

2023

Ohio Child Fatality Review

23RD ANNUAL REPORT



Mission

This report includes aggregate reviews of child deaths that occurred during a five-year period, from 2018 through 2022. The mission of Ohio's state and local child fatality review boards is to support data-to-action efforts to reduce the incidence of preventable child deaths in Ohio.

Submitted To

Mike DeWine, Governor, State of Ohio

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Allison Russo, Minority Leader, Ohio House of Representatives

Ohio County Child Fatality Review Boards

Ohio Family and Children First Councils

Submitted By

Ohio Department of Health and Ohio Children's Trust Fund
(housed within the Ohio Department of Children and Youth)



**Department of
Health**



**Department of
Children & Youth**

Table of Contents

Message From the Directors	iii
Ohio Children’s Trust Fund	1
Child Fatality Review (CFR)	2
Limitations	3
Transforming Data to Action	4
Recommendations from Local CFR Boards	4
Examples of County Initiatives	5
State Initiatives	6
All Reviews for 2018-2022	7
Reviews by Demographic Characteristics	8
Reviews by Manner of Death	12
Reviews by Primary Cause of Death	14
Reviews by Medical Causes	16
Reviews by External Causes	19
Reviews for 2018-2022 By Cause of Death	23
Congenital Anomalies	24
Child Abuse and Neglect	29
COVID-19	34
Drowning	37
Firearms	41
Infant Sleep-Related Deaths	46
Perinatal Conditions	51
Substance Use	54
Suicide	58
Vehicular Injuries	63
Reviews for 2018-2022 By Age Group	67
Infants: Ages 0 to 364 Days	68
Toddlers: Ages 1 to 4 Years	73
Young Children: Ages 5 to 9 Years	77
Preadolescents and Young Teens: Ages 10 to 14 Years	81
Teen Deaths: Ages 15 to 17 Years	85
Appendices	88
Appendix I: Overview of Ohio Child Fatality Review Program	89
Appendix II: Fetal Infant Mortality Review (FIMR)	91
Appendix III: Ohio County Types Designations	93
Appendix IV: Glossary	94
Appendix V: References	96

Message from the Directors

Dear Friends of Ohio Children:

Respectfully presented is the Ohio Child Fatality Review (CFR) 2023 Annual Report. This report contains comprehensive summary data pertaining to child deaths (ages birth through 17 years old) during the five-year period of 2018 to 2022. In addition, it outlines the work undertaken by local CFR boards and state agencies to decrease preventable child deaths. It is our hope that this report will inform interventions and lead to a reduction in the incidence of untimely and preventable deaths of Ohio children.

The CFR process begins at the local level, where local boards consisting of professionals from public health, recovery services, children's services, law enforcement, and healthcare review the circumstances surrounding every child death in their county. It is through their collective expertise and collaborative assessment that preventive solutions and initiatives are developed for use throughout the state.

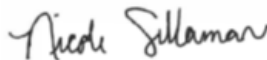
It is incumbent upon all of us to work together to prevent untimely child deaths by:

- Assisting and supporting families to achieve healthy parenting practices through education and resources.
- Educating families, children, neighbors, organizations, and communities about preventable child deaths.
- Empowering individuals to intervene in situations of violence and neglect.
- Encouraging individual and community involvement in recognizing and preventing risk factors that contribute to child deaths.
- Improving systems of care so all children receive optimal healthcare before and after birth and throughout their lives.

This data and information can be used to help inform initiatives at the state and local levels to help eliminate preventable child deaths in Ohio.



Bruce Vanderhoff, MD
Director
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Nicole Sillaman Director
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Ohio Children's Trust Fund

The Ohio Children's Trust Fund (OCTF) was statutorily created in 1984 and is dedicated exclusively to the primary and secondary prevention of child abuse and child neglect. The mission of OCTF is to prevent child abuse and child neglect through investing in strong communities, healthy families, and safe children. OCTF is a quasi-public entity, governed by a 15-member board, representing a broad public-private partnership. The board is comprised of eight members that represent the citizens of Ohio and are appointed by the Governor, two members each appointed by the President of the Ohio Senate and the Speaker of the Ohio House of Representatives, and three agency directors (from the Ohio departments of Health, Children and Youth, and Mental Health and Addiction Services). Current OCTF board membership is diverse in expertise and interest and includes representatives from the following fields: social work and child abuse and neglect services, healthcare, law, early care and education, mental health, and nonprofit executive leadership. The board supervises the OCTF policies and programs, and the Ohio Department of Children and Youth serves as OCTF's administrative agent for legal, human resources, procurement, and budgeting functions.

OCTF is governed by Ohio Revised Code (ORC) sections 3109.13 through 3109.179. In accordance with Ohio law, OCTF revenue is allocated in support of primary and/or secondary prevention strategies to strengthen families and prevent child abuse and neglect. Primary prevention strategies, as defined in ORC section 3109.13, are "activities and services provided to the public designed to prevent or reduce the prevalence of child abuse and child neglect before signs of abuse or neglect can be observed." Secondary prevention strategies, as defined in ORC section 3109.13, are "activities and services that are provided to a specific population identified as having risk factors for child abuse and child neglect and are designed to intervene at the earliest warning signs of child abuse or child neglect, or whenever a child can be identified as being at risk of abuse or neglect."

OCTF's staff and board believe that child abuse and neglect prevention is the most critical issue we can address for the long-term prosperity of our state and nation. The economic costs associated with child abuse and neglect are severe. As are the human costs. Child maltreatment has devastating effects on Ohio's children and may limit their ability to function and live healthy lives. To keep Ohio's children safe, everyone must proactively participate in the prevention of child abuse and neglect. It is this philosophy that drives our staff, leadership, and partners to continue engaging the community to ensure everyone knows the role they can play to support families prior to a crisis occurring.

OCTF invests its resources to support prevention programs at the local level through a regional model led by eight child abuse and neglect prevention councils representing all 88 Ohio counties, statewide grant projects funding Ohio entities implementing child abuse and child neglect prevention programs, and other statewide discretionary projects identified by the OCTF board. Through these efforts, OCTF is at the forefront of prevention activities throughout the state. From establishing guidelines for evidence-based program development to accessing innovative prevention curricula, producing educational and public awareness materials, and impacting social service policy legislation, the OCTF provides expertise and resources for legislators, state agencies, and the public.

In addition to being Ohio's designated lead agency for the federal Community-Based Child Abuse Prevention grant, OCTF is also Ohio's Prevent Child Abuse America (PCAA) state chapter. OCTF and PCAA share a common mission, and through this collaboration, Ohio's statewide prevention efforts are aligned under one entity to further these mutual goals. OCTF works collaboratively with state and local systems to facilitate efficient and effective work at the local level. More information on OCTF is available at: <http://octf.ohio.gov>.

Child Fatality Review (CFR)

The Ohio CFR program was established in 2000 by the Ohio General Assembly in response to the need to better understand the circumstances and causes of children’s deaths. The law mandates CFR boards in each of Ohio’s counties (or regions) to review the deaths of all children younger than 18 years of age. The mission of CFR is to reduce the incidence of preventable child deaths in Ohio. This report summarizes the process of local reviews by multi-disciplinary boards of community leaders, which results in data regarding the circumstances related to each death. This data and information can be used to help inform initiatives at the state and local levels to help eliminate preventable child deaths in Ohio.

The most important reason to review child deaths is to improve the health and safety of children and to reduce the incidence of preventable child deaths in Ohio. A child’s death is considered preventable if the community or an individual could reasonably have changed the circumstances that led to the death. The review process helps CFR boards focus on a wide spectrum of factors that may have caused or contributed to the death or made the child more susceptible to harm. After these factors are identified, the board must decide which, if any, of the factors could reasonably have been changed. Cases are then deemed “probably preventable” or “probably not preventable.” Even if a particular case is deemed “probably not preventable,” the CFR process is valuable in identifying gaps in care, systemic service delivery issues or community environmental factors that contribute to less-than-optimal quality of life for vulnerable individuals. For this reason, many local boards make recommendations and initiate changes even when a particular death is not deemed preventable.

Findings are used to generate recommendations for improved investigations, service delivery, changes in systems, local ordinances or state law, or community or state prevention initiatives. These systems improvements and prevention programming are the ultimate goals of a CFR process that is based on the public health model, to keep children safe, healthy, and protected. CFR does make a difference. In addition to the prevention initiatives, local and state initiatives impacted by the CFR process are highlighted throughout this report.

Many deaths may seem to happen “out of the blue,” but as the facts about the circumstances of all the deaths are compiled and analyzed, certain risks to children become clear, including:

- Newborn prematurity, which accounts for half of all infant deaths.
- Unsafe sleep environments, which place healthy infants at risk of sudden death.
- Riding unrestrained in vehicles, which puts children at greater risk of death in the event of a crash.
- Racial disparities that results in Black children dying from homicide at more than three times the expected rate.

For more information on this report or the Child Fatality Review Program, please contact:

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Limitations

Calculation of rates is not appropriate with Ohio's CFR data because circumstances do not always permit review of all child deaths within the calendar year the death occurs. Instead of rates, CFR statistics have been reported as a proportion of the total reviews.

For this report, cases with multiple races indicated were assigned to the race that represents the least proportion of the general child population of Ohio. For example, if a case indicated both Black and Asian, the case was assigned to Asian, because the proportion of Asian children is less than the proportion of Black children in Ohio. The CFR case report tool and data system record Hispanic ethnicity as a variable separate from race. A child of any race may be of Hispanic ethnicity.

Since the inception of statewide data collection in 2001, Ohio CFR has used two different data systems, and the latest system has undergone improvements and revisions. Because of the differences in data elements and classifications, data in this annual report may not be comparable to data in previous reports. In-depth evaluation of contributing factors associated with child deaths is limited in some cases by small numbers insufficient to draw valid conclusions and lack of access to relevant data.

Each year, several Ohio child deaths occur out of state. The first step of the review process, identification of a child death, is difficult when the death occurs out of state. Death certificates are recorded in the state where the death occurs, and a multi-state process is not in place to routinely notify the county of residence for a timely review. This is the case in rural Appalachian counties along Ohio's border, where the nearest hospital is sometimes in a neighboring state.

Deaths that were not reviewed include cases still under investigation or involved in prosecution, and out-of-state deaths reported too late for thorough review. Late-year deaths for which death certificates were not yet available to local review boards were also not reviewed. In addition, some cases were not reviewed due to the impacts of COVID-19. The year 2020 marked the beginning of COVID-19. Information sharing was problematic for many local CFR boards as they struggled for ways to obtain quality relevant information from outside agencies, hospitals, etc. The pandemic also placed new demands on local health department staff. Not all deaths for the state of Ohio were reviewed; therefore, the statistics are reported as a proportion of the total reviews. COVID-19 cases have also been underreported, due to testing shortages, people not getting tested, and at-home test results not being reported.

- For the five-year period from 2018 through 2022, local CFR boards reviewed 5,501 child deaths, which represents 75% of the child deaths reported by the Ohio Department of Health Bureau of Vital Statistics.

Transforming Data to Action

The death of a child is a calamity at both the family and community level that often evokes a desire to actuate change to prevent future loss. To help address this issue, local CFR boards recommend several new initiatives, and expansion of some existing initiatives, at the local and state levels.

Recommendations from Local CFR Boards

- Additional **roadway signage** for slow moving vehicles and potential roadway hazards should be installed.
- Promote ABCs (Alone, Back, Crib) of **safe sleep** practices at all prenatal health visits and well-child exams, as well as educating new caregivers on safe sleep anywhere, anytime via social media campaigns and targeted distribution.
- Increase education on and access to consistent **prenatal care**, encouraging mothers to seek early care and avoid smoking and using drugs.
- Promote the benefits of having **community health worker programs** to assist pregnant mothers.
- Fix broken and non-working **city street lighting**, especially in areas surrounding local parks or streets leading to parks.
- Increase **naloxone education and access** throughout the community so that anyone who may come into contact with people at risk for opioid overdose can have it available to save a life in the event of an opioid overdose.
- Offer education on how to properly adjust hot water heater settings to ensure **appropriate water temperature** with children in the home.
- Enhance education on **gun safety**, especially at elementary schools and child care centers, and promote all firearms being locked away at all times via distribution of gun locks at local health departments and community outreach events.
- Establish **mental health stigma reduction** education and training in local schools and through local community programs.
- Educate children on signs of **domestic violence** and characteristics of **healthy relationships** from an early age.
- Develop **fatherhood mentoring programs** through verbal education and newsletters.
- Encourage **home visiting** for any newborns who have “screened out” of children’s services to provide an assessment of the infant and home environment, allowing for **additional referrals** to be made if needed.
- Improve **inter-agency collaboration and communication** to discuss ongoing issues with high-risk families.
- Initiate **water safety campaigns** and increase signage near all bodies of water with information on **drowning risk and water safety**.
- Educate parents on **infant and toddler swimming lessons** and establish these classes at community pools for greater access.
- Install and lock **gated or fenced pool entrances**, cover unused pools, provide children who cannot swim with proper **flotation devices**, and provide adequate **supervision** while swimming to prevent pool deaths.
- Increase access to **grief support** resources for children via school-based education and social media.
- Health departments should provide materials related to **suicide prevention to school districts**.

Examples of County Initiatives

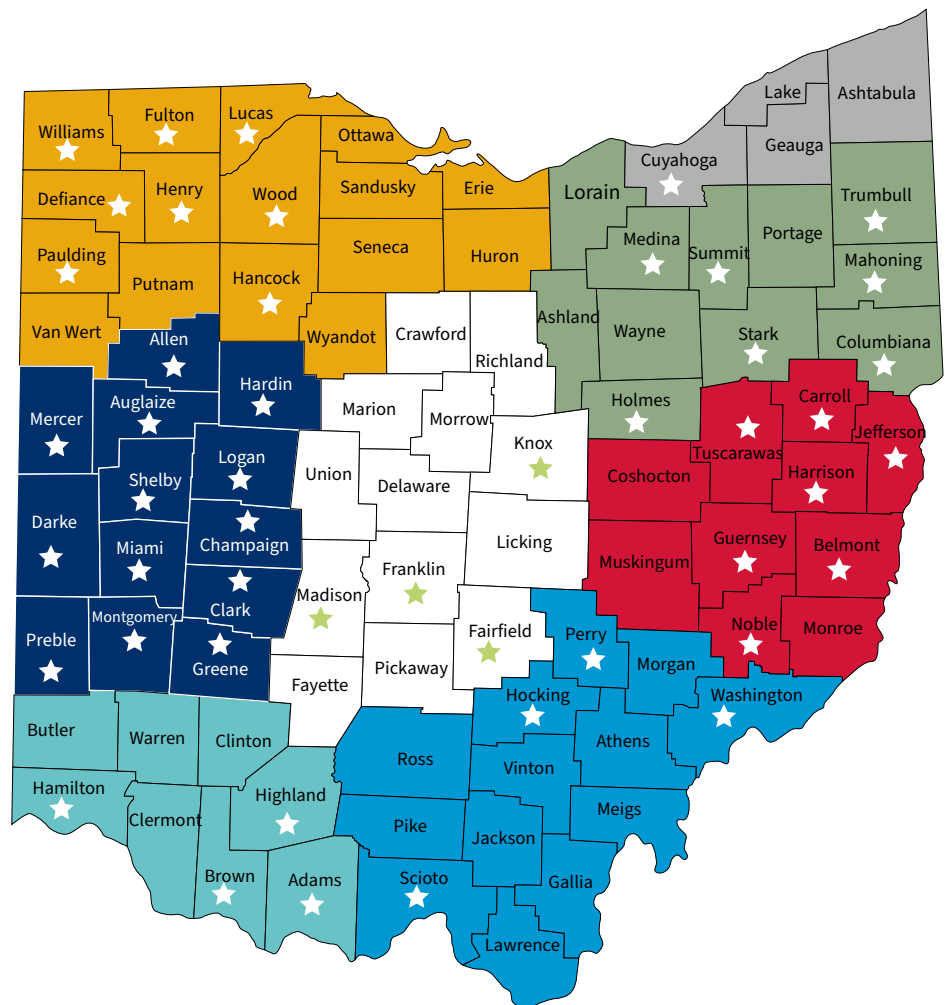
- **Auglaize County:** has distributed information on dangers of leaving children in vehicles in addition to education provided in other health department programs.
- **Brown County:** planning to initiate an Overdose Death Review Board and a Suicide Death Review Board.
- **Carroll County:** coordinating additional mental health training and services for Carroll County schools and planning to offer an eight-week grief recovery program to any school district interested.
- **Columbiana County:** has made free car seats and cribs for kids available at the health department; created a fact sheet on baby safety to give to local providers to hand out to parents and other caregivers and has put this baby safety fact sheet in local papers and on social media.
- **Cuyahoga County:** secured funding to establish a countywide child protection team that provides real-time, cross- system collaboration and information sharing to address and prevent child abuse and neglect.
- **Fairfield County:** community providers and WIC are promoting a multi-vitamin with folic acid to all women of childbearing age to reduce the risk of neural tube defects.
- **Franklin County:** distributed over 2,000 pack ‘n plays for infants without a safe sleep surface.
- **Lake County:** started public education initiative regarding use of Health Department social media and community presence to spread community education for water safety, train track safety, safe sleep, and monitoring sick children as priority.
- **Lawrence County:** plans to increase awareness surrounding bullying and suicide prevention in local schools.
- **Logan County:** increased community education on safe sleep practices.
- **Mahoning County:** provided suicide prevention training in the community; has had a staff member complete the training as a Grief Recovery Method Specialist; and has recently started a Suicide Fatality Review Team.
- **Meigs County:** initiated a firearm safety social media campaign with the County Prosecutor and County Sheriff.
- **Perry County:** speaking to schools about “mock crash” events regarding driver and passenger safety.
- **Pickaway County:** incorporated grief support services for community members who experience tragedies, such as child fatalities.
- **Sandusky County:** has developed a protocol to address the issue of newborns exposed to marijuana.
- **Summit County:** adopted the Safe Sleep Initiative as a priority goal and continues to distribute strong messaging around safe sleep.

