Child Mortality in Tarrant County

November 2018

Tarrant County Public Health

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I. Introduction

Child mortality is a fundamental indicator used to monitor population health around the world. The rate of child deaths offers insight into a community's overall well-being and is a proxy for personal, social, economic, political, and environmental health. Child mortality tells the story of how well we care for the most vulnerable among us.

Multiple organizations and stakeholders in Tarrant County are working together to reduce child mortality and implement prevention strategies in the community. An instrumental component of these efforts is the Tarrant County Child Fatality Review Team (CFRT). This multidisciplinary team conducts an in-depth review of a subgroup of all recent child deaths (aged 0-17 years) in Tarrant County. ***Since the findings from the CFRT are based on a subgroup of child deaths, they do not reflect or summarize all child deaths in Tarrant County.*** However, the reviewed cases provide additional details and specific information that cannot be derived from death certificates.

In addition to the CFRT, there is a Tarrant County Fetal and Infant Mortality Review (FIMR) team that reviews fetal and infant deaths (aged less than one year) in a similar process. While this report includes deaths within the FIMR age range, findings from the FIMR are presented in a separate report specifically on fetal and infant mortality.

Since mortality rates and leading causes of death during the first year of life differ greatly from those aged 1 to 17 years, results based on those age groups are presented separately to provide a more applicable view of child mortality in Tarrant County.

The primary purpose of this report is to give an overview of child mortality in Tarrant County and present current findings and recommendations from the Tarrant County CFRT. These results illuminate opportunities for program and policy development in order to reduce risk and prevent deaths among children throughout our county. Individuals, agencies, and organizations can utilize these data to engage the community and support their efforts in addressing child mortality.

Methods

Child deaths (aged 1-17 years) were collected from the underlying cause of death database in Wide-ranging Online Data for Epidemiologic Research (WONDER) from the U.S. Centers for Disease Control and Prevention (CDC) using the 113 selected causes of death for all ages in the International Classification of Diseases, Tenth Revision (ICD-10). The causes of death were analyzed overall and stratified by gender, race/ethnicity, and age group. Five years of deaths were combined (2012-2016) to minimize suppression of data from the database. Five-year rolling rates from 2008-2016 were used for trend analyses, again due to suppression of data for individual years.

Infant deaths (aged <1 year) were analyzed overall using the 130 selected causes of infant death in the ICD-10 and included data from 2012-2016. Data from the Texas Department of State Health Services (DSHS) were obtained for the years 2012-2015. Data from CDC WONDER were obtained for 2016, since those data were not yet available from DSHS.

Due to the number of deaths per age group and the causes of death, it was necessary to combine multiple years of data and utilize rolling rates in order to reduce data suppression. The number of infant deaths was large enough for one year of data (2016) while other forms of data required multiple years in order to stratify by demographic factors.

Data from the CFRT cases were provided by the CFRT Coordinator and the National Center for Fatality Review and Prevention (CFRP) database. The team reviewed 72 cases among children aged 0-17 years in 2016-2017. Results from 63 of the 72 cases are included in this report. The remaining nine cases include natural and undetermined deaths. These were not highlighted in the report because they were not in the top five causes of death. While common characteristics among CFRT cases are presented, any case information that applies to less than five cases was suppressed to protect confidentiality. However, even if case numbers were greater than five, results may be suppressed to prevent inadvertent disclosure through subtraction.

Limitations

While vital events data are collected using a reliable and systematic reporting process, there are still limitations with using death certificate data to monitor mortality outcomes. Subjectivity among the physician or medical examiner may occur when determining the true cause of death, resulting in potential misclassification due to the influence of social or legal conditions surrounding the death. Classification bias may be more likely among child deaths, with providers selecting an underlying cause of death they feel may ease grief or stigma for parents. The underlying cause of death may also be influenced by the level of medical investigation and whether an autopsy was performed. Autopsies are more common when an unnatural cause of death is suspected, therefore providing more pertinent information for death classification than deaths thought to be from natural causes.

Coding errors may occur when deciding which ICD-10 category best fits the cause of death found on the death certificate. Data entry and processing errors may also occur when vital events data are compiled, resulting in contradictory outcomes when analyzing cause of death, demographic characteristics, or geographic area.

Findings provided in this report from the Tarrant County CFRT are limited and should be considered with caution. They do not represent all child deaths in our community since the team only reviews deaths considered to be preventable. These are typically deaths from suicide, homicide, and unintentional injury. The team also reviews sleep-related deaths regardless of manner of death and all undetermined deaths. Another limitation is that findings only include data from cases reviewed during 2016-2017. Due to the limited number of cases, percentages and stratifications are not provided; therefore, the findings are limited in scope and detail. As additional cases are reviewed over time, more detailed information will be specified. Because of the impact of unknown and missing data, it is important not to sum or subtract values provided in this report in an attempt to disclose withheld values, especially when categorical results are presented.

II. Child Fatality Review Team (CFRT)

The National Center for Fatality Review and Prevention (CFRP) is the primary organization and data center for state and local review teams all over the United States. Tarrant County has a Child Fatality Review Team (CFRT) that reviews child deaths (aged 0-17 years) and a Fetal and Infant Mortality Review (FIMR) team that reviews infant deaths (aged <1 year). The Tarrant County Medical Examiner's office started the CFRT in 1993 and Tarrant County Public Health became the host agency in 2016. Cases reviewed by these teams are entered into the national CFRP database and the Department of State Health Services (DSHS) uses the data to report on child mortality throughout the state of Texas.

