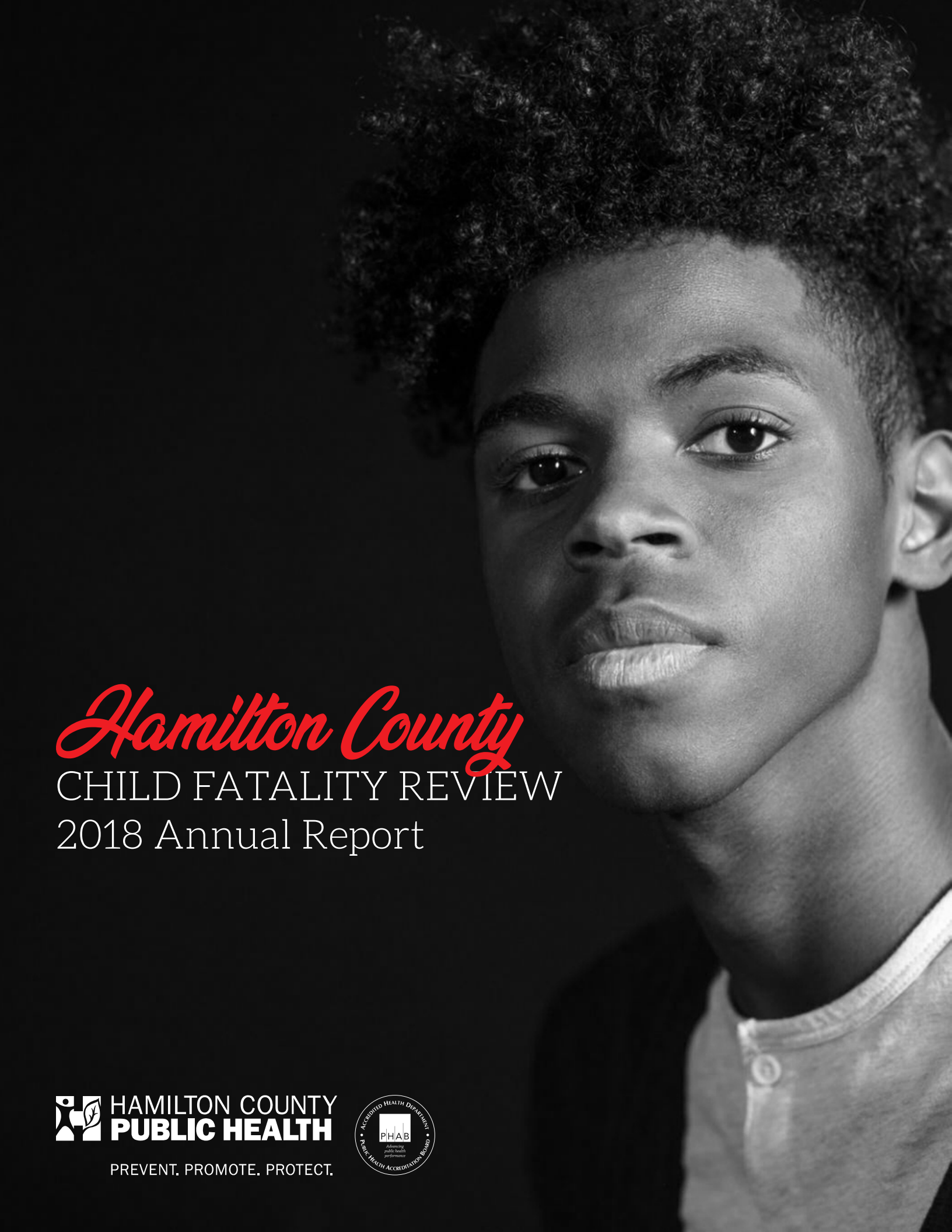

Hamilton County
CHILD FATALITY REVIEW
2018 Annual Report

HAMILTON COUNTY
PUBLIC HEALTH

PREVENT. PROMOTE. PROTECT.

ACCREDITED HEALTH DEPARTMENT • PUBLIC HEALTH ACCREDITATION BOARD • PHAB Advancing public health performance

Every death of a child in Hamilton County matters. This report is dedicated to the children, and their families, friends and communities whose lives were forever changed.

The Hamilton County Child Fatality Review Annual Report was made possible through the collaboration, and commitment of the numerous individuals who are members of the Hamilton County Child Fatality Review Board. This report mirrors the endeavors of the individuals who strive to enhance the lives of children living in Hamilton County.

Dear Friends

There are few health outcomes more tragic than the loss of a child, but the fact remains that child deaths are an important indicator of the general health of a community. As you will read in this report, a great number of child deaths could have been prevented.

Once again this year, Hamilton County's infant mortality rates are higher than the national average. While this report covers child deaths for all children under 18 years of age, the vast majority of child deaths in the County occur in children before their first birthday.

Creating a strategy to reduce the number of preventable child deaths is a complicated endeavor that requires collaboration among many stakeholders. Hamilton County Public Health partners with individuals, healthcare systems, physicians, clinics and other support sources affecting the social determinants of health in order to reduce these numbers.

It is my sincere hope that you examine the information in this report closely. It will require the collective effort of many to bring the rates of child mortality to levels representative of the quality of our great communities.

Sincerely,

Tim Ingram

Tim Ingram
Health Commissioner
Hamilton County Public Health

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EXECUTIVE SUMMARY

The Hamilton County Child Fatality Review Team, which currently operates under the auspices of Hamilton County Public Health, officially began reviewing cases January 1st, 1996. The following report represents the twenty-third full year of child fatality review by the Hamilton County team. The Hamilton County Child Fatality Review Annual Report presents an in-depth analysis of child deaths that occurred between 2014 and 2018.

In 2000, the Ohio General Assembly established the Ohio Child Fatality Review (CFR) program in response to better understand why children in Ohio are dying[1]. The law mandates that every Ohio county create a CFR board to review all deaths of children under 18 years of age. An online CFR data system was developed by the National Center for Fatality Review and Prevention that allows for a thorough capture of factors that impacted the death of a child[1].

The online data system has allowed for the in-depth analysis of the type of deaths presented within this report. This report is broken out into 10 sections: introduction, deaths due to medical conditions, motor vehicle deaths, homicides, suicides, drownings, asphyxia deaths, sleep-related deaths, "other types of child death", and a conclusion. Each section contains an in-depth look regarding the circumstances and factors related to the deaths. Where applicable, the number of child deaths (N) is displayed on each corresponding chart/figure. Maps will be presented throughout the report to highlight the inequities through Hamilton County as they related to child deaths.

The purpose of CFR is to prevent child deaths by examining the causes of deaths in the aggregate, making policy recommendations from the review of child deaths in Hamilton County, and increasing coordination and communication between agencies and systems. Each section of this report concludes with the recommendations made by the Hamilton County CFR Team.

The main goals of CFR are to:

- Compile uniform statistics on all deaths among children under 18 years of age in Hamilton County.
- Accurately identify and document the causes of death of all Hamilton County children.
- Identify trends among child deaths in Hamilton County.
- Identify causes of death that may be preventable, and make subsequent recommendations about policy changes in public health and public safety for Hamilton County.
- Develop uniform protocols and procedures for investigating child deaths.

This report is intended to describe the trends and patterns found across child deaths, identify areas of child death inequities and make meaningful recommendations that improve the outcomes for all children in Hamilton County. It is hoped that the recommendations provided throughout this report will result in continued collaboration across the various agencies whose focus is on improving the health of the children living in Hamilton County.

LIMITATIONS

The CFR data system collects information surrounding the death of the child. However, not all information is available during the review of the child death and pieces of information may be missing or unknown. Missing or unknown data is identified in the data tables beginning on page III of the Appendix.

Calculation of rates is not appropriate with Hamilton County's CFR data because not all child deaths undergo a full team review by the Hamilton County CFR Team. The overall child fatality rate is the only rate appropriate to calculate using Hamilton County's CFR data, as it takes into account all child deaths regardless if the child death received a full team review. CFR statistics are reported as proportions (percentages) of all child deaths in Hamilton County from 2014 to 2018. This can make analysis of trends over time difficult, as an increase in the percentage of one factor will result in a mathematical decrease in the percentage of other factors[1]. Percentages presented throughout this report may not equal 100 percent due to rounding.

Since the origin of statewide data collection, the CFR data system has undergone improvements and revisions. Due to the differences in data elements and classifications, the data presented in this report may not be comparable to previous reports[1]. The in-depth evaluation of factors that contributed to and impacted the child deaths in Hamilton County is limited by a small number of cases and/or a lack of pertinent information. Some statistics regarding child death in Hamilton County throughout this report are based on a small number of cases and should be interpreted with caution, as it may be difficult to distinguish random fluctuation/changes in the incidence from true changes in the underlying risk.

CHILD FATALITY REVIEW TEAM

The Hamilton County Child Fatality Review team meets on the 3rd Wednesday of each month. In 2018, members and meeting participants represented the following agencies in Hamilton County:

Cincinnati Children's Hospital Medical Center
Cincinnati Fire Department
Cincinnati Health Department
Cincinnati Police Department
Hamilton County Coroner's Office
Hamilton County Job and Family Services
Hamilton County Juvenile Court
Hamilton County Mental Health and Recovery Services Board
Hamilton County Prosecutor's Office
Hamilton County Public Health
UC Health

Meetings are closed to the general public and media, and all discussion and work products are confidential. Only CFR members and invited guests are permitted to attend CFR meetings. Representatives of other agencies and organizations are occasionally invited to attend when a relevant case is being presented.

For a complete list of the Hamilton County Child Fatality Review Team members, please refer to page I of the Appendix.

CASES REVIEWED

The Hamilton County CFR Team screens all deaths of children under 18 years of age who are residents of Hamilton County at the time of death. The CFR Team limits death reviews to residents of Hamilton County and does not review deaths of non-residents who die in Hamilton County.

Death certificates of all Hamilton County residents under 18 years of age are sent to Hamilton County Public Health by each of the health departments in Hamilton County. Hamilton County Public Health records all demographic data about all child deaths into the CFR data system developed by the National Center for Fatality Review and Prevention. The Hamilton County Coroner's Office reviews each death certificate to categorize the cause of death and determine whether it qualifies for a review by meeting any of the following criteria:

- Homicide
- Suicide
- Unintentional injuries (accidents)
- Undetermined, including presumed Sudden Unexplained Infant Death (SUID)
- Unexpected outcomes (e.g., unexpected death from identified medical causes)
- Unexpected clusters (e.g., unusual frequency of deaths from identified medical causes)
- All cases investigated by law enforcement

If the coroner's office determines that the case meets any of the criteria, the case is scheduled for a full CFR team review. Case names are also sent to Hamilton County Job and Family Services (JFS) to determine if there has been any involvement with Child Services at any time. Additionally, any CFR member can request a full-team review of any case they feel would benefit from a full-team review, whether or not it meets the criteria for a full review.

Full-team reviews involve an in-depth examination of the death by the entire CFR team, with members reporting on relevant information they might have about the death. The CFR team tries to reach conclusions about whether or not the death was preventable, based on the information available about the circumstances leading up to the death. The information about the factors related to the death of the child is recorded into the CFR data system. The following report is based on the analysis of the data between 2014 and 2018 from the CFR data system for Hamilton County.

INTRODUCTION

The death of a child is the most profound loss a parent can experience. In order to reduce the number of these tragic losses, we must understand why, how and where the children in our community are dying, along with the social determinants that influence the health of children.

To understand why our children are dying and the inequities in child deaths, we must first understand a little about the children living in Hamilton County. Children, throughout this report, are defined as Hamilton County residents under 18 years of age.

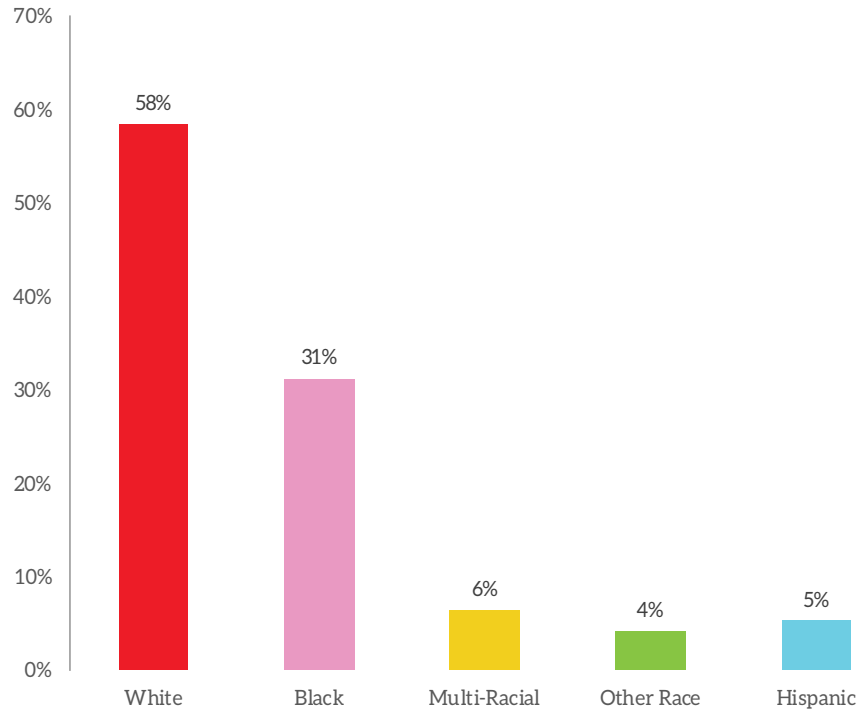
Demographics - Age, Race/Ethnicity, Sex

In 2017, there were 187,626 children who called Hamilton County home. This means that almost a quarter of the total Hamilton County population in 2017 were children. The percent of male children (51 percent) was nearly equal to that of female children (49 percent) living in Hamilton County in 2017.

Hamilton County Child Population, 2017*	
Total Child Population	**187,626**
Male Child Population	**95,178**
Female Child Population	**92,448**

The largest percentage of children (58 percent) in Hamilton County in 2015, were white children. Thirty-one percent of Hamilton County children in 2015 were black children, representing the second largest racial group of children. Six percent of Hamilton County children were multi-racial, or identified with two or more races. Other races, such as Pacific Islander, or Asian, represented four percent of children in Hamilton County. The vast majority of children living in Hamilton County were non-Hispanic children. However, five percent of children in Hamilton County were of Hispanic or Latino descent.

Hamilton County Child Population by Race/Ethnicity, 2017*



Note: Percentages of race/ethnicity equal more than 100 percent due to the inability of the America Community Survey to breakout race and ethnicity by age.

**Note: 2018 child population data was not available at a community level from the U.S. Census Bureau / American FactFinder. Due to this limitation, 2017 child population data was used.*

In 2017, the majority of Hamilton County children were younger than five years of age (29 percent). Twenty-eight percent of children in Hamilton County were between five and nine years of age. Children between 10 and 14 years of age accounted for 27 percent of Hamilton County children in 2017. Children between 15 and 17 years of age accounted for the remaining 16 percent of children.

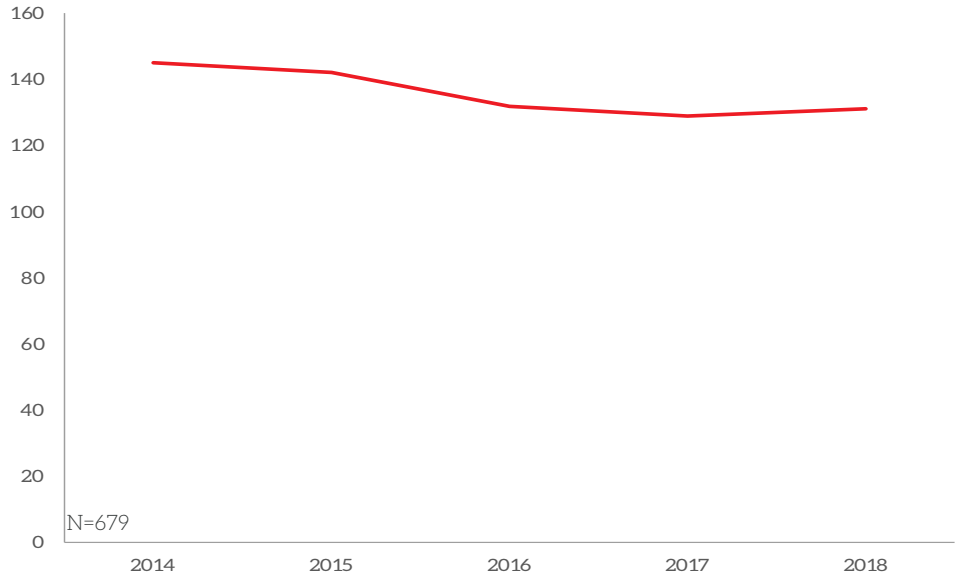
Hamilton County Child Population by Age, 2017*

< 5 Years of Age	**29%**
5-9 Years of Age	**28%**
10-14 Years of Age	**27%**
15-17 Years of Age	**16%**

Overall Annual Trends in Child Death

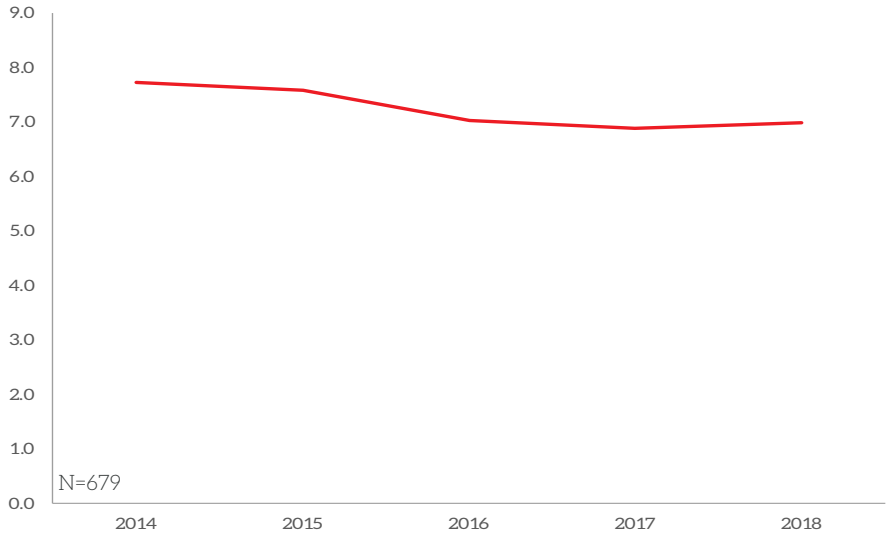
From 2014 to 2018, Hamilton County witnessed 679 of its child residents die from various causes, many of which could have been prevented. Over the five years during 2014 to 2018, the annual number of children who died in Hamilton County has slowly decreased. In 2014, Hamilton County witnessed 145 children die, the highest number of child deaths in the five-year time period. In 2018, 131 Hamilton County died, one of the lowest number of child deaths from 2014 to 2018.

Number of Child Deaths by Year in Hamilton County, 2014-2018



Another way to monitor child deaths is to look at the child fatality rate. The child fatality rate is a specific type of mortality (death) rate that measures the number of child deaths over a specified time period. The child fatality rate in Hamilton County for the five-year time period of 2014 to 2018 was 7.2 per 10,000. This means that for every 10,000 children who were living in Hamilton County from 2014 to 2018, there were approximately seven child deaths. Much like the number of child deaths, the child fatality rate in Hamilton County has slightly decreased from 2014 to 2018. In 2014, the child fatality rate (7.7 per 10,000) was the highest over the five-year time period. The child fatality rate has been slowly decreasing to 7.0 in 2018.

Hamilton County Child Fatality Rate (per 10,000), 2014-2018



Child Death Disparities: Demographic Sub-Populations

Within the child population in Hamilton County, there are sub-populations that are disproportionately affected by child deaths. Male children in Hamilton County are affected by higher numbers of child deaths than their female counterparts. In the five-year time span of 2014 to 2018, male children have consistently accounted for over 50 percent of child deaths in Hamilton County. Sixty percent of child deaths from 2014 to 2018 were male children, while female children accounted for only 40 percent of child deaths. Male children are not the only population that is disproportionately affected by higher numbers of child deaths. When race and ethnicity is taken into account, larger disparities emerge.

Hamilton County Child Deaths by Sex, 2014-2018

Male	60%
Female	40%

N=679

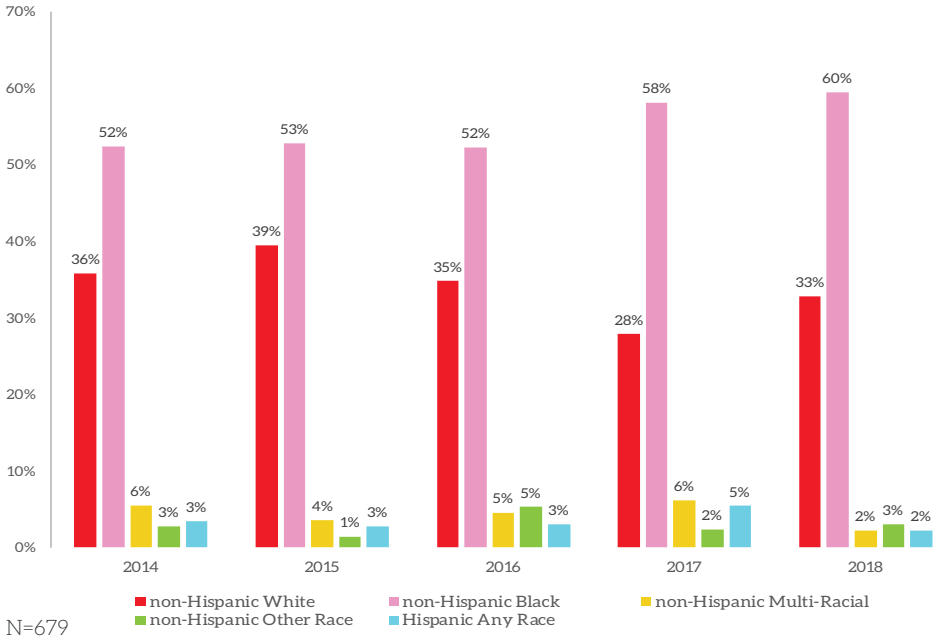
Race/Ethnicity

Race and ethnicity presented throughout this report are the combined race and ethnicity that is reported at the time of death on the child's death certificate. Race and ethnicity are classified into one of five different categories:

- non-Hispanic white
- non-Hispanic black
- non-Hispanic multi-racial
- non-Hispanic other race
- Hispanic

Hamilton County children who identify with two or more racial groups are classified as being multi-racial. If a child identifies with another race (e.g., Asian, Alaskan Native, Native American, etc.) the race of the child is classified as "other". Anytime a child is identified as being of Hispanic or Latino descent, regardless of race, they are classified as Hispanic. As shown previously, less than one-third of Hamilton County's child population are black, however, the majority of child deaths in Hamilton County are to non-Hispanic black children.

Hamilton County Child Deaths by Race/Ethnicity, 2014-2018



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Fifty-five percent of child deaths from 2014 to 2018 were to non-Hispanic black children. Historically, non-Hispanic black children in Hamilton County have consistently seen inequities when it comes to child deaths. Child deaths to non-Hispanic black children have consistently accounted for over 50 percent of child deaths in Hamilton County. While the overall number of child deaths in Hamilton County has been decreasing from 2014 to 2018, the number and percent of child deaths to non-Hispanic black children has been slowly increasing.

Thirty-four percent of child deaths in Hamilton County from 2014 to 2018 were to non-Hispanic white children. While over half of the child population in Hamilton County are white, they have consistently accounted for less than 40 percent of child deaths in Hamilton County. Deaths to children who were non-Hispanic multi-racial, non-Hispanic other races, and Hispanic have consistently accounted for the smallest percentage of child deaths in Hamilton County. Over the five years of 2014 to 2018, deaths to children who identify with one of these racial groups have remained relatively stable.

