Unknown,” 61 were less than one year of age. This reflects the inherent complexities in determining the manner and cause of infant deaths.

More detailed data on these deaths is contained in the pages that follow. Figures 8-10 summarize the causes and manners of death for 2014 fatalities. Additionally, Tables 4-6 provide a breakdown of causes by manner, demographic distributions (age, gender and race) for each cause and manner of death. Note that causes of death are broad categories. Detailed information regarding specific cause of death is contained later in the report.

Figure 8. Manner of Death Summary, Children Ages 0-17 in Tennessee, 2014

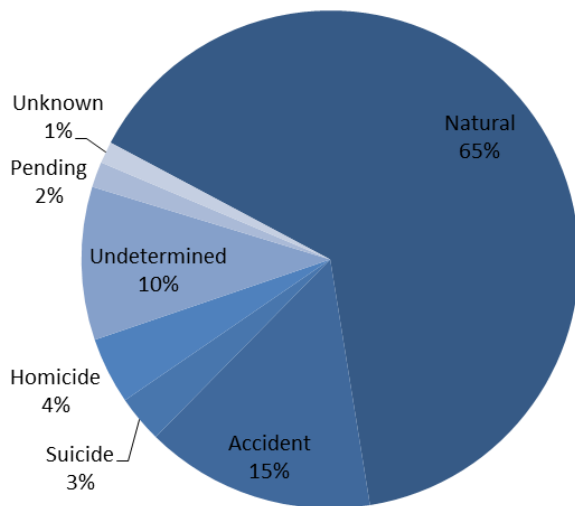


Figure 9. Cause of Death Summary, Children Ages 0-17 in Tennessee, 2014

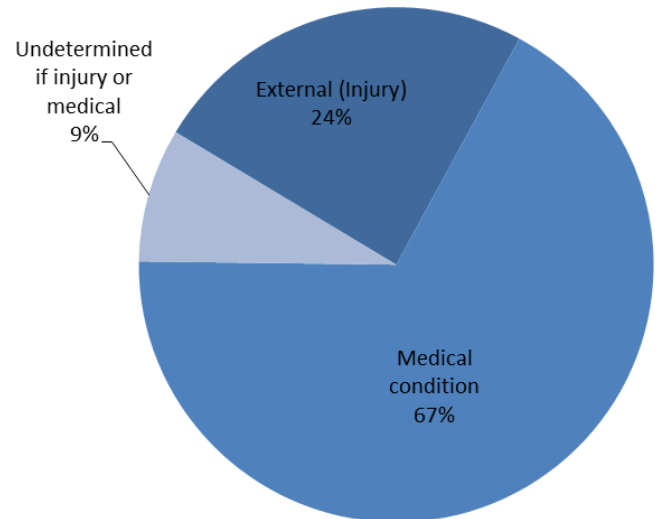
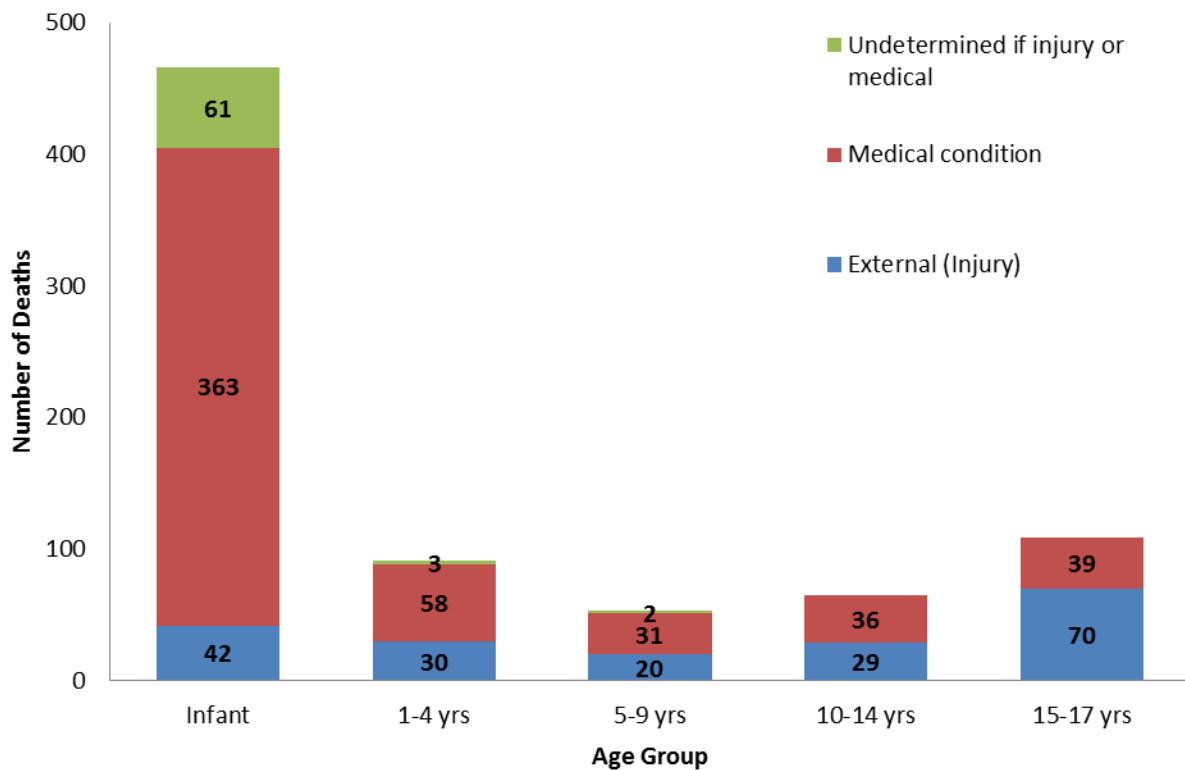


Figure 10. Medical/External Causes of Death for Children Ages 0-17 by Age Group in Tennessee, 2014



In order to better understand cause and manner of death, it is important to examine both their differences and similarities. While cause and manner of death have two very distinct definitions, they are strongly associated. In most cases, there is an obvious link between them. For example, a death due to a medical cause would be listed as having occurred in a natural manner or a death due to an external cause of injury might be listed as having occurred in an accidental manner. However, there may be cases where the manner and causes do not obviously relate. The underlying cause of death could be due to a medical condition, but the manner of death could be an accident. An example of this would be a case where a mother was pregnant and a motor vehicle accident resulted in preterm labor and baby was born and died with complications associated with preterm birth. This relationship is illustrated on Table 4, where the causes of death are stratified by manner. Table 5 and Table 6 provide demographic information for cause of death and manner of death.

Table 4. Medical/External Causes of Death by Manner for Children Ages 0-17 in Tennessee, 2014

Cause of Death	Manner of Death							
	Natural	Accident	Suicide	Homicide	Undetermined	Pending	Unknown	Total
External (Injury)	1	113	24	34	11	7	1	191
Medical condition	505	3	0	0	10	2	7	527
Undetermined if injury or medical	1	1	0	0	57	4	3	66
Total	507	117	24	34	78	13	11	784

Table 5. Medical/External Causes of Death Summary for Children Ages 0-17 in Tennessee, 2014

2014	Cause of Death			Total
	External (Injury)	Medical condition	Undetermined if injury or medical	
Age				
Infant	42(22%)	363(69%)	61(92%)	466(59%)
1-4 yrs	30(16%)	58(11%)	3(5%)	91(12%)
5-9 yrs	20(10%)	31(6%)	2(3%)	53(7%)
10-14 yrs	29(15%)	36(7%)	-	65(8%)
15-17 yrs	70(37%)	39(7%)	-	109(14%)
Total	191(100%)	527(100%)	66(100%)	784(100%)
Race				
Black	54(28%)	161(30%)	27(41%)	242(31%)
Other/Unknown	8(4%)	26(5%)	-	34(4%)
White	129(68%)	340(64%)	39(59%)	508(65%)
Total	191(100%)	527(100%)	66(100%)	784(100%)
Gender				
Boys	132(69%)	302(57%)	38(58%)	472(60%)
Girls	59(31%)	225(43%)	28(42%)	312(40%)
Total	191(100%)	527(100%)	66(100%)	784(100%)

Table 6. Manner of Death Summary for Children Ages 0-17 in Tennessee, 2014

2014	Cause of Death			Total
	External (Injury)	Medical condition	Undetermined if injury or medical	
Age				
Infant	42(22%)	363(69%)	61(92%)	466(59%)
1-4 yrs	30(16%)	58(11%)	3(5%)	91(12%)
5-9 yrs	20(10%)	31(6%)	2(3%)	53(7%)
10-14 yrs	29(15%)	36(7%)	-	65(8%)
15-17 yrs	70(37%)	39(7%)	-	109(14%)
Total	191(100%)	527(100%)	66(100%)	784(100%)
Race				
Black	54(28%)	161(30%)	27(41%)	242(31%)
Other/Unknown	8(4%)	26(5%)	-	34(4%)
White	129(68%)	340(64%)	39(59%)	508(65%)
Total	191(100%)	527(100%)	66(100%)	784(100%)
Gender				
Boys	132(69%)	302(57%)	38(58%)	472(60%)
Girls	59(31%)	225(43%)	28(42%)	312(40%)
Total	191(100%)	527(100%)	66(100%)	784(100%)

From 2010 to 2014, the overall mortality rate for Tennessee children has dropped by 11% (statistically significant at $p\text{-value} < 0.05$); however, the 2014 rate is a slight increase from the 2013 rate. While deaths due to medical conditions in 2014 have increased 13% compared to 2013, there was a 19% decrease in fatalities due to external causes of injury from 2013 to 2014. Figures 11 and 12 depict these yearly trends, and additional information is provided in the next section “Specific Causes of Death.”

Figure 11. Rate of Child Mortality Ages 0-17 by Cause of Death in Tennessee, 2010-2014

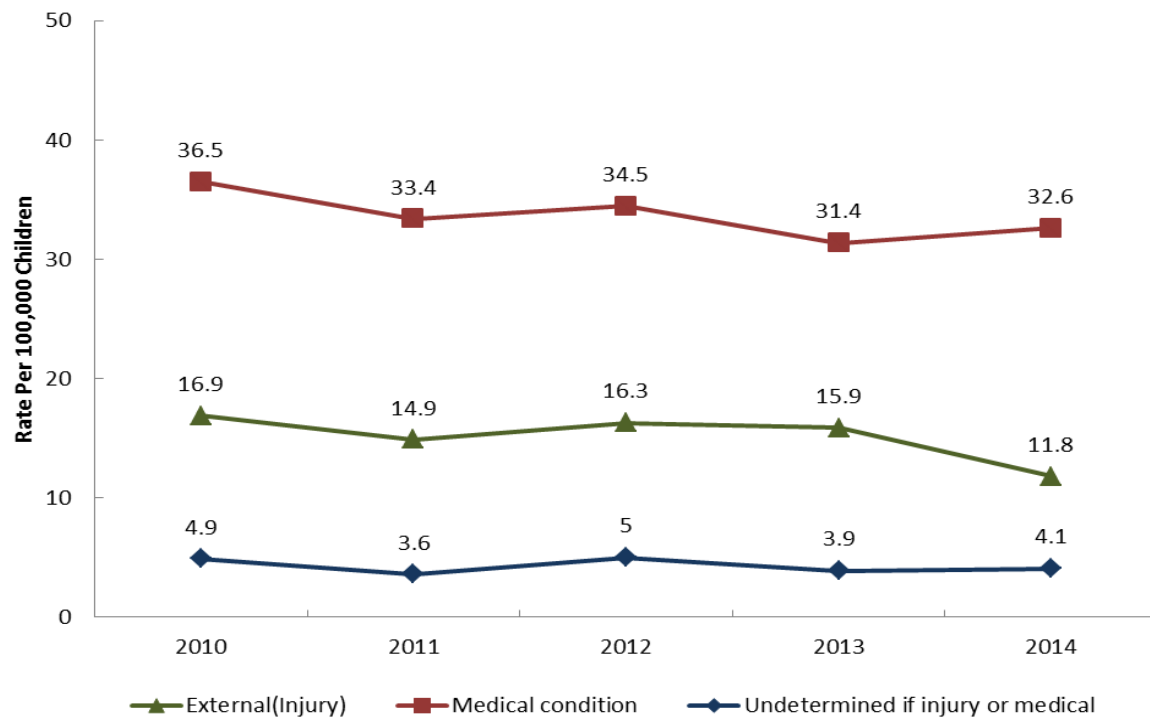
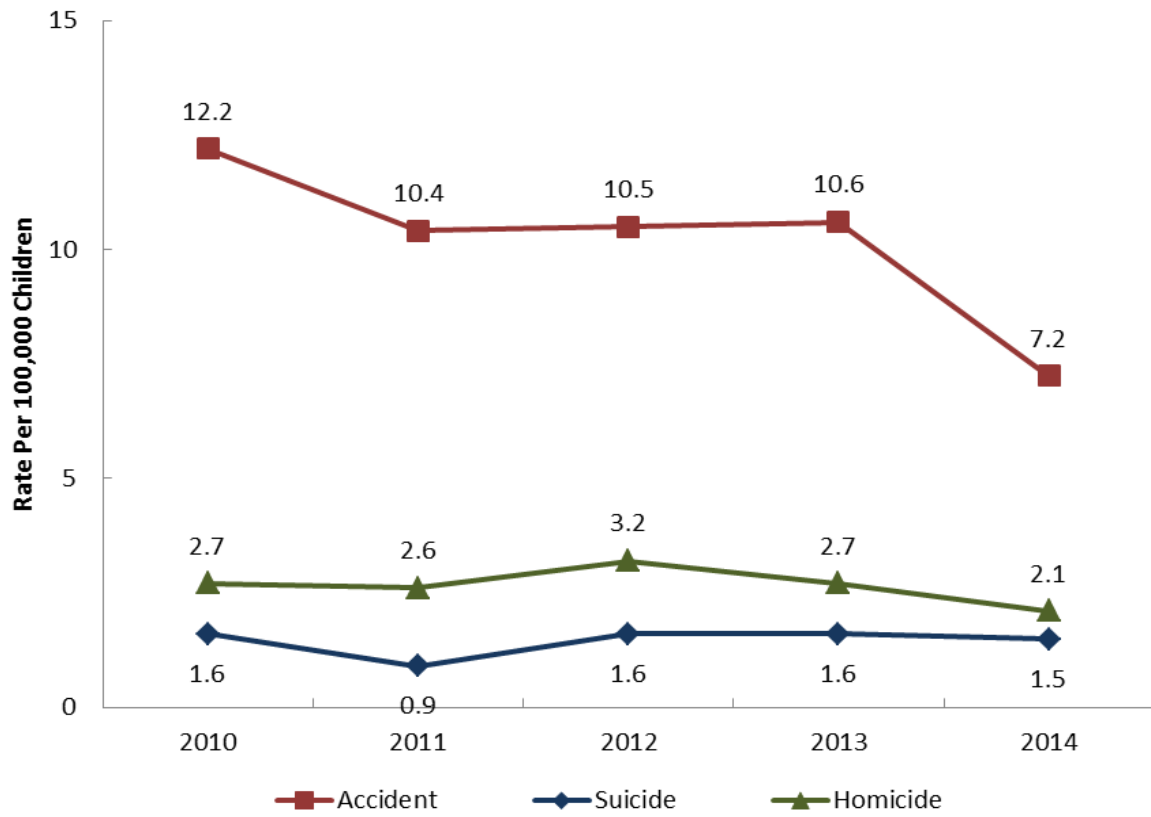


Figure 12. Rate of Child Mortality Ages 0-17 by Manner of Death in Tennessee, 2010-2014



Specific Causes of Death

The cause of death includes two broad categories: external causes of death and medical causes. Within the external classification, individual deaths are further classified according to the nature of the injury. Of the 784 reviewed child deaths in 2014, 191 (approximately 24%) were classified as due to external causes, including motor vehicle, weapons, asphyxia, fire/burns, poisoning or overdose, and fall/crush. This represents a statistically significant decrease from the nearly 31% observed in 2013 (236 deaths of external causes out of 767). Detailed analysis for each specific injury death is provided in later sections of this report.

Table 7. External Cause of Death (Injury Causes) for Children Ages 0-17 by Age Groups in Tennessee, 2014

Injuries	Total	Percent of Reviewed Deaths	Infant	1-4 yrs	5-9 yrs	10-14 yrs	15-17 yrs
Motor vehicle or other transport	53	6.8%	1	7	9	12	24
Asphyxia	46	5.9%	31	3	0	5	7
Weapon, including body part	40	5.1%	3	7	2	6	22
Drowning	21	2.7%	1	6	6	3	5
Other	11	1.4%	4	4	0	0	3
Poisoning, overdose or acute intoxication	8	1.0%	0	1	0	2	5
Fire, burn, or electrocution	7	0.9%	0	2	2	1	2
Fall or crush	3	0.4%	0	0	1	0	2
Undetermined	1	0.1%	1	0	0	0	0
Unknown	1	0.1%	1	0	0	0	0
Total	191	24.3%	42	30	20	29	70

Within the medical classification, causes are further specified by particular conditions or disease entities. In 2014, **527 deaths were attributed to medical causes**. Medical conditions can include those acquired congenitally (present at birth) or those that develop as the child grows. The majority of deaths from medical causes in Tennessee are related to prematurity and congenital anomalies. Other causes include infections, neurological conditions including seizures, and childhood cancers. In 2014, approximately 67% of reviewed deaths were attributed to medical causes; this represents an increase from 61% in 2013. Neurological/seizure disorders observed the largest increase (12 cases in 2013 compared to 27 in 2014) followed by prematurity (117 cases in 2013 compared to 146 cases in 2014). Medical causes of death are outlined in Table 8.

With infant deaths, it is important to note that when SIDS and/or a Sudden Unexplained Infant Death (SUID) is identified on a death certificate, it is classified under cause as “Medical” or “Undetermined.”

Table 8. Medical Cause of Death (Medical Causes) for Children Ages 0-17 by Age Groups in Tennessee, 2014

Medical Causes	Total	Percent of Reviewed Deaths	Infant	1-4 yrs	5-9 yrs	10-14 yrs	15-17 yrs
Prematurity	146	18.6%	145	1	0	0	0
Congenital anomaly	113	14.4%	94	11	5	0	3
Cancer	42	5.4%	0	10	12	11	9
Cardiovascular	29	3.7%	16	4	1	1	7
Neurological/seizure disorder	27	3.4%	7	5	3	4	8
Other perinatal condition	22	2.8%	22	0	0	0	0
Other infection	22	2.8%	17	2	2	1	0
Pneumonia	15	1.9%	4	4	3	3	1
SIDS	5	0.6%	5	0	0	0	0
Asthma	5	0.6%	0	0	2	3	0
Influenza	3	0.4%	1	0	0	2	0
Undetermined medical cause	1	0.1%	0	0	0	0	1
Other medical condition*	97	12.4%	52	21	3	11	10
Total	527	67.1%	363	58	31	36	39

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

FOCUSING ON PREVENTION



Potential prevention opportunities include:

- Routine vaccination of infants and children against diseases such as pertussis, measles, and influenza.
- Early and regular prenatal care for pregnant women.
- Avoidance of tobacco by pregnant women.
- Promotion of social services that are available to low-income, child-bearing age and pregnant women.
- Widespread messaging campaigns to promote the importance of safe sleep.
- Provider and patient education and facilitation of antenatal steroids when appropriate.

Current prevention efforts in Tennessee include:

- Presumptive eligibility for Medicaid is determined through local health departments when an uninsured woman has a positive pregnancy test.
- The Tennessee Department of Health funds the Tennessee Tobacco QuitLine which offers smoking cessation services to anyone, including pregnant women.
- Tobacco settlement funds are provided to all 95 counties for pregnancy smoking cessation activities.
- The Tennessee Department of Health operates the “ABC’s of Safe Sleep” campaign to reduce SIDS and other sleep-related deaths.

Summary of Infant Mortality Data

Infant mortality is defined as a death during infancy (the first 12 months of life). Infant mortality accounts for the largest single component of the Child Fatality Review process and is of particular concern in the state of Tennessee. The state's infant mortality rate has declined over the past five years, from 7.9 in 2010 to 6.9 deaths per 1,000 live births in 2014, a decrease of 13%. Tennessee still exceeds the national average for infant mortality (6.0 in 2013).¹¹

In 2013 (the most recent year for which national data is available), 23,446 infants died prior to their first birthday in the United States. While the overall infant mortality rate in the U.S. is 6.0 per 1,000 live births, two-thirds of infant deaths occur during the first twenty eight days. The leading causes of infant death in the United States in 2013 were congenital malformations, low birthweight, maternal complications, SIDS and unintentional injuries. Together, the five leading causes accounted for 57% of all infant deaths in the United States in 2013.¹²

In 2014, **466** Tennessee infant deaths¹³ were reviewed by local child fatality review teams. Table 9 provides a snapshot of the risk factors readily associated with infant mortality. It is important to note that, because the categories are not mutually exclusive, their total will exceed that of the 466 deaths.

Table 9. Risk Factors Associated with Infant Deaths Reviewed by Tennessee CFR Teams, 2014

Risk Factors	Total	Natural	Accident	Homicide	Undetermined	Pending	Unknown	Percent of Total Infant Deaths
Deaths Reviewed	466	345	26	7	68	10	10	100%
Low birth weight (<2500 grams)	334	277	12	0	37	2	6	72%
Premature (<37 weeks)	269	242	6	0	16	0	5	58%
Known Intrauterine Smoke Exposure	116	66	9	3	32	6	0	25%
Known Intrauterine Drug Exposure	41	24	4	1	10	2	0	9%
Late(>6 months) or No Prenatal Care	26	16	1	1	5	2	1	6%
Known Intrauterine Alcohol Exposure	3	3	0	0	0	0	0	1%

¹¹ Centers for Disease Control and Prevention. Deaths: Final Data for 2013. National Vital Statistics Reports; Vol 64 No 9. Hyattsville, MD: National Center for Health Statistics. 2015.

¹² Mathews TJ, MacDorman MF, Thoma ME. Infant mortality statistics from the 2013 period linked birth/infant death data set. National vital statistics reports; vol 64 no 9. Hyattsville, MD: national Center for Health Statistics. 2015.

¹³ Fetal deaths of less than 23 weeks' gestation and less or equal than 500 grams in weight are not reviewed. Therefore, this number may differ from that published in other Departmental reports.

As indicated in Table 9, low birth weight and prematurity were risk factors associated with many infant deaths; this is consistent with other analyses that indicate low birth weight and prematurity are major contributors to Tennessee's infant mortality rate. Additionally, 25% of infant deaths were associated with known intrauterine smoke exposure. Smoking during pregnancy is known to be associated with both prematurity and low birth weight, both of which are independent risk factors for infant mortality.

A detailed county-level listing of infant mortality rates can be found in Appendix D. The count of infants deaths reported there differs from that reported through the Child Fatality Review process, as the local CFR teams only review deaths in which the infant was born weighing over 500 grams and at 23 weeks' gestational age or greater; whereas Appendix D includes infant deaths for all live-born children, regardless of weight or gestational age.

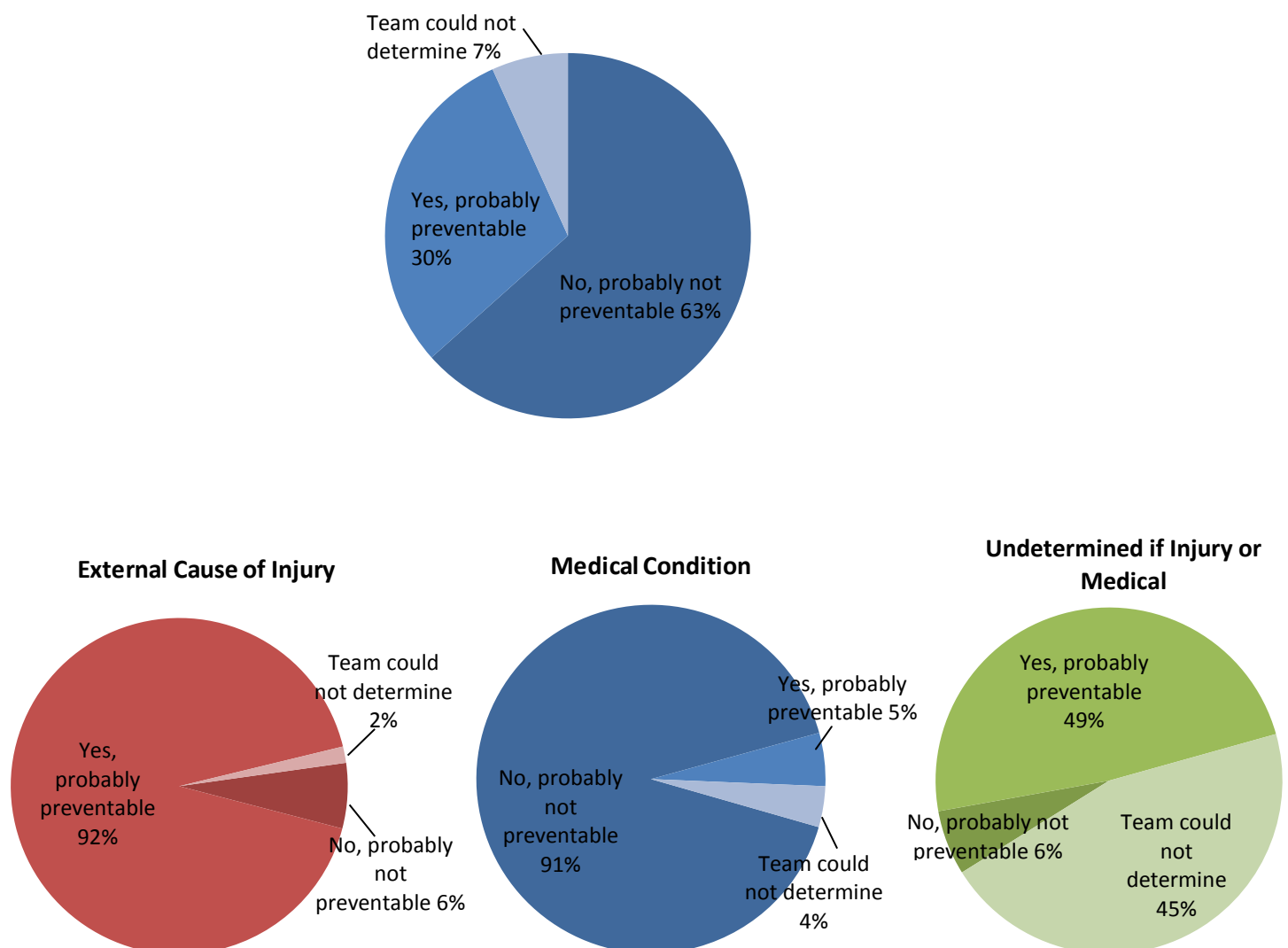
Prevention Analysis

The overarching goal of the Child Fatality Review Program is to craft and adopt recommendations for actions that can prevent future child deaths. In Tennessee, several policies have been the direct result of the Child Fatality Review process.