The review process leads to better identification of modifiable risk factors within the community. These risk factors may include systems, education, behaviors, and environment. The CFRT formulates

recommendations, based on the reviewed cases and local trends on child deaths, in order to modify the risk factors that lead to child death. Recommendations are shared with stakeholders, community leaders, and DSHS for review and implementation.

The CFRT is an interagency approach in which a child's death is analyzed by a multidisciplinary team. This team includes representatives from community agencies such as, Child Protective Services (CPS), child advocacy centers, juvenile probation, legal and judicial system officers, Medical Examiner's office (ME), Emergency Medical Services (EMS), law enforcement, District Attorney's office (DA), healthcare providers, public health professionals, and other child advocacy groups. The mandate of the CFRT is to advance understanding of how and why children die, to improve child health and safety, and to prevent deaths and injuries in the future.

The CFRT has provided valuable information on sudden death in infancy, unintentional injuries, suicide, homicide, and deaths due to maltreatment. Information about the circumstances of a death can influence and improve potential prevention activities, medical and mental health best practices, child welfare policies and procedures, and legislation relevant to public health and safety.

CFRT Methods

The purpose of the Tarrant County CFRT is to review Tarrant County child deaths (aged 0-17 years) that could have been prevented; therefore, they do not review *every* child death. The team reviews all non-natural deaths (suicide, homicide, and unintentional injuries), all sleep-related deaths regardless of manner of death, and all undetermined deaths based on the death certificate. The CFRT Coordinator will sometimes include cases that are potentially preventable natural deaths, such as asthma or an infection. Findings from the CFRT only apply to the subgroup of deaths that are reviewed. They are not applicable to all child deaths that occur in the county. The team reviewed 72 child deaths from July 2016 - December 2017.

Relevant information is obtained from the child's death certificate, autopsy report, hospital records, child protective services records, and law enforcement reports to determine the circumstances and preventability of the child's death. While preventability based on the death certificate determines which deaths will be reviewed, the team also has to agree on preventability using the additional information provided during the case review. The team considers deaths preventable when an individual or community could reasonably have done something that would have changed the circumstances that led to the child's death.

For each case reviewed, the CFRT Coordinator gives a brief description of the circumstances surrounding the death and members involved in the investigation provide their information in the order of responding to the scene, such as EMS or Fire, law enforcement, ME, healthcare providers, social services (CPS), public health, prosecuting attorney, and others. Members share their opinions, ask questions, clarify information, and discuss all aspects of the cases they review. Finally, the delivery of services and risk factors are analyzed, the group votes if the death was preventable or not, and they decide if acts of commission/omission caused or contributed to the death. In the event the group needs additional information in order to come to a decision on preventability, the team can continue the review of that case in a later meeting. Data are entered into the national CFRP database by the CFRT Coordinator for use at the state and national level. Data are analyzed internally by Tarrant County Public Health for use at the local level.

III. Glossary of Included CFRT Terms

Accidental Death – A manner of death indicating unintentional trauma. See **Manner of Death** and **Unintentional Death.**

Assault – The attempt to inflict bodily injury on another person, with unlawful force and the apparent ability to inflict the bodily injury unless stopped. Assault is both a crime and a tort (private/civil wrong).

Autopsy – The dissection of a dead body for the purpose of inquiring into the cause of death. Also, post mortem examination to determine the cause or nature of a disease. An autopsy is normally required by statute for violent, unexpected, sudden or unexplained deaths.

Biological Parent – A parent to whom a child is born. Also called "birth" or "natural" parent.

Cause of Death – The effect or condition that brought about the cessation of life (e.g., trauma, suffocation, cancer).

Child Abuse – Intentional injury to a child. Child abuse is any recent act or failure to act on the part of a parent or caretaker which results in death, serious physical or emotional harm, sexual abuse or exploitation; or an act or failure to act which presents an imminent risk of serious harm.

Congenital – Those mental or physical traits, malformations, disease, etc., that are present at birth. May be hereditary or due to some influence during gestation.

Death – The cessation of life, manifested in people by a loss of heart beat, absence of spontaneous breathing and the permanent loss of brain function; loss of life.

Death Certificate – Official document noting the cause and manner of death.

Fetal Death – Death of pregnancy after approximately 20 weeks.

Homicide – Death caused by another with the intent to kill or severely injure.

Injury – Refers to any force whether it be physical, chemical, thermal or electrical that results in harm or death.

Manner of Death – The official, vital statistics classification, whether natural, suicide, homicide, accidental or undetermined.

Natural Cause – Death resulting from inherent, existing conditions. Natural causes include congenital anomalies, disease, other medical causes and SIDS.

Preventable Death – A child's death is considered to be preventable if the community (through legislation, education, etc.) or an individual (through reasonable precaution, supervision or action) could have done that which could have changed the circumstances that led to the death.

Risk Factors – Refers to a person, thing, event, etc., that put an individual at an increased likelihood of incurring injury, disability or death.