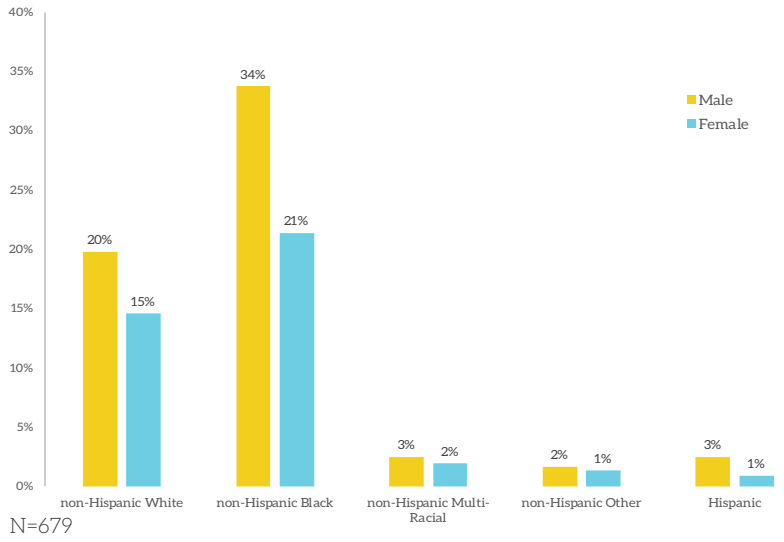
Disparity Ratio for Hamilton County Child Deaths, non-Hispanic black & non-Hispanic white, 2014-2018	
2014	**1.5**
2015	**1.3**
2016	**1.5**
2017	**2.1**
2018	**1.8**

As previously shown, there is a disparity in child deaths in Hamilton County between non-Hispanic black children and non-Hispanic white children (the two largest racial groups of the child population in Hamilton County). One way to measure or highlight this disparity is by looking at the disparity ratio. Disparity ratios can highlight the relative increase or decrease in inequality between two populations over time. The larger the disparity ratio between two populations the larger the disparity gap. Over the five years of 2014 to 2018 the disparity ratio between non-Hispanic black and non-Hispanic white child deaths in Hamilton County was 1.6. This means that non-Hispanic black children suffer from child deaths at a rate higher than their non-Hispanic white counterparts. Non-Hispanic black children have consistently had higher disparity ratios when compared to non-Hispanic white children in Hamilton County. From 2014 to 2018, the disparity between non-Hispanic black and non-Hispanic white children was the lowest (1.3). However, since then the gap has slowly gotten wider. In 2017, the disparity in child deaths between non-Hispanic black and non-Hispanic white children was the highest (2.1) over the same five-year period. While overall child deaths in Hamilton County are slowly decreasing, the child deaths to non-Hispanic black children are not only increasing, but the disparity gap, when compared to non-Hispanic white children, is widening.

Race/Ethnicity and Sex

As illustrated previously, male children and non-Hispanic black children in Hamilton County represented the largest percentage of child deaths. When sex and race/ethnicity are coupled, further inequalities in child deaths emerge. Non-Hispanic black male children accounted for the largest percentage of child deaths in Hamilton County from 2014 to 2018. Thirty-four percent of child deaths in Hamilton County between 2014 and 2018 were to non-Hispanic black males. The percent of deaths to non-Hispanic black male children was 1.7 times higher than non-Hispanic white male children and five times higher than non-Hispanic multi-racial, non-Hispanic other races and Hispanic male children combined.

Hamilton County Child Deaths by Race/Ethnicity and Sex, 2014-2018



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Non-Hispanic black females represented the second-highest percentage of child deaths from 2014 to 2018 (21 percent). The percent of child deaths to non-Hispanic black females was 1.5 times higher than non-Hispanic white female children and nearly 10 times higher than non-Hispanic multi-racial, non-Hispanic other races, and Hispanic female children combined. While the percentage of child deaths to non-Hispanic black females was slightly higher than that of non-Hispanic white males, the racial inequities are still apparent as non-Hispanic black children represented the most child deaths when broken out by sex.

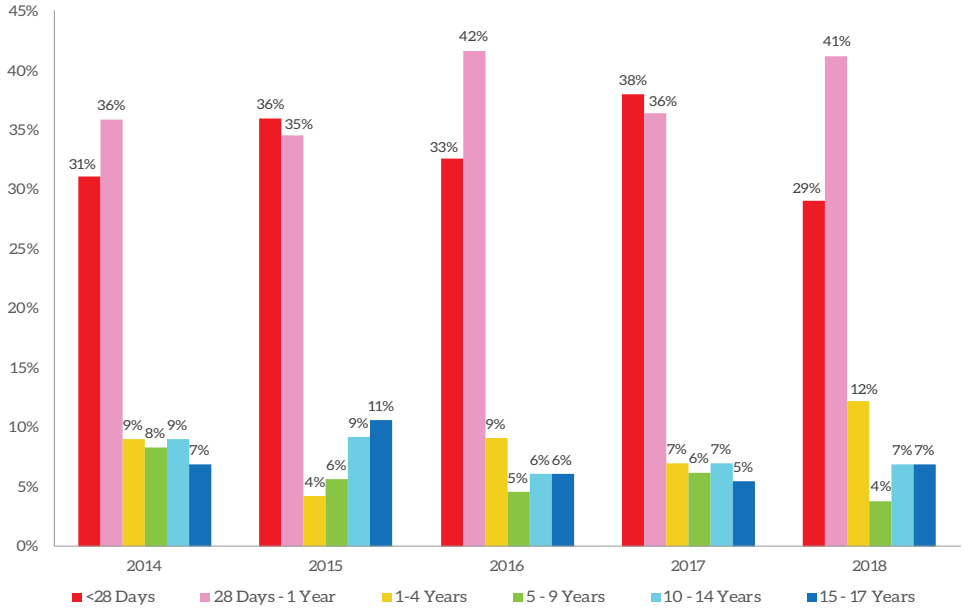
Age

Race/ethnicity and sex are not the only inequities in child deaths in Hamilton County. When the age of the child is taken into account, further inequities among child deaths emerge. Child deaths throughout this report are classified into one of six different age groups:

- <28 Days
- 28 Days - 1 Year
- 1 - 4 Years
- 5 - 9 Years
- 10 - 14 Years
- 15 - 17 Years

Infants (children who are less than one year of age) accounted for the largest percentage of child deaths in Hamilton County from 2014 to 2018. Seventy-one percent of child deaths from 2014 to 2018 were to infant children. Infants' ages are further broken down into children who are younger than 28 days old (neonates) and children who are between the ages of 28 days and one year of age (post neonates). Historically, infants in Hamilton County have seen inequalities when it comes to child deaths. From 2014 to 2018, infants have consistently accounted for over 60 percent of child deaths. Neonatal deaths accounted for 33 percent of all child deaths from 2014 to 2018. Post-neonatal deaths accounted for 38 percent of all child deaths in Hamilton County from 2014 to 2018. However, the overall number of infant deaths in Hamilton County has slowly begun to trend downwards.

Hamilton County Child Deaths by Age, 2014-2018



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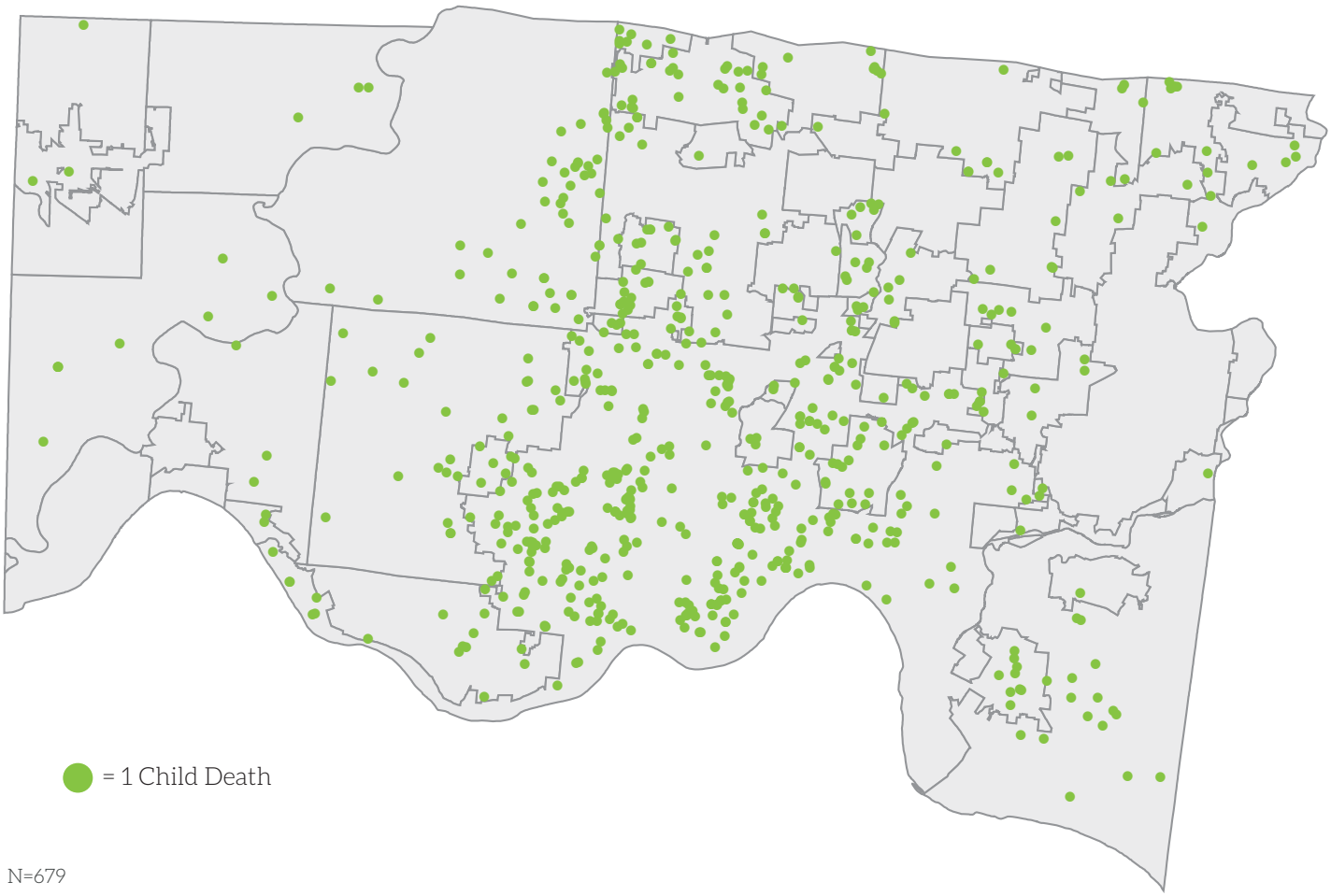
The percentage of child deaths in Hamilton County drops drastically when children reach one-year-of-age and older. The percentage of deaths to children who were between one and four years of age remained relatively stable, accounting for eight percent of child deaths in Hamilton County between 2014 and 2018. The smallest percentage of child deaths, six percent, were to children between five and nine years of age. Children who are in their early-teens, between 10 and 14 years of age accounted for six percent of child deaths in Hamilton County between 2014 and 2018. Children in Hamilton County who are in their mid-teens, between 15 and 17 years of age, accounted for seven percent of child deaths from 2014 to 2018. Over the five year time span of 2014 to 2018, all age groups have seen both increases and decreases in the percent of child deaths. The increase in the percentage of child deaths in children older than one-year-of-age could be due to the decrease in the overall number of infant deaths in Hamilton County.

Geography

Inequities in child deaths also exist between communities in Hamilton County. Within Hamilton County there are many diverse communities comprised of cities, villages, and townships. As illustrated by the map below, the majority of the communities in Hamilton County have witnessed child deaths within their communities.

Hamilton County Child Deaths by Community, 2014-2018



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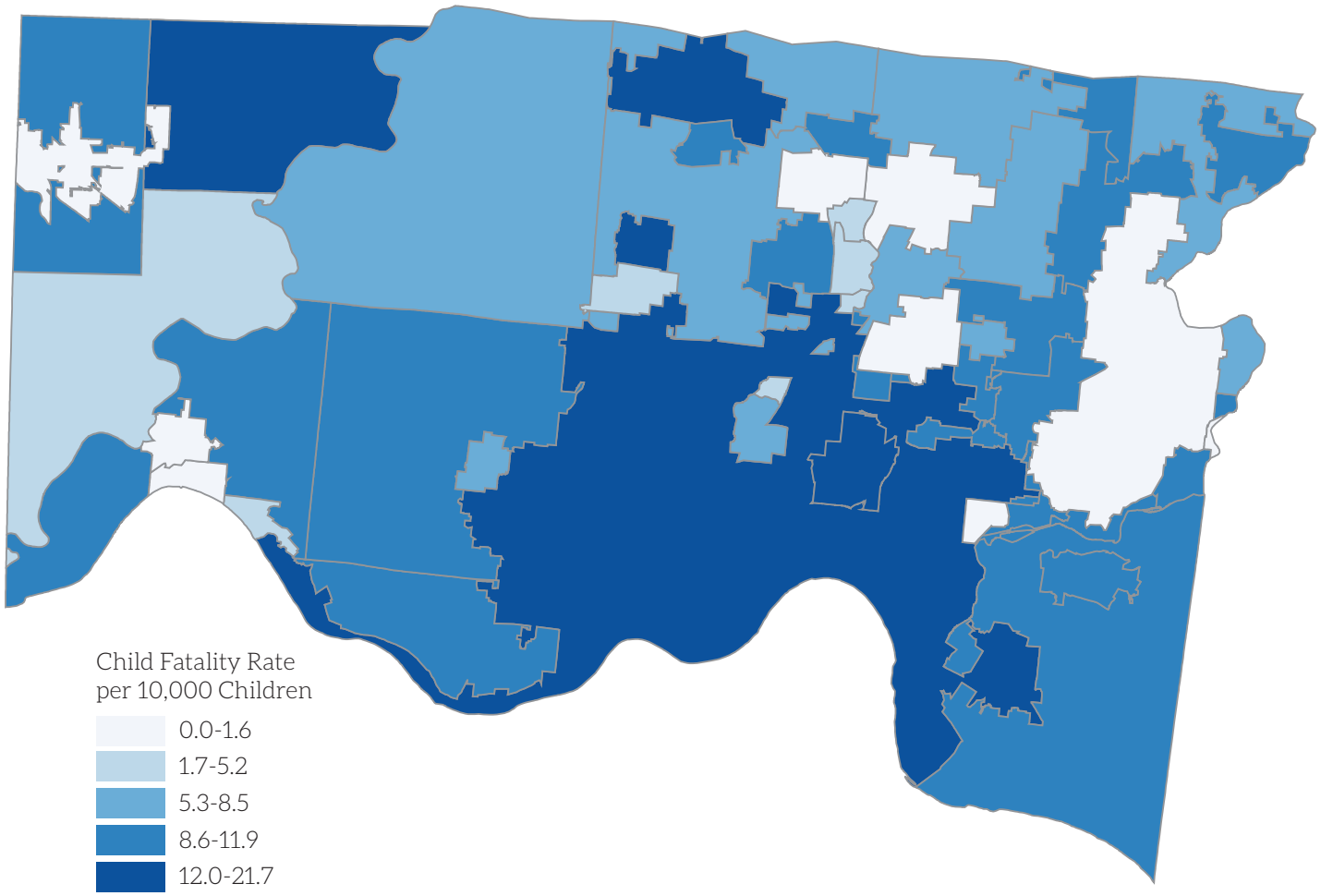
The urban core of Hamilton County (City of Cincinnati) experienced the largest number of child deaths from 2014 to 2018. Hamilton County communities to the north of the City of Cincinnati also witnessed a large number of child deaths from 2014 to 2018.

To determine the location of your community, please refer to the map on Page II of the Appendix.

The child fatality rate, a mortality (death) rate that is specific to children, is an important indicator of the overall health a community. The factors that are impacting the health of the community as a whole can impact the rate at which children die within a community.

Hamilton County Community Specific Child Fatality Rate, 2014-2018*



As illustrated by the map above, Hamilton County communities in the western part of the County and north of the City of Cincinnati have some of the highest child fatality rates. However, as shown previously, these communities have fewer child deaths and also smaller child populations than the City of Cincinnati. The largest burden of child fatality in terms of child deaths, however, lies within the City of Cincinnati.

Sociodemographics

Child deaths and child health can be influenced by sociodemographic factors, such as poverty, and the community in which the child lives[2]. One way to look at how multiple sociodemographic factors interact to influence the health of children, and ultimately child deaths, is to look at the level of concentrated disadvantage within the community where the child resided. Concentrated disadvantage is an indicator that shows areas of a community that are at an economic disadvantage. Communities that have higher levels of concentrated disadvantage often times have less mutual trust and willingness among community members to intervene for the common good, often known as collective efficacy[3]. Collective efficacy is a critical way that communities inhibit the perpetration of violence[3]. Children who live and grow

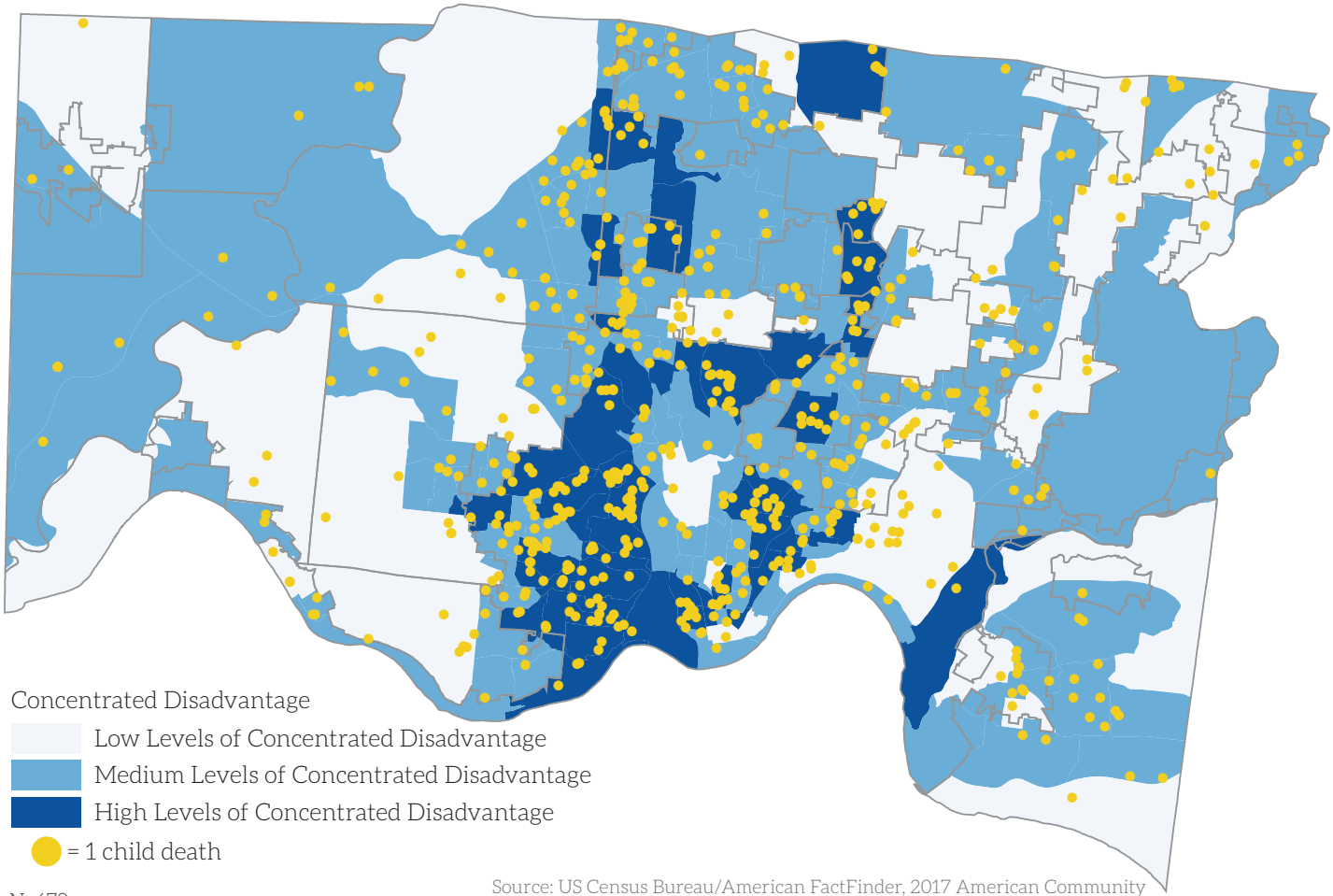
**Note: 2018 child population data was not available at a community level from the U.S. Census Bureau / American FactFinder. Due to this limitation, 2017 child population data was used to estimate the 2018 child populations. Some child fatality rates are based on a small number cases (i.e. less than 20) and should be interpreted with caution, as it may be difficult to distinguish random fluctuations in incidence from true changes in the underlying risk.*

in disadvantaged areas are more likely to experience violence[3]. Communities with high levels of concentrated disadvantage are also at an increased risk for higher rates of infant mortality[3]. Concentrated disadvantage is calculated using five indicators:

1. **Percent of individuals living below the poverty line;**
2. **Percent of individuals on public assistance;**
3. **Percent of female-headed households;**
4. **Percent of the population who are unemployed;**
5. **Percent of the population who are less than 18 years of age[3]**

The map below shows areas around Hamilton County that had low, medium, and high levels of concentrated disadvantage in 2017.

Hamilton County Child Deaths by Level of Concentrated Disadvantage, 2014-2018



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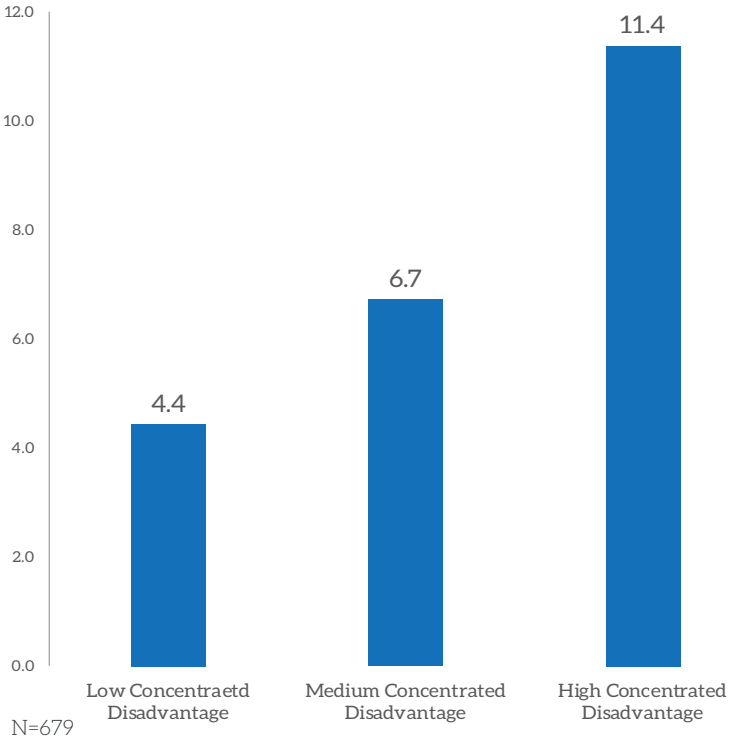
Source: US Census Bureau/American FactFinder, 2017 American Community Survey. Accessed: 5/16/2019, Available: http://factfinder2.census.gov

The urbanized areas in Hamilton County (City of Cincinnati and to the north), tend to have the highest levels of concentrated disadvantage. Correspondingly, the child fatality rate in neighborhoods with high levels of concentrated disadvantage is 1.7 times higher than the child fatality rate in neighborhoods with medium levels of concentrated disadvantage and over 2.5 times higher than the child fatality rate in neighborhoods with low levels of concentrated disadvantage.

It is important to identify the communities, and populations that have the largest inequities in child deaths so that targeted interventions can be implemented that improve child health and reduce deaths. However, in order to implement these targeted interventions, we must further understand why and who our children are dying.

Hamilton County Child Fatality Rate (per 10,000) by Level of Concentrated Disadvantage, 2014-2018



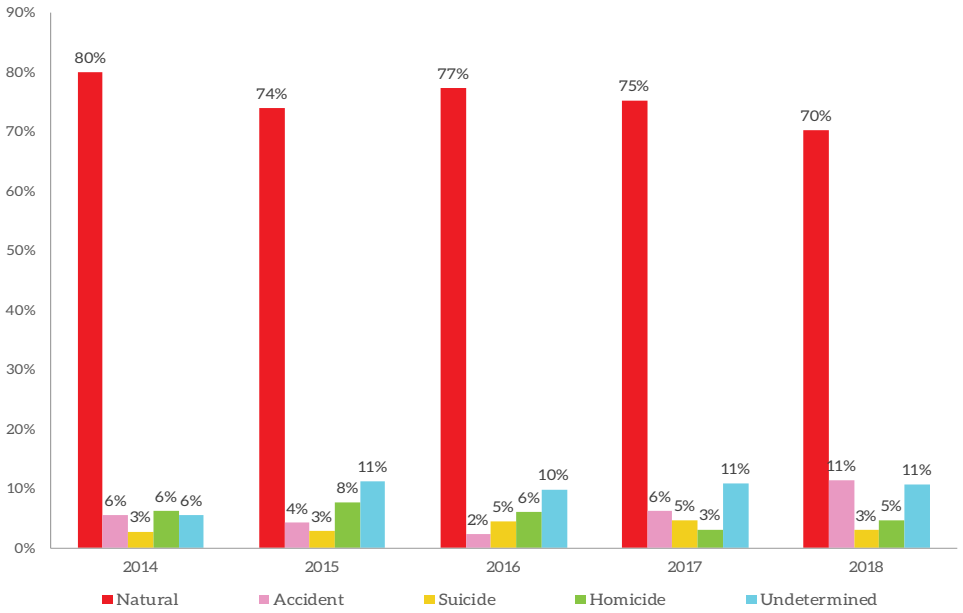
Manner and Cause of Death

Every child death is assigned both a manner and cause of death. The manner of death is how the death of the child is classified based on the surrounding circumstances of the death and how the cause was brought about. The manner of death is reported as it is listed on the child's death certificate. There are five categories in which the manner of death is classified as:

- Accident
- Homicide
- Suicide
- Natural
- Undetermined

Between 2014 and 2018, 70 percent of child deaths that occurred in Hamilton County were deaths due to natural causes. Child deaths due to natural causes can be caused by one or more of any serious health conditions such as congenital anomalies, genetic disorders, cancer, and preterm birth[4]. The percent of child deaths due to natural causes from 2014 to 2018 has slowly been decreasing.