If an individual or the community could reasonably have done something that would have changed the circumstances leading to a child's death, that fatality is considered to have been **preventable**. CFR teams carefully examine each death in an effort to determine preventability.

Of the cases reviewed, CFR teams determined that **234 deaths (30%) could probably have been prevented**, as shown in Figure 13. As suspected, the great majority of the preventable deaths are those caused by an external cause of injury (176 cases) versus medical causes (26 cases).

Figure 13. Preventability of Child Deaths Ages 0-17 by Cause of Death in Tennessee, 2014



Prevention of future child deaths is the primary goal of Child Fatality Review. Spread throughout the report are highlighted boxes labeled “**Focusing on Prevention.**” These boxes contain nationally-recommended strategies for preventing a particular type of death as well as highlights of current TN initiatives focused on preventing death in a particular category.

Table 8. Medical Cause of Death (Medical Causes) for Children Ages 0-17 by Age Groups in Tennessee, 2014

Medical Causes	Total	Percent of Reviewed Deaths	Infant	1-4 yrs	5-9 yrs	10-14 yrs	15-17 yrs
Prematurity	146	28.6%	145	1	0	0	0
Congenital anomaly	113	22.4%	94	11	5	0	3
Cancer	42	8.2%	0	10	12	11	9
Cardiovascular	29	5.7%	16	4	1	1	7
Neurological/seizure disorder	27	5.3%	7	5	3	4	8
Other perinatal condition	22	4.3%	22	0	0	0	0
Other infection	22	4.3%	17	2	2	1	0
Pneumonia	15	2.9%	4	4	3	3	1
SIDS	5	1.0%	5	0	0	0	0
Asthma	5	1.0%	0	0	2	3	0
Influenza	3	0.6%	1	0	0	2	0
Undetermined medical cause	1	0.2%	0	0	0	0	1
Other medical condition*	97	19.0%	52	21	3	11	10
Total	527	100.0%	363	58	31	36	39

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

FOCUSING ON PREVENTION

Potential prevention opportunities include:

- Routine vaccination of infants and children against diseases such as pertussis, measles, and influenza.
- Early and regular prenatal care for pregnant women.
- Avoidance of tobacco by pregnant women.
- Promotion of social services that are available to low-income, child-bearing age and pregnant women.
- Widespread messaging campaigns to promote the importance of safe sleep.
- Provider and patient education and facilitation of antenatal steroids when appropriate.

Current prevention efforts in Tennessee include:

- Presumptive eligibility for Medicaid is determined through local health departments when an uninsured woman has a positive pregnancy test.
- The Tennessee Department of Health funds the Tennessee Tobacco QuitLine which offers smoking cessation services to anyone, including pregnant women.
- Tobacco settlement funds are provided to all 95 counties for pregnancy smoking cessation activities.
- The Tennessee Department of Health operates the “ABC’s of Safe Sleep” campaign to reduce SIDS and other sleep-related deaths.

FOCUSING ON PREVENTION

Potential prevention opportunities include:

- Routine vaccination of infants and children against diseases such as pertussis, measles, and influenza.
- Early and regular prenatal care for pregnant women.
- Avoidance of tobacco by pregnant women.
- Promotion of social services that are available to low-income, child-bearing age and pregnant women.
- Widespread messaging campaigns to promote the importance of birth spacing.

Current prevention efforts in Tennessee include:

- Presumptive eligibility for Medicaid is determined through local health departments when a woman has a positive pregnancy test.
- The Tennessee Department of Health funds the Tennessee Tobacco QuitLine which offers smoking cessation services to anyone, including pregnant women.
- Tobacco settlement funds are provided to all 95 counties for pregnancy smoking cessation activities.
- The Tennessee Department of Health operates the “ABC’s of Safe Sleep” campaign to reduce SIDS and other sleep-related deaths.

Acts of Child Abuse or Neglect

Child abuse or neglect represents a serious concern for the United States. In 2013, it is estimated that 679,000 children were victims of child abuse across the U.S, of whom approximately 1,520 children died. Of the children who died from child abuse in the U.S, 79.5% experienced neglect and 18.0% experienced physical abuse. Children ages 0-5 years account for 79% of child abuse victims, but approximately 72% of child abuse fatalities occurred to children under the age of 3.^{14,15}

In Tennessee, 10,377 children were determined to have been victims of child abuse in 2013 and 40 of those children died. Of the children who died from child abuse in 2013, 28% experienced neglect and 73% experienced physical abuse. The majority (80%) of child abuse fatalities occurred to children under the age of 3, with children ages 0-5 accounting for 93% of all child abuse deaths.¹⁶

A portion of preventable deaths are either directly or indirectly related to the lack of quality care or supervision on the part of 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. These numbers 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 because DCS counts cases in which abuse or neglect are substantiated while the TDH local teams are examining deaths from a public health approach to determine whether there was opportunity for improvement with supervision, abuse or neglect.

Table 10 below describes the cases¹⁷ for which review teams found there was poor or absent supervision, child abuse, child neglect,¹⁸ or other negligence among 2014 deaths.¹³

¹⁴ U.S. Department of Health and Human Services, Administration for Children and Families, Administration on Children, Youth and Families, Children's Bureau. (2015). Child maltreatment 2013. Available from: <http://www.acf.hhs.gov/programs/cb/research-data-technology/statistics-research/child-maltreatment>

¹⁵ Centers for Disease Control and Prevention, National Center for Injury Prevention and Control: Division of Violence Prevention. Available at: 615-253-2950

¹⁶ Source: Child Maltreatment 2013; Children's Bureau (Administration on Children, Youth and Families, Administration for Children and Families) of the U.S. Department of Health and Human Services. TN Department of Children's Services FFY 2013 NCANDS File.

¹⁷ 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.

¹⁸ For purposes of this Child Fatality Review, **neglect** is defined as: "failure to act on the part of a parent or caregiver which results in death, or presents an imminent risk of serious harm." **Other negligence** is defined as: "acts or failures to act that are neglectful including criminal negligence, vehicular manslaughter, voluntary intoxication, but not restricted to the level of criminal culpability." Source: National MCH Center for Child Death Review, Child Death Review Case Reporting System Data Dictionary. Available at: <https://www.cdrdata.org/forms/DataDictionary.pdf>

Table 10. Acts of Child Abuse or Neglect Among Reviewed Deaths for Children Ages 0-17 in Tennessee, 2014

Age Group	Poor/absent Supervision	Child Abuse	Child Neglect	Other Negligence	Total
Infant	0	7	10	32	49
1-17 yrs	12	8	7	21	48
Total	12	15	17	53	97

FOCUSING ON PREVENTION



Potential prevention opportunities include:

- Increased child abuse awareness and training in schools.
- Educational and family support programs for lower income families to promote child social and cognitive development and increase parental participation.

Current prevention efforts in Tennessee include:

- The Tennessee Department of Health (TDH) funds evidence-based home visiting programs in at-risk counties; these programs have been shown to reduce child maltreatment.
- TDH staff receives in-service training on detection and reporting of child maltreatment, including human trafficking.
- Prevent Child Abuse Tennessee (PCAT) continues to lead the Nashville Child Protection Coalition and serve on the steering committee. The coalition's goal is to diminish the incidence and impact of child sexual abuse by teaching 5% of the adult population in Nashville how to recognize and react responsibly to child sexual abuse. PCAT was designated as the organization responsible for coordinating efforts and facilitating Stewards of Children training opportunities for nonprofit organizations, businesses, congregations and parents. In 2014, the organization trained 35,624 adults and added 164 trained facilitators.
- 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. 2014 was the first year the SLC reviewed cases involving child fatalities. Many of the findings and recommendations of the SLC have the potential to prevent child fatalities.
- The Department of Children's Services (DCS) utilizes In Home Tennessee (IHT) to build organizational and community capacity, improve access and quality services, and enhance how DCS works with families. In October 2014, IHT unit began the rollout of the federal IV-E waiver allowing states to use federal dollars in a more flexible way, focusing on prevention services.

Continued on next page

- The DCS child Abuse Hotline (CAH) handled over 140,000 calls in CY2014. The CAH's performance level has maintained at the highest industry standard of 80/20. That is, 80% of calls are answered in 20 seconds or less. For perspective, in 2014 over 110,000 calls to the hotline were answered in 20 seconds or less. Additionally, the CAH has maintained a call abandonment rate under 5%.
- In 2014, Child Protective Services (CPS) investigated over 91,000 allegations of abuse and neglect representing over 42,000 child victims.
- Using safety science, the DCS Child Death Review (CDR) process was created to increase safe outcomes by identifying and learning from those factors which influence the quality and delivery of service provided to children in a collaborative relationship with multidisciplinary participants from various divisions in DCS, alongside community partners.
- Annual reports are released by DCS following the first quarter of each calendar year to highlight significant findings and departmental improvement efforts of the previous year. Recent enhancements have been made to the DCS CDR in order to increase its overall efficiency and effectiveness. First, the CDR process was redesigned so that available resources could be strategically focused on cases with increased complexity while maintaining an expedient and thorough review of all child deaths and near deaths. Second, the CDR reports and key data are now managed in a web application hosted by Vanderbilt University's REDCap system. The system allows DCS to collect and examine important CDR data longitudinally with increased precision. Third, DCS has begun to use Spaced Education. Spaced Education is a learning system designed to quickly communicate important information from CDRs to DCS employees to ultimately increase favorable outcomes for children and families served by DCS.
- The Confidential Safety Reporting System (CSRS) allows DCS employees to report any issues they feel may affect the safety of DCS employees or children and families served by the department. Public Chapter Number 21 was signed into law on March 27th, 2015 by Governor Bill Haslam. Special legislation was required in Tennessee because child welfare does not currently have the protections for safety and quality improvement efforts seen in other safety critical industries. The protection of safety related information has been used successfully in industries such as aviation, healthcare, nuclear power, military and steel production. Research across these multiple disciplines has shown that employee participation in discussing safety related issues dramatically increases when issues can be discussed without the fear of punitive responses by their employer or outside agencies. The open dialogue that will take place is expected to increase organizational learning and prevent the occurrence of adverse events through systemic changes.

Deaths to Children with Special Circumstances

Children with special circumstances include those with a disability, chronic illness, or Child Protective Services (CPS) case open at time of death. Approximately one-third of the deaths in 2014 involved children known to have suffered from a disability or chronic illness. Of those 302 children, 15 were enrolled in the Tennessee Department of Health's Children's Special Services program (CSS). CSS is a voluntary program that provides care coordination and payments for medical services for families of children with special health care needs.

The families of 34 children were known by the local Child Fatality Review teams to have been involved in an open CPS case at the time of their deaths.¹⁹

Table 11. Children with Disability Among Reviewed Deaths* of Children Ages 0-17 by Age Groups in Tennessee, 2014

Type of Disability or Chronic illness	Infant	1-4 yrs	5-9 yrs	10-14 yrs	15-17 yrs	Total
Physical	149	45	29	28	33	284
Sensory	3	2	2	1	0	8
Mental health	0	0	0	0	2	2
Cognitive	4	7	6	4	13	34
Total of Disability or Chronic illness	151	46	30	30	45	302

*Because more than one disability or chronic illness may be present in a child, the sum of each type exceeds the total.

Table 12. Children with Special Circumstances Among Reviewed Deaths of Children Ages 0-17 in Tennessee, 2014

Circumstance	Number of Deaths
If disabled, child was enrolled in Children's Special Services (CSS)	15
Open child protective services (CPS) case at time of death ¹⁹	34

¹⁹ 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 TDH. Local Child Fatality Review Teams report based on information available to them from team members and other organizations in making their determinations at the time of the review.

FOCUSING ON PREVENTION



Potential prevention opportunities include:

- Provide 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:

- Tennessee Department of Health staff receives in-service training on detection and reporting of child maltreatment, including human trafficking.
- The Tennessee Department of Health operates Children's Special Services in all 95 counties. Trained care coordinators work with children with special health care needs and their families. Care coordinators refer families to community resources to help meet family-specific needs and improve coping with the child's condition.

Sudden Death in the Young (SDY) Registry Project

In October 2014, Tennessee was awarded a \$200,000 grant from the Centers for Disease Control and Prevention (CDC) to help establish the Sudden Death in the Young (SDY) Registry. Nine other states/jurisdictions received funding as well, including Delaware, Georgia, Michigan, Minnesota, New Hampshire, New Jersey, the city of San Francisco, the Tidewater region of Virginia and Wisconsin. Alaska, Kentucky, Nevada and Pennsylvania most recently joined the registry in October 2015.

The goals of the SDY registry are to a) establish the incidence of sudden death in the young in the United States using a population-based approach through state public health offices, and b) investigate the etiologies and risk factors for sudden death in the young, including sudden unexpected infant death (SUID), sudden cardiac death (SCD) and sudden unexpected death in epilepsy (SUDEP). All deaths in young people under age 20 may be considered for inclusion in the registry, except in cases where death was due to any of the following:

1. Accident in which the external cause was the obvious and only reason for the death, except infant suffocation
2. Homicide
3. Suicide
4. Accidental or intentional overdose of drugs even if this caused cardiac or respiratory arrest with no prior history of other possible chronic disease or autopsy findings suggestive of another cause
5. Terminal illness in which the death was reasonably expected to occur within 6 months.

To accomplish this, the 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 our 34 local CFR teams. The RFCs are responsible for identifying and notifying the state CFR program staff of any cases eligible for inclusion in the registry within 72 hours of death, conducting a thorough investigation into the circumstances of the death and obtaining consent from families for participation in the registry. The local CFR teams are responsible for reviewing SUID/SDY deaths within 90 days of notification.

For infant deaths, teams follow the SUID algorithm provided by CDC to categorize all cases where the death certificate indicated the cause 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. The local teams review all of the circumstances surrounding the SUID event, including the autopsy and death scene investigation reports to categorize the death into one of the 6 categories shown in Table 13.

Table 13. Categorization for SUID Case Registry (Age<1)

Categorization for SUID Case Registry	Number of Infants
Excluded	5
Unexplained: No autopsy or death scene investigation	1
Unexplained: Incomplete case information	2
Unexplained: No unsafe sleep factors	3
Unexplained: Unsafe sleep factors	15
Unexplained: Possible suffocation with unsafe sleep factors	7
Explained: Suffocation with unsafe sleep factors	9
Total	42

There must be strong evidence of factors for suffocation present in order for a SUID case to be categorized as unexplained: possible suffocation with unsafe sleep factors or explained: suffocation with unsafe sleep factors. Table 14 summarizes the primary mechanism(s) explaining the suffocation or possible suffocation as detailed in the autopsy and/or death scene investigation reports that are reviewed by local teams.

Table 14. Unsafe Sleep Factors

Unsafe sleep factors	Number of cases
Overlay	6
Soft bedding	4
Wedging	2
Other	4
Total	16

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 as having 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, an epileptologist, a neonatologist and forensic pathologists. The advanced review team reviews all medical and investigative records to categorize the death into one of the following seven categories: explained cardiac, explained neurological, possible cardiac, possible SUDEP, possible cardiac and SUDEP, unexplained death ≥ one year of age or unexplained death under age one. Table 15 summarizes how the teams have categorized the SDY cases.

Table 15. Categorization for SDY Case Registry (Age 0-17)

Categorization for SDY Case Registry	Infant	1-17 yrs	Total
No autopsy or death scene investigation	1	2	3
Incomplete case information	2	4	6
Explained cardiac	1	0	1
Explained infant suffocation	10	0	10
Explained other	3	2	5
Unexplained, possible cardiac	1	0	1
Unexplained infant death	18	0	18
Unexplained child death(age 1+)	1	0	1
Total	37	8	45

Sudden Cardiac Arrest Prevention Act

In April 2015, Tennessee passed the Sudden Cardiac Arrest Prevention Act, which has three key components:

1. To inform and educate coaches, parents, and athletes and require them to sign a sudden cardiac arrest information form before competing.
2. To require immediate removal of a youth athlete who appears to have symptoms of sudden cardiac arrest from play or practice.
3. To require a youth athlete to be cleared by a licensed health care professional before returning to play or practice.

This summer, Tennessee Department of Health, along with representatives from Tennessee Department of Education (DOE), Tennessee Secondary School Athletic Association (TSSAA), and Vanderbilt University Medical Center met to review and approve training resources and forms ahead of the effective date, January 1, 2016. Not only will the passage of this act increase awareness of cardiac arrest, but it also has the potential to save lives.

Other Registry Initiatives

Additionally, the state CFR program was able to allocate funding from the SDY Registry project to purchase and distribute 87 death scene investigation kits, which included a camera, laptop, and doll for reenactment purposes. Any agency responsible for conducting the infant or child death investigations was eligible to apply. Secondly, the Middle Tennessee RFC was the first out of all of the states funded to obtain a family consent and biosample. As of this date, we have identified 170 potential SDY deaths. The Middle Tennessee RFC has obtained family consent and biosamples for 9 cases, the local CFR teams have reviewed 61 potential SDY cases, and 29 have been referred for advanced review. We have held three advanced review meetings – two in Memphis and one in Nashville – and they have closed 23 cases.

DETAILED REVIEW: SPECIFIC CAUSES OF DEATH

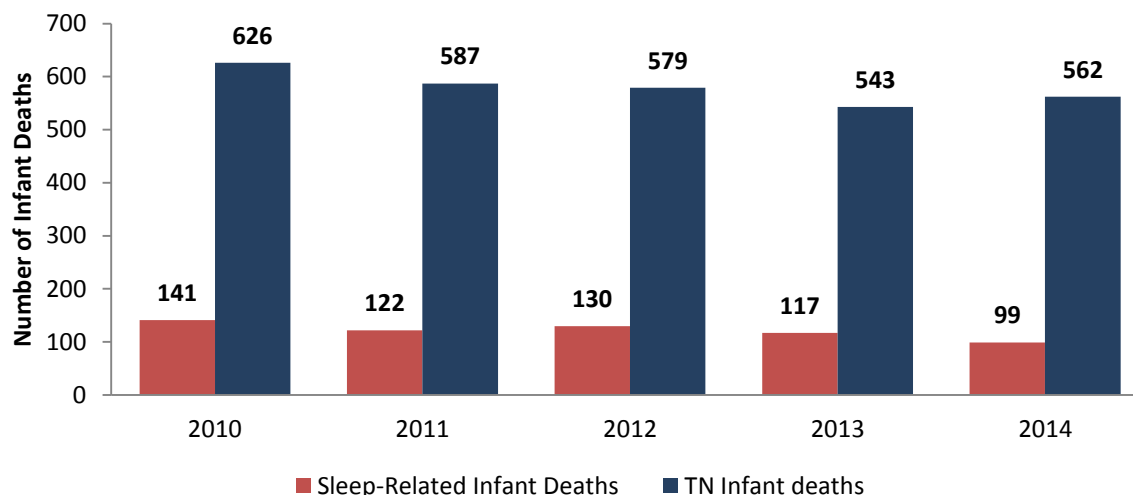
Sleep-Related Infant Deaths

Sleep related infant deaths are identified when a baby is found deceased in a sleeping environment with a history of his or her head pressed into the mattress or pillow, with a co-sleeper, or when he or she is found wedged against an object and other causes that may have contributed to the infant's suffocation or strangulation. Sleep-related infant deaths may also be classified as a diagnosis of SIDS. Sudden Infant Death Syndrome (SIDS), which is an exclusionary cause of death for children under 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; they are classified under sleep-related infant deaths.

The cause and manner of death in these cases are determined from the information obtained in the death scene investigation and after a Medical Examiner's autopsy. When seemingly healthy infants fail to awaken from sleep, their deaths may be SIDS, the result of suffocation related to the sleep environment, or the sign of an undiagnosed childhood malady. The exact cause of death may be difficult, if not impossible, to determine. In 2014, the cause of death in 61 reviewed fatalities (13%) 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 14 displays the number of sleep-related infant deaths and number of infant deaths in Tennessee for the last five years. **In 2014, there were 99 infant deaths that resulted from an unsafe sleep environment, of which 5 were classified as SIDS.** These sleep-related deaths account for 18% of all infant fatalities in Tennessee. The overall infant mortality rate has a slight increase from the rate of 6.8 per 1,000 live births in 2013 to 6.9 in 2014, however, sleep-related infant deaths dropped by 15% from 117 infants who died in 2013.

Figure 14. Number of Sleep-Related Infant Deaths in Tennessee, 2010-2014



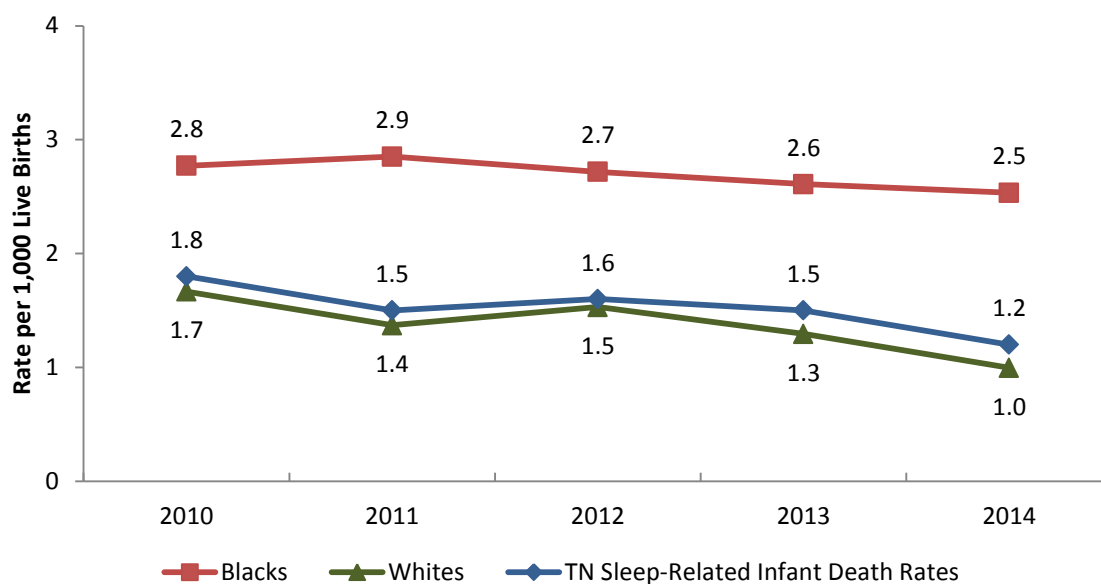
Of the 99 sleep-related deaths, 31 deaths were confirmed as asphyxia in the sleep environment. In many cases, family members or others who find the baby may not be able to provide a detailed history of what transpired. When investigators arrive on the scene, the baby has usually been moved, and accurately recreating the death scene may not be possible. Thus, despite autopsies and the effort of Child Fatality Review Teams, the exact cause of infant sleep-related deaths may never be known for some infants and their families.

Among the sleep-related infant deaths, there is also a statistically significant racial disparity, where African American infants are 2.5 times as likely to suffer a sleep-related fatality as White infants, as seen in Table 16. A higher percentage of male infants suffered this fatality (60%) than females (40%).