Sudden Infant Death Syndrome (SIDS) – Sudden death of an infant that remains unexplained after a review of the medical history, a complete death scene investigation in which a thorough postmortem examination, including autopsy, fails to demonstrate an adequate cause. A diagnosis of exclusion can be made when no underlying cause of death can be identified. It is not caused by abuse or neglect.

Suffocation – Asphyxia caused by a general deprivation of oxygen either from obstruction of external airways or lack of breathable gas in the environment.

Suicide – Death of self-caused with intent.

Undetermined Death – Death where the manner of death is not clear.

Unintentional Death – Refers to the act that resulted in death being one that was not deliberate, willful or planned.

IV. Overview of Child Mortality in Tarrant County

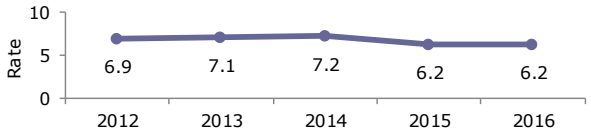
From 2012 through 2016, a total of 1,436 deaths were reported among Tarrant County children aged 0-17 years resulting in a mortality rate of 54.4 deaths per 100,000 population. Sixty-six percent of these deaths were infants aged less than one year (n=945) and 34% were children aged 1-17 years (n=491).

Infant Mortality (aged less than 1 year)

- During 2012-2016, the majority (66%) of all child deaths in Tarrant County were among infants
- Congenital malformations (birth defects) was the leading cause of death among Tarrant County infants aged less than one year with 22% of all infant deaths caused by birth defects
- In 2016, the infant mortality rate among Tarrant County residents aged less than one year was 6.2 deaths per 1,000 live births ***(NOTE: Infant death data for the year 2016 are provisional and subject to change. These data are not final and should be regarded with appropriate caution)***
- Tarrant County's infant mortality rate was higher than Texas and the U.S.
- The rate fluctuated over time but decreased 10% from 2012 to 2016
- Infant mortality was most common among very low birth weight babies (<1,500 g), males, non-Hispanic blacks, and those less than one day old

INFANT DEATHS (2016)[§]	
Number of deaths	177
Infant mortality rate (per 1,000 live births)	6.2
Change from 2012 to 2016	- 10.1%

5-Year Trend



Birthweight[†‡]	(Percent)	Infant Mortality Rate	
Very low birth weight	**(59.3)**	Tarrant	6.2
Low birth weight	(12.2)	Texas	5.7
Adequate birth weight	(28.5)	US	5.9

Gender	Number	(Percent)	Rate
Female	78	(44.1)	5.6
Male	**99**	**(55.9)**	**6.7**
Unknown	0		

Race/Ethnicity	Number	(Percent)	Rate
Hispanic	60	(34.1)	5.8
Non-Hispanic Black	**48**	**(27.3)**	**9.2**
Non-Hispanic White	58	(33.0)	5.3
Other/Multiracial	10	(5.7)	@

Age Group[‡]	Number	(Percent)	Rate
<1 day	**74**	**(43.0)**	**2.6**
1-6 days	29	(16.9)	1.0
7-27 days	20	(11.6)	0.7
28-364 days	49	(28.5)	1.7

Infant mortality rate (IMR) = the number of deaths among infants less than one year of age per 1,000 live births

Bold *= highest rate in each demographic category; @ = rate unstable for less than 20 cases*

[§] *2016 infant death data are preliminary and subject to change*

[†] *Very low birth weight (<1,500g), Low birth weight (1,500-2,499g), Adequate birth weight (2,500+g)*

[‡] *Birthweight and age at death data are from 2015 linked birth/infant death files*

Data sources: Centers for Disease Control and Prevention, Texas Department of State Health Services

Findings among infant deaths (aged <1 year) reviewed by the Tarrant County Child Fatality Review Team:

- The team reviewed 19 infant deaths (aged <1 year) in 2016-2017
- CFRT disagreed with and changed the official manner of death on two cases
- Most frequent manner of death was undetermined (n=17) with most being sleep-related (n=16)
- Most deaths were considered preventable by the team (n=17)
- Most deaths had supervision (n=17)
- Most supervisors were biological parents (n=15) and not impaired during the incident (n=11)
- Most incidents occurred in the child's home (n=15)

Sleep-related cases (n=16)

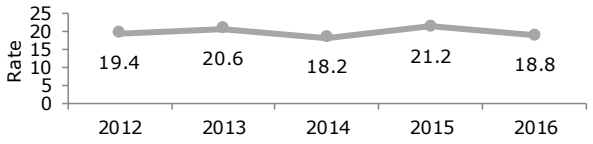
- Most cases were found in an adult bed (n=12) and sharing a bed with an adult (n=10)
- Most cases had access to a crib, bassinet, bed side sleeper, or baby box in the home (n=9)
- Among cases where sleep position information was available (n=11), most were put to sleep on their back (n=6), almost half were found on their side (n=5), a few were found on their stomach (n<5), and most had their airway fully obstructed by a person or object (n=7)
- Most cases were not put to sleep with a pacifier (n=12) or wrapped/swaddled in a blanket (n=10)

CHILD MORTALITY (AGED 1-17 YEARS)

