



CFRT

Harris County
Child Fatality Review Team

Harris County Child Fatality: A Decade in Review

2008 – 2017

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The HCCFRT membership as of June 2020 included professors of pediatrics, public health pediatrics specialists, social workers (medical, clinical, and hospital), a psychiatrist specializing in child trauma and abuse, injury prevention specialists, a director of access for mental health services, an assistant district attorney, a district attorney investigator, a domestic violence prevention specialist, a community outreach coordinator for emergency services, an assistant medical examiner, an early childhood programs director, a police lieutenant, child abuse pediatricians, a psychologist specializing in pediatric suicide, child safety specialists, a child fatality investigator, a product safety investigator, and others. They represent the following organizations (alphabetical, not a comprehensive list of member organizations):

- Baylor College of Medicine
- Baylor University Garland School of Social Work Houston Campus
- CPS Integrated Health Services Division Clinic
- The Children's Assessment Center
- Children's Memorial Hermann Hospital
- The Harris Center for Mental Health and IDD
- Harris County District Attorney's Office
- Harris County Domestic Violence Coordinating Council
- Harris County Emergency Corps
- Harris County Institute of Forensic Sciences
- Harris County Public Health
- Houston Police Department, Special Victims Division, Crimes Against Children Unit
- Texas Child Fatality Review Team: two members
- Texas Children's Hospital
- Texas Department of Family and Protective Services, Child Protective Services Division
- United States Consumer Product Safety Commission
- University of Houston Graduate College of Social Work, Healthy Start Program
- University of Texas Health Science Center at Houston

While these organizations and others have worked to review fatality cases and identify opportunities for new and changed policy to prevent future fatalities, the specific prevention concepts contained within the report are not necessarily representative of every institution's views.

Note on Harris County child fatality review data

The Harris County child fatality data presented in this report is derived from the child death case reviews conducted by the HCCFRT from 2008-2017. The data used for review is from the Harris County Institute of Forensic Science (HCIFS: medical examiner's office), hospitals and pediatric practices within Harris County, emergency services, Child Protective Services, the District Attorney's Office, and various law enforcement agencies in the area.

Because of the way the data are collected, we do not have all of the specific breakdowns by ethnicity. We receive the information on race/ethnicity categorized as the following: Hispanic, White, Black, Asian, Native American, Other. Because the incidence rates are so low in Harris County among Asian, Native American, and other races of children, they are combined into a single category for this report labeled "other".

Note on accessibility

To make this report more accessible to the blind and visually impaired, the information within the figures and tables that may not be compatible with accessibility technology is also covered in the text of the document.

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EXECUTIVE SUMMARY

Harris County, Texas, which encompasses Houston, several surrounding suburbs, and some rural areas, is home to more than 1.25 million children. In fact, 1/6 of all children in Texas reside in Harris County. The Harris County Child Fatality Review Team (HCCFRT) is charged with comprehensively reviewing child fatality cases in Harris County due to non-natural causes of death, with a focus on identifying potential gaps and areas for prevention efforts. The HCCFRT has developed the following decade report covering data findings from the 10-year period 2008-2017.

From 2008-2017, there were 2,260 child fatalities due to non-natural causes. The three leading causes of non-natural deaths for children in Harris County were: [Infant sleep-related deaths \(32%\)](#), motor vehicle collisions (MVCs, 18.6%), and firearm-related deaths (13.8%). Over the past decade there has

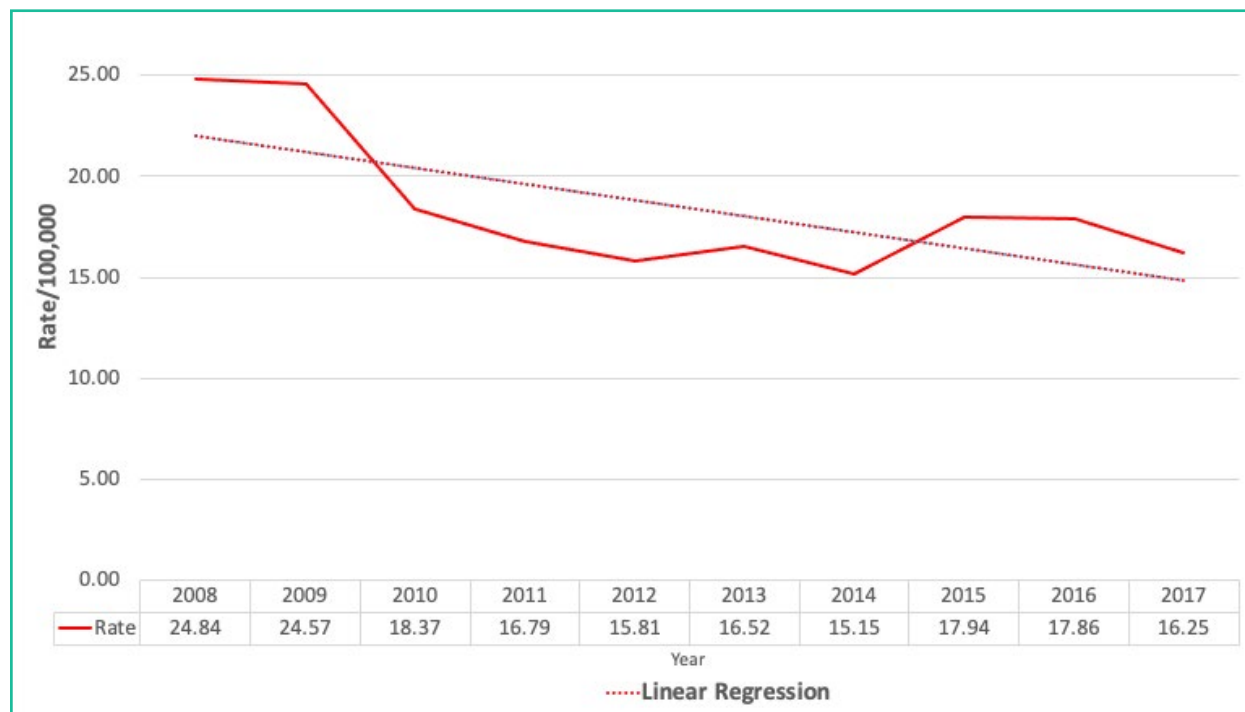


Figure 1. All non-natural fatalities of children under 18 years old, rate per 100,000, Harris County, 2008 – 2017

“Over the past decade there has been a 35% decrease in the overall rate of non-natural child deaths in Harris County.”

been a 35% decrease in the overall rate of non-natural child deaths in Harris County (Figure 1). Of note, there was a slight decline in the number of unsafe sleep environment infant deaths, a steady decline in MVCs, and a high rate of variation in firearm-related deaths. From 2015 to 2017 there was a surprising increase in suicides among adolescents, drownings, and firearm-related deaths. These variations caused deaths by suicide to surpass deaths by MVC for 13- to 17-year-olds in 2016 (Figure 2).

This report provides information on individual causes of death, risk and protective factors, prevention information, and resources. It is the hope of the HCCFRT that this report will be used to increase awareness of childhood injuries and violence, and to promote prevention efforts for the health and safety of the children in Harris County. Together, the HCCFRT is engaged in the development, implementation, and evaluation of prevention efforts to reduce child fatalities in Harris County. We will continue to partner with academic, governmental, and community partners to apply a public health framework for the prevention of child fatalities in Harris County and throughout the state of Texas.

“The number of 13 to 17 year olds that died by suicide surpassed the number that died by motor vehicle collisions starting in 2016.”



Figure 2. Fatalities by motor vehicle collision (MVC) vs suicide, rate per 100,000 13 – 17-year-old adolescents, Harris County, 2008 – 2017

GLOSSARY

These are the working definitions as used by HCCFRT.

Cause of Death – The illness, disease, or injury responsible for the death. Examples of natural causes of death include heart defects, asthma, and cancer. Examples of non-natural causes of death include blunt force impact, burns, and drowning.

Child – A person under 18 years of age.

Child Abuse – Injuries that are intentionally inflicted upon a child by another person.

Choking Death – Death due to oxygen deprivation caused by a foreign object in the windpipe.

Co-sleeping (bedsharing) – Any person (oftentimes a parent or sibling) and an infant sleeping together on any surface (bed, couch, chair).

Community violence - Exposure to intentional violent acts committed in public by unrelated individuals (e.g., riots, gang wars, drive-by shootings, and bullying).

Crushed Death – Death due to too much weight or force being applied to a body, which causes injury that leads to death (e.g., a building or stairwell collapsing, furniture falling on top of a child).

Drowning Death – Death due to the process of experiencing respiratory impairment from submersion/immersion in liquid.

Fall-Related Death – Death due to trauma experienced during or as a result of a fall.

Fire-Related Death – Death caused by exposure to flame or smoke.

Firearm-Related Death - Death caused by an injury resulting from the penetrating force of a bullet or other projectile shot from a gun.

Hanging Death – Death due to suspended strangulation.

HCCFRT – Harris County Child Fatality Review Team

Homicide – Death resulting from injuries inflicted by another person with the intent to cause fear, harm, or death.

Infant – A person younger than 1 year of age.

Manner of Death – The determination by the medical examiner of how the injury or disease led to death. Categories include natural, accident, suicide, homicide, and undetermined.

Motor Vehicle Collision (MVC) Death – Death caused by injuries (intentional or unintentional) from a motor vehicle collision, including injuries to motor vehicle occupant(s), pedestrian(s), pedal cyclist(s), or other persons. Vehicles include anything motor driven, such as everyday cars and trucks on the road as well as motorcycles, all-terrain vehicles (ATV, UTV, 4-wheeler, etc.), dirt bikes, boats, golf carts, Segways, etc.

Neglect Death – Death due to failure to provide basic needs such as food, shelter, and medical care.

Non-natural Deaths – Deaths due to non-natural causes such as accidents, homicides, suicides, and deaths of undetermined manner. The HCCFRT also reviews infant deaths classified as SIDS, which has a natural manner assigned to it, but the circumstances are indistinguishable from many other infant sleep-related deaths classified as undetermined. This discrepancy in ruling comes from differences in practice among some medical examiners. The HCIFS is working toward a more unified approach to infant sleep-related death rulings in the future.

Other Death – Death due to a mechanism not described by any of the other definitions listed here. May also be used to represent several listed causes amalgamated because the individual numbers are too small and must be suppressed.

Overdose Death – Death due to injury to the body (poisoning) that happens when a substance is taken in excessive amounts.

Pediatric Vehicular Heatstroke Death – Death due to heatstroke that is caused by exposure to extreme temperatures experienced inside a vehicle.

Preventable Deaths – Death determined that may have been prevented by reasonable medical, social, legal, psychological, or educational intervention, which may include intentional or unintentional injuries, medical neglect, lack of access to medical care, neglect, and reckless conduct—including failure to supervise and failure to seek medical care, and premature birth associated with any of the preceding factors.

Sleep-Related Death – A sudden unexplained infant death (SUID) that occurs during an observed or unobserved sleep period or a death caused directly by unsafe sleeping environment (e.g., smothering, suffocation from getting wedged between the bed and another surface, etc.). May include SIDS, co-sleeping, and deaths with undetermined causes that happen while the infant is asleep.

Stabbing Death – Death due to injury produced by a penetrating object or weapon.

Strangulation Death – Death due to a form of asphyxia in which compression applied to the neck closes the blood vessels and air passages.

Sudden Infant Death Syndrome (SIDS) – Cause assigned to infant deaths that cannot be explained after a thorough case investigation including a scene investigation, autopsy, and review of the clinical history.

Suicide – Death from behavior where the intent is to cause one's own death.

Trauma Death – Death due to a traumatic injury with an undetermined manner when accident or homicide cannot be ruled out.

Undetermined (cause) – Deaths that the medical examiner is unable to determine what the cause of death was. A death may be listed as undetermined because information is lacking, incomplete, or conflicting. This is most often seen in infant sleep-related deaths.

Undetermined (manner) – Deaths that the medical examiner is unable to determine whether the manner of death was natural, an accident, a homicide or a suicide. A death may be listed as undetermined because information is lacking, incomplete, or conflicting. In some cases, a death is listed as undetermined because it is not clear if it was an intentional injury or an unintentional injury. For example, it may not be clear when a firearm-related death is due to an accident, a suicide, or a homicide.

Unsafe Sleeping Environment – An infant sleep environment that does not follow accepted standards, such as those listed by the American Academy of Pediatrics, e.g., blankets or pillows in the crib, sleeping on an adult bed, couch, swing, “napper,” or any other unapproved sleep surface, or the infant being placed face down to sleep instead of on their back.



WHAT IS A CHILD FATALITY REVIEW TEAM?

The Harris County Child Fatality Review Team (HCCFRT) was established in 1994 to provide the framework for a multidisciplinary, multiagency work group that reviews child deaths in Harris County utilizing the public health model of identifying and defining the problem, identifying risk and protective factors, developing and testing prevention strategies, and assuring strategy adoption.

In accordance with Texas Family Code 264.506,¹ the objective of all county Child Fatality Review Teams (CFRTs) is to decrease the incidence of preventable deaths for all persons under the age of 18 by:

- Providing assistance to investigations of child deaths;
- Promoting cooperation among agencies involved in responding to child fatalities;
- Developing an understanding of the causes and incidence of child deaths in the county or counties in which the review team is located;
- Recommending changes to agencies, through the agency's representative members, that will reduce the number of preventable child deaths; and
- Advising the state child fatality review committee on changes to law, policy, or practice that will assist the team and the agencies represented on the team in fulfilling their duties.

The CFRT performs this vital function by:

- Adapting and implementing, according to local needs and resources, the model protocols developed by the department and the state child fatality review committee;
- Meeting on a regular basis to review child fatality cases and recommending methods to improve coordination of services and investigations between agencies that are represented on the team;
- Collecting and maintaining data as required by the state committee;
- Reviewing and analyzing the collected data to identify any demographic trends in child fatality cases, including whether there is a disproportionate number of child fatalities in a particular population group or geographic area;
- Submitting to the vital statistics unit data reports on deaths reviewed as specified by the committee.

The CFRT is tasked with examining the information regarding all non-natural deaths of children by relevant agencies, professionals, and health care providers in order to determine if the death was preventable.

The Texas Family Code, Section 264.505, allows for the creation of this multidisciplinary and multiagency team to review child deaths in Harris County. This team includes criminal prosecutors involved in prosecuting crimes against children, a medical examiner, law enforcement agents, board-certified child abuse pediatricians, trauma and emergency medicine professionals, child educators, child mental health providers, public health professionals, child protective services specialists, child advocates, consumer-products safety specialists, and child abuse and injury prevention specialists.

According to Texas Department of State Health Services,² as of 2017 there were up to 83 CFRTs covering 211 of the state's 254 counties. Teams consisted of 1 to 24 counties and met as often as needed (from monthly to yearly), depending on the counties' child population size and need.



“More than 1/6 of all children in Texas live in Harris County”

DEMOGRAPHICS OF CHILDREN IN HARRIS COUNTY

The third most populous county in the United States, Harris County had a total estimated population of 4.63 million in 2017 and a child population of more than 1.25 million.³ Harris County’s population has grown dramatically over the past four decades-- from 2.8 million in 1990 to a projected 4.8 million in 2020. The region’s general population grew by nearly 17% during the 10-year reporting period 2008-2017.³ More than 1/6 of all children in Texas live in Harris County, the largest proportion of whom are Hispanic (52%), followed by White (21%), Black (18%), Asian (6%), and other races (3%) (Figure 3).

Furthermore, Houston is often marketed as “one of the most diverse cities in the US”⁴ with an estimated 145 different languages spoken by its residents. Nearly 44% of Harris County residents over age 5 speak a language other than English in the home.³ In 2017, the Houston Metropolitan Area was estimated to house 1.6 million immigrants, making it the fifth largest concentration of immigrants in any metropolitan area in the US, with one of the fastest growing population of immigrants.⁵ Additionally, the 2017 census estimated that 26.0% of Harris County residents were foreign-born, higher than the national and state averages of 13.7% and 16.9%, respectively.³ This reflects a growing national trend as the national population continues to diversify.

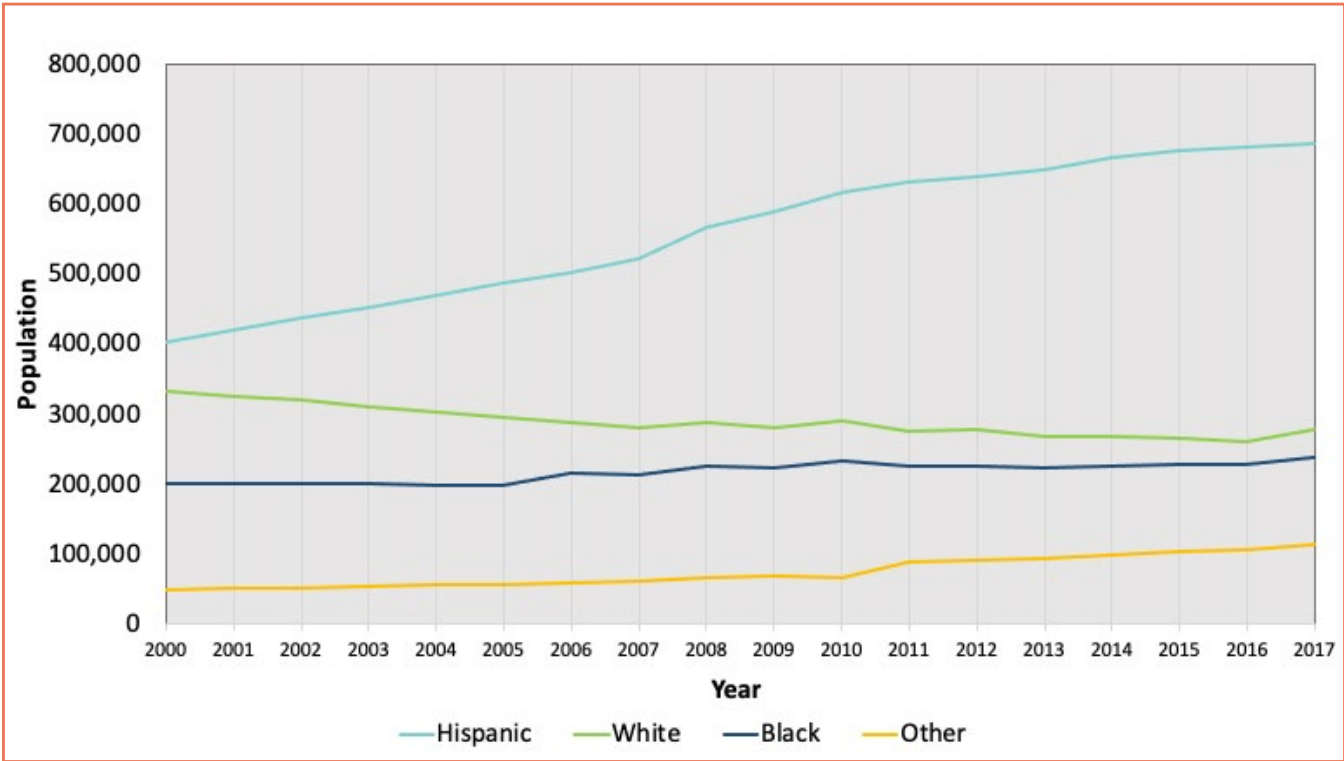


Figure 3. Harris County child population by race/ethnicity, children under 18 years, 2000 – 2017

HARRIS COUNTY CHARACTERISTICS:⁶

Percent of population under 18		Poverty by Race/Ethnicity (2017)			
26.3%	27.1%	36.3%	36.3%	15.5%	11.85%
Texas	Harris County	Hispanic	White	Black	Other

Population under 19 years with no health insurance coverage		Number of Harris County WIC recipients (2015)	
11.0%	12.1%	41,428	81,087
Texas	Harris County	Under 1 year	1-4 years

Texas Income	
Median household income	Estimated number of children living at or below the official federal poverty threshold
\$57,791	25% 22.9%
	OF CHILDREN UNDER 18 LIVE IN POVERTY IN
	HARRIS COUNTY TEXAS

SNAP recipients aged 0-17 (2015)	
2,094,210 (28.9%)	365,652 (30.1%)
TEXAS	HARRIS COUNTY

% Child population by race/ethnicity (2017)			
Hispanic	White	Black	Other*
49.2%	31.6%	11.7%	7.5%
IN TEXAS			
52.2%	21.1%	18.0%	8.6%
IN HARRIS COUNTY			

Percent Children experiencing Food Insecurity	
2010	2016
25.6%	23.0%
IN TEXAS	
25.5%	23.5%
IN HARRIS COUNTY	

* Other includes Asian, multiracial, Native American, or other race.

OVERVIEW OF HARRIS COUNTY CHILD DEATHS, 2008-2017

LEADING CAUSES OF DEATH

In 2008-2017, there were 2260 fatalities among children under the age of 18 in Harris County. The leading cause of death for all children under 18 was sleep-related deaths, followed by motor vehicle collision (MVC) related injuries, firearm-related deaths, drowning, and physical abuse. The number of sleep-related deaths were nearly equal to the second and third leading causes combined.

Figure 4 shows all non-natural causes of death for Harris County children under the age of 18 for 2008-2017. Causes of death that have counts less than 5 were suppressed and not represented in this graph.

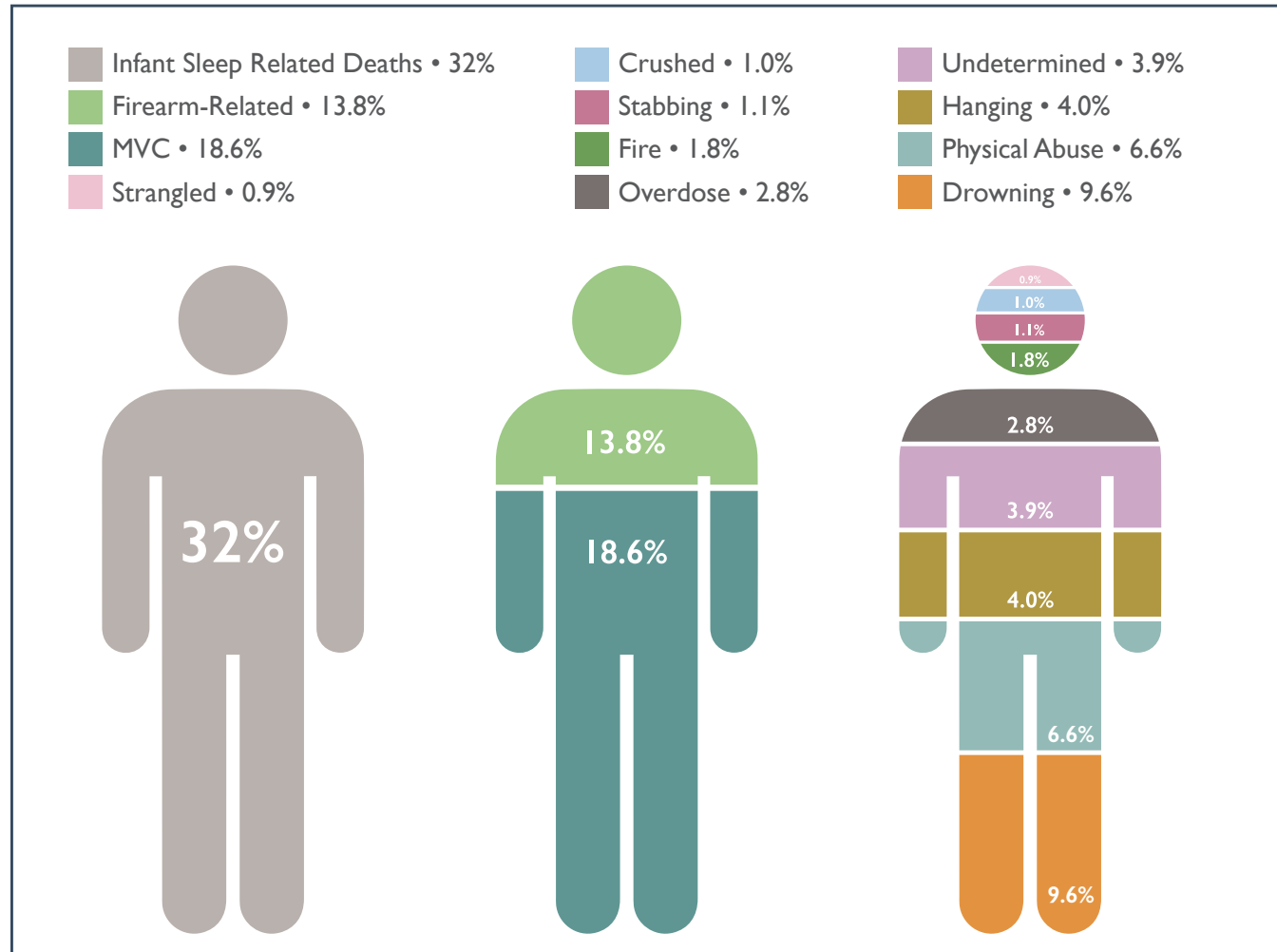


Figure 4. Leading causes of death, children under 18 years, Harris County, 2008 - 2017

“Children under one year of age account for 40% of all child fatalities.”

LEADING CAUSES OF DEATH BY AGE GROUPS

Children under 1 year of age account for 40% of all child fatalities. (Figure 5).