State Initiatives

Ohio's state agencies have several resources dedicated to ensuring the safety and well-being of Ohio's children. The Ohio Department of Health maintains multiple resources on [infant mortality related programs](#). Additionally, OCTF funds the Early Childhood Safety Initiative (ECSI) to increase access to early childhood intervention and prevention services, such as those provided by the Ohio Department of Health.

ECSI consists of 24 community-based service providers and county agencies serving 54 counties across Ohio. Individuals eligible for Temporary Assistance for Needy Families may receive brief, one-time early childhood safety education and access to over 100 early childhood safety items from ECSI providers. Participants are referred to local services such as Help Me Grow or Maternal Infant Wellness Programs. Additional information regarding who to contact within each indicated county below can be found on OCTF's [website](#). ECSI can be accessed by families through the following agencies:

- Harbor
 - Hancock County Public Health
 - Henry County Health Department
- Clark County Combined Health District
 - Dayton Children's Hospital
 - Miami County Public Health
- Central Community House
 - Fairfield County FACFC
 - Madison County FCFC
- Adams Brown CAP
 - Cincinnati Children's Hospital
 - Highland County CAP
- Cuyahoga County Board of Health
 - Merrick House
 - University Hospitals
- Akron Children's Hospital
 - Early Childhood Resource Center
 - Holmes County General Health District
- ForeverDads
 - Jefferson County Educational Service Center
 - Tuscarawas County Health Department
- Community Action Org. of Scioto County
 - Fairfield County TeenWorks
 - Washington County FCFC





ALL REVIEWS FOR 2018 -2022

Reviews by Demographic Characteristics

Local CFR boards reviewed a total of 5,490 deaths that occurred from 2018 through 2022. Eight of those reviews did not include information on the child's age, thus they will not be included in the following analysis and the total number of reviews included in this report is 5,482.

The Ohio Department of Health categorizes Ohio's 88 counties into four county type designations (suburban, rural non-Appalachian, Appalachian, and metropolitan) based on similarities in terms of population and geography. The current county type designations originated with the Ohio Family Health Survey in 1998 and are based on the U.S. Code and U.S. Census information. See Appendix III for a map of Ohio counties by county type. In nearly all cases, the county of review is the child's county of residence.

In this report, any instances where the term "American Indian" is needed, the term will be replaced by "Native American" to reflect this race more accurately. "Sex" in this report refers to assigned sex at birth, and is classified as binary, male, or female. Additionally, throughout the report, Chi-square goodness of fit tests were run to determine whether there were statistically significant differences between groups. A p-value of <0.05 was considered to indicate a statistically significant difference at the 95% confidence interval.

KEY FINDING:

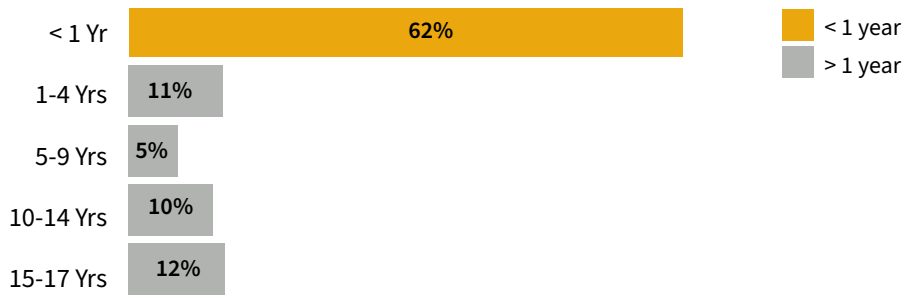
CFR deaths had a higher percentage of Black children represented compared to Ohio births.

Demographics Review Findings

- Young children, ages four years and younger, accounted for 73% of child death reviews.
- Hispanic/Latino children represent 6% of CFR reviews for the 5-year period.
- While Black children accounted for 22% of Ohio births, they accounted for 36% of death reviews.
- Males (58%) represent more child death reviews than females.

Most deaths reviewed were among infants.

Distribution of Age Among Reviews of Deaths, from 2018 through 2022 (n=5,482).



There is a disparity between age groups among CFR deaths, with infants overrepresented among deaths reviewed. Of the 5,482 child deaths reviewed, 62% were infants (less than one year of age), 11% were toddlers (1 to 4 years of age), 5% were young children (5 to 9 years of age), 10% were preadolescents (10 to 14 years of age), and 12% were teenagers (15 to 17 years of age).

The distribution of ethnicity is significantly different among CFR deaths compared to Ohio births.

Distribution of Ethnicity Among Reviews of Deaths, from 2018 through 2022 (n=5,482).

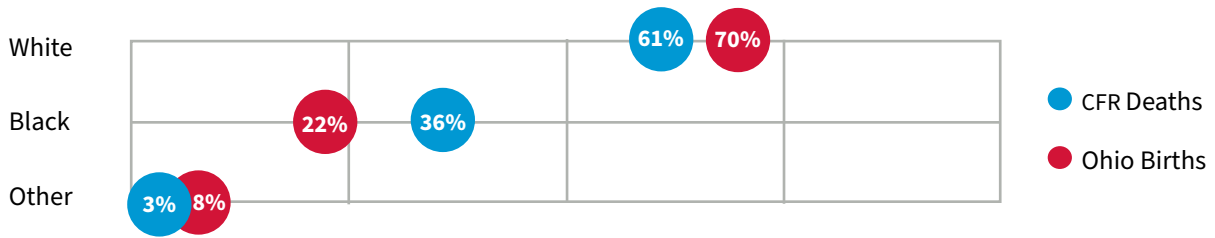


Data Source for Ohio Births: Vital Statistics Birth Occurrences

Vital statistics data of Ohio resident births from 2018 through 2022 showed that 92% of births were Non-Hispanic/Latino babies, 8% were Hispanic/Latino babies, and less than 0.5% of babies were listed as unknown ethnicity. The demographics section of this report uses Ohio resident births for the 5-year period (2018-2022) as a proxy, as the CFR sample is not population-based. Local boards reviewed deaths that occurred during this period and found that 7% of children were Hispanic/Latino and 90% of children were Non-Hispanic/Latino, with 3% were recorded as unknown ethnicity. The distribution of ethnicity is significantly different in CFR deaths compared to Ohio births from 2018 through 2022.

CFR deaths had a higher percentage of Black children represented, compared to Ohio births.

Distribution of Race Among Reviews of Deaths, from 2018 through 2022 (n=5,482).

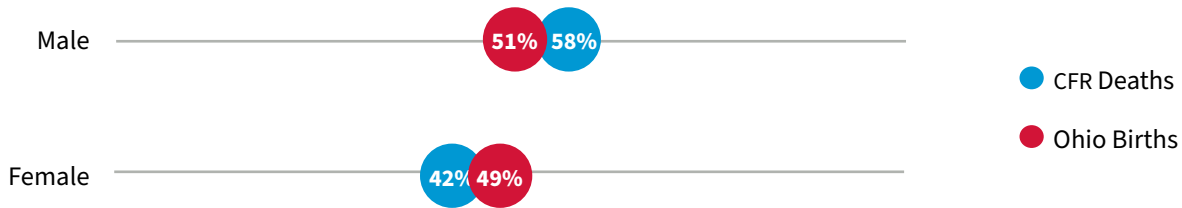


Data Source: Vital Statistics Birth Occurrences

Vital statistics data of Ohio resident births from 2018 through 2022 showed that 70% of births were White babies, 22% were Black babies, and 8% of babies were other races. Races in the “other” category include Native Hawaiian, Pacific Islander, Asian, Native American/Alaskan Native, and unknown. These races were all merged as “other” due to low numbers. Local boards reviewed deaths that occurred during this period and found that 61% of children were White, 36% of children were Black, and 3% were other races. The distribution of race among Ohio death reviews was different when compared to the distribution among Ohio resident births. It is important to note that the total number of Ohio births in the vital statistics data is much larger than the total number of Ohio deaths; therefore, comparing the proportions between these two populations should be done conservatively. However, the comparison can still give some context surrounding reviews of Ohio children.

There are more male children represented in CFR deaths and Ohio births.

Distribution of Sex Among Reviews of Deaths, from 2018 through 2022 (n=5,482).

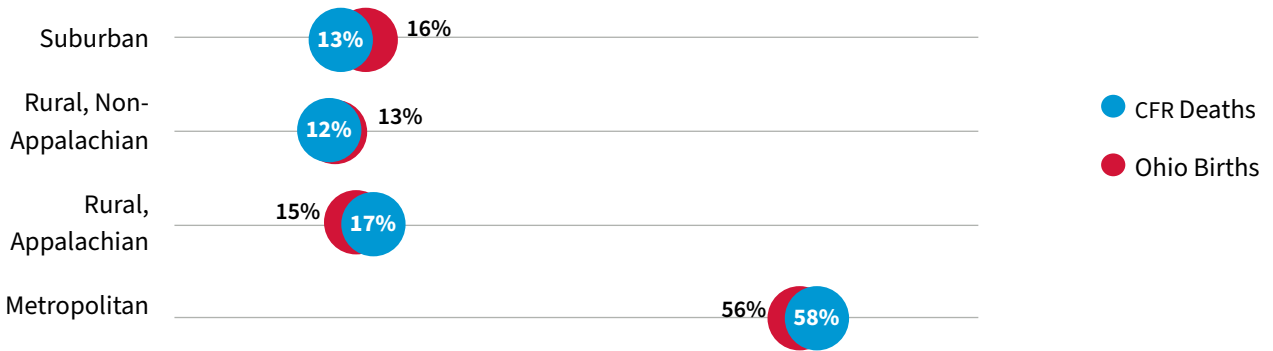


Data Source: Vital Statistics Birth Occurrences

There is a significant difference between the distribution of sex among CFR death reviews and Ohio births. Males accounted for 51% of Ohio births and females accounted for 49% of Ohio births. Among CFR deaths, males represented 58% and females represented 42%. This remains consistent with past findings. A small percentage of CFR deaths did not have information on the child’s sex (0.31%).

Metropolitan county residents account for most Ohio births and CFR deaths.

Distribution of County Types Among Reviews of Deaths, from 2018 through 2022 (n=5,415).



Data Source: Vital Statistics Birth Occurrences

Vital statistics data of Ohio resident births from 2018 through 2022 showed that 56% occurred in metropolitan counties, 15% occurred in rural Appalachian counties, 13% occurred in rural non-Appalachian counties, and 16% occurred in suburban counties. Among deaths that were reviewed by local CFR boards, 58% of children were from metropolitan counties, 17% were from rural Appalachian counties, 12% were from rural non-Appalachian counties, and 13% were from suburban counties. There is a statistically significant difference in the distribution of resident county types between CFR deaths and Ohio births.

REVIEWS BY MANNER OF DEATH

CFR boards report the manner of death as indicated on the death certificate. In cases where the local review boards disagreed with the manner of death listed on the death certificate, the manner of death decided by the local review boards is what was used for data analysis. Manner of death is a classification of death based on the circumstances surrounding a cause of death and how the cause came about. The only possible categories for manner of death are natural, accident, homicide, suicide, undetermined, pending, and unknown.

Nationally, the leading manner of death in children from 2017 through 2020 was natural, with an unadjusted death rate of 35.4 per 100,000 children. The second leading manner of death was accidental (7.5 per 100,000), followed by suicide (2.4) and homicide (2.4).¹ In Ohio, the distribution of manners of death among child death reviews is similar to the national patterns, with natural deaths being the leading manner of death in children.

KEY FINDING:

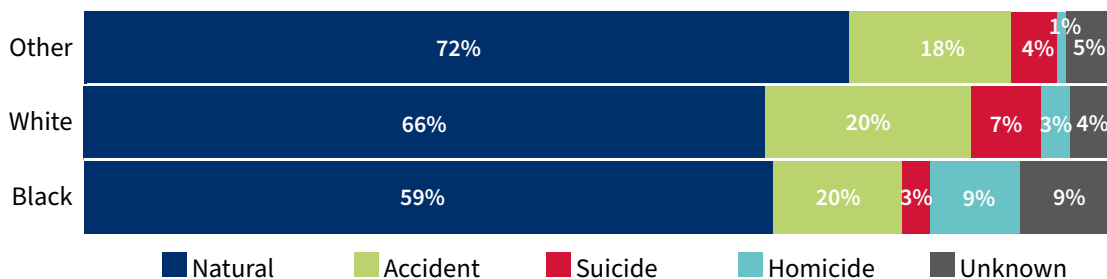
Local CFR teams found 64% of homicide death reviews were among Black children.

Manner of Death Review Findings

- Homicide accounted for more Black deaths compared to other races, and suicide accounted for more White deaths compared to other races.
- Reviews of suicide deaths consisted of mostly teenagers (ages 15 to 17 years), followed by preadolescents (ages 10 to 14 years).
- Reviews of homicide deaths consisted of mostly teenagers (ages 15 to 17 years), followed by toddlers (ages 1 to 4 years).
- Reviews of accidental deaths consisted of mostly infants (less than one year of age).

Homicide affected families of Black children most.

Distribution of Manner of Death by Race Among Reviews of Deaths, from 2018 through 2022 (n=5,482).



Although the manner of child death is distributed similarly between races among all CFR deaths, there are small differences worth noting. Among all CFR deaths, the leading manner of death was natural. This remains true between all races, with “other” races having a slightly higher percentage of natural deaths. The second-leading manner of death among all CFR deaths was accidental, and this remains the same for each race when stratified. Although suicide was the fourth-leading manner of death among CFR deaths, it was the third leading manner of death among White children, and, although homicide was the fifth-leading manner of death, it was the fourth-leading manner of death among Black children. In cases where the manner of death was “unknown,” the case was either pending investigation or the manner of death was undetermined.

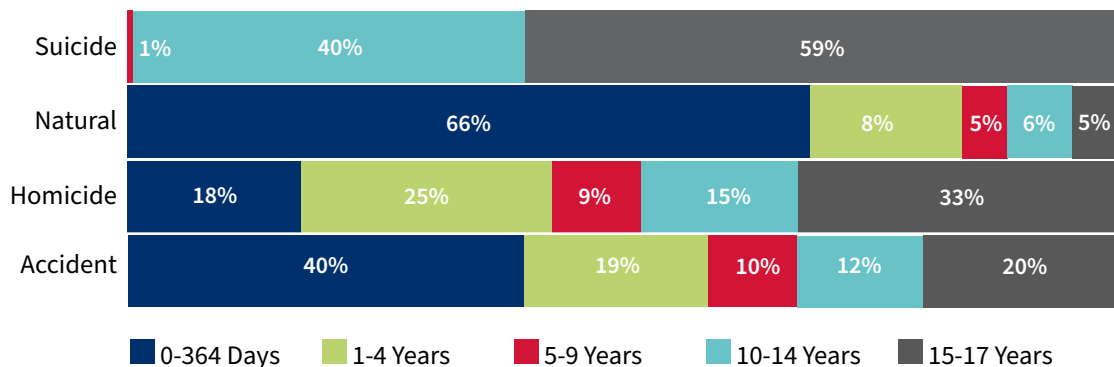
Most children died of natural causes.

Distribution of Manners of Death Among Reviews of Deaths, from 2018 through 2022 (n=5,482).

Manner of Death	Number of Deaths	Percentage of Deaths	CFR Annual Report Definition
Natural	3,492	64%	Deaths caused by the natural disease process, including prematurity, and not an accident or violence.
Accident	1,095	20%	Deaths caused by unintentional rather than by natural causes, suicide, or murder.
Undetermined or Unknown	323	6%	Following a thorough medical and legal investigation, a conclusive manner of death is not determined.
Suicide	289	5%	Deaths caused by self-inflicted behavior with the intent to die as a result.
Homicide	269	5%	The killing of a person by another person.
Pending	14	0%	Additional investigation or information is required.