Hamilton County Child Deaths by Manner of Death, 2014-2018



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Child deaths in which the manner of death was deemed undetermined accounted for 11 percent of child deaths from 2014 to 2018. A death is classified as being undetermined when the information surrounding the death (that was available at the time to authorities completing the investigation) was insufficient to determine the manner of death[5]. From 2014 to 2018, the percent of child deaths that were deemed as undetermined increased from six percent (2014) to 11 percent (2015). However, since 2015, the percent of child deaths deemed as undetermined has remained relatively stable.

Accidental deaths also accounted for 11 percent of child deaths from 2014 to 2018. Accidental deaths are deaths in which "there is little or no evidence that the injury or poisoning occurred with intent to harm or cause death. In essence, the fatal outcome was unintentional[6]." Accidental deaths decreased from 2014 (six percent) to 2016 (two percent). However, since 2016, the percent of child deaths that were accidental deaths has been increasing.

Child homicides in Hamilton County accounted for five percent of child deaths from 2014 to 2018. After witnessing an increase in child homicides from 2014 to 2015, the percent of child homicides decreased from eight percent (2015) to three percent (2017). However, the percentages of child homicides increased in 2018.

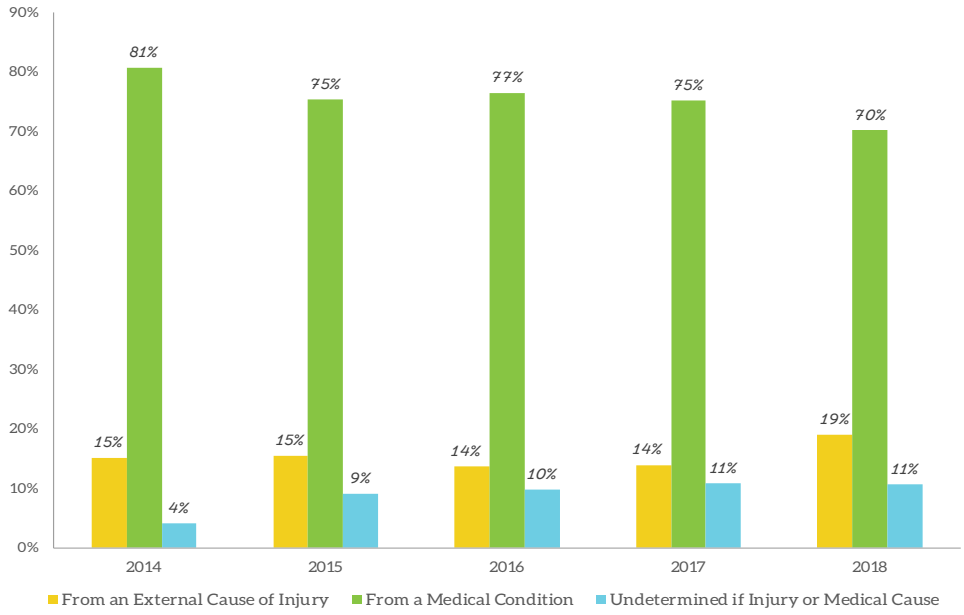
Suicides represent the smallest percentage of child deaths in Hamilton County. Three percent of child deaths from 2014 to 2018 were due to suicides. The percent of child deaths in Hamilton County that were due to suicides has remained relatively stable from 2014 to 2018.

While the manner of death describes how the death is classified, the cause of death is the actual mechanism by which the death occurred. There are four different categories into which a cause of death can be classified:

- A medical condition
- External causes due to injury
- Undetermined if injury or medical condition
- Unknown

If a cause of death was due to a medical condition, the deaths are further classified by the specific medical condition or disease that contributed to the death of the child. If a child death was from external causes due to injury, the injury is further classified and how the injury occurred is also detailed. Injury is defined as being "any unintentional or intentional damage to the body resulting from acute exposure to thermal, mechanical, electrical or chemical energy that exceeds a threshold of tolerance in the body or from the absence of such essentials as health or oxygen[7]." If a cause of death is unable to be classified as a death due to a medical condition or from external causes, based on the manner of death, the death is classified in as being undetermined if injury or a medical condition caused the child's death. There are instances in which no information on the primary cause of deaths is available or known. In these types of cases, the cause of death is deemed unknown. There were no child deaths in Hamilton County from 2014 to 2018 in which the cause of death was unknown.

Hamilton County Child Deaths by Cause of Death, 2014-2018



N=679

The most common cause of death for children in Hamilton County was due to a medical condition (70 percent). Child deaths due to a medical condition have historically accounted for over 70 percent of child deaths. Since 2014, the percent of child deaths due to a medical condition has been slowly decreasing. Child deaths in which the cause of death was due to external causes accounted for 19 percent of child deaths from 2014 to 2018. Child deaths due to a medical condition have been slowly increasing from 15 percent in 2014, to 19 percent in 2018. The percentage of child deaths whose cause was unable to be determined if the death was a result of an injury or medical condition accounted for 11 percent of child deaths from 2014 to 2018. Since 2014, the percentage of child deaths whose cause was unable to be determined has been slowly increasing.

Preventability Classification

Mortality (death) rates for children are widely recognized as a valuable measure of the health and well-being of children in a community. The Hamilton County CFR Team works to reduce the number of child deaths in Hamilton County, and to improve the health and well-being of children living in Hamilton County. Each death is reviewed to determine if the death of a child was considered to have been a preventable death. Once the CFR Team reviews the death, it is classified as either "Yes, Probably Preventable," "No, Probably Not Preventable" or "Team Could Not Determine." A child death is considered to have been preventable if the circumstances that

caused the death of the child could have been changed by either the parent, individual or the community. Oftentimes, a case may be deemed as not being able to have been prevented, based on the circumstances surrounding the case, or it was unable to be determined as to whether the child death was preventable. These cases are nonetheless important, as the CFR team is able to identify areas where there are gaps in care, and community factors that could influence health outcomes. Recommendations for these types of cases are still given by the CFR team as a way to work toward improving health and wellness, and preventing the deaths of children in the future.

Report Sections

To prevent our children from dying, we must understand more about how and why our children are dying. This report analyzes the following types of death in-depth to better understand child deaths in Hamilton County:

- Deaths due to a medical condition
- Motor vehicle deaths
- Homicides
- Suicides
- Sleep-related deaths
- Drownings
- Unintentional asphyxia deaths
- "Other types of child death"

Each section will conclude with the preventability of each type of death along with the recommendations made by the Hamilton County CFR team on how communities, individuals, and organizations can work at preventing these types of death.

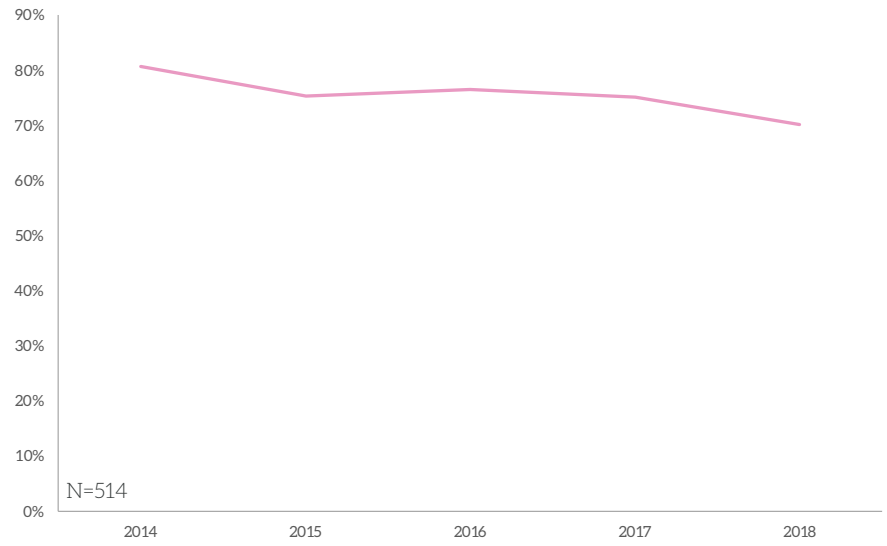
MEDICAL DEATHS

As illustrated previously, the majority of child deaths in Hamilton County are caused by a medical condition. When a death is due to a medical condition, it is the result of the natural progression of a disease, ailment, disorder or prematurity. A death due to a medical condition is further classified into one of 18 medical conditions that contributed to the death of a child:

- Asthma/respiratory
- Cancer
- Cardiovascular
- Congenital anomaly
- Diabetes
- HIV/AIDS
- Influenza
- Low birth weight
- Malnutrition/dehydration
- Neurological/seizure disorder
- Pneumonia
- Prematurity
- SIDS
- Other infection
- Other perinatal condition
- Other medical condition
- Undetermined medical cause
- Unknown

Seventy-six percent of all child deaths in Hamilton County from 2014 to 2018 were due to a medical condition. In 2014, the percent of child deaths due to a medical death was the highest during the 2014 to 2018 period (81 percent). However, since 2014 the percent of child deaths that were due to a medical condition have been slowly decreasing. In 2018, the percent of child deaths due to a medical condition decreased to 70 percent.

Percent of Hamilton County Child Deaths due to a Medical Condition, 2014-2018



Age

While medical conditions can affect everyone, child deaths due to a medical condition in Hamilton County disproportionately impact infants younger than one-year-of-age. Seventy-nine percent of all child deaths due to a medical condition were to infants (children less than one-year-of-age). When age is further broken out, disparities begin to emerge.

Hamilton County Child Deaths due to a Medical Condition by Age, 2014-2018

< 28 Days	44%
28 Days - 1 Year	35%
1 - 4 Years	7%
5 - 9 Years	5%
10 - 14 Years	5%
15 - 17 Years	3%

N=514

Children who are less than 28 days of age (neonates) accounted for 44 percent of child deaths due to a medical condition from 2014 to 2018. Post-neonates (infants who are between 28 days of age and one year of age) accounted for the second largest percentage of child deaths due to a medical condition (35 percent).

As a child gets older, the percentage of deaths due to a medical condition drastically drops. Children who are between one and four years of age accounted for seven percent of child deaths due to a medical condition. Children who were between five and nine years of age and between 10 and 14 years of age each accounted for five percent of child deaths due to a medical condition. Older children who were between 15 and 17 years of age had the smallest percentage (three percent) of child deaths due to a medical condition in Hamilton County.

Sex

Child deaths due to a medical condition in Hamilton County are higher among male children. Sixty percent of child deaths due to a medical condition were to male children, compared to 40 percent to female children.

Hamilton County Child Deaths Due to a Medical Condition by Sex, 2014-2018

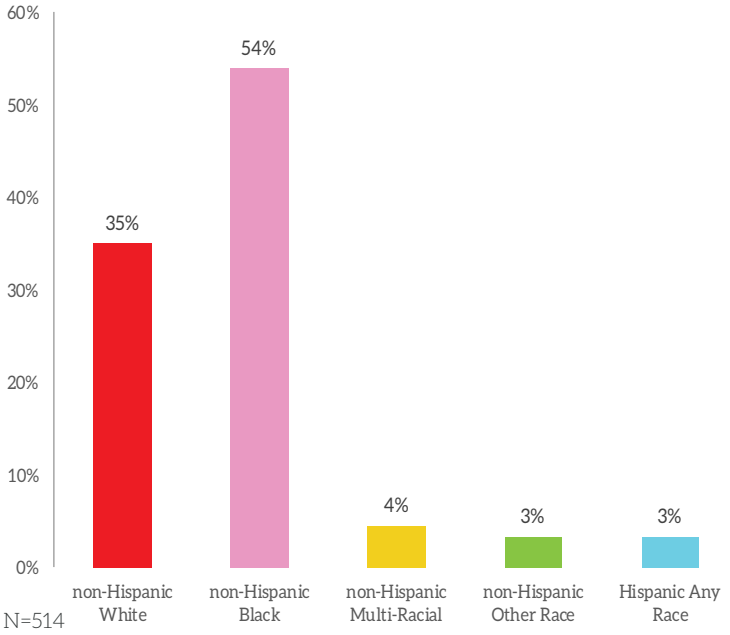
Male	60%
Female	40%

N=514

Race/Ethnicity

As illustrated previously, non-Hispanic black children account for the largest percent of child deaths in Hamilton County. Non-Hispanic black children also accounted for the largest percent of child deaths that were due to a medical condition.

Hamilton County Child Deaths due to a Medical Condition by Race/Ethnicity, 2014-2018



From 2014 to 2018, 54 percent of child deaths that were due to a medical condition were non-Hispanic black children. The percent of child deaths to non-Hispanic black children due to a medical condition was 1.5 times higher than non-Hispanic white children and nearly five times higher than non-Hispanic multi-racial, non-Hispanic other races, and Hispanic children combined.

Non-Hispanic white children accounted for the second highest percentages (35 percent) of child deaths that were due to a medical condition in Hamilton County from 2014 to 2018. Children who were non-Hispanic multi-racial accounted for four percent of child deaths that were due to a medical condition. Children who were non-Hispanic and identified with another racial group accounted for three percent of child deaths due to a medical condition. Hispanic children also only accounted for three percent of child deaths that were due to a medical condition from 2014 to 2018 in Hamilton County.

Top Medical Conditions

Prematurity, congenital anomalies, and cancer are the top three specific leading medical conditions that caused a child's death from 2014 to 2018 in Hamilton County. The largest percentage (54 percent) of child deaths due to a medical condition in Hamilton County were caused by prematurity. Prematurity, also known as preterm birth, is the birth of a baby that is at least three weeks prior to the baby's due date (<37 weeks gestation)[8]. Preterm birth can cause many health complications for the child later in life, such as long-term motor, cognitive, visual, and growth problems[9].

Hamilton County Child Deaths due to a Medical Condition by Top 3 Medical Conditions, 2014-2018

Prematurity	54%
Congenital anomaly	18%
Cancer	5%

N=514

Congenital anomalies accounted for 18 percent of child deaths due to a medical condition. A congenital anomaly, more commonly known as a birth defect, is a more serious condition that changes the structure of one or more parts of the body that can affect almost any part of the body (e.g., heart, brain)[10]. Cancers, the third leading medical condition, accounted for five percent of child deaths in Hamilton County from 2014 to 2018.

Preventability

Many health conditions can result in the death of a child and it is believed that many of the medical conditions cannot be considered to be preventable in the same way an accident or homicide is deemed preventable. However, there are some instances in which the illness, disorder or deaths may have been prevented. Not all medical conditions can be prevented. However, early screening and detection, consistent and early prenatal care and counseling may aid in the prevention of some medical conditions[1].

Preventability of Hamilton County Child Deaths due to a Medical Condition, 2014-2018	
Yes, Probably	1%
No, Probably Not	86%
Team Could not Determine	13%

N=514

The Hamilton County CFR team deemed that 86 percent of child deaths between 2014 and 2018 that were due to a medical condition were probably not preventable. The Hamilton County CFR team could not determine, based on the circumstances surrounding the case, if the death of the child could have been prevented in 13 percent of child deaths due to a medical condition. One percent of child deaths due to a medical condition between 2014 and 2018 could have been prevented by changing various circumstances that led to the death of the child.

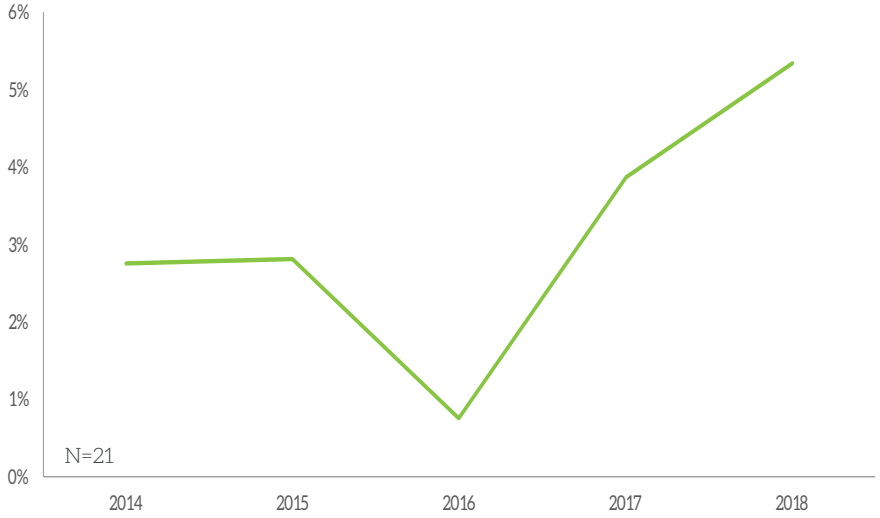
Recommendations

- Implementation of idle free zones to help prevent children suffering from asthma attacks due to being exposed to car exhaust.
- The completion of the American Lung Association programs in schools to teach children empowerment to take control of their asthma, to know when to go to the hospital, and how to take care of your own medication
- Broader awareness that if you are in a rental situation to make a complaint to the landlord to clean up the property to help prevent mold and cockroaches that can trigger asthma.
- Community awareness and education about secondhand smoke and its contributions to asthma.
- Have doctors' offices and pharmacies provide assistance to individuals so they understand how to properly take their prescribed medication and when they should take the medication.

MOTOR VEHICLE DEATHS

Motor vehicle injuries are a leading cause of death among children in the United States[11]. However many of these deaths can be prevented. Between 2014 and 2018, three percent of all child deaths in Hamilton County were due to motor vehicle crashes. Child deaths due to motor vehicle crashes remained relatively stable from 2014 to 2015, accounting for three percent of child deaths. In 2016, the percent of child deaths due to motor vehicle crashes decreased to the lowest (one percent) in the five year time period of 2014 to 2018. However, since 2018, the percent of child deaths due to motor vehicle crashes has been increasing. In 2018, five percent of all child deaths were due to motor vehicle crashes, the highest percent in the five year time period.

Percent of Hamilton County Child Deaths due to a Motor Vehicle Crash, 2014-2018



Age

Motor vehicle crashes can happen to anyone, however, new teen drivers are at a high risk for causing motor vehicle crashes[12]. The majority of child deaths that were due to motor vehicle crashes in Hamilton County were among older children. Thirty-eight percent of child deaths due to a motor vehicle crash between 2014 and 2018 were to children between 15 and 17 years of age. Younger children, between one and four years of age accounted for the second highest percent (29 percent) of child deaths due to motor vehicle crashes between 2014 and 2018. Nineteen percent of child deaths that were due to motor vehicle crashes were to children between 10 and 14 years of age. Infants, specifically children between 28 days and one year of age, accounted for the smallest percent (five percent) of child deaths that were due to motor vehicle crashes.

Hamilton County Child Deaths due to a Motor Vehicle Crash by Age, 2014-2018

< 28 Days	0%
28 Days - 1 Year	5%
1 - 4 Years	29%
5 - 9 Years	10%
10 - 14 Years	19%
15 - 17 Years	38%

N=21

Sex

Child deaths due to motor vehicle crashes not only are disproportionately higher in older children in Hamilton County, but are also higher among male children. Fifty-seven percent of child deaths that were due to a motor vehicle crash between 2014 and 2018 in Hamilton County were to male children. Female children accounted for 43 percent of child deaths that were due to a motor vehicle crash in Hamilton County.

Hamilton County Child Deaths Due to a Motor Vehicle Crash by Sex, 2014-2018

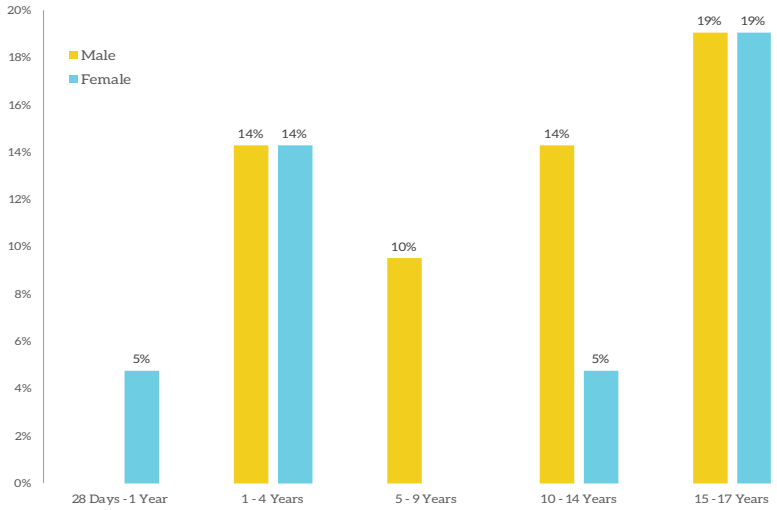
Male	57%
Female	43%

N=21

Age and Sex

When the sex and age of the child are coupled together, further inequities in child deaths due to motor vehicle crashes emerge. As illustrated previously, older children (15 to 17 years of age) accounted for the largest percentage of child deaths due to a motor vehicle crash. Male and female children who are between 15 and 17 years of age each accounted for 19 percent, the largest percentage of child deaths due to a motor vehicle crash. Male and female children who were between one and four years of age, and male children between 10 and 14 years of age each accounted for 14 percent of child deaths due to a motor vehicle crash from 2014 to 2018. Ten percent of child deaths in Hamilton County from 2014 to 2018 due to a motor vehicle crash were to male children between five and nine years of age. Female children between 10 and 14 years of age, and female infant children (28 days to 1-year-of-age) each accounted for five percent of child deaths due to a motor vehicle crash from 2014 to 2018.

Hamilton County Child Deaths due to a Motor Vehicle Crash by Age and Sex, 2014-2018

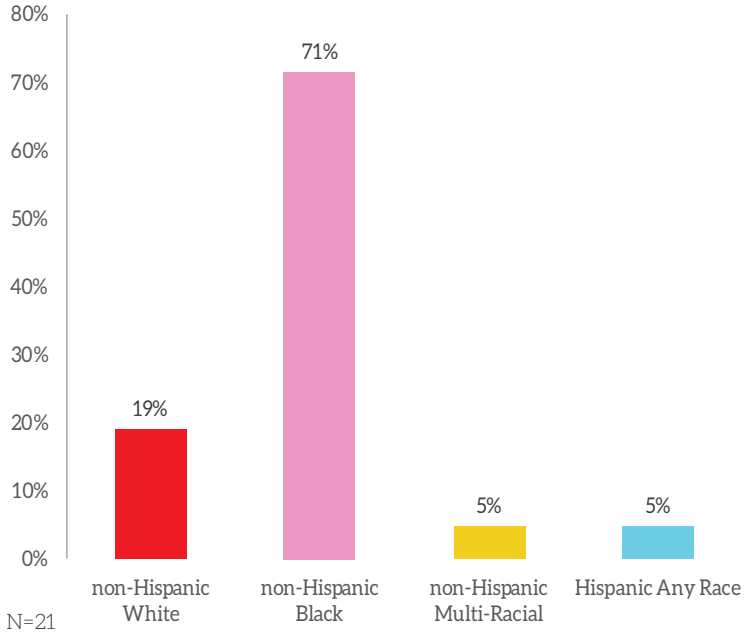


N=21

Race/Ethnicity

As illustrated previously, non-Hispanic black children in Hamilton County represented the largest percentage of child deaths. Non-Hispanic black children also accounted for the largest percentage of child deaths that were due to a motor vehicle crash. Seventy-one percent of child deaths that were due to motor vehicle crashes from 2014 to 2018 in Hamilton County were to non-Hispanic black children. Non-Hispanic white children accounted for a significantly smaller percentage (19 percent) of child deaths due to a motor vehicle crash. Non-Hispanic multi-racial children accounted for five percent of child deaths due to a motor vehicle crash in Hamilton County between 2014 and 2018. Hispanic children in Hamilton County also accounted for five percent of child deaths due to a motor vehicle crash.