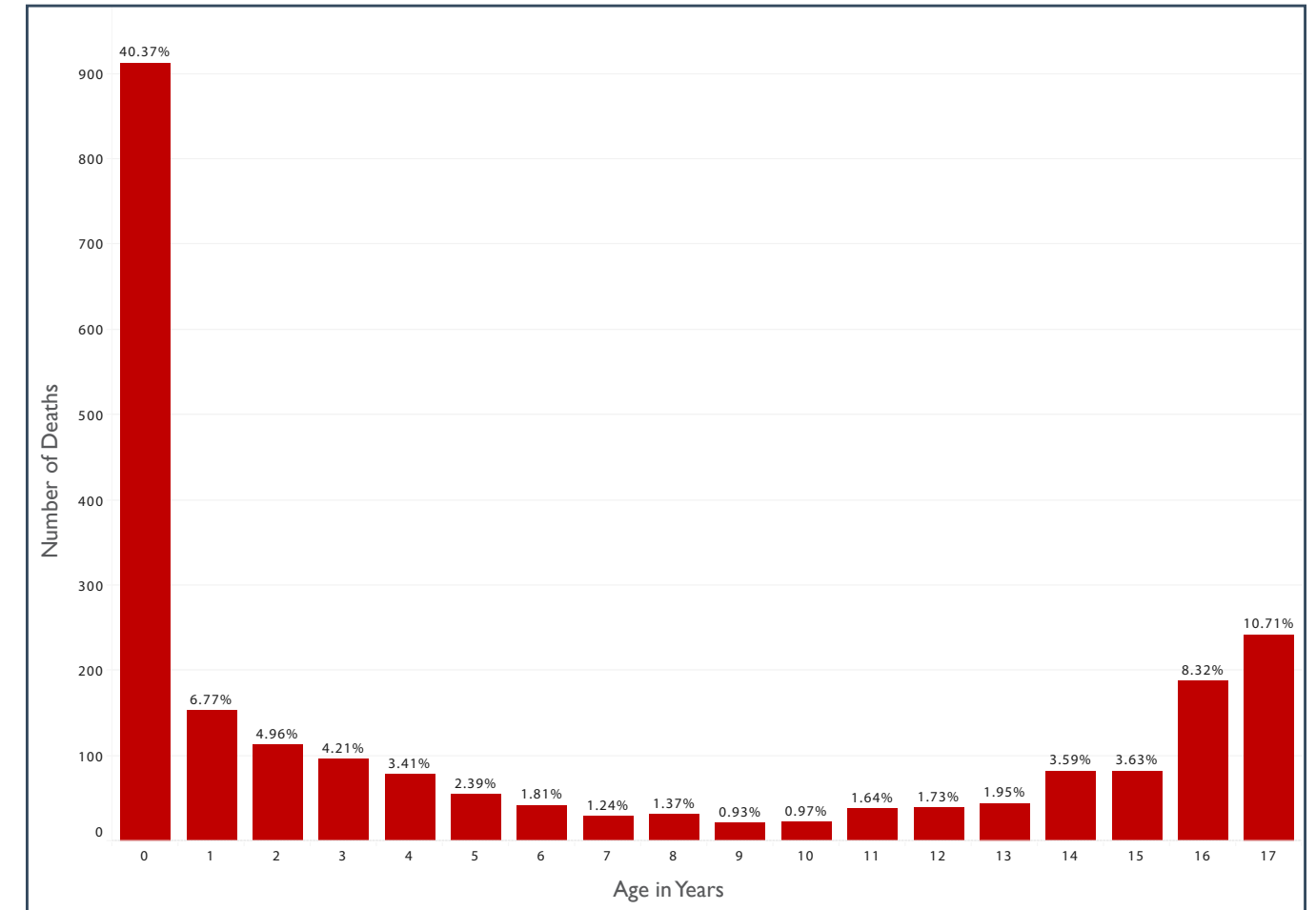


Figure 5. Number of deaths, all cause, by age, including percentage breakdown, Harris County, 2008 - 2017

LEADING CAUSES OF DEATH BY AGE GROUPS CONTINUED

- Choking
- Crushed
- Drowning
- Fall
- Fire
- Firearm-related
- Hanging
- Hot Car
- MVC
- Physical Abuse
- Neglect
- Other
- Overdose
- Sleep
- Stabbing
- Stangulation/Suff.
- Trauma
- Undetermined

Note: Age groupings were created by similarities of causes of death

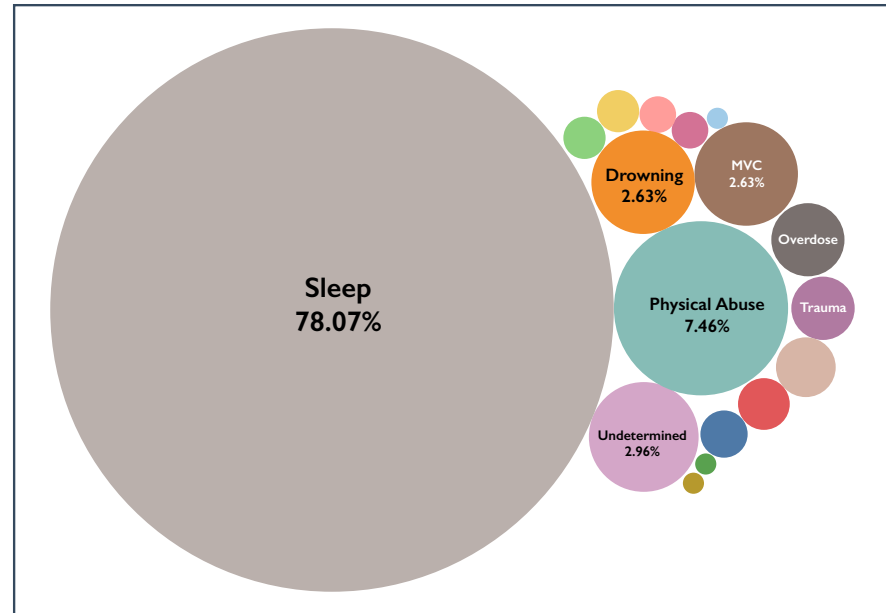


Figure 6a. Leading causes of death for children under 1 year, Harris County, 2008 – 2017

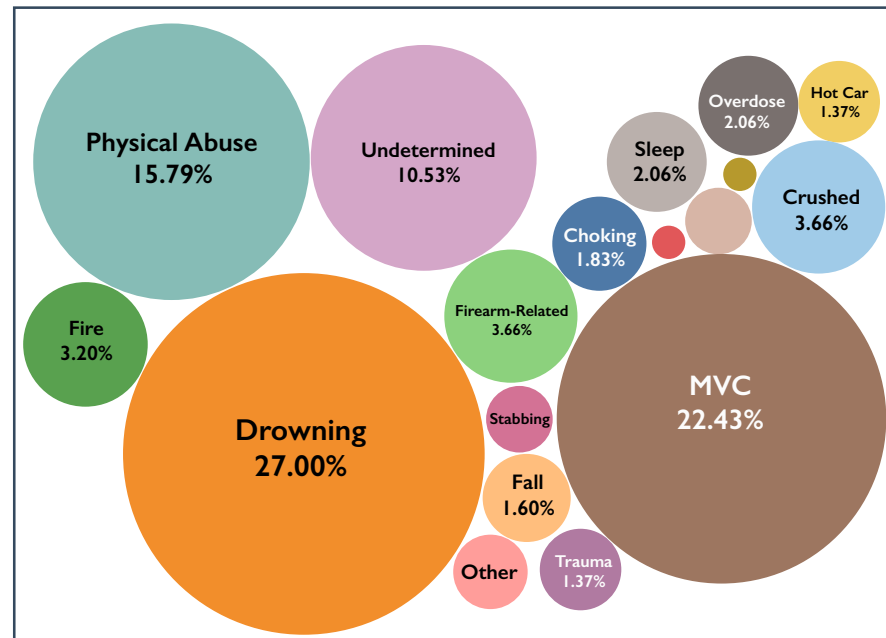


Figure 6b. Leading causes of death for children 1 to 4 years old, Harris County, 2008 – 2017

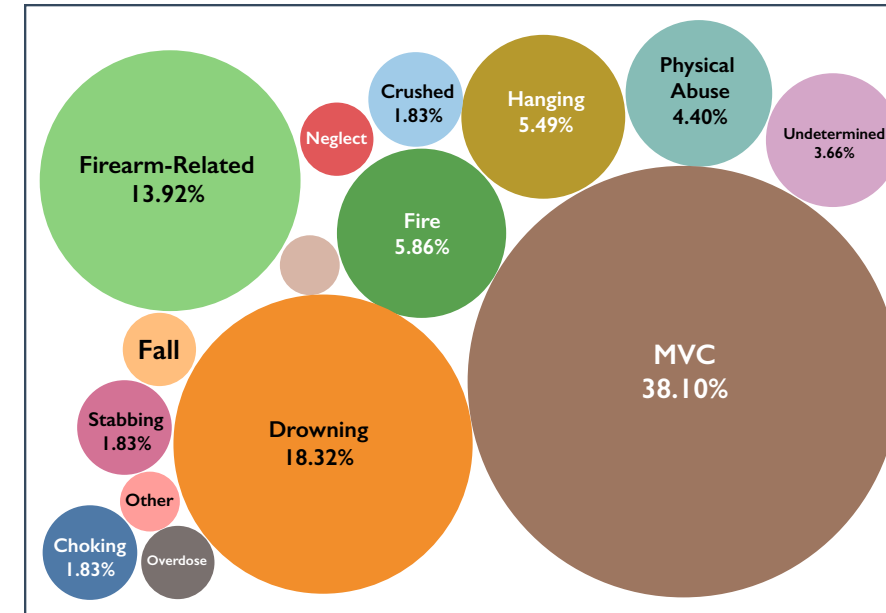


Figure 6c. Leading causes of death for children 5 to 12 years old, Harris County, 2008 – 2017

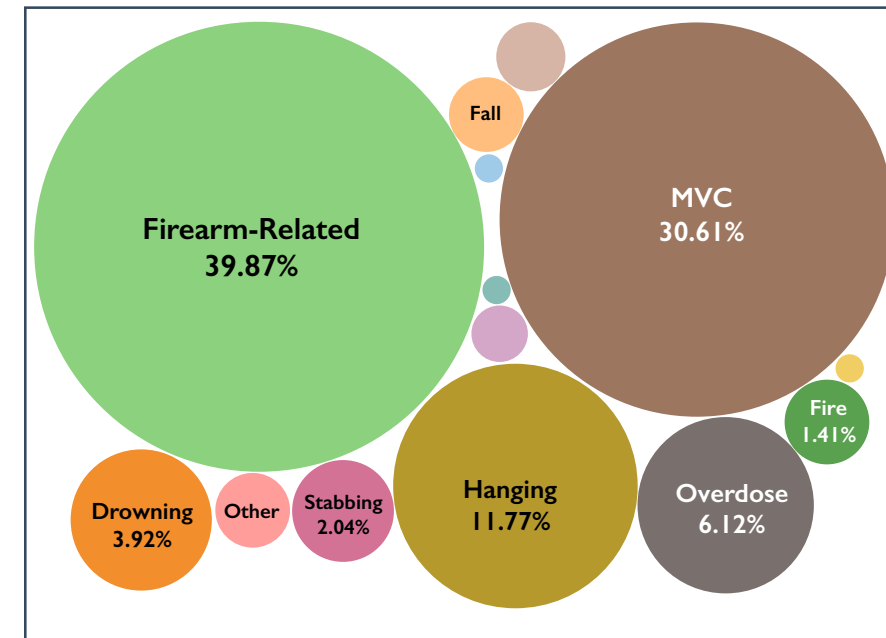


Figure 6d. Leading causes of death for children 13 to 17 years old, Harris County, 2008 – 2017

Birth – under 1 year (Figure 6a)

Sleep-related deaths were the primary cause of death for children from birth to 1 year of age and accounted for approximately 78% of all deaths within this age range. One-third of all child deaths under the age of 18 were sleep-related deaths. For more details, please see the SUID section of this report.

1-4 years old (Figure 6b)

Harris County 1- to 4-year-olds were more likely to die by drowning than any other cause, which was followed closely by MVCs and physical abuse.

5-12 years old (Figure 6c)

MVCs were the leading cause of death for 5- to 12-year-olds in Harris County, more than twice the following cause. Oftentimes, children were not properly restrained.

13-17 years old (Figure 6d)

The overall number of deaths in 13- to 17-year-olds was higher than the deaths reported in the 1-4 and 5-12-year-old ranges, but it was still lower than the under one-year age group. The primary cause of death among teenagers in Harris County was firearm-related, followed by MVCs and hangings.

LEADING CAUSES OF DEATH BY GENDER

Males accounted for 63% of all child deaths in Harris County (Figure 7). They also experienced 80% of the deaths due to firearms, 69% of drowning, and 65% of hangings.

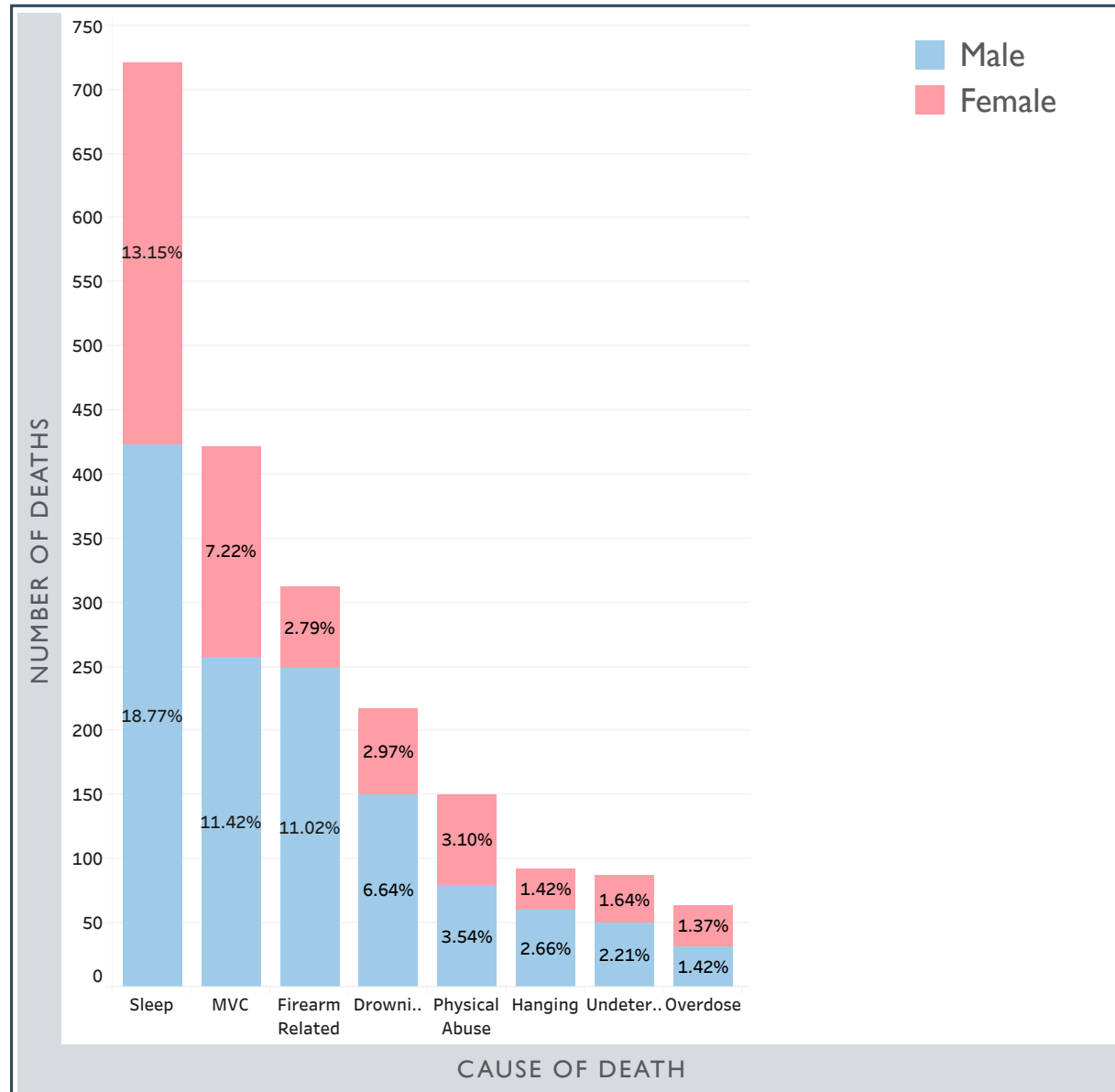


Figure 7. Leading causes of death by gender, children under 18 years, Harris County, 2008 – 2017

Note: Total deaths: n = 2,260; males: n = 1,430; females: n = 830, percentages shown are out of total deaths

LEADING CAUSES OF DEATH BY RACE/ETHNICITY

Fatalities affect race and ethnicity populations disproportionately (Figure 8). Black children make up 34% of fatalities and only 18% of the population, while Hispanic children make up only 37% of fatalities and 52% of the population.



Figure 8. Percentage of fatalities by race/ethnicity compared to population, Harris County, 2008 – 2017

Note: Population percentage by race was determined by using the child population average for Harris County from 2008 to 2017.

“Black children make up 34% of fatalities and only 18% of the population. While Hispanic children make up only 37% of fatalities and 52% of the population.”

LEADING CAUSES OF DEATH BY RACE/ETHNICITY CONTINUED

Hispanic (Figure 9a)

MVCs were the most common cause of death for Hispanic children, followed closely by infant sleep-related deaths. These two causes of death accounted for 51% of all Hispanic deaths.

Although Hispanic children made up 52% of the total county population under 18, they accounted for only 37% of the total deaths (Figure 8). It is also remarkable that only 30% of the total number of infant sleep-related deaths were among Hispanic children.

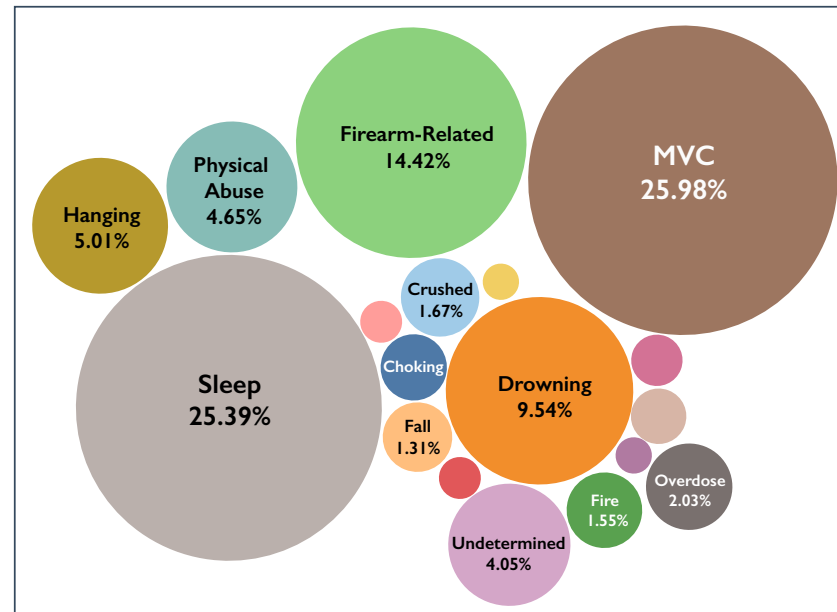


Figure 9a. Leading causes of death for Hispanic children under 18 years, Harris County, 2008 – 2017

White (Figure 9b)

The most common causes of death of white children were infant sleep-related deaths, followed by MVCs, drowning, and firearm-related deaths. Infant sleep-related deaths greatly outpaced all other causes of death, accounting for 30% of all deaths of white children and nearly equal to the number of the second and third leading causes combined.

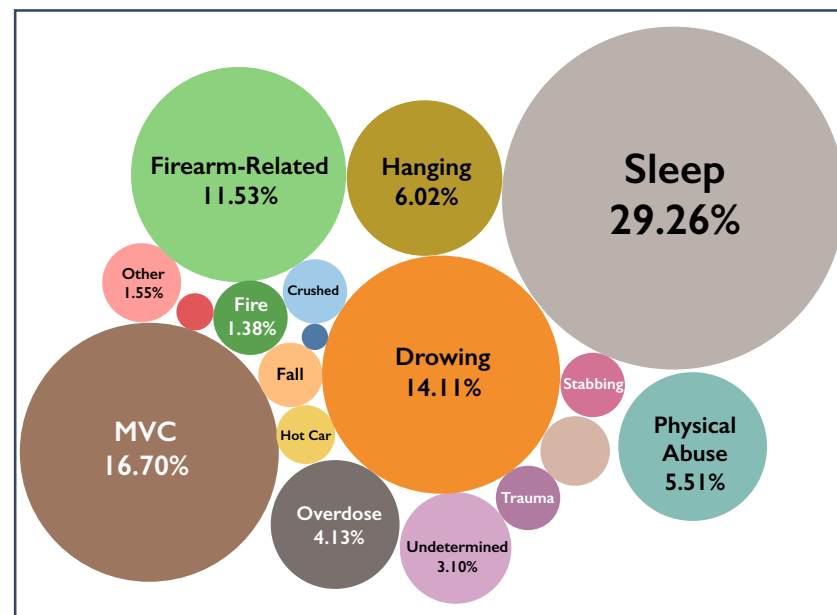


Figure 9b. Leading causes of death for White children under 18 years, Harris County, 2008 – 2017

Black (Figure 9c)

Black children experienced the highest rate of mortality among all racial/ethnic groups. While 18% of the child population is Black, their deaths accounted for 34% of the total fatalities (Figure 8). Black children are most disproportionately affected by infant sleep-related deaths, which accounted for 42% of all Black child deaths, significantly greater than any other cause.

This group also experienced a disproportionate number of firearm-related deaths (37%) and child abuse deaths (50%) when compared to the other race/ethnicity groups.

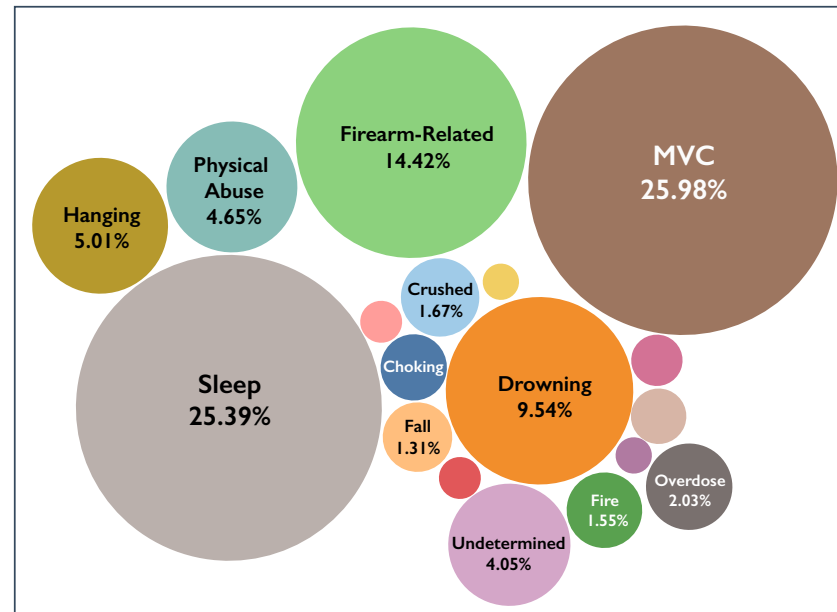


Figure 9c. Leading causes of death for Black children under 18, Harris County, 2008 – 2017

Other (Figure 9d)

Children of other races' top three causes of death were infant sleep-related deaths, MVCs, and drowning. Because of low incidence rates, the proportions are more susceptible to variability than other groups.

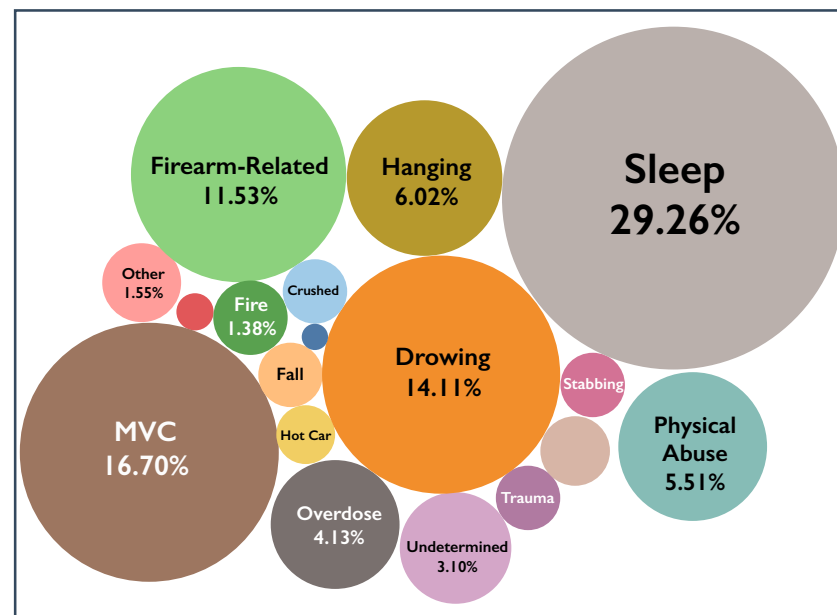


Figure 9d. Leading causes of death for children of other races under 18 years, Harris County, 2008 – 2017

- Choking
- Crushed
- Drowning
- Fall
- Fire
- Firearm-related
- Hanging
- Hot Car
- MVC
- Physical Abuse
- Neglect
- Other
- Overdose
- Sleep
- Stabbing
- Stangulation/Suff.
- Trauma
- Undetermined

Note: Causes with fewer than 5 deaths were suppressed.

INTENTIONAL INJURY DEATHS

SUICIDE

Epidemiology

In the US, suicide is the second leading cause of death among adolescents and young adults, ages 15-34 years, and the third leading cause of death for children ages 10-14 years.⁷ During 2008-2017, there were 12,656 suicide deaths nationally among children and adolescents under 18 years of age. More than 90% of youth suicide deaths occur among children ages 13-17 years, and suicide deaths among children 8 years of age and younger are rare.⁷ Nationally, boys are nearly 2.4 times as likely to die by suicide as girls.⁷ The suicide rate is highest among American Indian/Alaskan Native youth, followed by White youth, Black youth, Hispanic youth, and Asian/Pacific Islander youth.⁷

Harris County Statistics

From 2008 to 2017, there were 191 pediatric suicide deaths in Harris County. While there is a lot of variation, the overall trend is increasing (Figure 10). Over the last decade there has been a 70% increase in child and adolescent suicide in Harris County.