Infants account for most accidental and natural deaths.

Distribution of Age, by Manner of Death Among Reviews of Deaths, from 2018 through 2022 (n=5,482).



Among suicide deaths reviewed by CFR boards, 59% were teenagers (15 to 17 years old), 40% were preadolescents (10 to 14 years old), and 1% were young children (5 to 9 years old). Among natural deaths reviewed, 76% were infants (less than 1 year of age), 8% were toddlers (1 to 4 years old), 5% were young children (5 to 9 years old), 6% were preadolescents (10 to 14 years old), and 5% were teenagers (15 to 17 years old). Among all homicide deaths reviewed, 33% were teenagers (15 to 17 years old), 25% were toddlers (1 to 4 years old), 18% were infants (less than one year of age), 15% were preadolescents (10 to 14 years old), and 9% were young children (5 to 9 years old). Among accidental deaths reviewed, 40% were infants (less than 1 year old), 20% were teenagers (15 to 17 years old), 19% were toddlers (1 to 4 years old), 12% were preadolescents (10 to 14 years old), and 10% were young children (5 to 9 years old).

REVIEWS BY PRIMARY CAUSE OF DEATH

CFR boards select the cause of death category that provides the most information about the circumstances of the death, with a focus on prevention. The primary causes of death are categorized as external injury, medical, and unknown. Within each primary cause of death, causes are further specified by nature of the injury and the disease entities.

Nationally, the leading primary cause of child death from 2017 through 2020 was medical, with an unadjusted death rate of 35 per 100,000 children. Perinatal conditions were the leading cause of child deaths in 2020, with a crude death rate of 13.2 (9,636 deaths).¹ In Ohio, CFR boards found that the leading primary cause of death among child deaths from 2018 through 2022 was also medical, accounting for 64% of deaths reviewed.

KEY FINDING:

Local CFR teams found 5% of medical deaths and 85% of external injury deaths preventable.

Primary Cause of Death Review Findings

- Most reviews were of deaths directly due to a medical condition, or complications from a medical condition.

Most children died from a **medical condition**.

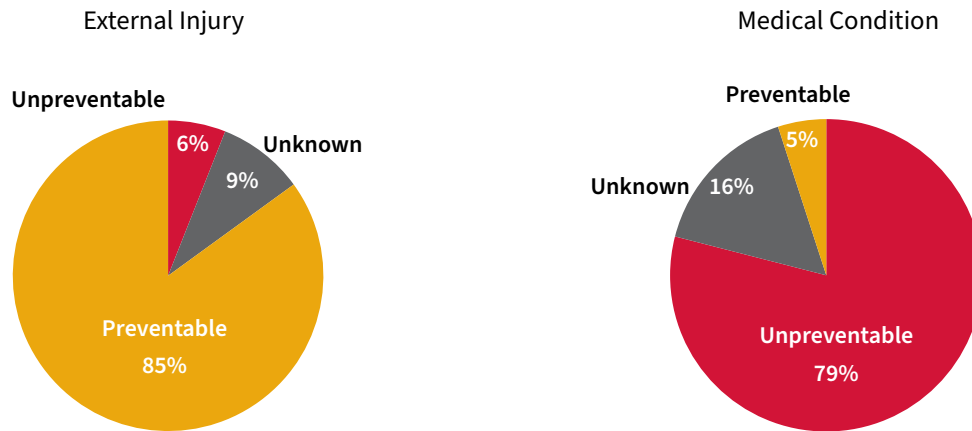
Distribution of Primary Causes of Death Among Reviews of Deaths, from 2018 through 2022 (n=5,482).

Primary Cause of Death	Number of Deaths Reviewed	Percentage of Total Primary Causes	CFR Annual Report Definition
Medical Condition	3,495	64%	Deaths caused from a natural process such as disease, prematurity, or congenital defect.
External Injury	1,689	31%	Deaths caused by injuries, either intentional or resulting from acute exposure to forces that exceed a threshold of the body's tolerance, or from the absence of such essentials as heat or oxygen.
Unknown	298	5%	Cause of death cannot be determined as medical or external or is unknown.

Among all CFR deaths from 2018 through 2022, 64% were due to natural causes, 31% were due to an external injury, and 5% were due to an unknown primary cause of death or a primary cause that could not be positively determined by the coroner or local CFR boards.

Most injury deaths are preventable, but most medical deaths were not preventable.

Preventability of Deaths by Primary Cause Among Reviews of Deaths, from 2018 through 2022 (n=5,482).



Local CFR boards determined that most deaths due to external injuries were preventable (85%), whereas only 5% of deaths due to medical conditions were preventable. Due to a lack of practical application, the above visual does not include preventability among reviews where primary cause of death was unknown.

REVIEWS BY MEDICAL CAUSES

Local CFR boards found that 64% of deaths reviewed were due to medical causes. The CFR data system provides a list of 15 medical conditions in addition to an “other” category for classifying deaths from medical causes that do not fit in the provided categories. According to the CDC, most medical deaths occurring nationwide from 2017 through 2020 were specific to infants, including low birth weight, sleep-related infant deaths, prematurity, and perinatal conditions. The leading cause of medical deaths was perinatal conditions, with a crude death rate of 14.3 per 100,000 children. The second leading cause of medical deaths was congenital anomalies (7.1 per 100,000), followed by childhood cancer (2.1 per 100,000).¹

In Ohio, local CFR boards found that among deaths reviewed from 2018 through 2022, the leading causes of medical deaths were prematurity, low birth weight, and other perinatal conditions, followed by congenital anomalies.

KEY FINDING:

Local CFR teams found that prematurity, low birth weight, and other perinatal conditions accounted for most (48%) medical deaths reviewed.

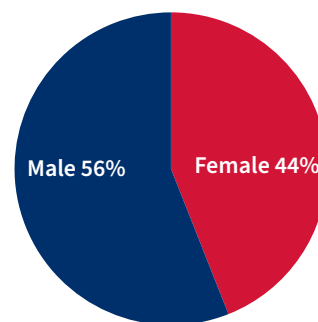
Medical Death Review Findings

- The leading medical causes of deaths reviewed were prematurity/low birth weight, congenital anomalies, and infections.
- The leading cause of death among all medical deaths reviewed was perinatal conditions (47%). The second-leading cause was a genetic mutation or birth defect (25%).

There is no disparity between sexes among medical deaths reviewed.

Distribution of Sex Among Reviews of Medical Deaths, from 2018 through 2022 (n=3,495).

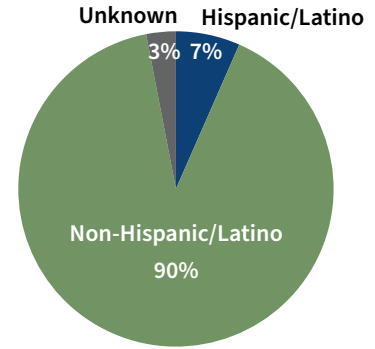
Among all CFR deaths, males represented 58% and females represented 42%. Among medical death reviews, males account for 56% and females account for 44%. There is no statistical difference in the distribution of sex among medical deaths reviewed compared to all CFR deaths.



There is no ethnic disparity among medical deaths reviewed.

Distribution of Ethnicity Among Reviews of Medical Deaths, from 2018 through 2022 (n=3,495).

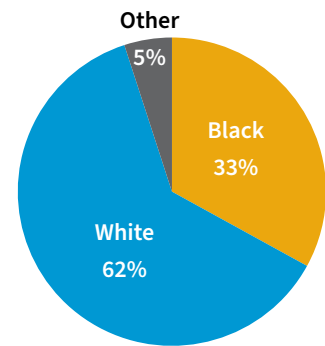
The distribution of ethnicity among medical death reviews is similar to the distribution of all CFR deaths. Hispanic/Latino ethnicities account for 7% of CFR deaths and 7% of medical death reviews. Non-Hispanic/Latino ethnicities accounted for 90% of all CFR deaths and 90% of medical death reviews. Unknown ethnicities account for 3% of all CFR deaths and 3% of medical death reviews.



Children of other races are overrepresented among medical deaths reviewed.

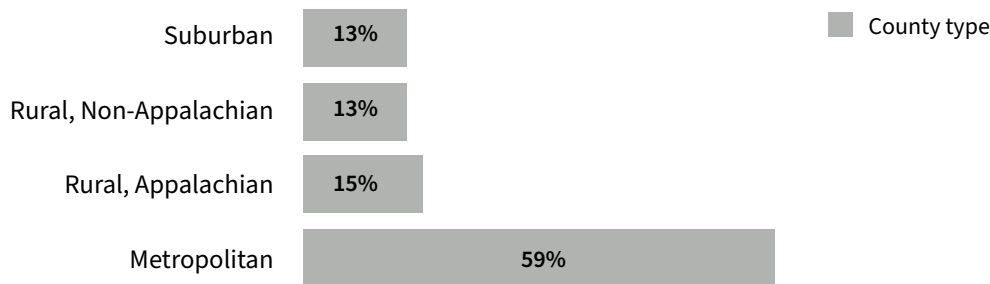
Distribution of Race Among Reviews of Medical Deaths, from 2018 through 2022 (n=3,495).

There is a statistically significant difference in the distribution of race between all CFR cases and medical death reviews. Black children account for 37% of all CFR cases and 33% of all medical death reviews. White children account for 61% of CFR cases and 62% of all medical death reviews. Children of other races account for 3% of all CFR cases and 5% of medical death reviews.



There is no disparity between residential county types among medical death reviews.

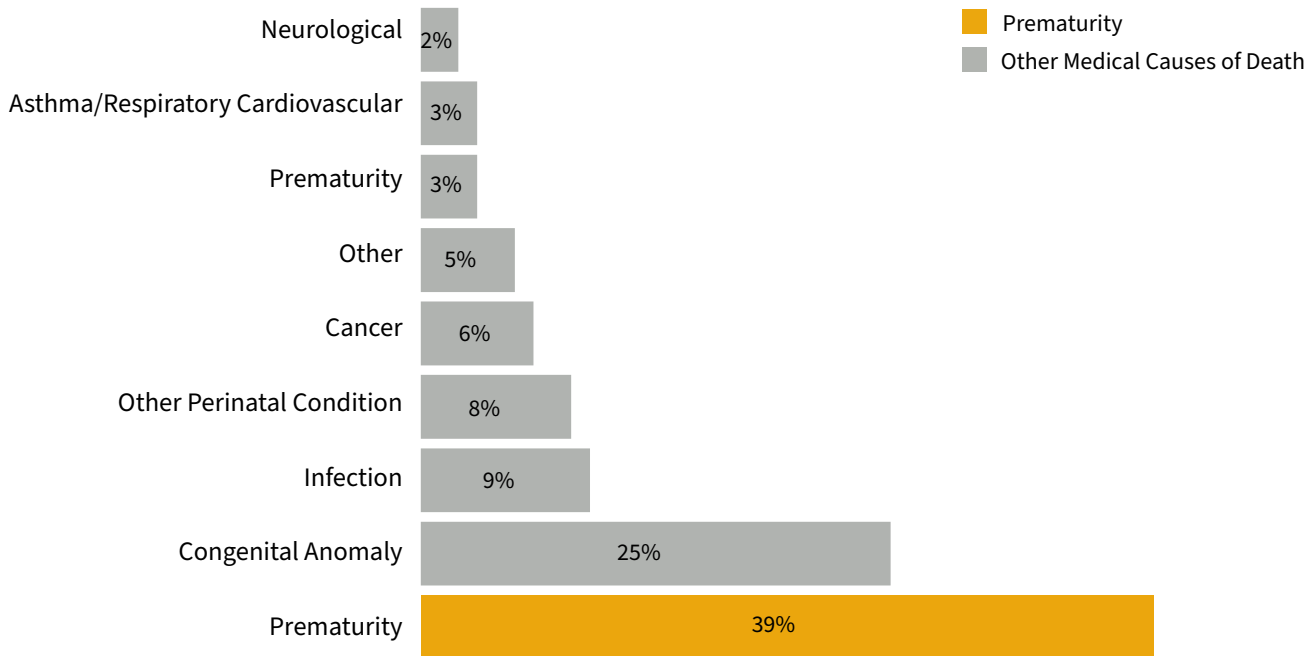
Distribution of County Types Among Reviews of Medical Deaths, from 2018 through 2022 (n=3,495).



Among CFR deaths between 2018 and 2022, 58% of children lived in metropolitan counties, 17% lived in rural Appalachian counties, 12% lived in rural non-Appalachian counties, and 13% lived in suburban counties. Among medical death reviews, 59% lived in metropolitan counties, 15% lived in rural Appalachian counties, 13% lived in rural non-Appalachian counties, and 13% lived in suburban counties. The distribution of residential county types between all CFR deaths and medical deaths reviewed is not statistically different.

Most medical deaths are due to **prematurity**.

Reviews of Deaths by Medical Causes Among Deaths Reviewed, from 2018 through 2022 (n=3,495).



Among medical death reviews, the leading cause of death was prematurity (including low birth weight and other complications), which accounted for 39% of medical death reviews. Congenital anomalies (and associated complications) accounted for 25% of medical death reviews, making congenital anomalies the second leading cause of death among medical death reviews. Infections were the third leading cause of medical deaths reviewed, accounting for 9% of medical death reviews. Conditions categorized as an infection include, but are not limited to, the flu, respiratory syncytial virus (RSV), common cold, sepsis, pneumonia, Methicillin-resistant *Staphylococcus aureus* (MRSA), gastroenteritis, and COVID-19.

Medical conditions that are classified as “other perinatal conditions” include complications during pregnancy or birth [e.g., chorioamnionitis, pre-eclampsia, intrauterine growth restriction (IUGR), and Group B Sepsis]. Other perinatal conditions accounted for 8% of all medical deaths reviewed. Medical conditions classified as “other” include diabetes, dehydration, malnutrition, confirmed SIDS, and conditions not otherwise classified (e.g., encephalopathy of unknown cause, renal failure, autoimmune diseases not genetic, and post-operative complications); these accounted for 5% of all medical deaths reviewed.

REVIEWS BY EXTERNAL CAUSES

The CFR data system provides a list of nine categories of external injuries for review purposes. These external injury categories are vehicular, fire/burn/electrocution, drowning, asphyxia, bodily force/weapon, fall/crush, poisoning/overdose/acute intoxication, undetermined, and other.

According to the CDC, the national leading cause of child death due to external injury from 2017 through 2020 was vehicular accidents, with a crude death rate of 3.4 per 100,000 children. The second national leading cause of external injury death was accidental suffocation/strangulation in bed (3.1), followed by drowning (1.1).¹

KEY FINDING:

Local CFR boards found that 64% of deaths due to external injuries were accidental.

External Cause of Death Review Findings

- The leading causes of accidental injury deaths were asphyxia/aspiration, vehicular accidents, and then drownings.
- 86% of accidental asphyxia/aspiration deaths were among infants.
- 45% of drownings were among toddlers 1 to 4 years old.
- 44% of accidental vehicular deaths were among teenagers 15 to 17 years old.

Most external injury deaths were **accidental**.

Distribution of Manners of Death Among Reviews of Injury Deaths, from 2018 through 2022 (n=1,689).

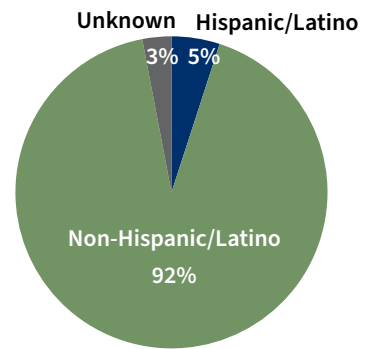


Among all CFR deaths due to external injury, local CFR boards found that 64% were accidental in manner. Among all external injury CFR deaths, suicide was the second-leading manner, accounting for 17% of reviews. Homicide accounted for 16% of external injury CFR deaths, 5% of CFR deaths had unknown manner of death, and 1% of CFR deaths were natural deaths. Deaths categorized as “unknown” manner in this graph include cases of pending determination and undetermined manner of death.

There is no ethnic disparity among accidental external injury deaths reviewed.

Distribution of Ethnicity Among Reviews of Accidental External Injury Deaths, from 2018 through 2022 (n=1,081).

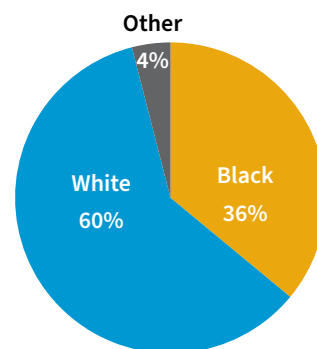
The distribution of ethnicity among accidental external injury death reviews is similar to the distribution among all CFR cases. Hispanic/Latino ethnicities account for 7% of all CFR cases and 5% of CFR accidental external injury death reviews. Non-Hispanic/Latino ethnicities accounted for 90% of all CFR cases and 92% of accidental external injury reviews. Unknown ethnicities accounted for 3% of all CFR cases and 3% of accidental external injury reviews.