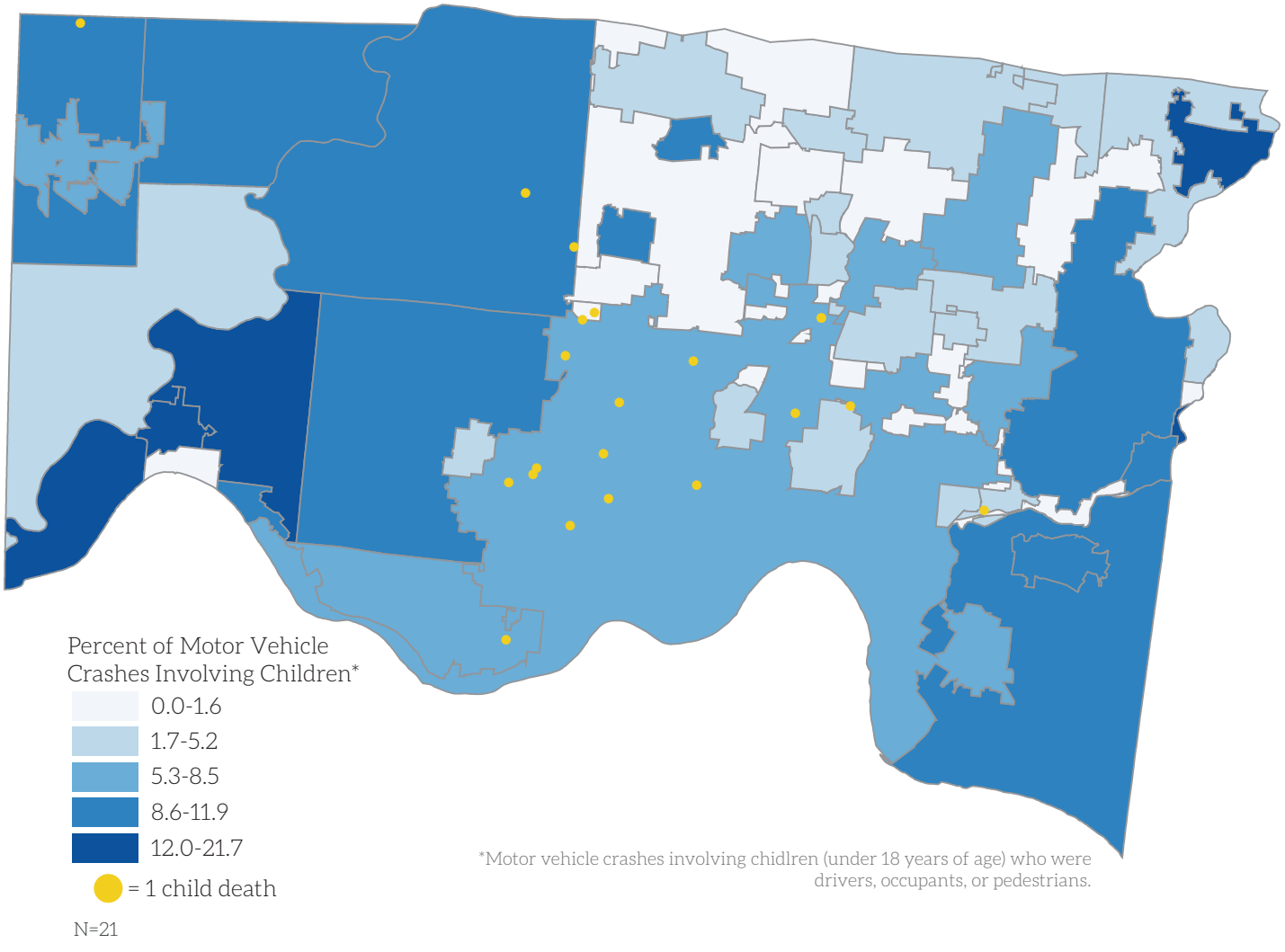
Hamilton County Child Deaths due to a Motor Vehicle Crash by Race/Ethnicity, 2014-2018



Geography

As shown previously, the urban core of Hamilton County, the City of Cincinnati, experienced the largest number of child deaths between 2014 and 2018. The urban core also experienced the largest number of child deaths due to motor vehicle crashes. As shown by the map below, not all communities in Hamilton County witnessed a child death due to a motor vehicle crash. However, nearly all Hamilton County communities had motor vehicle crashes that involved children (either as the driver, occupant or pedestrian). The communities that had the largest number of child deaths due to motor vehicle crashes were not the Hamilton County communities that had the largest percent of motor vehicle crashes that involved children. The western communities within Hamilton County, along with the eastern communities, had the highest percentage of motor vehicle crashes that involved children (either as the driver, occupant or pedestrian).

Hamilton County Child Deaths due to a Motor Vehicle Crash by Percent of Motor Vehicle Crashes Involving Children by Hamilton County Community, 2014-2018



Identifying the communities that are experiencing not only higher child deaths due to motor vehicle crashes, but also experiencing higher percentages of motor vehicle crashes that involve a child is important so targeted interventions and education can be implemented to help reduce the risk of a child being involved in a motor vehicle crash.

Child Position

To tailor interventions and education, knowing the position of the child at the time of the motor vehicle crash is important. Some of the interventions can be improved safe driving education, or proper ways to ensure the safety of pedestrians. In nearly half of all child deaths from 2014 to 2018 in Hamilton County that were due to a motor vehicle crash, the child was a passenger in the car at the time of the accident. In thirty-three percent of child deaths that were due to a motor vehicle crash, the child was a pedestrian that was struck by a car. In fourteen percent of child deaths, the child was the driver of a car that was involved in a crash that caused the child to die. The smallest percentage of child deaths due to a motor vehicle crash (five percent), the child was a bicycle that was struck by a car.

Hamilton County Child Deaths due to a Motor Vehicle Crash by Child Position, 2014-2018

Driver	14%
Passenger	48%
Pedestrian	33%
On Bicycle	5%

N=21

Child Passenger Location

As illustrated previously, in the majority of the child deaths in Hamilton County between 2014 and 2018 that were due to a motor vehicle crash, the child was the passenger in the car at the time of the crash. When the passenger location of the child is determined, the majority of the children were sitting in the back seat of the vehicle at the time of the crash. Eighty percent of child deaths (due to a motor vehicle crash) in which the child was the passenger, showed the child was sitting in the back seat of the car at the time of crash. In twenty percent of child deaths where the child was a passenger, the child was sitting in the front seat of the car at the time of the crash.

Hamilton County Child Deaths due to a Motor Vehicle Crash by Child Passenger Location, 2014-2018

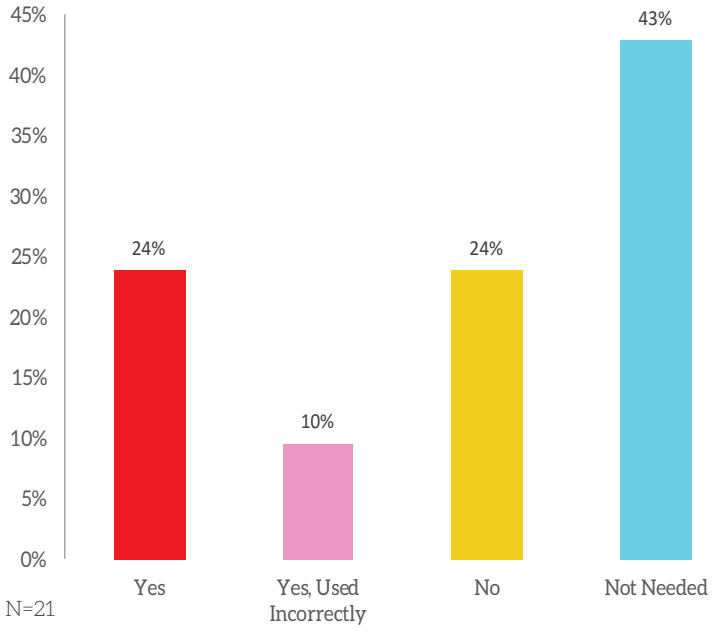
Front Seat	20%
Back Seat	80%

N=21

Seatbelt / Car Seat / Booster Seat Use

Often, one of the most effective ways an individual can prevent injury or death due to a motor vehicle crash is by using a seatbelt, or a booster/car seat for small children. In the State of Ohio, every driver and front passenger must wear a seat belt[13]. In 24 percent of child deaths from 2014 to 2018 in Hamilton County that were due to a motor vehicle crash, the child was properly restrained using a seatbelt/ car seat/booster seat. In 10 percent of child deaths due to a motor vehicle crash, the child was restrained using a seatbelt/car seat/booster seat, however, it was not used properly. Children were not using a seatbelt/car seat/booster seat in 24 percent of child deaths due to a motor vehicle crash. In the majority (43 percent) of child deaths due to motor vehicle crashes, a seatbelt/ car seat/booster seat was not needed at the time of the crash. In these instances, the child was not in the motor vehicle at the time of the accident.

Hamilton County Child Deaths due to a Motor Vehicle Crash by Seatbelt/Car Seat/Booster Seat Use 2014-2018



Children in the State of Ohio are required to use booster seats once they outgrow their car seat and until they are either eight years old or at least four feet nine inches tall[14]. Twenty-four percent of child deaths due to a motor vehicle crash in Hamilton County from 2014 to 2018 involved a child as a passenger that was younger than 10 years of age. In 20 percent of child deaths due to a motor vehicle crash that involved a child as a passenger that was 10 years of age and younger, the child was in a car seat/booster seat, however, the car seat/booster seat was not properly used. This could mean that the child was not properly restrained in the seat, or the incorrect type of car seat/booster seat was used for the child's age and/or height. In 80 percent of child deaths due to a motor vehicle crash that involved a child as a passenger that was 10 years of age and younger, the child did not have a car seat/booster seat, but based on the child's age and/or the child's height and weight needed one.

Hamilton County Child Deaths due to a Motor Vehicle Crash to Child Passenger, <10 Years of Age by Car/Booster Seat Use, 2014-2018

Were in a car seat/booster seat used incorrectly	20%
Did not have a car seat/ booster seat present but needed one	80%

N=21

Contributing Factors

There are many factors that can contribute to a motor vehicle crash. These factors include speeding, drivers being distracted by multiple things such as cell phones, use of drugs and alcohol before or while operating a motor vehicle. Each motor vehicle crash can have multiple

Hamilton County Child Deaths due to a Motor Vehicle Crash by Contributing Factors Involved in the Crash, 2014-2018*	
Speeding over the posted speed limit	38%
Drugs/Alcohol use	38%
Recklessness	29%
Other Causes	29%
Rollover	10%
Ran a red light/stop sign	5%

N=21

factors that contributed to the crash. From 2014 to 2018, a majority (38 percent) of child deaths due to a motor vehicle crash speeding was a factor in the crash. The use of drugs and/or alcohol before or while operating a motor vehicle was also a factor in 38 percent of child deaths due to a motor vehicle crash. Reckless driving, which places a person at an increased risk for a car crash, was a contributing factor in the motor vehicle crash that caused a child death in Hamilton County from 2014 to 2018. In 29 percent of child deaths due to a motor vehicle crash, there were other factors (not collected by the national reporting system) that contributed to the motor vehicle crash. These are factors such as darting/walking out into a road and not yielding to oncoming traffic, and running from the police. A rollover, an instance in which a car rolls over onto its top, was a factor in 10 percent of child deaths in Hamilton County due to a motor vehicle crash from 2014 to 2018. Five percent of child deaths due to a motor vehicle crash, saw a car ran a red light or a stop sign and caused a crash that resulted in the death of a child.

Preventability

Motor vehicle crashes are a public health problem, and many deaths that are a result of a motor vehicle crash can be prevented. The Hamilton County CFR team deemed that 90 percent of child deaths between 2014 and 2018 that were due to a motor vehicle crash would have been prevented by changing various circumstances that led to the death of the child. The Hamilton County CFR team could not determine, based on the circumstances surrounding the case, if the death of the child could have been prevented in 10 percent of child deaths due to a motor vehicle crash.

Preventability of Hamilton County Child Deaths due to a Motor Vehicle Crash, 2014-2018	
Yes, Probably	90%
No, Probably Not	0%
Team Could not Determine	10%

N=21

Recommendations

- Installation of traffic calming measures.
- Increased pedestrian safety, even if you have the right of way to know your surroundings.
- Installation of kids at play and caution signs.
- Education for parents about supervision with young children when moving objects are around.
- Education on safe driving techniques for kids.
- Education that kids should not ride on the backs of motorcycles.

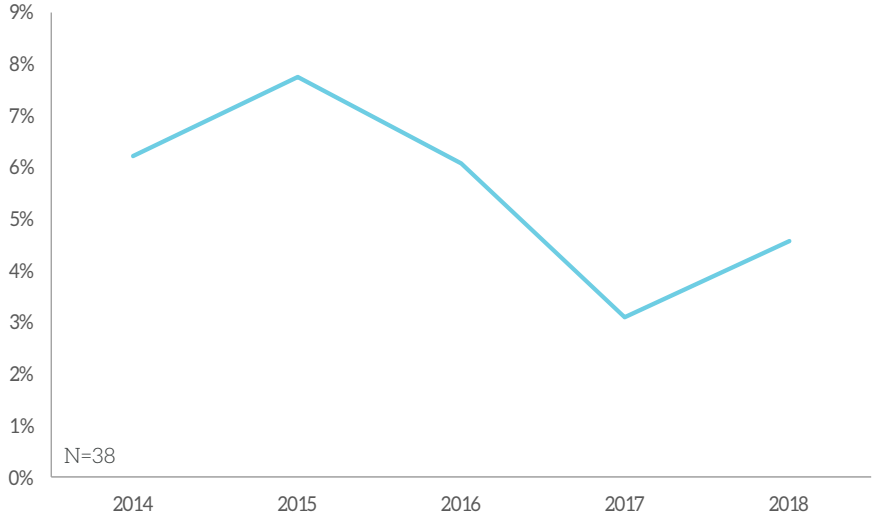
Note: The percentages do not equal 100 percent as there can be multiple factors that contributed to the motor vehicle crash that cause the death of a child.

- Enhanced infrastructure (e.g., crosswalks, lights, etc) around bus stops where students get on/off the bus to improve safety and visibility.
- Education on the appropriate seating for children based on their age.
- Education on how to properly use a seat belt/car seat/booster seat.
- Laws created regarding child passenger safety/restraints and failure to comply with the laws is considered child endangerment.
- Brochure created that highlights the local fire departments that install and/or inspect child car seats for proper installation.
- Increased education to not drink or do drugs while driving and buzzed driving is the same as drunk driving.
- Education to parents that they should be aware of where their kids are at all times.
- Education to students in school about safety when being a pedestrian and to think about decisions before crossing the roads.
- Promote resources (where available) that can help with automobile maintenance for low income/in-need individuals.
- Promotions of public transportation as an alternative (safe) mode of transportation.
- Education on the importance of car maintenance and ensuring the car is running/ operating safely.

HOMICIDES

Homicides are a serious public health problem, and can have lasting effects on communities.

Percent of Hamilton County Child Deaths due to Homicides, 2014-2018



Homicide is an extreme outcome of the broader public health problem of interpersonal violence[15]. Child homicides can have profound long-term emotional consequences on families and friends of victims and witnesses to the violence[16]. They can also cause excessive economic costs to residents of affected communities[16].

Between 2014 and 2018, six percent of all child deaths in Hamilton County were due to homicides. From 2014 to 2015, the percent of child deaths due to homicides was slowly increasing. In 2015, eight percent of child deaths were due to homicides, the highest percentage of the five year time period of 2014 to 2018. After the percent of child deaths due to homicides increased in 2015, the percent slowly decreased to the lowest percent of child deaths (three percent) in 2017. However, since 2017 the percent of child deaths due to homicides began to increase.

Age

Homicides of children are most often murders of teens by other teens[17]. The majority of child homicides in Hamilton County were to older children. Twenty-six percent of child homicides in Hamilton County from 2014 to 2018 were to children who were between 15 and 17 years of age. Infant children who were between 28 days and one year of age accounted for the second largest percent of child homicides (24 percent). Eighteen percent of child homicides were to children between 10 and 14 years of age. Hamilton County children between one and four years of age accounted for 16 percent of child homicides from 2014 to 2018. Thirteen percent of child homicides in Hamilton County from 2014 to 2018 were to children who were between five and nine years of age. The youngest children, those who are less than 28 days old, accounted for the smallest percentage (three percent) of child homicides in Hamilton County.

Hamilton County Child Homicides by Age, 2014-2018

< 28 Days	3%
28 Days - 1 Year	24%
1 - 4 Years	16%
5 - 9 Years	13%
10 - 14 Years	18%
15 - 17 Years	26%

N=38

Sex

Child homicides are not only disproportionately higher in older children in Hamilton County, but are also higher among male children. Fifty-five percent of child homicides in Hamilton County between 2014 and 2018 were to male children. Female children accounted for 45 percent of child homicides in Hamilton County between 2014 and 2018.

Hamilton County Child Homicides by Sex, 2014-2018

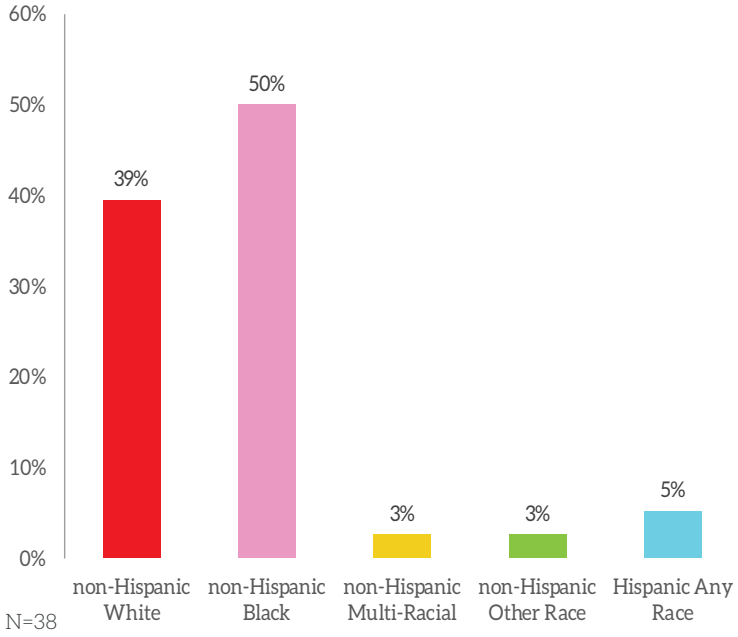
Male	55%
Female	45%

N=38

Race/Ethnicity

As illustrated previously, non-Hispanic black children in Hamilton County represented the largest percentage of child deaths. Non-Hispanic black children also accounted for the largest percentage of child homicides in Hamilton County. Fifty percent of child homicides from 2014 to 2018 were to non-Hispanic black children. The percentage of child homicides to non-Hispanic black children in Hamilton County was 1.3 times higher than homicides to non-Hispanic white children and nearly five times higher than homicides to non-Hispanic multi-racial, non-Hispanic other race, and Hispanic children in Hamilton County combined.

Hamilton County Child Homicides by Race/ Ethnicity, 2014-2018

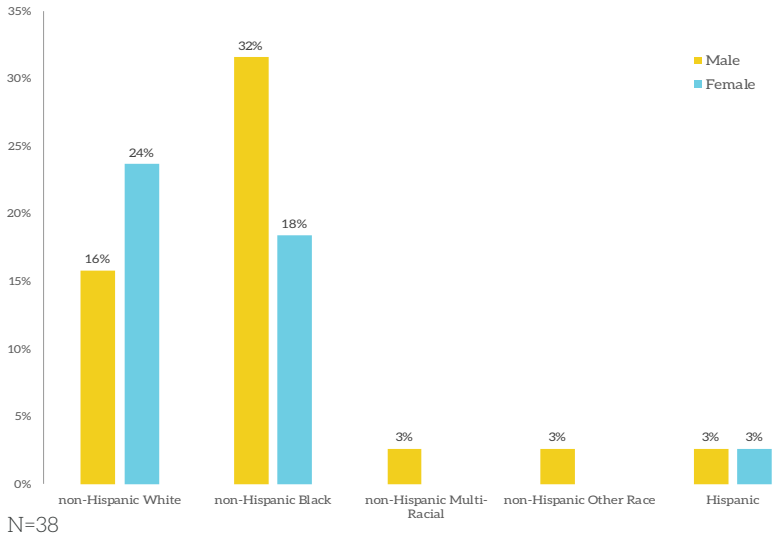


Non-Hispanic white children represent the second highest percent of child homicides in Hamilton County from 2014 to 2018 (39 percent). Hispanic children accounted for five percent of child homicides in Hamilton County. Three percent of child homicides were to children who were non-Hispanic and multi-racial. Children who were non-Hispanic and identified with another racial group also accounted for three percent of child homicides in Hamilton County from 2014 to 2018.

Race/Ethnicity and Sex

As illustrated previously, male children and non-Hispanic black children in Hamilton County represented the largest percentage of child deaths that were due to a homicide. When sex and race/ethnicity are coupled together, further inequalities in child deaths emerge. Non-Hispanic black male children accounted for the largest percentage of child homicides in Hamilton County from 2014 to 2018. Thirty-two percent of child homicides in Hamilton County between 2014 and 2018 were to non-Hispanic black males. The percent of child homicides to non-Hispanic black males was two times higher than non-Hispanic white male children and four time higher than non-Hispanic multi-racial, non-Hispanic other races and Hispanic male children combined.

Hamilton County Child Homicides by Race/Ethnicity and Sex, 2014-2018



N=38

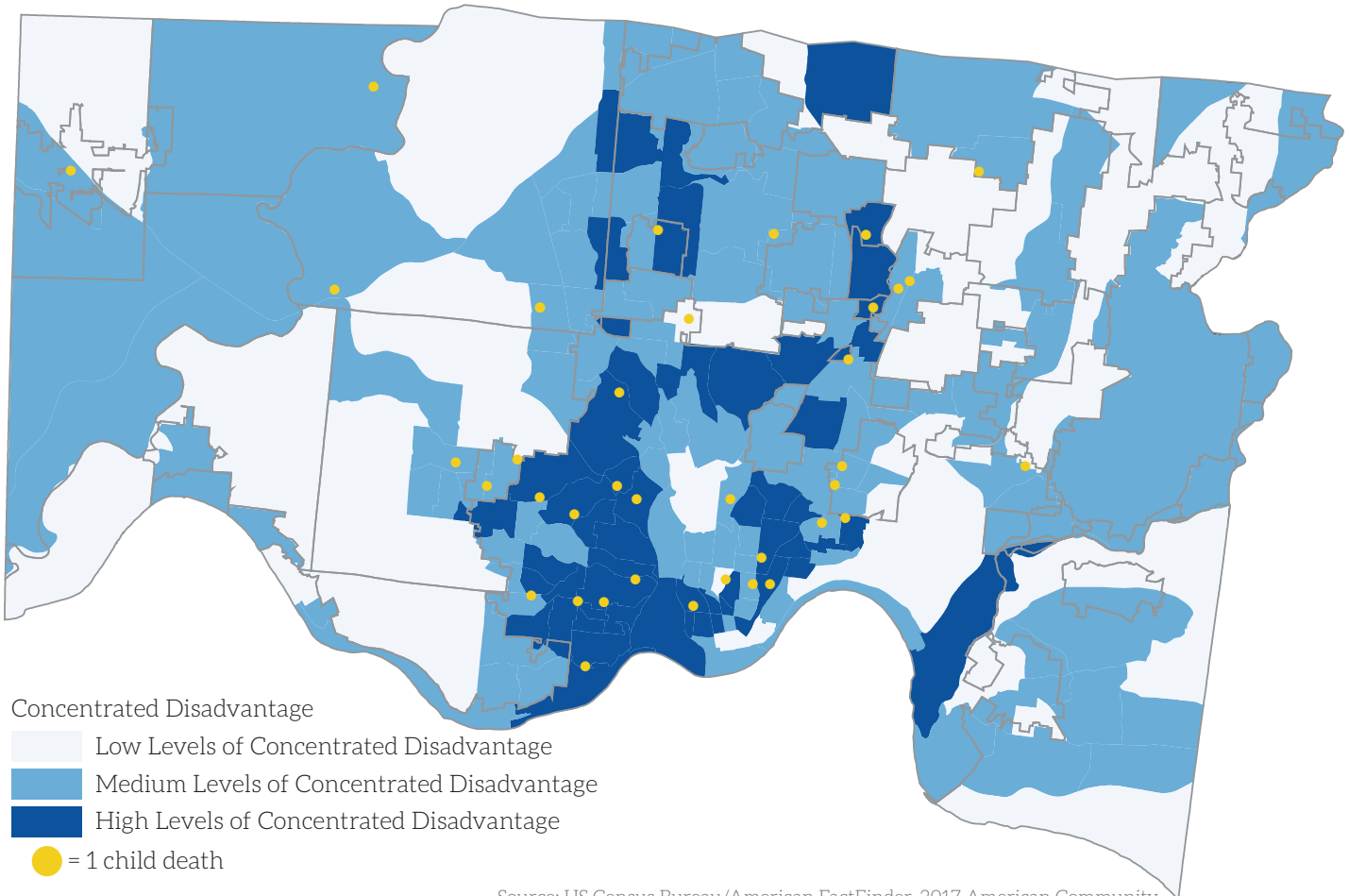
Non-Hispanic white females represented the second highest percentage of child homicides from 2014 to 2018 (24 percent). The percentage of child homicides to non-Hispanic white females was 1.3 times higher than non-Hispanic black female children and nine times higher than Hispanic female children.

Sociodemographics

There are many community factors that can contribute to youth violence and child homicide. Diminished economic opportunities, high concentrations of poor residents, and low levels of community participation are some risk factors that can contribute to child homicide[18]. Communities that have high levels of concentrated disadvantage have less mutual trust and collective efficacy[3]. Collective efficacy is critical for communities to inhibit the perpetuation of violence[3]. Children who live and grow in disadvantaged areas are more likely to experience violence[3].