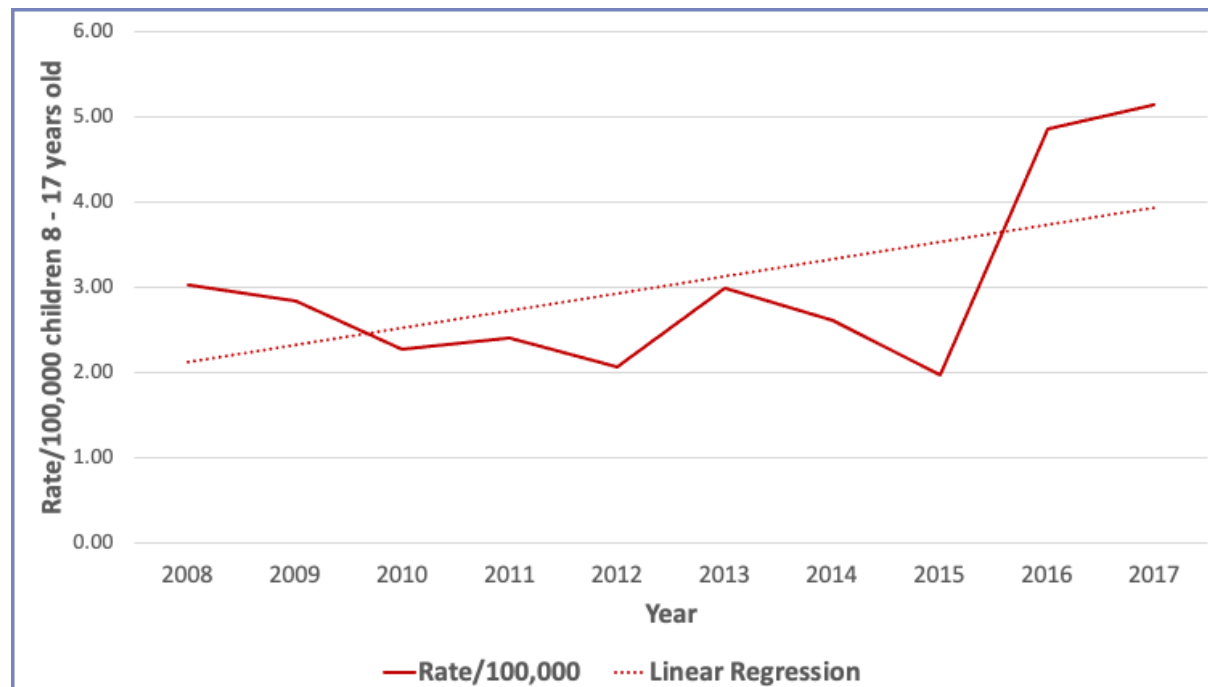


Figure 10. Suicide deaths, 8 to 17 years old, rate per 100,000, Harris County, 2008 – 2017

“Over the last decade there has been a 70% increase in child and adolescent suicide in Harris County.”

The most common method of suicide was the use of a firearm, which accounted for 86 deaths and which represents 45.0% of pediatric suicide deaths in Harris County. Other methods of suicide included: hanging/suffocation (82 deaths, 42.9% of suicide deaths), intentional overdose (11 deaths, 5.8%), and MVCs (6 deaths, 3.1%) (Figure 11). All other methods of suicide resulted in fewer than 5 deaths by each individual method during this period and are cumulatively represented as “all others” in Figure 11.

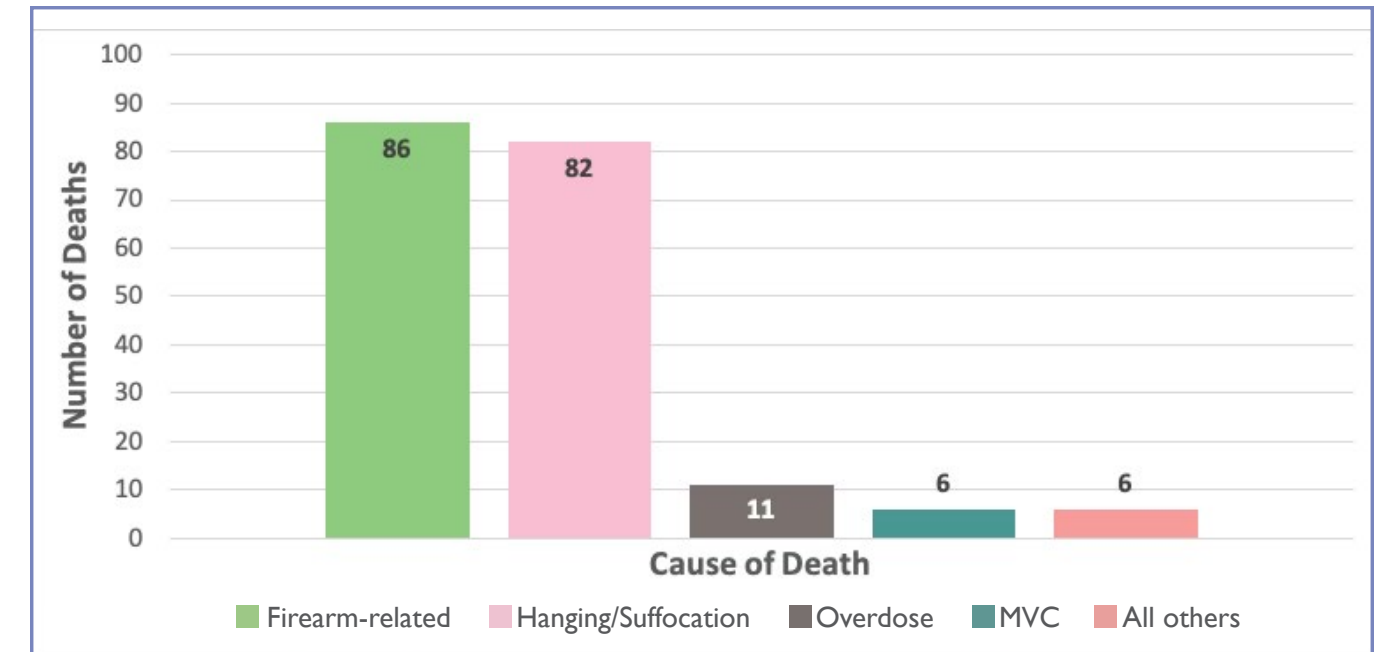


Figure 11. Suicide deaths by method, number of cases, children under 18 years, Harris County, 2008 – 2017

Of 191 suicide deaths during this period, boys accounted for 136 deaths (71.2% of deaths) and girls for 55 deaths (28.8% of deaths). Suicide deaths were approximately 2.5 times more frequent among boys than girls. Among boys, 52.9% of suicide deaths occurred via firearm and 38.2% occurred via hanging/suffocation. Among girls, 25.5% of suicide deaths occurred via firearm, while 54.5% occurred via hanging/suffocation.

During this period, 81 deaths (42.4%) were among White youth, 70 deaths (36.6%) were among Hispanic youth, 31 deaths (16.2%) were among Black youth, and 9 deaths were among youth of other racial/ethnic groups (Figure 12). Among White youth, 52.6% of deaths occurred via firearm and 35.9% occurred via hanging/suffocation. Similarly, among Black youth, 58.1% of deaths occurred via firearm and 35.5% occurred via hanging/suffocation. That pattern was reversed among Hispanic youth, for whom 32.9% of deaths occurred via firearm and 55.7% occurred via hanging/suffocation.

SUICIDE CONTINUED

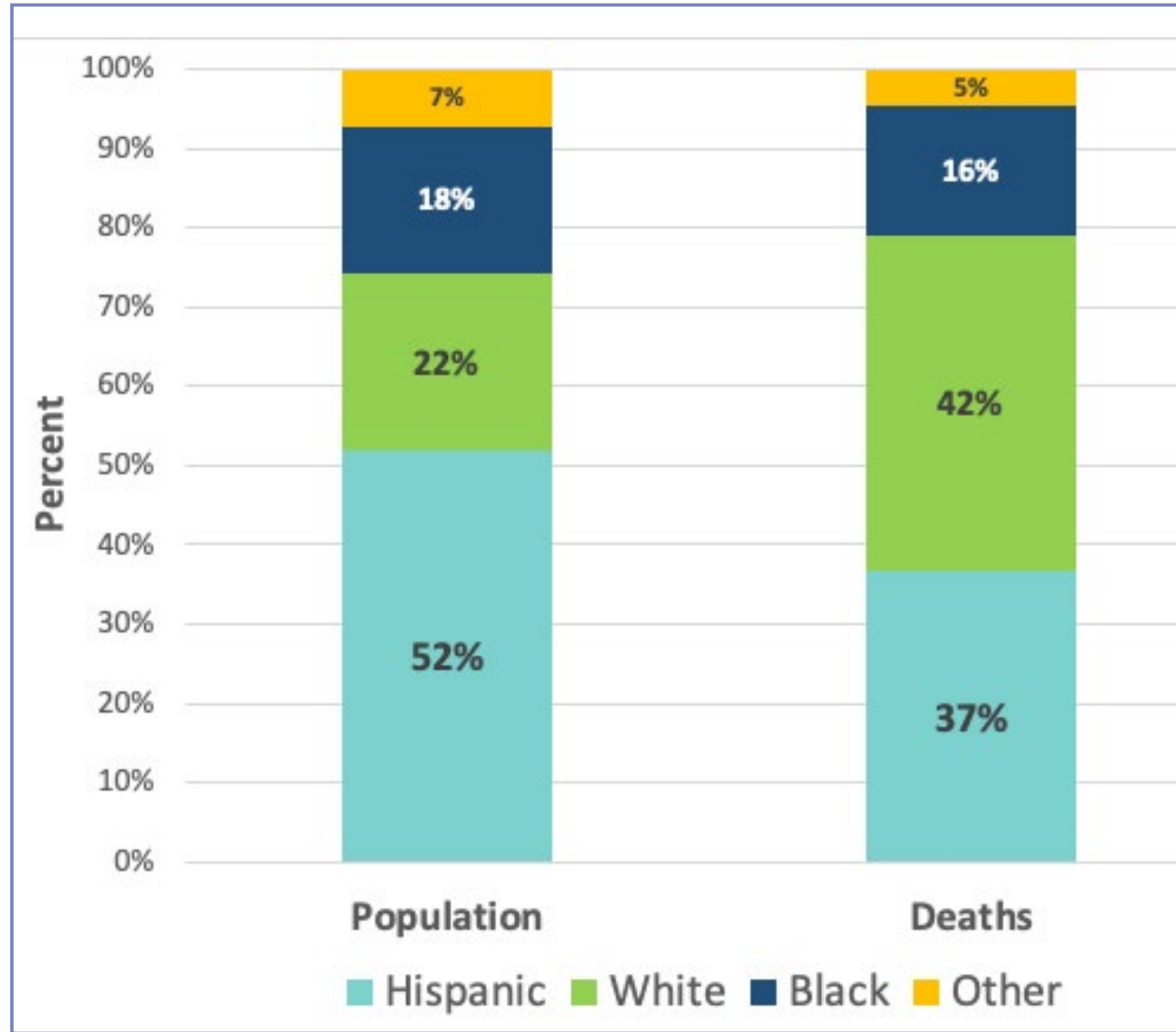


Figure 12. Suicide death percentages by race/ethnicity compared to child population, children under 18 years, Harris County, 2008 – 2017

Suicide deaths became more frequent with age, with a particularly striking increase from ages 12 to 16 (Figure 13). Among children 7 years of age or younger, there were no suicide deaths during this period. Among children 8-10 years of age, there were 6 suicide deaths, 5 deaths among children 11 years of age, 6 deaths among children 12 years of age, 15 deaths among children 13 years of age, 18 deaths among children 14 years of age, 22 deaths among children 15 years of age, 58 deaths among children 16 years of age, and 61 deaths among children 17 years of age.

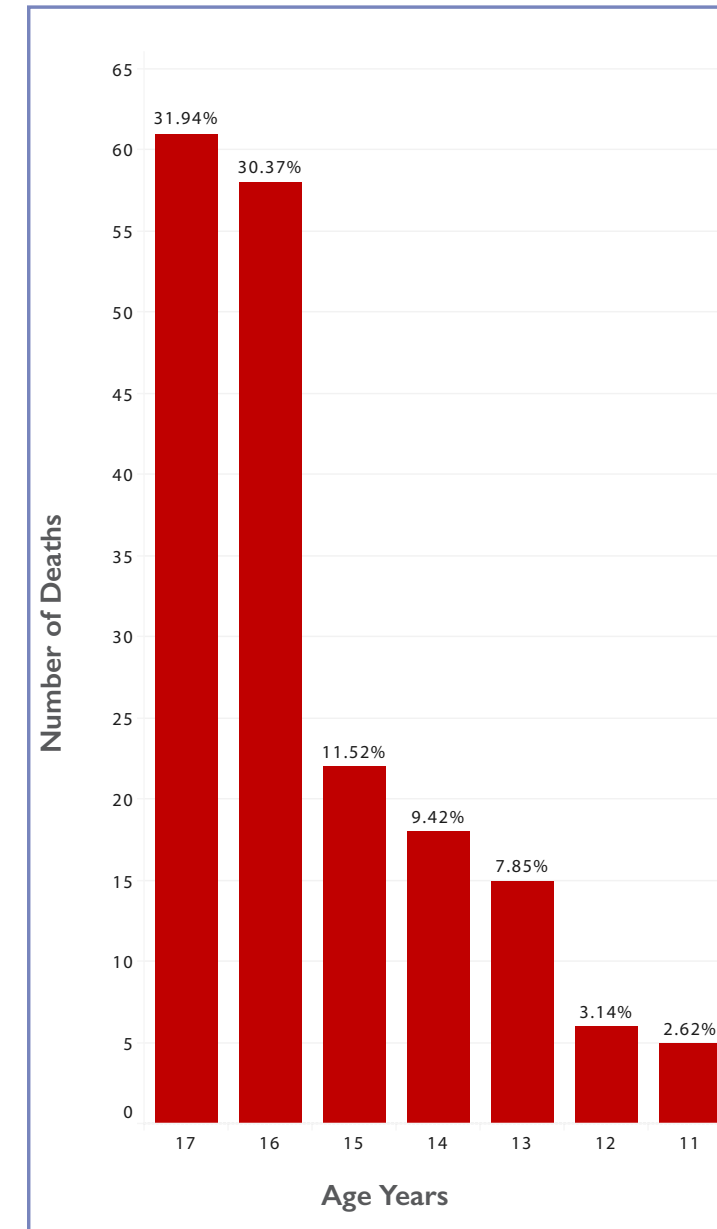


Figure 13. Suicide deaths by age, children under 18 years, Harris County, 2008 – 2017

Note: There were fewer than 5 deaths at each age below 11 years; therefore, they were suppressed and excluded from this graph.

SUICIDE CONTINUED

Risk and Protective Factors

Risk Factors and Warning Signs of Youth Suicide Risk

A range of youth characteristics have been identified as risk factors or warning signs for youth suicide. Information about youth warning signs for suicide is critically important to clinicians, parents, and educators who work with youth.

Suicide-Attempt History, Suicide Intent, and Suicide Planning.

Previous research indicates that a primary risk factor for youth suicide is a history of a previous suicide attempt. Youth with multiple previous suicide attempts are at 4 to 5 times greater risk for future suicide attempts compared to youth reporting a history of ideation or a single suicide attempt.⁸ Talking about or making plans for suicide are important warning signs, as the presence and severity of suicidal ideation are predictors of suicide attempts among youth.⁹ Additionally, research has found that youth ratings of frequency and controllability of suicidal ideation, along with thoughts about method and plan, each independently predict future suicide attempts.¹⁰

Increase in Depression, Hopelessness, Anxiety, and Emotional Distress.

Depression is a well-established risk factor for youth suicide attempts, repeat suicide attempts, and death by suicide.¹¹ Relatedly, hopelessness and anxiety co-occurring with depression have been associated with youth suicidal ideation and suicide attempts.¹¹ Further, youth who display severe emotional distress or explicitly express hopelessness about their future may be demonstrating distinct warning signs of suicide risk, and efforts to further assess their risk should be taken.

Interpersonal Life Events.

Social withdrawal has been linked to suicide risk in previous research,¹² and additional research suggests that interpersonal conflicts, interpersonal losses, and legal/disciplinary problems are common acute stressors associated with suicide.¹³ Further, bullying victimization and perpetration, sexual abuse, and physical abuse are also important risk factors.¹⁴ Similarly, previous research has indicated associations between a history of abuse--sexual, physical, and emotional--and suicide attempts among youth¹⁵.

Sexuality and Gender.

Adolescents who are members of a sexual or gender minorityⁱ (often referred to as LGBTQIA: lesbian, gay, bisexual, transgender, queer/questioning, intersex, asexual/agender) are at higher risk for suicide attempts and completion.¹⁷⁻²⁰ This risk can be partially mitigated by providing emotional support and by reducing victimization in school and home settings.^{17,19}

Increase in Alcohol/Substance Use, Aggressive Behavior, and Impulse-Control Problems.

Alcohol and drug use have been consistently associated with suicide in adolescents²¹, and alcohol dependence has been associated with substantially increased risk of suicide attempts.²² Research findings from a study of 1400 adolescents who reported a suicide attempt during the past year showed that the likelihood of multiple suicide attempts increased with the severity of aggressive/violent behavior and substance abuse.²³ Finally, impulse-control problems, including impulsive aggression, have been associated with suicide attempts in clinical samples of adolescents.²⁴

Increase in Agitation and Sleep Disturbance.

In a sample of adolescents from the National Comorbidity Survey (NCS) Replication Adolescent Supplement, problems of anxiety, agitation, and behavioral dyscontrolⁱⁱ emerged as the strongest predictors of suicide attempts among adolescents who reported suicidal ideation.²⁶ Multiple studies have documented associations between sleep disturbance and suicide attempts.²⁷ Specifically, research has indicated that youth who died by suicide were 5 times more likely than control groups to have experienced insomnia in the week prior to the suicide, highlighting the significance of sleep as it relates to youth suicide risk.

Protective Factors for Suicide Risk

Identifying protective factors for suicide risk, or characteristics associated with a lower likelihood or reduced impact of suicide risk, is important for prevention and intervention efforts. Through the identification of such factors, clinicians, parents, and educators begin to establish systems and points of intervention for youth who may indicate elevated risk for suicide.

Youth Characteristics.

A range of individual characteristics have been shown to protect against suicide risk or reduce the negative impact of suicide risk on youth. For example, self-compassion, or feelings of kindness toward one's perceived inadequacies, was found to protect youth against thoughts of death and suicidal ideation.²⁸ Further, youth who engage in low novelty seekingⁱⁱⁱ and who report having high self-esteem are also protected against attempting suicide in the future.²⁹ In addition, one's ability to engage in problem solving and distraction are protective against suicidal ideation. Opportunities at home, at school, and in the community that allow youth to develop these characteristics can aid in protecting youth from suicide risk.

Connectedness.

Research has found that connectedness is an important protective factor against suicide risk, specifically connectedness between youth and their families, peers, and schools.³⁰ Research examining inpatient suicidal adolescents following their hospital discharge found that youth who engaged in more peer connectedness over the year following their discharge were 50% less likely to make a suicide attempt in this time period. A recent study found school connectedness buffered the negative impact of cyberbullying and victimization.³¹ Implementing school and community-wide programs that incentivize and promote opportunities for both family and school-level connectedness may be beneficial for youth, particularly youth at elevated suicide risk.

Prevention and Resources

Prevention

There are several promising avenues for improving suicide prevention efforts and reducing the rate of youth suicide within Harris County and at the state and national levels. Broadly, efforts to improve suicide prevention might include:

- (a) increasing the use of screening for suicidal thoughts and behaviors,
- (b) increasing access to mental and behavioral healthcare,
- (c) increasing the use of evidence-based programs and empirically supported best practices, and
- (d) reducing stigma, increasing community awareness of suicide warning signs, and increasing knowledge about what to do when someone is in crisis.

ⁱSexual and gender minority (SGM) populations include, but are not limited to, individuals who identify as lesbian, gay, bisexual, asexual, transgender, Two-Spirit, queer, and/or intersex. Individuals with same-sex or -gender attractions or behaviors and those with a variation in sex development are also included. These populations also encompass those who do not self-identify with one of these terms but whose sexual orientation, gender identity or expression, or reproductive development is characterized by nonbinary constructs of sexual orientation, gender, and/or sex.¹⁶

ⁱⁱ Dyscontrol: an impaired ability to direct or regulate volition, emotion, behavior, or cognition, or some other area, which often entails inability to resist impulses and leads to abnormal behaviors without significant provocation.²⁵

ⁱⁱⁱ Low novelty seeking: more risk aversion, less likely to pursue new and exciting, sometimes impulsive experiences

SUICIDE CONTINUED

Crisis Resources

In the event of a suicidal crisis, youth and adults can seek crisis-oriented services to assist with managing intense suicidal thoughts and urges. National crisis hotlines and text lines offer services free of charge at any time for those in need.

- *The National Suicide Prevention Lifeline* is a national network of local crisis centers funded by the Substance Abuse and Mental Health Services Organization. The National Suicide Prevention Lifeline provides emotional support and crisis intervention and can be reached at 1-800-273-8255. For Spanish-language services, the National Suicide Prevention Lifeline can be reached at 1-888-628-9454. Additional services are available for those who are deaf or hearing impaired at <https://suicidepreventionlifeline.org/help-yourself/for-deaf-hard-of-hearing/>. For more information visit <https://suicidepreventionlifeline.org/>.
- *Crisis Text Line* is a nonprofit crisis counseling organization providing services via text message anywhere in the US. To access the crisis text line, text the word “home” to 741741. Those interested in volunteering to become a crisis counselor should visit the Crisis Text Line website at <https://www.crisistextline.org/>.
- *The Trevor Project* is a national crisis intervention and suicide prevention organization that provides support and services to lesbian, gay, bisexual, transgender, queer, and questioning (LGBTQ) youth and young adults under age 25. The Trevor Project hosts a crisis hotline (1-866-488-7386), text line (text “start” to 678678), as well as an online chat service. More information on The Trevor Project can be found at <https://www.thetrevorproject.org/get-help-now/>.
- *Trans Lifeline* is a national non-profit organization that provides trans-led peer support crisis hotline services to support trans people in crisis. The Trans Lifeline can be reached at 977-565-8860. For more information, visit <https://translifeline.org/>.

Resources for Information and Training in Suicide Prevention

Several major state and national suicide prevention organizations provide information and resources about suicide prevention. A number of these organizations also provide fact sheets, crisis resource handouts, and online trainings for community members and healthcare providers.

- *The Suicide Prevention Resource Center* is the only federally supported resource center devoted to advancing the implementation of the National Strategy for Suicide Prevention. The Suicide Prevention Resource Center provides an array of resources and online trainings, including training in Counseling Access to Lethal Means. More information is available at <https://www.sprc.org/>.
- *The American Foundation for Suicide Prevention* is a national leader in research, education, and advocacy for suicide prevention. The American Foundation for Suicide Prevention website provides information for those with suicidal thoughts, family members, attempt survivors, and healthcare providers. Additional information can be found at <https://afsp.org/>.
- *The American Association of Suicidology* is a national organization of mental health providers, researchers, crisis centers, survivors, and advocates. The American Association of Suicidology promotes the understanding and prevention of suicide and supports those who have been affected by suicide. The American Association of Suicidology offers an array of resources and fact sheets on their website at www.Suicidology.org.
- *Zero Suicide* is a framework for improving the quality of healthcare systems to reduce suicide risk. Zero Suicide offers an array of training resources for healthcare providers at <http://zerosuicide.sprc.org/>.
- *Texas Suicide Prevention* is a collaborative effort throughout the state of Texas of community-based organizations, state and local agencies, academic institutions, and many others who work together to reduce

suicides in Texas. Texas Suicide Prevention also offers a number of video, online, and in-person best practice training options related to suicide prevention, available at <https://texassuicideprevention.org/>.

HOMICIDE

The leading cause of homicidal death for Harris County children was firearm-related, followed by physical abuse (Figure 14). There were 182 non-child abuse related homicides (community violence homicides) by firearm in Harris County (Figure 15a). The remaining 23 non-child abuse homicides were from stabbing, suffocation, fire, MVC, and other (Figure 15a). There were 262 child abuse homicides. Over 57% of those were from physical abuse (Figure 15b).