There is no racial disparity among accidental external injury deaths reviewed.

Distribution of Race Among Reviews of Accidental Injury Deaths, from 2018 through 2022 (n=1,081).

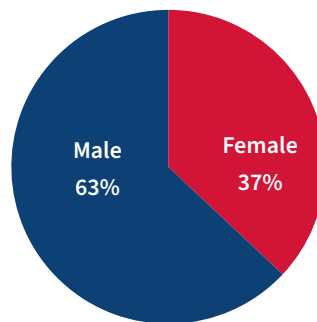
The distribution of racial groups among accidental external injury deaths is comparable to the overall distribution of racial groups among all CFR deaths. Sixty percent of accidental external injury deaths occurred among White children, 36% among Black children and 4% among children of other races. Across all CFR deaths, 61% occurred among White children, 36% among Black children, and 3% among children of other races.



Males are overrepresented among accidental external injury deaths reviewed.

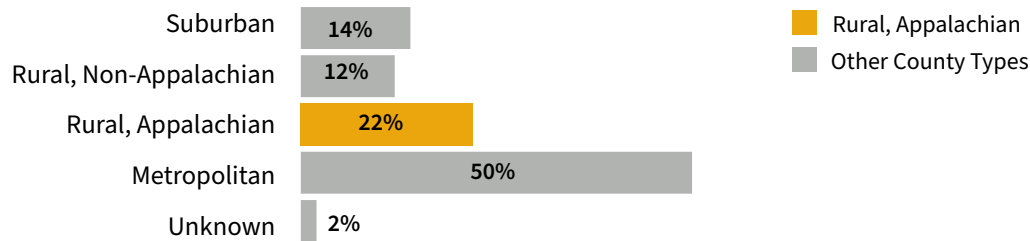
Distribution of Sex Among Reviews of Accidental External Injury Deaths, from 2018 through 2022 (n=1,081).

Males accounted for 58% of total CFR deaths, but 63% of accidental external injury death reviews. There is a disparity among sexes between all CFR deaths and accidental external injury death reviews.



Rural, Appalachian resident children are overrepresented among accidental external injury deaths.

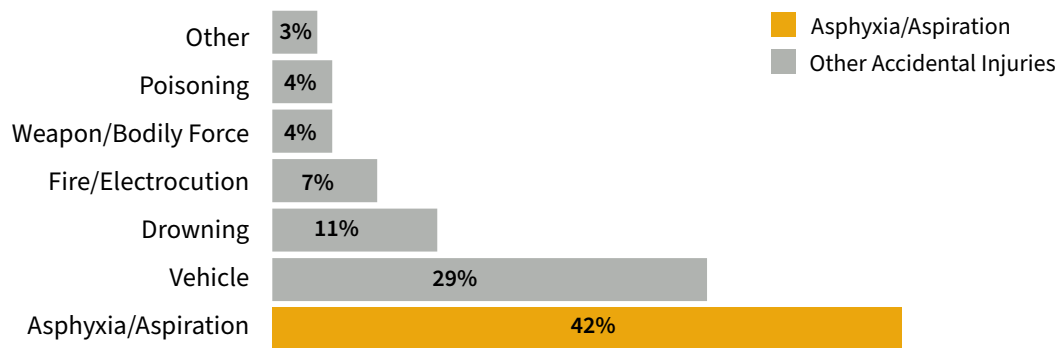
Distribution of County Types Among Reviews of Accidental External Injury Deaths, from 2018 through 2022 (n=1,077).



Among reviews of accidental external injury deaths from 2018 through 2022, 50% were from metropolitan counties, 22% were from rural Appalachian counties, 12% were from rural, non-Appalachian counties, and 14% were from suburban counties. Among all CFR deaths, 58% of children lived in metropolitan counties, 17% lived in rural Appalachian counties, 12% lived in rural non-Appalachian counties, and 13% lived in suburban counties. There is a disparity between county types among reviews of accidental external injury deaths compared to all CFR deaths.

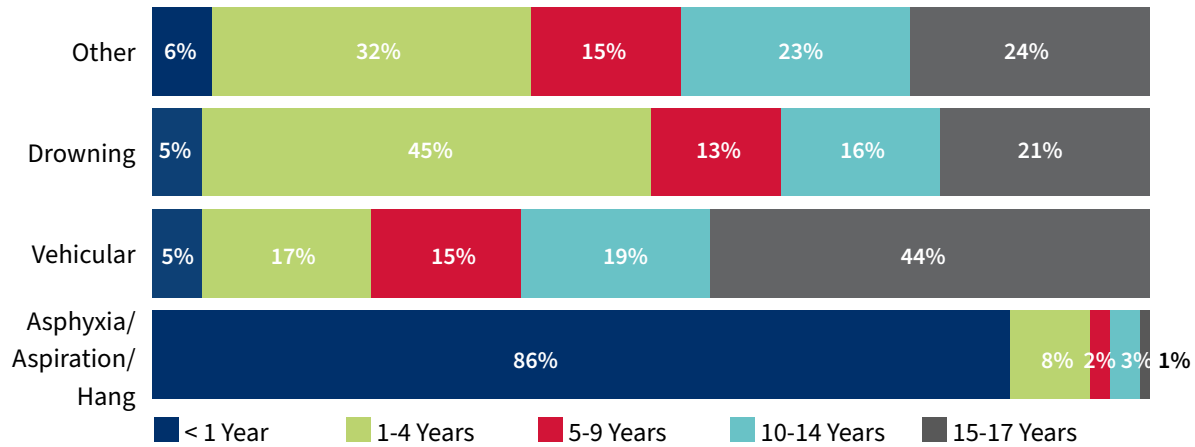
Asphyxia was the leading cause of accidental injury deaths reviewed.

Distribution of Accidental External Injury Causes Among Reviews of Deaths, from 2018 through 2022 (n=1,081).



Asphyxia/aspiration was the leading cause of accidental external injury death, accounting for 42% of all accidental external injury deaths reviewed. The second-leading cause of death among accidental external injury deaths reviewed was vehicular accidents, accounting for 29% of reviews, followed by drowning, accounting for 11% of accidental external injury deaths reviewed. Seven percent of accidental external injury deaths reviewed were directly or indirectly caused by house fires (including electrocution, burns, or smoke/carbon monoxide exposure from house fires). Accidental external injury deaths due to weapons or bodily force accounted for 4% of reviews, as did deaths due to poisoning (4%). Accidental external injury deaths listed in the “other” category include animal bites, exposure, undetermined, and other injuries not otherwise classified, and accounted for 3% of all accidental external injury death reviews.

There is a difference in the distribution of age groups by cause of accidental external injury deaths.
 Distribution of Age Among Reviews of All Accidental External Injury Deaths, from 2018 through 2022 (n=1,081).



There is a notable difference in distribution of age groups by cause of accidental external injury deaths reviewed. Infants (less than a year old) accounted for 86% of asphyxia/aspiration/hanging deaths reviewed (most were infant sleep-related). Toddlers (1 to 4 years old) accounted for most drowning deaths reviewed and deaths by “other” causes. Deaths reviewed in the “other” category of accidental external injury deaths were grouped due to small numbers, and include animal bites, exposure, falls/crashes, injury from bodily force or a weapon, accidental poisoning, exposure to fire, smoke from a house fire, or electricity, and unknown sources of accidental external injury.

Teenagers (15 to 17 years old) accounted for most deaths reviewed due to vehicular accidents. Young children (ages 5 to 9 years) did not represent the majority of any single cause of accidental external injury death, but they accounted for 13% of drownings deaths reviewed and 15% of vehicular accident reviews. Preadolescents (10 to 14 years old) also did not represent the majority of any single cause of accidental external injury death among reviews, but they accounted for 16% of drownings reviewed and 19% of vehicular accident reviews.



REVIEWS FOR 2018-2022 BY CAUSE OF DEATH

CONGENITAL ANOMALIES

Nationally, birth defects occur in one in every 33 live births and are responsible for 20% of infant deaths. The most common birth defects in the country are heart defects, followed by chromosomal/genetic defects.²⁰ In Ohio, congenital anomalies were responsible for 16% of all death reviews. Congenital anomalies also represent 10% of all Black child deaths reviewed, 19% of all White child deaths reviewed, and 17% of deaths reviewed for children of other races including Pacific Islander, Asian, Native American, Native Hawaiian, and unknown race. Among congenital anomaly deaths reviewed, children either died directly due to an anomaly or due to complications from a congenital anomaly. Most anomaly deaths were due to genetic mutations or defects that could be screened for using currently available technology, either before conception or during pregnancy.

Although several ways have been identified to reduce the risk of birth defects, often they cannot be prevented. The time to prevent many congenital anomalies is prior to conception because many occur during conception, thus calling to attention the importance of adequate preconception health. Adequate folate intake (B9) (e.g., eating leafy greens) is important to prevent defects related to a developing brain and spine, specifically neural tube defects such as spina bifida and anencephaly. Folic acid (the synthetic form of folate) is also helpful in boosting vitamin B9 intake, although it is less easily absorbed in the body. Avoiding alcohol, drug, and tobacco use during pregnancy reduces the risk of intellectual, physical, and behavioral disabilities. Avoiding infections and fevers by keeping up to date on vaccines and staying healthy reduces risks of some heart and neural tube defects. Controlling diabetes and maintaining a healthy weight also reduces the risk of many birth defects. Many birth defects are the result of certain medications taken during pregnancy or genetic mutation and hereditary genetic anomalies, so it is important that pregnant women have a healthcare provider, remain in close contact with their healthcare provider, attend adequate prenatal visits, and receive prenatal genetic testing and ultrasounds.²⁰

KEY FINDING:

Local CFR boards found that most deaths due to congenital anomalies were children that were also born prematurely.

Congenital Anomaly Death Review Findings

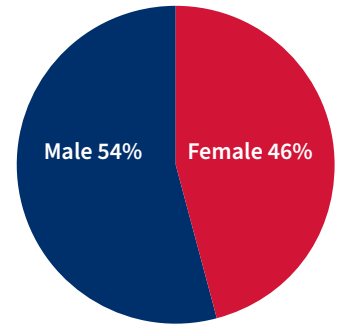
- Seventy-seven percent of reviews for congenital anomaly deaths were of infants (less than 1 year of age).
- Most congenital anomaly deaths reviewed were among children who were also born prematurely and had low birthweight.
- Congenital anomaly deaths reviewed affected all races and ethnicities.
- The leading congenital anomalies responsible for deaths reviewed were cardiovascular defects, cases with multiple defects and defects not otherwise categorized, and chromosomal defects resulting in conditions (e.g., trisomy).
- Neural tube defects accounted for 10% of congenital anomaly death reviews.

There is no disparity in the distribution of sex between congenital anomaly deaths reviewed and all CFR deaths.

Distribution of Sex Among Reviews of Congenital Anomaly Deaths, from 2018 through 2022 (n=857).

There are more than 533 disorders involving genes on the X chromosome, some with recessive inheritance and others dominant.²⁴ X-linked recessive disorders generally occur in males, although females may be carriers and more rarely may be affected by these disorders. X-linked dominant disorders also may affect both males and females, but females are affected more often and less severely.

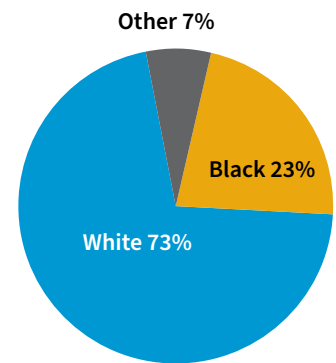
Although there are inherited disorders that affect males and females unequally, there is no evidence of an excessive burden of these disorders among congenital anomaly death reviews. Among CFR deaths due to congenital anomalies and related complications, two were of an unknown sex. Males accounted for 58% of total CFR deaths and 54% of congenital anomaly death reviews, and females accounted for 42% of total CFR deaths and 46% of congenital anomaly death reviews.



Among CFR deaths, those due to congenital anomalies were more common in White children.

Distribution of Race Among Reviews of Anomaly Deaths, from 2018 through 2022 (n=857).

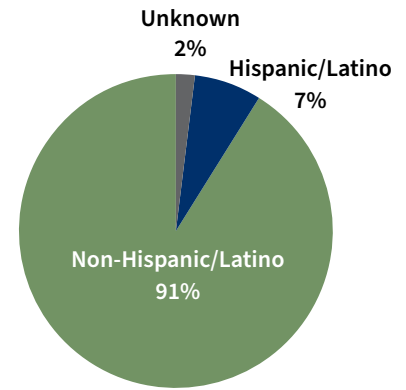
There is a statistically significant difference in the distribution of race between all CFR deaths and congenital anomaly death reviews. Black children account for 36% of all CFR deaths and 23% of congenital anomaly death reviews. White children account for 61% of total CFR deaths and 73% of congenital anomaly death reviews. Children of “other” races accounted for 3% of all CFR deaths and 7% of congenital anomaly death reviews.



There is no ethnic disparity among congenital anomaly death reviews.

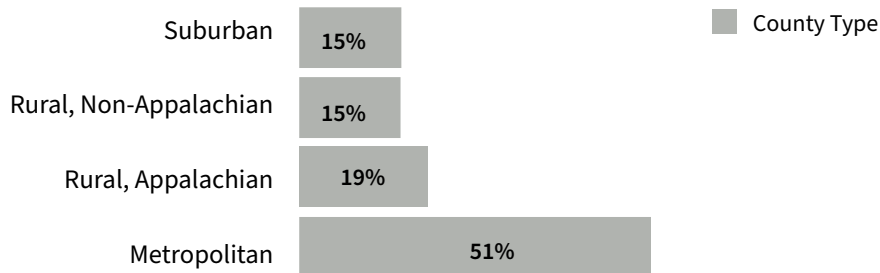
Distribution of Ethnicity Among Reviews of Anomaly Deaths, from 2018 through 2022 (n=857).

Hispanic/Latino ethnicities account for 7% of all CFR deaths and 7% of congenital anomaly death reviews. Non-Hispanic/Latino ethnicities account for 90% of all CFR deaths and 91% of congenital anomaly death reviews. Unknown ethnicity accounts for 3% of all CFR deaths and 2% of congenital anomaly death reviews. There is no statistically significant difference in the distribution of ethnicities between all CFR deaths and congenital anomaly death reviews.



There is no disparity between resident county types among congenital anomaly death reviews.

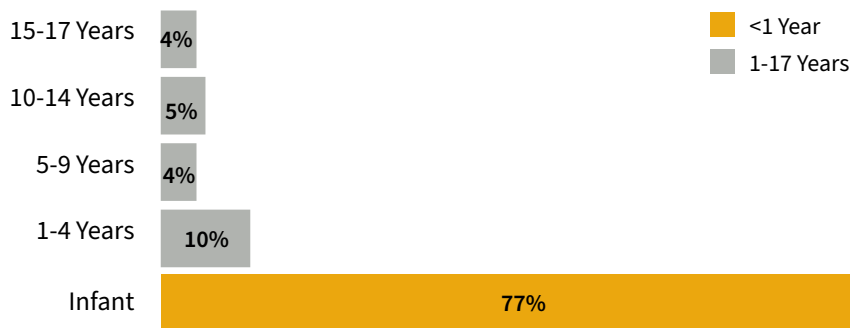
Distribution of County Type Among Reviews of Anomaly Deaths, from 2018 through 2022 (n=857).



Among congenital anomaly deaths reviewed from 2018 through 2022, 51% were from metropolitan counties, 19% were from rural Appalachian counties, 15% were from rural non-Appalachian counties, and 15% were from suburban counties. Among all CFR deaths, 58% of children lived in metropolitan counties, 17% lived in rural Appalachian counties, 12% lived in rural non-Appalachian counties, and 13% lived in suburban counties. There is no statistically significant difference in the distribution of resident county types between all CFR deaths and congenital anomaly deaths reviewed.

Most congenital anomaly deaths reviewed were infants.