The urbanized areas in Hamilton County (City of Cincinnati and to the north) tend to have the highest levels of concentrated disadvantage, as illustrated by the map below. Correspondingly, the majority of child homicides occurred to children who lived in communities that have medium and high levels of concentrated disadvantage.

Hamilton County Child Homicides by Level of Concentrated Disadvantage, 2014-2018

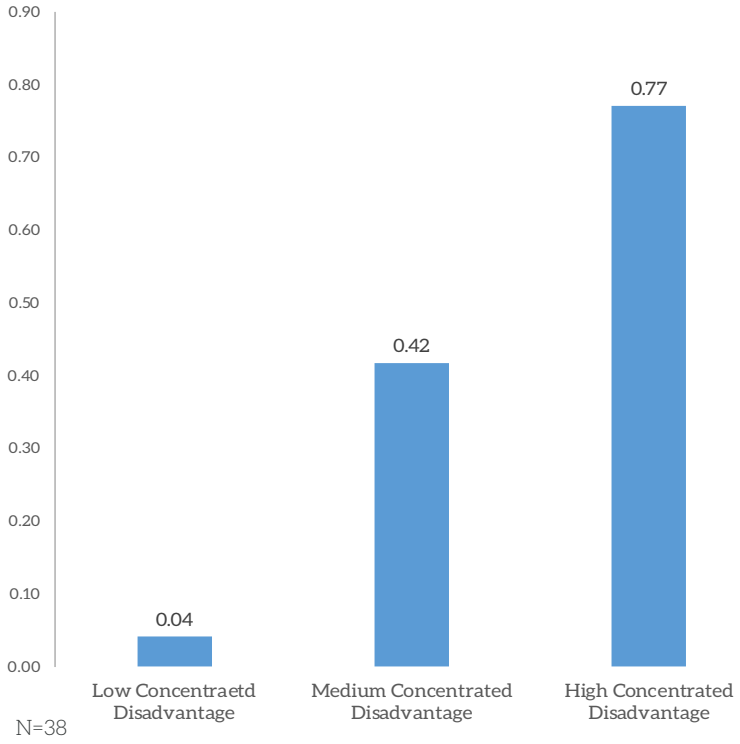


N=38

Source: US Census Bureau/American FactFinder, 2017 American Community Survey. Accessed: 5/16/2019, Available: http://factfinder2.census.gov

As illustrated previously in this report, communities with high levels of concentrated disadvantage had the highest child fatality rates in Hamilton County. Children who live and grow up in communities with high levels of concentrated disadvantage are at an increased risk for experiencing violence, which can include homicide[3]. Correspondingly, the communities with high levels of concentrated disadvantage also had the highest rates of child homicide in Hamilton County between 2014 and 2018. The child homicide rate in communities with high levels of concentrated disadvantage was nearly two times higher than the child homicide rate in communities with medium levels of concentrated disadvantage and 18 times higher than the child homicide rate in communities with low levels of concentrated disadvantage.

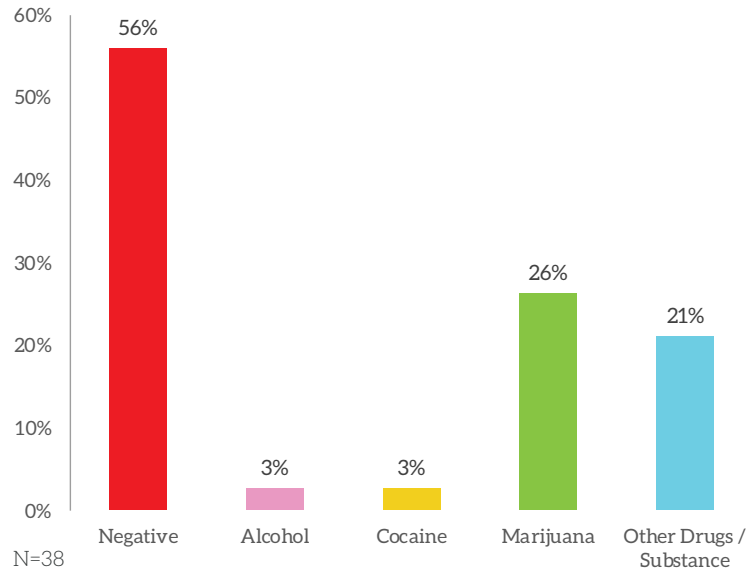
Hamilton County Child Homicide Rate (per 10,000) by Level of Concentrated Disadvantage, 2014-2018†



Alcohol and Substance Use

Individual risk factors, such as involvement with drugs, alcohol or tobacco, poor behavior control, and exposures to violence can also contribute to youth violence and child homicide[18].

Percent of Hamilton County Child Homicides by Toxicology Screen, 2014-2018*



Eighty-nine percent of all child homicides in Hamilton County received a toxicology screen at the time of death. A toxicology screen refers to various tests that determine the type and approximate amount of legal and illegal drugs a person has taken[19]. In 56 percent of child homicides in Hamilton County from 2014 to 2018, the child had a negative toxicology screen. In 26 percent of child homicides, the child tested positive for marijuana at the time of death. In three percent of child homicides in Hamilton County, the child had tested positive for having alcohol or cocaine at the time of death. In 21 percent of child homicides in Hamilton County from 2014 to 2018, the child tested positive for another drug/ substance that is not captured by the CFR online data system

† *Note: The rates may be based on less than 20 cases, and should be interpreted with caution.*
**Note: The percentages do not equal 100 percent as the child can test positive for multiple substances on a toxicology screen.*

Hamilton County Child Homicides by Drug/ Substance Abuse Problems, 2014-2018	
Yes	16%
No	3%
N/A	50%
Unknown	32%

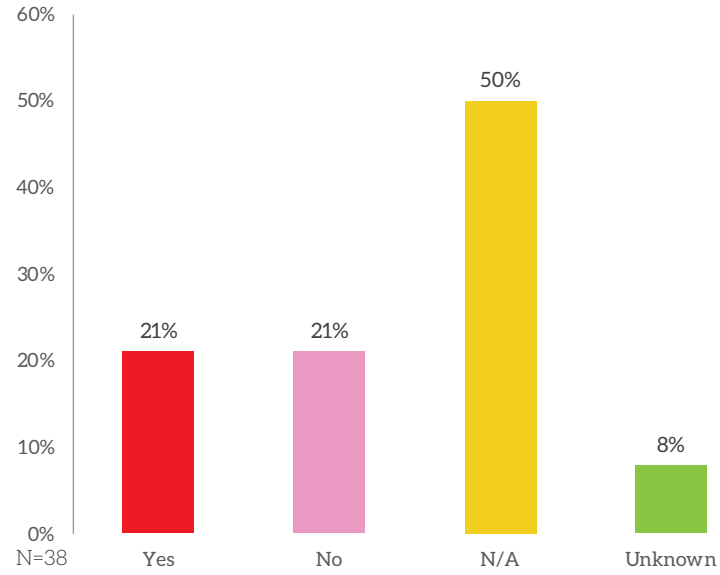
N=38

In 16 percent of child homicides in Hamilton County from 2014 to 2018, the child had a drug/substance abuse problem. Three percent of child homicides the child did not have a drug/substance abuse problem. It was unknown if the child had a drug/substance abuse problem in 32 percent of child homicides in Hamilton County from 2014 to 2018. The majority of child homicides (50 percent) having a drug/substance abuse problem was not applicable to the child. The child homicides where having a drug/substance abuse problem was not applicable was due to the age of the child. This means that the child was too young (e.g., infant or toddler) to begin using drugs, at the time of death.

Juvenile Delinquency

Delinquency is often associated with the perpetration of violence, however delinquent youth are also at risk for early violent deaths[20]. In 21 percent of child homicides in Hamilton County from 2014 to 2018, the child had a delinquent or criminal history. Twenty-one percent of child homicides, the child did not have a delinquent or criminal history. It was unknown if the child had a delinquent or criminal history in eight percent of child homicides from 2014 to 2018. The majority of child homicides, 50 percent, having a delinquent or criminal history was not applicable to the child. This means, much like having a drug/substance abuse problem, the child was too young to have a delinquent or criminal history.

Percent of Hamilton County Child Homicides by Delinquent/Criminal History 2014-2018*



Of the child homicides where the child had a delinquent or criminal history, 75 percent of child homicides the child had a history of committing assaults. In 50 percent of child homicides where the child had a delinquent or criminal history, the child had a history of committing robberies. Seventy-five percent of child homicides in Hamilton County, where the child had a delinquent or criminal history from 2014 to 2018, the child had a history of using and/or abusing drugs. In 88 percent of child homicides, where the child had a delinquent or criminal history, the child

Hamilton County Child Homicides with a Delinquent/Criminal History by Type, 2014-2018	
Assaults	75%
Robbery	50%
Drugs	75%
Other Delinquent/Criminal Acts	88%

N=8

Note: The percentages do not equal 100 percent as the child can commit multiple delinquent/criminal acts.

had some other type of delinquent or criminal acts that are not captured by the CFR online data system. These delinquent or criminal acts include:

- Attempt
- Disorderly conduct
- Carrying a concealed weapon
- Criminal mischief
- Alcohol possession
- Criminal damaging
- Criminal trespassing
- Runaway
- Violating Court Order
- Domestic violence
- Theft
- Curfew violation
- Aggravated rioting
- Burglary/attempted burglary
- Obstructing official business
- Complicity
- Weapons under disability

A child who commits delinquent or unruly acts may become involved with the juvenile justice system and spend time in juvenile detention[21]. In 88 percent of child homicides where the child had a delinquent or criminal history, the child spent time in juvenile detention. In 12 percent of child homicides in which the child had a delinquent or criminal history, the child did not spend time in juvenile detention.

Hamilton County Child Homicides with a Delinquent/Criminal History by Time Spent in Juvenile Detention, 2014-2018

Yes	88%
No	12%

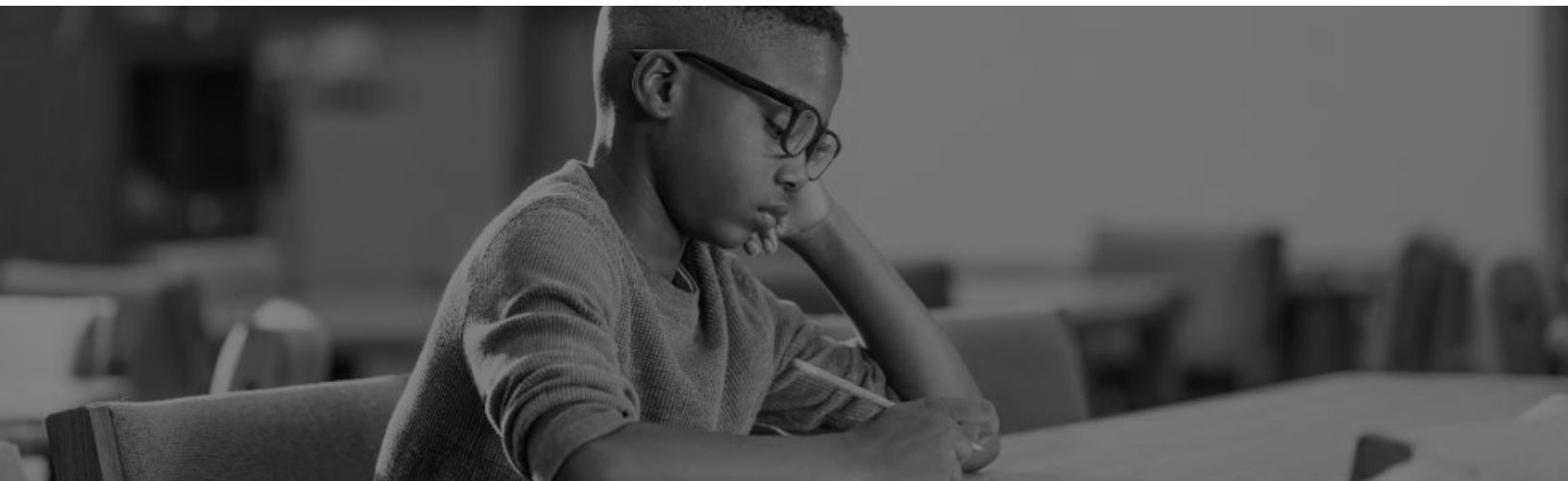
N=8

Criminal and antisocial parents often tend to have delinquent and antisocial children[22]. Family risk factors such as parental substance abuse or criminality can contribute to youth violence and child homicide[18]. In 50 percent of child homicides in Hamilton County from 2014 to 2018, the primary caregiver of the child had a delinquent or criminal history. The primary caregiver is defined as the person who had responsibility for the care, custody and control of the child the majority of the time[7]. In 42 percent of child homicides, the primary caregiver of the child did not have a delinquent or criminal history. It was unknown whether the primary caregiver had a delinquent or criminal history in eight percent of child homicides in Hamilton County from 2014 to 2018.

Hamilton County Child Homicides by Primary Caregiver Delinquent/Criminal History, 2014-2018

Yes	50%
No	42%
Unknown	8%

N=38



Preventability

Child homicides are a public health problem, and many child homicides could have been prevented. The Hamilton County CFR Team determined that 95 percent of child homicides between 2014 and 2018 could have been prevented by changing various circumstances that led to the death of the child. The Hamilton County CFR Team could not determine, based on the circumstances surrounding the case, if the death of the child could have been prevented in five percent of child homicides.

Preventability of Hamilton County Child Homicide, 2014-2018	
Yes, Probably	95%
No, Probably Not	0%
Team Could not Determine	5%

N=38

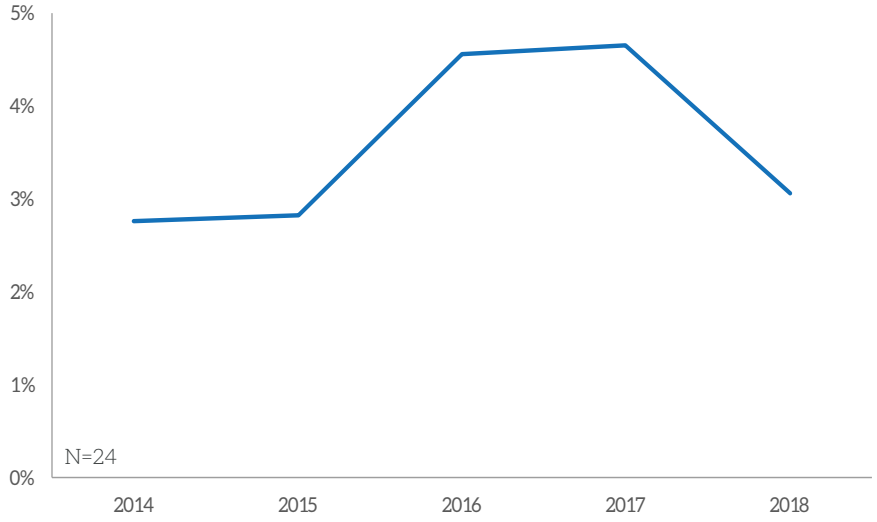
Recommendations

- Partner with groups or programs such as Street Rescue to get illegal guns off the streets.
- Broader awareness around ACES (Adverse Child Experiences), integrated trauma and resilience building practices.
- Identify resources and support networks for parents with behavioral or mental health issues and criminal history.
- Education on anger management and how to cope with stress.
- Stress/coping management during parenting and prenatal classes and appointments.
- Extend shaken baby education and information to moms partners.
- Cultural competency of social workers and those interacting with children whose parents have a history of violence, as violence is all the children know and grew up with.
- Provide affordable parenting classes for families who cannot financially afford classes to ensure all education is provided to families.
- Creation of earlier interventions within the schools where a support system is created to help when there is no support system at home.
- Creation of male leadership programs in schools.
- Reinforcement of HIPPA violations and the severe consequences of having a HIPPA violation.
- Education to health care systems on the universal prosecution of HIPPA violations.
- Change that keeps protective suspensions longer where there is a history of serious abuse and injury to the child.
- Shift from compliance-based changes to measuring behavior changes in adults for the child protective services agencies.
- Education to look over the history of the family for abuse/trauma to understand the overall trauma the family and child has been experiencing.

SUICIDES

Suicides are a serious public health problem and can have lasting effects on communities. Suicide rates vary by age group, and reasons for suicide are often complex. A combination of individual, relational, community, and societal factors contribute to the risk of suicide[23]. Suicide is the tenth leading cause of death in the United States, and it is estimated that more than 1.3 million people reported making a suicide attempt in 2016[24].

Percent of Hamilton County Child Deaths due to Suicides, 2014-2018



Between 2014 and 2018, four percent of all child deaths in Hamilton County were suicides. From 2014 to 2015, the percent of child suicides remained relatively stable at three percent. However, between 2015 and 2017, the percent of child suicides increased to five percent. In 2018, the percent of child suicides in Hamilton County, decreased to three percent. Suicide can impact all children, however, there are some groups that are at a higher risk than others.

Age

Suicide is a public health problem that can impact anyone at any stage in life. It is the second leading cause of death for individuals between 10 and 34 years of age[25]. The majority of child suicides in Hamilton County were to children who were older than 10 years of age. However, between 2014 and 2018, Hamilton County witnessed children younger than 10 years of age die by suicide. Four percent of child suicides in Hamilton County from 2014 to 2018 were to children between five and nine years of age. Forty-two percent of child suicides were to children who were between 10 and 14 years of age. Over half (54 percent) of child suicides in Hamilton County were to older teenage children between 15 and 17 years of age.

Hamilton County Child Suicides by Age, 2014-2018

5 - 9 Years	**4%**
10 - 14 Years	**42%**
15 - 17 Years	**54%**

N=24

Sex

While anyone can be impacted by suicide, suicides are more likely to occur in males than females[25]. In Hamilton County male children are disproportionately affected by a higher percentage of child suicides than their female counterparts. Seventy-one percent of child suicides in Hamilton County between 2014 and 2018 were to male children. Female children accounted for 29 percent of child suicides in Hamilton County between 2014 and 2018.

Hamilton County Child Suicides by Sex, 2014-2018

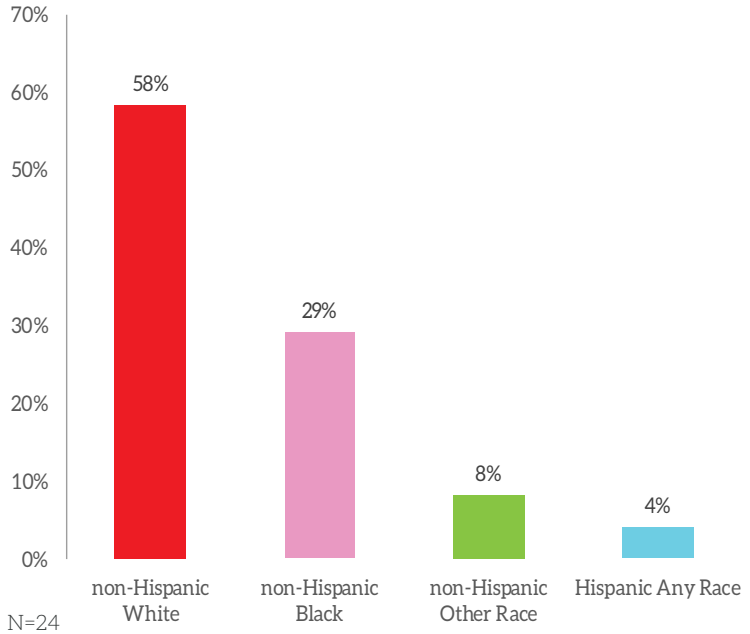
Male	**71%**
Female	**29%**

N=24

Race/Ethnicity

As illustrated in previous sections of this report, non-Hispanic black children in Hamilton County are disproportionately impacted by higher percentages of child deaths from various causes. However, child suicides impact non-Hispanic white children at higher percentages. From 2014 to 2018, non-Hispanic white children accounted for 58 percent of child suicides in Hamilton County. The percentage of child suicides to non-Hispanic white children in Hamilton County was two times higher than suicides to non-Hispanic black children.

Hamilton County Child Suicides by Race/Ethnicity, 2014-2018



N=24

Non-Hispanic black children represented the second highest percent of child suicides in Hamilton County from 2014 to 2018 (29 percent). Eight percent of child suicides in Hamilton County from 2014 to 2018 were children who were non-Hispanic and identified with another racial group. Hispanic children accounted for the smallest percentage (four percent) of child suicides in Hamilton County from 2014 to 2018.

Child Maltreatment

Several factors can place children at an increased risk for suicide, such as stressful life events, history of depression or other mental illness and a history of previous suicide attempts[25]. However, just because a child has a risk factor for suicide does not mean that suicide will occur. One stressful life event a child may experience is being a victim of child maltreatment. Child maltreatment is any act or series of acts of child abuse or neglect by a parent or caregiver that results in harm, potential for harm, or threat of harm to a child[26].

Hamilton County Child Suicides by Victim of Child Maltreatment, 2014-2018	
Yes	46%
No	54%

N=24

In the majority of child suicides (54 percent) in Hamilton County between 2014 and 2018, the child was not a victim of child maltreatment. Forty-six percent of child suicides in Hamilton County, the child was a victim of child maltreatment of some form.

There are many various forms of child maltreatment, and each can have lasting effects on the child. Of the child suicides in Hamilton County where the child was a victim of child maltreatment, in 64 percent of deaths the child was a victim of child neglect. Child neglect is the failure of a parent or caregiver to provide for a child's basic needs. Physical abuse was the type of child maltreatment in 55 percent of child suicides where the child was a victim of child maltreatment. Physical abuse is the intentional physical injury to a child caused by a parent, caregiver or other person that can include punching, beating, and shaking. Sexual abuse was the type of child maltreatment in 27 percent of child suicides where the child was a victim of child maltreatment.

Hamilton County Child Suicides who were Victims of Child Maltreatment by Type, 2014-2018*	
Physical	55%
Neglect	64%
Sexual	27%

N=11

Depression and Mental Illness

Being a victim of child maltreatment can have significant impact on the child's well-being, including their mental health. Having a history of a mental illness or depression can increase the risk of a child suicide[25] A mental illness is "a condition that impacts a person's thinking, feeling, mood and may affect his or her ability to relate to other and function on a daily basis[27]." In 46 percent of child suicides in Hamilton County from 2014 to 2018, the child had been diagnosed with a mental health illness. Fifty-four percent of child suicides, the child had not been diagnosed with a mental health illness.

Hamilton County Child Suicides by Diagnosed Mental Health Illness, 2014-2018	
Yes	46%
No	54%

N=24

Mental health illnesses, such as depression and anxiety, can impact an individual's ability to participate in healthy behaviors, and can decrease an individual's ability to engage in treatment and recovery for their mental health illness[28]. In 73 percent of child suicides in Hamilton County from 2014 to 2018, where the child was diagnosed with a mental health illness, the

**Note: The percentages do not equal 100 percent as the child can be a victim of multiple types of child maltreatment.*

child had received professional treatment for a mental health illness in the past. However, they may not have been receiving active treatment at the time of death. Forty-five percent of child suicides where the child was diagnosed with a mental health illness, the child was currently receiving mental health services. Children currently receiving mental health services were in treatment which includes seeing a psychiatrist, psychologist, medical doctor, therapist or other counselor for a mental health illness; receiving a prescription for an antidepressant or other psychiatric medication, or residing in an inpatient or halfway house facility for mental health problems[7]. In 27 percent of child suicides where the child was diagnosed with a mental health illness, the child was on medications for their mental health illness. This means that the child had an active prescription for psychiatric medication at the time of death. However, it does not guarantee or mean the child was actively taking the medication as prescribed at the time of death.

Hamilton County Child Suicides with a Diagnosed Mental Health Illness by Treatment of Mental Health Illness, 2014-2018	
Child had received prior mental health services	73%
Child was currently receiving mental health services	45%
Child was on medications for mental health illness	27%

N=24

Risk/Contributing Factors

The reasons a child chooses to die by suicide are often complex, and may have many risk/contributing factors that led to the suicide. In some instances, a suicide note may help to answer why the child died by suicide. In 42 percent of child suicides in Hamilton County, the child left some form of a suicide note that may have provided some insight into why the child died by suicide.

Hamilton County Child Suicides by Select Risk/Contributing Factor, 2014-2018*	
Suicide note was left	42%
Prior suicide threats	33%
History of self-mutilation	33%
Talked about suicide	29%
Prior suicide attempts	29%
Argument with parents	21%
History of running away	21%
Family discord	21%
Family history of suicide	17%
Bullying as a victim	17%

N=24

Having a history of prior suicide attempts is a risk factor for a child suicide. Thirty-three percent of child suicides in Hamilton County from 2014 to 2018, the child made prior threats of suicide. When a child makes a threat of suicide, they expressed their intent to die verbally[7]. The child had talked about suicide in 29 percent of child suicides in Hamilton County. If a child talked about suicide, hey only expressed they thought about suicide, however, they never mentioned or describe a plan for dying by suicide. Prior suicide attempts were made in 29 percent of child suicides from 2014 to 2018.