Table 16. Number of Sleep-Related Infant Deaths and Rates per 1,000 Live Births by Race in Tennessee, 2010-2014

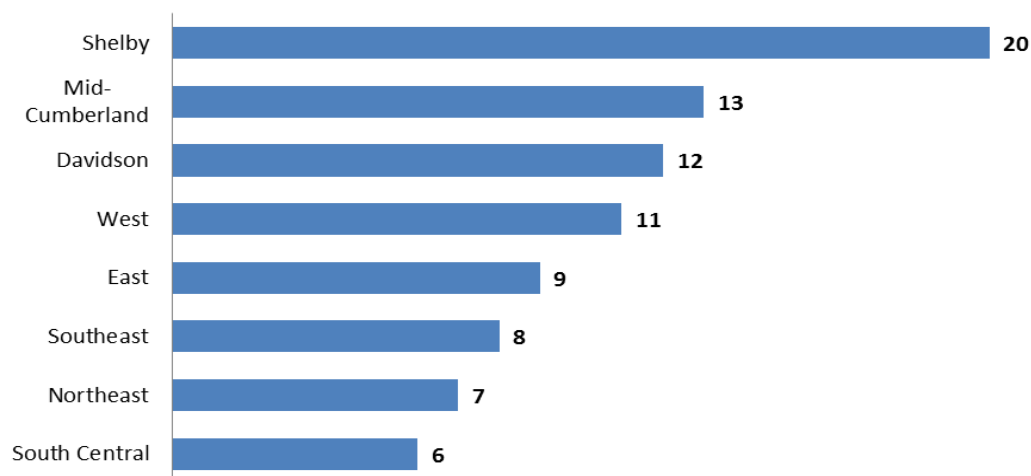
Year	Blacks			Whites			TN Sleep-Related Infant Death Rates
	Number of Deaths	Live Births	Rate per 1,000	Number of Deaths	Live Births	Rate per 1,000	
2010	46	16,599	2.8	91	54,593	1.7	1.8
2011	47	16,482	2.9	75	54,765	1.4	1.5
2012	45	16,560	2.7	85	55,548	1.5	1.6
2013	44	16,863	2.6	71	54,877	1.3	1.5
2014	41	16,574	2.5	58	56,238	1.0	1.2

Figure 15. Sleep-Related Death Rates per 1,000 Live Births by Race in Tennessee, 2010-2014



Additionally, a regional distribution of the sleep-related infant deaths is provided in Figure 16. The region with the highest number of sleep related infant deaths is Shelby County with 20 cases (20% of all sleep related deaths), followed by the Mid-Cumberland Region with 13 cases (13%) and Davidson County with 12 cases (12%). Although Shelby County had the most cases, it was the region with the largest decrease in sleep-related deaths (32 cases in 2013 vs 20 cases in 2014, representing a 38% decrease).

Figure 16. Number of Sleep-Related Infant Deaths in Tennessee by Region, 2014



*Numbers less than 5 are suppressed due to confidentiality concern.

Table 17. Contributing Factors in Sleep-Related Infant Deaths²⁰ in Tennessee, 2010-2014

Circumstance	2010	2011	2012	2013	2014	2014 Percent of Sleep-Related Infant Death
Infant found not sleeping in crib or bassinette	112	100	95	88	78	79%
Unsafe bedding or toys in sleeping area*	59	56	53	72	70	71%
Infant sleeping with other people	95	73	68	67	65	66%
Infant found not sleeping on back	64	66	72	71	40	40%
Drug impaired adult sleeping with infant	1	5	1	5	12	12%
Infant sleeping with obese adult	13	9	9	13	7	7%
Adult fell asleep while bottle feeding	3	1	0	3	3	3%
Alcohol impaired adult sleeping with infant	2	3	2	2	3	3%
Adult fell asleep while breast feeding	1	1	2	3	1	1%

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

²⁰ Because more than one contributing factor may have been present in a single death, the total number of contributing factors exceeds the number of sleep environment deaths.

As indicated in Table 17, four main contributing factors are consistently present in sleep-related infant deaths: infant not sleeping in a crib or bassinette (79% of cases), unsafe bedding or toys in sleeping area (71% of cases), infant not sleeping alone (66% of cases), and infant not sleeping on their back (40% of cases). These risk factors are key points for education in the Tennessee Department of Health's "ABC's of Safe Sleep" campaign (Babies should sleep Alone, on their Back, and in a Crib).

FOCUSING ON PREVENTION



Potential prevention opportunities include:

- Widespread messaging campaigns particularly targeted at parents and caregivers of infants.
- Provision of portable cribs to families with limited resources.
- Modeling of correct safe sleep practices by trusted professionals such as physicians and nurses.

Current prevention efforts in Tennessee include:

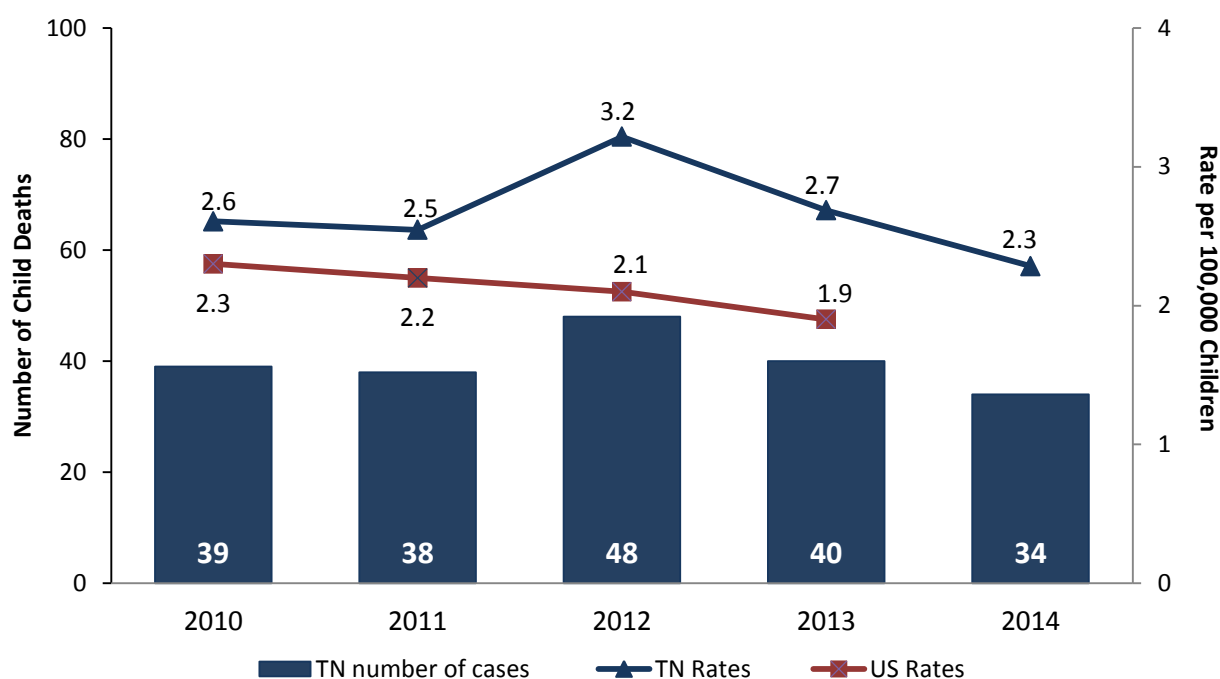
- TDH partnered with 100% of birthing hospitals (65) and 5 non-delivery hospitals across Tennessee, who have all developed and implemented a safe sleep policy to include: modeling of safe sleep behavior in the hospital, education for parents and caregivers and education for staff. In addition, hospitals are responsible for completing quarterly crib audits to monitor compliance with their safe sleep policy.
- 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 with a pregnant woman or infant, responders are trained to look for unsafe sleep conditions and offer the residents a safe sleep kit with information on the ABC's of Safe Sleep. As of this date, 28 first responder agencies across the state are participating in the D.O.S.E. program. They have distributed 496 safe sleep kits and 14 Pack 'n Plays.
- TDH implemented the safe sleep floor talker project in 2014. Partner sites display a large plastic decal on the floor or other hard surface to promote the safe sleep message. As of this date, 376 floor talkers have been placed in various partner sites including stores, clinics, and health departments.
- Tennessee Department of Health has piloted a safe sleep online educational module through the WIC program.
- Safe sleep educational flip charts were provided to the Department of Children Services (DCS) and home visitors across the state to ensure a consistent message is taught to all parents and caregivers.

- Each of the DCS regions throughout the state is establishing a local protocol to guide their staff on the importance of educating families on safe sleep. DCS staff will assess for safe sleeping environments, educate parents and caregivers on the importance of safe sleep, and ensure each infant has a safe sleeping environment.
- Prevent Child Abuse Tennessee (PCAT) is assessing and educating families enrolled in the Health Families Tennessee (HFTN) and Nurturing Parenting programs for a safe sleep environment. Families are provided education and Pack 'n Plays as needed.
- Tennessee Commission on Children and Youth (TCCY) included information about safe sleep as a strategy for reducing infant mortality in their Kids Count report.
- Safe sleep has been promoted on the kidcentraltn.com website throughout the year. During some months, safe sleep was one of the most popular web pages viewed on kidcentraltn.com.

Homicide Deaths

Homicide is a serious problem nationally in the United States, affecting people across all stages of life, from infants to the elderly. In 2013, over 16,121 people nationwide were homicide victims, of which 1,138 were children ages 1 to 17 years. Homicide is the fourth leading cause of death for children between the ages of 1 and 17. African American children (vs. White) and boys (vs. girls) had higher homicide rates in 2013 nationally.²¹

Figure 17. Homicide Deaths and Rates per 100,000 Children Population Ages 0 to 17 in Tennessee and the US, 2010-2014



Tennessee's child homicide rate has remained consistently above the national rate. In 2014, **thirty-four children died of homicide in Tennessee**, a decrease from the 40 cases from the previous year. This number represents **4 percent of all child deaths**. Twenty-two homicide victims were boys; 12 were girls. Two thirds of the victims (22 cases) were African American children and 10 were White. Older teenagers (age 15-17) and toddlers (age 1-4) suffered the highest percentage of fatalities, both at 32%. Almost half of all homicides (49%) involved firearms, and 56% occurred in the child's home.

²¹ Centers for Disease Control and Prevention: National Center for Injury Prevention and Control. Injury Prevention Web-based Injury Statistics Query System (WISQARS). 2015. Accessed at http://www.cdc.gov/injury/wisqars/fatal_injury_reports.html

Figure 18. Demographic Distribution of Homicide Deaths among Children Ages 0-17 in Tennessee, 2014

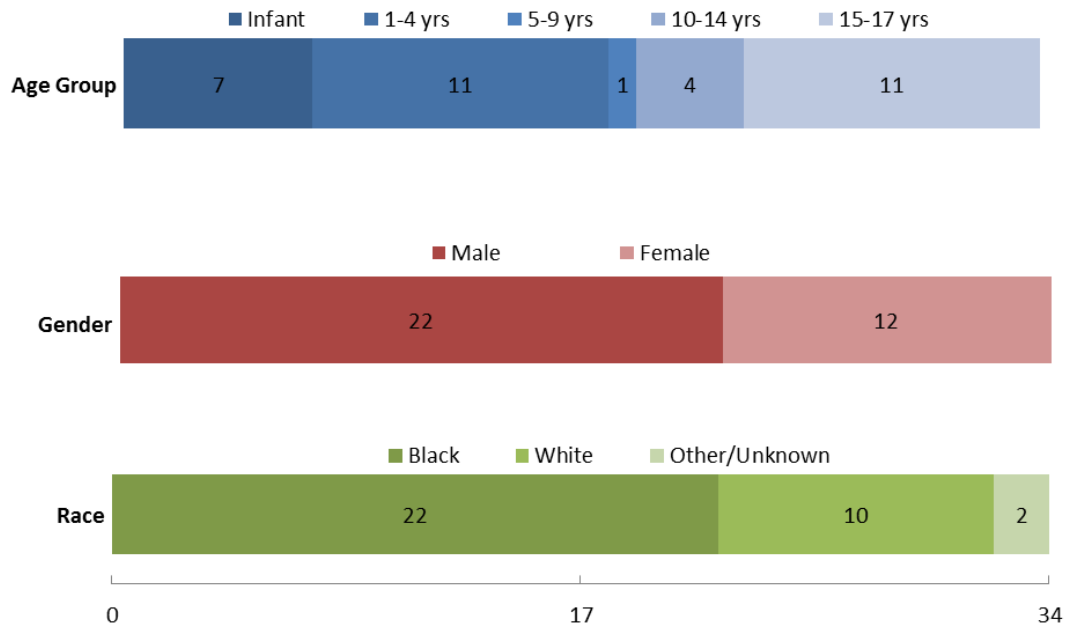
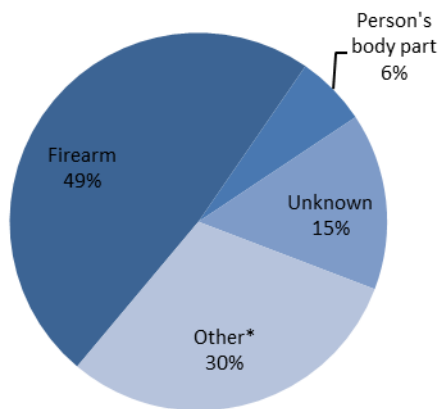


Figure 19. Cause of Homicide Deaths among Children Ages 0-17 in Tennessee, 2014



*Includes cases that did not involve a weapon such as starvation or shaking baby

Table 18. Homicide Deaths among Children Ages 0-17 by Victim's Location in Tennessee, 2014

Incident Location	Number of Deaths
Child's home	19
Other	6
Friend's home	4
Relative's home	1
Roadway	1
Other parking area	1
Unspecify	2
Total	34

FOCUSING ON PREVENTION



Potential prevention opportunities include:

- Targeted activities in neighborhoods with high homicide rates including: enhanced police presence, neighborhood watch and after school recreation programs.
- Increased intensive early intervention services for high-risk parents.

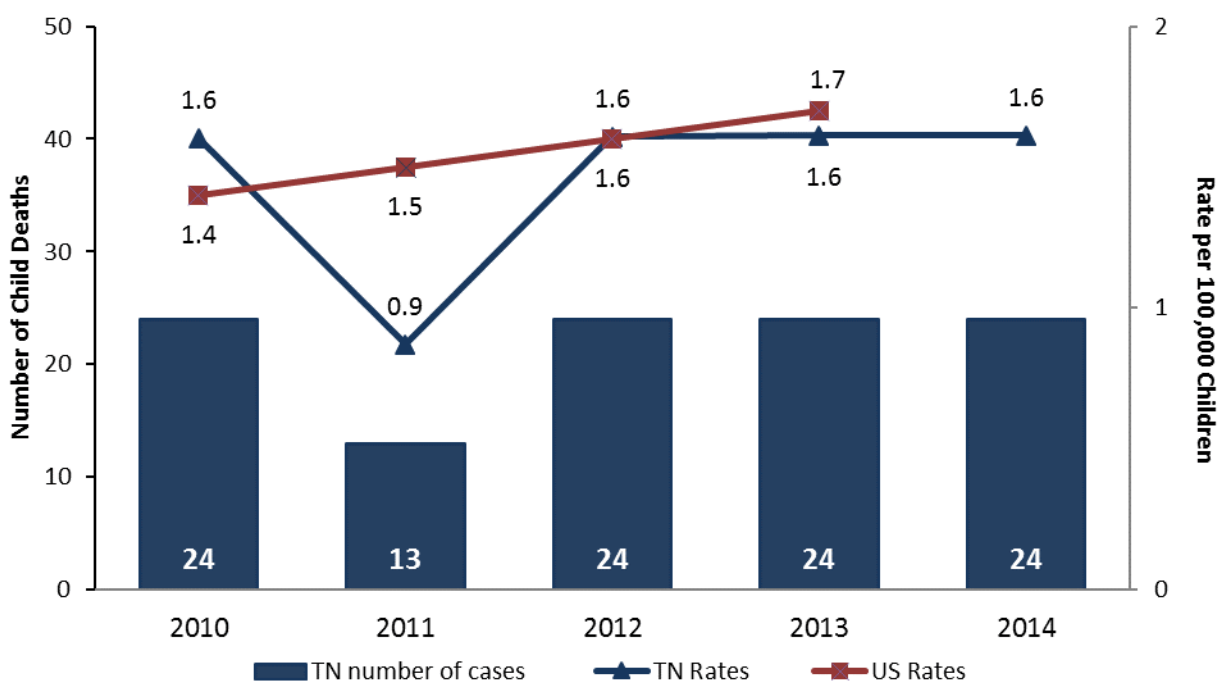
Current prevention efforts in Tennessee include:

- Prevent Child Abuse Tennessee's Shaken Baby Prevention project materials are now disseminated statewide to every birthing hospital in Tennessee. In FY2015, PCAT distributed 97,500 educational packets to 100% of birthing hospitals. A national evaluation of the Shaken Baby Prevention project found that hospitals in which the program has been implemented have seen a decrease in the number of incidents of abusive head trauma by 57%.
- The Tennessee Department of Health provides presentations in schools on bullying and violence prevention among adolescents and teens.
- The Tennessee Commission on Children and Youth awards grants to agencies to provide services for at-risk youth to prevent criminal behavior. The grants allow agencies to provide interventions to ensure that youth who commit offenses receive proper services.
- School districts and other non-profit agencies across the state that primarily serve students who attend schools with a high concentration of low-income students receive federal funding from the 21st Century Community Learning Centers initiative to support afterschool programs designed to reinforce and complement the regular academic program; other approved activities include parent involvement, counseling programs, character education, and drug and violence prevention.

Suicide Deaths

Suicide is a significant public health problem with complex causes and long lasting harms to individuals, families and communities in the United States.²² Suicide is the third leading cause of death for child ages 1 to 17 nationwide. In 2013, 1,249 children between ages 0-17 died of suicide (1.7 per 100,000) throughout the United States. White (vs. African American) children and boys (vs. girls) had higher rates of suicide nationally in 2013.²³

Figure 20. Suicides and Suicide Rates per 100,000 Children Population Ages 0-17 in Tennessee and the US, 2010-2014



In Tennessee, **twenty-four** young people took their own lives during 2014, a figure that represents **3 percent of all deaths**. Half of all suicide cases involved a weapon. The suicides were more frequent among boys (N=17) than girls (N=7), and among Whites (N=21) than African Americans (N=1). The majority of the cases (71%) occurred in the child's home.

²² Centers for Disease Control and Prevention: National Center for Injury Prevention and Control. Understanding Suicide. Accessed at http://www.cdc.gov/violenceprevention/pdf/suicide_factsheet-a.pdf

²³ Centers for Disease Control and Prevention: National Center for Injury Prevention and Control. Injury Prevention Web-based Injury Statistics Query System (WISQARS). 2015. Accessed at http://www.cdc.gov/injury/wisqars/fatal_injury_reports.html

Figure 21. Demographic Distribution of Suicide Deaths among Children Ages 0-17 in Tennessee, 2014

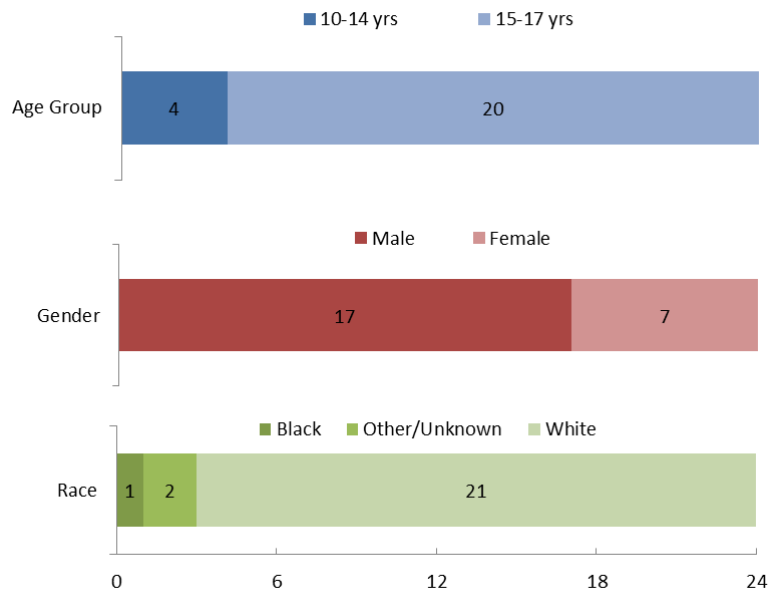


Table 19. Suicide Deaths among Children Ages 0-17 in Tennessee by Victim's Location, 2014

Incident Location	Number
Child's home	17
Other	3
Relative's home	2
Friend's home	1
Jail/detention facility	1
Total	24

Figure 22. Cause of Suicide Deaths among Children Ages 0-17 in Tennessee, 2014

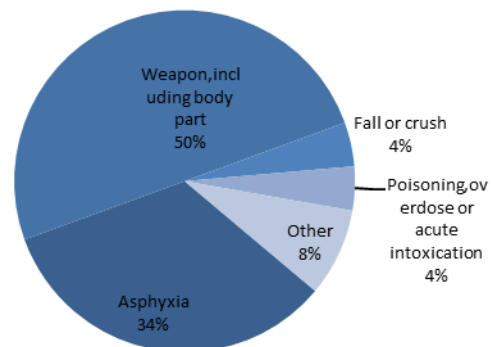


Table 20. Suicide Deaths among Children Ages 0-17 by Victim's Age Groups and Cause in Tennessee, 2014

Cause	10-14 yrs	15-17 yrs	Total Number of Deaths
Weapon,including body part	1	11	12
Asphyxia	3	5	8
Other	0	2	2
Fall or crush	0	1	1
Poisoning,overdose or acute intoxication	0	1	1
Total	4	20	24

FOCUSING ON PREVENTION



Potential prevention opportunities include:

- Increase education targeted towards teens to help them understand warning signs of suicide.
- Increase training to help school staff identify and refer students at risk and respond to suicide or other crises in the school.
- Restrict access to lethal means of suicide, including removal of firearms in homes of high-risk teens.

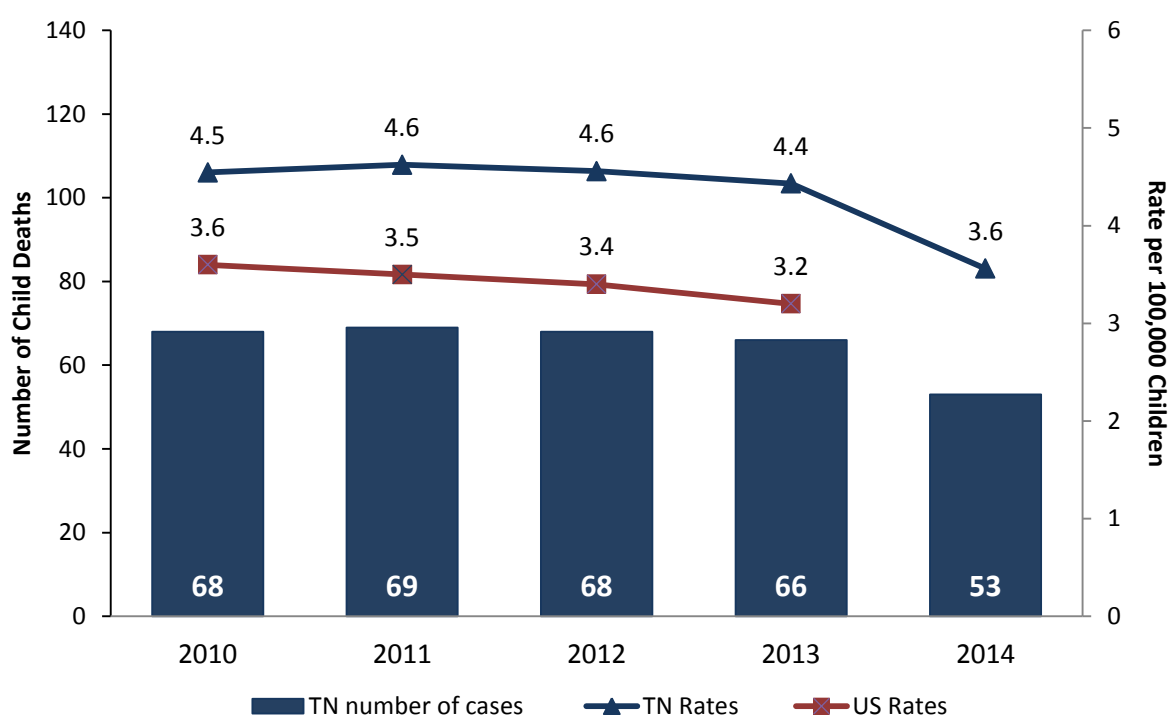
Current prevention efforts in Tennessee include:

- In collaboration with the Jason Foundation and Tennessee Department of Mental Health and Substance Abuse Services, the Tennessee Department of Education offers a no cost, web-based professional development training series on suicide prevention.
- The Tennessee Suicide Prevention Network has a number of efforts aimed at reducing suicide, including:
 - Distribution of resources on suicide grief across the state. These include, but are not limited to the pamphlet “Survivors of Suicide” and regional resource directories.
 - Provides postvention and debriefing services to schools affected by confirmed or suspected suicide death of a teacher or student.
 - Connects families who have recently experienced a suicide death with other survivors to guide them through the grief and recovery process.
 - Provides funeral homes across the state with materials to help survivors of suicide loss. These include the survivor pamphlet and [“Supporting Survivors of Suicide Loss”](#), a guide for funeral directors published by the U.S. Department of Health and Human Services.

Motor Vehicle and Other Transportation Deaths

Motor vehicle crashes are the number one cause of child deaths ages 1 to 17 nationally.²⁴ In 2013, motor vehicle crashes resulted in 2,331 deaths among children 17 and under (as either occupants or drivers). Teenagers (age 15-17) and males make up the majority (42% and 60% respectively) of child motor vehicle fatalities.²⁵ Teens are more likely than older drivers to underestimate dangerous situations. In addition, teens have the lowest rate of seat belt use compared to other age groups.