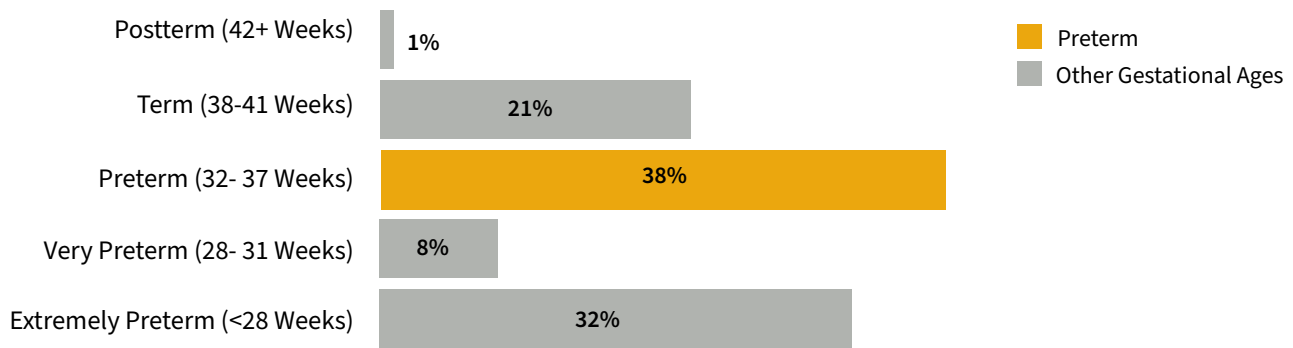
Distribution of Age Among Reviews of Congenital Anomaly Deaths, from 2018 through 2022 (n=857).



Although infants (less than one year of age) accounted for 62% of total CFR deaths, they represented 77% of reviews for congenital anomaly deaths.

Most infants who died due to congenital anomalies were born **preterm.**

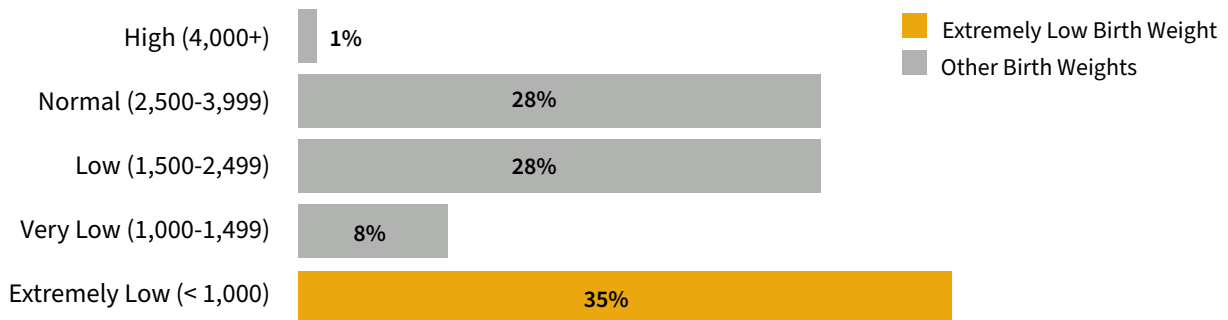
Distribution of Gestational Age Among Reviews of Congenital Anomaly Deaths, from 2018 through 2022 (n=857).



Among all CFR deaths due to congenital anomalies, 78% of children were born prematurely. Most (38%) had a gestational period between 32 and 37 weeks (i.e., preterm), followed by 32% born with less than 28 weeks gestation (i.e., extremely preterm), 21% born between 38 and 41 weeks gestation (i.e., term pregnancies), and 8% born between 28 and 31 weeks gestation (i.e., very preterm).

Most anomaly deaths occurred among infants with **extremely low birth weight.**

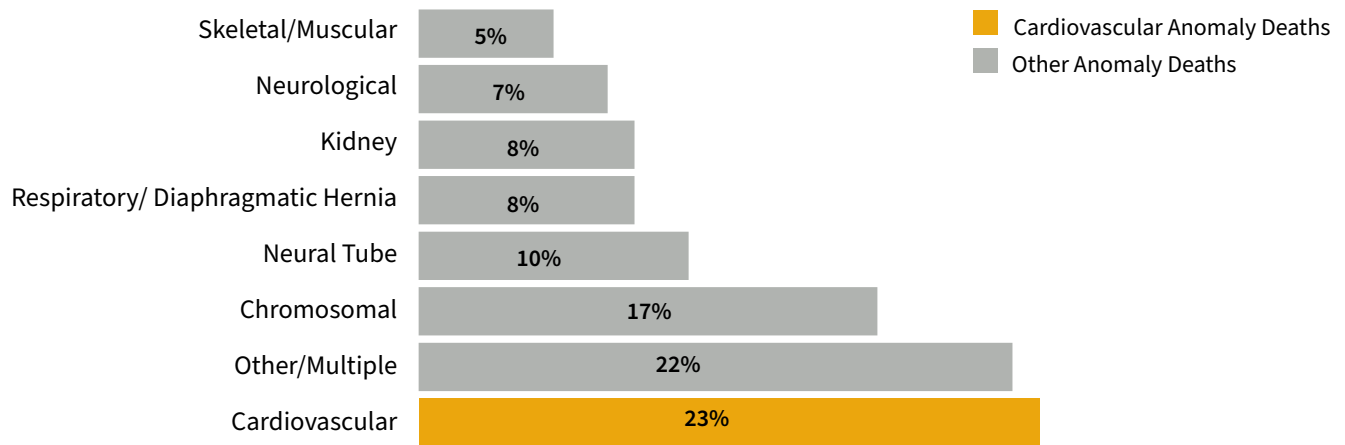
Distribution of Birth Weight Among Reviews of Congenital Anomaly Deaths, from 2018 through 2022 (n=857).



Among all CFR deaths due to a congenital anomaly, 71% were born with a low birthweight (i.e., less than 2,500 grams at birth). When low birthweight is divided into categories, 35% of children were born with an extremely low birthweight (i.e., less than 1,000 grams).

Most congenital anomaly deaths reviewed were due to cardiovascular anomalies.

Distribution of Anomaly Type Among Reviews of Congenital Anomaly Deaths, from 2018 through 2022 (n=857).



Cardiovascular congenital anomalies and their related complications accounted for 23% of congenital anomaly death reviews. Anomalies categorized as “other” accounted for 22% of congenital anomaly death reviews; these include metabolic, mitochondrial, or autoimmune diseases and defects that affect multiple bodily systems. Anomalies caused by chromosomal defects accounted for 17% of congenital anomaly death reviews (e.g., trisomy, triploidy, and x-linked diseases).

CHILD ABUSE AND NEGLECT

According to the federal Child Abuse Prevention and Treatment Act (CAPTA), child abuse and neglect is “any act or failure to act on the part of a parent or caretaker that results in death, serious physical or emotional harm, sexual abuse or exploitation, or that presents an imminent risk of serious harm.”² Physical abuse includes punching, hitting, shaking, kicking, biting, burning, or otherwise harming a child and often is the result of excessive discipline or physical punishment that is inappropriate for the child’s age. Head injuries and internal abdominal injuries are the most frequent causes of child abuse fatalities. Neglect is the “failure of parents or caregivers to provide for the basic needs of their children, including food, clothing, shelter, supervision, and medical care.”² Child deaths from neglect are attributed to malnutrition, inadequate weight gain, infections, and accidents resulting from unsafe environments and lack of supervision.

Some deaths from child abuse and neglect are the result of long-term patterns of maltreatment, while many other deaths result from a single incident. Risk factors of parents and caregivers that make them more likely to abuse or neglect a child are substance use, poverty, social isolation, domestic violence, single parenting, unresolved mental health issues, young parental age, difficulty bonding with the child, and prior history of child abuse or neglect. Providing parents with a support network, stress management resources, education, and stable employment opportunities are all shown to be effective strategies in preventing child abuse and neglect. Infants and young children, due to their need for constant care, are particularly vulnerable to mistreatment, so providing parents with the tools to manage overwhelming situations, especially parents of young children and children with disabilities, is also an effective way to prevent child abuse and neglect.³

The interagency, multidisciplinary approach of the CFR process may be the best way to recognize and assess the number and the circumstances of child abuse and neglect fatalities. However, even the CFR process is likely to undercount child abuse and neglect fatalities due to delays in reviews caused by lengthy investigations and prosecution procedures. In Ohio, local CFR boards found abuse and neglect accounted for 3% of all child death reviews. This is consistent with previous reports. Child abuse and neglect also accounted for 5% of all CFR deaths for Black children, and 3% of all CFR deaths for White children. None of the CFR deaths reviewed due to child abuse and neglect included other races.

KEY FINDING:

Local CFR boards found that more Black children die due to abuse and neglect.

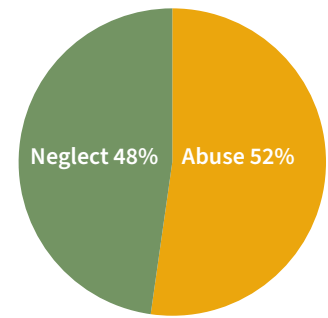
Child Abuse and Neglect Death Review Findings

- The most common social circumstance in child abuse and neglect death reviews was economic hardships (e.g., poverty, financial struggle, and food or housing insecurity). Additionally, it is likely that the prevalence of economic hardship is underestimated since local CFR boards experience difficulty in getting this information for every death reviewed.
- Most deaths reviewed due to child abuse and neglect were among children younger than five years of age.
- Failure to provide supervision and protection from hazards was the most common characteristic of neglect death reviews.
- Assault by bodily force was the most common cause of external injury deaths among abuse death reviews.

More children died from abuse than neglect.

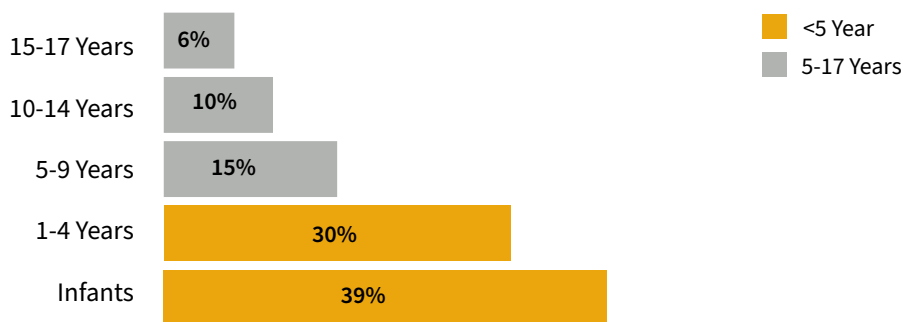
Proportion of Abuse versus Neglect Among Reviews of Deaths, from 2018 through 2022 (n=178).

CFR deaths from 2018 through 2022 found 178 deaths caused by abuse and neglect, which represents 3% of all CFR deaths. This is a slight increase from what was found in the previous year's report. Although the proportions are similar, slightly more children died from abuse compared to neglect, and this remains consistent between report years.



Most abused/neglected child fatalities were children younger than five years old.

Distribution of Age Among Reviews of Child Abuse/Neglect Deaths, from 2018 through 2022 (n=178).

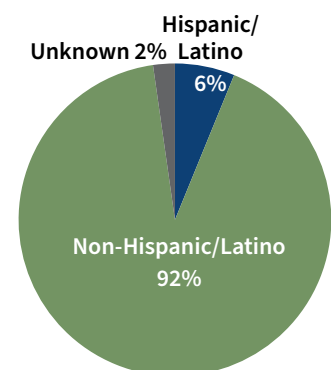


Children younger than five years old accounted for 69% of CFR deaths due to child abuse and neglect from 2018 through 2022, which is consistent with previous years. Infants (less than one year of age) represent the most deaths (39%), followed by toddlers (1 to 4 years old) (33%). Young children (5 to 9 years old) accounted for 15% of CFR deaths due to child abuse and neglect, preadolescents (10 to 14 years old) accounted for 10% of CFR deaths due to child abuse and neglect, and teenagers (15 to 17 years old) accounted for 6% of CFR deaths due to child abuse and neglect.

There is no disparity between ethnicities among abuse/neglect deaths reviewed.

Distribution of Ethnicity Among Reviews of Child Abuse/Neglect Deaths, from 2018 through 2022 (n=178).

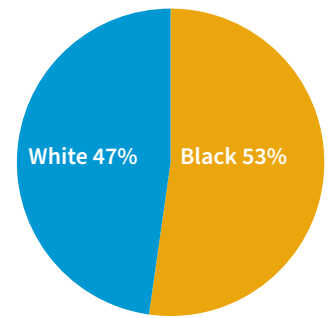
Hispanic/Latino children account for 7% of total CFR deaths and 6% of child abuse and neglect deaths reviewed. Non-Hispanic/Latino children account for 91% of total CFR deaths and 92% of child abuse and neglect deaths reviewed. There were four deaths reviewed where the child's ethnicity was unknown. There is not a statistically significant difference in the distribution of ethnicity among abuse/neglect deaths compared to all CFR deaths.



Black children are overrepresented among abuse/neglect deaths reviewed.

Distribution of Race Among Reviews of Child Abuse/Neglect Deaths, from 2018 through 2022 (n=178).

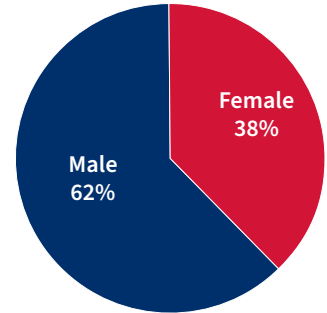
Abuse/neglect is the only specific cause of death where Black children are not only heavily overrepresented, but also where Black children represent most deaths reviewed. Black children accounted for 36% of total CFR deaths and 53% of reviews due to child abuse and neglect. White children account for 61% of all CFR deaths and 47% of reviews due child abuse and neglect. Less than 1% of child abuse and neglect deaths reviewed occurred among children of other races.



More males die due to child abuse and neglect.

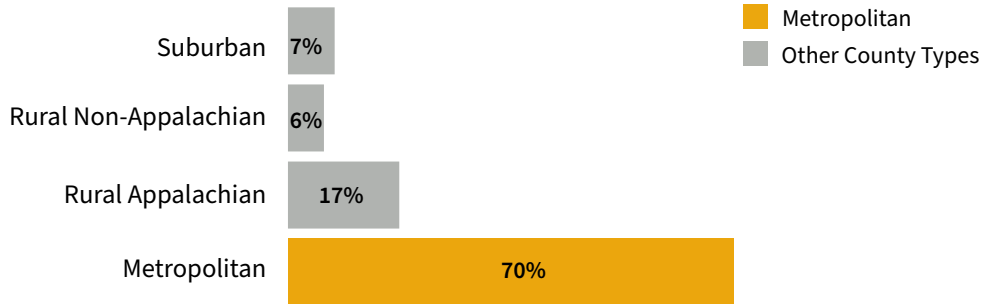
Distribution of Sex Among Reviews of Child Abuse/Neglect Deaths, from 2018 through 2022 (n=178).

Males accounted for 58% of CFR deaths and 62% of child abuse and neglect death reviews. This remains consistent with previous years. However, the difference between percentages is not statistically significant.



Children in metropolitan counties died more from abuse and neglect.

Distribution of Resident County Type Among Reviews of Child Abuse/Neglect Deaths, from 2018 through 2022 (n=178).

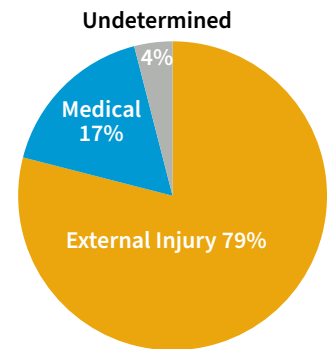


Among child abuse and neglect deaths reviewed from 2018 through 2022, 70% were from metropolitan counties, 7% were from suburban counties, 6% were from rural non-Appalachian counties, and 17% were from rural Appalachian counties. Among all CFR deaths reviewed, 58% of children lived in metropolitan counties, 17% lived in rural Appalachian counties, 12% lived in rural non-Appalachian counties, and 13% lived in suburban counties. This disparity of children from metropolitan counties being overrepresented among child abuse and neglect deaths reviewed is consistent with previous years and indicates a statistically significant difference in the distribution of residential county type between child abuse and neglect deaths reviewed and all CFR deaths.

External injuries are the leading cause of death among child abuse and neglect deaths reviewed.

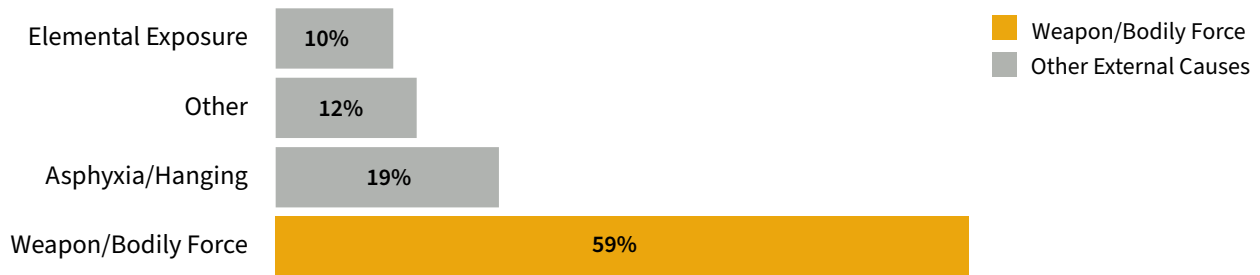
Distribution of Primary Causes of Death Among Reviews of Child Abuse/Neglect, from 2018 through 2022 (n=178).