**Note: The percentages do not equal 100 percent as multiple factors can contribute to a child suicide.*

Not only does a history of prior suicide attempts increase a child's risk for a suicide, but also having a family history of suicide can increase the risk of a child suicide. Seventeen percent of child suicides in Hamilton County, there was a family history of suicide. This can mean that a parent, sibling, a grandparent or other family member died by suicide.

Repetition of deliberate self-harm (e.g., self-mutilation/cutting oneself) is a risk factor for suicide[29]. In 33 percent of child suicides in Hamilton County from 2014 to 2018, the child had a history of self-mutilation/cutting oneself.

Preventability

While these are only a few of the risk/contributing factors, suicides are often complex and no one risk/contributing factor can answer why the child died by suicide. Child suicides can have a lasting impact on family, friends and the community. However, many of these tragic deaths could have been prevented.

Preventability of Hamilton County Child Suicides, 2014-2018	
Yes, Probably	71%
No, Probably Not	0%
Team Could not Determine	29%

N=38

The Hamilton County CFR team deemed that 71 percent of child suicides between 2014 and 2018 could have been prevented by changing various circumstances that led to the death of the child. In 29 percent of child suicides, the Hamilton County CFR team could not determine, based on the circumstances surrounding the case, if the suicide and ultimately the death of the child could have been prevented.

Recommendations

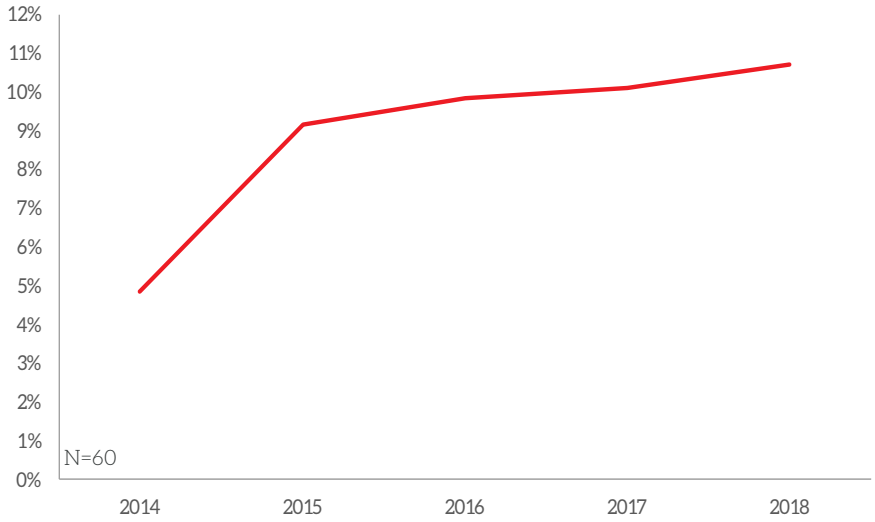
- Transparency of schools to families about any issues/health concerns/injury reports/ incidence reports.
- Implement standardization of education in schools on bullying be implemented into the core curriculum.
- Implement life skills and coping techniques into the schools.
- Fully integrate mental health into school-based health centers.
- Have pop-up health clinics in the schools to provide health services and mental health screenings in the schools that don't have school-based health centers.
- Schools should be proactively providing information on suicide and signs and symptoms to parents and students rather than being reactive.
- Community prevention on how to help kids create a safety plan for those living in high-risk circumstances.
- Education that concussions are very serious and can cause mental health problems at a later date.
- If a child receives concussions from school activities/sports providers should give mental health education along with the signs and symptoms that one should be aware of.
- Continual education and awareness on the red flags of mental health concerns for family and schools for early identification and entry into services.
- Continual destigmatization of mental health illnesses.
- Education that if a child makes a suicide threat to take the threat seriously.
- Mental health services and support teams within schools to address the mental and emotional health of children.

- Improved education on what parents or families can do when there have been multiple suicide attempts made and the child is still struggling.
- Establish a peer connection service to children who have the signs/symptoms of a mental health concern.
- Improved follow up when a parent or guardian refuses inpatient treatment for a mental health issue or when an appointment is missed.
- Improved inter-agency cooperation/collaboration when a child moves to a different county to alert the new child services agency in the county to can begin reaching out to link to services.
- Creation of trauma informed residential facilities for children with a substantial history of trauma.
- Increase the awareness of the impulsivity and volatility of traumatized youth.

SLEEP-RELATED DEATHS

A sleep-related death is the death of a child that is related to when the child is sleeping or the sleep-environment of the child. The sleeping environment, sleeping position, sleeping location of the child, and co-sleeping all can contribute to a child suffering from a sleep-related death. Between 2014 and 2018, nine percent of child deaths in Hamilton County were sleep-related deaths. Since 2014, the percent of sleep-related deaths has been steadily increasing. In 2014, five percent of child deaths in Hamilton County were sleep-related deaths. This is the lowest percentage of child deaths that were sleep-related deaths that Hamilton County has seen. However, the percent of sleep-related deaths increased to 11 percent in 2018, double that of 2014. Recent preliminary data continues to show an increasing trend in sleep-related deaths in Hamilton County. These data will be analyzed and considered final in next years CFR Annual Report.

Percent of Hamilton County Child Deaths that were Sleep-Related Deaths, 2014-2018



Age

Deaths attributed to the sleep-environment can impact a child of any age. In Hamilton County, 100 percent of the sleep-related deaths from 2014 to 2018 were to infants who were between 28 days and one-year-of-age.

Hamilton County Sleep-Related Deaths by Age, 2014-2018

28 Days - 1 Year	**100%**

N=24

Sex

While sleep-related deaths can occur to any child, sleep-related deaths are disproportionately higher among male children. Fifty-eight percent of sleep-related deaths in Hamilton County from 2014 to 2018 were to male children. Female children accounted for 42 percent of sleep-related deaths.

Hamilton County Sleep-Related Deaths by Sex, 2014-2018

Male	**58%**
Female	**42%**

N=60

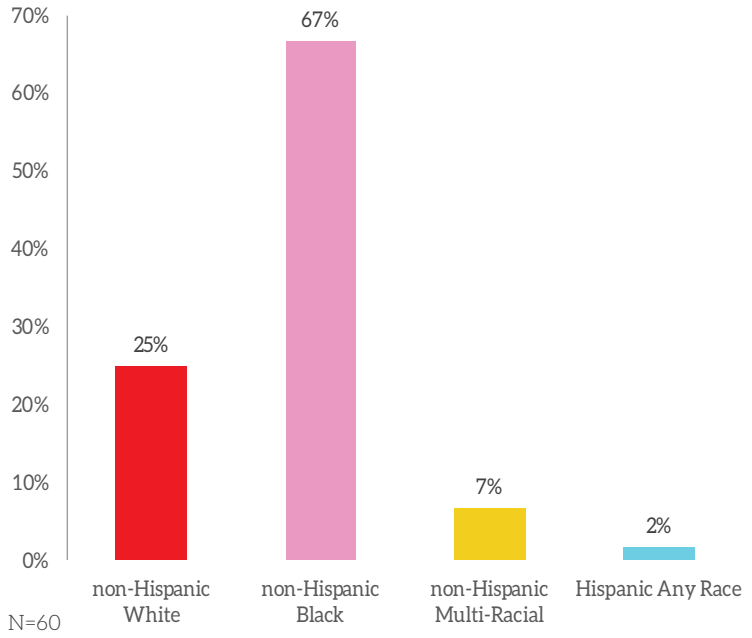
Race/Ethnicity

Throughout the report, disparities among child deaths have been shown. Non-Hispanic black children are disproportionately impacted by higher percentages of child deaths in Hamilton County. Non-Hispanic black infants also are impacted by higher percentages of sleep-related deaths in Hamilton County.

Sixty-seven percent of sleep-related deaths in Hamilton County from 2014 to 2018 were to non-Hispanic black infants. The percent of sleep-related deaths to non-Hispanic black children was over 2.5 times higher than non-Hispanic white children, 10 times higher than non-Hispanic multi-racial children and nearly 40 times higher than Hispanic children.

Non-Hispanic white children accounted for a quarter (25 percent) of sleep-related deaths in Hamilton County from 2014 to 2018. Children who were non-Hispanic multi-racial accounted for seven percent of child deaths that were sleep-related. Hispanic children represented the lowest percentage of sleep-related deaths in Hamilton County, accounting for only two percent of sleep-related deaths.

Hamilton County Sleep-Related Deaths by Race/ Ethnicity, 2014-2018

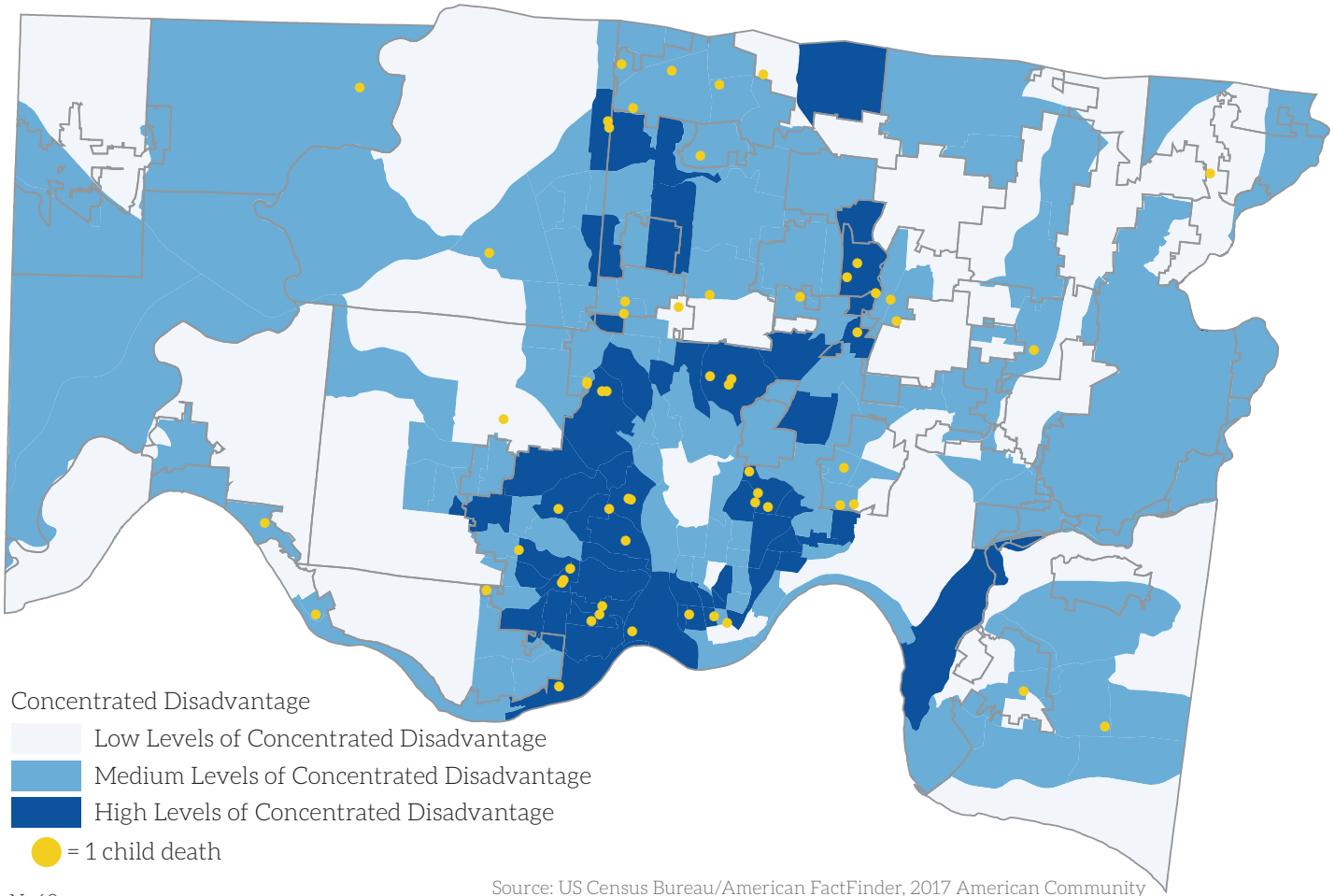


Sociodemographics

The sleeping arrangements of infants and children, which can increase or decrease the risk of a sleep-related death, can be influenced by a combination of parental values, socioeconomic factors and cultural diversity[30]. One way to look at how multiple sociodemographic factors interact to influence disparities in sleep-related deaths is to look at the level of concentrated disadvantage in the community where the child lived.

Communities with high levels of concentrated disadvantage are at an increased risk for higher rates of poor health outcomes, including higher rates of infant mortality[3]. The urbanized areas in Hamilton County (City of Cincinnati and to the north) tend to have the highest levels of concentrated disadvantage, as illustrated by the map below. Correspondingly the majority of sleep-related deaths in Hamilton County, occurred to children who live in communities that have high levels of concentrated disadvantage.

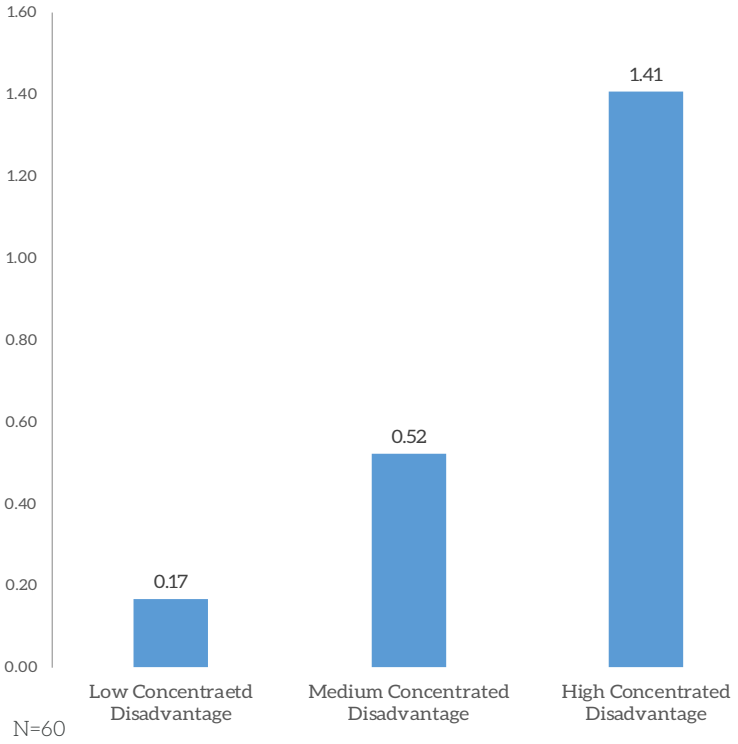
Hamilton County Child Homicides by Level of Concentrated Disadvantage, 2014-2018



N=60

Source: US Census Bureau/American FactFinder, 2017 American Community Survey. Accessed: 5/16/2019, Available: http://factfinder2.census.gov

Hamilton County Child Sleep-Related Mortality Rate (per 10,000) by Level of Concentrated Disadvantage, 2014-2018*



N=60

As shown by the map on the prior page, the majority of sleep-related deaths in Hamilton County occurred in communities that have high levels of concentrated disadvantage. The sleep-related mortality rate to Hamilton County children in communities with high levels of concentrated disadvantage was over 2.5 times higher than communities with medium levels of concentrated disadvantage, and nearly 8.5 times higher than communities with low levels of concentrated disadvantage.

Identifying the communities that have high rates of children dying from sleep-related deaths will allow for targeted interventions to reduce the number of deaths attributed to the sleep-environment by increasing the opportunities that families have to ensure they have a safe sleep-environment for their child.

Manner and Cause of Death

Oftentimes, no one sees sleep-related deaths occur, and there can be many questions as to what caused the death of the child[31]. Identifying the manner and cause of death of the child can help to identify what may have caused the child to die. Between 2014 and 2018, seven percent of sleep-related deaths in Hamilton County were due to asphyxia (i.e., suffocation). For the majority of sleep-related deaths (93 percent) it was undermined if the death was a result of an injury or a medical cause. These deaths are often considered to be Sudden Unexplained Infant Deaths (SUIDS). There are no tests that can be done to distinguish SUIDS from suffocation. Thorough investigation is used to gain a better understanding of the circumstances and events involved with the sleep-environment associated with the sleep-related deaths that can help to reduce these types of deaths in the future[31]. The appropriate safe sleep environment, even during nap time, is to follow the ABC's of safe sleep; **A**lone, **B**ack **C**rib.

Hamilton County Child Sleep-Related Deaths by Manner and Cause of Death, 2014-2018

Asphyxia	7%
Undetermined if Injury or Medical Cause	93%

N=60

Note: The rates may be based on less than 20 cases, and should be interpreted with caution.

Co-Sleeping

Sleeping alone means the child should be sleeping without an adult, other children, pillow, blankets or stuffed animals in the crib or bassinet. Between 2014 and 2018, in over half (57 percent) of the sleep-related deaths in Hamilton County the child was co-sleeping with either parent(s), sibling(s), or caregiver(s). Co-sleeping is when a parent, sibling or caregiver sleeps on the same surface close enough to the child that they can see and hear the child[32]. Based on the information obtained from the investigation, it was unknown if the child was co-sleeping in 12 percent of sleep-related death. Thirty-two percent of sleep-related deaths in Hamilton County the child was not co-sleeping at the time of death. This means the child was sleeping alone, however, the child could have been sleeping on an inappropriate sleep location (e.g., adult bed) or had other items present during the child's sleep.

Hamilton County Sleep-Related Deaths by Co-Sleeping, 2014-2018*	
Yes	57%
No	32%
Unknown	12%

N=60

Items Present During Sleep

Having items in the same crib or bassinet as the child or around the child on a flat surface can increase the risk for a sleep-related deaths. Twelve percent of sleep-related deaths in Hamilton County there were no items present with the child during sleep. However, in 88 percent of sleep-related deaths there was one, if not more items present with the child during sleep. In over half (55 percent) of sleep-related deaths in Hamilton County from 2014 to 2018 where there was an item present during sleep, an adult was sleeping with the child at the time of death, also known as co-sleeping. Co-sleeping can also be with other children. Nineteen percent of sleep-related deaths where there was an item present during sleep, another child was sleeping in the same bed or crib with the child at the time of death. Having items such as pillows, blankets, and sheets can increase the risk that a child, particularly an infant, can become entangled/trapped in the item and suffer from a sleep-related death. In 45 percent of sleep-related deaths where there was an item present, a blanket, whether under or wrapped around the child, was present in the sleep environment. Pillows, whether

Hamilton County Sleep-Related Deaths with Items Present during Sleep by Item Type, 2014-2018*	
Adults	55%
Blankets	45%
Pillows	34%
Other children	19%
Comforter	17%
Other items	15%
Cushion(s)	8%
Mattress†	6%
Clothing	6%
Toys	3%
Boppy Pillow	2%
Crib Railing/Side†	2%
Wall†	2%

N=53

**Note: The percentages do not equal 100 percent as there can be multiple items present during sleep.*

†Note: Items such as a mattress, crib railing/side or wall present in the sleep-environment means that the child was either trapped or wedged between these items contributing the sleep-related death.

placed under or next to the child, were present in the sleep environment in 34 percent of sleep-related deaths, where items were present in the sleeping environment.

Sleeping Position

The sleep position of the child is also part of the safe sleep environment. Placing a child on his or her back to sleep for every sleep, including nap time, can help to reduce the risk of the child suffering from SIDS and other sleep-related causes of death[33]. In 55 percent of sleep-related deaths in Hamilton County between 2014 and 2018, the child was placed to sleep on their back. The child was placed to sleep on their stomach in 15 percent of sleep-related deaths. Three percent of sleep-related deaths in Hamilton County, the child was placed to sleep on their side. Based on the circumstances of the death, it was unknown in what position the child was placed to sleep in 27 percent of sleep-related deaths in Hamilton County between 2014 and 2018.

Hamilton County Sleep-Related Deaths by Sleep Position, 2014-2018*

On Back	55%
On Stomach	15%
On Side	3%
Unknown	27%

N=60

As illustrated previously, in the majority of sleep-related deaths in Hamilton County, the child was co-sleeping with another at the time of death. Of the sleep-related deaths where the child was put to sleep on their back, 52 percent were co-sleeping with a parent, other children, or another individual. It was unknown whether the child was co-sleeping in nine percent of sleep-related deaths where the child was put to sleep on their back. The child was not co-sleeping in 39 percent of sleep-related deaths where the child was put on their back to sleep. However, not all children who were put to sleep on their back and not co-sleeping were in a safe sleep environment. Sixty-nine percent of sleep-related deaths where the child was placed to sleep on their back and were not co-sleeping had other items (e.g., pillows, blankets, bumper pads) in their sleep environment at the time of death.

Hamilton County Sleep-Related Deaths to Children put on Their Backs to Sleep by Co-Sleeping, 2014-2018*

Yes	52%
No	39%
Unknown	9%

N=33

Sleeping Location

A safe sleep environment includes the child sleeping in a crib and/or bassinet. In the majority of sleep-related deaths (45 percent) in Hamilton County from 2014 to 2018, the child was sleeping in an adult bed. Seventeen percent of sleep-related deaths the child was put to sleep in a crib (a safe sleep recommended location). A bassinet, also a safe sleep recommended location, was the sleeping location of only three percent of sleep-related deaths in Hamilton County. The child was placed to sleep on a couch in 17 percent of sleep-related deaths. Other sleeping locations, such as a bouncy seat, infant swing, or laundry basket accounted for 10 percent of sleep-related deaths in Hamilton County. The child was placed to sleep on the floor in three percent of sleep-related deaths. While the child was sleeping on the floor, the child could have been placed on a blanket or sheet to sleep. The child was put to sleep in a chair in two percent of sleep-related deaths. In three percent of sleep-related deaths, a car seat was the location in which the child was put to sleep, or left sleeping. A car seat should only be used during transportation of the child in a car and should not be used as a sleeping area outside of the car[34] It was unknown where the child was put to sleep in two percent of sleep-related deaths.

Hamilton County Sleep-Related Deaths by Sleeping Location, 2014-2018*	
Adult Bed	45%
Crib	17%
Couch	17%
Other	10%
Bassinet	3%
Floor	3%
Chair	2%
Car Seat	2%
Unknown	2%

N=60

Supervisor

Often, safe sleep materials and education are focused on the parents of the child. However, not all instances the parents are the individual who is providing the supervision of the child. Majority of sleep-related deaths (62 percent) in Hamilton County from 2014 to 2018, the biological mom of the child was the supervisor of the child at the time of the death. The child's biological dad was the supervisor in 20 percent of sleep-related deaths. With over 80 percent of sleep-related deaths occurring under the supervision of a biological parent, this provides the opportunity to review safe sleep materials and to identify areas of opportunity to improve on the education. Another area of opportunity is to provide safe sleep education tailored to a caregiver that is not a biological parent. Eighteen percent of sleep-related deaths in Hamilton County occurred when the child was under the supervision of someone else who was not their biological parent (e.g., grandparent, other relative or sibling).

Hamilton County Sleep-Related Deaths by Supervisor, 2014-2018*	
Biological Mom	62%
Biological Dad	20%
Grandparent	8%
Other Caregiver	3%
Sibling	2%
Other Relative	2%
Foster Parent	2%
Mom's Partner	2%

N=60

Preventability

As illustrated previously, many of the sleep-related deaths had one if not multiple factors that contributed to an unsafe sleep environment. Many of the sleep-related deaths in Hamilton County could have been prevented possibly by following the ABC's of safe sleep. The Hamilton County CFR team determined that 92 percent of sleep-related deaths in Hamilton County between 2010 and 2014 could have been prevented by changing various circumstances that led to the death of the child. Two percent of sleep-related deaths the Hamilton County CFR team deemed that the death could not have been prevented. The Hamilton County CFR team could not determine, based on the circumstances surrounding the case, if the death of the child could have been prevented in seven percent of sleep-related deaths.