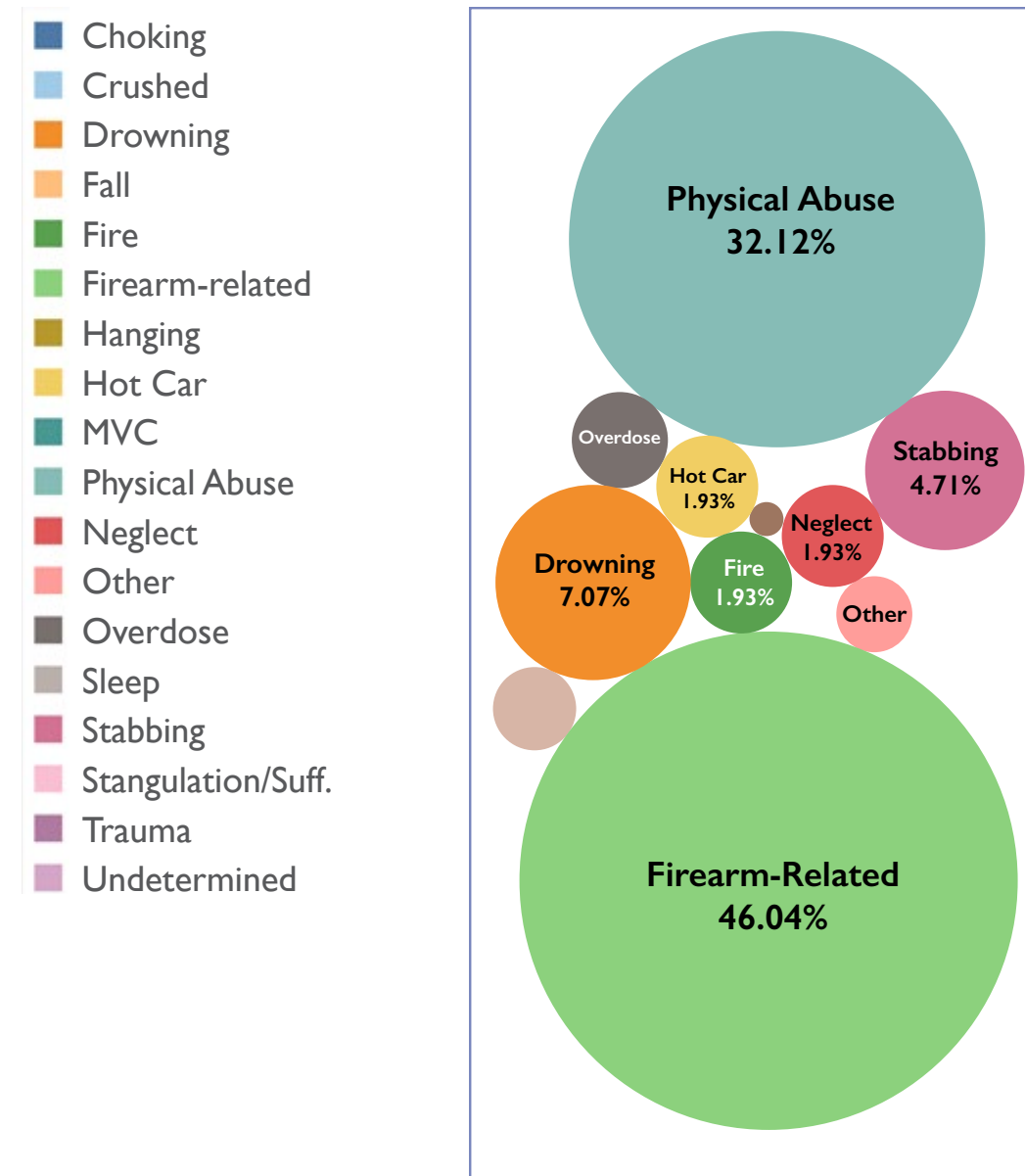


Figure 14. Causes of death by homicide, children under 18 years, Harris County, 2008 – 2017

HOMICIDE CONTINUED

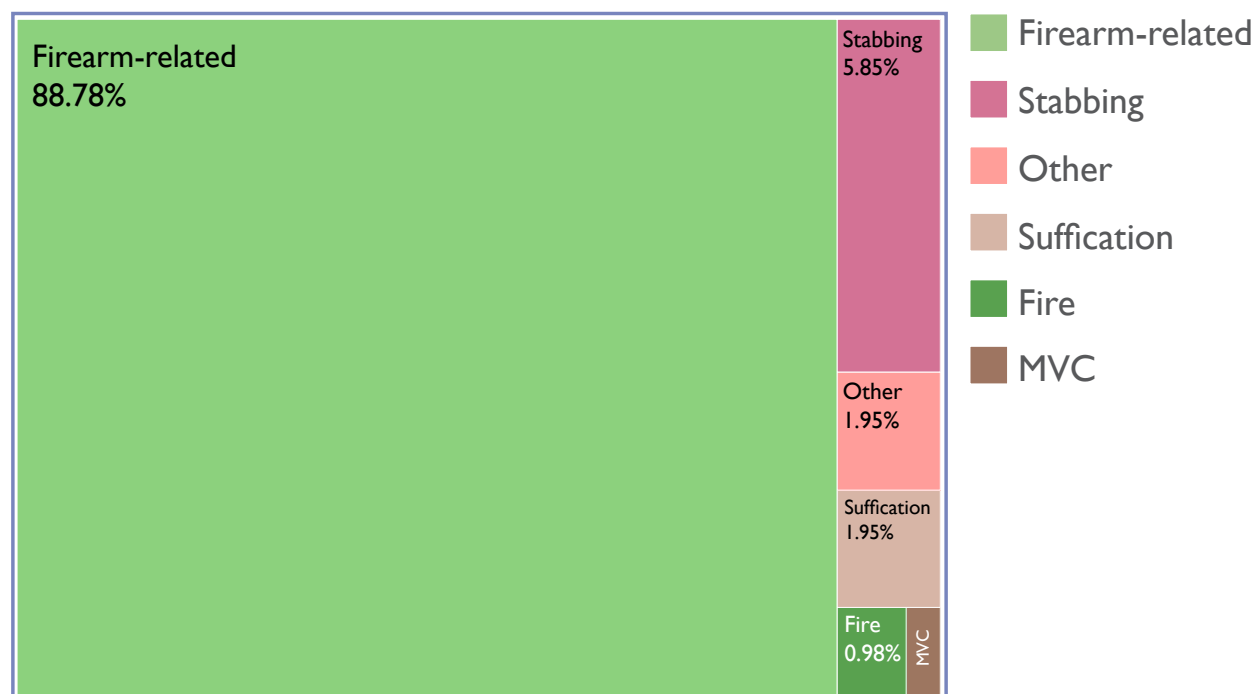


Figure 15a. Causes of death for community violence homicides, children under 18 years, Harris County, 2008 – 2017

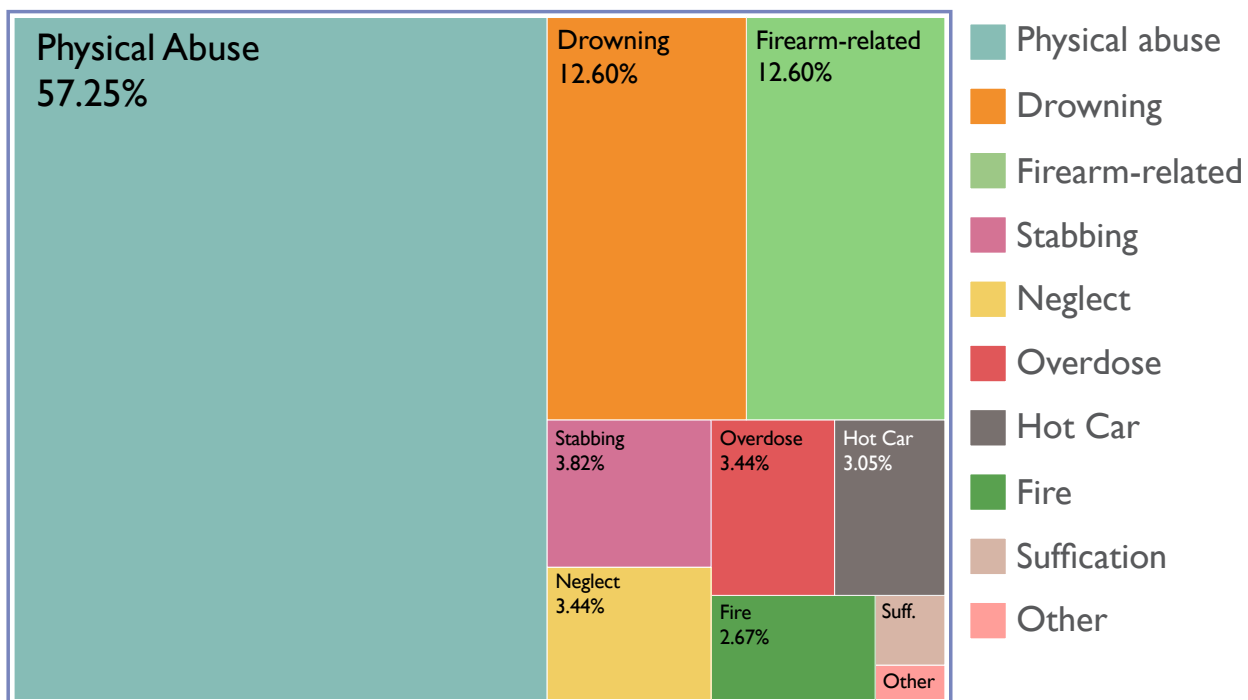


Figure 15b. Causes of death for child abuse homicides, children under 18 years, Harris County, 2008 – 2017

Firearm-Related Deaths: Intentional

Epidemiology

Firearm-related injuries are the second leading cause (15%) of non-natural child fatalities in the US³² and vary by circumstance and intention. Homicides are intentional shootings directed at another person, suicides are the use of a firearm to cause one’s own death, and unintentional shootings occur when a child unintentionally injures himself/herself or someone else. Nationally, among all firearm-related child fatalities, 4% were unintentional, 59% were homicide, and 35% were suicide.³²

Homicides account for 36% of all firearm-related deaths in the general population, but 66% of firearm-related deaths among children 0-19 years.³³ The risk of intentional death increases with age; and among adolescents aged 10-19 years, 61% of intentional firearm-related deaths were homicide (as opposed to suicide).³² The majority of homicides involve a firearm, most commonly a handgun: in 2010, 23% of homicides among 0-14-year-olds, and 83% of homicides among 15-24-year-olds involved a firearm.³⁴ The firearms used in homicides often belonged to a family member.

In 2016, the overall US mortality rate from firearm-related homicides was 4.0 per 100,000 children³²; however, these rates varied between age groups. For 2008-2017 in the US, the average annual mortality rate among children 0-9 years for firearm-related homicide deaths was 0.29 per 100,000 children, and among adolescents (10-17 years) it was 2.07 per 100,000.³⁴

In 2017, the overall Texas mortality rate from firearm-related homicides was 2.2 per 100,000 children.³⁵ Between 2008 and 2017 in Texas, 0.31 per 100,000 deaths among children (0-9 years) and 1.60 per 100,000 deaths among adolescents (10-17 years) per year were due to homicide by firearm.⁷ The reported national circumstances around child homicide are mirrored in Texas, where over 70% of homicides among adolescents (10-17 years) involved a firearm, which often belonged to a relative.³⁶ Across localities, the rate of deaths due to firearm-related homicide is significantly higher among adolescents than among young children.

Harris County Statistics

Overall, adolescents (ages 13-17) had higher rates of firearm-related fatalities compared to children under age 13 (Figure 16).

In Harris County, firearms are the leading cause of homicide deaths; during the reporting period, 69% of firearm-related fatalities among children 0-17 years old were due to homicide.

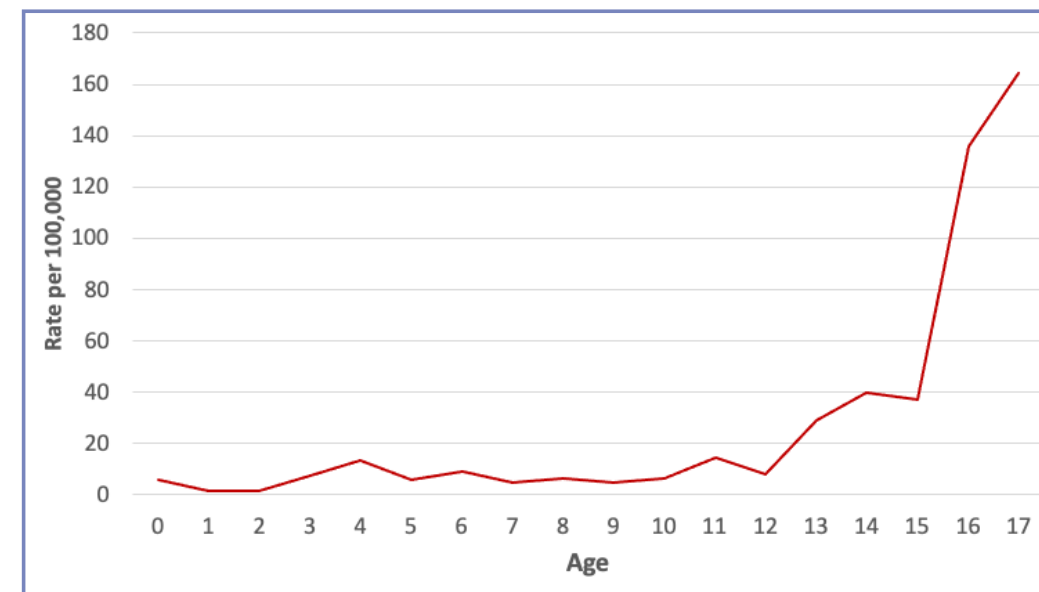


Figure 16. All firearm-related deaths by age, rate per 100,000, children under 18 years, Harris County, 2008 - 2017

HOMICIDE CONTINUED

The average yearly firearm-related homicide mortality rate during the reporting period in Harris County was 2.75 deaths per 100,000 children. While somewhat variable, the overall rate of firearm-related homicides stayed constant across the 10-year reporting period.

During that time, Harris County firearm-related homicide mortality rates for children (0-9 years) were 0.60 per 100,000 children of all ages, and 5.43 per 100,000 children among adolescents (age 10-17), with the highest rates occurring among 16- (13.6/100,000) and 17-year-olds (16.5/100,000). Harris County age-specific mortality rates are at least double the state and national rates.

Nearly two-thirds (66.91%) of firearm-related deaths among adolescents (10-17 years) were due to homicide (31.25% suicide), and over 80% (82.5%) of firearm-related deaths among children (0-9 years) were due to homicide (15% were suicide and unintentional). Among children of all ages, firearm-related homicide disproportionately affects Black children the most at 4 deaths per 100,000 children, which is more than the 3 deaths per 100,000 of all other races and ethnicities combined (Figure 17). Homicide victims of all ages were 3 times more likely to be male than female (Figure 18).

Only 1.26% of the Harris County firearm-related fatalities were unintentional. More information can be found on pages 68-69. Suicide accounted for 29.8% of Harris County firearm-related fatalities. More information can be found on pages 26-33.

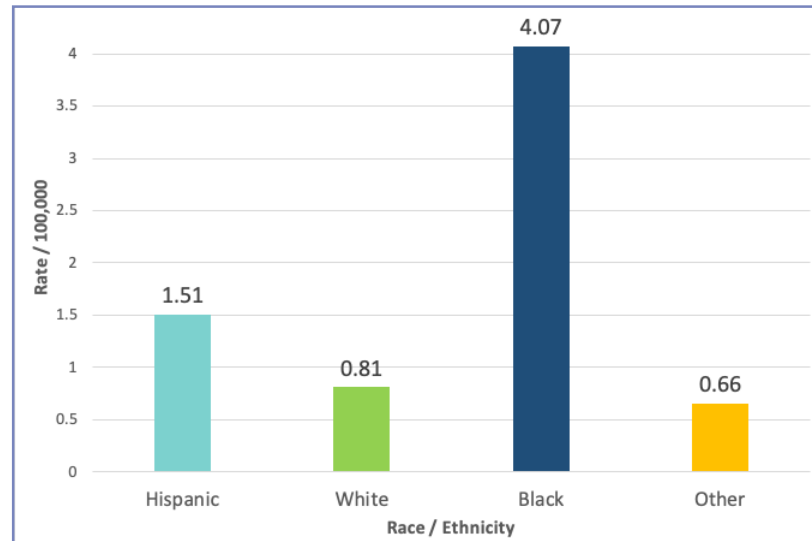


Figure 17. Firearm-related homicides by race/ethnicity, rate per 100,000, children under 18 years, Harris County, 2008 – 2017

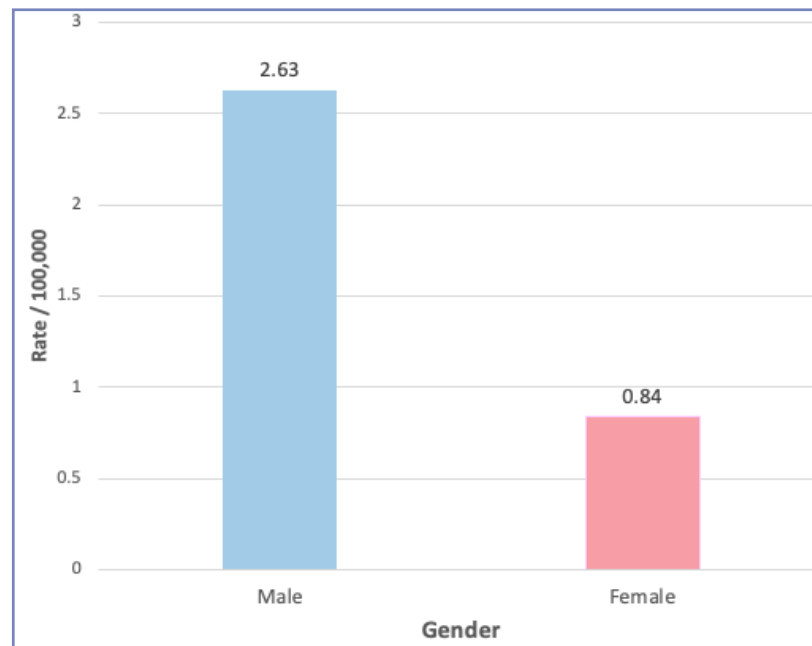


Figure 18. Firearm-related homicides by gender, rate per 100,000, children under 18 years, Harris County, 2008 – 2017

Risk and Protective Factors:

Primary characteristics leading to an increased risk of firearm-related homicide among children include being male (5 times more likely than females among ages 0-17 years), adolescent (especially ages 15-19 years), and Black (over 3 times more likely than Whites).³³

Gender

Boys aged 13-17 years old have firearm-related death rates 6 times higher than girls the same age.³⁷ Boys among all age groups tend to be more socialized toward violence and have different norms with respect to risk-taking behavior. Adolescent boys are more likely to own or carry a firearm, which is likely due to expectations of gender roles, hypermasculinity, and independence.³⁷

Age

Adolescents are especially at risk for intentional deaths. In the US in 2010, only 1.7% of firearm-related fatalities of children over 15 years were accidents.³⁴ Among adolescents and young adults (aged 15-24 years), homicide is the second leading cause of death (after MVC). Adolescents and young adults make up 14% of the general population but account for 20% of all firearm-related fatalities and 43% of non-fatal firearm-related injuries; they also make up 27% of all homicides, and 33% of all firearm-related homicides.³⁴ Older children were usually killed by a peer their age or close in age, whereas younger children were more likely to be killed by an adult relative.³⁸ Among children aged 13-17 years, the firearm-related fatality rate was more than 12 times higher than the rate for younger children (0-12 years).³⁸

Race/Ethnicity

In a national comparison, “the annual firearm homicide rate among [Black] children (0-18 years) is 3.5 per 100,000, which is nearly twice as high as American Indian children (2.2), four times higher than Hispanic children (0.8), and roughly 10 times higher than White (0.4) and Asian (0.4) children”.³⁸ Similarly, among youth aged 15-24 years, the mortality rate of firearm-related injuries per 100,000 is 39.9 in Black youth, 14.7 in American Indian/Alaska Native (AI/AN) youth, 9.4 in White youth, and 3.9 in Asian/Pacific Islander (A/PI) youth.³⁴ Of those firearm-related fatalities, the rate of death by homicide is significantly higher in Black youth (35.4 per 100,000) than AI/AN (5.7), White (3.8), and A/PI (1.8) youth.³⁴

The disproportionate mortality rate among Black children and youth may be due to increased exposure to community violence and/or disparities among the social determinants of health. The disparity in firearm-related homicide deaths is especially pronounced among Black adolescent boys: firearm-related homicide rates per 100,000 children aged 15-19 years old were 49.7 among Black boys and 4.8 among Black girls, versus White boys (6.0) and White girls (1.0).³⁴

These racial disparities are also found in Texas, where the overall mortality rate for firearm-related deaths has been consistently higher among Black children than any other race group.³⁹

In Harris County, the overall mortality rate (homicide, suicide, and accident) for firearm-related deaths has been consistently and disproportionately higher among Black children (5.05 per 100,000) than any other race group (White 2.43, Hispanic 1.89, and Other 1.01 per 100,000).

Urban Areas

The US rate of firearm-related deaths is significantly higher than that of economically similar countries globally.³³ Additionally, the child mortality rates in urban areas (15.7 per 100,000) are much higher than rural areas (3.6 per 100,000), likely due to increased density and therefore increased access to firearms.³³ There is a strong positive correlation between high levels of gun ownership and higher homicide rates.⁴⁰

HOMICIDE CONTINUED

Criminal and Gang-Related Activity

Nationally, among youth aged 15-24 years, 15.1% of homicides occurred as part of gang-related activity, 40% were precipitated by a crime, and 28% were part of a crime in progress.³⁴ Risk factors for homicide victims include being male, experiencing rejection or economic anxiety, past experience of community or family violence, having access to an unsecured firearms, access to a readily available firearm, and lack of positive social connections with adults and school.³⁴

Alcohol or Drug Use

Increased odds of firearm-related homicides are noted among adolescents with a history of alcohol or drug use, whose caregiver had a history of drug use, and who live in neighborhoods with a high density of alcohol and drug availability.⁴¹ Homicides of older children are more likely associated with crime, gang activity, and drug involvement.³⁸ Adolescents who carry guns are more likely to be members of a gang, both victims and perpetrators of violence, and use substances.³³

Access to Firearms

In 2017, 4.8% of US and 5.9% of Texas high school students reported carrying a gun on at least one day in the last 12 months, not including for recreational use; 8.4% of students in the Greater Houston Area reported the same, which is significantly more than the national and state averages.¹⁸ Increased levels of gun ownership in an area is correlated with higher homicide rates and firearm homicide rates.^{42,43}

School and Mass Shootings

Although school shooting incidents have increased in the last several years, they comprise less than 1% all intentional firearm-related deaths among school-aged children (5-19 years).³² Most mass shootings (defined as more than 4 deaths) occur in the home by a family member as part of escalated intimate partner violence in a murder-suicide situation.³⁸

Mental Health

The common narrative that gun violence is linked to mental illness is not borne out in research.^{44,45} However, some personality characteristics are linked to gun violence such as impulsivity and hostility. Mental health symptoms such as borderline personality disorder, post-traumatic stress disorder, stress, anxiety, and depression were not found to be associated with gun violence.⁴⁴ But comorbid substance abuse disorder or history of violence could lead to gun violence in individuals with severe mental illness.^{44,46}

Prevention and Resources*Prevention: Individual, Community, and Legislative Strategy*

The American Academy of Pediatrics advocates for a comprehensive and holistic resiliency-based approach to firearm violence prevention at the individual and community level, in multiple settings.⁴⁷

“The common narrative that gun violence is linked to mental illness is not borne out in research.”

Gunshot injury deaths can be prevented with safe storage and parent education. Decreasing a child’s access to firearms is one of the best ways to prevent firearm-related injuries.³³ The Texas Department of Public Safety endorsed these best practices for the proper and safe storage of firearms: Firearms should be locked, unloaded, and stored separately from ammunition; additionally, firearm owners should report theft in a timely manner.⁴⁸ The safe storage of firearms can decrease intentional and unintentional child firearm-related deaths by 70%.⁴⁹ Because of the lethality of firearms, having a firearm in the home was found to increase risk of homicide by 3 times and suicide by 5 times.³³

Nearly one-third of households with a child (18 and younger) report owning a firearm; of those, nearly 43% report the firearm is unlocked and accessible, and 13% are unlocked and loaded.⁵⁰ Child-directed firearm safety education interventions have not been shown to prevent firearm injuries.⁵¹ Additionally, parent perceptions of their child’s knowledge about firearms are often inconsistent with the child’s actual behavior. Baxley and Miller⁵² found that most children (over 70%), age 5-14 years, knew the location of the family’s firearm and one-third had handled it, but over one-third of the “parents misjudged their children’s knowledge about the firearm location in the home,” and almost 1 in 4 parents “misjudged whether their children had handled a firearm.” This discrepancy persists regardless of whether the firearm was locked or if the child received safety instructions from their parents.⁵²

Firearm safe storage and child access prevention laws vary by state. Texas parents are liable for unsafe storage of firearms when accessed and misused by children under 17 years old.⁵³ Texas also has laws relating to background checks, buying and transferring of guns, and possession of firearms by people convicted of a felony, in an attempt to decrease firearm access among violent or gang-related offenders.⁵⁴ Homicide prevention among adolescents should include community-based mental health and social needs interventions.³³

Prevention efforts for both unintentional and intentional firearm deaths include safe storage of firearms, community-based violence prevention and mentorship programs to engage at-risk youth, resiliency-based violence prevention and school-engagement programs, and laws restricting the sales of firearms to violent offenders. Pediatricians can offer anticipatory guidance to parents with known firearms in the household.³³ Legislative best-practice recommendations include licensing and registration for ownership of firearms similar to cars, community interventions about public safety, parenting and social skills development, age limits on firearm purchase, quantity limits on firearm purchase, background checks for violent offenders, children’s firearm behavioral skills and safety training, early mentoring, parent and youth development, collaborative community interventions, and Child Access Prevention laws.³⁷ Robust public health funding to monitor and investigate causes and circumstances of child firearm deaths is key to developing successful prevention strategies.

Resources

Brady United Against Gun Violence: ASK (Asking Saves Kids)
<https://www.bradyunited.org/program/end-family-fire/asking-saves-kids>

Moms Demand Action and Everytown for Gun Safety: Be SMART
<https://besmartforkids.org/>

American Academy of Pediatrics

- For parents: Guns in the Home (<https://www.healthychildren.org/English/safety-prevention/at-home/Pages/Handguns-in-the-Home.aspx>)
- For pediatricians: <https://www.aap.org/en-us/about-the-aap/aap-press-room/campaigns/gun-safety/Pages/default.aspx>

National Institute of Justice: Clearinghouse of programs and practices for youth violence prevention
<https://www.crimesolutions.gov>

HOMICIDE CONTINUED

Substance Abuse and Mental Health Services Administration: Collaborative efforts needed to address youth violence <https://www.samhsa.gov/homelessness-programs-resources/hpr-resources/efforts-address-youth-violence>

Harris County Protective Services for Children and Adults: Services for at-risk youth <https://hcps.harriscountytexas.gov/Our-Services/Services-for-At-Risk-Youth>

Harris County Office of the District Attorney: Gun safety tips <https://app.dao.hctx.net/safe-storage-guns>

Texas Department of Public Safety: Proper Firearm Storage to Prevent Theft and Accidental Injury to a Child <https://www.dps.texas.gov/RSD/LTC/documents/SafeStorage.pdf>

Child Abuse and Domestic Violence

Epidemiology

Child abuse occurs whenever a caregiver, through their action or inaction, causes a child to be harmed. Abuse can take many forms, primarily physical, emotional, sexual, or through exploitation. In rare cases, this abuse can result in a child's death. For the 2017 fiscal year, an estimated 1720 children nationally died from abuse and neglect at a rate of 2.32 per 100,000 children.⁵⁵ Sadly, and perhaps surprisingly, this is one of the highest rates in the developed world.⁵⁵ In Texas, the rate of child abuse deaths is slightly higher at 2.53 per 100,000,⁵⁵ posing a significant risk to the over 7 million children who call Texas home.

When considering these tragic deaths, it is important to keep in mind that they do not occur in isolation; these deaths provide a window through which we can see the larger sociocultural context that facilitates not only these deaths but the extensive impact of child maltreatment in general. In 2017, over 142,000 children nationwide received foster care services, which resulted from 4.1 million child abuse reports. In Texas child abuse occurred at a rate of 830 per 100,000 children.

Harris County Statistics

Over the past 10 years, child abuse deaths in Harris County have accounted for an average of 26 deaths per year. Although these deaths are not all prosecuted, they are all considered homicides. While there has been a decreasing trend over the past decade, any child death from abuse or neglect is unacceptable, and we must continue to work on prevention (Figure 19). There has been a 58% decrease in child abuse fatalities in Harris County over the last decade.

“There has been a 58% decrease in child abuse fatalities in Harris County over the last decade.”