- From 2012 through 2016, the child mortality rate among Tarrant County residents aged 1-17 years was 19.7 deaths per 100,000 residents
- The rate fluctuated over time but decreased 3% from 2012 to 2016
- Tarrant County's child mortality rate was lower than Texas and the U.S.
- The leading cause of death among Tarrant County children aged 1-17 years was unintentional injuries (accidents), comprising 29% of all deaths for this age group
- Child mortality was most common among males, non-Hispanic blacks, and 15-17 year-olds

CHILD DEATHS (2012-2016)	
Number of deaths	491
Rate (per 100,000 population)	19.7
Change from 2012 to 2016	-3.1%

5-Year Trend



Age Characteristics		Mortality Rate	
Mean	9 years	Tarrant	19.7
Median	9 years	Texas	20.5
Min-Max	1-17 years	US	19.8

Gender	Number	(Percent)	Rate
Female	202	(41.1)	16.5
Male	**289**	**(58.9)**	**22.7**
Unknown	0		

Race/Ethnicity	Number	(Percent)	Rate
Hispanic	152	(31.0)	16.1
Non-Hispanic Black	**117**	**(23.8)**	**26.7**
Non-Hispanic White	197	(40.1)	20.1
Other/Multiracial	25	(5.1)	18.0

Age Group	Number	(Percent)	Rate
1-4	163	(33.2)	28.4
5-9	83	(16.9)	11.1
10-14	87	(17.7)	11.7
15-17	**158**	**(32.2)**	**36.8**

Data for residents aged 1 to 17 years

***Bold** = highest rate in each demographic category*

Data source: Centers for Disease Control and Prevention, National Center for Health Statistics

Findings among child deaths (aged 1-17 years) reviewed by the Tarrant County Child Fatality Review Team:

- The team reviewed 53 child deaths (aged 1-17 years) in 2016-2017
- CFRT disagreed with and changed the official manner of death on two cases
- Most frequent manner of death was unintentional injuries (accidents) (n=19)
- Most deaths were considered preventable by the team (n=31)
- Most deaths did not need supervision (n=26) or had supervision (n=23)
- Most supervisors were biological parents (n=18) and not impaired during the incident (n=17)
- Most incidents occurred in the child's home (n=22)
- Most deaths did not occur during commission of another crime (n=41)

V. Leading Causes of Death among Children in Tarrant County

The following section ranks the five leading causes of death among children in Tarrant County, which differ between infants aged less than one year and children aged 1-17 years. Among children aged less than one year, rankings are presented overall and stratified by race/ethnicity. Among children aged 1-17 years, rankings are presented overall and stratified by gender, race/ethnicity, and age group. This information can help explain similarities and differences between subgroups of the population and what issues should be focused on for intervention, prevention, and education.

More detailed findings for each of the top five overall causes of death are presented for children aged 1-17 years and include relevant findings from cases reviewed by the CFRT. While these findings only describe a subgroup of all deaths, they do provide additional insight into the ranked causes of death.

Leading Causes of Death Summary

- The leading cause of death overall among infants (aged less than one year) was congenital malformations (birth defects)
- Congenital malformations (birth defects) occurred at a significantly higher rate overall among infants than the second leading cause of death
- Congenital malformations (birth defects) was the leading cause of death among infants across all race/ethnicity groups
- The leading cause of death overall among children (aged 1-17 years) was unintentional injuries (accidents)
- Unintentional injuries (accidents) occurred at a significantly higher rate overall among children than the second leading cause of death
- Unintentional injuries (accidents) was the leading cause of death among children regardless of gender, race/ethnicity, or age group

Table 1. Leading causes of death among infants aged <1 year overall and by race/ethnicity, Tarrant County, 2012-2016

Rank	Overall n (%)	Hispanic n (%)	Non-Hispanic Black n (%)	Non-Hispanic White n (%)
1	Congenital malformations, deformations, and chromosomal abnormalities (birth defects) 211 (22.3)	Congenital malformations, deformations, and chromosomal abnormalities (birth defects) 85 (25.0)	Congenital malformations, deformations, and chromosomal abnormalities (birth defects) 43 (15.8)	Congenital malformations, deformations, and chromosomal abnormalities (birth defects) 68 (24.0)
2	Disorders related to short gestation and low birth weight 136 (14.4)	Disorders related to short gestation and low birth weight 62 (18.2)	Sudden infant death syndrome 38 (14.0)	Sudden infant death syndrome 50 (17.7)
3	Sudden infant death syndrome 122 (12.9)	Sudden infant death syndrome 32 (9.4)	Disorders related to short gestation and low birth weight 35 (12.9)	Disorders related to short gestation and low birth weight 31 (11.0)
4	Newborn affected by maternal complications of pregnancy 91 (9.6)	Newborn affected by maternal complications of pregnancy 30 (8.8)	Newborn affected by maternal complications of pregnancy 34 (12.5)	Newborn affected by maternal complications of pregnancy 27 (9.5)
5	Newborn affected by complications of placenta, cord, and membranes 40 (4.2)	Newborn affected by complications of placenta, cord, and membranes 15 (4.4)	Newborn affected by complications of placenta, cord, and membranes 13 (4.8)	Bacterial sepsis of newborn 11 (3.9)