Figure 23. Motor Vehicle Related Deaths and Rates per 100,000 Children Population Ages 0-17 in Tennessee and the US, 2010-2014



In Tennessee, deaths related to motor vehicle incidents represent the highest number of fatalities among all external causes of death. In 2014, **53 deaths** were related to motor vehicles and other transportation modalities, representing **6 percent of all child fatalities in 2014**. This is a 20% decrease in motor vehicle fatalities among children compared to the previous year. They occurred more frequently among boys (N=37) than girls (N=16), and among Whites (N=44) than African Americans (N=8).

²⁴ Centers for Disease Control and Prevention: Leading Causes of Death Reports, 1999-2013, for National, Regional, and States (Restricted). Accessed at <http://webappa.cdc.gov/cgi-bin/broker.exe>

²⁵ Centers for Disease Control and Prevention: National Center for Injury Prevention and Control. Injury Prevention Web-based Injury Statistics Query System (WISQARS). 2015. Accessed at http://www.cdc.gov/injury/wisqars/fatal_injury_reports.html

Motor vehicle deaths were experienced among every age category, although, predictably, those of driving age (within the 15-17 year age cohort) were affected most frequently. Of the 24 teen (ages 15-17 years) fatalities, 42% (10 cases) were drivers in the accident. Table 21 summarizes the position of the children in vehicle at the time of the accident.

While some fatalities involved pedestrians, 90% of the deaths (N=47) were victims of a motor vehicle crash. As shown in Table 22, thirty-eight percent (N=20) did not use any protective measure, such as a seat belt, helmet or a child/booster seat. An additional six child fatalities were pedestrians.

Figure 24. Demographic Distribution of Motor Vehicle Fatalities among Children Ages 0-17 in Tennessee, 2014

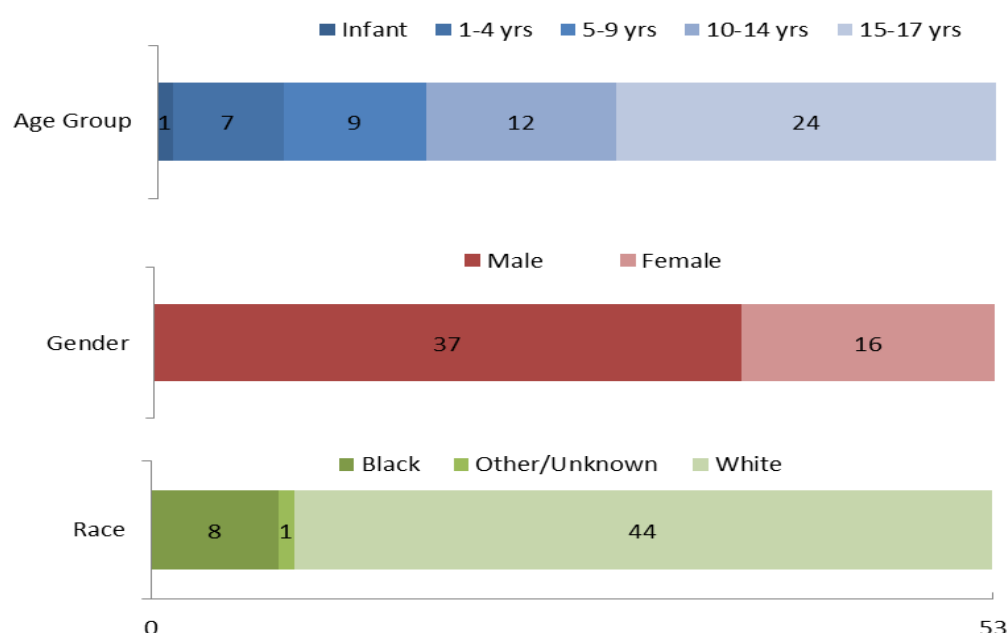


Table 21. Motor Vehicle/Other Transport Fatalities among Children Ages 0-17 by Age Groups and Position in Vehicle in Tennessee, 2014

Position in Vehicle	Infant	1-4 yrs	5-9 yrs	10-14 yrs	15-17 yrs	Total
Driver	0	0	0	3	10	13
Passenger	1	3	9	8	13	34
Pedestrian	0	4	0	1	1	6
Total	1	7	9	12	24	53

Table 22. Motor Vehicle Deaths* among Children Ages 0-17 by Vehicle Type and Protective Measure Not Used in Tennessee, 2014

Vehicle Type	Protection Not Used	Protection Used	Total Deaths
Car, Truck, Sport Utility Vehicle (SUV)	14	25	39
All Terrain Vehicle, Motorcycle, Other	6	2	8
Total	20	27	47

*This table does not add up to total number of motor vehicle deaths because pedestrian deaths are excluded.

FOCUSING ON PREVENTION



Potential prevention opportunities include:

- Imposition of stricter nighttime driving restriction for teen drivers.
- Use of infant car seats and booster seats for toddlers and young children.
- Stricter enforcement of the “no texting and driving” law.
- Encourage school participation in a seat belt use awareness program such as “Battle of the Belt”.

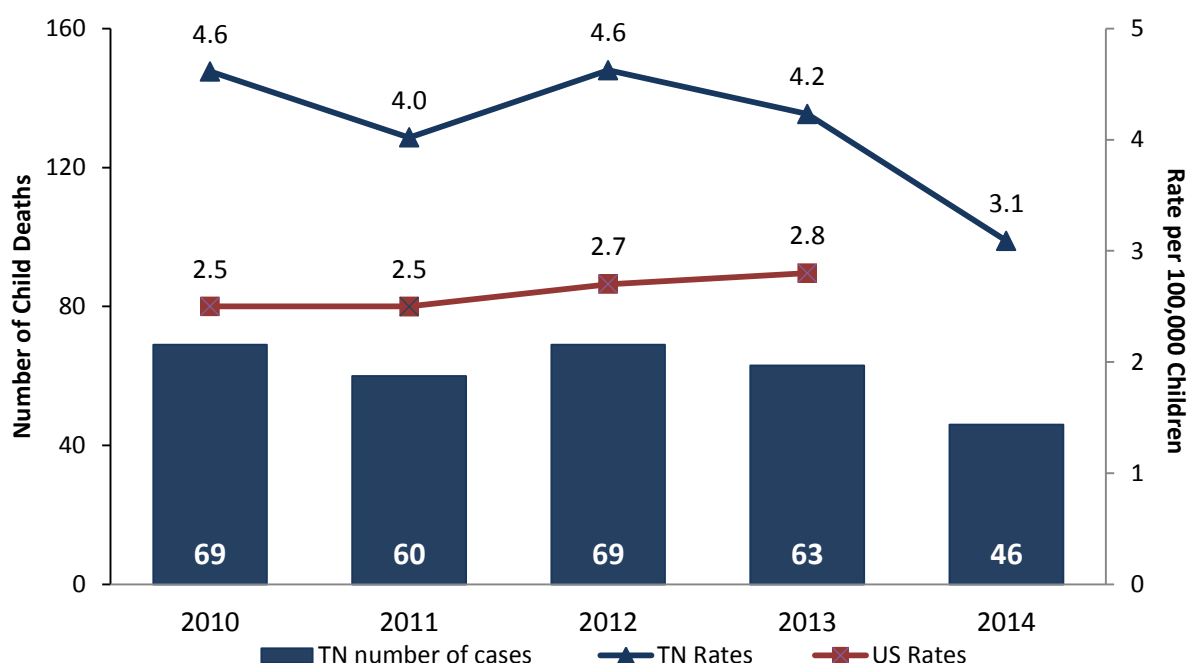
Current prevention efforts in Tennessee include:

- Tennessee was the first state in the country to have a child safety seat law, passed in the late 1970’s. Tennessee still maintains strong laws for infant car seats and toddler/child booster seats.
- The Tennessee General Assembly passed a Graduated Driver’s License law in 2001.
- The Tennessee Department of Health, in conjunction with the regional trauma centers, sponsors “Battle of the Belt,” a seat belt competition among Tennessee high schools.
- The Tennessee Department of Health provides funding to 28 agencies to purchase and distribute car seats and booster seats to families that cannot afford them.
- Organizations across the state host Bike Rodeos, providing children with basic bike skills to include proper helmet fitting, riding techniques, and road safety.
- Safe Kids provides car seat checks in the community through their Buckle Up for Life Program.

Asphyxia Deaths

Asphyxia is the leading cause of death of children under the age of one, and accounts for approximately 1,000 infant deaths nationally. Accidental suffocation rates have increased fourfold since 1984.²⁶ While infant asphyxia deaths are closely linked to sleep environment factors, older children such as toddlers are more likely to suffocate from choking on food or toys. Nationally, males (vs. females) and African American (vs. White) infants have higher rates of death due to asphyxia.²⁷

Figure 25. Asphyxia Deaths and Rates per 100,000 Children Population Ages 0-17 in Tennessee and the US, 2010-2014



In Tennessee, **forty-six** children died of asphyxia in 2014. This number represents **5 percent of all deaths** in 2014. Asphyxia cases may be related to either suffocation, strangulation, or choking. Thirty-one of the asphyxia cases were infants under the age of one year who died due to suffocation or strangulation. **Eight** children of the 46 who suffered an asphyxia fatality were due to self-inflicted strangulation.

²⁶ 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>

²⁷ Centers for Disease Control and Prevention: National Center for Injury Prevention and Control. Injury Prevention Web-based Injury Statistics Query System (WISQARS). 2015. Accessed at <http://webappa.cdc.gov/cgi-bin/broker.exe>

Figure 26. Demographic Distribution of Asphyxia Deaths among Children Ages 0-17 in Tennessee, 2014

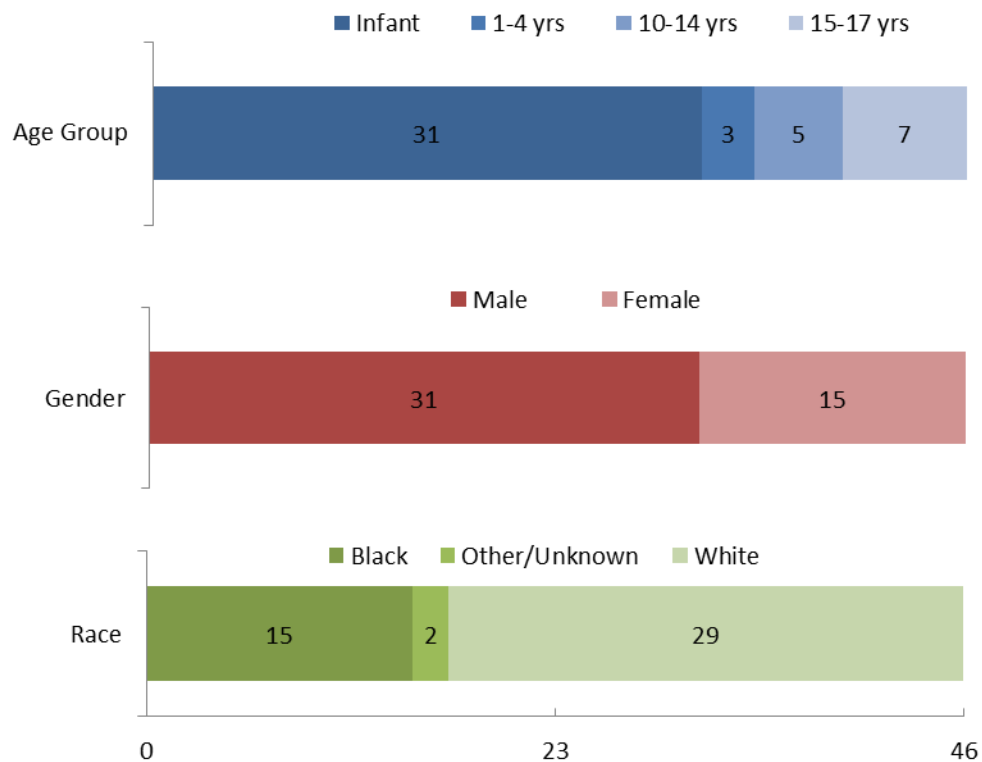


Table 23. Asphyxia Cause and Manner of Death among Children Ages 0-17 by Age Groups in Tennessee, 2014

Cause of Asphyxia	Infant	1-4 yrs	5-9 yrs	10-14 yrs	15-17 yrs	Total
Sleep-related (Strangulation,Suffocation, Other)	31	0	0	0	0	31
Suffocation	0	1	0	0	1	2
Strangulation	0	2	0	5	5	12
Other	0	0	0	0	1	1
Total	31	3	0	5	7	46
Manner of Asphyxia	Infant	1-4 yrs	5-9 yrs	10-14 yrs	15-17 yrs	Total
Natural	0	0	0	0	1	1
Accident	23	1	0	2	0	26
Suicide	0	0	0	3	5	8
Undetermined	4	1	0	0	0	5
Pending	4	0	0	0	1	5
Unknown	0	1	0	0	0	1
Total	31	3	0	5	7	46

FOCUSING ON PREVENTION



Potential prevention opportunities include:

- Increased education regarding importance of safe sleep environment for infants.
- Safer meal and play time education (importance of monitoring toddlers during meal and play time).
- Basic first aid and CPR education for child care professionals and parents to safely remove airway obstructions.
- Educate parents of young children on how to properly child-proof the home.

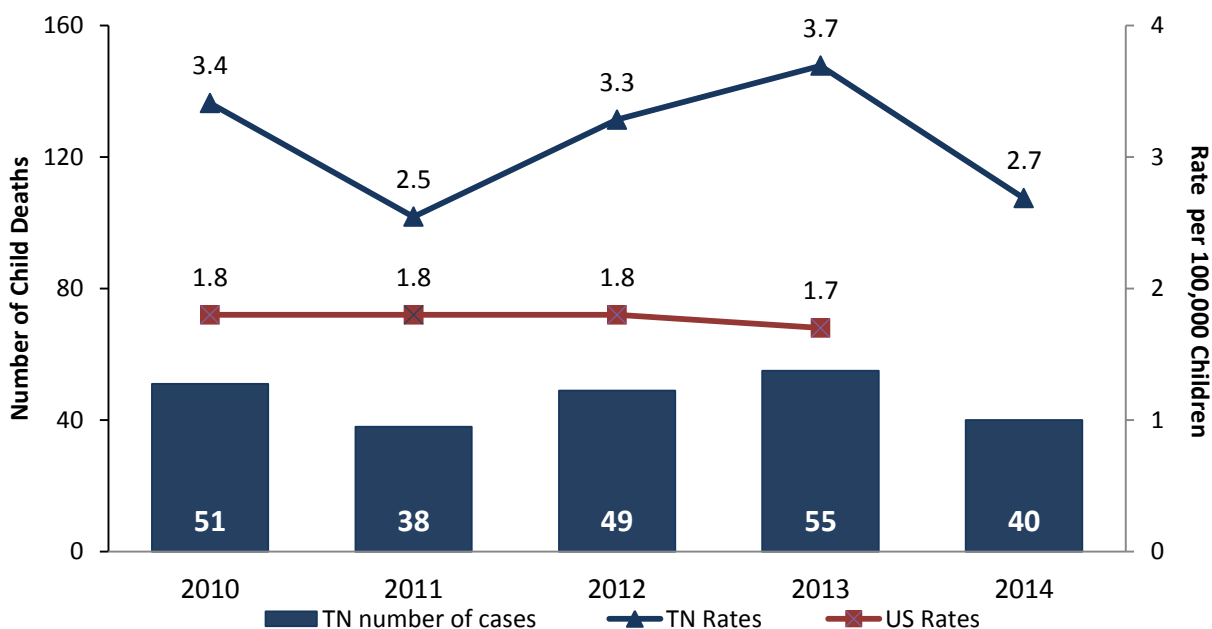
Current prevention efforts in Tennessee include:

- The Tennessee Department of Health's "ABC's of Safe Sleep" campaign educates parents on the dangers of asphyxia in the sleep environment.
- Safe Kids promotes a video on prevention of choking in children with special needs.
- Safe Kids sends out a monthly email to alert parents and caregivers of recent recalls specific to children.

Weapon-Related Deaths

In 2013, firearms alone accounted for 1,258 child deaths (1.71 per 100,000) nationally of children ages 0 to 17. An additional 1,538 children (2.09 per 100,000) died from violence involving weapons other than firearms such as body parts, knives or other objects.²⁸

Figure 27. Weapon-Related Deaths and Rates per 100,000 Children Population Ages 0-17 in Tennessee and the US, 2010-2014



In Tennessee, **forty** children died via weapon injuries in 2014, a 27% decrease from 2013. This number represents approximately **5 percent of all deaths**. Of the 40 deaths, 30 were boys and 10 were girls. Although the number of White children who died from a weapon injury was greater than the number of African-American children who died, the rate of fatality is higher among African-American children. Most of the weapon-related victims (60%) are from homicide.

For classification purposes, body parts are included as weapons. Seventy-three percent (N=29) of all weapon fatalities were the result of firearms. Of the 29 deaths involving firearms, 20 were related to handguns, three were related to shot guns, and the remaining were other guns.

²⁸ Centers for Disease Control and Prevention: National Center for Injury Prevention and Control. Injury Prevention Web-based Injury Statistics Query System (WISQARS). 2015. Accessed at http://www.cdc.gov/injury/wisqars/fatal_injury_reports.html

Figure 28. Demographic Distribution of Weapon-Related Deaths among Children Ages 0-17 in Tennessee, 2014

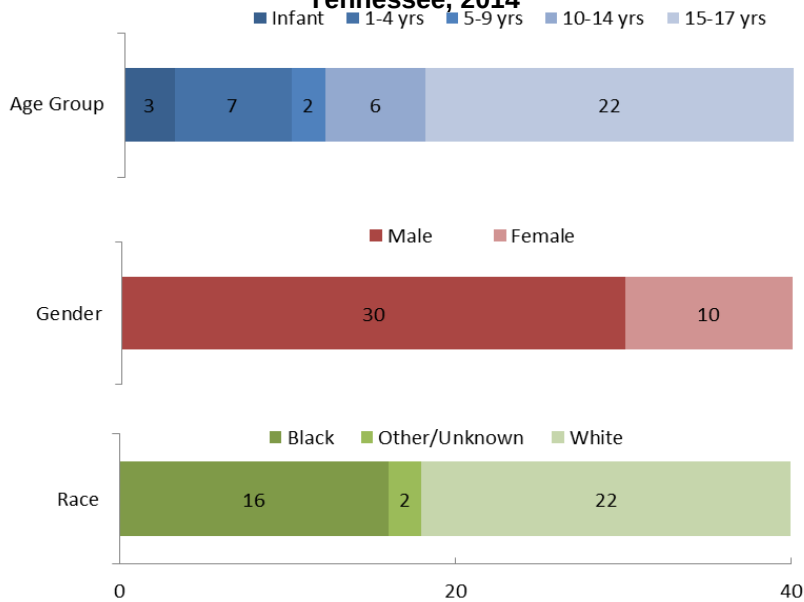


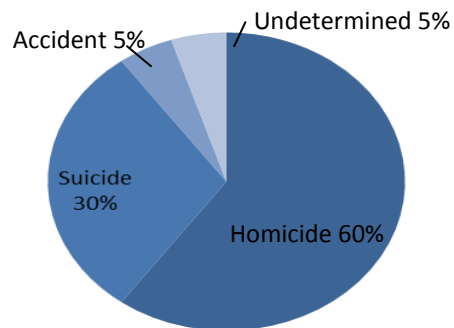
Table 24. Weapon-Related Deaths among Children Ages 0-17 by Manner of Death and Age Groups in Tennessee, 2014

Manner of Death	Infant	1-4 yrs	5-9 yrs	10-14 yrs	15-17 yrs	Total
Accident	0	1	1	0	0	2
Suicide	0	0	0	1	11	12
Homicide	3	5	1	4	11	24
Undetermined	0	1	0	1	0	2
Total	3	7	2	6	22	40

Table 25. Weapon-Related Deaths among Children Ages 0-17 in Tennessee by Weapon Type,²⁹ 2014

Weapon Type	Number of Deaths
Firearm	29
Person's body part	2
Rope	2
Other	1
Unknown	6
Total	40

Figure 29. Weapon-Related Deaths Children Ages 0-17 in Tennessee by Manner of Death, 2014



²⁹ There are multiple cases, particularly for infants, where the exact weapon type is unknown. These may include cases where the medical records showed evidence of "blunt force trauma" but the source of the trauma is not evident by history or exam.

FOCUSING ON PREVENTION



Potential prevention opportunities include:

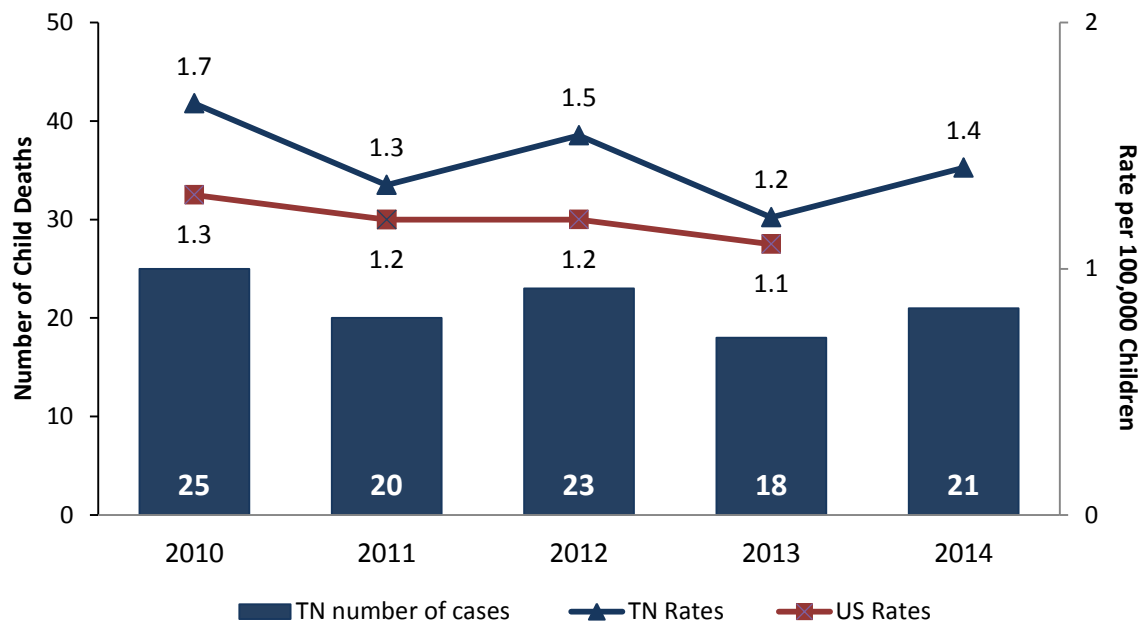
- Increase awareness of safer firearm handling practices.
- Promote safety programs targeting parents to encourage supervision to prevent unsafe child-weapon interactions.
- Promote safe gun and weapon storage to eliminate child access to weapons.

Current prevention efforts in Tennessee include:

- The Tennessee Department of Safety requires firearm safety training and certification by a licensed trainer for all hand gun owners prior to carrying hand guns.
- The Tennessee Department of Health provides education in the schools on bullying and violence prevention.

Drowning ranks fifth among the causes of unintentional injury death in the United States.³⁰ Between 2010 and 2013, an average of 892 fatal drownings of children ages 0 to 17 occurred annually in the United States. From 2005 to 2013, drowning has become the leading cause of death for ages 1 to 4 from unintentional injury.³¹ Nationwide, drowning occurred most often in a bath tub for infants and swimming pools for children ages 1 to 4.³²

Figure 30. Drowning Deaths and Rates per 100,000 Children Population Ages 0-17 in Tennessee and the US, 2010-2014



In Tennessee, **twenty-one** children perished by drowning in 2014. This number represents approximately **2 percent of all deaths**. Drowning deaths were more frequent in boys (N=19) and Whites (N=14) than girls (N=2) and other races (N=7). Of the 21 drowning case reports, there were six cases with definitive acknowledgement that the child was able to swim.

Most of these deaths (N=7) occurred while children were playing near the water, mainly by the open water (N=4), as shown in Table 26 and Figure 32. Of the five drowning deaths that occurred in a pool, only three had some kind of barrier/protection around the pool. Three of the accidents occurred in a bathtub.