Among the 178 abuse and neglect deaths, 79% were due to external injuries, 17% were due to medical causes, and 4% were undetermined primary causes.



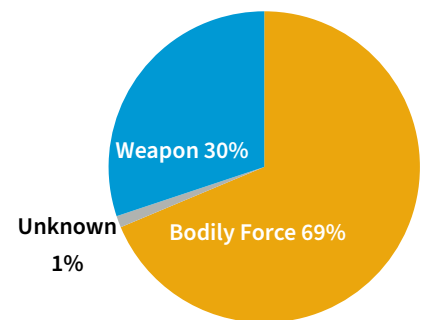
Bodily force was the leading cause of external injury deaths among child abuse and neglect deaths reviewed.

Distribution of External Injury Causes Among Reviews of Child Abuse/Neglect Deaths, from 2018 through 2022 (n=140).



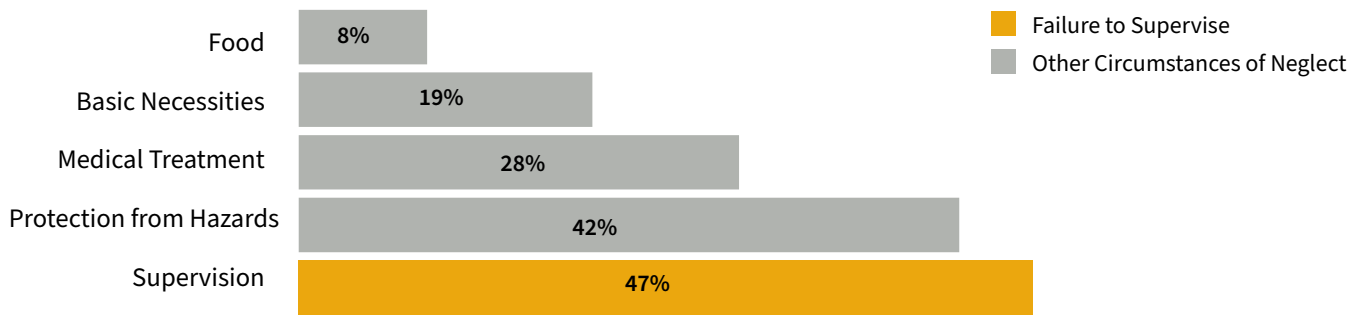
Among the 140 reviews of child abuse and neglect deaths due to external injuries, 59% were from weapons or bodily force, 19% were from asphyxia, aspiration or hanging, 12% were “other” causes (e.g., poisonings, vehicular deaths, and undetermined cause), and 10% were due to elemental exposure (e.g., drowning, fires, burns, or hyperthermia/hypothermia).

Among child abuse and neglect deaths reviewed due to bodily force or weapons, 69% were caused by traumatic physical injuries from bodily force, 30% by weapons, and 1% were of unknown cause. Deaths due to bodily force include deaths directly due to beating, pushing, and violent shaking, as well as the complications resulting from those traumatic physical injuries.



Failure to supervise was the most common trait involved in neglect deaths reviewed.

Distribution of Circumstances Among Reviews of Neglect Deaths, from 2018 through 2022 (n=85).



Among the 85 neglect deaths reviewed, the most common circumstance surrounding the death was failure to provide adequate supervision, accounting for 47% of all neglect deaths reviewed. The second most common circumstance was a failure to protect against hazards (42%) (e.g., unsafe sleep environment, unsecured medication, drugs, or poisons, fire, water, motor vehicles, and firearms). Twenty-eight percent of neglect deaths reviewed involved failure to provide medical treatment, 19% involved a failure to provide basic necessities, and 8% involved a failure to provide food. These circumstances are not mutually exclusive, and many deaths involved more than one of these circumstances.

COVID-19

Starting in the U.S. in 2020, COVID-19 caught the public health workforce by surprise and, as data continues to be collected, we are better situated to understand the past and future impacts of COVID-19 on Ohioans. Since the 23rd Annual Child Fatality Report only contains two years of COVID-19 data, more robust data will follow in the coming years' reports. It is important to note that there was no data field available (section I8) for local boards to enter COVID-19 death in the case reporting system until April 2021. Additionally, due to a lack of testing technology and lags in case reporting, it is difficult to have a complete picture of the impact of COVID-19 on child deaths at the time of this report.

The CDC has found that nationally, children represent 17% of all COVID-19 cases, and less than 1% of all COVID-19 deaths. The distribution of national child COVID-19 infections by race resembles the national race and ethnicity distribution, except for Hispanic children, who are overrepresented among reported COVID-19 infections. For Black children, the distribution of COVID-19 deaths does not resemble race distribution as closely as overall infection does. Black children, although not more likely to contract COVID-19, are more likely to die from it.⁴

In Ohio, deaths related to COVID-19 accounted for 1% of reviews of deaths that occurred from 2020 through 2022. COVID-19 also represented 0.8% of all death reviews for Black children during this time, 1% of all death reviews for White children, and 1% of all death reviews for children of other races.

KEY FINDING:

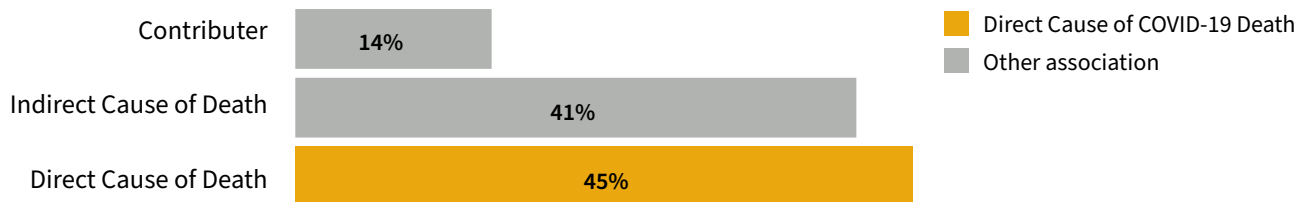
In Ohio, deaths related to COVID-19 accounted for 1% of reviews of deaths that occurred from 2020 through 2022.

COVID-19 Death Review Findings

- Among the 19 COVID-19 deaths, 89% (17) were Non-Hispanic/Latino, and the remaining reviews were of an unknown ethnicity.
- Most COVID-19 related death reviews were for teenage children 15 to 17 years old.

COVID-19 was most commonly the **direct cause of death** among child death reviews.

The Impact of COVID-19 Among Reviews of Deaths, from 2020 through 2022 (n=49).



When attempting to understand the impact of COVID-19, the public health interest is not only death directly from infection, but also death from the sequence of medical effects from infection and violent deaths resulting from the economic and mental hardships.²² Due to this multifaceted interest, there are varying categories for analyzing COVID-19 impact on death. Indirect cause of COVID-19 death is defined as death resulting from previously existing conditions, but the condition was aggravated by COVID-19, or the difficulty in accessing medical care because of the pandemic. If COVID-19 was determined to be an underlying cause of death, then COVID-19 initiated events that led directly to death. If COVID-19 is determined to be a direct cause of death, then COVID-19 infection directly caused death.

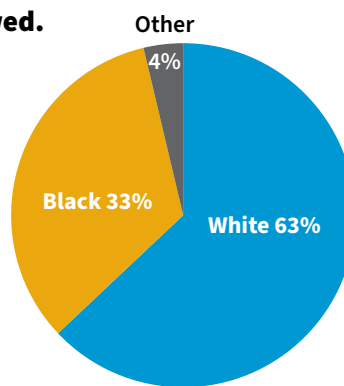
Since the beginning of COVID-19 in 2020, local CFR boards have found 49 child deaths that were either directly or indirectly associated with COVID-19. Most (n=22 or 45% of COVID-19 related deaths) were reported as COVID-19 directly causing death. There were 20 reviews (41%) that found COVID-19 indirectly caused a child’s death, and the remaining seven death reviews found the effects of COVID-19 as a contributing factor in homicide or suicide.

For the remaining analysis on COVID-19 related reviews, deaths due to COVID-19 as either an underlying cause, a direct cause, or a contributor to death will all be included.

There is no disparity between races among COVID-19 deaths reviewed.

Distribution of Race Among Reviews of COVID-19 Related Deaths, from 2020 through 2022 (n=27).

Black children accounted for 36% of total CFR deaths and 33% of COVID-19 related deaths reviewed. White children accounted for 61% of total CFR deaths and 63% of reviews related to COVID-19. Children of other races accounted for 3% of total CFR deaths and 4% of reviews related to COVID-19. Due to low numbers, there is no statistically significant difference in the distribution of race among COVID-19 deaths reviewed when compared to all CFR deaths.



Most COVID-19 related deaths were teenagers.

Distribution of Age Among Reviews of COVID-19 Related Deaths, from 2020 through 2022 (n=27).

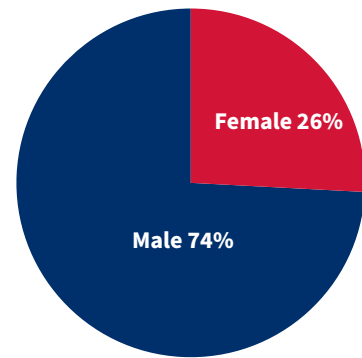


There were no infant deaths due to COVID-19 among CFR deaths reviewed between 2020 and 2022. Young children (5 to 9 years old) accounted for 5% of total CFR deaths but 15% of COVID-19 related death reviews. Teenagers (15 to 17 years old) accounted for 12% of total CFR deaths but 48% of COVID-19 related death reviews. Due to low numbers, interpretations cannot yet be made on the impact of COVID-19 among pediatric age groups in Ohio, but teenagers do represent most (48%) COVID-19 related death reviews.

Most deaths reviewed due to COVID-19 were of males.

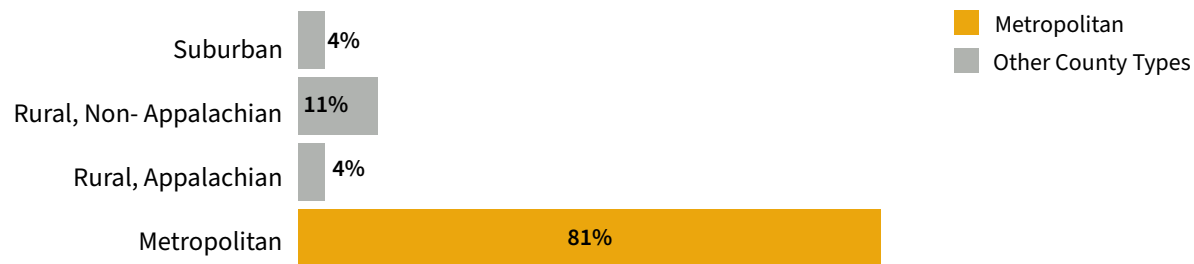
Distribution of Sex Among Reviews of COVID-19 Related Deaths, from 2020 through 2022 (n=27).

Males accounted for 58% of all CFR deaths and 74% of COVID-19 deaths reviewed. Females accounted for 42% of all CFR deaths and 26% of COVID-19 deaths reviewed. Although there appears to be a large difference between percentages, the number of total deaths in children related to COVID-19 is small, and the statistical test does not indicate a significant disparity in the distribution of sex among COVID-19 deaths reviewed compared to all CFR deaths.



Most child deaths reviewed due to COVID-19 occurred among metropolitan county residents.

Distribution of Resident County Types Among Reviews of COVID-19 Related Deaths, from 2020 through 2022 (n=27).



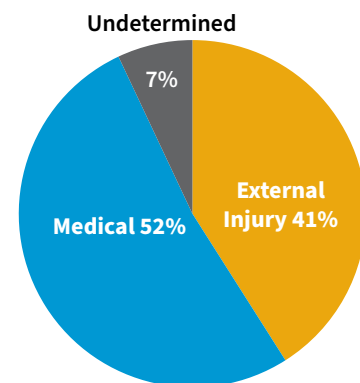
Among COVID-19 deaths reviewed from 2020 through 2022, 81% were from metropolitan counties, 4% were from suburban counties, 11% were from rural non-Appalachian counties, and 4% were from rural Appalachian counties. Among all CFR deaths, 58% of children were from metropolitan counties, 17% were from rural Appalachian counties, 12% were from rural non-Appalachian counties, and 13% were from suburban counties. However, due to the small number of deaths related to COVID-19, the statistical test does not indicate a significant disparity between resident county types among COVID-19-related deaths compared to all CFR deaths.

Medical conditions and external injury deaths reviewed were almost equally distributed among COVID-19 deaths.

Distribution of Medical Conditions Among Reviews of COVID-19 Related Medical Deaths, from 2020 through 2022 (n=27).

Medical conditions accounted for 52% of COVID-19 related death reviews. Among those medical deaths, 44% were due to infection, and the rest were undetermined medical causes of death, cancer, and respiratory conditions/asthma. (Data not included in graph due to low numbers).

External injuries accounted for 41% of COVID-19 related reviews. Among those external causes of death, 56% were undetermined external causes of death, and the rest were due to weapons or bodily force, hangings, falls/crashes, and poisoning (i.e., indirectly associated with COVID-19). (Data not included in graph due to low numbers).



Natural manner of death accounted for 52% of COVID-19 reviews, suicide accounted for 22%, and the rest were accidents, homicides, or undetermined manner of death. It is important to recognize that COVID-19 affected more than those who were directly infected by the virus, as there exists a contextual relationship between poor outcomes (e.g., financial and mental health) because of the pandemic and indirect COVID-19 related child deaths. External injury deaths accounted for 41% of COVID-19 related reviews. Among those external causes of death, 56% were undetermined external causes of death, and the rest were due to weapons or bodily force, hangings, falls/crashes, and poisoning (i.e., indirectly associated with COVID-19). (Data not included in graph due to low numbers).

DROWNING

Drowning is the process of experiencing respiratory impairment from submersion/immersion in liquid. Many drowning injuries occur in recreational water settings, including pools and spas/hot tubs, and natural water settings (e.g., lakes, rivers, or oceans). Several factors influence drowning risk, such as lack of swimming ability, lack of barriers that prevent unsupervised water access, lack of close supervision while swimming, location, failure to wear life jackets, alcohol use, and seizure disorders. Drowning is a leading cause of injury-related death in children, and it continues to be a public health problem affecting some of our most vulnerable population groups.

According to the CDC, the unadjusted death rate for drowning deaths in the United States is 1.1 per 100,000 children, making drowning the eighth leading cause of death between 2017 and 2020.¹ Children ages 1 to 4 years account for most drowning deaths nationally. In Ohio, drowning accounts for 2% of all CFR deaths from 2018 through 2022. These deaths include cases in which the child died while drowning, as well as cases in which the child suffered effects from near-drowning and later died from related complications. Reviews of drowning deaths represented 2% of all reviews for Black child deaths, 2.4% of all reviews for White child deaths, and 3% of all reviews for deaths of children of other races.

KEY FINDING:

Local CFR boards found that most drownings deaths reviewed occurred in a privately owned pool.

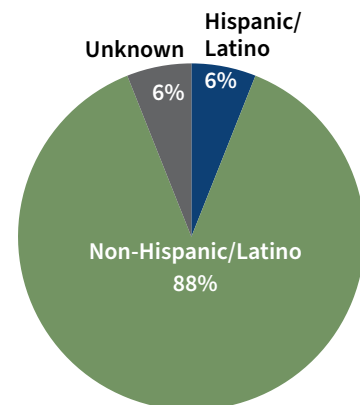
Drowning Death Review Findings:

- Most drowning deaths were found to be accidental (95%).
- Most pool-related drowning reviews found that there were no safety resources available (e.g., lifeguard or supervising adult, floatation device, or rescue device).
- In all reviews, there was either no security feature to prevent entry into the pool, or the security features were not implemented or easily unlocked.

There is no disparity in ethnicity among drowning deaths reviewed.

Distribution of Ethnicity Among Reviews of Drowning Deaths, from 2018 through 2022 (n=128).

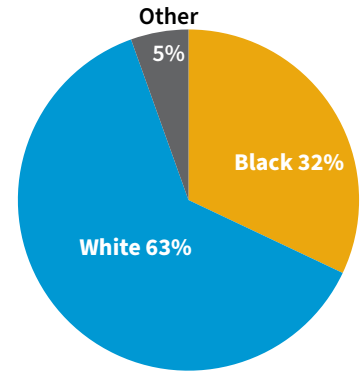
Hispanic/Latino children account for 7% of all CFR deaths and 6% of drowning death reviews. Non-Hispanic/Latino children account for 90% of all CFR deaths and 88% of drowning death reviews. Children of unknown ethnicities account for 3% of all CFR deaths and 6% of drowning death reviews. There is no statistically significant difference in the distribution of ethnicity among drowning deaths reviewed when compared to all CFR deaths.