Preventability of Hamilton County Sleep-Related Deaths, 2014-2018

Yes, Probably	**92%**
No, Probably Not	**2%**
Team Could not Determine	**7%**

N=60

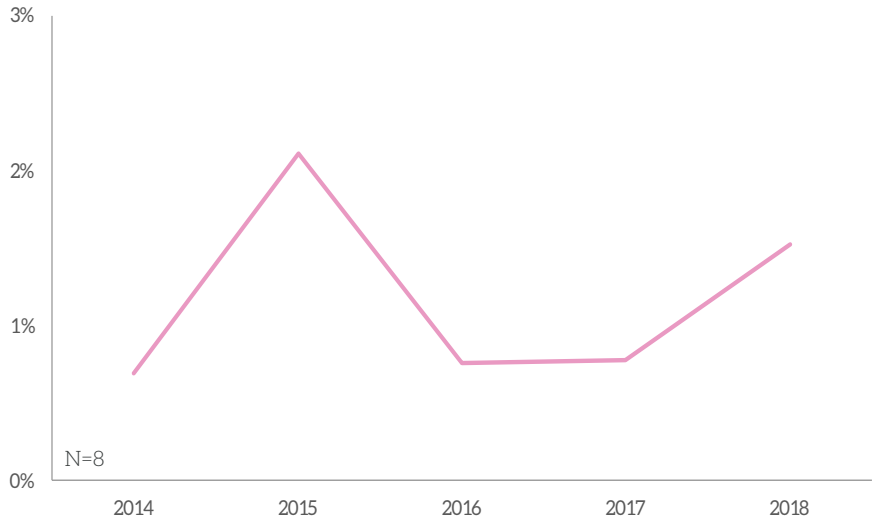
Recommendations

- Tailored safe sleep education to grandparents and other individuals who may give care to an infant.
- Evaluation of safe sleep messaging and education to identify why the safe sleep messaging is not working.
- Encourage partner agencies/organizations to talk with families who are co-sleeping or practicing unsafe sleep practices and have not had an infant death to understand why they are co-sleeping and what about the materials/education is not working.
- Providers should institute a policy to follow-up with families around safe sleep at the 6 week visit appointment.
- Mandatory paid maternity/paternity/family leave for both mom and dad.
- Create and/or re-start a grandparent safe sleep ambassador program.
- Create alternative safe sleep education for those instances/situations where the family is unable to have their child sleep properly.
- Address social determinants of health to address the underlying issues that impact the ability to have a safe sleep environment.
- All hospitals should follow a "practice what you preach".
- Safe sleep education targeted specifically at fathers.
- Safe sleep messages provided in the NICU - especially for twins as there is a potential for mixed messages if the families see twins placed in the same incubator within the NICU.
- Provide education that when doing the recommended skin-to-skin contact that it is important that you stay awake while the baby is on your chest.
- Culturally appropriate safe sleep education in multiple languages (more than just Spanish).
- Provide education around other options besides co-sleeping (e.g., bassinet that attaches to the side of the bed, etc.(, or provide access to these resources for families who are in need.
- Safe sleep education specifically for the winter time.
- Incorporate safe sleep education into babysitting training.

DROWNINGS

Drowning is the fifth leading cause of unintentional injury death in the United States[35]. In Hamilton County from 2014 to 2018, drownings were the eighth leading cause of unintentional injury death. One percent of all child deaths in Hamilton County between 2014 and 2018 were due to drowning. Historically, the percent of child deaths due to drowning among Hamilton County children was never more than two percent of child deaths. The highest percentage of child deaths due to drowning in Hamilton County between 2014 and 2018, was two percent in 2015.

Percent of Hamilton County Child Deaths due to Drowning, 2014-2018



Age

Drowning can happen to any child, regardless of age. However, children between the ages of one and four years of age have the highest rates of drowning in the United States[36]. In Hamilton County, 38 percent of child drownings between 2014 and 2018 were to infants who were between 28 days of age and one-year-of-age. Older children accounted for the second highest percent of child drownings. Twenty-five percent of child drownings were to children who were between five and nine years of age. Children who were between 10 and 14 years of age also accounted for 25 percent of child drownings in Hamilton County between 2014 and 2018. Younger children, between one and four years of age, accounted for the smallest percent (13 percent) of child drownings.

Hamilton County Child Drowning Deaths by Age, 2014-2018

28 Days - 1 Year	38%
1 - 4 Years	13%
5 - 9 Years	25%
10-14 Years	25%

N=8

Sex

Child drownings are not only disproportionately higher in infant children in Hamilton County, but are also higher among female children. Sixty-three of child drownings in Hamilton County between 2014 and 2018 were to female children. Male children accounted for 38 percent of child drownings in Hamilton County between 2014 and 2018.

Hamilton County Child Drowning Deaths by Sex, 2014-2018

Male	38%
Female	63%

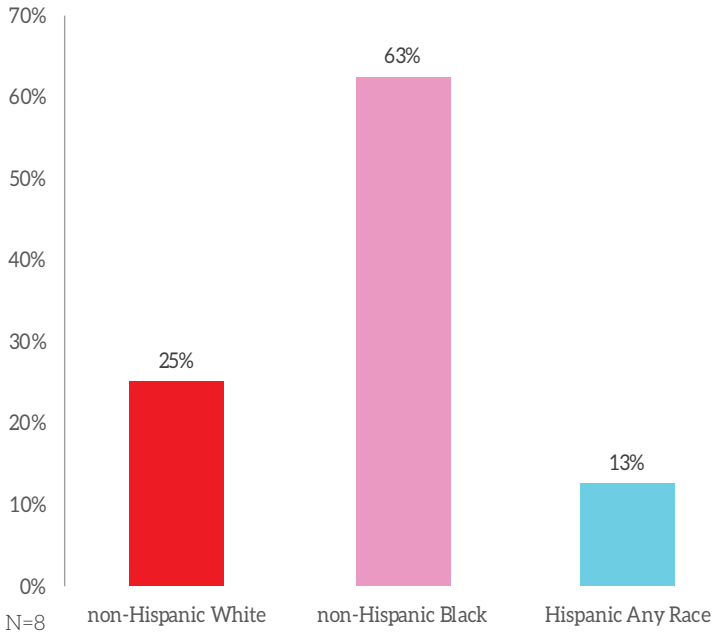
N=8

Race/Ethnicity

Throughout the report, non-Hispanic black children in Hamilton County are impacted by higher disparities in child deaths. Non-Hispanic black children also represent a higher percentage of child drownings in Hamilton County. From 2014 to 2018, 63 percent of child drownings in Hamilton County were to non-Hispanic black children. The percentage of child drownings to non-Hispanic black children was 2.5 times higher than the percent to non-Hispanic white children and five times higher than Hispanic children.

Non-Hispanic white children accounted for a quarter (25 percent) of child drownings in Hamilton County from 2014 to 2018. Hispanic children were the lowest percentage of child drownings in Hamilton County, accounting for 13 percent of child drownings.

Hamilton County Child Drowning Deaths by Race/ Ethnicity, 2014-2018



N=8

Location of Drowning

Individuals can drown in many different locations, such swimming pools, rivers and bathtubs. Thirty-eight percent of child drownings in Hamilton County between 2014 and 2018, happened in open water. Open water includes rivers, lakes, streams and ponds. In 33 percent of child drownings in Hamilton County in open water, the drowning happened in a lake. Another 33 percent of child drownings in open water occurred in a river, while the remaining 33 percent occurred in a pond. An in-ground swimming pool was the location of 38 percent of child drownings in Hamilton County. The remaining 25 percent of child drownings occurred in a bathtub.

Hamilton County Child Drowning Deaths by Drowning Location, 2014-2018

Open Water	38%
Pool/Hot Tub/Spa	38%
Bathtub	25%

N=8

Flotation Device

When an individual cannot swim or is a weak swimmer, wearing a life jacket can help save their lives[36]. In child drownings in Hamilton County that were in open water and swimming pools, 67 percent did not use a flotation device, such a life jacket. Seventeen percent of child drownings in open water and swimming pools the child was wearing some form of flotation device. It was unknown if a flotation device was used in 17 percent of child drownings in open water and swimming pools.

Hamilton County Child Drowning Deaths in Open Water & Swimming Pools by Use of a Flotation Device, 2014-2018	
Yes, flotation device used	17%
No, flotation device not used	67%
Unknown if flotation device used	17%

N=8

Supervision

Designating a responsible adult to supervise and watch young children when they are in the bathtub and all children that are playing in or around water can help prevent a child from drowning[35]. When there are very young children in and around water, supervisors should practice "touch supervision", which means they should be close enough to reach the child at all times, as drowning occurs quickly and quietly[35].

Hamilton County Child Drowning Deaths by Supervision, 2014-2018	
Yes, child had supervision	75%
No, but needed supervision	13%
Unable to determine	13%

N=8

In the majority of child drownings in Hamilton County from 2014 to 2018, the child had some form of supervision. While the child had supervision, it may not have been appropriate given the age of the child or location of where the child drowned. Thirteen percent of child drownings, the child did not have supervision, but needed supervision at the time of the drowning. In 13 percent of child drownings in Hamilton County, it could not be determined, based on the information surrounding the death, if the child did or did not have supervision at the time of the drowning.

Preventability

Having the appropriate flotation device for the child; having appropriate supervision; and teaching children appropriate swimming skills can help to prevent a child drowning from occurring. The Hamilton County CFR team deemed that 88 percent of child drownings in Hamilton County from 2014 to 2018 could have been prevented. In 12 percent of child drownings, the Hamilton County CFR team could not determine, based on the circumstances surrounding the death, if the drowning could have been prevented.

Preventability of Hamilton County Child Deaths due to Drowning, 2014-2018	
Yes, Probably	88%
No, Probably Not	0%
Team Could not Determine	12%

N=60

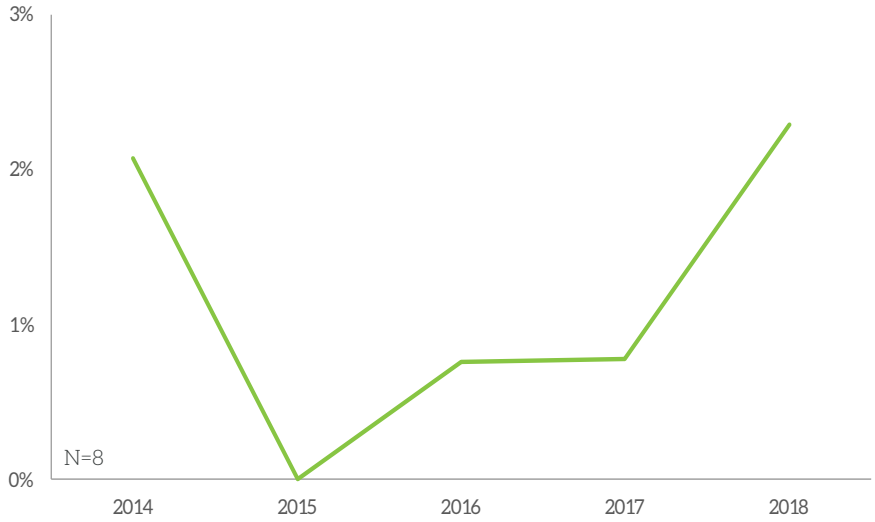
Recommendations

- Culturally appropriate education that small children should be within hand grabbing distance when swimming.
- Culturally appropriate education on one-on-one supervision for children when swimming.
- Ensure that signs around swimming pools and open water are culturally appropriate and in multiple languages.
- Culturally appropriate education that life vests should be worn by small children and those who cannot swim.
- Culturally appropriate education to children on basic water safety, and differences between swimming in a pool versus swimming in open water.
- Education campaign about caring for your child sober, not under the influence of drugs or alcohol.
- Education not to bathe an infant in a tub, or to leave an infant in a tub alone.
- Culturally appropriate education that if you are bathing with an infant to remain alert and do not get too comfortable.
- Education on not co-bathing with a child when under then influence of any substance.
- Culturally appropriate education on situational awareness when there are visible hazards in the area.
- Education for parents that when children are around pools, or open water to know at all times who is supervising the child.

UNINTENTIONAL ASPHYXIA DEATHS

Asphyxia is defined as the lack of oxygen in the body that results in unconsciousness and often death, and it is usually caused by interruption of breathing or inadequate oxygen supply[38].

Percent of Hamilton County Child Deaths due to Unintentional Asphyxia, 2014-2018



Asphyxia deaths captured by the CFR online data system include suffocation, strangulation and choking. They are also considered unintentional or accidental deaths. Intentional asphyxia deaths are captured in the previous sections of this report (homicide and suicide).

Between 2014 and 2018, one percent of all child deaths in Hamilton County were due to unintentional asphyxia. In 2015, there were no child deaths in Hamilton County due to unintentional asphyxia. However, since 2015, the percent of child deaths due to unintentional asphyxia has slowly increased.

Age

Child deaths due to unintentional asphyxia can happen to children of any age. In Hamilton County, the majority of child deaths due to unintentional asphyxia (50 percent) between 2014 and 2018 were to infants between 28 days and one-year-of-age. The remaining 50 percent of child deaths due to unintentional asphyxia were evenly split between young children, between one and four years of age, and teenagers between 15 and 17 years of age.

Hamilton County Child Deaths due to Unintentional Asphyxia by Age, 2014-2018

28 Days - 1 Year	50%
1 - 4 Years	25%
15 - 17 Years	25%

N=8

Sex

In Hamilton County, the percentage of child deaths due to unintentional asphyxia are higher in female children. Sixty-three percent of child deaths between 2014 and 2018 in Hamilton County due to unintentional asphyxia were to female children. Male children accounted for 38 percent of child deaths due to unintentional asphyxia in Hamilton County.

Hamilton County Child Deaths due to Unintentional Asphyxia by Sex, 2014-2018

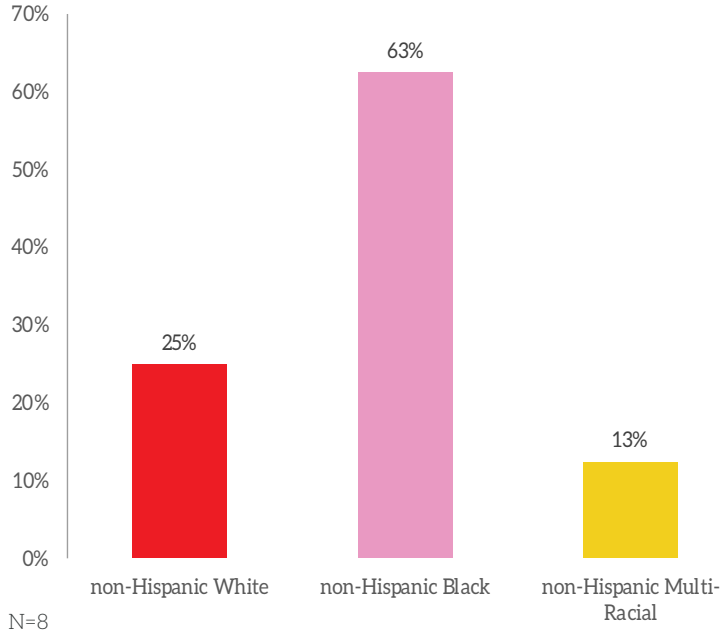
Male	38%
Female	63%

N=8

Race/Ethnicity

Throughout this report, it's been shown that non-Hispanic black children in Hamilton County suffer from higher inequities in child death. Non-Hispanic black children also accounted for largest percentage of child deaths that were due to unintentional asphyxia. Sixty-three percent of child deaths in Hamilton County that were due to unintentional asphyxia from 2014 to 2018 were to non-Hispanic black children. The percentage of child deaths that were due to unintentional asphyxia to non-Hispanic black children in Hamilton County was 2.5 times higher than non-Hispanic white children and five times higher than to non-Hispanic multi-racial children.

Hamilton County Child Deaths due to Unintentional Asphyxia by Race/Ethnicity, 2014-2018



N=8

Non-Hispanic white children accounted for a quarter (25 percent) of child deaths in Hamilton County that were due to unintentional asphyxia. Thirteen percent of child deaths that were due to unintentional asphyxia in Hamilton County from 2014 to 2018 were to non-Hispanic multi-racial children.

Sleep-Related Asphyxia

A child death that is due to unintentional asphyxia can occur at anytime, including when a child is sleeping. Fifty-percent of child deaths due to unintentional asphyxia were sleep-related. This means that the child had an unsafe sleep environment such as co-sleeping, or having pillows, blankets and/or toys in the crib/bassinet with the child while they were sleeping. For a more in-depth look at sleep-related deaths in Hamilton County, please refer to the sleep-related deaths section of the report.

Hamilton County Child Deaths due to Unintentional Asphyxia that are Sleep-Related, 2014-2018

Yes, sleep-related	50%
No, not sleep-related	50%

N=8

The remaining 50 percent of child deaths due to unintentional asphyxia were not sleep-related. These asphyxia deaths would include children who choked on a foreign object or suffocated due to accidental entrapment in something such as being wedged in a tight space.

Type of Unintentional Asphyxia

Child deaths due to unintentional asphyxia can be further classified by the type of asphyxia event. A majority of child deaths that were due to unintentional asphyxia in Hamilton County from 2014 to 2018 were caused by the suffocation of the child. Suffocation refers to the death of a child in which oxygen was deprived and can occur in multiple different ways (e.g., sleep-related, becoming wedged or confined in a tight space, or asphyxia by gas)[7]. Twelve percent of child deaths due unintentional asphyxia in Hamilton County were caused by choking. Choking can occur when food or a foreign object becomes lodged in the airway of the child preventing the child from being able to breath.

Hamilton County Child Deaths due to Unintentional Asphyxia by Type of Asphyxia, 2014-2018	
Suffocation	88%
Choking	12%

N=8

Preventability

Child deaths due to unintentional asphyxia, particularly sleep-related asphyxia deaths, oftentimes can have complex and multiple risk/contributing factors that can determine the preventability of the death of the child. The Hamilton County CFR team deemed that the death of the child could have been prevented in 88 percent of child deaths that were due to unintentional asphyxia in Hamilton County from 2014 to 2108. Twelve percent of child deaths in Hamilton County that were due to unintentional asphyxia the Hamilton County CFR team determined that death probably could not have been prevented.

Preventability of Hamilton County Child Deaths due to Unintentional Asphyxia, 2014-2018	
Yes, Probably	88%
No, Probably Not	12%
Team Could not Determine	0%

N=60

Recommendations

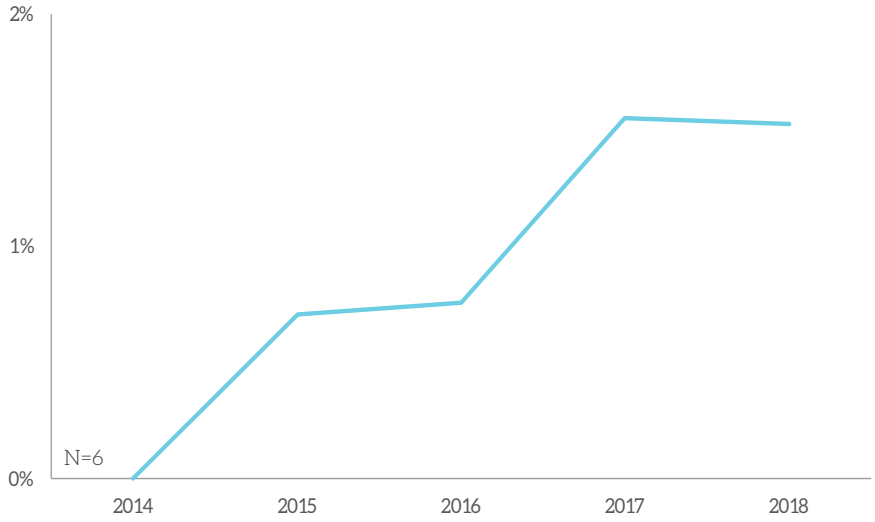
- Change in policy and procedure at school and after school activities that a coach or faculty members notifies a parent if the child doesn't show up for an event or practice.
- Reinforce if something seems off or you hear something to check or say something, don't just leave.
- Change that all cell phones come with 911 assist enabled by default to better locate the caller.
- Create/reinstate a grandparent safe-sleep ambassador program.
- Education that if you have small children to utilize a spout cover for the bathtub faucets.
- Education on the proper techniques of baby proofing your home - keeping small items out of reach and off the floor.
- Culturally appropriate education that anything the child can get into his or her mouth can get stuck in their throat.
- Safe sleep education targeted at grandparents.
- Provide families with information about inexpensive safe sleep alternatives when safe sleep is not possible.

OTHER TYPES OF CHILD DEATH

"Other types of child death" are the remaining types of child death in Hamilton County that have a small number of child deaths in which an in-depth analysis was unable to be completed. As such, these deaths are grouped into an "other types of child death" category for this report. The types of death included in this group are:

- Fire, burn or electrocution
- Fall or crush
- Poisoning, overdose or acute intoxication

Percent of "Other Types of Child Death" in Hamilton County, 2014-2018



Between 2014 and 2018, these other types of child death accounted for one percent of all child deaths in Hamilton County. In 2014, there were no child deaths in Hamilton County due to one of these other types of child deaths. However, since 2014, the percent of child deaths due to one of these "other types of child death" has slowly increased.

Age

Younger children in Hamilton County are disproportionately affected by a higher percentage of these "other types of child death". Thirty-three percent of child deaths due to these "other types of child death" in Hamilton County between 2014 and 2018 were to young children between one and five years of age. Children between five and nine years of age also accounted for 33 percent of the "other types of child death". Infants who are between 28 days and one-year-of-age accounted for 17 percent of child deaths in Hamilton County from one of these "other types of child death". Older children who are between 10 and 14 years of age also accounted for 17 percent of these "other types of child death" in Hamilton County.

"Other Types of Child Death" in Hamilton County by Age, 2014-2018

28 Days - 1 Year	17%
1 - 4 Years	33%
5 - 9 Years	33%
10 - 14 Years	17%

N=6

Sex

In Hamilton County, the percentage of child deaths due to one of these "other types of child death" are higher in female children. Sixty-seven percent of child deaths between 2014 and 2018 in Hamilton County due to one of these "other types of child death" were to female children. Male children accounted for 33 percent of child deaths due to one of these "other types of child death" in Hamilton County.

"Other Types of Child Death" in Hamilton County by Sex, 2014-2018

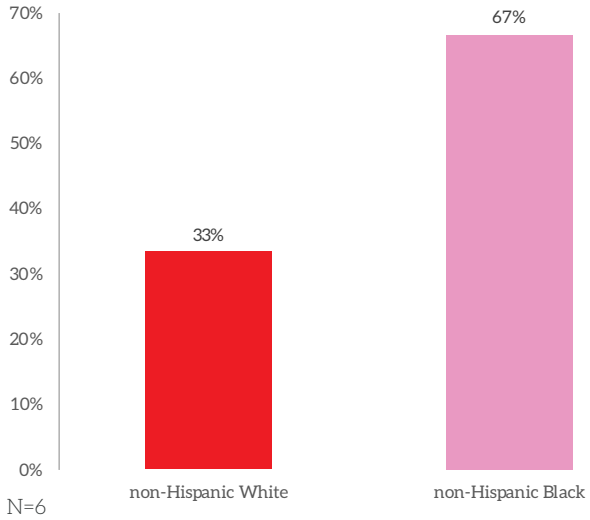
Male	33%
Female	67%

N=6

Race/Ethnicity

In Hamilton County, as shown throughout this report, non-Hispanic black children suffer from higher percentages of child death. From 2014 to 2018, Hamilton County non-Hispanic black children also accounted for higher percentages of child deaths due to one of these "other types of child death".

"Other Types of Child Death" in Hamilton County by Race/Ethnicity, 2014-2018



N=6

Sixty-seven percent of child deaths in Hamilton County due to one of these "other types of child deaths" were to non-Hispanic black children. This was two times higher than deaths to non-Hispanic white children in Hamilton County from one of these "other types of child death". Non-Hispanic white children accounted for 33 percent of child deaths in Hamilton County from 2014 to 2018 that was due to one of these "other types of child death".

Manner and Cause of Death

While these three types of death are grouped together, the manner of death can differ based on the circumstances in which the death occurred. The majority (67 percent) of these "other types of child death" in Hamilton County between 2014 and 2018, were deemed to be accidental deaths. Seventeen percent of these "other types of child death" were deaths where the child died by suicide. In the manner of death in the remaining 17 percent of child deaths due to one of these "other types of child death" the child was a homicide victim. For a more in-depth look at child suicides and child homicides in Hamilton County, please refer to the suicide and homicide sections of this report.

"Other Types of Child Death" in Hamilton County by Manner of Death, 2014-2018

Accident	67%
Suicide	17%
Homicide	17%

N=6

The cause of death for these "other types of child deaths" are split between two types. Thirty-three percent of child deaths in Hamilton County that were one of the "other types of death" were caused by a fire, burn or electrocution. Poisoning, overdose or acute intoxication was the cause of death in 67 percent of child deaths that were one of these "other types of child death". There were no child deaths due to a fall or crush in Hamilton County from 2014 to 2018.

Preventability

Many factors can contribute to a child dying from one of these other types. The Hamilton County CFR team determined that 100 percent of child deaths due to one of these "other types of child death" could have been prevented by changing various circumstances that led to the death of the child.

Preventability of "Other Types of Child Death" in Hamilton County, 2014-2018

Yes, Probably	100%
No, Probably Not	0%
Team Could not Determine	0%

N=6

Recommendations

- Culturally appropriate education to not leave items on stoves when unattended.
- Increase the fire education on social media, including the importance of closing doors, having smoking detectors.
- Fire safety education/information provided to residents that live in multi-family units.
- Community education events such as safety day events around fire safety.
- Education on the importance of smoke detectors and ensuring they have working batteries.
- Culturally appropriate education to ensure that the stove is completely turned off before leaving the house or going to sleep.
- Culturally appropriate education not to use the stove as a source of heat.
- Stress the importance of prenatal care.
- Mandate physicals when individuals are undergoing subutex/methadone treatment.
- Referrals for pregnant mothers who are addicted to methadone treatment that are specifically for pregnant mothers.
- Provide working poor better assistance with child care.
- Increased awareness/education on the availability of child care vouchers and the process to apply for them.
- Increased daycare/child care options for 2nd shift workers.
- Continual education and awareness on the red flags of mental health concerns for family and schools for the early identification and entry into services.
- Continual destigmatization of mental health illnesses.