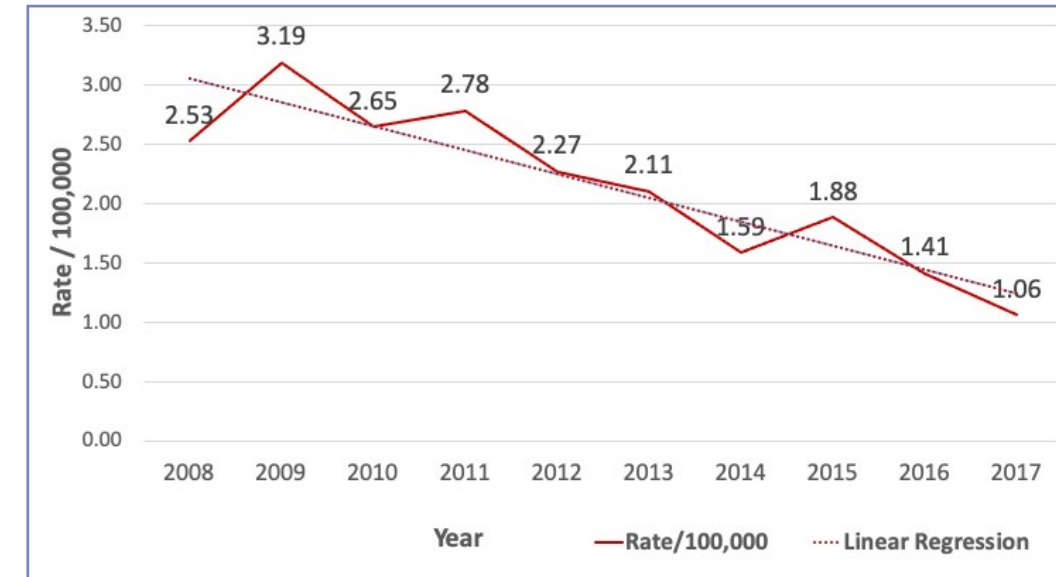


Figure 19. Child abuse deaths, rate per 100,000, children under 18 years, Harris County, 2008 – 2017

The majority of homicide fatalities from child abuse or neglect in Harris County have been a result of physical abuse, followed by firearms, drowning, stabbings, and neglectful supervision (Figure 20). Notably, 42% of child abuse and neglect homicides happened before the child's first birthday, and 77% were in children under 3 years of age. Over one-third (39%) of these were a result of abusive head trauma.

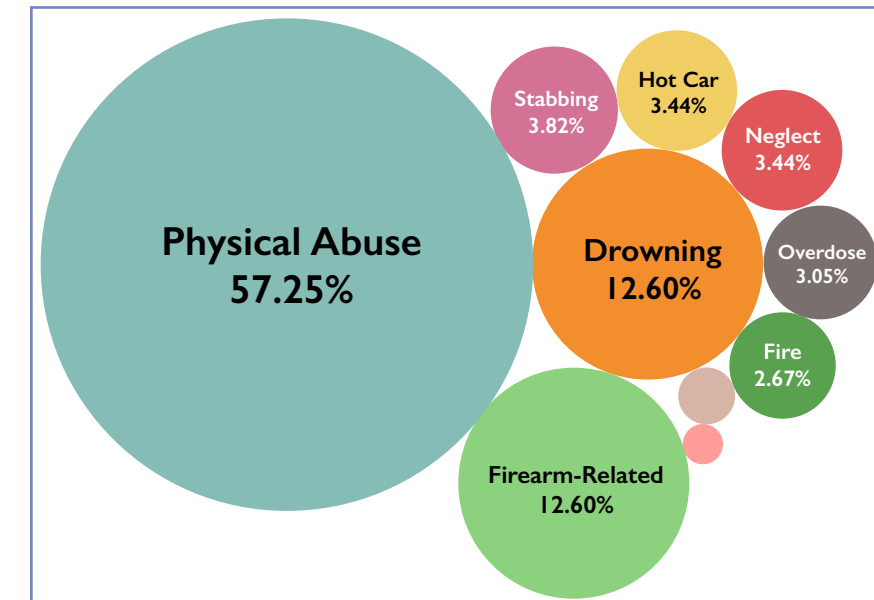


Figure 20. All child abuse-related fatalities by cause of death, children under 18 years, Harris County, 2008 – 2017

- Choking
- Crushed
- Drowning
- Fall
- Fire
- Firearm-related
- Hanging
- Hot Car
- MVC
- Physical Abuse
- Neglect
- Other
- Overdose
- Sleep
- Stabbing
- Stangulation/Suff.
- Trauma
- Undetermined

HOMICIDE CONTINUED

Black children were disproportionately victims of child abuse fatalities in Harris County compared to children of other races/ethnicities (Figure 21).

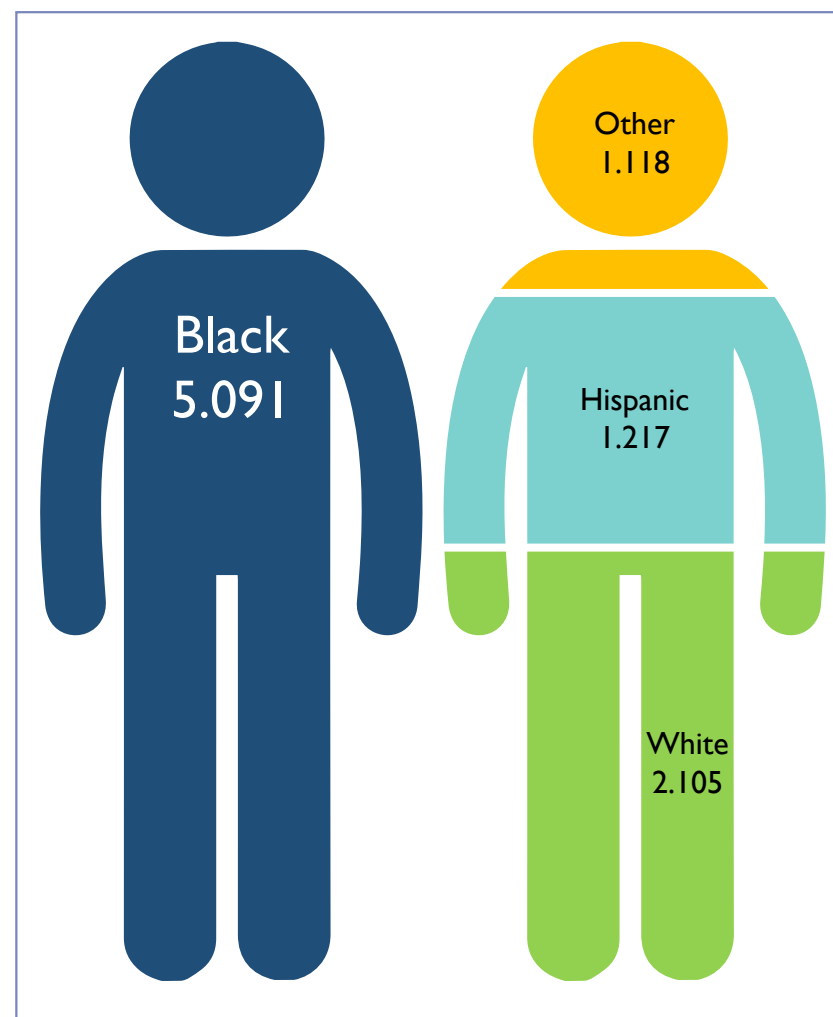


Figure 21. All child abuse-related fatalities by race/ethnicity, rate per 100,000, children under 18 years, Harris County, 2008 – 2017

“Black children were as likely to be victims of abuse as all other children combined.”

Risk and Protective Factors

Risk factors

Risk factors for child maltreatment include: poverty, lack of social support, familial stress, inadequate parenting skills, lack of parental understanding of child development, parental mental illness, violence in the home, history of abuse, nonbiological transient caregiver in the home, and substance abuse.^{56,57} Abusive head trauma is a leading cause of physical child abuse deaths in children under 5 years in the US. It accounts for approximately one-third of all child abuse deaths nationwide. Infants less than 1-year-old are at greatest risk of injury from abusive head trauma. A common trigger for abusive head trauma is crying. Another common trigger for child abuse is around toilet training, especially when the caregiver’s expectations are unreasonable for the child’s age and developmental abilities.

Intimate Partner Violence (IPV)

Studies have shown a co-occurrence of intimate partner violence (IPV) and child abuse.⁵⁸⁻⁶⁰ On average 1 in 4 women in the US have experienced victimization by IPV.⁶¹ In Texas, 4.2% of women reported that their husband or partner abused them before or during their pregnancy.⁶² Windham et al.⁶⁰ found that compared to homes with nonviolent relationships, children experience higher rates of abuse and increased severity of injuries in homes with the presence of IPV.

IPV does not discriminate and occurs in every race, ethnicity, socioeconomic background, education, age, gender, and sexual orientation. It can occur in any type of intimate relationship including marriage, dating, living together, or same sex. It has no age limit and can occur from adolescents to the elderly.

In Harris County the majority of victims of IPV are women and the majority of perpetrators are men (Figure 22).

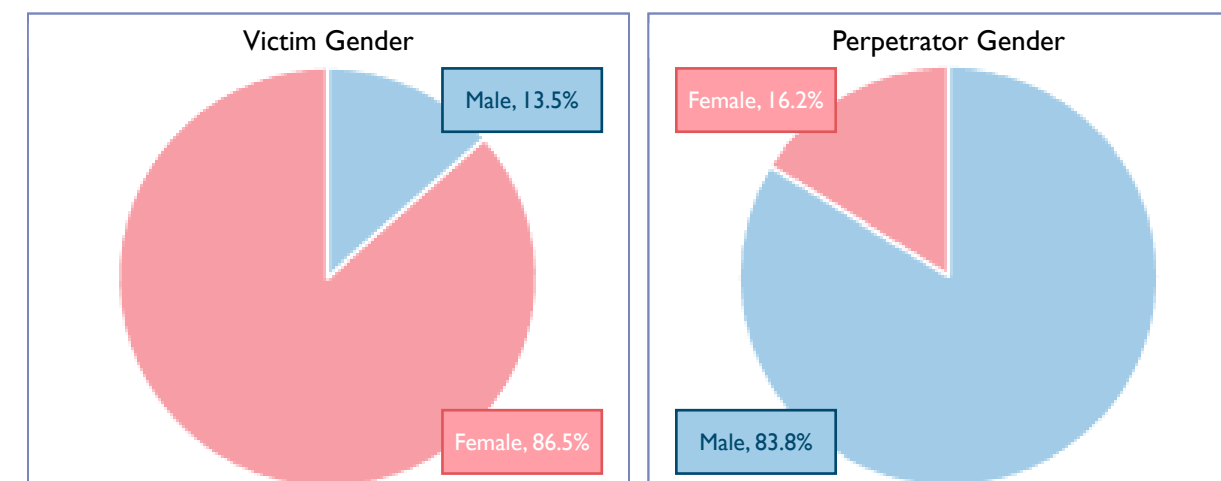


Figure 22. Gender of fatality victims and of perpetrators of intimate partner violence, Harris County, 2016 – 2017

Note. The data in this figure were collected from cases that occurred from 2012-2015 where charges were filed by the Harris County District Attorney’s Office and reviewed by the Harris County Adult Violent Death Review Team 2016 to 2018.

Protective factors

One of the strongest individual level protective factors for child maltreatment prevention is a stable and nurturing primary caregiver that is responsive to the child’s needs.⁶³ Additional protective factors are stable social networks, support for basic needs, parental employment, parental education, adequate housing, and access to health care and social services.⁶⁴

HOMICIDE CONTINUED

Prevention and Resources

Prevention

When examining the data, it is important to understand that death from child abuse is 100% preventable, and for each death, there are countless more living children suffering from ongoing abuse. It is essential that we continue to implement pragmatic prevention strategies and raise awareness of these important issues in order to reduce child deaths and child abuse.

The HCCFRT advocates support of the Texas Department of Family and Protective Services (DFPS) in improving the efficacy of the Texas child welfare system. This has enormous opportunity to drastically reduce the amount of child abuse and deaths in the state. Texas has a rate of child abuse that is slightly higher than the national average. This is despite the fact that Texas has a relatively high number of child welfare workforce members (4,182; second highest compared to other reporting states), who in turn have a relatively low closing rate when compared to other states (54 completed cases per investigator; tied for the fifth lowest compared to other reporting states). This is an area of intervention that cannot be overlooked, considering that more than one-quarter (27.3%) of the fatalities nationwide had at least 1 prior CPS contact in the 3 years prior to the date of death.

Parenting programs for the prevention of child maltreatment target enhancing protective factors and mitigating risk factors.⁶³ In a systematic review of reviews of child maltreatment prevention programs globally, the authors report that parenting programs, including home visitation and parenting education programs, showed evidence for effectively reducing the risk of child maltreatment.⁶⁵ Parenting programs should include information on positive parenting practices and normal child development. Additionally, effective programs connect families to supportive social services and educational and economic opportunities in their community.

Professionals working with families should be trained to identify risks and signs and symptoms of child maltreatment.

HCCFRT data should be used to identify populations most at risk for child abuse-related homicides to develop and implement innovative and evidence-based programs to support families in the community.

Resources

National Domestic Violence Hotline: 24 hours a day, call toll-free 1-800-799-7233

National Parent Helpline: Emotional support from a trained parent advocate. Call toll-free 1-855-427-2736

Texas Abuse Hotline: Report suspected child maltreatment and neglect. Call toll-free 1-800-252-5400

Texas Association Against Sexual Assault: Information about rape crisis centers and online resources
<https://taasa.org/resources/>

Texas Department of Family Protective Services: Help and Hope. Help and Hope offers practical, actionable advice and tips to help parents with everyday problems.
<http://www.helpandhope.org/>

Texas Home Visiting: For expectant parents and parents with children 6 years old and younger.
https://www.dfps.state.tx.us/Prevention_and_Early_Intervention/Texas_Home_Visiting/default.asp

Texas Mental Health Hotline: open 24 hours a day, 7 days a week. Call toll-free at 833-986-1919.

Texas Workforce Commission: Workforce development services for employers and job seekers in Texas. Provide support services, including child care.
<https://www.twc.texas.gov/about-texas-workforce>

Harris County Community Services Department: Harris County Housing and Community Resource Center
<https://housingandcommunityresources.net/emergency-assistance/domestic-abuse/>

UNINTENTIONAL INJURY DEATHS

SUDDEN UNEXPECTED INFANT DEATHS (SUID)

Epidemiology

According to the American Academy of Pediatrics (AAP), more than 3500 infants die annually in the US from sleep-related or unexpected causes. Unlike other causes of death, sudden unexpected infant deaths (SUID) are typically defined by a lack of injury or illness findings at autopsy.⁶⁶ The classification of these deaths has changed dramatically over time as more is known about safe infant sleep practices, related risk factors, and other medical causes of death that are now detectable. Currently for medical examiners, there is no universal classification for these types of deaths; classification of these deaths is left up to the individual medical examiner, meaning that the same infant death scenario with the same facts could be classified as “undetermined”, “co-sleeping”, or even “natural” from sudden infant death syndrome (SIDS), all depending on the individual interpretation of the cause of death by the medical examiner.⁶⁷

In the US, approximately 40% of infant sleep-related deaths are diagnosed as SIDS, 35% as undetermined, and 25% as unintentional suffocation and strangulation in bed.⁶⁸ In Texas, SIDS is the second leading cause of infant death.

Since the mid-1990s the rate of infant sleep-related deaths has decreased dramatically with the “back to sleep” campaign from the AAP.⁶⁶ However, recent surveys have shown that despite the increased awareness from that campaign, many parents and caregivers are still placing infants in unsafe sleep environments.⁶⁹ Sleep-related deaths remain among the highest causes of death in infants.⁶⁸

Harris County Statistics

Since 2008, the overall trend of sleep-related infant deaths by population in Harris County has declined (Figure 23). However, as this remains the

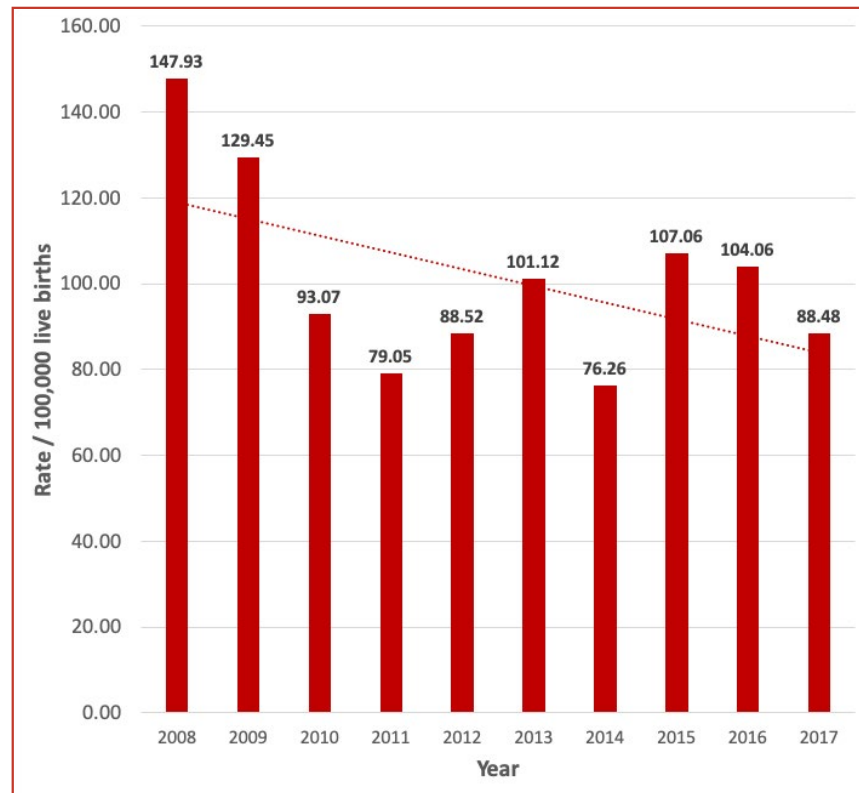


Figure 23. Infant sleep-related death, rate per 100,000 live births, Harris County, 2008 – 2017

“Attributed in large part to safe sleep campaigns, Harris County has seen a 40% decrease in infant sleep-related deaths from 2008 to 2017.”

highest cause of mortality, prevention strategies are critical. It is unknown whether all sleep-related deaths are preventable, but we do know that there are modifiable factors such as the safe sleep environment, which decreases the likelihood of sleep-related deaths. Attributed in large part to safe sleep campaigns, Harris County has seen a 40% decrease in infant sleep-related deaths from 2008 to 2017.

Sleep-related infant deaths are not proportional across race/ethnicity. The total sleep-related infant death rate is about 1 per 1000 babies. However, the sleep-related death rate is more than double for Black infants than White infants (Figure 24). Similar to national and state patterns, Hispanic and other race/ethnicity infants have a lower sleep-related death rate compared to the population as a whole. Sleep-related deaths in White infants remain proportional to the population. The reasons behind these racial disparities are not fully known, but it could be in part caused by the effects of chronic systemic inequity.⁷⁰ Of note, the disparity has been largely steady over the past decade in Harris County.

“The sleep-related death rate is more than double for Black infants than White infants.”

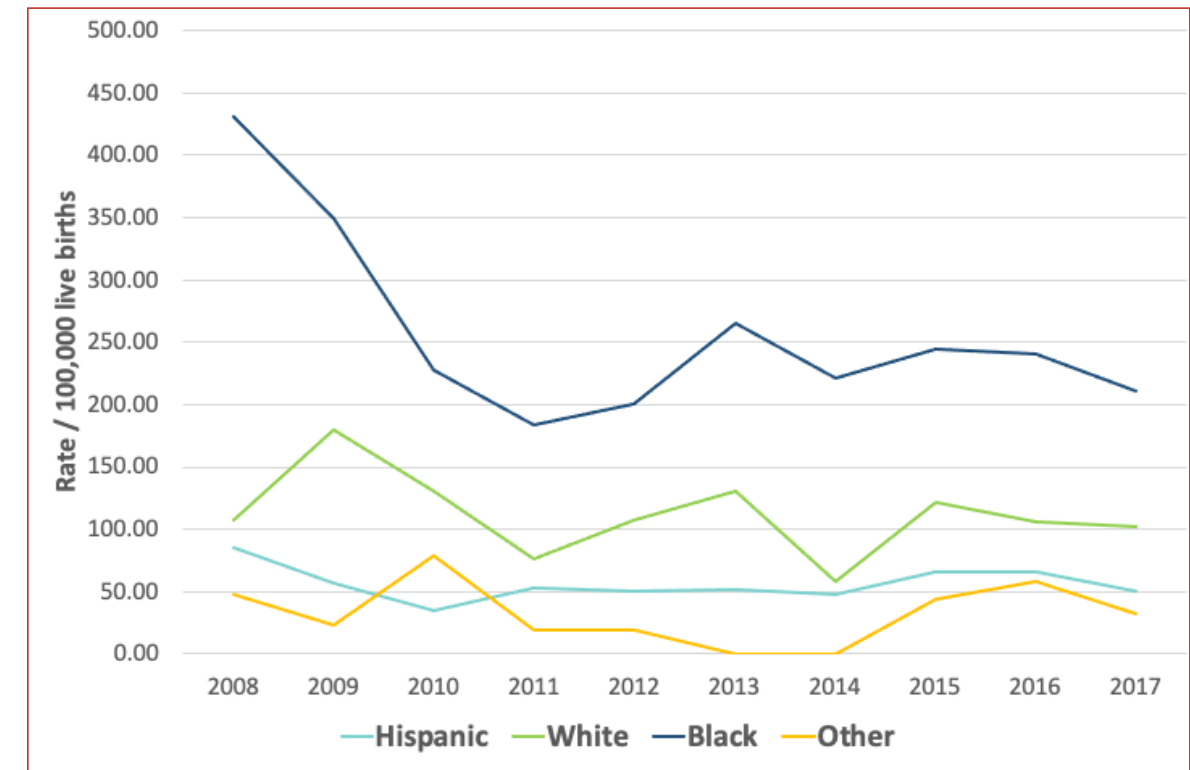


Figure 24. Infant sleep-related deaths by year and race/ethnicity, rate per 100,000 live births, Harris County, 2008-2017

As more interventions are developed to decrease the rate of sleep-related infant deaths, it is vital that we continue to monitor not only the total population rate of infant deaths but also infant death rates by race/ethnicity. Even interventions that seem successful by lowering the overall infant sleep-related death rate may increase the existing racial/ethnic disparity.⁷⁰

SUDDEN UNEXPECTED INFANT DEATHS (SUID) CONTINUED

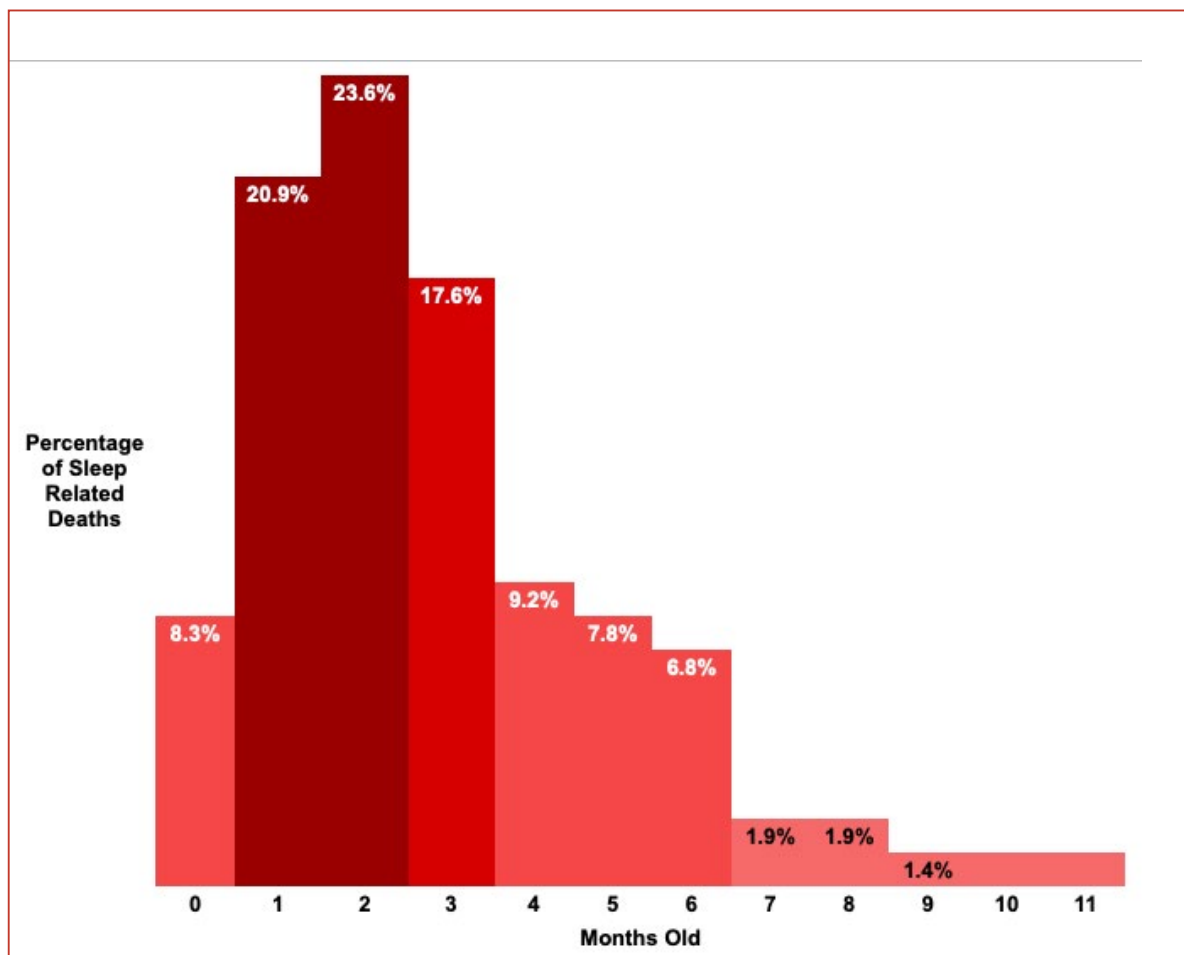


Figure 25. Infant sleep-related deaths by age in months, Harris County, 2008-2017

Note. There were a total of 8 deaths between 10 to 12 months old.