Infant death data are preliminary and subject to change; Number of deaths among Other race/ethnicity too small to report out

n = number of cases; % = percentage of all infant deaths aged <1 year 2012-2016;

Data source: Centers for Disease Control and Prevention, National Center for Health Statistics

Table 2. Leading causes of death among children aged 1 to 17 years overall and by gender, Tarrant County, 2012-2016

Rank	Overall n (% , rate)	Female n (% , rate)	Male n (% , rate)
1	Unintentional injuries (accidents) 140 (28.5, 5.6)	Unintentional injuries (accidents) 47 (23.3, 3.8)	Unintentional injuries (accidents) 93 (32.2, 7.3)
2	Malignant neoplasms (cancer) 56 (11.4, 2.2)	Malignant neoplasms (cancer) 27 (13.4, 2.2)	Malignant neoplasms (cancer) 29 (10.0, 2.3)
3	Intentional self-harm (suicide) 44 (9.0, 1.8)	Intentional self-harm (suicide) 20 (9.9, 1.6)	Assault (homicide) 27 (9.3, 2.1)
4	Assault (homicide) 42 (8.6, 1.7)	Congenital malformations, deformations and chromosomal abnormalities (birth defects) 17 (8.4, @)	Intentional self-harm (suicide) 24 (8.3, 1.9)
5	Congenital malformations, deformations and chromosomal abnormalities (birth defects) 34 (6.9, 1.4)	Assault (homicide) 15 (7.4, @)	Congenital malformations, deformations and chromosomal abnormalities (birth defects) 17 (5.9, @)

n = number of cases; % = percentage of all child deaths aged 1 to 17 years 2012-2016 per demographic category; rate per 100,000 population; @ = rate unstable for less than 20 cases

Data source: Centers for Disease Control and Prevention, National Center for Health Statistics

Table 3. Leading causes of death among children aged 1 to 17 years by race/ethnicity, Tarrant County, 2012-2016

Rank	Hispanic n (% , rate)	Non-Hispanic Black n (% , rate)	Non-Hispanic White n (% , rate)
1	Unintentional injuries (accidents) 44 (28.9, 4.7)	Unintentional injuries (accidents) 33 (28.2, 7.5)	Unintentional injuries (accidents) 54 (27.4, 5.5)
2	Malignant neoplasms (cancer) 21 (13.8, 2.2)	Assault (homicide) 19 (16.2, @)	Intentional self-harm (suicide) 27 (13.7, 2.8)
3	Assault (homicide) / Congenital malformations, deformations and chromosomal abnormalities (birth defects) 14 (9.2, @)	---	Malignant neoplasms (cancer) 23 (11.7, 2.3)
4		---	Congenital malformations, deformations and chromosomal abnormalities (birth defects) 12 (6.1, @)
5	Intentional self-harm (suicide) 12 (7.9, @)	---	---

n = number of cases; % = percentage of all child deaths aged 1 to 17 years 2012-2016 per demographic category; rate per 100,000 population; @ = rate unstable for less than 20 cases

--- = less than 10 deaths not reported to protect confidentiality; Selected case counts not reported to prevent inadvertent disclosure; Number of deaths among Other race/ethnicity too small to report

Data source: Centers for Disease Control and Prevention, National Center for Health Statistics

Table 4. Leading causes of death among children aged 1 to 17 years by age group, Tarrant County, 2012-2016

Rank	1 to 4 years n (% , rate)	5 to 9 years n (% , rate)	10 to 14 years n (% , rate)	15 to 17 years n (% , rate)
1	Unintentional injuries (accidents) 39 (23.9, 6.8)	Unintentional injuries (accidents) 22 (26.5, 2.9)	Unintentional injuries (accidents) 27 (31.0, 3.6)	Unintentional injuries (accidents) 52 (32.9, 12.1)
2	Malignant neoplasms (cancer) 21 (12.9, 3.7)	Malignant neoplasms (cancer) 17 (20.5, @)	---	Intentional self-harm (suicide) 39 (24.7, 9.1)
3	Congenital malformations, deformations and chromosomal abnormalities (birth defects) 19 (11.7, @)	---	---	Assault (homicide) 15 (9.5, @)
4	Assault (homicide) 17 (10.4, @)	---	---	Malignant neoplasms (cancer) 10 (6.3, @)
5	---	---	---	---

n = number of cases; % = percentage of all child deaths aged 1 to 17 years 2012-2016 per age group; rate per 100,000 population; @ = rate unstable for less than 20 cases

--- = less than 10 deaths not reported to protect confidentiality; Selected case counts not reported to prevent inadvertent disclosure

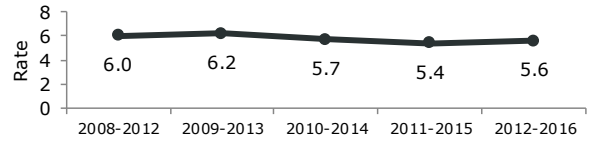
Data source: Centers for Disease Control and Prevention, National Center for Health Statistics

#1. UNINTENTIONAL INJURIES (ACCIDENTS) (AGED 1-17 YEARS)