CONCLUSION

The death of a child can impact both the family and the community. The goal of the Hamilton County Child Fatality Review is to decrease the number of child deaths in Hamilton County through prevention efforts. This is accomplished through the identification of groups (e.g., racial/ethnic, sex, and age groups) within the population of Hamilton County that experience disparities in child deaths.

Throughout this report disparities among child deaths have been highlighted. Infants, children under one year of age experience the highest percentage and number of deaths among Hamilton County children. Non-Hispanic black children also experience inequities in child deaths. Non-Hispanic black children die at higher rates than their non-Hispanic white counter parts.

This report is intended to describe these trends, along with underlying risk factors, found across the child deaths in Hamilton County and make meaningful recommendations that can be used to engage the community of Hamilton County to work at improving the outcomes for all children. Collaboration is needed to develop and implement policy and systems changes, and programs that can improve the lives of children in Hamilton County, ultimately reducing the number of child deaths.

It is hoped this report will provide communities with the tools to make significant, lasting policy changes that will have a positive effect on the children in Hamilton County for generations to come.

APPENDIX

Hamilton County CFR Team I
Community Map II
Data Tables III

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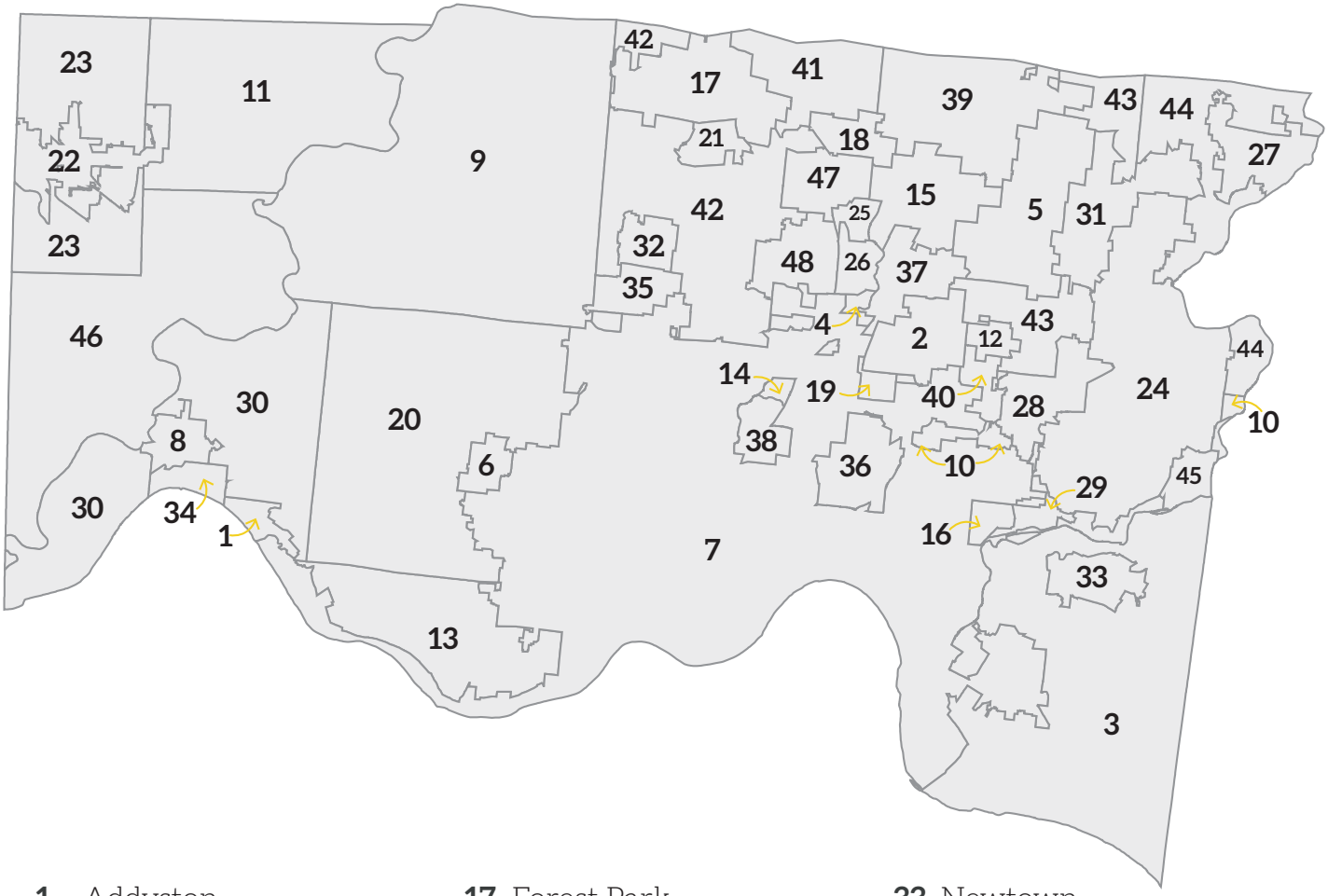
COMMUNITY MAP

Within Hamilton County there are 48 communities comprised of cities, villages, and townships. Below is a map that shows the location of each community in Hamilton County.



1. Addyston
2. Amberly Village
3. Anderson Township
4. Arlington Heights
5. Blue Ash
6. Cheviot
7. Cincinnati
8. Cleves
9. Colerain Township
10. Columbia Township
11. Crosby Township
12. Deer Park
13. Delhi Township
14. Elmwood Place
15. Even Dale
16. Fairfax
17. Forest Park
18. Glendale
19. Golf Manor
20. Green Township
21. Greenhills
22. Harrison City
23. Harrison Township
24. Indian Hill
25. Lincoln Heights
26. Lockland
27. Loveland
28. Maderia
29. Mariemont
30. Miami Township
31. Montgomery
32. Mount Healthy
33. Newtown
34. North Bend
35. North College Hill
36. Norwood
37. Reading
38. Saint Bernard
39. Sharonville
40. Silverton
41. Springdale
42. Springfield Township
43. Sycamore Township
44. Symmes Township
45. Terrace Park
46. Whitewater Township
47. Woodlawn
48. Wyoming

DATA TABLES

Total Child Deaths in Hamilton County

	2014	2015	2016	2017	2018	2014-2018
Number of Child Deaths	145	142	132	129	131	679
Child Fatality Rate (per 10,000)	7.7	7.6	7.0	6.9	7.0	7.2
Age						
<28 Days	31%	36%	33%	38%	29%	33%
28 Days - 1 Year	36%	35%	42%	36%	41%	38%
1 - 4 Years	9%	4%	9%	7%	12%	8%
5 - 9 Years	8%	6%	5%	6%	4%	6%
10 - 14 Years	9%	9%	6%	7%	7%	8%
15 - 17 Years	7%	11%	6%	5%	7%	7%
Sex						
Male	63%	51%	61%	63%	62%	60%
Female	37%	49%	39%	37%	38%	40%
Race/Ethnicity						
non-Hispanic White	36%	39%	35%	28%	33%	34%
non-Hispanic Black	52%	53%	52%	58%	60%	55%
non-Hispanic Multi-Racial	6%	4%	5%	6%	2%	4%
non-Hispanic Other Race	3%	1%	5%	2%	3%	3%
Hispanic, Any Race	3%	3%	3%	5%	2%	3%
Manner of Death						
Natural	80%	74%	77%	75%	70%	70%
Accident	6%	4%	2%	6%	11%	11%
Suicide	3%	3%	5%	5%	3%	3%
Homicide	6%	8%	6%	3%	5%	5%
Undetermined	6%	11%	10%	11%	11%	11%
Cause of Death						
From an External Cause of Injury	15%	15%	14%	14%	19%	19%
From a Medical Condition	81%	75%	77%	75%	70%	70%
Undetermined if Injury or Medical Cause	4%	9%	10%	11%	11%	11%

Child Deaths due to a Medical Condition

	2014	2015	2016	2017	2018	2014-2018
Percent of Child Deaths†	81%	75%	77%	75%	70%	70%
Age*						
<28 Days	38%	48%	43%	49%	42%	44%
28 Days - 1 Year	37%	31%	39%	32%	39%	35%
1 - 4 Years	8%	5%	11%	5%	9%	7%
5 - 9 Years	8%	6%	3%	5%	3%	5%
10 - 14 Years	5%	7%	4%	6%	4%	5%
15 - 17 Years	4%	4%	1%	2%	3%	3%
Sex*						
Male	63%	52%	57%	64%	64%	60%
Female	37%	48%	43%	36%	36%	40%
Race/Ethnicity*						
non-Hispanic White	37%	36%	37%	29%	36%	35%
non-Hispanic Black	50%	54%	50%	59%	58%	54%
non-Hispanic Multi-Racial	7%	4%	5%	6%	0%	4%
non-Hispanic Other Race	3%	2%	6%	1%	4%	3%
Hispanic, Any Race	3%	4%	2%	5%	2%	3%
Medical Condition						
Asthma	1%	2%	0%	0%	0%	1%
Cancer	9%	4%	3%	3%	4%	5%
Cardiovascular	3%	1%	2%	1%	1%	2%
Congenital Anomaly	13%	16%	20%	19%	23%	18%
Neurological/Seizure Disorder	4%	1%	1%	0%	1%	2%
Pneumonia	1%	2%	0%	2%	0%	1%
Prematurity	52%	58%	55%	56%	51%	54%
Other Infection	4%	5%	2%	5%	4%	4%
Other Perinatal Condition	5%	3%	1%	3%	7%	4%
Other Medical Condition	8%	37%	14%	11%	9%	10%
Undetermined Medical Cause	5%	3%	1%	3%	7%	4%
Unknown	0%	2%	2%	0%	0%	1%

†*Note: Percent of total child deaths in Hamilton County.*

**Note: Percentages are the percent of child deaths in Hamilton County due to a Medical Condition.*

Child Deaths due to a Motor Vehicle Crash

	2014	2015	2016	2017	2018	2014-2018
Percent of Child Deaths†	3%	35	1%	4%	5%	3%
Age*						
<28 Days	05	0%	0%	0%	0%	0%
28 Days - 1 Year	0%	0%	0%	20%	0%	5%
1 - 4 Years	50%	0%	0%	40%	29%	29%
5 - 9 Years	25%	0%	0%	0%	14%	10%
10 - 14 Years	0%	50%	100%	20%	0%	19%
15 - 17 Years	25%	50%	0%	20%	57%	38%
Sex*						
Male	75%	50%	100%	60%	43%	57%
Female	25%	50%	0%	40%	57%	43%
Race/Ethnicity*						
non-Hispanic White	0%	0%	0%	20%	43%	19%
non-Hispanic Black	100%	100%	100%	80%	29%	71%
non-Hispanic Multi-Racial	0%	0%	0%	0%	14%	5%
non-Hispanic Other Race	0%	0%	0%	0%	0%	0%
Hispanic, Any Race	0%	0%	0%	0%	14%	5%
Position of Child *						
Driver	0%	0%	0%	20%	29%	14%
Passenger	100%	50%	0%	40%	29%	48%
Pedestrian	0%	50%	100%	20%	43%	33%
On Bicycle	0%	0%	0%	20%	0%	5%
Factors of Motor Vehicle Crash*						
Speeding over the limit	75%	50%	0%	60%	0%	38%
Recklessness	25%	50%	0%	40%	14%	29%
Ran a red light/stop sign	25%	0%	0%	0%	0%	5%
Drugs/Alcohol	50%	75%	0%	40%	14%	38%
Rollover	25%	0%	0%	20%	0%	10%
Other Causes	25%	25%	100%	20%	29%	29%

†*Note: Percent of total child deaths in Hamilton County.*

**Note: Percentages are the percent of child deaths in Hamilton County due to a motor vehicle crash.*

Child Homicides

	2014	2015	2016	2017	2018	2014-2018
Percent of Child Deaths†	6%	8%	6%	3%	5%	6%
Age*						
<28 Days	0%	0%	0%	25%	0%	3%
28 Days - 1 Year	22%	27%	13%	25%	33%	24%
1 - 4 Years	11%	9%	13%	25%	33%	16%
5 - 9 Years	11%	9%	25%	25%	0%	13%
10 - 14 Years	44%	9%	13%	0%	17%	18%
15 - 17 Years	11%	45%	38%	0%	17%	26%
Sex*						
Male	56%	45%	63%	25%	83%	55%
Female	44%	55%	38%	75%	17%	45%
Race/Ethnicity*						
non-Hispanic White	33%	55%	25%	50%	33%	39%
non-Hispanic Black	56%	45%	63%	0%	67%	50%
non-Hispanic Multi-Racial	0%	0%	0%	25%	0%	1%
non-Hispanic Other Race	0%	0%	13%	0%	0%	3%
Hispanic, Any Race	11%	0%	0%	25%	0%	5%
Child Delinquent or Criminal History*						
Yes	22%	18%	50%	0%	0%	21%
No	22%	36%	0%	0%	33%	21%
N/A	44%	45%	50%	100%	33%	50%
Unknown	11%	0%	0%	0%	33%	8%
Primary Caregiver Criminal History*						
Yes	56%	36%	75%	75%	17%	50%
No	33%	55%	25%	25%	67%	42%
Unknown	11%	9%	0%	0%	17%	8%

†*Note: Percent of total child deaths in Hamilton County.*

**Note: Percentages are the percent of child deaths in Hamilton County that were a homicide.*

Child Suicides

	2014	2015	2016	2017	2018	2014-2018
Percent of Child Deaths†	3%	3%	5%	5%	3%	4%
Age*						
<28 Days	0%	0%	0%	0%	0%	0%
28 Days - 1 Year	0%	0%	0%	0%	0%	0%
1 - 4 Years	0%	0%	0%	0%	0%	0%
5 - 9 Years	0%	0%	0%	17%	0%	4%
10 - 14 Years	50%	25%	33%	17%	100%	42%
15 - 17 Years	50%	75%	67%	67%	0%	54%
Sex*						
Male	75%	50%	83%	67%	75%	71%
Female	25%	50%	17%	33%	25%	29%
Race/Ethnicity*						
non-Hispanic White	100%	100%	33%	33%	50%	58%
non-Hispanic Black	0%	0%	50%	33%	50%	29%
non-Hispanic Multi-Racial	0%	0%	0%	0%	0%	0%
non-Hispanic Other Race	0%	0%	0%	33%	0%	8%
Hispanic, Any Race	0%	0%	17%	0%	0%	4%
Victim of Child Maltreatment*						
Yes	0%	50%	67%	67%	50%	55%
No	75%	50%	50%	50%	50%	54%
Diagnosed Mental Health Illness*						
Yes	25%	75%	33%	50%	50%	46%
No	75%	25%	67%	50%	50%	54%

†*Note: Percent of total child deaths in Hamilton County.*

**Note: Percentages are the percent of child deaths in Hamilton County that were suicides.*

Sleep-Related Child Deaths

	2014	2015	2016	2017	2018	2014-2018
Percent of Child Deaths†	5%	9%	10%	10%	11%	9%
Age*						
<28 Days	0%	0%	0%	0%	0%	0%
28 Days - 1 Year	100%	100%	100%	100%	100%	100%
1 - 4 Years	0%	0%	0%	0%	0%	0%
5 - 9 Years	0%	0%	0%	0%	0%	0%
10 - 14 Years	0%	0%	0%	0%	0%	0%
15 - 17 Years	0%	0%	0%	0%	0%	0%
Sex*						
Male	57%	54%	62%	62%	57%	58%
Female	43%	46%	38%	38%	43%	42%
Race/Ethnicity*						
non-Hispanic White	29%	38%	23%	23%	14%	25%
non-Hispanic Black	71%	54%	62%	69%	79%	67%
non-Hispanic Multi-Racial	0%	8%	8%	8%	7%	7%
non-Hispanic Other Race	0%	0%	0%	0%	0%	0%
Hispanic, Any Race	0%	0%	8%	0%	0%	2%
Co-Sleeping*						
Yes	71%	38%	62%	54%	64%	57%
No	14%	54%	31%	23%	29%	32%
Unknown	14%	8%	8%	23%	7%	12%
Sleeping Position*						
On Back	57%	69%	31%	77%	43%	55%
On Stomach	0%	8%	38%	0%	21%	15%
On Side	0%	8%	0%	0%	7%	3%
Unknown	43%	15%	31%	23%	29%	27%

†*Note: Percent of total child deaths in Hamilton County.*

**Note: Percentages are the percent of child deaths in Hamilton County that were a sleep-related deaths.*

Child Deaths due to Drowning

	2014	2015	2016	2017	2018	2014-2018
Percent of Child Deaths†	1%	2%	1%	1%	2%	1%
Age*						
<28 Days	0%	0%	0%	0%	0%	0%
28 Days - 1 Year	0%	33%	100%	0%	50%	38%
1 - 4 Years	0%	0%	0%	0%	50%	13%
5 - 9 Years	0%	33%	0%	100%	0%	25%
10 - 14 Years	100%	33%	0%	0%	0%	25%
15 - 17 Years	0%	0%	0%	0%	0%	0%
Sex*						
Male	100%	33%	0	100%	0%	38%
Female	0%	67%	100%	0%	100%	63%
Race/Ethnicity*						
non-Hispanic White	0%	67%	0%	0%	0%	25%
non-Hispanic Black	100%	33%	100%	0%	100%	63%
non-Hispanic Multi-Racial	0%	0%	0%	0%	0%	0%
non-Hispanic Other Race	0%	0%	0%	0%	0%	0%
Hispanic, Any Race	0%	0%	0%	100%	0%	13%
Drowning Location*						
Open Water	0%	33%	100%	100%	0%	38%
Pool/Hot Tub/Spa	100%	33%	0%	0%	50%	38%
Bathtub	0%	33%	0%	0%	50%	25%
Flotation Used*						
No, but needed	0%	67%	100%	0%	50%	67%
Yes	0%	0%	0%	100%	0%	17%
Unable to Determine	100%	0%	0%	0%	0%	17%
Child Supervision*						
Yes	0%	67%	100%	100%	100%	75%
No	100%	0%	0%	0%	0%	13%
Unable to Determine	0%	33%	0%	0%	0%	13%

†*Note: Percent of total child deaths in Hamilton County.*

**Note: Percentages are the percent of child deaths in Hamilton County that were suicides.*

Child Deaths due to Unintentional Asphyxia

	2014	2015	2016	2017	2018	2014-2018
Percent of Child Deaths†	2%	0%	1%	1%	2%	1%
Age*						
<28 Days	0%	0%	0%	0%	0%	0%
28 Days - 1 Year	33%	0%	10%	100%	33%	50%
1 - 4 Years	33%	0%	0%	0%	33%	25%
5 - 9 Years	0%	0%	0%	0%	0%	0%
10 - 14 Years	0%	0%	0%	0%	0%	0%
15 - 17 Years	33%	0%	0%	0%	33%	25%
Sex*						
Male	33%	0%	100%	0%	33%	38%
Female	67%	0%	0%	100%	67%	63%
Race/Ethnicity*						
non-Hispanic White	33%	0%	0%	0%	33%	25%
non-Hispanic Black	67%	0%	100%	100%	33%	63%
non-Hispanic Multi-Racial	0%	0%	0%	0%	33%	13%
non-Hispanic Other Race	0%	0%	0%	0%	0%	0%
Hispanic, Any Race	0%	0%	0%	0%	0%	0%
Sleep-Related Asphyxia*						
Sleep-Related	33%	0%	100%	100%	33%	50%
Not Sleep-Related	67%	0%	0%	0%	67%	50%
Type of Asphyxia*						
Suffocation	67%	0%	100%	100%	100%	88%
Choking	33%	0%	0%	0%	0%	13%

†*Note: Percent of total child deaths in Hamilton County.*

**Note: Percentages are the percent of child deaths in Hamilton County that were unintentional asphyxia*

"Other Types of Child Death"

	2014	2015	2016	2017	2018	2014-2018
Percent of Child Deaths†	0%	1%	1%	2%	2%	1%
Age*						
<28 Days	0%	0%	0%	0%	0%	0%
28 Days - 1 Year	0%	0%	0%	50%	0%	17%
1 - 4 Years	0%	0%	0%	50%	50%	33%
5 - 9 Years	0%	100%	0%	0%	50%	33%
10 - 14 Years	0%	0%	100%	0%	0%	17%
15 - 17 Years	0%	0%	0%	0%	0%	0%
Sex*						
Male	0%	0%	100%	0%	50%	33%
Female	0%	100%	0%	100%	50%	67%
Race/Ethnicity*						
non-Hispanic White	0%	100%	0%	50%	0%	33%
non-Hispanic Black	0%	0%	100%	50%	100%	67%
non-Hispanic Multi-Racial	0%	0%	0%	0%	0%	0%
non-Hispanic Other Race	0%	0%	0%	0%	0%	0%
Hispanic, Any Race	0%	0%	0%	0%	0%	0%
Manner of Death*						
Accident	0%	0%	100%	50%	100%	67%
Suicide	0%	100%	0%	0%	0%	17%
Homicide	0%	0%	0%	5%	0%	17%
Cause of Death*						
Fire, Burn or Electrocution	0%	0%	100%	0%	50%	33%
Poisoning, Overdose or Acute Intoxication	0%	100%	0%	100%	50%	67%

†*Note: Percent of total child deaths in Hamilton County.*

**Note: Percentages are the percent of child deaths in Hamilton County that were due to "other types of child death".*

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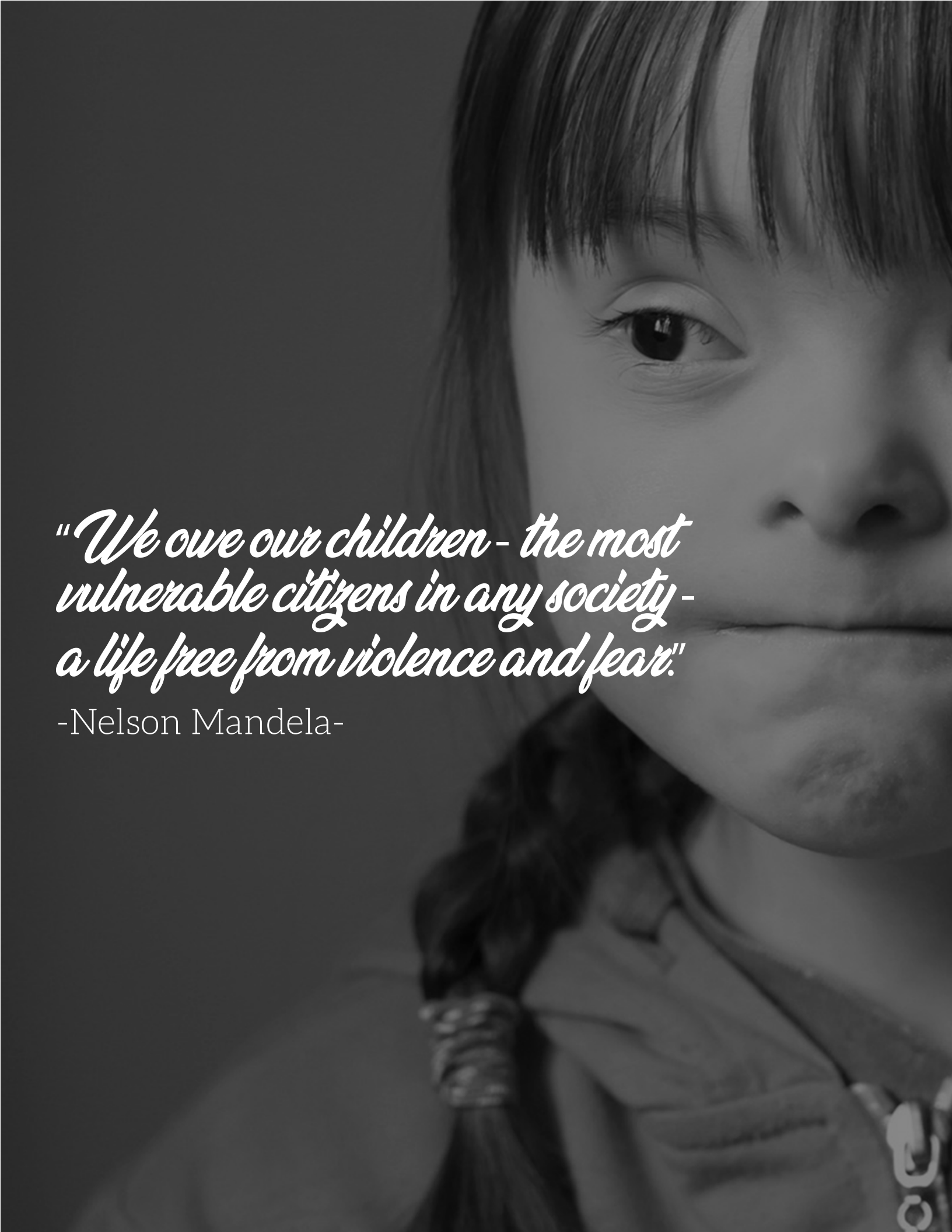
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-Nelson Mandela-

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