³⁰ 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>

³¹ Centers for Disease Control and Prevention: National Center for Injury Prevention and Control. Injury Prevention Web-based Injury Statistics Query System (WISQARS). 2015. Accessed at http://www.cdc.gov/injury/wisqars/fatal_injury_reports.html

³² Control and Prevention: National Center for Injury Prevention and Control, Division of Unintentional Injury Prevention. Unintentional Drowning Deaths in the U.S. (2015). Accessed at <http://www.cdc.gov/nchs/data/databriefs/DB149.pdf>

Figure 31. Demographic Distribution of Drowning Deaths among Children Ages 0-17 in Tennessee, 2014

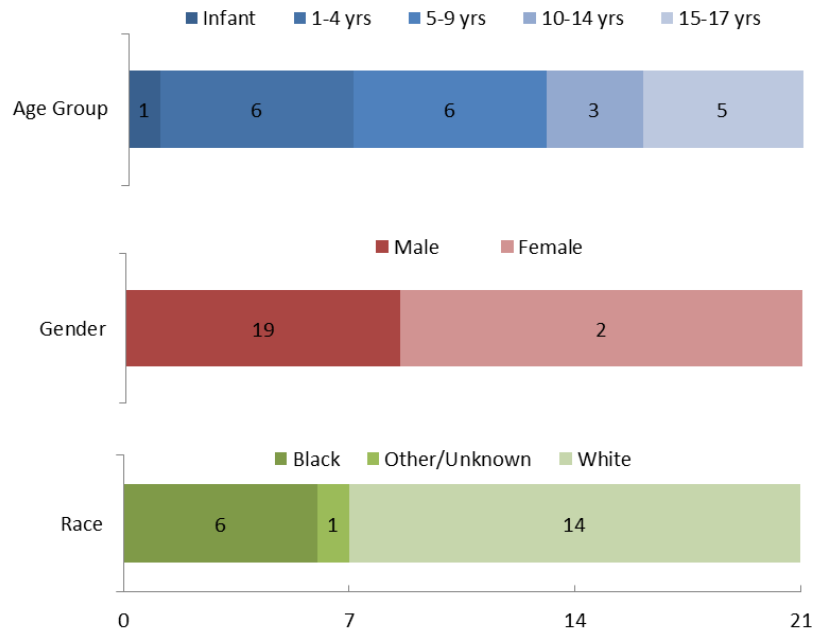
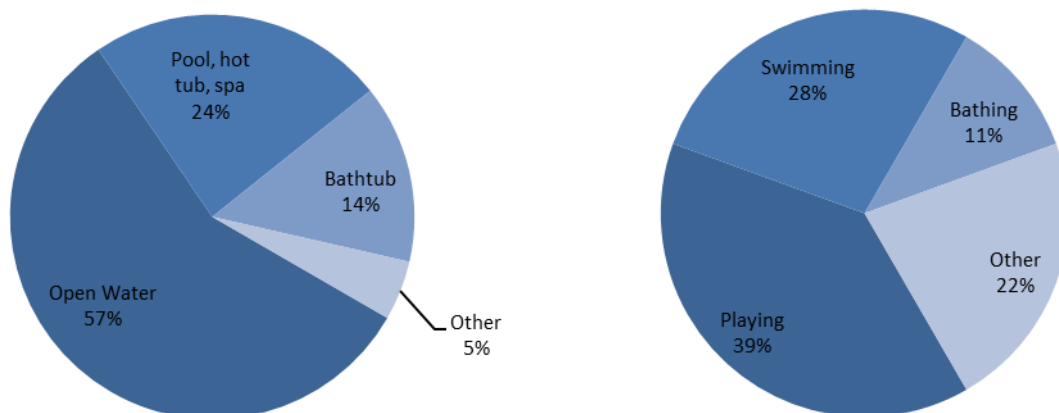


Table 26. Drowning Deaths among Children Ages 0-17 by Location³³ and Age Groups in Tennessee, 2014

Location of Accident	Infant	1-4 yrs	5-9 yrs	10-14 yrs	15-17 yrs	Total
Open Water	0	0	5	3	4	12
Pool, hot tub, spa	0	4	0	0	1	5
Bathtub	1	1	1	0	0	3
Other	0	1	0	0	0	1
Total	1	6	6	3	5	21

Figure 32. Drowning Deaths among Children Ages 0-17 by Location and Activity at the Time of Death in Tennessee, 2014



³³ Cases that occur in bathtubs among non-infants may be due to a medical condition that disabled the child at the time of death.

FOCUSING ON PREVENTION



Potential prevention opportunities include:

- Educational efforts to promote “Buddy System” when swimming.
- Promotion of formal swimming lessons for young children.
- Teaching CPR skills to children in school to reach those at the greatest risk for drowning.
- Fencing pools with four sided isolation fences, with self-closing and self-latching gates.

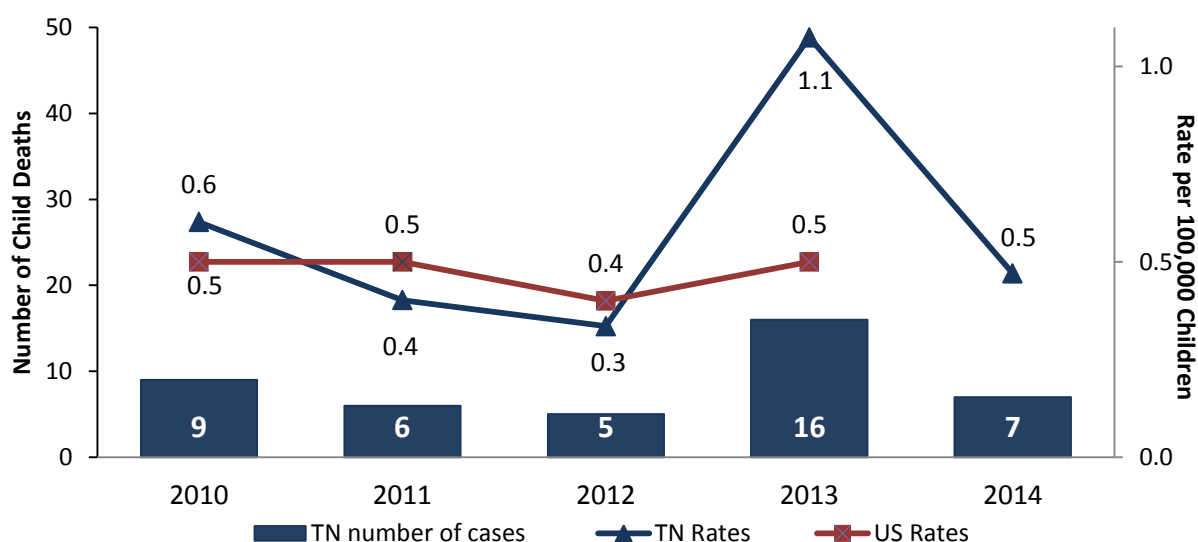
Current prevention efforts in Tennessee include:

- Safe Kids collaborates with many partners throughout the spring and summer to provide water safety education.
- In conjunction with several partners, Dollywood Splash Country held a water safety event at the water park on June 18, 2015. Attendees participated in multiple stations to learn 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 fatal home injury.³⁴ In 2013, 307 children ages 0 to 17 (0.42 per 100,000) died from unintentional fires nationally, of which 266 occurred in residential structures.³⁵ Children ages 0 to 4 have the highest fire death rates compared to children of all ages.³⁶ Fire deaths are also more common among African American (vs. White) children nationally. Cooking is the leading cause of residential fires; however most fires that result in deaths are a result of smoking.

Figure 33. Fire/Burn Deaths and Rates per 100,000 Children Population Ages 0-17 in Tennessee and the US, 2010-2014



Tennessee had observed a gradual decline in fire/burn deaths until 2013 when there was an unusually high number of child fatalities (N=16); in 2014, that figure decreased to seven cases.

All age groups between ages 1-17 years of the children who died were equally affected by this preventable death, but most were females (N=5). Nationally, African American children are at a higher risk of dying from fires/burns; however, in Tennessee, White children had a higher fatality rate compared to African Americans in 2014.

³⁴ 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

³⁵ Centers for Disease Control and Prevention: National Center for Injury Prevention and Control. Injury Prevention Web-based Injury Statistics Query System (WISQARS). 2015. Accessed at http://www.cdc.gov/injury/wisqars/fatal_injury_reports.html

³⁶ Federal Emergency Management Agency: U.S. Fire Administration. Child Fire Death Rates and Relative Risk 2002-2011. Accessed at https://www.usfa.fema.gov/data/statistics/fire_death_rates.html

Most of these tragedies occurred in single homes. One case was an electrocution from an electrical wiring, and of the six known sources of fire, three reported not having a smoke detector or a properly working one in the residence.

Figure 34. Demographic Distribution of Fire/Burn Deaths among Children Ages 0-17 in Tennessee, 2014

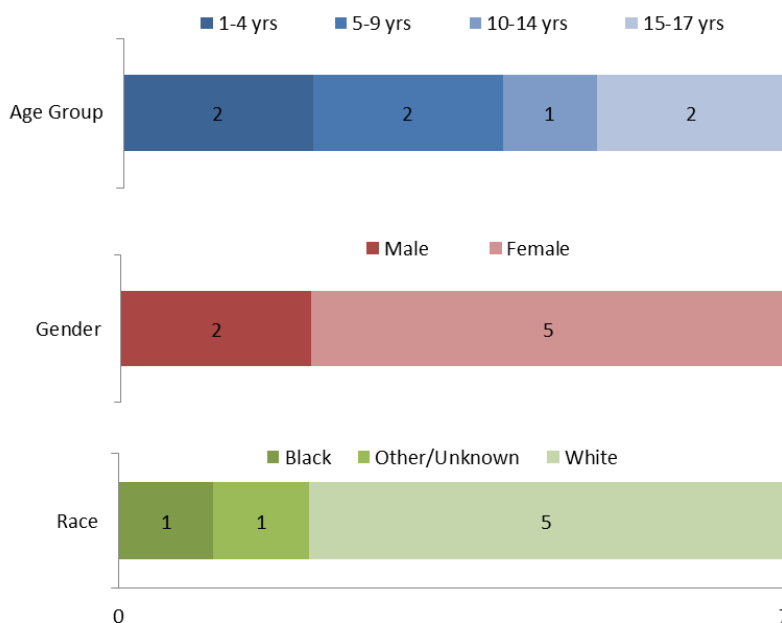


Table 27. Cause of Fire/Burn Deaths among Children Ages 0-17 by Age Groups in Tennessee, 2014

Cause	1-4 yrs	5-9 yrs	10-14 yrs	15-17 yrs	Total
Fire	2	2	0	2	6
Electrocution	0	0	1	0	1
Total	2	2	1	2	7

Table 28. Fire/Burn Deaths among Children Ages 0-17 by Fire Source in Tennessee, 2014

Fire Source	Number of Deaths
Candles	1
Electrical wiring	5
Unknown	1
Total	7

Table 29. Fire/Burn Deaths among Children Ages 0-17 by Structure Type in Tennessee, 2014

Structure Type	Number of Deaths
Single home	4
Apartment	1
Trailer/mobile home	1
Unknown	1
Total	7

FOCUSING ON PREVENTION



Potential prevention opportunities include:

- Increased education to create awareness of fire safety and cost of fires.
- Incorporation of fire-safe features into high risk devices (ex. stoves, lighters).
- Distribution of smoke alarms to low income families.

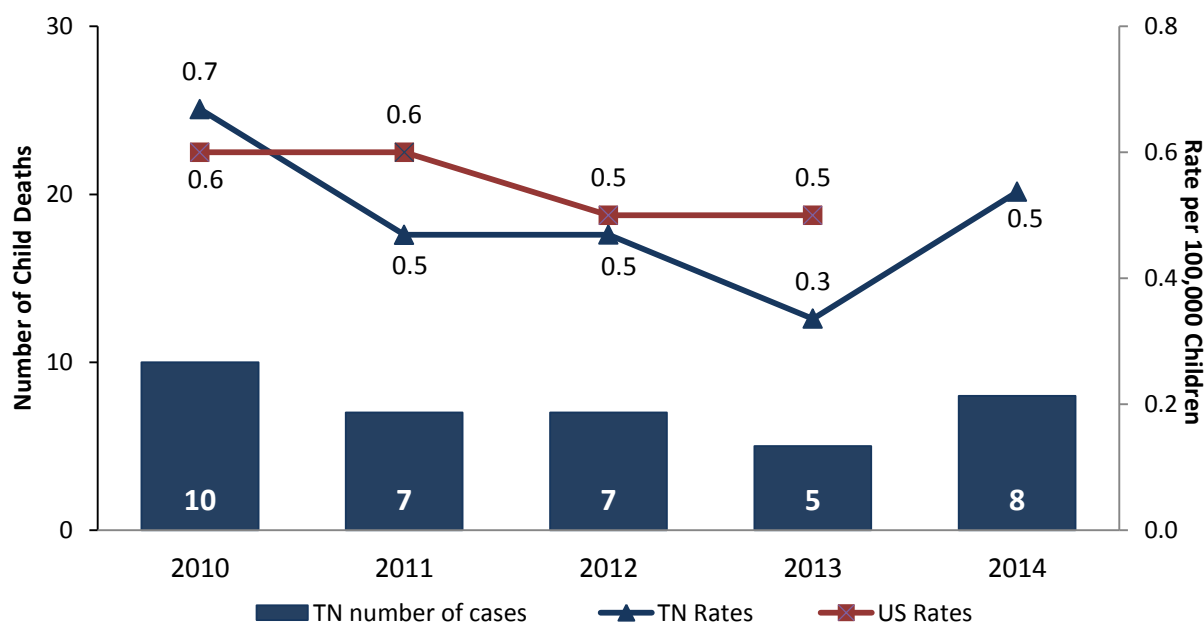
Current prevention efforts in Tennessee include:

- The Tennessee Department of Commerce and Insurance holds an annual fire safety poster contest for school students.
- This year, more than 150 people attended the Vanderbilt Regional Burn Center's *Camp Hope Safety Day* event where local Fire, EMS, Police, Bomb Squad, Health Department and other agencies performed demonstrations, passed out safety information, and talked with parents about keeping their families safe.
- Several fire departments throughout Tennessee provide and install free smoke detectors for families that cannot afford them.

Poisoning Deaths

Poisoning is the leading cause of injury death in the United States. Drugs - both pharmaceutical and illicit - cause the vast majority of poisoning deaths. Since 2000, the age-adjusted drug poisoning death rate more than doubled, from 6.2 per 100,000 in 2000 to 13.8 per 100,000 in 2013.³⁷ Unintentional poisoning deaths among children ages 0 to 17 increased by 94% from 1999 to 2009, but the rates have been decreasing since 2010. Opioid analgesic pain relievers were the most-frequently involved drug in the drug poisoning deaths. Nationally, males (vs. females) and teens are more likely to die than girls from unintentional poisoning.³⁸

Figure 35. Poisoning Deaths and Rates per 100,000 Children Population Ages 0-17 in Tennessee and the US, 2010-2014



Eight children died in Tennessee as the result of a poison-related incident in 2014, representing **1 percent of all child fatalities**. Most of the cases occurred among teenagers of ages 15-17 years. Five of the deaths were to males, three were females, and five of them were White children. **Five of eight poisoning fatalities in Tennessee involved prescription drugs.**

Figure 36. Demographic Distribution of Poison-Related Deaths among Children Ages 0-17 in Tennessee, 2014

³⁷ Centers for Disease Control and Prevention: National Center for Health Statistics. NCHS Fact Sheet: NCHS Data on Drug Poisoning Deaths. Accessed at http://www.cdc.gov/nchs/data/factsheets/factsheet_drug_poisoning.pdf

³⁸ Centers for Disease Control and Prevention: National Center for Injury Prevention and Control. Injury Prevention Web-based Injury Statistics Query System (WISQARS). 2015. Accessed at http://www.cdc.gov/injury/wisqars/fatal_injury_reports.html

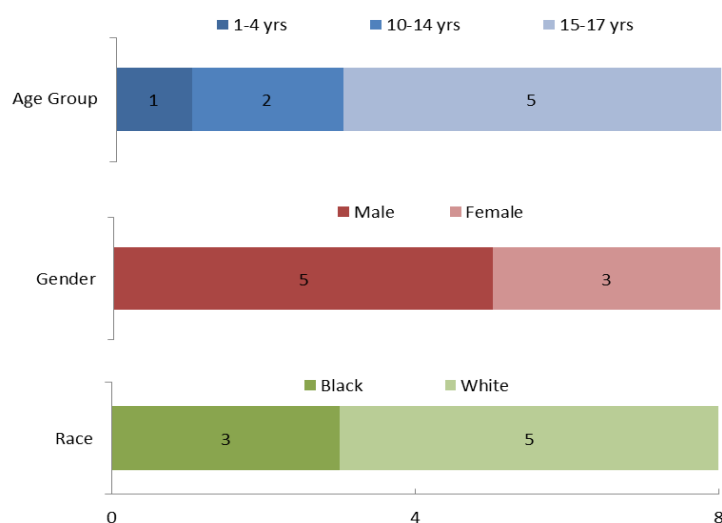


Table 30. Poison-Related Deaths among Children Ages 0-17 by Substance and Age Groups in Tennessee, 2014

Type of Substances	Age Group			
	1-4 yrs	10-14 yrs	15-17 yrs	Total
Prescription drug	1	2	2	5
Over-the-counter drug	0	0	1	1
Other substances	0	0	2	2
Total	1	2	5	8

FOCUSING ON PREVENTION



Potential prevention opportunities include:

- Educational campaign regarding prescription drug abuse and proper disposal of prescription drugs.
- Increase access to secure drop-off locations for unused medications.

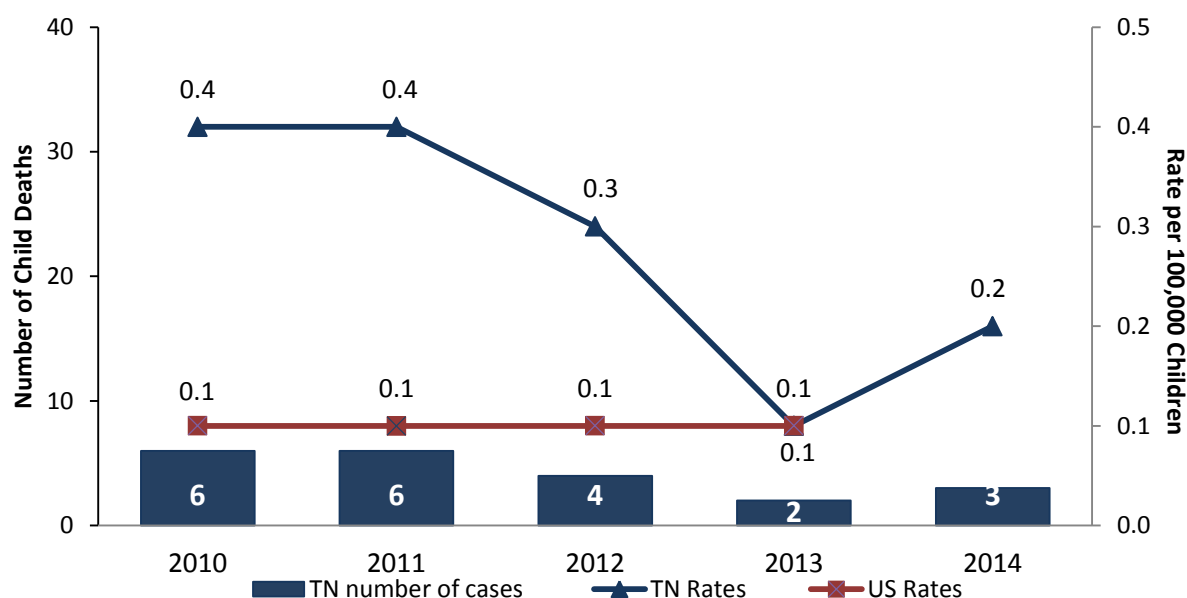
Current prevention efforts in Tennessee include:

- The Department of Health and Department of Environment and Conservation have partnered to place 145 secure drop-off boxes in 78 of 95 counties in Tennessee. From August 2014 to July 2015, a total of 31,206 pounds of medicine was collected in the drop-off boxes.
- The Tennessee General Assembly passed Tenn. Code 53-11-308(e) (2014) which prohibits a prescription for any opioids or benzodiazepines dispensed in quantities greater than a thirty-day supply.
- The Bureau of TennCare has developed prior authorization requirements for long-acting narcotic medications.
- On March 19, 2015, the TDH Communications Office placed a National Poison Prevention Week message on Twitter.

Fall/Crush Deaths

While falls are the leading cause of both fatal and non-fatal injuries among older adults, falls are the leading cause of non-fatal injuries among children 0 to 19.³⁹ Approximately 2.3 million children nationally are treated in emergency rooms for fall related injuries. In 2013, 84 children ages 0 to 17 died nationally of unintentional fall injuries (0.11 per 100,000); males have higher rates of fall-related deaths than females.⁴⁰

Figure 37. Fall/Crush Deaths and Rates per 100,000 Children Population Ages 0-17 in Tennessee and the US, 2010-2014

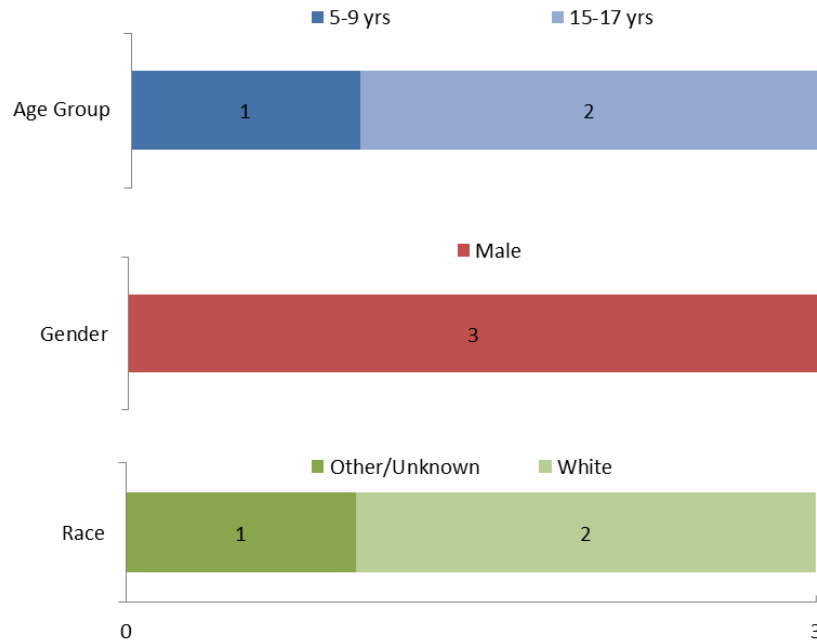


In Tennessee, three children died as the result of a fall or crush injury in 2014. They were all boys and two of them were White. **These three deaths represent 0.3 percent of all child fatalities.**

³⁹ 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>

⁴⁰ Centers for Disease Control and Prevention: National Center for Injury Prevention and Control. Injury Prevention Web-based Injury Statistics Query System (WISQARS). 2015. Accessed at http://www.cdc.gov/injury/wisqars/fatal_injury_reports.html

Figure 38. Demographic Distribution of Fall/Crush Deaths among Children Ages 0-17 in Tennessee, 2014



FOCUSING ON PREVENTION



Potential prevention opportunities include:

- Safety checks on playgrounds to ensure that playground equipment is safe and well-maintained.
- Encourage child safety features in homes such as window guards, stair gates, and guard rails to prevent accidental falls.
- Increase awareness regarding importance of supervision in both the home and at play.

Current prevention efforts in Tennessee include:

- Safe Kids provides education for parents and the community around TV/furniture tip-overs.
- Safe Kids has developed a falls prevention video for parents and caregivers of children with special health care needs.
- Safe Kids has published multiple media reports about fall/crush injuries over the last 2–3 years

Prevention Recommendations for 2016

The state CFR team met in December 2015 to review aggregate data on deaths occurring in 2014. In addition, the team reviewed recommendations for prevention from the local teams. After careful consideration of the data and recommendations, the state team decided to focus on the recommendations below concerning safe sleep, motor vehicle accidents, suicide, substance abuse/medical and racial disparities.

Safe Sleep

The number of sleep-related deaths decreased in 2014; however, there were still 99 sleep-related deaths in 2014 and these deaths accounted for 18% of all infant deaths.

The State Team recommends aggressively continuing the safe sleep campaign with an emphasis on expanding projects already in place to educate families and caregivers.

To accomplish this, the Department of Health will partner with Department of Children's Services, Prevent Child Abuse Tennessee and Tennessee Commission on Children and Youth (TCCY) to distribute a minimum of 80,000 TDH educational materials to individuals responsible for the care of an infant. The Department will specifically collaborate with hospitals to continue to provide education to staff and parents. The Department of Children's Services will continue to roll-out their safe sleep pilot by developing processes in each region to reliably assess and train families, and deliver a pack n' play to the point of care when needed. TDH will also pilot a successful European program to provide Baby Box that includes a safe sleep space. Prevent Child Abuse Tennessee will provide education to families and caregivers. TCCY will distribute educational materials through the regional councils on children and youth. In addition, they will include safe sleep education in their packets for Children's Advocacy Days. The success of these efforts will be measured by the number of sleep-related infant deaths in subsequent years.

Motor Vehicle

Motor vehicle related fatalities are a substantial contributor to external causes of death among Tennessee's children, particularly among children ages 15-17, who account for 42% of all childhood motor vehicle fatalities. **The State Team recommends expanding educational efforts in schools with an emphasis on the regions with the highest motor vehicle crash fatalities among teens (Mid-Cumberland, East Tennessee, South Central and West Tennessee).**

The Department of Education and the Tennessee Department of Health will collaborate to engage schools located in high-risk counties in adopting an evidence-based or evidence-informed practice from <http://reducetncrashes.org>, a Governor's Highway Safety Office traffic safety awards program. Efforts will be evaluated by tracking the number of schools that have registered with the website and completed activities. The success of these efforts will be measured by the number of motor vehicle fatalities among children in subsequent years.

Suicide

The number of suicide deaths among children remained the same from 2013 to 2014. **The State Team recommends expanding the current suicide prevention efforts by a) increasing education to students by including age appropriate suicide and other mental health related concerns in the Health and Lifetime Wellness curricula available in schools; and b) identifying barriers and addressing youth access to effective mental health services.**

To accomplish this, the Tennessee Suicide Prevention Network, Departments of Education, Mental Health and Substance Abuse Services, Intellectual and Developmental Disabilities, and Health will collaborate to increase education to students through the inclusion of suicide prevention in appropriate curriculums. In addition, mental health services and barriers to accessing resources will be identified in each region. The success of these efforts will be measured by the number of suicide deaths among children in subsequent years.