- From 2012 through 2016, unintentional injuries (accidents) were the leading cause of death among Tarrant County children aged 1-17 years with a rate of 5.6 accidental deaths per 100,000 residents
- Motor vehicle accidents were the leading mechanism of accidents
- The rate of accidental deaths decreased 6.7% from the time period 2008-2012 to 2012-2016
- Accidental deaths were most common among males, non-Hispanic blacks, and 15-17 year-olds

UNINTENTIONAL INJURIES (ACCIDENTS) (2012-2016)	
Number of deaths	140
Rate (per 100,000 population)	5.6
Change from 2008-2012 to 2012-2016	-6.7%

5-Year Rolling Trend



Leading Mechanisms[¶]	Number	(Percent)	Rate
MVA	**60**	**(42.9)**	**2.4**
Drowning/Submersion	42	(30.0)	1.7

Gender	Number	(Percent)	Rate
Female	47	(33.6)	3.8
Male	**93**	**(66.4)**	**7.3**

Race/Ethnicity	Number	(Percent)	Rate
Hispanic	44	(31.4)	4.7
Non-Hispanic Black	**33**	**(23.6)**	**7.5**
Non-Hispanic White	54	(38.6)	5.5
Other/Multiracial	9	(6.4)	@

Age Group	Number	(Percent)	Rate
1-4	39	(27.9)	6.8
5-9	22	(15.7)	2.9
10-14	27	(19.3)	3.6
15-17	**52**	**(37.1)**	**12.1**

Data for residents aged 1 to 17 years

Bold *= highest rate in each demographic category; @ = rate unstable for less than 20 cases*

[¶] Motor vehicle accidents (MVA) (ICD-10 codes: V02-V04,V09.0,V09.2,V12-V14,V19.0-V19.2,V19.4-V19.6, V20-V79,V80.3-V80.5,V81.0-V81.1,V82.0-V82.1,V83-V86,V87.0-V87.8,V88.0-V88.8,V89.0,V89.2)

[Ŧ] Drowning/Submersion (ICD-10 codes: W65-W74)

Data source: Centers for Disease Control and Prevention, National Center for Health Statistics

Findings from the Tarrant County Child Fatality Review Team:

- The team reviewed 20 unintentional injury (accident) cases in 2016-2017
- The most common type of accident reviewed by the team was motor vehicle (n=10)
- Most deaths were considered preventable by the team (n=12)

Motor vehicle cases (n=11)

- Most frequent manner of death was accidents (n=10)
- Most deaths were considered preventable by the team (n=7)
- Cases were often drivers in the vehicle (n=5) and were in a car (n=5)
- Most incidents involved one vehicle (n=6) and normal driving conditions (n=9)
- Most common collision type was when the child was in/on a vehicle that struck a person/object (n=5)
- Almost half of incidents involved seat belts being present but not used (n=5)
- Most common contributing causes were speed, driver distraction, and recklessness (all n<5)

Drowning cases (n=7)

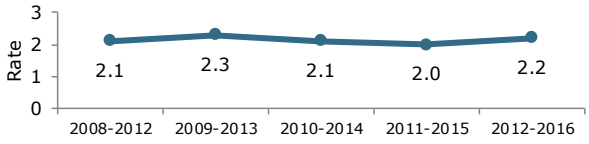
- Most deaths were considered preventable by the team (n=5)
- Most incidents occurred in pools, hot tubs, and spas (n<5)
- Often cases could not swim (n=5) and did not have supervision but needed it (n<5)

#2. Malignant Neoplasms (Cancer)
(Aged 1-17 Years)

- During 2012-2016, malignant neoplasms (cancer) was the second leading cause of death among Tarrant County children aged 1-17 years with a rate of 2.2 cancer deaths per 100,000 residents
- Cancer of the brain and central nervous system was the leading type of cancer death
- The 5-year rolling rate was relatively stable from the time period 2008-2012 to 2012-2016
- Cancer deaths were most common among males, non-Hispanic whites, and 1-4 year-olds

MALIGNANT NEOPLASMS (CANCER) (2012-2016)	
Number of deaths	56
Rate (per 100,000 population)	2.2
Change from 2008-2012 to 2012-2016	+ 4.8%

5-Year Rolling Trend



Leading Types[μ¥]	Number	(Percent)	Rate
Brain/CNS	**20**	**(35.7)**	**0.8**
Lymphoid	15	(26.8)	@

Gender	Number	(Percent)	Rate
Female	27	(48.2)	2.2
Male	**29**	**(51.8)**	**2.3**

Race/Ethnicity	Number	(Percent)	Rate
Hispanic	21	(37.5)	2.2
Non-Hispanic Black	-	-	-
Non-Hispanic White	**23**	**(41.1)**	**2.3**
Other/Multiracial	-	-	-

Age Group	Number	(Percent)	Rate
1-4	**21**	**(37.5)**	**3.7**
5-9	17	(30.4)	@
10-14	8	(14.3)	@
15-17	10	(17.9)	@

Data for residents aged 1 to 17 years; "-" = deaths not reported to protect confidentiality and prevent inadvertent disclosure

Bold *= highest rate in each demographic category; @ = rate unstable for less than 20 cases*

[μ] *Malignant neoplasms of meninges, brain and other parts of central nervous system (CNS) (ICD-10 codes: C70-C72)*