As noted in Figure 25, over half of the infant sleep-related deaths occurred within the first 3 months of life and three-quarters of the infant sleep-related deaths by 4 months of age. This is expected, as the youngest infants have the least amount of control over their airway position and are the least able to get themselves out of a situation that leads to suffocation.⁷¹ As infants develop, they gain the ability to roll over and move more, which leads to different dangers such as rolling and getting wedged between a mattress and a wall.⁷² One of the newer risks to be discovered is sleeping on an inclined surface. Surprisingly, some products advertised and sold for infant sleep-- such as the Fisher Price Rock 'n Play, which was recalled by the Consumer Product Safety Commission-- are unsafe, even when used as prescribed by the manufacturer because of the inclined position.⁷³

The finding that males are more impacted by sleep-related deaths (Figure 26) is supported in the literature on SUIDs, though researchers have not determined the etiology of this gender disparity.⁷⁴

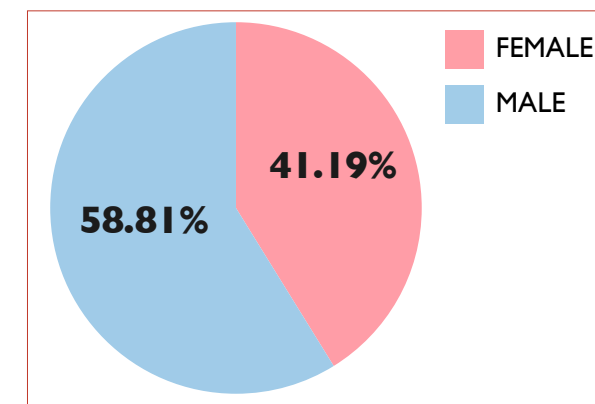


Figure 26. Infant sleep-related deaths by gender, Harris County, 2008 – 2017

Co-sleeping (Bedsharing) vs Other Unsafe Sleep Environments

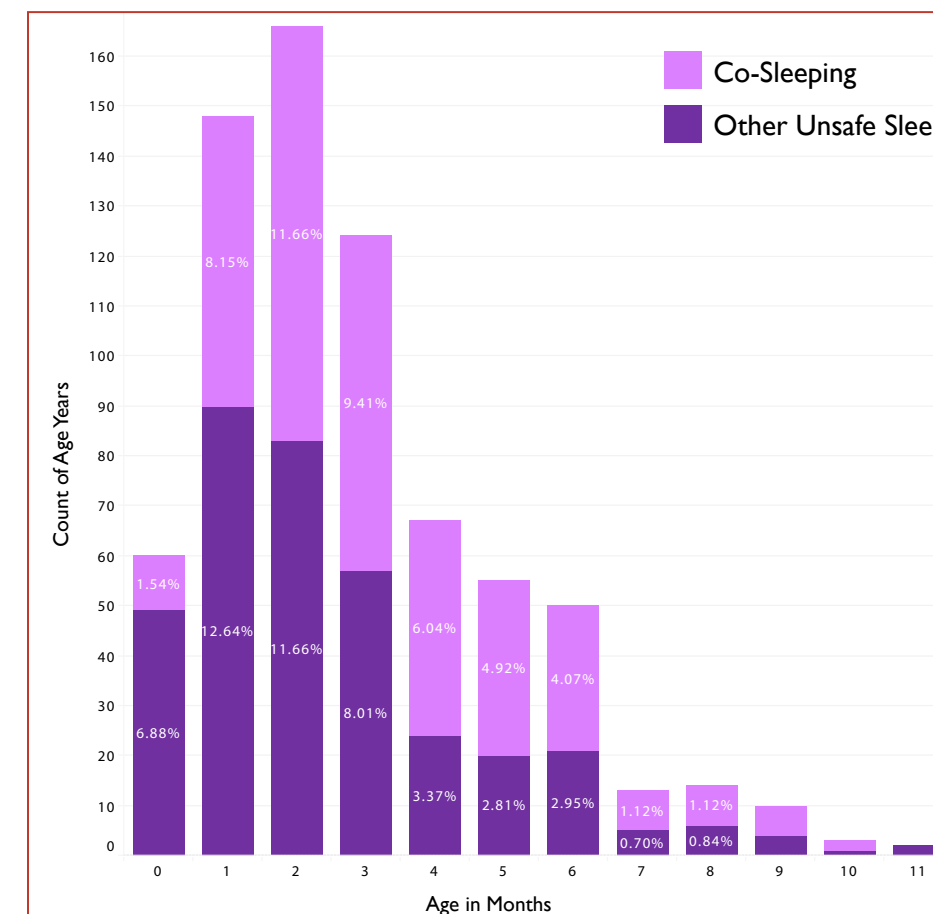


Figure 27. Infant deaths from co-sleeping (bedsharing) vs other unsafe sleep environments, Harris County, 2008 – 2017

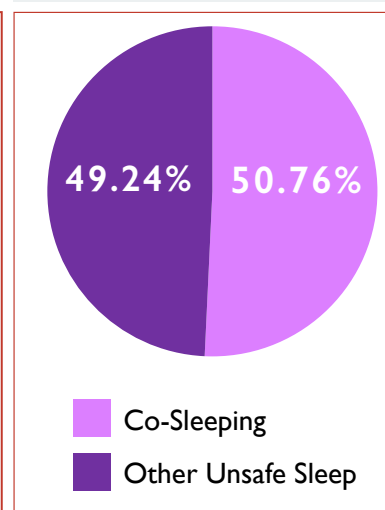


Figure 28. Infant deaths from co-sleeping (bedsharing) and other unsafe sleep environments by age in months, Harris County, 2008 – 2017

Note. There were 9 co-sleeping deaths from 9 to 12 months. There were also 9 deaths from other unsafe sleep environments from 9 to 12 months.

SUDDEN UNEXPECTED INFANT DEATHS (SUID) CONTINUED

More than half of the infant sleep-related deaths were from co-sleeping compared to other unsafe sleep environments (Figure 27). Co-sleeping deaths were noted in every age category. As noted in Figure 28, younger infants in the first couple of months of life were more likely to die co-sleeping. Co-sleeping has been identified as a modifiable risk factor for infant death in a number of studies. In Harris County, there was no statistically significant change in the number of deaths from co-sleeping between the years 2008 – 2017 (Figure 29). However, there has been a slow decrease in deaths from other unsafe environments such as sleeping alone on an adult bed, pillows or blankets in the crib, sleeping prone, etc.

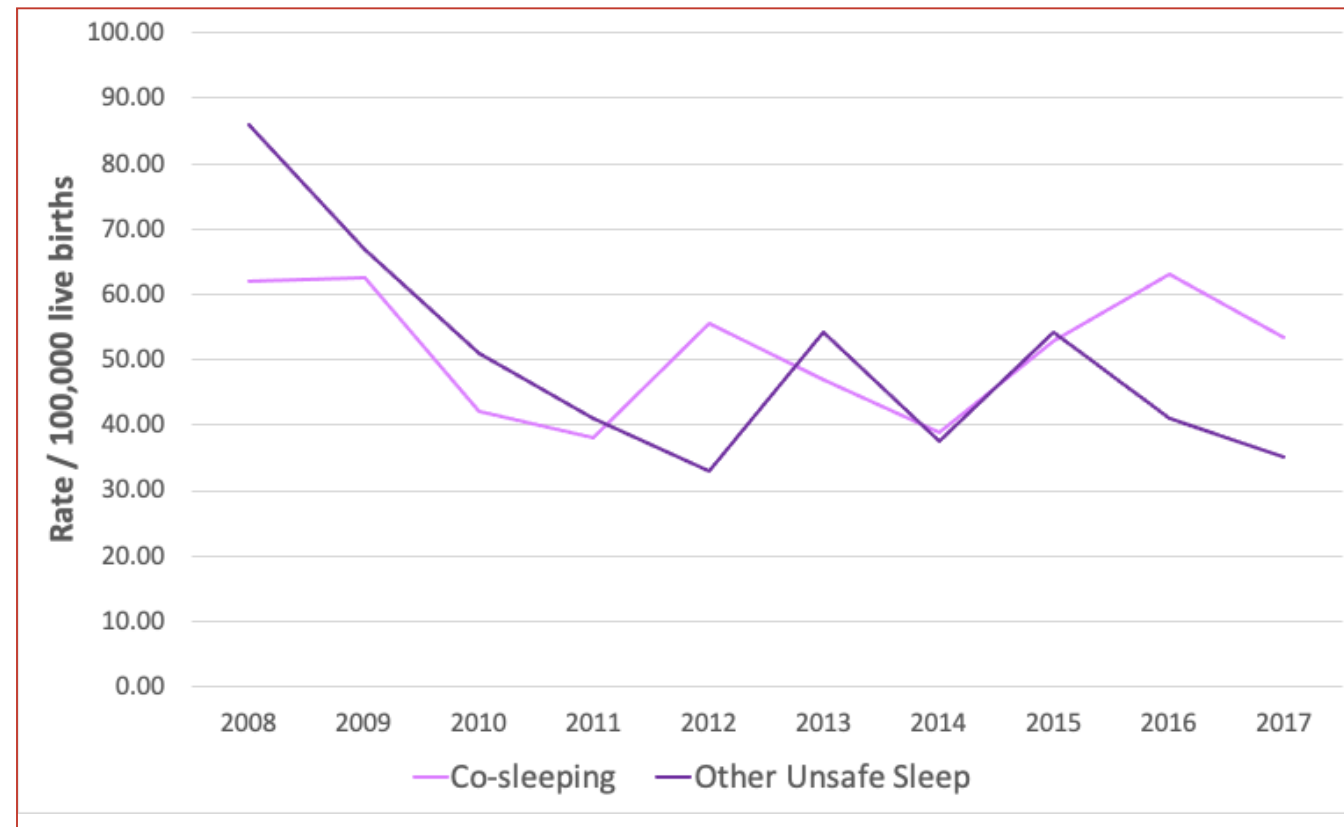


Figure 29. Infant deaths from co-sleeping (bedsharing) vs other unsafe sleep deaths per 100,000 live births, Harris County, 2008-2017

Risk and Protective Factors

The known risk factors for sleep-related infant deaths include anything that may increase the risk of suffocation or asphyxiation or decrease the arousability of the infant from sleep including the following: bedsharing (or sleeping on a couch or chair) with the infant, placing the infant to sleep on a soft surface, infant sleeping on an inclined surface, having blankets and other soft items (including crib bumpers, pillows, etc.), sharing the sleeping space with the infant, prematurity, exposing the infant to cigarette smoke (including chemicals remaining on clothing and in the environment), intoxicated caregiver (especially when combined with bedsharing), overheating, and sleeping in

“There has been a slow decrease in deaths from other unsafe environments such as sleeping alone on an adult bed, pillows or blankets in the crib, sleeping prone, etc.”

prone positions before the infant is able to roll over independently.^{66,71,72,75,76} Protective factors include room sharing, breastfeeding, pacifier use, and immunizations.⁷⁷ Many of these risks are modifiable and sleep-related deaths are preventable. Interestingly, in Harris County, most of the co-sleeping deaths occurred in homes that did have a safe place for the baby to sleep (crib or bassinet) but it was not being used. Access to a safe sleeping environment was not a barrier for those cases.

Prevention and Resources

Prevention

Many of the risk factors for sleep-related deaths are modifiable; therefore, many of these deaths are preventable. The AAP recommends that infants less than 1 year of age be placed alone on their back, on a firm surface for every sleep (including naps) and that they be placed near their caregivers (in the same room, not on the same surface). Pacifiers and breastfeeding are also recommended. Furthermore, the AAP recommends removing from the infant sleep area any soft or loose objects such as pillows, toys, blankets, bumper pads, and nonfitted sheets, and avoiding overheating the infant by overbundling or covering the infant’s face and head. Additionally, caregivers should avoid smoke exposure, alcohol, and illicit drug use during pregnancy and after birth.⁶⁶

AAP Recommendations for a Safe Infant Sleeping Environment⁶⁶

SIDS and Other Sleep-Related Infant Deaths: Updated 2016

1. Back to sleep for every sleep.
2. Use a firm sleep surface.
3. Breastfeeding is recommended.
4. It is recommended that infants sleep in the parents’ room, close to the parents’ bed, but on a separate surface designed for infants, ideally for the first year of life, but at least for the first 6 months.
5. Keep soft objects and loose bedding away from the infant’s sleep area to reduce the risk of SIDS, suffocation, entrapment, and strangulation.
6. Consider offering a pacifier at nap time and bedtime.
7. Avoid smoke exposure during pregnancy and after birth.
8. Avoid alcohol and illicit drug use during pregnancy and after birth.
9. Avoid overheating and head covering in infants.
10. Pregnant women should obtain regular prenatal care.

SUDDEN UNEXPECTED INFANT DEATHS (SUID) CONTINUED

11. Infants should be immunized in accordance with recommendations of the AAP and Centers for Disease Control and Prevention.
12. Avoid the use of commercial devices that are inconsistent with safe sleep recommendations.
13. Do not use home cardiorespiratory monitors as a strategy to reduce the risk of SIDS.
14. Supervised, awake tummy time is recommended to facilitate development and to minimize development of positional plagiocephaly.
15. There is no evidence to recommend swaddling as a strategy to reduce the risk of SIDS.
16. Health care professionals, staff in newborn nurseries and neonatal intensive care units, and child care providers should endorse and model the SIDS risk-reduction recommendations from birth.
17. Media and manufacturers should follow safe sleep guidelines in their messaging and advertising.
18. Continue the “Safe to Sleep” campaign, focusing on ways to reduce the risk of all sleep-related infant deaths, including SIDS, suffocation, and other unintentional deaths. Pediatricians and other primary care providers should actively participate in this campaign.
19. Continue research and surveillance on the risk factors, causes, and pathophysiologic mechanisms of SIDS and other sleep-related infant deaths, with the ultimate goal of eliminating these deaths altogether.

Resources

NICHD Safe to Sleep Campaign: <https://safetosleep.nichd.nih.gov/>

American Academy of Pediatrics Safe Sleep Information (for clinicians): <https://www.aap.org/en-us/about-the-aap/aap-press-room/campaigns/Safe-Sleep/Pages/default.aspx>

American Academy of Pediatrics Safe Sleep Information (for families): <https://www.healthychildren.org/English/ages-stages/baby/sleep/Pages/Safe-Sleep-for-Babies.aspxPages/Safe-Sleep.aspx>

Safe Kids Worldwide Sleep Safety Information: <https://www.safekids.org/risks/sleep-safety>

Texas Department of Family Protective Services Room to Breathe Campaign: http://www.helpandhope.org/Safe_Sleep/

Cribs for Kids: <https://cribsforkids.org/> (Local partners: Texas Children’s Hospital, Spring Branch Community Center, and Memorial Hermann Cypress)

Children’s Memorial Hermann Hospital Safe Sleep Information: <http://childrens.memorialhermann.org/patients-families/safe-to-sleep-tips/>

Texas Children’s Hospital Center for Childhood Injury Prevention Home Safety Program: <https://www.texaschildrens.org/departments/injury-prevention/home-safety-program>

Consumer Product Safety Commission statement on cardboard baby boxes: <https://www.cpsc.gov/CPSC-Statement-on-Cardboard-Baby-Boxes>

MOTOR VEHICLE COLLISIONS

Epidemiology

Motor vehicle collisions (MVC) involve collisions of any vehicle with an engine, including but not limited to cars, trucks, sport utility vehicles, all-terrain vehicles, boats, pedestrians, and cyclists. In 2018, MVCs were the most common (20%) cause of deaths among children (0-14 years) and adolescents (15-19 years) in the US.³² MVC-related child fatalities in the US decreased 38% from 2007 to 2016, with the mortality rate at 5.2 per 100,000 children in 2016; this decrease was likely due to advances in safety features, car seat use and design, driver education, and campaigns to reduce teen drunk driving.³²

The Texas child MVC mortality rate decreased from 11.3 in 2008 to 4.9 in 2017, per 100,000 children aged 0-19 years.^{35,78} In Texas, 3.4% of all MVC fatalities were among children, with a mortality rate of 2.07 per 100,000 children, versus 3.1% and 1.88 nationally.⁷⁹ In Texas, nearly half of all MVC child fatalities were vehicle occupants, and nearly 20% of those were drivers.³⁶ Forty percent of MVC fatalities among children aged 15-17 years were drivers, and less than a quarter of those teen driver fatalities were correctly wearing seat belts.³⁶ In Texas, the top 4 causes of child MVC fatalities were reckless driving, speeding, unsafe driving, and drugs/alcohol.^{36,80,81}

“Child fatality rates from motor vehicle collisions decreased 39% from 2008-2017.”

Harris County Statistics

In Harris County, rates of child MVC fatalities decreased 39% from 2008-2017 (Figure 30). In 2017 they reached less than half of the rate from 2009 (down from 5.86 to 2.43 per 100,000).

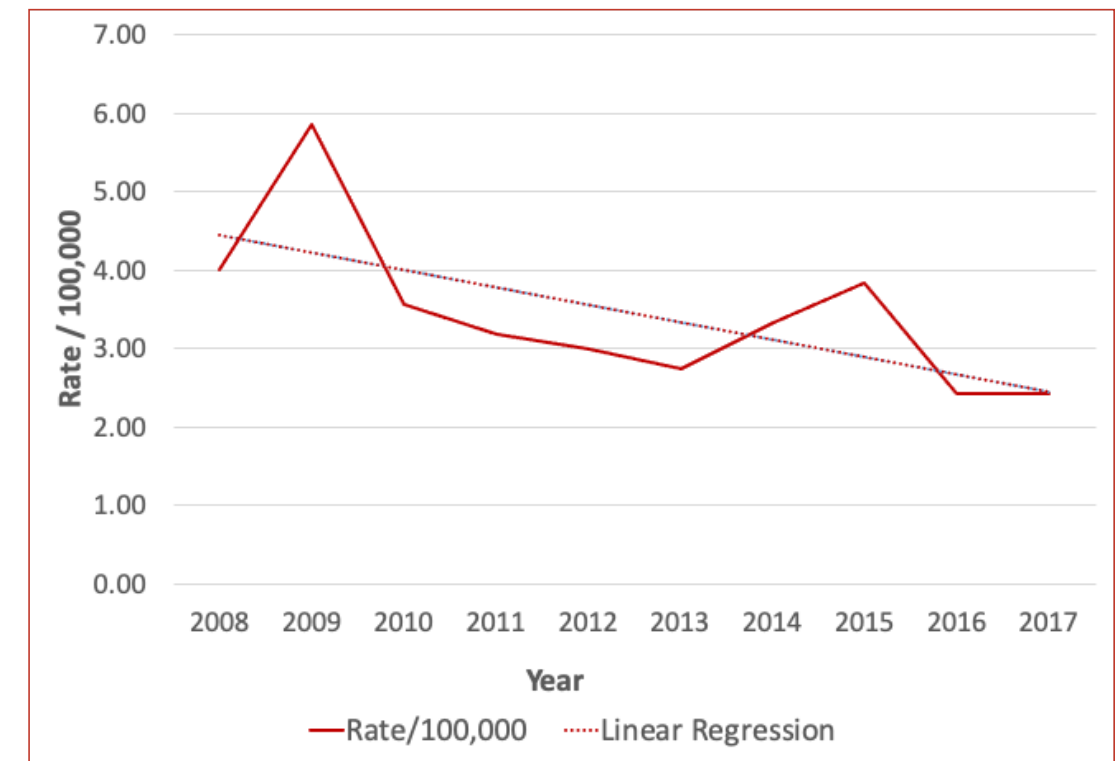


Figure 30. MVC deaths, rate per 100,000, children under 18 years, Harris County, 2008-2017

MOTOR VEHICLE COLLISIONS CONTINUED

Hispanic children are twice as likely to die from an MVC than any other race/ethnicity (Figure 31).

“Hispanic children are twice as likely to die from an motor vehicle collision than any other race/ethnicity.”

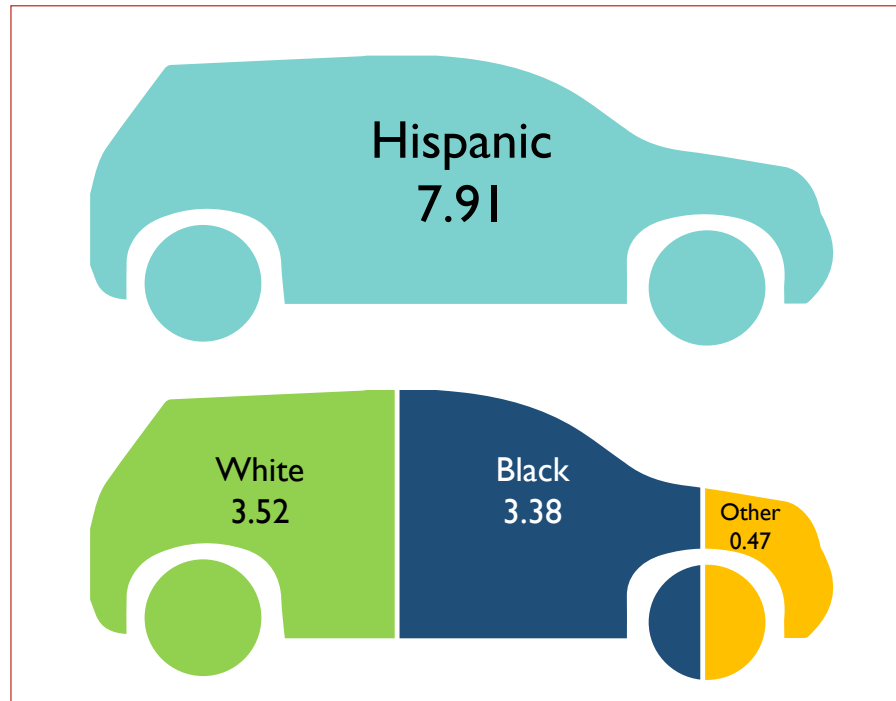


Figure 31. MVC deaths by race / ethnicity, rate per 100,000, children under 18 years, Harris County, 2008 – 2017

Boys are at higher risk of MVC death than girls (Figure 32). This could be due to a difference in risk-aversion and socialization around safety.

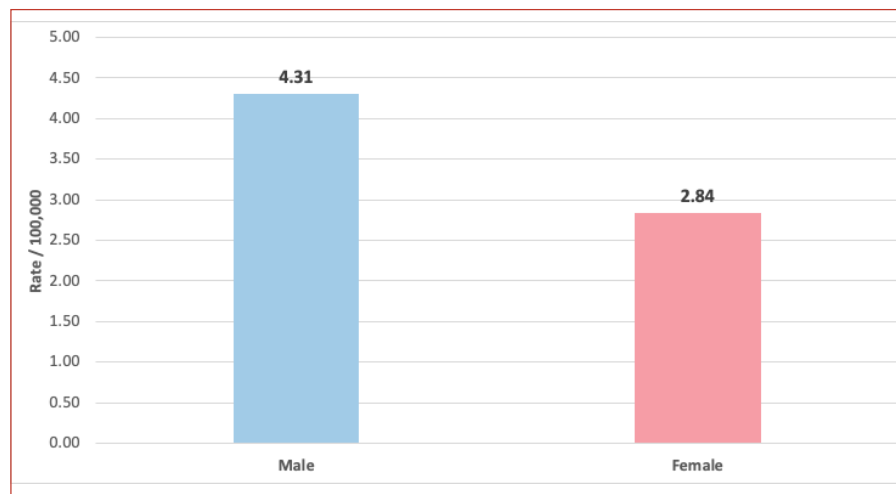


Figure 32. MVC deaths by gender, rate per 100,000, children under 18 years, Harris County, 2008 – 2017

Risk and Protective Factors

Overall, males and teenagers (15-19 years) had higher rates of death from MVCs than others.^{32,79} Mortality rates are lower in urban areas than in rural, which tend to have more distance, travel-time, and road area between destinations.³² The risk of death increases with age, where adolescents are at more risk for a MVC fatality than younger children. MVCs are the number one cause of death among adolescents ages 15-20 years.⁸² Adolescents aged 15-20 years old are 5.4% of all licensed drivers, but account for 9% of all fatal MVC.⁸² Adolescents are more susceptible to MVC fatality because they tend to be new/unexperienced drivers and may be easily distracted, or more prone to risk-taking behaviors, such as driving without a seatbelt, using a cell phone, or driving while intoxicated. The most common factors of crashes among teenaged drivers include driver error, not using restraints, speeding, recklessness, single vehicle collisions, driving at night, increased risk with each additional passenger, distraction, and substance use.^{32,82}

These risk factors for teen driver MVCs are consistent with Harris County data from 2008-2017, where adolescent deaths mostly occurred during circumstances involving unlicensed teenage drivers with no parental supervision, and reckless driving such as speeding and risk-taking.

Another Harris County MVC death risk factor was intoxicated adult drivers with a child passenger. The National Highway Traffic Safety Administration reported that among the children killed in traffic crashes in 2017, 19% were killed in alcohol-impaired driving crashes, of which 54% were passengers of the intoxicated driver, 32% were passengers struck by an intoxicated driver, 10% were non-occupants, and less than 1% were intoxicated teen drivers. Of those fatalities who were passengers of intoxicated drivers, 42% were unrestrained, whereas 26% of other passengers were unrestrained.⁷⁹

Protective factors are factors that will make it more likely for an individual to engage in safe driving behaviors.⁸³ Legislation regarding safe driving, such as seat belt laws, child passenger safety laws, blood alcohol content laws, mobile devices laws, and alcohol taxes, are protective for safe driving. Individual factors such as sleep duration, mindfulness to reduce aggression and anxiety, and emotional stability are also protective for safe driving.

Prevention and Resources

Prevention

The best prevention of child passenger fatalities is driving safely and ensuring all children are properly restrained. In 2017, 35% of all MVC deaths among children 12 years and younger in the US were unrestrained; the percentage of child fatalities that were unrestrained varied from 15% among infants (under 1-year-old) to 43% among children 9-12 years old. Best-practice guidance from the American Academy of Pediatrics⁸⁴ and National Highway Traffic Safety Administration⁸⁵ recommends that all children under 14 years must sit in the back seat and that car seats must be properly installed and size-appropriate. Other child passenger safety recommendations include: proper installation of car seats, graduating car seats only once the child has maxed out in size for current sized seat, never placing rear-facing seats in front of an airbag, and registration of the car seat with its manufacturer, in case of safety recalls. Children start rear-facing and remain rear-facing as long as possible. Once the child outgrows a rear-facing convertible seat, the child will graduate to the forward-facing position with a 5-point harness. After the height and weight limits are reached on the forward-facing seat, the child will graduate

MOTOR VEHICLE COLLISIONS CONTINUED

to a belt-positioning booster seat. In Texas, the law requires children to remain in a belt-positioning booster seat until age 8 or 4'9" in height.⁸⁶ After graduating from a belt-positioning booster, children should properly use the lap and shoulder belt in the vehicle.⁸⁷ Safe Kids Greater Houston trains child passenger safety technicians across the county and provides free child safety seat inspections and education throughout Harris County (see information in the resource section).