Substance Abuse/Medical

Prematurity is a leading cause of death among Tennessee infants (58% or 269 of reviewed deaths). Prematurity is often associated with low birth weight (72% of infant deaths (334) were low birth weight). Additional risk factors associated with infant deaths included known intrauterine drug exposure (9%, 41) and intrauterine smoke exposure (25%, 116). Addressing the risk factors for prematurity, which include substance exposure, requires a focus on preconception/interconception health (a mother's health before she becomes pregnant). Addressing risk factors like tobacco and other substance use before pregnancy and assuring that a mother is healthy before becoming pregnant are key strategies for reducing prematurity. In Tennessee, nearly half of all pregnancies are unintended, putting the mother (and baby) at risk for adverse outcomes, including prematurity. Utilizing effective contraception can assist women of child bearing age to avoid an unintended pregnancy and to address any risk factors for prematurity before she becomes pregnant. **The State Team recommends making Voluntary Reversible Long Acting Contraceptives (VRLACs) easily available to promote optimal birth spacing, reduce the number of babies exposed to prescription drugs and reduce unplanned pregnancies.** To accomplish this, the Departments of Health, Children's Services and Mental Health and Substance Abuse Services will collaborate to provide education and increase access to VRLACs to women of child bearing age.

In addition, the TDH will work with the TennCare managed care organizations with the intent of identifying funding to sustain and expand the highly successful "Baby and Me Tobacco Free" program. The goal of the program is to assist pregnant women to stop smoking. It has enrolled 869 women in 86 county health departments and has resulted in a 61% reduction in the risk of low birth weight during the program's first 18 months.

Racial Disparities

A racial disparity exists among child and infant fatalities. Although the majority of deaths are comprised of White children, African American children suffer a higher rate of mortality than Whites and other races. While there was a 7% decrease (not statistically significant) in the mortality rate in African American children from 2010 to 2014, there was a 15% statistically significant decline among White children. **The State Team recommends identifying strategies to target racial and ethnic disparities.**

To accomplish this, the Department of Health, specifically the Division of Family Health and Wellness and the Office of Minority Health, will engage disproportionately affected communities, identify key stake holders, and identify evidenced-informed strategies that can be replicated in our state to address the racial and ethnic disparities.

DATA TO ACTION, REVIEW OF 2015 ACCOMPLISHMENTS

State-Level Activities

In December 2014, the State Child Fatality Review Team met to review aggregate child death data from the 2013 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. In contrast to previous years during which a longer list of recommendations was released, the State Team decided to focus on a few key strategies for reducing child fatalities in Tennessee. This decision reflected a potentially better practice identified during a series of national meetings aimed at strengthening state child fatality reviews.

The State Team made the following recommendations in the 2013 report:

- Aggressively continuing the safe sleep campaign with an emphasis on expanding projects already in place to educate health care providers and parents.
- Expand motor vehicle safety educational efforts in schools with an emphasis on the regions with the highest motor vehicle crash fatalities among teens (West Tennessee, East Tennessee and Shelby County).
- Expand the current suicide prevention efforts by increasing education to students to include awareness of warning signs and available resources. Specific efforts will include:
 - Annual identification of school staff who have been/should be trained in suicide prevention as per the Jason Flatt Act of 2007
 - Implementation of the Jason Foundation's "Promise for Tomorrow" curriculum into more public schools
 - Increased provision of suicide prevention and crisis intervention resources and promotional materials, especially those featuring hotline numbers, within schools
 - Widespread propagation of the Columbia Suicide Rating Scale (C-SSRS) among public school staff
- Examine racial disparities through enhanced data analysis and identifying opportunities for prevention efforts.

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:

Safe Sleep

- The Tennessee Department of Health (TDH) partnered with agencies across the state to distribute educational materials to parents, healthcare providers, child care agencies, social services providers and other caregivers.
- In partnership with TDH, 100% of birthing hospitals (65) and 5 non-birthing hospitals have developed and implemented a safe sleep policy. As a result, another 80,000 *Sleep Baby, Safe and Snug* board books and other departmental safe sleep educational materials were distributed to parents prior to being discharged from the hospital.
- TDH continues to promote the Direct on Scene Education (D.O.S.E.) program. When responding to an emergency or non-emergency call from a household with a pregnant woman or infant, first responders are trained to look for unsafe sleep conditions and offer the residence a safe sleep kit with information on the ABC's of Safe Sleep. Over the past year, 10 new first responder agencies have adopted the D.O.S.E. program, increasing the total number of participating departments to 27. Since implementation, agencies have distributed over 496 kits and 14 cribs.
- TDH implemented the safe sleep floor talker project in 2014. This project places large plastic decals on the floors of businesses and other agencies. To date, 376 floor talkers have been placed in businesses and agencies across the state.
- Cribs were distributed to the regional health departments to provide a safe sleep environment to families that could not afford one.
- The safe sleep educational flipchart was provided to DCS and home visiting staff statewide to ensure a consistent message is taught to parents.
- In 2015, DCS facilitated a series of regional Safe Sleep work sessions statewide. Within the Safe Sleep Initiative, DCS collaborated with community partners throughout each region to develop a strategic plan in an effort to overcome the barriers found with unsafe sleep. Each of the department's twelve regions throughout the state will establish a local protocol that will guide their staff on the importance and education of safe sleep. Staff will then be able to assess for safe sleeping environments, educate parents and caregivers on the importance of safe sleep, and ensure each infant has safe sleep furniture before leaving the family home. By the end of 2015, DCS anticipates providing over 500 parents and caregivers education on safe sleep and distributing pack n' plays to families identified as needing safe sleep furniture.
- In FY2015, Prevent Child Abuse Tennessee (PCAT) served 574 first time parents through the Healthy Families Tennessee (HFTN) program. HFTN is an evidence-based home visiting program serving 20 counties in Tennessee. During the assessment process and initial home visit, families explore safe sleep information and options. Home visitors utilize the ABC's of Safe Sleep fliers and door hangers to present information. If families do not have a safe sleep environment, they are provided with a pack and play. Last year, PCAT home visitors distributed 150 pack and plays to families.

- The Nurturing Parenting program provides home based parent education for parents with children ages 0-8. Through this program, parents with infants are also educated on safe sleep and provided with pack and plays as needed. Last year, PCAT served 318 parents in this program.
- The October 1, 2015 media release for KIDS Count: State of the Child in Tennessee 2014, included information about Safe Sleep as a strategy for reducing infant mortality. The following news articles specifically picked up this issue:
 - *Newport Plain Talk*
 - *Franklin Home Page*
 - *Chattanooga Times Free Press*
 - *Columbia Daily Herald* (including a picture of a sleeping baby with a caption about safe sleep as well as text in the article)

Motor Vehicle

- TDH continues to collaborate with the Department of Education and the Trauma Centers to promote involvement in the “Battle of the Belt” seat belt program. The program is currently recruiting schools for participation in this year’s competition.
- A teen driving task force with representation from the Department of Health, Department of Education, Governor’s Highway Safety Office, Tennessee Highway Patrol, Vanderbilt Trauma Center and UT Trauma Center continues to meet. The goal of this task force is to increase the teen motor vehicle accident prevention education taking place in schools. In particular, the task force is looking at the schools in the counties with the highest rates of teen motor vehicle accidents and encouraging them to participate in motor vehicle prevention activities.
- The Governor’s Highway Safety Office website promotes teen driving prevention activities among the schools. The website allows anyone to click on a county and view a list of motor vehicle prevention activities that are available in that particular county. Each school can also input prevention activities in which they are participating. As of September 2015, a total of 145 schools in 74 of the 95 counties have completed 400 safe driving awareness activities.

Suicide

Tennessee Department of Mental Health and Substance Abuse Services (TDMHSAS):

- From FY2014 to 2015, there was an 18% increase statewide in the number of children receiving services through mobile crisis. The goal of a face-to-face timeframe of 2 hours was met without an increase in funding.
- TDMHSAS has been in contact with Community Mental Health Centers/Agencies across the state, confirming their availability to provide access and resources to the local CFR teams.
- The Suicide Prevention and the African American Faith Communities Initiatives Committee continues to expand its initiatives in faith communities by providing trainings on suicide prevention, bullying, and mental health and distributing

suicide prevention resource material. These initiatives are currently being implemented in Nashville, Memphis, Clarksville, Murfreesboro and Manchester, TN and the numbers of faith leaders involved have increased. The purpose of these initiatives continues to be to provide faith leaders with tools to identify warning signs of depression and suicidal behaviors, to know the community mental health resources and know how to help their parishioners get the help they need. More faith leaders and parishioners who are involved in these initiatives have been able to identify signs of depression and suicidal behaviors and have been able themselves to assist individuals in getting the help they need.

- Kids Helping Rutherford County and Others Morph into Excellence (KHROME): Youth Move which had consisted of 10-12 youth in the Rutherford County area has increased its membership to 40 committed youth. They continue to collaborate with Tennessee Voices for Children's National Youth Move Program to perform skits, presentations and interactive activities four times a month related to suicide prevention and bullying at community events in the Rutherford County area, Nashville and Manchester. Their performances continue to help a number of youth in the community realize they should seek help. Several youth who heard their presentations and saw their skits in FY 2014/2015 have reached out to members of KHROME seeking help for their depression and suicidal thoughts. Some of those spectators are now connected with mental health services, currently receiving services, and even committed members of KHROME.

Tennessee Suicide Prevention Network (TSPN):

- During the 2014-2015 school year, TSPN co-facilitated postvention operations at 4 high schools affected by a recent student death; and provided postvention consultation to 7 middle and high schools.
- Staff and volunteers provided some form of suicide prevention training to 3,730 educators in Tennessee through 46 presentations at schools or conferences. These included presentations of the "Question, Persuade, Refer" curriculum, as well as TSPN's curricula on substance abuse and suicide and on the risk of suicide among LGBTQ youth.
 - In all trainings to school staff, participants were encouraged to consider training on the Columbia Suicide Severity Rating Scale (C-SSRS). Information about this mechanism was also included in their resource directories. It is worth noting that 100% of psychologists, counselors, and mental health workers within Metro Nashville Public Schools were trained on the C-SSRS.
- Distributed resources and materials on suicide prevention at all events, including the Lifeline number. The Lifeline number was also printed on all of TSPN's new brochures, flyers, and handouts.
- During the 2014-2015 school year, the Jason Foundation, Inc. (JFI) provided training for 50,679 Tennessee educators by way of its online library, trainings facilitated by JFI staff, or using the DVD Facilitator Packet.
- 946 Tennessee schools and youth organizations have adopted The JFI "Promise for Tomorrow" curriculum. 85 new schools and organizations and 14 other youth

service organizations received kits during the 2014-2015 school year, representing 775 additional teachers/presenters receiving new kits and reaching a projected 31,991 students.

- At least one school in each of Tennessee's 95 counties has contracted with JFI to provide the curriculum; and 48 of them have two or more schools contracted.
- 1,080 Tennessee schools/contracted teachers received updated materials from JFI, reaching a total of 319,476 students.

Tennessee Department of Education (TDOE):

- Applied for and received a five-year, \$9.75 million demonstration grant from Substance Abuse and Mental Health Services Administration (SAMSA) to enhance mental health awareness and access to services. Tennessee AWARE has two broad areas of focus: 1. Funding to three pilot school districts to provide school-based mental health services, develop and identify best practices, and support indicated policy changes; and 2. Delivery of Youth Mental Health First Aid Training to school staff and other adults who regularly interact with adolescents. A significant portion of the Youth Mental Health First Aid Training focuses specifically on youth suicide.
- Coordinated with TSPN on the dissemination of Suicide Postvention Guidelines and the integration of the guidelines with school and district-level emergency response plans and other traumatic response protocols/guidance including the Tennessee PREPARE training. Also, this year, the Department began including procedures for suicide prevention, intervention, and postvention in emergency operations training for districts.

Racial Disparities

A racial disparity clearly exists among children and infant fatalities in Tennessee. Although the majority of deaths are comprised of White children, African American children suffer a higher rate of mortality than Whites or other races. Last year, the state team recommended *examining racial disparities through enhanced data analysis and identifying opportunities for prevention efforts*. To accomplish this, TDH analyzed and presented child and infant mortality data to the state team in order to identify where the greatest racial disparities existed.

Further analysis of child mortality data revealed that although an overall racial disparity does exist (statistically significant at $p < .05$) in Tennessee, the number of occurrences are too small to infer the presence of a statistically significant racial disparity within individual causes/manners of death. The team did, however, find the homicide rate ratio to be alarmingly high and concerning; black children, ages 1-17 years, were found to be 7.0 times more likely to die as a result of homicide when compared to white children and other children. Table 31 summarizes the 2013 child death data in Tennessee by race and manner/cause of death.

Table 31. Racial Disparity in Child Fatality Ages 1-17 in Tennessee by Cause of Death, 2013

Cause/Manner of Death	Number of Deaths			Child Rate per 100,000			Rate Ratio
	White	Black	Other	White	Black	Other	
Asthma	2	6	0	0.2	2.1	0.0	10.9
Influenza	2	2	0	0.2	0.7	0.0	3.6
Pneumonia	5	3	0	0.5	1.1	0.0	2.2
Other medical condition	32	18	0	3.1	6.3	0.0	2.0
Congenital anomaly	10	4	1	1.0	1.4	1.2	1.5
Neurological / seizure disorder	6	2	0	0.6	0.7	0.0	1.2
Cardiovascular	10	3	1	1.0	1.1	1.2	1.1
Cancer	23	5	3	2.2	1.8	3.5	0.8
Other infection	5	1	0	0.5	0.4	0.0	0.7
Homicide	12	23	0	1.2	8.1	0.0	7.0
Fire, burn, or electrocution	7	7	0	0.7	2.5	0.0	3.6
Drowning	9	7	1	0.9	2.5	1.2	2.8
Asphyxia	4	2	0	0.4	0.7	0.0	1.8
Motor vehicle and other transport	46	13	4	4.4	4.6	4.7	1.0
Suicide	22	2	0	2.1	0.7	0.0	0.3
Weapon, including body part	2	0	1	0.2	0.0	1.2	0.0
Fall or crush	2	0	0	0.2	0.0	0.0	0.0
Poisoning, overdose or acute intoxication	3	0	0	0.3	0.0	0.0	0.0
Other injury	4	0	0	0.4	0.0	0.0	0.0
Exposure	0	1	0	0.0	0.4	0.0	-
Tennessee	211	100	12	20.3	35.0	14.0	1.7*

Table 32 was prepared to further examine the racial disparity in child homicides, ages 1-17, by region. While the numbers are too small to calculate statistical significance, it was observed that regions with the highest African American rate of homicides are Hamilton, Madison, and Shelby. No white children suffered a homicide in either of these three regions. While these numbers are too small to calculate statistically significance, some are clinically significant and warrant a closer look at prevention from a public health perspective.

Table 32. Racial Disparity in Child Homicides Ages 1-17 in Tennessee by Region, 2013

Region	Number of Deaths†		Child Rate per 100,000 Child Population*	
	White	Black	White	Black
SHELBY	0	12	0.0	9.1
NORTHEAST	4	0	6.5	0.0
DAVIDSON	1	3	1.3	6.4
UPPER CUMBERLAND	3	0	4.6	0.0
EAST TN	2	0	1.4	0.0
MID CUMBERLAND	0	2	0.0	6.6
WEST	0	2	0.0	9.2
HAMILTON	0	2	0.0	11.8
SOUTH CENTRAL	1	0	1.3	0.0
SOUTHEAST	1	0	1.6	0.0
Tennessee	12	23	1.2	8.1

†Numbers of Madison and Knox are suppressed due to confidentiality concern.

Table 33 summarizes the racial disparity in infant mortality in Tennessee by cause of death. A racial disparity was found to be statistically significant ($p < .05$) among infant deaths due to prematurity and the presence of unsafe sleep factors. Black infants were found to be 3.2 times more likely to die as a result of prematurity and 2.0 times more likely to experience a sleep-related death when compared to white children and other children.

Table 33. Racial Disparity in Infant Mortality in Tennessee by Cause of Death, 2013

Cause/Manner of Death	Number of Deaths			Infant Rate			Rate Ratio
	White	Black	Other	White	Black	Other	
Pneumonia	4	5	0	0.1	0.3	0.0	4.1
Undetermined medical cause	1	1	0	0.0	0.1	0.0	3.3
Prematurity	46	45	1	0.8	2.7	0.1	3.2*
Cancer	2	1	0	0.0	0.1	0.0	1.6
Other infection	8	4	0	0.1	0.2	0.0	1.6
Congenital anomaly	63	23	6	1.1	1.4	0.7	1.2
Neurological / seizure disorder	3	1	0	0.1	0.1	0.0	1.1
Other medical condition	40	10	2	0.7	0.6	0.2	0.8
Other perinatal condition	27	5	2	0.5	0.3	0.2	0.6
Cardiovascular	17	2	0	0.3	0.1	0.0	0.4
Unknown	1	0	0	0.0	0.0	0.0	0.0
SIDS	3	0	0	0.1	0.0	0.0	0.0
Sleep Related	71	44	2	1.3	2.6	0.2	2.0*
Asphyxia	36	13	0	0.7	0.8	0.0	1.2
Homicide	4	1	0	0.4	0.4	0.0	0.9
Fire, burn, or electrocution	2	0	0	0.0	0.0	0.0	0.0
Drowning	1	0	0	0.0	0.0	0.0	0.0
Weapon, including body part	4	0	0	0.1	0.0	0.0	0.0
Poisoning, overdose or acute intoxication	1	0	0	0.0	0.0	0.0	0.0
Motor vehicle and other transport	0	2	0	0.0	0.1	0.0	-
Tennessee	290	140	13	5.3	8.3	1.6	1.6*

Table 34 is sorted by regions with the highest number of total premature infant deaths in 2013. The region with the highest number of premature infant deaths was Shelby. The regions with the highest racial disparity of premature infant death rates are Shelby (higher among black infants) and Upper Cumberland (higher among white infants). East, Northeast, Southeast Sullivan and Upper Cumberland did not have any black infant deaths due to prematurity. Knox, Madison and South Central did not have any white infant deaths due prematurity.

Table 34. Racial Disparity in Infant Deaths Due to Prematurity in Tennessee by Region, 2013

Region	Number of Deaths†		Child Rate per 100,000 Child Population*	
	White	Black	White	Black
SHELBY	3	27	0.8	3.2
DAVIDSON	11	10	2.2	3.4
UPPER CUMBERLAND	9	0	2.6	0.0
NORTHEAST	5	0	0.7	0.0
EAST TN	5	0	1.6	0.0
HAMILTON	3	2	1.1	1.9
MID CUMBERLAND	3	1	0.7	0.9
WEST	3	1	0.3	0.6
SOUTHEAST	3	0	0.9	0.0
Tennessee	46	45	0.8	2.7

†Numbers of Knox, Madison, South Central and Sullivan are suppressed due to confidentiality concern.

Table 35 is sorted by regions with the highest number of total sleep-related infant deaths in 2013. The region with the highest number of sleep related infant deaths was Shelby. The regions with the highest racial disparity of sleep related infant death rates are South Central, Mid-Cumberland, followed by Davidson. East, Northeast, Southeast and Sullivan regions of Tennessee and Upper Cumberland did not have any African American sleep related infant death.

Table 35. Racial Disparity in Infant Sleep-Related Deaths in Tennessee by Region, 2013

Region	Number of Deaths†		Child Rate per 100,000 Child Population*	
	White	Black	White	Black
MID CUMBERLAND	10	4	0.8	2.6
EAST TN	12	0	1.7	0.0
DAVIDSON	4	6	0.8	2.0
SOUTHEAST	6	0	1.8	0.0
NORTHEAST	6	0	1.9	0.0
UPPER CUMBERLAND	4	0	1.2	0.0
HAMILTON	2	2	0.8	1.9
Tennessee	71	44	1.3	2.6

†Numbers of Shelby, West, South Central, Knox and Madison are suppressed due to confidentiality concern.

After careful review of the data, the state team decided that prematurity and sleep-related deaths should be the focus areas for targeting racial disparities for infants. For children over age one, homicide was determined to be a focus area. Prevention

initiatives around these topic areas will be specifically targeted in regions of the state with the highest disparities. In addition, stakeholders will be encouraged to implement evidenced-based activities or best practices in their local community.

Local Prevention Activities

As part of the CFR process, the review of each case and 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:

- Teams from all of the metros/regions provided safe sleep education and printed materials to the general public.
- The Davidson County CFR team's Nashville Fire Department representative coordinated three, 8-hour in-service trainings on Direct On Scene Education (D.O.S.E.) on June 8, 10 and 15 for first responders at the Fire Department Headquarters. A total of 293 first responders completed the training.
- The Davidson County CFR team's medical examiner representative attended Vanderbilt Pediatrics' Mortality and Morbidity Conference, which through discussion, initiated an internal systems review and resulted in changes in their computer system to alert providers of missed appointments.
- The Anderson County CFR team worked with the local EMS and Tennessee Wildlife Resources Agency to get a "Swimming Safety" PSA placed on their websites during the spring and summer months.
- Members of the team in Judicial District 4 (Cocke, Grainger, Jefferson and Sevier) partnered with Newport Medical Center to educate mothers in the community on safe sleep, risk of tobacco use, and injury prevention.
- Blount County CFR team members participated in the "Big Latch Event", a partnership with UT Extension, Pregnancy Resource Center, Baby & Me, and the Blount County Health Council to distribute safe sleep material and promote breastfeeding, WIC, etc.
- Children's Hospital at Erlanger in Chattanooga, TN hosted a media event focusing on safe sleep. Two of the local news channels were present and aired the story three times that day. The Chattanooga Times Free Press newspaper and the Chattanooga.com also released the story.
- A Chattanooga-Hamilton County CFR team member set up a safe sleep environment for display at the Chattanooga Market, a local weekend outdoor market.
- Team members from the Chattanooga-Hamilton County Health Department as well staff members from other community agencies, including the Health Department and 1N3 participated in the Choices Matter Teen Maze, held April 7-10, 2015 at Eastgate Town Center. The Choices Matter Teen Maze is a highly interactive program that delivers powerful information to teens concerning safe driving, crime and interactions with Juvenile Court, bullying, STI and pregnancy prevention, drug and tobacco use, and health options. This year, over 600 sophomores from Hamilton County and Marion County Schools participated.

- Members of the team in Judicial District 25 (Fayette, Hardeman, Lauderdale, McNairy, and Tipton) supported the Fayette County Primary Prevention Initiative PPI team's suicide prevention initiative by helping to lead education sessions at area elementary, middle and high schools.
- Knox County CFR team members partnered with the East Tennessee Safe Sleep Initiative to provide education to women on presumptive eligibility for Medicaid.
- Team members from the Northeast region worked with Niswonger Children's Hospital to distribute lock boxes to families with a drug exposed infant as well as families with an infant or child hospitalized for accidental ingestion, unintentional or intentional overdose.
- CFR team members from the Northeast region collaborated with the regional anti-drug coalitions and East Tennessee State University to host "A Tough Pill to Swallow: Addressing the Epidemic of Prescription Drug Abuse", a continuing medical education event, to increase awareness of the impacts of prescription drug abuse, prevention opportunities, etc.
- Members of the Shelby County CFR team assisted with the "Daddy Boot Camp Fatherhood Educational Training Session." This session, which was held at the Shelby County Correctional Center, provided 30 inmates with training on infant care, responsible fatherhood, and safe sleep for infants.

Other Local CFR Team Accomplishments

There are many factors that contribute to the overall effectiveness of the child fatality review process. In order to ensure that each case is thoroughly reviewed, our teams must have dedicated team members and access to any accurate and relevant information around the circumstances of each death. Here we highlight a few of the other accomplishments that some of our teams achieved over the past year:

- Recruitment was a high priority for the Davidson County team this year. The team had several long-standing members retire or leave their agency, and as a result the CFR team worked with the agencies to find replacements. There were changes in representation from the District Attorney's office, DCS, Nurses for Newborns, and Prevent Child Abuse Tennessee.
- Davidson County's CFR team coordinator worked with Metro Legal to craft a boilerplate letter to use when the team decides it needs to request medical records from agencies or individuals that are not current members of the CFR team.
- The Davidson County CFR team's coordinator also completed a data quality evaluation and presented the results to the team. The purpose was to point out the area of data collection where the team excels, and point out specific questions on the data collection form where they can improve.
- In August 2015, one of the East region's CFR teams arranged a meeting with representation from the District Attorney's office, the Department of Children's Services, the Regional Health Office, and representatives from the local law enforcement, court system and emergency medical services to discuss how the agencies could collaborate to improve their working relationships. The meeting was successful in that all parties involved established what role each agency will assume in a child's death and identified a contact person from each agency.
- The Chattanooga-Hamilton County CFR team has added a mental health representative to their team.
- The Hamilton County Medical Examiner's Office recently staffed investigators to visit the death scenes and assist in the completion of the Sudden Unexpected Infant Death Investigation (SUIDI) form.

CONCLUSION

The goal of child fatality review is to better understand the causes of death to children in Tennessee and to identify strategies for preventing future deaths. As indicated in this report, there has been a significant reduction in the child fatality rate in Tennessee—11% over the last five years. However, our child fatality rate remains above the national average, leaving important work to be done by all of us in order to protect our children.