[¥] *Malignant neoplasms of lymphoid, hematopoietic and related tissue (ICD-10 codes: C81-C96)*

Data source: Centers for Disease Control and Prevention, National Center for Health Statistics

Findings from the Tarrant County Child Fatality Review Team:

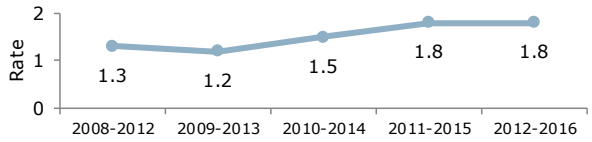
- No malignant neoplasm cases were reviewed

#3. INTENTIONAL SELF-HARM (SUICIDE) (AGED 1-17 YEARS)

- During 2012-2016, intentional self-harm (suicide) was the third leading cause of death among Tarrant County children aged 1-17 years with a rate of 1.8 suicides per 100,000 residents
- Suffocation was the leading mechanism of suicide
- The rate of suicide deaths increased 38.5% from the time period 2008-2012 to 2012-2016
- Suicide was most common among males, non-Hispanic whites, and 15-17 year-olds

INTENTIONAL SELF-HARM (SUICIDE) (2012-2016)	
Number of deaths	44
Rate (per 100,000 population)	1.8
Change from 2008-2012 to 2012-2016	+ 38.5%

5-Year Rolling Trend



Leading Mechanisms[≠€]	Number	(Percent)	Rate
Suffocation	**25**	**(56.8)**	**1.0**
Firearm	12	(27.3)	@

Gender	Number	(Percent)	Rate
Female	20	(45.5)	1.6
Male	**24**	**(54.5)**	**1.9**

Race/Ethnicity	Number	(Percent)	Rate
Hispanic	12	(27.3)	@
Non-Hispanic Black	-	-	-
Non-Hispanic White	**27**	**(61.4)**	**2.8**
Other/Multiracial	-	-	-

Age Group	Number	(Percent)	Rate
1-4	-	-	-
5-9	-	-	-
10-14	-	-	-
15-17	**39**	**(88.6)**	**9.1**

Data for residents aged 1 to 17 years; "-" = deaths not reported to protect confidentiality and prevent inadvertent disclosure

***Bold** = highest rate in each demographic category; @ = rate unstable for less than 20 cases*

[≠] *Intentional self-harm (suicide) by hanging, strangulation and suffocation (ICD-10 code: X70)*

[€] *Intentional self-harm (suicide) by discharge of firearms (ICD-10 codes: X72-X74)*

Data source: Centers for Disease Control and Prevention, National Center for Health Statistics

Findings from the Tarrant County Child Fatality Review Team:

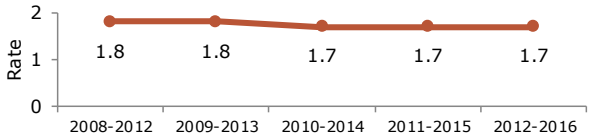
- The team reviewed 10 intentional self-harm (suicide) cases in 2016-2017
- Most deaths were considered not preventable by the team (n=6)
- Most common type of weapon used was a firearm (n<5) and most were handguns (n<5)
- Most firearms were stored in a parent's closet (n<5)
- Most common indicators were prior suicide threats (n=6), child talked about suicide (n=5), and prior attempts were made (n=5)
- Most common contributing factors were parents' divorce/separation (n=5) and argument with parents/caregivers (n<5)

#4. ASSAULT (HOMICIDE)
(AGED 1-17 YEARS)

- From 2012 through 2016, assault (homicide) was the fourth leading cause of death among Tarrant County children aged 1-17 years with a rate of 1.7 homicides per 100,000 residents
- Firearms were the leading mechanism of homicide
- The 5-year rolling rate was relatively stable from the time period 2008-2012 to 2012-2016
- Homicide was most common among males

ASSAULT (HOMICIDE) (2012-2016)	
Number of deaths	42
Rate (per 100,000 population)	1.7
Change from 2008-2012 to 2012-2016	- 5.6%

5-Year Rolling Trend



Leading Mechanisms[≡^]	Number	(Percent)	Rate
Firearm	18	(42.9)	@
Unspecified injury	12	(28.6)	@

Gender	Number	(Percent)	Rate
Female	15	(35.7)	@
Male	**27**	**(64.3)**	**2.1**

Race/Ethnicity	Number	(Percent)	Rate
Hispanic	14	(33.3)	@
Non-Hispanic Black	19	(45.2)	@
Non-Hispanic White	-	-	-
Other/Multiracial	-	-	-

Age Group	Number	(Percent)	Rate
1-4	17	(40.5)	@
5-9	-	-	-
10-14	-	-	-
15-17	15	(35.7)	@

Data for residents aged 1 to 17 years; "-" = deaths not reported to protect confidentiality and prevent inadvertent disclosure

Bold *= highest rate in each demographic category; @ = rate unstable for less than 20 cases*

[≡] *Assault by discharge of firearms (ICD-10 codes: U01.4,X93-X95)*

[^] *Assault by other and unspecified means and their sequelae (ICD-10 codes: U01.0-U01.3,U01.5-U01.9, U02,X85-X92,X96-Y09,Y87.1)*