Among MVC fatalities, adolescents were more likely to be unrestrained than children. A national study in 2017 found that seatbelt use in the front seat was lower among 16-24-year-olds (87.0%) than other age groups.⁸⁸ Rear seatbelt use was higher in states with seatbelt laws for all positions (84.3%) than in states with front-seat only laws (62.7%), and restraint use among children aged 0-7 years was 92.8%, higher than the previous year (90.9%).⁸⁸ Adults who used restraints were more likely to restrain their children than adults who do not use restraints. Nationally, 71% of the child passengers of unrestrained drivers were also unrestrained⁷⁹, compared to 81% among child passengers aged 5-12 years in Texas.^{79,87}

Texas is one such state that has seatbelt requirements for all positions in the vehicle. Texas law ("Click It or Ticket") started in 2002 to incentivize everyone in a vehicle, including backseat passengers, to buckle up or face fines; penalties increase if the driver has unrestrained child passengers. Since the implementation of Click It or Ticket, overall seatbelt use has increased 15% in Texas.⁸⁹

In Texas, other prevention legislation includes a graduated driver's licensing program^{iv}, and, since 2017, a ban on using cellphones while driving, especially in protected areas such as school zones.⁹⁰ Additionally, Texas law requires drivers to carry collision liability insurance coverage, maintains road safety signs and speed limits, and implements penalties for adults who drive while intoxicated (DWI) especially in the case of a child passengers under 15 years old.⁹¹

Some prevention strategies include seating laws, car seat distribution and education, community information, and enforcement of safe driving.⁸⁷ Other prevention efforts include anticipatory guidance and education for developmentally appropriate restraints. Overall, safety features such as: restraints and car seats, improved car standards (rear-view camera), road improvements, graduated driver's licensing programs, teen driver risk aversion programs, and disabling cell phone distractions during driving all help prevent child fatalities among MVCs.

Most MVC deaths in the US occur as occupants of a vehicle (74%); however, 24% of child fatalities due to MVC are non-occupants, such as pedestrians or bicyclists.⁷⁹ Prevention for child and pedestrian fatalities includes less distracted driving, slower speeds, crosswalks, designated school paths, sidewalks, streetlights, teaching kids a plan for safe walking, pedestrian-friendly city planning, and supervised practice for new drivers. The driveway is a high-risk area for small children not in the vehicle. To keep them safe, ensure children are far away from the vehicle before starting the car, especially since small children are often not visible in front of or behind large vehicles.⁹²

Resources

Vision Zero Network: <https://visionzeronetwork.org/>

Texas Department of Transportation Traffic Safety Division: <https://www.txdot.gov/inside-txdot/division/traffic.html>

Texas Department of State Health Services Safe Riders Traffic Safety Program: <https://www.dshs.state.tx.us/saferiders/>

Safe Kids Greater Houston Child Passenger Safety: <https://www.safekidsgreaterhouston.org/child-passenger-safety>

^{iv} Graduated Driver License (GDL) Program – Phase 1: learner's license--must have a fully licensed adult in the front seat of the car with them for at least 6 months; Phase 2: provisional license--no more than 1 passenger under the age of 21 and cannot drive between midnight and 5 am; Phase 3: unrestricted license.⁹⁰

DROWNING

Epidemiology

In the US, among children ages 1-4 years, drowning causes more deaths than any condition except congenital anomalies. One of the major differences we see in drowning cases is that the place where children drown differs by age. Infants are more likely to drown at home, often in a bathtub or a bucket. Toddlers tend to drown more often in swimming pools or hot tubs, often because they are not watched closely enough. Older children and adolescents most frequently drown in ponds, lakes, and streams as their propensity to take risks increases.

The CDC reports that rates of drowning are higher for Black people (all ages under 29), 1.4 times higher than among White people. In 2017, the Texas child mortality rate for unintentional drowning deaths among children aged 0-19 was 1.2 per 100,000 children.³⁵ It is difficult to compare national, state, and local rates directly because they are reported by different age groups.

More than 50% of drowning victims treated in emergency departments require hospitalization or transfer for further care. Children who suffer injury but do not die from drowning may develop severe brain damage and long-term disabilities such as memory problems, learning disabilities, and permanent loss of basic functioning (permanent vegetative state).

Drowning was the second most prevalent cause of accidental deaths among children in Texas between 2014 and 2015. Children aged 1-4 are the most likely to die in drowning events, accounting for 68% (2014) and 42% (2015) of drowning deaths in pools, hot tubs, or spas, whereas 46% (2014) and 42% (2015) of open-water drowning deaths were among children 15-17 years old. Of deaths that occurred in a pool, approximately 82% in 2014 and 79% in 2015 had no barrier to limit pool access.³⁶

Harris County Statistics

As awareness of the need for caution has increased, we have seen an overall decrease in the rate of drowning in Harris County, with an uncharacteristic spike in 2016 (Figure 33).

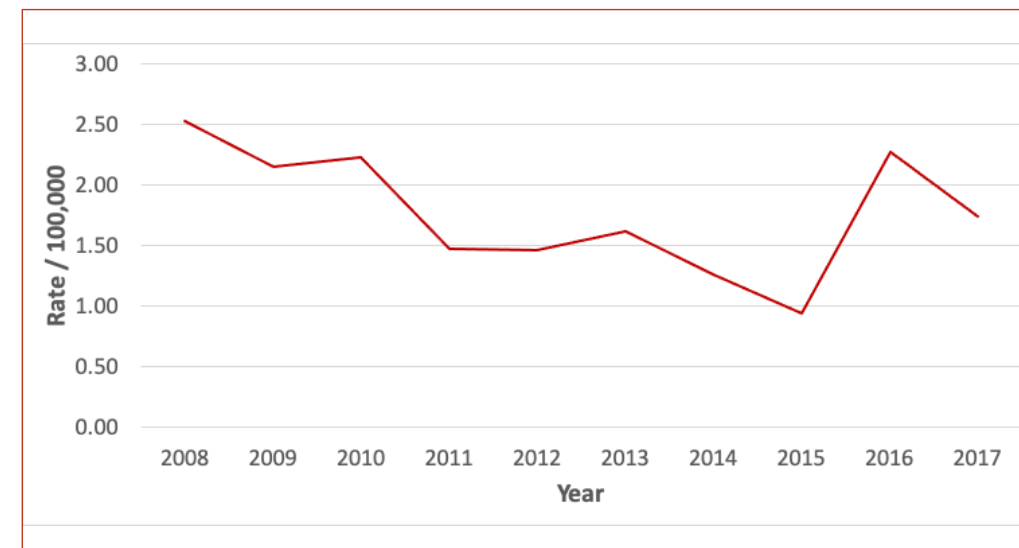


Figure 33. Drowning deaths by year, rate per 100,000, children under 18 years, Harris County, 2008 – 2017

DROWNING CONTINUED

Children of all ages are at risk of drowning, even if they know how to swim. But the highest risk group is children ages 1 to 4 years. There is a continued decrease in rates of drowning up to age 16, when there is a slight jump again due to increased unsupervised water play and increased risk-taking behaviors (Figure 34).

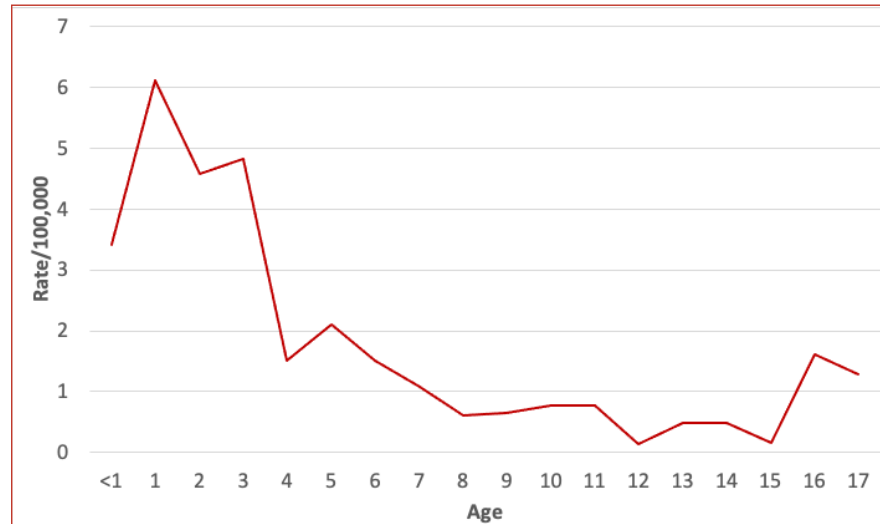


Figure 34. Drowning deaths by age, rate per 100,000, children under 18 years, Harris County, 2008 – 2017

In Harris County, White children (0-17 years) are 1.95 times more likely to die by drowning than children of other races/ethnicities (Figure 35).

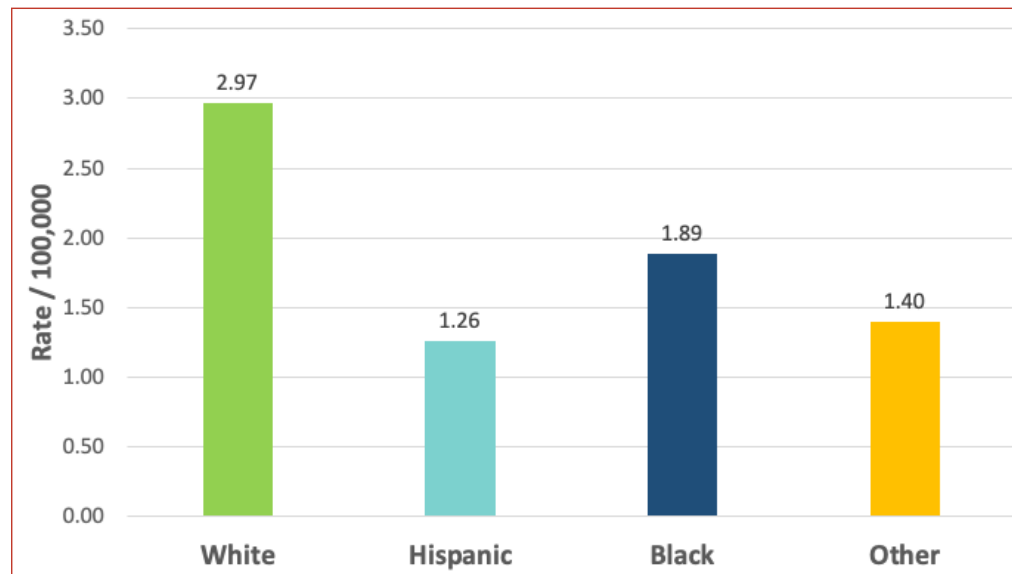


Figure 35. Drowning deaths by race/ethnicity, rate per 100,000, children under 18 years, Harris County, 2008 – 2017

Boys across the age span, including as infants, are 2.16 times as likely to drown as girls (Figures 36 and 37). Similar to MVC risk, females tend to be more risk averse than males. Previous studies found that males may overestimate their swimming ability and underestimate their risk of drowning.

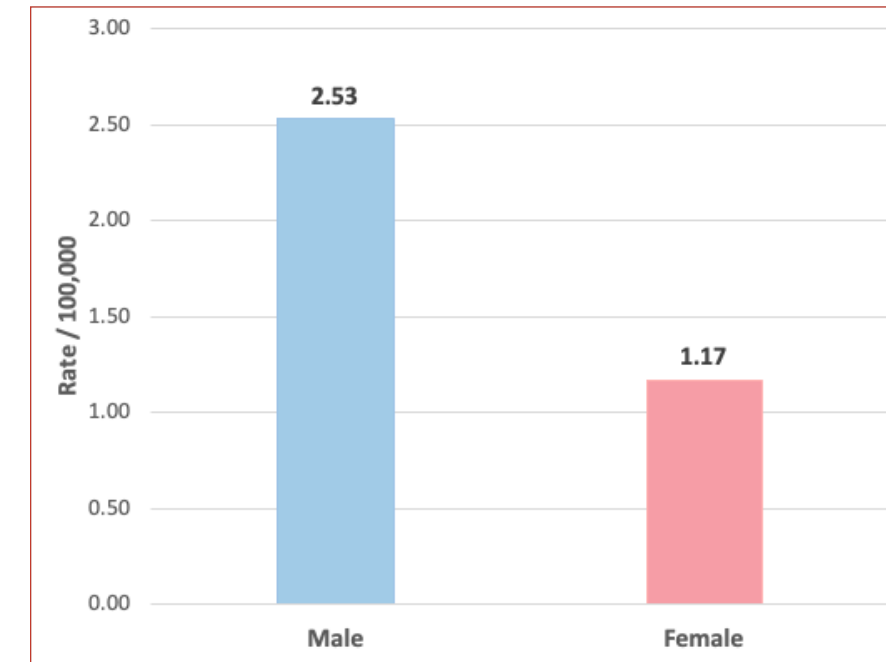


Figure 36. Drowning deaths by gender, rate per 100,000, children under 18 years, Harris County, 2008 – 2017

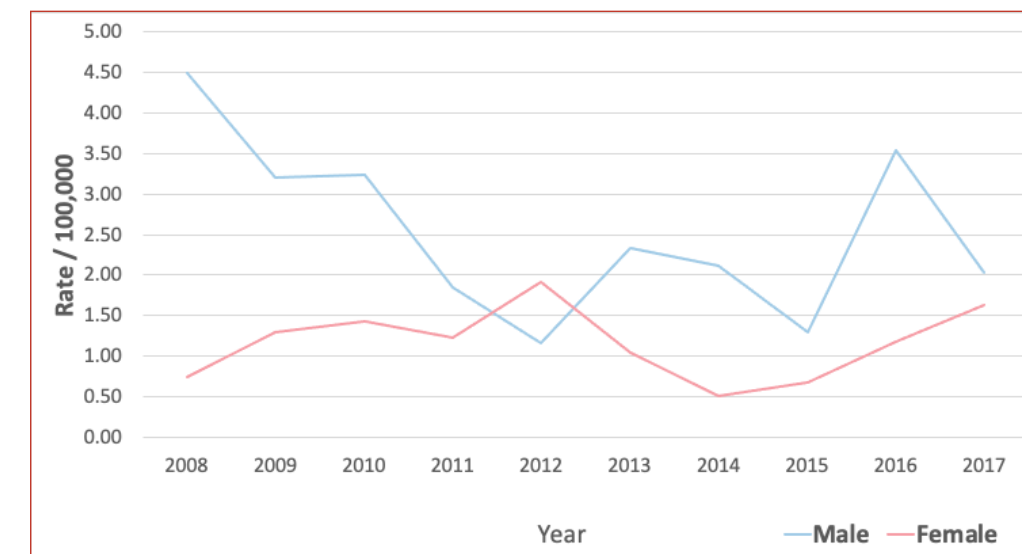
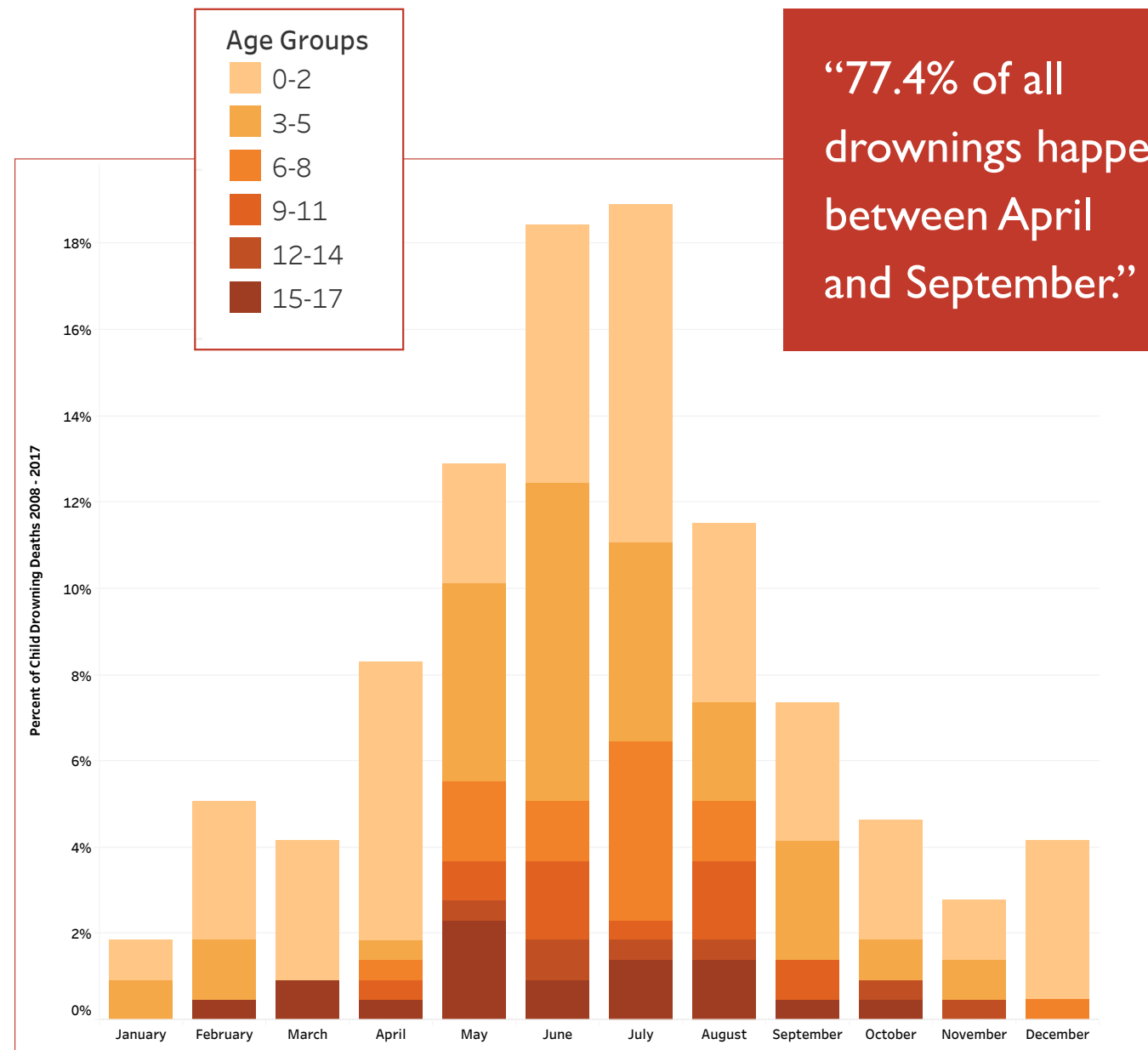


Figure 37. Drowning deaths by gender each year, rate per 100,000, Harris County, 2008 – 2017

DROWNING CONTINUED

While drowning deaths can happen at any time, they are most prevalent in the warmer months of the year: 77.4% of all drownings happen between April and September (Figure 38). Younger children are more likely to be the ones to drown in the cooler months, as they are more likely to drown in a bath tub at home or wander unsupervised into a body of water (Figure 38).



“77.4% of all drownings happen between April and September.”

Figure 38. Percentage of deaths by month of the year, 2008 – 2017, with ages grouped every 3 years, Harris County

Risk and Protective Factors

The Centers for Disease Control and Prevention (CDC) state that the main factors that increase drowning risk are 1) lack of swimming ability, lack of barriers (e.g., pool fencing), lack of supervision, body of water location depending on age (e.g., home in bathtub, home in swimming pool, lakes, rivers, etc.), failure to wear Coast Guard approved life jackets, alcohol use, and seizure disorders.⁹³

Prevention & Resources

Prevention

THE CDC PROVIDES KEY PREVENTION TIPS FOR PARENTS AND CAREGIVERS⁹⁴:

- **Learn life-saving skills.**
Everyone should know the basics of swimming (floating, moving through the water) and cardiopulmonary resuscitation (CPR).
- **Fence it off.**
Install a four-sided isolation fence, with self-closing and self-latching gates, around backyard swimming pools. This can help keep children away from the area when they aren't supposed to be swimming. Pool fences should completely separate the house and play area from the pool.
- **Make life jackets a must.**
Make sure kids wear life jackets in and around natural bodies of water, such as lakes or the ocean, even if they know how to swim. Life jackets can be used in and around pools for weaker swimmers, too.
- **Be on the lookout.**
When kids are in or near water (including bathtubs), closely supervise them at all times. Because drowning happens quickly and quietly, adults watching kids in or near water should avoid distracting activities like playing cards, reading books, talking on the phone, and using alcohol or drugs.

Resources

National Drowning Prevention Alliance <https://ndpa.org/>

American Academy of Pediatrics: Drowning prevention
For parents: Drowning Prevention for Curious Toddlers: What Parents Need to Know <https://www.healthychildren.org/English/safety-prevention/at-play/Pages/Water-Safety-And-Young-Children.aspx>

For pediatricians: Drowning Prevention Toolkit <https://www.aap.org/en-us/about-the-aap/aap-press-room/campaigns/drowning-prevention/Pages/default.aspx>

Texas Drowning Prevention Alliance <http://www.txdpa.com/>

Safe Kids Greater Houston: <https://safekidsgreaterhouston.org/water-safety>

OTHER UNINTENTIONAL INJURY DEATHS

Overdose

Drug overdose is now the leading cause of injury-related death in the US. In 2017, more than 70,000 people died from drug overdose in the US, and 68% of these deaths involved a prescription or illicit opioid.⁹⁵ While the vast majority of overdose deaths occur in adults, children and adolescents are not immune. In fact, people are most likely to begin using and abusing substances—including tobacco, alcohol, and illegal and prescription drugs—during adolescence and young adulthood.⁹⁶

Results from the 2017 Youth Risk Behavior Surveillance System conducted in high schools across the Houston area reveals that approximately 54% of high school students have tried alcohol, 34% marijuana, 12.9% a prescription medication without a doctor's prescription, 7.8% cocaine, and 3.9% heroin, and 3.9% have injected illegal drugs. Additionally, more than a quarter of youth (27.5%) had been offered, sold, or given illegal drugs on school property.¹⁸ Compared to all US youth surveyed, Houston's high school students were statistically less likely to have ever used alcohol but statistically more likely to have tried illegal and potentially more deadly substances including cocaine, heroin, methamphetamines, and injectable substances.⁹⁵ Therefore, attention to substance use and abuse among youth in the Houston area is warranted and a likely crucial step in helping reduce overdose deaths now and in the future.

For children and adolescents in Harris County, drug overdose was the eighth highest cause of death for 2008-2017 for all ages. However, it ranked fourth for adolescents ages 13-17. Examination of overdose deaths by age indicates a bimodal distribution, with 24 deaths (38%) occurring in children 6 and under, 0 deaths occurring for children 7-12 years of age, and 39 (62%) occurring in 13-17-year-olds (Figure 39).

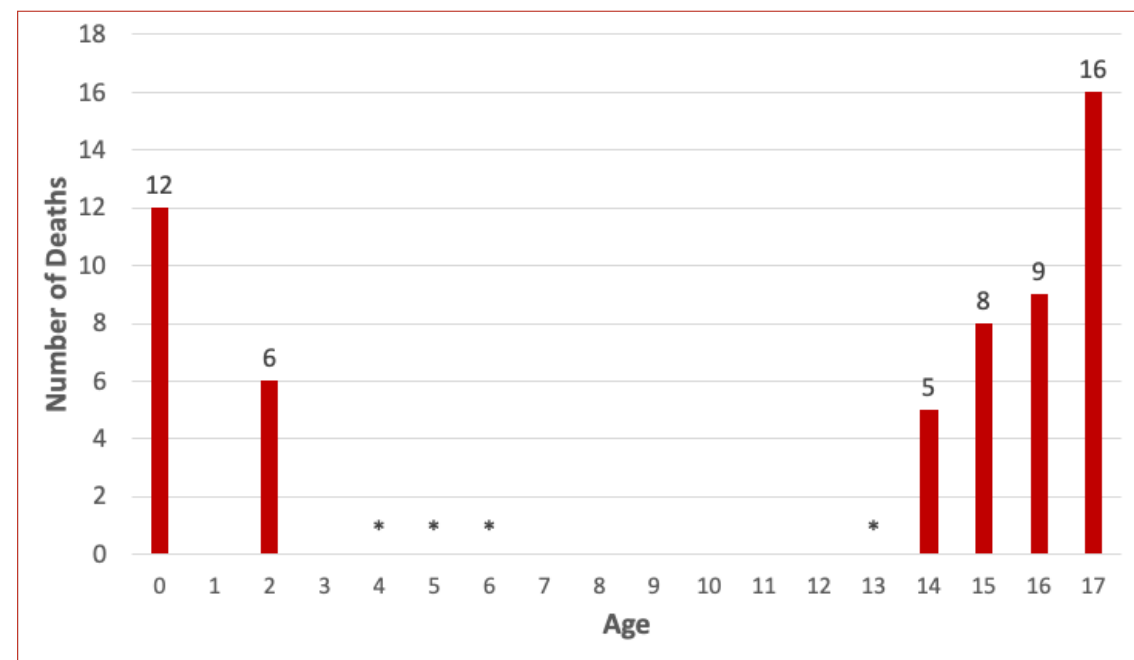


Figure 39. Total number of overdose deaths, by age, children under 18 years, Harris County, 2008 – 2017

Note: Columns labeled * are suppressed data because there were fewer than 5 deaths.

Over the 10-year reporting period, overdose deaths among youth were nearly evenly split between females (n=31, 49%) and males (n=32, 51%). For younger children, the proportion of overdose deaths was higher among females (63%), whereas for adolescents, the majority of overdose deaths (60%) occurred in males (Figure 40).

Although total deaths by race/ethnicity were relatively evenly split across groups, with slightly more among White children, there were large differences when broken down by age (Figure 41). Of the 19 Black children with death due to overdose, 84% occurred among children 6 years and younger, while 94% of overdose deaths among White children occurred in adolescents.