Several key areas identified in this report warrant further attention, as recommended by the state team. We encourage all who read this report to utilize the data contained herein to explore opportunities for improving the health and well-being of children in your own community.

APPENDICES

Tables

1. Number and Rate of Child Mortality Ages 0-17 by Race in Tennessee, 2010-2014
2. Number and Rate of Infant Mortality by Race in Tennessee, 2010-2014
3. Summary of Year-to-Year Trends for Child Fatalities in Tennessee, 2013-2014
4. Medical/External Causes of Death by Manner for Children Ages 0-17 in Tennessee, 2014
5. Medical/External Causes of Death Summary for Children Ages 0-17 in Tennessee, 2014
6. Manner of Death Summary for Children Ages 0-17 in Tennessee, 2014
7. External Cause of Death (Injury Causes) for Children Ages 0-17 by Age Groups in Tennessee, 2014
8. Medical Cause of Death (Medical Causes) for Children Ages 0-17 by Age Groups in Tennessee, 2014
9. Risk Factors Associated with Infant Deaths Reviewed by Tennessee CFR Teams, 2014
10. Acts of Child Abuse or Neglect Among Reviewed Deaths for Children Ages 0-17 in Tennessee, 2014
11. Children with Disability Among Reviewed Deaths for Children Ages 0-17 by Age Groups in Tennessee, 2014
12. Children with Special Circumstances Among Reviewed Deaths of Children Ages 0-17 in Tennessee, 2014
13. Categorization for SUID Case Registry (Age <1)
14. Unsafe Sleep Factors
15. Categorization for SDY Case Registry (Age 0-17)
16. Number of Sleep-Related Infant Deaths and Rates per 1,000 Live Births by Race in Tennessee, 2010-2014
17. Contributing Factors in Sleep-Related Infant Deaths in Tennessee, 2010-2014
18. Homicide Deaths for Children Ages 0-17 by Victim's Location in Tennessee, 2014
19. Suicides for Children Ages 0-17 in Tennessee by Victim's Location, 2014
20. Suicide for Children Ages 0-17 by Victim's Age Groups and Cause in Tennessee, 2014
21. Motor Vehicle/Other Transport Fatalities for Children Ages 0-17 by Age Groups and Position in Vehicle in Tennessee, 2014
22. Motor Vehicle Deaths for Children Ages 0-17 by Vehicle Type and Protective Measure Not Used in Tennessee, 2014
23. Asphyxia Cause and Manner of Death for Children Ages 0-17 by Age Groups in Tennessee, 2014
24. Weapon-Related Deaths for Children Ages 0-17 by Manner of Death and Age Groups in Tennessee, 2014
25. Weapon-Related Deaths for Children Ages 0-17 in Tennessee by Weapon Type, 2014
26. Drowning Deaths for Children Ages 0-17 by Location and Age Groups in Tennessee, 2014
27. Cause of Fire/Burn Deaths for Children Ages 0-17 by Age Groups in Tennessee, 2014

28. Fire/Burn Deaths for Children Ages 0-17 by Fire Source in Tennessee, 2014
29. Fire/Burn Deaths for Children Ages 0-17 by Structure Type in Tennessee, 2014
30. Poison-Related Deaths for Children Ages 0-17 by Substance and Age Groups in Tennessee, 2014
31. Racial Disparity in Child Fatality Ages 1-17 in Tennessee by Cause of Death, 2013
32. Racial Disparity in Child Homicides Ages 1-17 in Tennessee by Region, 2013
33. Racial Disparity in Infant Mortality in Tennessee by Cause of Death, 2013
34. Racial Disparity in Infant Deaths Due to Prematurity in Tennessee by Region, 2013
35. Racial Disparity in Infant Sleep-Related Deaths in Tennessee by Region, 2013
36. Child Fatalities (Number and Rate) by County, 2014
37. Infant Mortality (Number and Rate) by County, 2014

Figures

1. Number and Rate of Child Mortality Ages 0-17 in Tennessee, 2010-2014
2. Rate of Child Mortality Ages 0-17 by Race in Tennessee, 2010-2014
3. Number and Rate of Infant Mortality in Tennessee, 2010-2014
4. Rate of Infant Mortality by Race in Tennessee, 2010-2014
5. Child Deaths by Age Groups in Tennessee, 2014
6. Child Deaths Ages 0-17 by Gender in Tennessee, 2014
7. Child Deaths Ages 0-17 by Race in Tennessee, 2014
8. Manner of Death Summary, Children Ages 0-17 in Tennessee, 2014
9. Cause of Death Summary, Children Ages 0-17 in Tennessee, 2014
10. Medical/External Causes of Death for Children Ages 0-17 by Age Group in Tennessee, 2014
11. Rate of Child Mortality Ages 0-17 by Cause of Death in Tennessee, 2010-2014
12. Rate of Child Mortality Ages 0-17 by Manner of Death in Tennessee, 2010-2014
13. Preventability of Child Deaths Ages 0-17 by Cause of Death in Tennessee, 2014
14. Number of Sleep-Related Infant Deaths in Tennessee, 2010-2014
15. Sleep-Related Death Rates per 1,000 Live Births by Race in Tennessee, 2010-2014
16. Number of Sleep-Related Infant Deaths in Tennessee by Region, 2014
17. Homicide Deaths and Rates per 100,000 Children Population Ages 0 to 17 in Tennessee and the US, 2010-2014
18. Demographic Distribution of Homicide Deaths for Children Ages 0-17 in Tennessee, 2014
19. Cause of Homicide Deaths Children Ages 0-17 in Tennessee, 2014
20. Suicides and Suicide Rates per 100,000 Children Population Ages 0-17 in Tennessee and the US, 2010-2014
21. Demographic Distribution of Suicides for Children Ages 0-17 in Tennessee, 2014
22. Cause of Suicides for Children Ages 0-17 in Tennessee, 2014
23. Motor Vehicle Related Deaths and Rates per 100,000 Children Population Ages 0-17 in Tennessee and the US, 2010-2014
24. Demographic Distribution of Motor Vehicle Fatalities for Children Ages 0-17 in Tennessee, 2014

25. Asphyxia Deaths and Rates per 100,000 Children Population Ages 0-17 in Tennessee and the US, 2010-2014
26. Demographic Distribution of Asphyxia Deaths for Children Ages 0-17 in Tennessee, 2014
27. Weapon-Related Deaths and Rates per 100,000 Children Population Ages 0-17 in Tennessee and the US, 2010-2014
28. Demographic Distribution of Weapon-Related Deaths for Children Ages 0-17 in Tennessee, 2014
29. Weapon-Related Deaths Children Ages 0-17 in Tennessee by Manner of Death, 2014
30. Drowning Deaths and Rates per 100,000 Children Population Ages 0-17 in Tennessee and the US, 2010-2014
31. Demographic Distribution of Drowning Deaths for Children Ages 0-17 in Tennessee, 2014
32. Drowning Deaths for Children Ages 0-17 by Location and Activity at the Time of Death in Tennessee, 2014
33. Fire/Burn Deaths and Rates per 100,000 Children Population Ages 0-17 in Tennessee and the US, 2010-2014
34. Demographic Distribution of Fire/Burn Deaths for Children Ages 0-17 in Tennessee, 2014
35. Poisoning Deaths and Rates per 100,000 Children Population Ages 0-17 in Tennessee and the US, 2010-2014
36. Demographic Distribution of Poison-Related Deaths for Children Ages 0-17 in Tennessee, 2014
37. Fall/Crush Deaths and Rates per 100,000 Children Population Ages 0-17 in Tennessee and the US, 2010-2014
38. Demographic Distribution of Fall/Crush Deaths for Children Ages 0-17 in Tennessee, 2014

Appendix B—Glossary

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

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

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

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

Child Fatality Review (CFR) Team– Tennessee's local/regional groups, comprised of such agencies as public health, law enforcement, social services, etc., that examine the deaths of children aged 17 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) – Supervision that willfully endangers a child's health and welfare.

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

Contributing Factors – Behavioral actions that may elevate the potential 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.

Child Protective Services (CPS) – Social service system engaged in protecting children from maltreatment.

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

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.

Exposure – Cause of death directly related to environmental factors; typically death from hyper- or hypothermia.

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 or severely injure.

Hyperthermia – High body temperature.

Hypothermia – Low body temperature.

Infant – Child under one year of age.

Manner of Death – The intent of a death, i.e. whether a death was caused by an act carried out on purpose by oneself or another person(s): Natural, Accident, Suicide, Homicide, or Undetermined.

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

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

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

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

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

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

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

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

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

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

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

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

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

Appendix C—Child Deaths by County of Residence

Table 36. Child Fatalities (Number and Rate) by County, 2014

County Name	Number of Child Deaths	Children Ages 0-17 Population	Rates per 100,000
Tennessee	883	1,488,738	59.3
ANDERSON	12	15,644	76.7
BEDFORD	12	12,132	98.9
BENTON	4	3,144	127.2
BLEDSON	2	2,379	84.1
BLOUNT	15	26,361	56.9
BRADLEY	16	23,142	69.1
CAMPBELL	7	8,300	84.3
CANNON	3	2,873	104.4
CARROLL	4	6,229	64.2
CARTER	8	10,782	74.2
CHEATHAM	3	9,242	32.5
CHESTER	2	3,987	50.2
CLAIBORNE	5	6,217	80.4
CLAY	0	1,563	0.0
COCKE	2	7,254	27.6
COFFEE	4	12,665	31.6
CROCKETT	3	3,513	85.4
CUMBERLAND	9	10,444	86.2
DAVIDSON	96	145,495	66.0
DECATUR	2	2,317	86.3
DEKALB	1	4,285	23.3
DICKSON	4	11,692	34.2
DYER	5	9,068	55.1
FAYETTE	6	8,004	75.0
FENTRESS	2	3,840	52.1
FRANKLIN	3	8,817	34.0
GIBSON	4	11,910	33.6
GILES	6	6,010	99.8
GRAINGER	10	4,779	209.2
GREENE	15	13,633	110.0
GRUNDY	2	2,871	69.7
HAMBLETON	5	14,564	34.3
HAMILTON	36	74,805	48.1
HANCOCK	0	1,385	0.0

HARDEMAN	4	5,104	78.4
HARDIN	3	5,302	56.6
HAWKINS	7	11,795	59.3
HAYWOOD	6	4,263	140.7
HENDERSON	3	6,457	46.5
HENRY	3	6,664	45.0
HICKMAN	4	5,219	76.6
HOUSTON	1	1,775	56.3
HUMPHREYS	3	3,919	76.6
JACKSON	1	2,173	46.0
JEFFERSON	6	11,019	54.5
JOHNSON	2	3,073	65.1
KNOX	50	97,076	51.5
LAKE	2	1,179	169.6
LAUDERDALE	10	6,254	159.9
LAWRENCE	8	10,377	77.1
LEWIS	1	2,606	38.4
LINCOLN	2	7,449	26.8
LOUDON	3	9,936	30.2
MCMINN	4	11,325	35.3
MCNAIRY	2	5,866	34.1
MACON	2	5,576	35.9
MADISON	20	23,072	86.7
MARION	3	5,952	50.4
MARSHALL	6	7,270	82.5
MAURY	10	19,909	50.2
MEIGS	0	2,344	0.0
MONROE	10	9,682	103.3
MONTGOMERY	25	51,239	48.8
MOORE	0	1,261	0.0
MORGAN	2	4,192	47.7
OBION	4	6,766	59.1
OVERTON	1	4,840	20.7
PERRY	0	1,670	0.0
PICKETT	0	930	0.0
POLK	4	3,383	118.2
PUTNAM	2	16,196	12.3
RHEA	5	7,511	66.6
ROANE	4	10,264	39.0
ROBERTSON	10	16,891	59.2
RUTHERFORD	34	72,413	47.0
SCOTT	4	5,314	75.3

SEQUATCHIE	2	3,166	63.2
SEVIER	5	19,843	25.2
SHELBY	192	237,784	80.7
SMITH	2	4,374	45.7
STEWART	1	2,812	35.6
SULLIVAN	8	30,939	25.9
SUMNER	21	41,450	50.7
TIPTON	7	15,586	44.9
TROUSDALE	0	1,805	0.0
UNICOI	0	3,426	0.0
UNION	1	4,417	22.6
VAN BUREN	1	1,055	94.8
WARREN	8	9,318	85.9
WASHINGTON	19	25,326	75.0
WAYNE	1	3,052	32.8
WEAKLEY	2	7,022	28.5
WHITE	5	5,697	87.8
WILLIAMSON	13	56,732	22.9
WILSON	16	30,082	53.2

Data source: Tennessee Department of Health, Division of Health Statistics.

Appendix D—Infant Deaths by County of Residence

Table 37. Infant Mortality (Number and Rate) by County, 2014

County Name	Number of Infant Deaths	Live Births	Infant Mortality Rates per 1,000 Live Births
Tennessee	562	81,609	6.9
ANDERSON	5	802	6.2
BEDFORD	5	640	7.8
BENTON	3	141	21.3
BLEDSON	1	119	8.4
BLOUNT	10	1,322	7.6
BRADLEY	10	1,206	8.3
CAMPBELL	5	421	11.9
CANNON	2	142	14.1
CARROLL	2	308	6.5
CARTER	5	532	9.4
CHEATHAM	3	469	6.4
CHESTER	0	208	0.0
CLAIBORNE	2	330	6.1
CLAY	0	74	0.0
COCKE	1	398	2.5
COFFEE	4	693	5.8
CROCKETT	2	182	11.0
CUMBERLAND	5	548	9.1
DAVIDSON	70	10,275	6.8
DECATUR	2	141	14.2
DEKALB	1	235	4.3
DICKSON	2	625	3.2
DYER	5	467	10.7
FAYETTE	3	424	7.1
FENTRESS	0	196	0.0
FRANKLIN	1	399	2.5
GIBSON	3	623	4.8
GILES	2	303	6.6
GRAINGER	7	247	28.3
GREENE	9	651	13.8
GRUNDY	2	151	13.2
HAMBLETON	3	799	3.8
HAMILTON	23	4,144	5.6

HANCOCK	0	67	0.0
HARDEMAN	2	273	7.3
HARDIN	0	257	0.0
HAWKINS	6	538	11.2
HAYWOOD	5	220	22.7
HENDERSON	3	328	9.1
HENRY	2	305	6.6
HICKMAN	1	283	3.5
HOUSTON	1	96	10.4
HUMPHREYS	2	187	10.7
JACKSON	1	90	11.1
JEFFERSON	5	546	9.2
JOHNSON	1	189	5.3
KNOX	32	5,255	6.1
LAKE	0	60	0.0
LAUDERDALE	6	290	20.7
LAWRENCE	3	582	5.2
LEWIS	1	155	6.5
LINCOLN	1	339	2.9
LOUDON	0	510	0.0
MCMINN	2	553	3.6
MCNAIRY	0	260	0.0
MACON	1	342	2.9
MADISON	12	1,249	9.6
MARION	1	324	3.1
MARSHALL	4	380	10.5
MAURY	8	1,130	7.1
MEIGS	0	102	0.0
MONROE	6	527	11.4
MONTGOMERY	14	3,453	4.1
MOORE	0	52	0.0
MORGAN	1	209	4.8
OBION	3	315	9.5
OVERTON	1	227	4.4
PERRY	0	121	0.0
PICKETT	0	49	0.0
POLK	2	177	11.3
PUTNAM	1	862	1.2
RHEA	3	384	7.8
ROANE	1	433	2.3
ROBERTSON	8	884	9.0
RUTHERFORD	23	4,001	5.7

SCOTT	3	280	10.7
SEQUATCHIE	1	152	6.6
SEVIER	3	1,075	2.8
SHELBY	133	13,842	9.6
SMITH	1	237	4.2
STEWART	1	130	7.7
SULLIVAN	2	1,575	1.3
SUMNER	12	2,122	5.7
TIPTON	5	710	7.0
TROUSDALE	0	97	0.0
UNICOI	0	147	0.0
UNION	1	170	5.9
VAN BUREN	1	61	16.4
WARREN	5	477	10.5
WASHINGTON	14	1,302	10.8
WAYNE	1	153	6.5
WEAKLEY	1	348	2.9
WHITE	3	304	9.9
WILLIAMSON	5	2,149	2.3
WILSON	9	1,459	6.2

Data source: Tennessee Department of Health, Division of Health Statistics.

Safe Sleep Hospital Policy Project Evaluation

The number of sleep related infant deaths in Tennessee has decreased since 2010; however, there were still 117 cases identified in 2013, accounting for 21.5% of all infant deaths in Tennessee. Since the majority of Tennessee babies are born in hospitals, hospitals and health care workers play an important role in educating new parents and caregivers about ways to keep babies safe while sleeping. In January 2014, Tennessee Department of Health received commitment from 100% of birthing hospitals (66) and 5 non-delivery hospitals across the state to develop and implement a hospital Safe Sleep policy, which at minimum had to contain the following:

- At least annual education to all perinatal staff (OB, peri/postpartum and pediatrics) on Safe Sleep recommendations
- Requirements for staff to model Safe Sleep recommendations
- Plan for at least quarterly internal crib audits with hospital policy

In early 2015, TDH set out to evaluate this project through collecting and analyzing annual reports from each of the participating hospitals. Each of the 71 participating hospitals were required to submit an annual report with percent of staff trained, percent of parents trained and results of the crib audits.

By the end of January 2015, 45 hospitals turned in their annual reports with information about the percentage of staff and parents educated on safe sleep practices, their teaching methods and results of their crib audits; two were from non-delivery hospitals and crib auditing did not apply. Ninety-three percent of hospitals trained at least 90% of their OB perinatal/postpartum and pediatric staff and all hospitals reported educating at least 90% of the families prior to discharge.

Hospitals reported statistically significant differences in the proportion of infants found in most types of unsafe sleep environments from the first to the last audit conducted, which reflects a change from the time before policy implementation to a period after policy implementation. The only measure that did not observe a significant reduction was the proportion of infants found with a blanket in the crib. Overall, there was a 45.3% decrease in all factors contributing to unsafe sleep environments in the hospital from the first crib audit to the last crib audit. Specifically, infants found asleep not on their back decreased by 43.9%, infants with a toy or object in the crib decreased by 51.9% and infants not sleeping in a crib decreased by 48%. While this study was unable to assess safe sleep environment after the family leaves the hospital, an improvement in modeling safe sleep behavior in the hospital is likely to translate to an improvement in safe sleep behavior at home.

TDH plans to conduct another evaluation in 2016. This evaluation will determine if there was a decrease in unsafe sleep environments at the hospitals during 2015 versus 2014.

Teen Motor Vehicle Crash Prevention Programming

While the number of teen drivers (ages 15-18) involved in motor vehicle crashes in Tennessee decreased 3% and fatalities among this group decreased 12.5% (56 to 49) from 2010-2014, there were 22,133 teen driver crashes in Tennessee in 2014. Schools can play an important role in educating this age group about ways to maintain safe driving behaviors. Teen driving skills can be taught and student norms can be impacted through coordinated evidence-informed education programs. While schools have traditionally partnered with community organizations to prevent teen health problems, relatively few state districts had implemented motor vehicle crash prevention programs as of July 2014.

In 2014 a goal was set out to increase teen motor vehicle safety programs in Tennessee schools, resulting in an increase in the number of evidence-informed teen motor vehicle safety projects conducted in Tennessee. The REDUCE TN CRASHES.ORG Traffic Certification Program is a coordinated web-based program supported by the Tennessee Governor's Highway Safety Office and coordinated by Tennessee Tech University. It is designed to encourage schools to a) become familiar with crash rate data in their county, b) implement a variety of evidence-informed motor vehicle safety programs, and c) to promote friendly competition among schools for "points" for engaging in different level of best practice activities. Schools register through the REDUCE TN CRASHES website and are directed to select from a host of evidence-informed programs. State and national partners provide programming such as: TDH – "Battle of the Belt", Ford Corporation "Ford Driving Skills for Life", State Farm – "Celebrate My Drive", Vanderbilt Hospital – "Be-In-The-Zone", and others. There are a total of 45 available projects ranging in difficulty and scope, with points awarded at Bronze, Silver, and Gold levels.

The total number of participating schools in 2013 was 60 schools. In August of 2014, the Tennessee Injury Community Planning Group (ICPG) commissioned a letter to all Tennessee public school leaders educating them about teen driver crash risk and recommending that "every public and private high school institution in Tennessee enroll in the Reduce TN Crashes program, and begin taking steps toward earning the GHSO Traffic Safety Award. The letter was initiated by TDH and was co-signed by Director of the Governor's Highway Safety Office, the Tennessee Trauma System Manager, The Executive Director of the Tennessee Emergency Medical Services for Children Foundation, The AAA-Auto Club Group Public Affairs Director, and the Tennessee Teen Institute Director of Prevention. A total of 734 public and private school districts received the call to action document.

In July 2014, a total of 63 schools had completed 200 safe driving programs through REDUCE TN CRASHES.ORG. The recruitment letter was mailed in October of 2014. As a result of the letter, by December 2014, 118 schools registered for the program, representing an increase of 55% in the total number of participating schools. At the time of this report, a total of 145 schools in 74 of the 95 counties had completed 400 safe driving awareness activities. This represents an 82% increase in the number of participating schools since July of 2014.

State Child Fatality Review Program Hosts Fall Webinar Series

Over the past three years, the state office has worked diligently to build up our Child Fatality Review program. As a part of the push to strengthen the program, in-person trainings for both local team leaders and members have been hosted in the three Grand Divisions annually. In the past, these trainings have focused on topics such as effective review meetings, goal-setting, and making S.M.A.R.T. recommendations.

This year, the state program decided to take a different approach by hosting a series of webinars on topics that the local CFR team members expressed an interest in learning more about. Over the summer, the state CFR coordinator sent an email out to local CFR team members to request input on the topics that would be addressed. The state office received suggestions from all of the metro/regions. Upon review of the submissions, four topics were finally selected:

Session 1: October 15, 2015, 1pm – 2pm
Neonatal Abstinence Syndrome
Michael Warren, MD, MPH, FAAP
Director, Division of Family Health and Wellness

Session 2: October 29, 2015, 9am – 10am
Tennessee's Prescription Drug Laws
Mary Kennedy
Deputy General Counsel, Tennessee Department of Health

Session3: November 3, 2015: 9am – 10am
Child Suicide Prevention
Scott Ridgway, MS
Executive Director, Tennessee Suicide Prevention Network

Session 4: November 5, 2015, 9am – 10am
Dealing with Vicarious Trauma
Pamela Tabor, DPN, Forensics
Director, Arkansas Infant and Child Death Review

The *Child Fatality Review: Fall Webinar Series* was well attended, with a total of 152 participants. The conclusion of this series was met with positive feedback from participants and presenters alike; and we look forward to planning similar events in the near future.

Student Pedestrian Safety near School in Downtown Nashville

The Metro Nashville CFR team discovered that a school in an urban, downtown area of the city lacked the standard pedestrian safety protections (school zones, crossing guards, etc.) provided at other schools. It was agreed that in order to address this concern, the team would need to collaborate with the Mayor's Bicycle and Pedestrian Advisory Committee (BPAC).

The BPAC is an interdisciplinary committee populated by agencies that determine policy related to the safety of bicyclists and pedestrians in Davidson County. The team crafted a letter, outlining the issue and recommended that *BPAC evaluate the area around the downtown school for the best way to implement student protections without severely impacting commuter traffic and access to downtown businesses*. The letter was sent to the chair of the BPAC, which later resulted in a meeting between local CFR team members and the Chair of the BPAC.



The BPAC determined the establishment of a school zone was the best course of action to protect students from being struck by motor vehicles in the vicinity of the school. Through the combined efforts of the BPAC and the CFR team, the downtown school now has a school zone established in front of the school. Another key partner in this project was the Metro Nashville Health Department representative on the BPAC, who was also apprised of the situation. She updated the CFR team coordinator on developments and helped make the issue a priority for the BPAC.

The school zone includes 15 mph flashing signals, school zone signs, and a crossing guard who is present before and after school hours to assist students with crossing intersections. As a result, students at the downtown school now have a safety infrastructure in place to help prevent injuries or fatalities when arriving at or leaving school. Traffic speeds are slower, drivers are more aware of students' presence, and students have assistance from the crossing guard when crossing the street in front of the school (6 lanes of traffic with a turn lane and no median). Additionally, the CFR team now has a working relationship with the BPAC; and they are eager to address any future recommendations the team makes related to pedestrian and bicyclist safety.

It took a total of 9 months to complete this project. The biggest lesson learned through this process is that even though the CFR team has been functioning in Davidson County for nearly two decades, members realized that the team doesn't have much visibility in the community. The BPAC, which has the power and ability to change policy, was unaware of their existence or the work they do, even though there are clearly instances where their goals and objectives coincide. While the CFR team is able to affect policy within its representative agencies, broader policy change requires partnerships.