Data source: Centers for Disease Control and Prevention, National Center for Health Statistics

Findings from the Tarrant County Child Fatality Review Team:

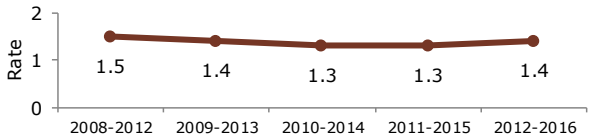
- The team reviewed 14 assault (homicide) cases in 2016-2017
- Most deaths were considered preventable by the team (n=10)
- Child abuse caused or contributed to the incident most frequently among 1-4 year-olds (n=5)
- Assault (not child abuse) caused or contributed to the incident most frequently among 15-17 year-olds (n<5)
- Most cases had no history of maltreatment (n=9)
- Most common type of weapon used was a firearm (n=7) and all were handguns
- Firearms were most often used against 15-17 year-olds (n=6) and physical abuse was most often used against 1-4 year-olds (n<5)
- Most perpetrators did not have a history of weapon-related offenses (n=8)
- Most common reason for using the weapon was an argument (n<5)

#5. CONGENITAL MALFORMATIONS (BIRTH DEFECTS)
(AGED 1-17 YEARS)

- During 2012-2016, congenital malformations (birth defects) was the fifth leading cause of death among Tarrant County children aged 1-17 years with a rate of 1.4 deaths per 100,000 residents
- Defects of the circulatory system was the leading type of birth defect
- The 5-year rolling rate was relatively stable from the time period 2008-2012 to 2012-2016

BIRTH DEFECTS (2012-2016)	
Number of deaths	34
Rate (per 100,000 population)	1.4
Change from 2008-2012 to 2012-2016	- 6.7%

5-Year Rolling Trend



Leading Types#	Number	(Percent)	Rate
Circulatory system	14	(41.2)	@

Gender	Number	(Percent)	Rate
Female	17	(50.0)	@
Male	17	(50.0)	@

Race/Ethnicity	Number	(Percent)	Rate
Hispanic	14	(41.2)	@
Non-Hispanic Black	-	-	-
Non-Hispanic White	12	(35.3)	@
Other/Multiracial	-	-	-

Age Group	Number	(Percent)	Rate
1-4	19	(55.9)	@
5-9	-	-	-
10-14	-	-	-
15-17	-	-	-

Data for residents aged 1 to 17 years; "-" = deaths not reported to protect confidentiality and prevent inadvertent disclosure

@ = rate unstable for less than 20 cases

 # Congenital malformations of the circulatory system (ICD-10 codes: Q20-Q28)

Data source: Centers for Disease Control and Prevention, National Center for Health Statistics

Findings from the Tarrant County Child Fatality Review Team:

- No congenital malformation cases were reviewed

VI. CFRT Recommendations

The final product of the Tarrant County CFRT process is the submission of recommendations to local, state, and national leaders. The reviewed cases inform these recommendations and highlight changes needed to improve safety and reduce child mortality in the community.

Six recommendations resulted from the Tarrant County CFRT voting meeting that included cases reviewed in 2016-2017. Recommendations are shared by CFRT members in their areas of influence, with community partners and stakeholders, and local leadership in Tarrant County. They are also submitted to the state CFRT Coordinator who shares them with the state leadership team. This team then votes on all of the submitted recommendations in the state and the selected list goes to the legislative body of Texas.

The Tarrant County CFRT created these recommendations using the 72 cases reviewed from 2016-2017:

1. Consistent messaging by birth hospitals, child birth classes, etc. on the dangers of an unsafe sleep environment to include the risk of bed sharing.
2. Improved coordination with hospital ER's, medical examiners, law enforcement and CPS following a suspicious death.
3. All firearms must be stored with a lock in place in homes where a child under 18 resides.
4. Health care providers will conduct an infant sleep environment safety assessment and distribute "Safe Sleep" educational materials at every office visit.
5. Enforcement of pool safety standards and prompt investigation of pool violations.
6. Public awareness campaigns and affordable water safety classes for parents of young children emphasizing constant undistracted adult supervision and use of approved floatation devices.

VII. Tarrant County CFRT Participating Agencies

CFRT Coordinator- Patricia Shearin
Tarrant County Public Health

Alliance for Children
Arlington Police Department
Baylor Scott and White Hospital
Benbrook Police Department
Challenge of Tarrant County
Child Protective Services
City of Fort Worth
Commissioner Brooks' Office
Consumer Product Safety Commission
Cook Children's Medical Center
Emergency Physician Advisory Board
Euless Police Department
Everman Police Department
Fort Worth Fire Department
Fort Worth Independent School District
Fort Worth Police Department
Grapevine Police Department
Haltom City Police Department
John Peter Smith Hospital
Keller Police Department
Mansfield Police Department
MedStar
Mental Health America
MHMR Tarrant County
One Safe Place
Saginaw Police Department
Southlake Police Department
Swim Safe Fort Worth
Tarrant County District Attorney's Office
Tarrant County Juvenile Services
Tarrant County Medical Examiner's Office
Tarrant County Public Health
Tarrant County Sheriff's Office
Texas Department of State Health Services
Texas Department of Transportation
Texas Health Resources
Watauga Police Department

Tarrant County Public Health

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