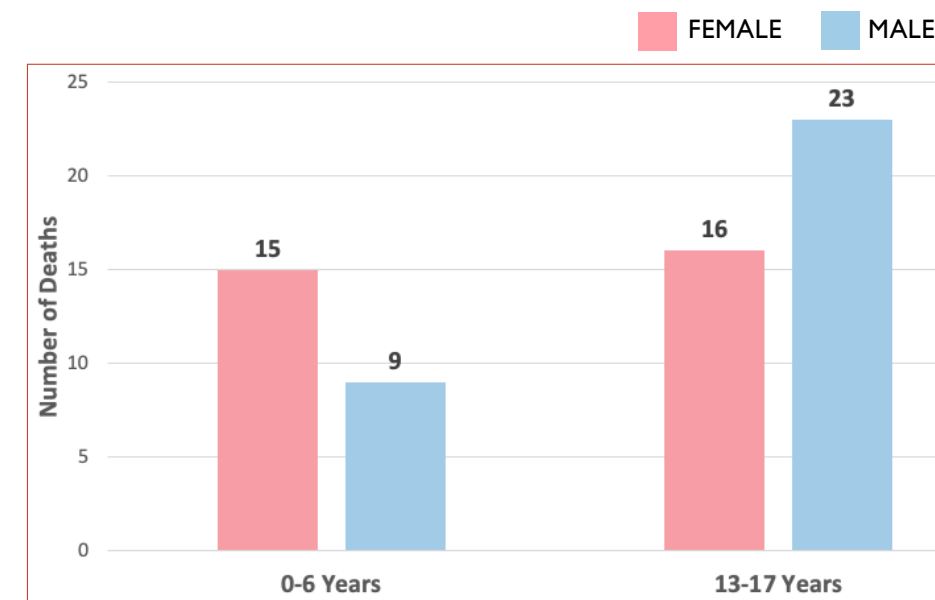


Figure 40. Total overdose deaths, by age and gender, Harris County, 2008 – 2017

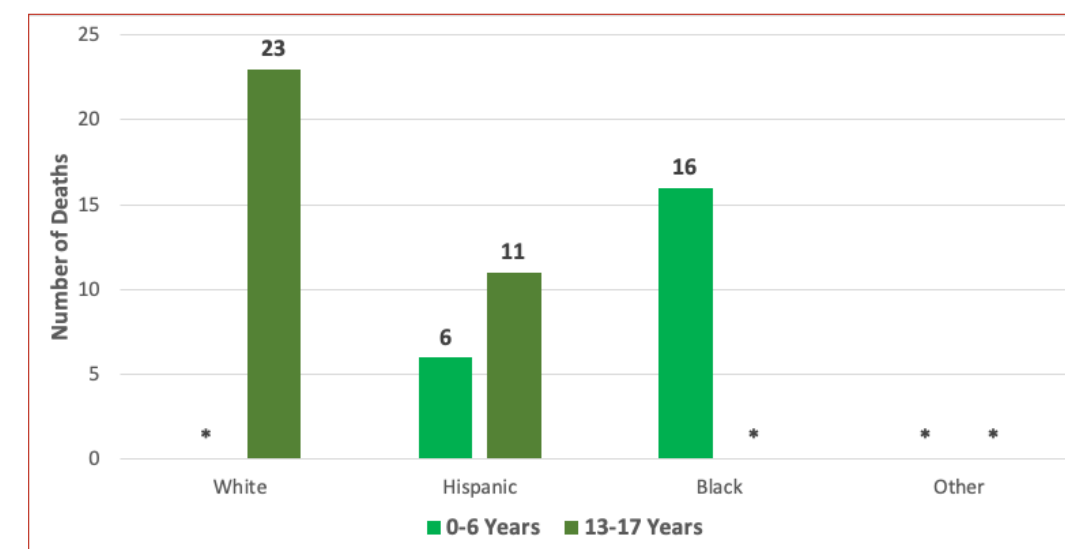


Figure 41. Number of overdose deaths by age range and race/ethnicity, Harris County, 2008 – 2017

Note: Columns labeled * are suppressed data because there were fewer than 5 deaths.

OTHER UNINTENTIONAL INJURY DEATHS CONTINUED

The majority (64%) of the all overdose deaths were ruled accidental, followed by 17% ruled as a suicide, and the remaining 19% were split between homicide and undetermined (Figure 42). However, manner of death differed between younger children and adolescents. For children 6 years and younger, slightly more than half (54%) were considered accidental deaths. Accidental deaths in this age group were due to unintentional overmedication and children ingesting hazardous substances not securely stored. One third of overdose deaths in young children occurred intentionally and were considered homicides.

For adolescents, nearly 70% of overdose deaths were ruled accidental and 30% were suicides or undetermined (mostly suicide). Unlike their younger counterparts, these deaths were due to the teen ingesting substances, including prescription and illicit drugs, and either intentionally or unintentionally overdosing.

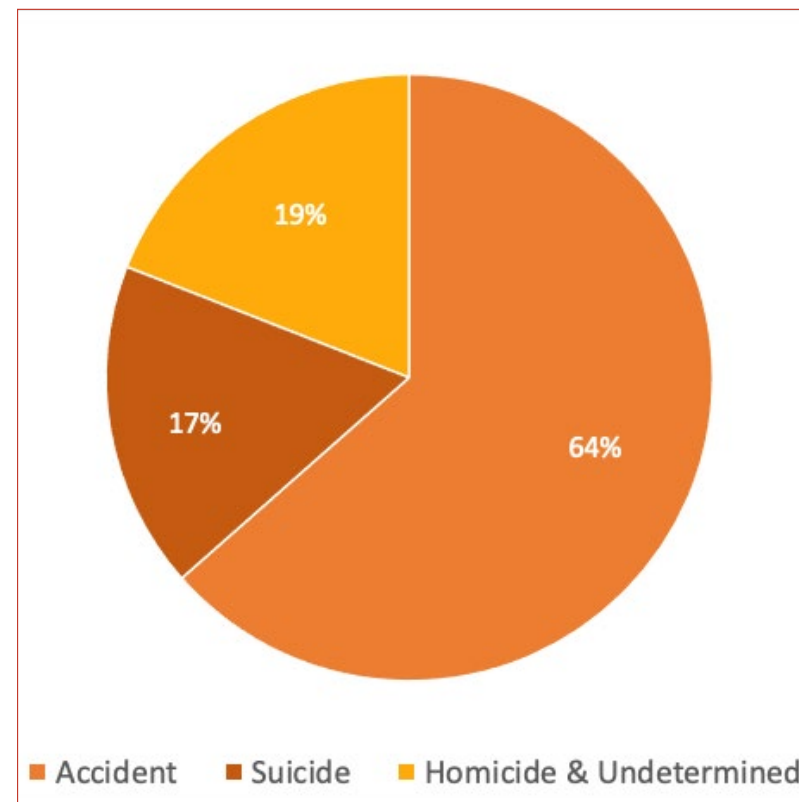


Figure 42. Manner of death for overdose, all ages, children under 18 years, Harris County, 2008 – 2017

Note: In this figure homicide overdoses and undetermined-manner overdoses were combined because of low incidence rates. All homicides were in children 6 and under; all suicides were in children 13 and older. Undetermined deaths were found among all ages. In children 6 and younger, overdose deaths accounted for 54% and in children 13 and older it accounted for 69% of the deaths.

Prevention and Treatment

The cause of overdose varied widely between young children and adolescents, with younger children experiencing accidental overmedication and ingestion from unsecured substances and adolescents from experimentation and use of prescription and illicit drugs as well as suicide via overdose.

YOUNG CHILDREN

The CDC outlines the following safety tips for the prevention of poisonings among children and adults⁹⁷:

Drugs and Medicines

- Only take prescription medications that are prescribed to you by a healthcare professional. Misusing or abusing prescription or over-the-counter medications is not a “safe” alternative to illicit substance abuse.
- Never take larger or more frequent doses of your medications, particularly prescription pain medications, to try to get faster or more powerful effects.
- Never share or sell your prescription drugs. Keep all prescription medicines (especially prescription painkillers, such as those containing methadone, hydrocodone, or oxycodone), over-the-counter medicines (including pain or fever relievers and cough and cold medicines), vitamins, and herbals in a safe place that can be reached only by people who take or give them.
- Follow directions on the label when you give or take medicines. Read all warning labels. Some medicines cannot be taken safely when you take other medicines or drink alcohol.
- Turn on a light when you give or take medicines at night so that you know you have the correct amount of the right medicine.
- Keep medicines in their original bottles or containers.
- Monitor the use of medicines prescribed for children and teenagers, such as medicines for attention deficit hyperactivity disorder, or ADHD.
- Dispose of unused, unneeded, or expired prescription drugs. Follow federal guidelines for how to do this.
- Participate in National Drug Take Back days recognized by the Drug Enforcement Administration or local take-back programs in your community.

Household Chemicals and Carbon Monoxide

- Always read the label before using a product that may be poisonous.
- Keep chemical products in their original bottles or containers. Do not use food containers such as cups, bottles, or jars to store chemical products such as cleaning solutions or beauty products.
- Never mix household products together. For example, mixing bleach and ammonia can result in toxic gases.
- Wear protective clothing (gloves, long sleeves, long pants, socks, shoes) if you spray pesticides or other chemicals.
- Turn on the fan and open windows when using chemical products such as household cleaners.

OTHER UNINTENTIONAL INJURY DEATHS CONTINUED

Keep Young Children Safe from Poisoning*Be Prepared*

- Put the poison help number, 1-800-222-1222, on or near every home telephone and save it on your cell phone. The line is open 24 hours a day, 7 days a week.

Be Smart about Storage

- Store all medicines and household products up and away and out of sight in a cabinet where a child cannot reach them.
- When you are taking or giving medicines or are using household products:
 - » Do not put your next dose on the counter or table where children can reach them—it only takes seconds for a child to get them.
 - » If you have to do something else while taking medicine, such as answer the phone, take any young children with you.
 - » Secure the child safety cap completely every time you use a medicine.
 - » After using them, do not leave medicines or household products out. As soon as you are done with them, put them away and out of sight in a cabinet where a child cannot reach them.
 - » Be aware of any legal or illegal drugs that guests may bring into your home. Ask guests to store drugs where children cannot find them. Children can easily get into pillboxes, purses, backpacks, or coat pockets.

Other Tips

- Do not call medicine “candy.”
- [Identify poisonous plants](#) in your house and yard and place them out of reach of children or remove them.

Treatment for Poisonings/Overmedication in Young Children:

- Remain calm.
- Call 911 if you have a poison emergency and the victim has collapsed or is not breathing. If the victim is awake and alert, dial 1-800-222-1222. Try to have this information ready:
 - » o the victim’s age and weight
 - » o the container or bottle of the poison if available
 - » o the time of the poison exposure
 - » o the address where the poisoning occurred
- Stay on the phone and follow the instructions from the emergency operator or poison control center.

Substance Use and Substance Use Disorder for Children and Adolescents

Given the rise of national attention to drug overdose and substance use disorders, there is a growing number of prevention strategies and resources available for communities, schools, and families.

The Evidence-Based Practices Resource Center from the [Substance Abuse and Mental Health Services Administration \(SAMHSA\)](#) provides a number of resources and best-practice guides for healthcare providers, systems, and communities seeking to prevent substance misuse across age groups and in special populations. The guide for specific substance misuse prevention for young adults can be found [here](#).

The National Institute on Drug Abuse has published multiple prevention resources including the [Principles of Substance Abuse Prevention for Early Childhood](#), which outlines risk and protective factors (biological, psychological, social, and environmental) for substance use disorders starting as early as the prenatal period, as well as early intervention strategies to prevent substance use disorders and behavioral problems.

According to the [Prevention Resource Center for Region 6](#), substance abuse prevention programs offered in the greater Houston area include:

- [All Stars](#): All Stars is a continuum of prevention programs, for grades 4-12, designed to delay the onset of risky behaviors with adolescents. The program uses a character-based approach to preventing high-risk behaviors such as substance use, violence, and premature sexual activity.
- [Botvins Life Skills](#): Botvin LifeSkills Training (LST) is a research-validated substance abuse prevention program aiming to reduce the risks of alcohol, tobacco, drug abuse, and violence by targeting the major social and psychological factors that promote the initiation of substance use and other risky behaviors.
- [Kid Connection / Rainbow Days](#): Rainbow Days provides training and resources for several interventions targeting youth in high-risk situations. Kids Connection, for children 4-12 years, is a curriculum-based support group program where children meet in confidential, small-group settings and are taught essential life skills to help them cope with difficult family situations, resist negative peer pressure, respect themselves and others, set and achieve goals, make healthy choices, and refuse alcohol, tobacco, and other drugs.
- [Positive Action](#): Positive Action is a social and emotional learning program designed to improve student behavior and academic motivation.
- [Project Alert](#): Project Alert is a free classroom-based substance abuse prevention program for 7th and 8th graders that uses a skills-based curriculum to teach teens how to say “no.”
- [Project Towards No Drug Use \(Project TND\): Project Towards No Drug Abuse \(TND\)](#) is a drug prevention program designed for high school students (ages 14–19) who are at risk for drug use and/or violent behavior. The Project TND curriculum teaches students skills in self-control, communication, resource acquisition, and decision-making.
- Reconnecting Youth: <http://wp.reconnectingyouth.com/reconnecting-youth/>
- [Strengthening Families](#): The Strengthening Families Program: For Parents and Youth 10-14 aims to reduce substance use and behavior problems during adolescence through improved skills in nurturing and child management by parents and improved interpersonal and personal competencies among youth.
- [Too Good For Drugs](#): Too Good For Drugs (TGFD) is a 10-lesson substance abuse prevention curriculum used in kindergarten through 8th grade. The program provides education in social and emotional competencies and reduces risk factors while building protective factors.

Note: Not all of the programs listed here are evidenced-based or have positive evaluation outcomes. If you are selecting a program for your school or community, be sure to do your research to find programs with proven results. [Houston State of Health](#) as well as the [Texas Impaired Driving Task Force](#) and others have created resources to help evaluate and compare programs for substance use prevention among youth.

Treatment for Substance Use Disorder for Children and Adolescents: The majority of treatment facilities serve adult populations only, and not all major cities in the US have access to adolescent substance use disorder treatment. Luckily, Houston is one city that does have treatment for teens experiencing substance use issues.

OTHER UNINTENTIONAL INJURY DEATHS CONTINUED

The Council On Recovery provides services for children and youth experiencing substance use issues themselves as well as in their families. The Council on Recovery also serves as the region’s Outreach, Screening, Assessment, and Referral (OSAR) and provides free screenings and referrals to detox services, in-patient and outpatient treatment facilities, and other recovery options for anyone struggling with alcoholism, drug abuse, other addictions, or co-occurring mental health disorders. 713-942-4100

SAMHSA provides both a national helpline – 1-800-662-HELP (4357) -- and a website -- <https://findtreatment.gov/> -- for free, confidential, 24/7, 365-day-a-year treatment referral and information.

For the prevention of suicide, see the suicide section on page pages 26 to 33.

Firearm-Related Deaths: Unintentional

Over a 10-year period, children under 15 years old made up 1.2% of all firearm-related fatalities; however, they are at a higher risk of unintentional firearm-related deaths than adolescents and adults.³⁴ Nationally, unintentional shootings cause 26% of firearm-related fatalities among children under 10 years, but only 3% of firearm-related fatalities among adolescents ages 10 to 19.³² Among children (60%) and adolescents (49%), unintentional firearm-related deaths most often occurred during unsupervised play with loaded firearms, and typically by a friend or relative. Between 2008 and 2017 in the US, the reported mortality rate due to unintentional firearm-related injuries among children younger than 10 years was 0.10 per 100,000 children and 0.15 per 100,000 among adolescents ages 10-17.⁷

Between 2008 and 2017, unintentional firearm-related deaths in Texas for children under 10 years were reported at 0.12 deaths per 100,000 children, and among adolescents aged 10-17 the rate was 0.13 deaths per 100,000.⁷ Texas mortality rates due to unintentional firearm-related injury are similar to national data.

The overall unintentional firearm-related mortality rate in Harris County for 2008-2017 for all children (0-17 years) was 0.06 deaths per 100,000 children.

During the same period, in Harris County there were 5 unintentional firearm-related deaths among children 0-9 years and fewer than 5 unintentional deaths among adolescents 10-17 years old; unintentional shootings accounted for 2.24% of all firearm-related deaths among children 0-17 years old in Harris County (Figure 43). Among adolescents, less than 1% of firearm-related deaths were unintentional whereas among children under 10, the percentage of unintentional deaths rose to 12.5%, mirroring national findings that unintentional firearm-related deaths are more common in younger children.

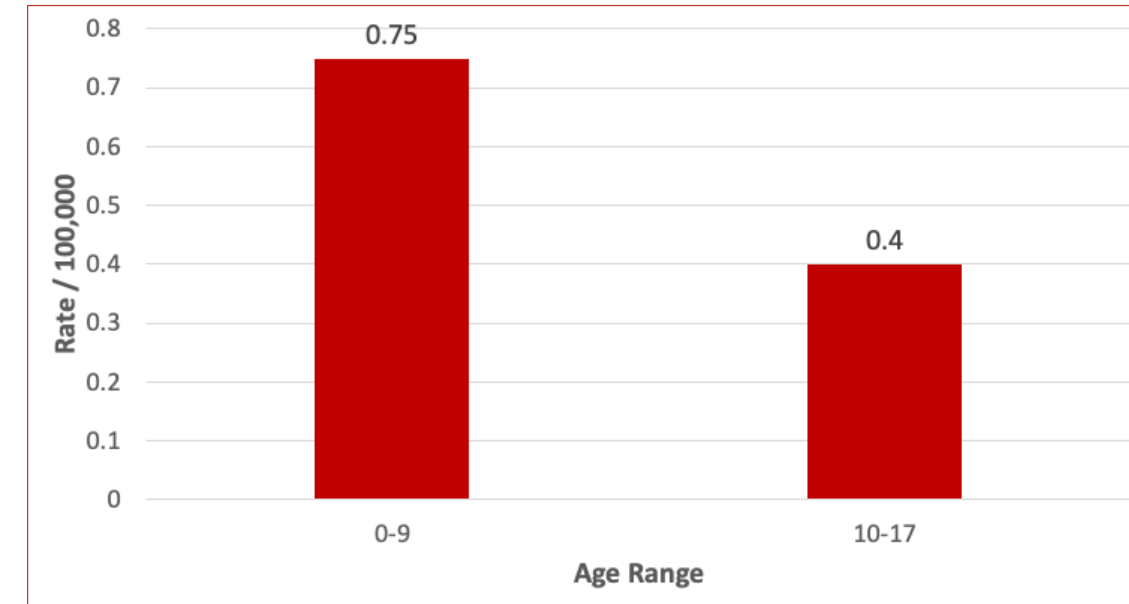


Figure 43. Unintentional firearm-related deaths by age range, rate per 100,000, children under 18 years, Harris County, 2008-2017

A national study found that in 16% of unintentional firearm-related deaths among younger children, the firearm was mistaken for a toy.³⁸ However, in another study researchers found that approximately 75% of parents who owned guns felt that their young child could distinguish a real gun from a toy gun, and almost a quarter of parents stated they trusted their child with a loaded gun.³⁷

Younger children are at a higher risk of unintentional shooting because their psyche is undeveloped, they’re naturally curious, they likely don’t understand death, may not be able to differentiate between toy and real firearms, and may be easily influenced by fictive violence in media.⁵¹ Some children as young as 3-4 years old, and a majority of children 5-8 years old are strong enough to pull a trigger, but at this age children have not fully developed impulse control.⁹⁸

Prevention and resources for firearm-related deaths can be found on pages 38-40.

Pediatric Vehicular Heatstroke (PVH)

Pediatric vehicular heatstroke (PVH) deaths are caused when the child (under 14-years-old) is left in a vehicle unattended. Motor vehicles heat up very quickly, and children’s body temperatures can heat 3 to 5 times more quickly than adults.^{99,100} Even on cool days, temperatures inside a vehicle can rise within 15 minutes to become fatal to children, and studies have shown that leaving the windows open does not alleviate the heat.¹⁰⁰ Young children are especially at risk of being unintentionally left in cars since they cannot speak or exit the vehicle themselves.^{99,101}

OTHER UNINTENTIONAL INJURY DEATHS CONTINUED

One study found that of PVH child fatalities in a 30-year period, 56% were caused by a parent unintentionally leaving the child in a car, 26% were due to the child playing in a car alone, and 88% were among children under 3 years old.¹⁰²

Since 1998, Texas has had the most PVH deaths (n=126) in the country among children under 14 years, but has a lower rate per population than some states (Texas ranks 38th in PVH death rates).⁹⁹ Nationally, during the same period (1998-2019), the US had 849 total PVH child fatalities. More than half of the deaths (54%) were among children under 2 years of age. Between 2008 and 2017, an average of 37 PVH deaths were recorded per year in the US (children under 14 years).⁹⁹ Comparatively, during the same 10-year period in Harris County, there were 11 total child PVH deaths, 10 of which involved children younger than 3 years.¹⁰³

Prevention

The prevention of PVH fatalities includes campaigns reminding parents to never leave children unattended if they cannot let themselves out, to always check the backseat, and to keep the vehicle locked when not in use.¹⁰¹ These deaths often occur when the driver is out of their usual routine and carrying the child passenger at a time that they typically do not have the child in the vehicle (e.g., a change to drop off the child at childcare on the way to work). A suggestion to remind the parent that the child is in the vehicle is to keep the child's toy in the front passenger seat so the driver will see it upon exiting the vehicle. The risk of PVH also extends to daycares and schools that transport children. Prevention strategies for this are licensing requirements for training and mandatory rituals and checkpoints to double-check that no children are left behind.

Texas law prohibits leaving a child unattended in a car for more than 5 minutes if the child is under 7 years old and not attended by another individual who is at least 14 years old.¹⁰⁴ Leaving a child unattended in a car is also considered neglectful supervision that can be investigated by Child Protective Services. Texas also has a "good samaritan" law (HB 478), enacted in 2017, which protects individuals who act in good faith to remove a vulnerable person (child or adult) from a locked vehicle¹⁰⁵; and since 2013, the state requires child safety alarms in certain vehicles used by childcare facilities to transport children (HB 1741).¹⁰⁶

Fires and Burn Injuries

Fires and burns are the third leading cause of non-natural fatal injuries occurring in the home in the US and in Texas.¹⁰⁷ In 2013, 87% of child fire and burn deaths were due to residential home fires.¹⁰⁸ Fires cause 1.7% of all non-natural child deaths in the US, and risk has decreased significantly since 1990.³² This mirrors Harris County data of 1.8% non-natural deaths due to fires and burns. Between 2006 and 2010, fires and burns were the fourth leading cause of unintentional injury death among children ages 1-9 in Texas,¹⁰⁹ which is consistent with Harris County data (2008-2017). In 2017, there were 24 deaths due to fires and burns among children aged 0-19 years in Texas, with a mortality rate of 0.3 per 100,000 children.³⁵ However, in Harris County, during the 10-year period 2008-2017, 6 deaths due to fires and burns among children were recorded.

Most fire and burn injuries occur at home and the type of injuries range by the child's age. Younger children are more likely to suffer injuries from scalding liquids or steam, and older children are more likely to have injuries from direct flame or fireworks; younger children may also be less likely to evacuate a burning structure

independently.^{107,110} The National Center for Fatality Review and Prevention (NCFRP) reports that the top three causes of house fires are cooking, electrical/appliances, and cigarettes.¹¹¹ Boys and children aged 4-6 are more likely to play with incendiary devices that result in fatal house fires.¹¹¹

In Texas, children who are at a higher risk for fire- and burn-related deaths are more likely to be under 5 years old, Black or Native American, or living in poverty.¹⁰⁹ Household fire risk increases with residential density and poverty rates, where fire hazards may be more common.^{111,112} One national study found that the decreasing trend in deaths since 1990 could be attributed to a decrease in smoking, an increase in functional smoke detectors, and improved fire codes.³² Fire-related child mortality rates are higher in rural areas than urban, because rural areas may have older homes, older heating sources, or lower use of alarms.³²

Prevention

Prevention of fire injuries includes functioning fire alarms and smoke detectors, safe storage of cigarettes and incendiary devices, adequate supervision of active fires, proper maintenance on household heating, and practicing an age-appropriate fire safety plan with children.^{107,108,111,113} Prevention of pediatric burn injuries includes setting the hot water heater temperature to 120 degrees Fahrenheit or below, testing tap water before placing a child in water to bathe or washing their hands, never leaving the stove unattended when cooking, and restricting the child from reaching the microwave, table, or counter to retrieve any hot item (e.g., hot tea, soup, or instant noodles). Additionally, refrain from carrying the child when you are holding hot liquids such as coffee or hot tea.

Choking

Choking is especially common in children aged 3 years or younger as they are learning to eat solid foods and tend to explore their environment with their mouths.^{114,115} The most common small objects that are choking hazards are food, coins, balloons, tacks, lithium batteries, and other small toys.^{114,116,117}

National and state data for choking-specific fatalities is limited, since choking may be characterized as unintentional suffocation/asphyxiation or grouped with strangulation.³⁵ In Harris County from 2008 to 2017, there were 17 accidental choking deaths among children under 12 years old. The majority (70%) of the fatalities were in children younger than 4 years and involved more males (58.8%) than females (41.2%).

Prevention

The best choking prevention efforts include following regulations against toy choking hazards by the US Consumer Product Safety Commission (CPSC), education to child caregivers about the Heimlich maneuver for common food and toy hazards, and closer supervision of children, especially those with special needs or younger than 3 years.¹¹⁴⁻¹¹⁶

OTHER UNINTENTIONAL INJURY DEATHS CONTINUED

Suffocation, Strangulation, and Hanging

Unlike choking deaths, deaths by suffocation, strangulation, or hanging involve the child and an external choking agent such as an electrical cord, shoe laces, or purse straps.^{115,116} Between 2008 and 2017, 12 strangulation, suffocation, or unintentional hanging deaths occurred in Harris County, with 107 suffocation deaths in Texas among children aged 0-19 years in 2017 alone.³⁵ The Texas child mortality rate for unintentional suffocation in 2017 was 1.3 deaths per 100,000 children aged 0-19 years.³⁵

Prevention

Prevention efforts include increased caregiver supervision and child-proofing the home so that young children and toddlers are less able to interact with potential hazards, such as empty appliances or other small spaces in which children could become trapped, plastic bags, and loose cords, straps, or strings.¹¹⁵⁻¹¹⁷

Crush Hazards and General Home Safety

Some fatalities are caused by hazards around the home that fall on and crush the child. Crushing hazards may be more common in homes with heavy furniture or heavy equipment, and can be mitigated by direct supervision, appropriate safety measures in securing heavy items in the home (such as anchoring furniture to the wall), and play area maintenance.^{110,118} Between 2008 and 2017 in Harris County, there were 23 deaths by a crushing injury. Deaths occurred more frequently in males than females. These accidents happened to children ranging from infants to 16-year-olds, but 70% of the deaths happened in children between 1 and 4 years old.

Other unintentional injuries include fatal injuries from around the household and insufficient supervision, especially around animals.¹¹⁹ Fewer than 5 pediatric deaths classified as other unintentional injuries were reported in Harris County from 2008 to 2017. The best prevention of unintentional injuries around the home includes child safety locks and adequate adult supervision, especially around pets. Caregivers should securely lock hazards such as household, heavy, or sharp equipment out of the reach of children, and parents should ensure that other caregivers also comply with a home safety checklist.^{110,118} Parents should also communicate risk aversion, exercise caution, and supervise children when they are with animals.

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