There is no disparity between races among drowning deaths reviewed.

Distribution of Race Among Reviews of Drowning Deaths, from 2018 through 2022 (n=128).

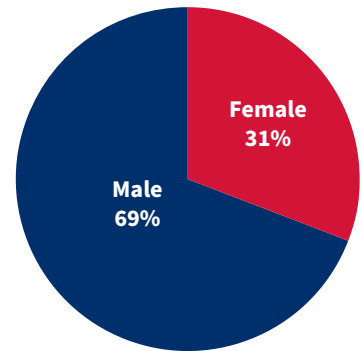
Black children account 37% of total CFR deaths and 32% of drowning and near-drowning death reviews. White children account for 61% of total CFR deaths and 63% of drowning and near-drowning death reviews. Children of other races account for 3% of total CFR deaths and 5% of drowning and near-drowning death reviews. The distribution of race is not significantly different between drowning deaths reviewed and all CFR deaths.



Males were overrepresented among drowning deaths reviewed.

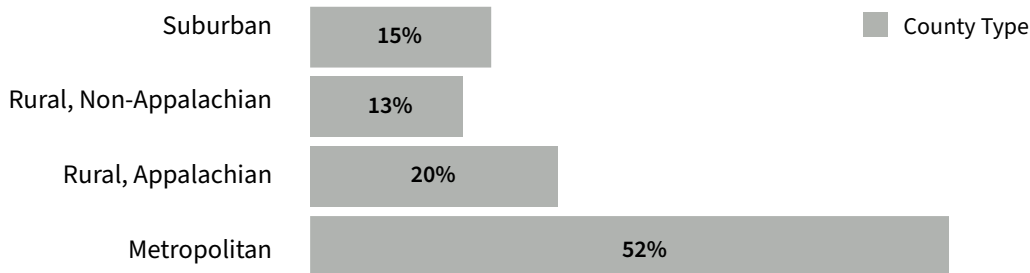
Distribution of Sex Among Reviews of Drowning Deaths, from 2018 through 2022 (n=128).

Males accounted for 58% of CFR deaths and 69% of drowning and near-drowning death reviews. Females accounted for 42% of CFR deaths and 31% of drowning and near-drowning death reviews. This represents a significant difference in the distribution of sex between drowning deaths and all CFR deaths, with males being overrepresented.



There is no disparity in resident county types among drownings deaths reviewed.

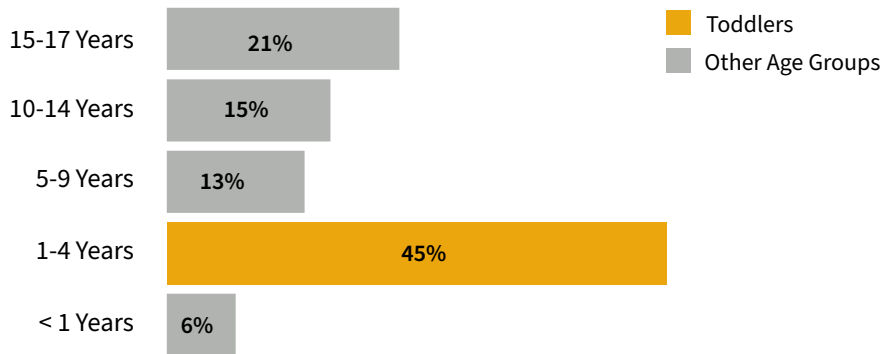
Distribution of County Types Among Reviews of Drowning Deaths, from 2018 through 2022 (n=128).



Among drowning deaths reviewed from 2018 through 2022, 52% were from metropolitan counties, 20% were from rural Appalachian counties, 13% were from rural non-Appalachian counties, and 15% were from suburban counties. Among all CFR deaths, 58% were from metropolitan counties, 17% were from rural Appalachian counties, 12% were from rural non-Appalachian counties, and 13% were from suburban counties. This difference is not large enough to indicate a statistically significant difference in the distribution of resident county type between drowning deaths reviewed and all CFR deaths.

Most drowning deaths reviewed occurred among **toddlers**.

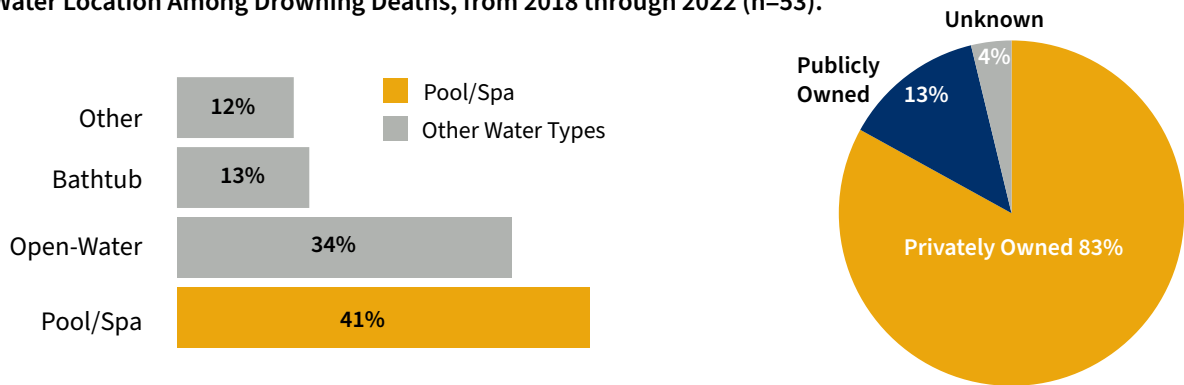
Distribution of Age Among Reviews of Drowning Deaths, from 2018 through 2022 (n=128).



Toddlers (1 to 4 years of age) accounted for the most drowning and near-drowning death reviews (45%). Although most child deaths of all causes that were reviewed by local CFR boards were for infants (less than 1 year old), infants accounted for the least number of reviews due to drowning deaths. Teenagers (15 to 17 years old) accounted for the second-largest number of drowning death reviews (21%).

Most drownings occurred in **private pools**.

Reviews by Water Location Among Drowning Deaths, from 2018 through 2022 (n=53).

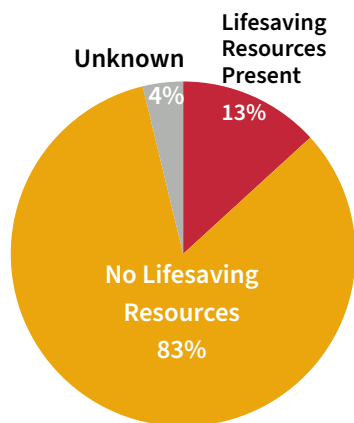
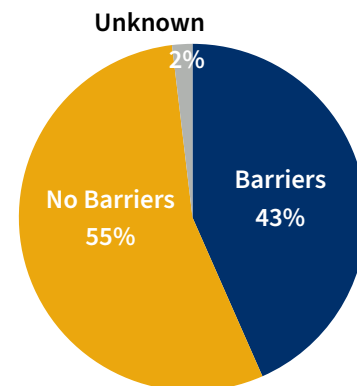


Most drowning deaths reviewed occurred in a pool/spa (41%). Among deaths that occurred in a pool or spa, local CFR boards found that 83% were privately owned, only 2% of children had a personal flotation device, and 13% of children knew how to swim. Barriers (e.g., gates or fencing around a pool/spa) existed for less than half of pool/spa drowning deaths (43%) and the majority of those barriers that existed were not in place during the drowning event (65%). (Data not included in above graphic).

Most pools/spas had no safety measures in place.

Reviews of Pool/Spa Drownings by Safety Measures Among Drowning Deaths, from 2018 through 2022 (n=53).

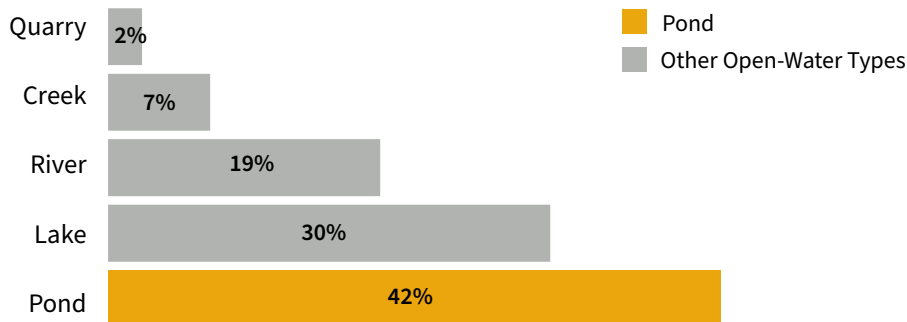
Most drowning and near-drowning incidents at a pool/spa did not have barriers put in place. Barriers limiting access to the water include pool covers, doors, gates, alarms, and fencing. Local CFR boards found that 55% of cases had no barriers, 43% of cases had a barrier, and 2% of reviews did not have this information. Among the cases where a barrier did exist, in most incidences, these barriers were left open or unlocked, so that children were still able to access the water (data not included in graphic).



Only 13% of drowning and near-drowning death reviews found that there were lifesaving resources available at the scene, including a lifeguard or supervising adult, a flotation device, or other rescue equipment.

Most open-water drownings occurred in ponds.

Reviews of Open-Water Drowning by Water Type Among Drowning Deaths, from 2018 through 2022 (n=43).



Among open-water drowning and near-drowning deaths reviewed, the majority (42%) were in a pond. Lakes accounted for the second largest number of open-water drowning deaths reviewed (30%), followed by rivers (19%), creeks (7%), and then quarries (2%).

FIREARMS

During 2020, firearm deaths accounted for a national crude death rate of 3.1 per 100,000 children ages 0 to 17 years old (a total of 2,281 deaths). Most of these deaths were homicides (1,376) and suicides (721). When stratified by race and injury intent, the death rate of Black children in homicides is 6.8, compared to the much lower homicidal firearm death rate of White children (0.9). White children had the highest rate of suicide by firearms in 2020, 1.1 per 100,000 children (594 deaths).

In Ohio, firearm deaths represented 6% of all CFR deaths from 2018 through 2022. Reviews for firearm deaths also represented 8% of all reviews for Black children, 5% of all reviews for White children, and 3% of all reviews for deaths of children of other races. Recommendations to prevent these deaths included securing firearms at home, distributing free gun locks, increased domestic violence support for mothers and their children, fully integrating mental health support into school-based health centers, reducing/eliminating school bullying, preventing children from becoming associated with gangs, early identification of depression in youth, increasing access to positive mentorship for youth, and strengthening education and support for families of suicidal children.

KEY FINDING:

Local CFR boards found that most firearm deaths involved firearms that were unlocked, easily accessible, or not fully secured because children knew a safe combination or location of a key.

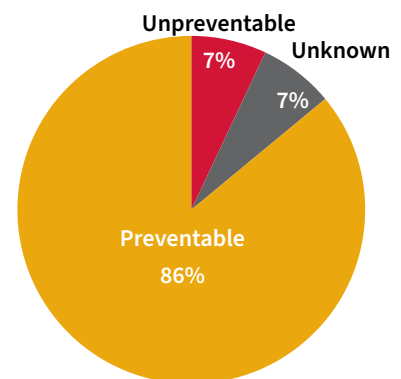
Firearms Review Findings:

- Homicidal firearm deaths were highest among Black children, and suicidal firearm deaths were highest among White children.
- Most firearm deaths were reviews for male children.
- Black children accounted for most firearm death reviews.

Most firearm deaths reviewed were preventable.

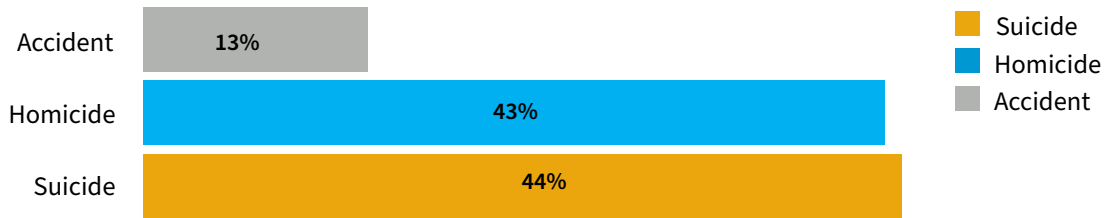
Distribution of Preventability Among Reviews of Firearms Deaths, from 2018 through 2022 (n=315).

Most reviews (86%) found that the death due to a firearm was preventable; 7% were determined to not be preventable, and the preventability could not be determined in 7% of reviews.



Most firearm deaths were due to suicide or homicide.

Distribution of Manner of Death Among Reviews of Firearms Deaths, from 2018 through 2022 (n=315).



Local CFR boards found that most firearm deaths reviewed were for suicides and homicides, not accidental firearm discharge. Suicide was the leading manner of death found in firearm death reviews (44%), followed by homicide (43%), and then accident (13%).

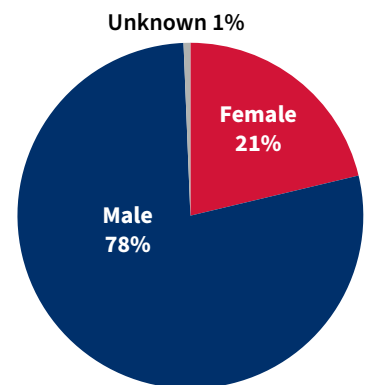
Homicide firearm deaths included children intentionally targeted by another person, children that were victims of crime of passion shootings, bystanders, and drive-by shootings. Among all homicidal firearm deaths reviewed, 20% were known to be due to domestic violence, where the perpetrator was a parent or guardian, grandparent, sibling, or boyfriend. In 13% of homicidal firearm deaths reviewed, children died while involved in criminal activity (e.g., robbery, drug dealing, and assaulting an officer). (Data not included in the above graphic).

Accidental firearm deaths reviewed include cases in which the firearm was not appropriately handled and was accidentally discharged, cases in which children found a firearm and attempted to handle it, play with it or show it to friends, and other similar circumstances of inappropriate handling of a firearm.

Males are overrepresented among firearm deaths.

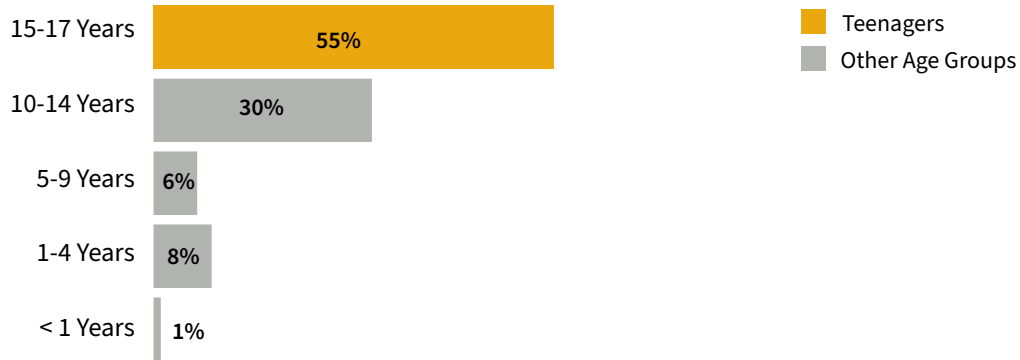
Distribution of Sex Among Reviews of Firearms Deaths, from 2018 through 2022 (n=315).

Males accounted for 58% of all CFR deaths and 79% of firearm death reviews. Females accounted for 42% of all CFR deaths and 21% of firearm deaths. There is a statistically significant difference in the distribution of sex between firearm deaths and all CFR deaths, with males being overrepresented.



Most firearm deaths were among teenagers.

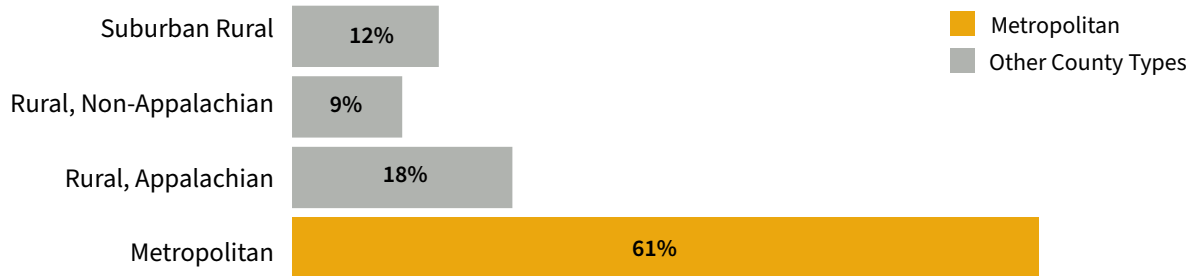
Distribution of Age Among Reviews of Firearms Deaths, from 2018 through 2022 (n=315).