Knox County: The Power of Bringing Together Stakeholders

Response to the death of an infant can be chaotic, traumatic and involves multiple agencies. Every agency is on scene to gather information pertinent to their needs; individuals involved in the response to the death of an infant may perceive their goals to be opposed to one another. Additionally, practices to facilitate bereavement services in the Emergency Department may be perceived by law enforcement and medical examiners as potentially tampering with evidence and a delay of transport the forensic center. Oftentimes, when a child death occurs outside of a hospital setting, bereavement services offered to the family may be limited or absent. For these reasons, the Knox County CFR team recommended *a) the review of policies in each agency to determine the best ways of facilitating communication between agencies during an infant death investigation and b) the creation of a mechanism for sharing bereavement services with families when an infant death occurs outside of a hospital setting.*

To begin a discussion about possible scene investigation issues and to determine the best way to present bereavement services information, a meeting was facilitated by the Knox County CFR team leader; a pediatrician at East Tennessee Children's Hospital. This meeting was held at the Regional Forensic Center, and brought together leadership in law enforcement (Knoxville Police Department and Knox County Sheriff's Office), EMS (RuralMetro EMS), emergency department and hospital security (East Tennessee Children's Hospital), and medical examiners and investigators (East Tennessee Regional Forensic Center).

East Tennessee Children's Hospital then reviewed all policies at the hospital to include concerns voiced by other agencies; and in turn, the hospital will reinforce ways to facilitate communication between responding agencies to better inform each agency. Additionally, the CFR team and Fetal Infant Mortality Review (FIMR) team staff at Knox County Health Department put together a comprehensive booklet of local bereavement services. These teams will keep this list current so that on-scene investigators and first responders can share the list with families who have experienced a loss.

As a result, communication about the death scene investigation has improved between the agencies. This project also led to discussion between the Medical Examiner and Department of Children's Services offices on facilitating communication of vital history to inform the death scene. Also, first responders and investigators were pleased with the bereavement services list and hope to share the information with families in the future. It took a combined total of six months to implement both parts of this recommendation.

Putting together a meeting like this to include so many stakeholders may be challenging but was worthwhile. Objectives should be clearly defined before the meeting, with actionable items to follow. Each agency's goals should be considered when discussing facilitation of a death scene investigation. Open communication between the agencies is crucial with a thorough death scene investigation being the shared goal. Also, local bereavement resource lists should be annually updated and checked for accuracy to confirm a valid tool is being shared with the community. Certain social media groups dedicated to infant loss may be considered as a valuable bereavement resource to some families.

Jackson-Madison County Hosts *Safe Sleep Supper* at Local Apartment Complex

During one of Jackson-Madison County's recent CFR meetings, team members noticed a trend in their data – over the years, a number of sleep-related infant deaths have occurred within one community in the Jackson area. Upon this realization, the team determined that a site-specific prevention activity was necessary. Being complete outsiders to this community, team members understood that while the ultimate goal of



their project was to provide safe sleep education, residents would only be receptive if some level of trust was established. As the team discussed their plan of action, the following recommendation was developed: The Jackson-Madison County CFR team will *form trusting relationships with the residents – particularly the mothers – in an effort to help them make better choices regarding their baby's sleep habits.*

The *Safe Sleep Supper* occurred on October 23, 2015 at one of the local

apartment complexes, with a total of 23 mothers and 130 children reached. The mothers were counseled on the ABC's of Safe Sleep and other essential public health topics, including immunizations, smoking cessation during pregnancy and secondhand smoke, nutrition, and child abuse. The team also provided a meal to all attendees.

This project took four months to implement. Several key partners contributed to the overall success of this prevention activity, including the apartment complex manager; the CFR team leader who scheduled and coordinated the event; program representatives from the Jackson-Madison County Regional Health Office who assisted with distributing information to the families; and local CFR team members from the Jackson Police Department, Tennessee Highway Patrol, and Madison County Sheriff's Department who facilitated organized discussion and play amongst the children while their mothers talked with health department staff.

The apartment manager and residents expressed their appreciation for the team's presence and the information that was shared; and as a result of this project, the health department was able to establish a new partnership with this community. There are plans for the team to return in the future to provide educational outreach. Additionally, the apartment manager received information about how to obtain a pack-N-play if she identifies a family in need.

The team plans to expand their outreach efforts in an effort to provide safe sleep education in other high-risk communities as they are identified.

Upper Cumberland Region: Community Safe Sleep Education and Floor Talker Distribution

A couple of individuals who serve on the local CFR teams in Upper Cumberland region are also staff at the Regional Health Office in Cookeville, Tennessee. This past year, these local team members sat on a Primary Prevention Initiative (PPI) team that selected the ABC's of Safe Sleep as its focus area.

Since October 2014, this PPI team has been able to place floor talkers in 39 of the 40 grocery stores that they visited; one was unable to use the floor talker due to their corporate office guidelines. The team also distributed floor talkers and safe sleep materials at the local Department of Children's Services offices.

Aside from distributing materials across the region, the team also set out to identify and train other individuals that could help spread the ABC's of Safe Sleep. Prior to leading any training, the entire team participated in a train-the-trainer session to learn more about infant mortality, the ABC's of Safe Sleep, and to gain pointers on how to address some of the more challenging questions that may be posed while out in the community. A total of 33 people at the Regional Office, including the PPI team, attended this training. The team found the training to be informative, and even left with several ideas about how to spread the message in the community.

As of this date, the Upper Cumberland Safe Sleep team has conducted the following activities:

- Trained 49 regional DCS staff – held 2 sessions for current employees and 2 sessions for new employees
- Trained 56 nursing students at Tennessee Tech University
- Trained 14 relative caregivers with the Upper Cumberland Development District
- Trained 67 Health Council members; with plans to schedule sessions with 7 other counties before the end of the year; and
- Trained 7 DHS daycare workers.

The team plans to provide on-going trainings for new DCS staff and the Upper Cumberland Development District. In addition, there are plans to offer their safe sleep training to all daycare workers in Putnam County, which has already been approved by the Regional Director. The team is also exploring other avenues to spread the ABC's of Safe Sleep as they received approval, including through churches.

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)

Karen Cline- Parhamovich, DO	Diane Cupp Gary Cutshall, LSCW	Pat Rash Joanna Roy
Beth Bare Inv. Christopher Bowers	Mike DeVoe, MD Inv. Deborah Dunn	Sam Rutherford Inv. Nicki Salyer
Lt. Randy Bowers Regina Bowman	Ashley Fine Kim Garland	Lori Shields, EdS Kristen Spencer
Inv. Shawn Brown Seth Brown, MD	Michelle Hansen, RN David Kirschke, MD	Patsy Stanley Melissa Synder, MD
Heidi Casey, RN Sandra Castro, MD	Nicole Masian, MD William Monk	Edward Tester Cynthia Thomas, DO
Tara Chadwell Atty. Tony Clark	Shirley Odem Donna Pleasant	Chief Regan Tilson Fay Willis, RN
Capt. Mike Cooke	Sheree Pierce	

JD2 (Sullivan County)

Kathy Benedetto Julie Canter, JD	Andy Hare William Harper, JD	Janice Miller Marjorie Miller
Lt. Sean Chambers Steven Combs, MD	Pam Harr Cindy Hawkins	Heather Mullins Teresa Nelson, JD
Michael DeVoe, MD John Eanes	Barry Honeycutt William Hudson, MD	Jim Perry Debra Poston
Danielle Eller Gigi Epps	Capt. Joel Jones Ashley Justice	Debbie Richmond Emily Smith, JD
Brandon Ferrell Jamie Greene-Lamb	Kolleen Kolassa Stephen May, MD	Barry Staubus, JD Michelle Steadman
Steve Hammonds Tracy Haraz	Gary Mayes Darrell Mears	Laura Tipton Myra Winters

JD4 (Cocke, Grainger, Jefferson, and Sevier Counties)

Don Best, BSE, ME Amy Ball Susan Blair, RN Kathy Craft, RN Kristin Dean, PhD	Rita Hillhouse, RN John Holland, EMT-P David McConnell, MD Teresa Moyers Atty. Charles Murphy	Sheri Smith, RN Tara Sturdivant, MD Capt. Derrick Woods
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JD5 (Blount County)

Lori Baxter, MD Mary Beth Blevins, RN Kathy Craft, RN Cindy Crawford Tabitha Damron	Mike Flynn, JD Amanda May Sgt. Ronnie Pryor Jonathon Rodgers Det. Kris Sanders	Det. Mike Seratt Sheri Smith, RN Tara Sturdivant, MD Michael Teague, MD
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JD6 (Knox County)

Lt. Brad Anders Mona Blanton-Kitts, LCSW John Brinkley Angie Bowen, RN Kimberly Christensen Tracy Davis Vickie Fox Wendy Foster Chris Gregory Amy Hawes	Rita Hillhouse, RN Paige Huggler David Kitts, PhD Ashley McDermott, JD Christopher McLain Darnika Mileusnic, MD Mary Palmer, MD Det. Heather Reyda Kit Rodgers, JD Rachel Russell, JD Robin Slattery, D-ABMDI	Tracie Savage, RN Joanie Stewart, JD Barbara Summers, MD David Teaster, MD Alicia Verlinde, MPH Lisa Wagoner, MSN, RN Frances Wheatley Capt. Mark Wilbanks Zachary Young, RN
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JD7 (Anderson County)

Det. Vaughn Becker Patty Campbell, RD Thomas Clary, MD Kathy Craft, RN Det. Kevin Craig Margaret Durgin	Bobbi Jo Henderson Darinka Mileusnic- Polchan, MD, PhD Rodney Minor Stacy Park, LCSW Angela Perez	Joe Pinkerton Robin Slattery Sheri Smith, RN Tara Sturdivant, MD Vicki Violette Karen Wilkinson, APN
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JD8 (Campbell, Claiborne, Fentress, Scott, and Union Counties)

Kerri Byrd-Hamby, RN Samantha Cardwell- Jennings Kathy Craft, RN Rev. Martha Anne Fairchild Shannon Follett	Kim Hammock Det. Joshua Hill Det. Ricky Jeffers Andrea Meadows, MD Bruce Perkins Kim Sanderson	Mary Lou Seamon Meredith Slemp Sheri Smith, RN Tara Sturdivant, MD Barbara Williams Zachary Young-Lutz, RN
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JD9 (Loudon, Meigs, Morgan, and Roane Counties)

Kathy Craft, RN	Judge Dennis	Mona William-Hayes, PhD
Melissa Denton	Humphrey	Tara Sturdivant, MD
James P. Guider, MD	Alyson Kennedy	Millicent Thomas
Sherriff Tim Guider	Missy Layne	
Mary Harding, EdS	Sheri Smith, RN	

JD9 (Loudon, Meigs, Morgan, and Roane Counties)

Robin Allen	Tina Florey	Calvin Rockholt
Keith Barker	Daniel Gibbs	Melissa Rodante
Jeannie Bentley	Mark Gibson	Teresa Rogers
Elisa Bishop, BSN	Joe Guy	Dewayne Scoggins
Sheriff Bill Bivens	Vant Hardaway	Lt. David Shoemaker
Deanna Brooks	Det. Cody Hinson	Iris Snider, MD
Eddie Byrum	Sandra Holder	Millicent Thomas
Allyson Cornell, MD	Capt. Frank E. Horning	Jackie Thompson
Debbie Cox	Danny Lawson	Eloise Waters
Steve Crump, JD	Susan Merriman	Andy Wattenbarger
Det. Brandon Edwards	Gayla H. Miller	Laura Wittmaier
Det. Shaunda Efaw	Jeffery Miller, MD	

JD11 (Hamilton County)

Beverly Allen	Denise Cook	Det. Ed Merritt
Sharon Barker	Jackie Jolley	Det. Henry Ritter
Valerie Boaz, MD	Atty. Leslie Longshore	Sheryl Rogers, RN
Barbara Breedwell	Lisa Lowery-Smith, MD	Det. Mickey Rountree
Det. Gregg Carson	Lt. Henry McElvain	Lt. Glenn Scruggs
AnnaMaria Church, MD	Shelley McGraw	Sgt. Joe Shaw
Steven Cogswell	James Metcalfe, MD	Melissa Wilson, LPC

JD12 (Bledsoe, Franklin, Grundy, Marion, Rhea, and Sequatchie Counties)

Robin Allen	Dianne Easterly	Charlene Nunley
Keith Brown	Inv. Keith Herron	Rhonda Sills
Vicki Carr	Jessica Hill	Brenda K. Sowter, MD
Beth Cassidy, DO	Sandra Holder	Lt. Coy Swanger
Allyson Cornell, MD	Lt. Paul W. Howard	Mike Taylor
Debbie Cox	Inv. Jodi Lockhardt	Jackie Thompson
Kimberly A. Dean	Susan Merriman	Elise Young

JD13 (Clay, Cumberland, DeKalb, Overton, Pickett, Putnam, and White Counties)

Brandon Boone	Eddie Farris	Jim Morgan
Greg Bowman	Andrea Fox	Billy Price
James Breyer, MD	Pam Gannon	Michael Railling
Lisa Bumbalough	John Garrett	Patrick Ray
Jean Coffee	Hoyte Hale	Karen Roper
Chip Cook	Kendall Hargis	John Rust
Tommy Copeland	Hazel Hubbard	Tonya Scott
Casey Cox	Jerry Jackson	Oddie Shoupe
Michael Cox, MD	Gayla Jestice	Sullivan Smith, MD
Pam Davis	Andy Lanford	Ann Stamps
Linda Dennis	Tara LeMaire, MD	Carolyn Valerio, PsyD
Doris Denton	Larry Mason, MD	J.C. Wall, MD
Dana Dowdy	Ralph Mayercik	Richard Williams
Bryant Dunaway	David McKinney, MD	
Tina Farr, RN	Lynn Mitchell	

JD14 (Coffee County)

LeeAnne Boeringer	Susan Ferencei	Lang Smith, MD
Michael Bonner	Kellie Lusk	Ray Stewart
Al Brandon, DO	Susan Minger	Paul Tibbs
Debbie Broadway	Deborah Molder, RN	Frank Watkins
David Brumley, DDS	Shaun Noblit	L.B. Windley, Jr., DVM
Inv. Billy Butler	Atty. Jason Ponder	Jan Winters
Mike Clements	Darla Sain, RN	
Leanne Eaton	Clifford Seyler, MD	

JD15 (Jackson, Macon, Smith, Troup, and Wilcox Counties)

Alison Asaro, MD	Scott Giles, DO	Brian Newberry
Matt Batey	Felicia Harris	Donald Nuessle, MD
Robert Bryan	Angie Hassler	Sandra Phillips
Kimberly Brindley	Marty Hinson	Michael Railing
Darlene Brown	Steve Hopper	Ray Russell
Patrick Cockburn	Heather Jefferies	John Rust
Jean Coffee	Gayla Jestice	Tonya Scott
Chip Cook	Randall Kirby	Ricky Slack
Tina Farr, RN	Jason Lawson	Tom Swink
Mark Gammons	Christina Moody	Tommy Thompson, JD

JD16 (Cannon and Rutherford Counties)

Hugh Ammerman	Det. Andrea Knox	Lt. Britt Reed
Alison Asaro, MD	Jason Lamberth	Det. Tommy Roberts
Peggy Bratcher	Sgt. John Liehr	Audrey Sherer
Jennifer Croft	Toni McDaniel	Det. Kevin Stolinsky
Tina Farr, RN	Capt. Nathan McDaniel	Dwight Stone
Doris Denton	Lorraine MacDonald, MD	Kari Stevens
Dana Garrett	Nicole Miller	Lt. Monty Terry
Don Grisham, MD	Sgt. Paul Mongold	Michael Thomas, MD
Carl Hudgens	Sheneka Morgan	Sharon Woodard, RN
Jennings Jones	Mike Nunley	

JD17 (Bedford, Lincoln, Marshall, and Moore Counties)

Tammy Anderson	Mike Clements	Jill Murdock, RN
Sarah Bates, RN	Danny Cupples	Shaun Noblit
LeeAnne Boeringer	Jason Deal	Elizabeth Osborne
Cindy Bolton, RN	Stephanie Dunn	Kenneth Phelps, MD
Det. Scott Braden	Angie Faulkner	William Reuter
Debbie Broadway	Jeremy Ezell	Lang Smith, MD
Brian Bruce	Susan Ferencei	Kyle Spears, MD
Chad Brown	Vickie Groce	Denise Werner, MD
Stefanie Brown, RN	Penny Hawk	Jan Winters
David Brumley, DDS	Deborah Molder, RN	Richard Wright

JD18 (Sumner County)

Chief Kenny Armstrong	Tammy Kellogg	Sgt. Chris Shockley
Alison Asaro, MD	Chief Thomas King	Chief Richard Smith
Jay Austin	Jan Lovell	Inv. Emily Stockdale
Tim Bailey	Chief Mickey Miller	Ricky Troupe
Amy Burke-Salyers	Capt. Jeff Mingledorff	Det. Jim Vaughn
Denney Coarsey	Chief Joe Palmer	Ray Whitley, JD
Chief David Hindman	Morgan Radley	Sharon Woodard, RN
Chief Mark Jenkins	Scott Ryan	Tara Wyllie, JD

JD1901 (Montgomery County)

Alison Asaro, MD	Patrice Jessie	Mayme Siders
Eric Berg, MD	Stephen Kent	Maj. Justin Sterne
Col. David Brown, MD	Sgt. Vincent Lewis	Fred Smith
John Carney, JD	Kimberly Lund, JD	Joey Smith
Stacey Coulter	David Mendoza, MD	Sarah Wilkins
Mary Davila	Maj. Domenick Nardi	Sgt. Mark Wojanrek
John Downs, MD	Christopher Nolder	Danette T. Woodcock
Menzo Faassen	Gary Perry	Sharon Woodard, RN
Sgt. Maurice Hobbs	Sabrina Sanford	

JD1902 (Robertson County)

Alison Asaro, MD Jennifer Ashworth, MD Hunter Butler, MD Rebecca Chafatelli Regina Duffie	J. Scott Jordan Det. James Kendrick Det. Elizabeth Leonard Dana Hold, RN Nicole Martin	Dent Morris, JD Vanessa Watkins Sharon Woodard, RN
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JD20 (Davidson County)

D'yuanna Allen-Robb Vickie Blair- Fleming, LMSW Det. Sarah Bruner Allison Butler, RN Susan Campbell, MD Amy Campbell-Pittz Det. Ron Carter Valerie Cook Trevor Crowder Ashley Griffin	Leslie Howell Carol Jones, BSHA Atty. Robert Jones Det. Selene Julia Charlsi Legendre Tina Lester, RN, MSN Adele Lewis, MD Deborah Lowen, MD Brooke McKelvey, MPH Michael Meadors, MD Katy Miller, JD	Janet Nielsen, MA Renee Pratt, MPA Sue Ross, RNC, PNP William Paul, MD, MPH Sue Ross, RNC, PNP Danielle Russell, RN Tom Sharp Brad Strohler, MD John Vick, PhD Jennifer Weatherly, RN Lacey Wilkins, RN
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JD2101 (Hickman, Lewis, and Perry Counties)

Jim Bates LeeAnne Boeringer David Brumley, DDS Mike Clements Robin Crowell, RN Danny Cupples DeAnna Darden-Carroll Stacey Edmondson Susan Franks	Jennifer Harris Zachary Hutchens, MD Felicia Love, RN Brandi Mackin, RN Deborah Molder, RN Fred Moore Shaun Noblit Charles Pierce Kim Primm	Gary Rogers Lang Smith, MD Jim Tanner Valerie Votaw Renee Whaley, RN Tabitha Whitehead Jan Winters
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JD2102 (Williamson County)

Sgt. Charles Achinger Alison Asaro, MD Stokey Bourque Det. Robert Carden Regina Duffie Chief Terry Harris Det. Phil Jaroz Sgt. Tommy Justus Daniel Kimes	Shannon Lankford Feng Li, MD Jeff Long Zannie Martin Tamara Mick Catherine Montgomery Dept. Chief Greg Policastro Det. Tameka Sanders Samuel Smith, MD	Capt. Cindy Strange Tamara Swinson Lt. Monty Terry Richard Westgate, RN Det. Justin Whitwell Lt. John P. Wood Sharon Woodard, RN Brittany Youngblood
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JD2201 (Giles, Lawrence, and Wayne Counties)

Pam Arnell	Larry Glass	Lt. Joel Robison, CID
LeeAnne Boeringer	Roy Griggs	Denise Sanders
Tracy Brumit	Lisa Hardison	Lang Smith, MD
David Brumley, DDS	Brigitte Massey	Keith Tolar MD
Mike Clements	Janet McAlister	Devin Toms
Cindy English	Deborah Molder, RN	Jan Winters
Joe Fite, MD	Shaun Noblit	
Susan Franks	Sherry Ray	

JD2202 (Maury County)

LeeAnne Boeringer	Sgt. Jeff Duncan	Deborah Molder, RN
David Brumley, DDS	Susan Ferencei	Shaun Noblit
Mike Clements	Jason Griggs	Lang Smith, MD
Elizabeth Cook	Barbara Heier, RN	Stephanie H. Williams
Danny Cupples	E. Ann Ingram	Lisa Williamson
Det. Terry Dial	Gayle Martin	Jan Winters

JD23 (Cheatham, Dickson, Houston, Humphreys, and Stewart Counties)

Darrell Allison	Kimberly Davis	Daniel Martin
Karen Anderson	Regina Duffie	Kay Marshock
Alison Asaro, MD	Christy Espey	Inv. Ken Miller
Det. Mark Bausell	Det. James Eubank	Robert Rhea
Marion Biggs	Maggie Filson	Capt. Randy Starkey
Sgt. J.D. Blackwell	Lt. Shannon Heflin	Kevin Suggs
Jo Brashers	Lt. Brian Hooper	Vanessa Watkins
Comm. Eddie Breeden	Det. Johnny Hunter	Judy Wilson
Alana Carmical	Lawrence Jackson, MD	Sharon Woodard, RN
Larina Corlew	Robert Lee	
Chris Davis	Venk Mani, MD	

JD24 (Benton, Carroll, Decatur, Hardin, and Henry Counties)

Shavetta Conner, MD	Lt. Johnny Hill	Danny Tucker
Phillip Christopher	Ricky Inman	James Vinson
Christy Espey	Diane Oman	Inv. Gary Vandiver
Bruce I. Griffey	Trooper Ollie Parker	Becky Butler White
Anjeanette Hall, MD	Kathy Smith	Johnny Wilson

JD25 (Fayette, Hardeman, Lauderdale, McNairy, and Tipton Counties)

Kinney Bridges	Bob Gray	James Shelton
Christy Chandler	Richard Griggs	Kathy Smith
Falen Chandler	Ginny Jaco	Det. Sheri Wassel
Karen Codjoe, MD	Linda F. Moss	Inv. David Webb
Shavetta Conner, MD	Kaleb Sanders	
Det. Scottie DeLashmit	Rives Seay	

JD26 (Chester, Henderson, and Madison Counties)

Inv. David Dowdy	Capt. Jeff Fitzgerald	Amanda Saltzman
Amy Clanton	Donna Heatherington	Shanna Shearon, MPH
Inv. David Dowdy	Sgt. Danielle Jones	Andrew Smith
Mary Beth Duke	Rodger Jowers	Lt. Felicia Stacy
Christy Espey	Atty. Stuart Mills	Lt. Brad Wilbanks
Harlin Fesmire	Lisa Piercey, MD	Tina Williams, PhD

JD27 (Obion and Weakley Counties)

Shavetta Conner, MD	Laura Toney	Inv. Candice Winstead
Christy Espey	Kathy Smith	Inv. Angie Workman
Lt. Phillip A. Gibson	Tommy Thomas	Rick Workman
Keith Jones	Chief Randall Walker	

JD28 (Crockett, Gibson, and Haywood Counties)

Inv. Taylor Atkins	Christy Espey	Elashia Ramsey
Gary Brown, JD	Chief Roger Jenkins	David Smith
Shavetta Conner, MD	Inv. Dennis Mitchell	Kathy Smith
John Copeland	Tonika Noble	Det. Andrew Whitehead
Tony Emison, MD	Lt. Michael Phillips	

JD29 (Dyer and Lake Counties)

Phil Bivens, JD	Charles Latimer	Kathy Smith
Sheriff Jeff Box	Chief James Medling	Lisa Stanley, RN
John Cummings, MD	Jack Mauldin	
Shavetta Conner, MD	Jessica Roser, RN	Chief Charles Stewart
Chief Dep. Joe England	Chad Sipes	Capt. Billy Williams
Christy Espey		

JD30 (Shelby County)

Patricia Bafford, Ed.D.	Dep. Chief Jim Harvey	Vanessa Roberts
Jamila Batts, RN	Susan Helms, RN	Col. Mike Ryall
Lee Branch	Gannon Hill	Andrea Sebastian
Sgt. D. Brunson	Ginny Hood	James Sewell
Mark Bugnitz, MD	Paula Humphrey	Carrie Shelton
Karen Chancellor, MD	Pamela Kiestler	Sam Sheppard
Eric Christensen, JD	Karen Lakin, MD	Ajay Talati, MD
Ronald Collins	Jim Logan	Michelle Taylor
Joshua Corman	Jason Martin	Det. Jason Valentine
Meg Harmeier	Katie McKinnie	Denise Webb
DeShawn Harris	Helen Morrow, MD	Brandi Willis
Sgt. Paula Harris	Jennifer Nichols, JD	
Chief Andrew Hart	Tully Reed	

JD31 (Van Buren and Warren County)

Peggy Bratcher
Faye Braxton
Eddie Carter
Jean Coffee
Chip Cook
Tina Farr, RN
Doris Denton

Andrea Fox
Pam Gannon
Brian Madewell
Jackie Mathney
Thomas Miner
Lynn Mitchell
Charles Morgan, MD

James Payne
Jacquelin Powell
RosseAnn Riddle
Karen Roper
John Rust
Tonya Scott
Lisa Zavogiannis, JD

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.