Over half of all child deaths reviewed due to firearms were teenagers (15 to 17 years old) (55%). Preadolescents (10 to 14 years old) accounted for 30% of firearm deaths reviewed, young children (5 to 9 years old) accounted for 6%, toddlers (1 to 4 years old) accounted for 8%, and infants (less than one year old) accounted for 1%.

Most child deaths reviewed due to firearm injuries were among metropolitan county residents.

Distribution of County Type Among Reviews of Firearms Deaths, from 2018 through 2022 (n=315).

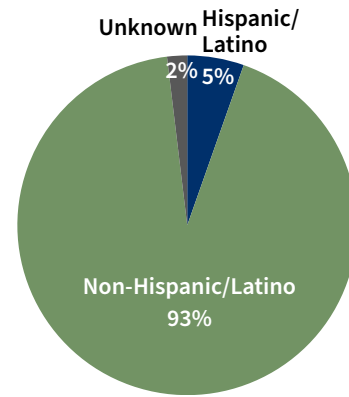


Among firearm deaths reviewed from 2018 through 2022, 61% were from metropolitan counties, 18% were from rural Appalachian counties, 9% were from rural non-Appalachian counties, and 12% were from suburban counties. Among all CFR deaths, 58% of children were from metropolitan counties, 17% were from rural Appalachian counties, 12% were from rural non-Appalachian counties, and 13% were from suburban counties. There is no significant difference in the distribution of resident county type between firearm deaths reviewed when compared to all CFR deaths.

There is no ethnic disparity among firearm deaths reviewed.

Distribution of Ethnicity Among Reviews of Firearms Deaths, from 2018 through 2022 (n=315).

Hispanic/Latino children accounted for 7% of total CFR deaths and 5% of firearms death reviews. Non-Hispanic/Latino children accounted for 91% total CFR deaths and 93% firearm death reviews. Children of unknown ethnicities accounted for 3% of total CFR deaths and 2% of firearm death reviews. There is no statistical difference in the distribution of ethnicity between firearm deaths reviewed and all CFR deaths.



Firearms were usually not secured.

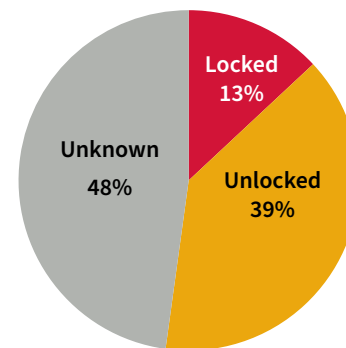
Distribution of Firearm Security by Manner of Death Among Reviews of Firearms Deaths, from 2018 through 2022 (n=180).

Among firearm deaths reviewed due to both suicide and accidental manners, more reviews involved unlocked firearms when compared to locked firearms, with accidents having a higher percentage of unlocked firearms. However, there were many cases where this information was not known, so care should be taken in interpreting this data.

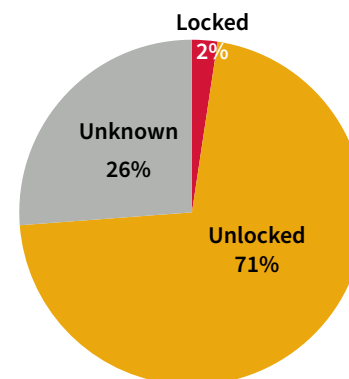
Additionally, local CFR boards found that in most cases where a firearm was secured, the key was accessible or the combination to the gun safe was known to the child, so they were still able to access the firearm. (Data not included in above graphic).

Local CFR boards were not able to find firearm specifics in many reviews, but among cases in which local CFR boards had information on the firearm, handguns accounted for the most firearm deaths reviewed across all manners of death. (Data not included in graphic). Firearms used in the death of a child were known to be stolen in only 3% of all firearm deaths reviewed, but 2% of homicides, 7% of accidents, and 4% of suicides. Firearms were known to have belonged to a caregiver or other family member in 36% of all firearm deaths reviewed, but 15% of homicides, 60% of accidents, and 49% of suicides. (Data not included in graphic).

Suicide (n= 138)



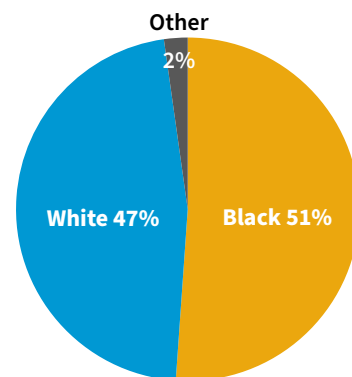
Accident (n= 42)



Black children are highly overrepresented among firearm deaths reviewed.

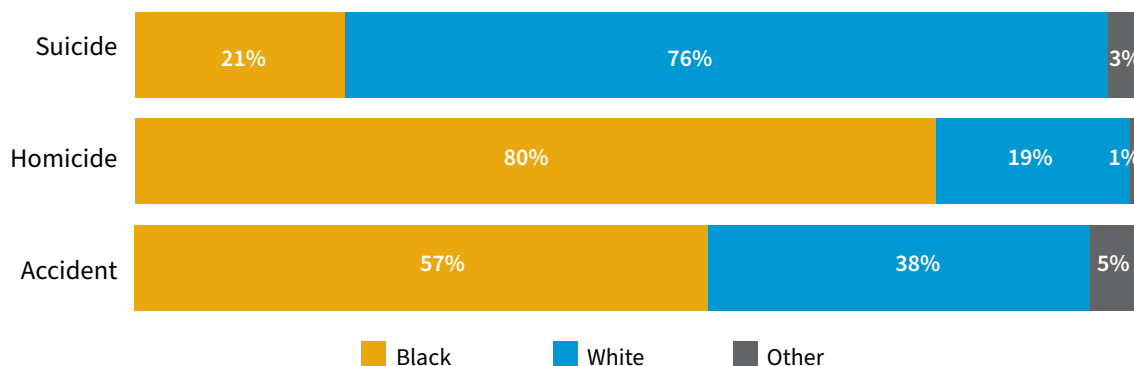
Distribution of Race Among Reviews of Firearms Deaths, from 2018 through 2022 (n=315).

Black children account for 36% of total CFR deaths and 51% of firearm death reviews. White children account for 61% of total CFR deaths and 47% of firearm death reviews. Children of other races account for 3% of CFR deaths and 2% of firearm death reviews. These proportions are significantly different, indicating there is a disparity between the distribution of race among firearm deaths compared to all CFR deaths.



There is a clear racial disparity between manners of firearm deaths reviewed.

Distribution of Race by Manner of Death Among Reviews of Firearms Deaths, from 2018 through 2022 (n=315).



Local CFR boards found that 51% of firearm death reviews were among Black children, 47% of firearm deaths were among White children, and 2% of firearm death reviews were among children of other races (Native American/Alaskan, Asian/Pacific Islander, and unknown race). When firearm death reviews are stratified by race and manner of death, there are noticeable differences in cause of firearm deaths between races. Black children are most affected by homicidal firearm deaths and White children are most affected by suicidal firearm deaths.

Among accidental firearm deaths reviewed, 57% were for Black children and 38% were for White children. Among homicidal firearm death reviews, Black children accounted for 80%, White children accounted for 19%, and children of other races accounted for only 1%. Among suicidal firearm deaths reviewed, 76% of reviews were for White children, 21% were for Black children, and 3% of reviews were for children of other races.

INFANT SLEEP-RELATED DEATHS

Nationally, there was a high infant death rate from 2017 through 2020 due to either suffocation in bed or sudden infant death syndrome (SIDS). During this period, there were 8,981 deaths, with an unadjusted death rate of 58.7 per 100,000 infants.¹ In Ohio, infant sleep-related deaths accounted for 12.4% of all deaths reviewed from 2018 through 2022. Reviews of infant sleep-related deaths also represented 18.7% of all deaths reviewed for Black children, 9% of all deaths reviewed for White children, and 8% of all deaths reviewed for children of other races.

The cause of death that occurs during infant sleep is often difficult to determine. Some cases are diagnosed as SIDS, while others are diagnosed as accidental suffocation, positional asphyxia, overlay (the obstruction of breathing caused by the weight of a person or animal lying on the infant), or undetermined. SIDS is a medical cause of death and the diagnosis is given to a sudden death of an infant under one year of age that remains unexplained after the performance of a complete postmortem investigation, which includes an autopsy, an examination of the scene of death, and a review of the infant's health history.⁵ Therefore, SIDS and "undetermined" deaths may be intermingled; however, they are not the same. Incomplete investigations, ambiguous findings, and the presence of known risk factors for other causes of death add to the difficulty of determining cause of death. SIDS is not exclusive to sleep, it also happens while the infant is awake, so an unexplained sleep-related death should not automatically be determined to be from SIDS. Similarly, an infant death that occurs while the infant is asleep is not always due to sleep conditions.

Preterm infants and low birthweight infants have a higher risk of death due to sleep-related causes. Preterm birth is defined as birth at less than 37 weeks gestation. Low birth weight is defined as a weight less than 2,500 grams, moderately low birth weight is defined as weight between 1,500 and 2,499 grams, very low birth weight is defined as weight less than 1,500 grams, and normal birthweight is defined as weight between 2,500 and 3,999 grams.⁷

In this report, an infant death is classified as a sleep-related death during the review if either the infant was sleeping and the sleep environment may have contributed to the death, or the infant died of asphyxia or crushing due to the sleep environment. For example, infants with respiratory infections may have excessive difficulty breathing due to unsafe sleep position or environment, therefore death reviews in this context would be determined to be sleep-related. Additionally, autopsy findings that show evidence of respiratory distress prior to death, in the context of an unsafe sleep environment, would be sufficient to determine the cause of death as sleep-related asphyxia.

To reduce infant deaths, the American Academy of Pediatrics has provided evidence-based guidelines for safe sleep. Sleeping in the same room as the infant (i.e., room sharing) is encouraged until the infant is at least six months of age. Infants are at lowest risk for sleep-related deaths when they are placed to sleep on their back on a firm, flat surface, without bedding, animals, soft objects, or other people in the immediate sleeping area (i.e., sleep surface). Infants who can roll are allowed to remain in their chosen sleep position. Since there are no peer-reviewed publications on the safety of in-bed sleepers, they are not recommended. The recommended sleep surfaces are cribs, bassinets, portable cribs, bedside sleepers, or play yards that meet federal safety standards.⁶ Although bed sharing is not advised to meet safe sleep standards, the American Academy of Pediatrics acknowledges that it may happen unintentionally when an adult falls asleep. Any soft objects (e.g., memory foam mattress toppers, blankets, pillows, stuffed animals, and pets) add a very high risk of death due to breathing obstruction or overheating. Since the risk of death due to bed sharing increases with duration, it is recommended that the infant is returned to their separate sleep surface immediately upon the adult waking.⁶

Infant Sleep-Related Death Review Findings

KEY FINDING:

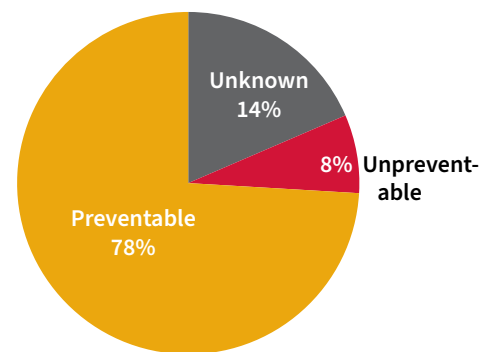
Local CFR boards found that 78% of infant sleep-related deaths reviewed were preventable.

- The most common manners of death among infant sleep-related death reviews were accidental (54%) and undetermined (34%). Only 11% of sleep-related deaths reviewed were determined to be natural in manner.
- Black infants were highly overrepresented among infant sleep-related death reviews.
- The most common medical cause of death among infant sleep-related deaths was infection.
- The most common external cause of death among infant sleep-related deaths was asphyxia.
- Most infant sleep-related deaths involved an unsafe sleep surface (e.g., an adult bed or couch), an unsafe sleep environment (e.g., comforters or pillows), or an unsafe sleep position (e.g., infant placed on their stomach).

Most infant sleep-related deaths reviewed were preventable.

Distribution of Preventability Among Reviews of Infant Sleep-Related Deaths, from 2018 through 2022 (n=682).

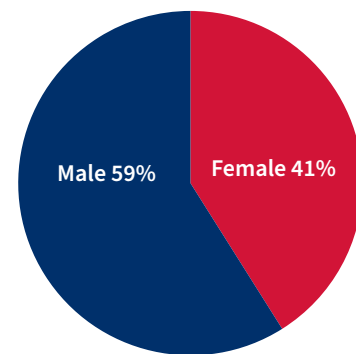
Among all reviews of infant sleep-related deaths, 78% were determined to be preventable, 8% were determined to be unpreventable, and the remaining were either unknown or missing data.



There is no disparity between sexes among infant sleep-related deaths reviewed.

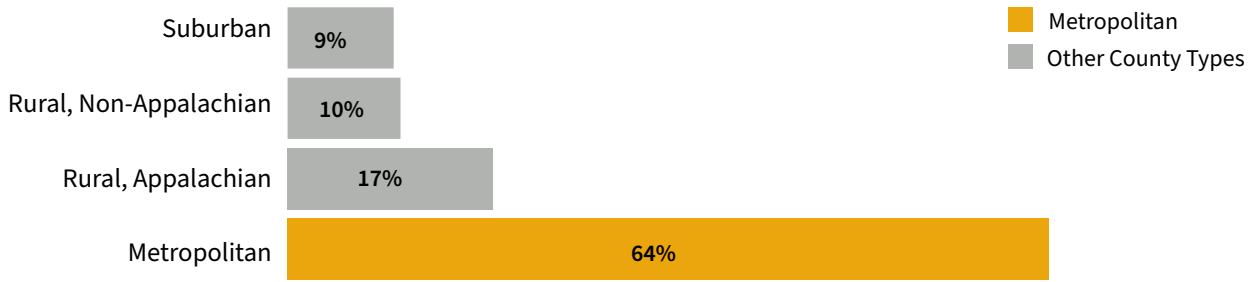
Distribution of Sex Among Reviews of Infant Sleep-Related Deaths, from 2018 through 2022 (n=682).

Males accounted for 58% of all CFR deaths and 59% of infant sleep-related death reviews. Females accounted for 42% of all CFR deaths and 41% of infant sleep-related death reviews. There is no statistically significant difference in the distribution of sex between infant sleep-related deaths reviewed and all CFR deaths.



Metropolitan counties are overrepresented among infant sleep-related deaths reviewed.

Distribution of Resident County Types Among Reviews of Infant Sleep-Related Deaths, from 2018 through 2022 (n=682).

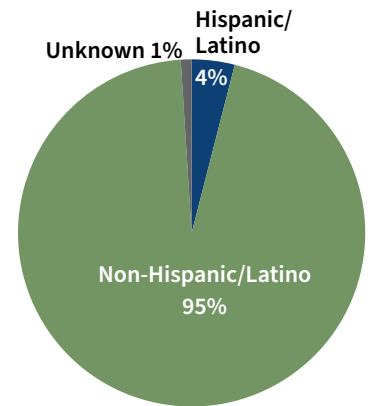


Among infant sleep-related deaths reviewed from 2018 through 2022, 64% were from metropolitan counties, 17% were from rural Appalachian counties, 10% were from rural non-Appalachian counties, and 9% were from suburban counties. Among all CFR deaths, 58% of children were from metropolitan counties, 17% were from rural Appalachian counties, 12% were from rural non-Appalachian counties, and 13% were from suburban counties. Infant sleep-related deaths are statically more common among metropolitan counties, indicating an increased public health burden among metropolitan county residents for infant sleep-related deaths.

There is no ethnic disparity among infant sleep-related deaths reviewed.

Distribution of Ethnicity Among Reviews of Infant Sleep-Related Deaths, from 2018 through 2022 (n=682).

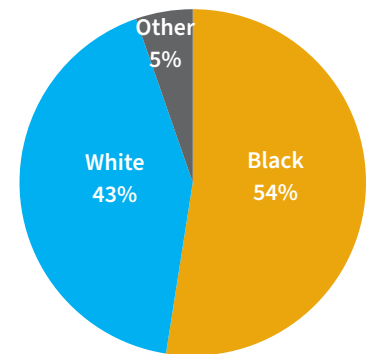
Hispanic/Latino children account for 7% of all CFR deaths and 4% of infant sleep-related deaths reviewed. Non-Hispanic/Latino children account for 91% of all CFR deaths and 95% of infant sleep-related deaths reviewed. Children of unknown ethnicities account for 3% of all CFR deaths and 1% of infant sleep-related deaths reviewed. There is no statistical difference in the distribution of ethnicities between infant sleep-related deaths and all CFR deaths.



Black infants are highly overrepresented among infant sleep-related deaths reviewed.

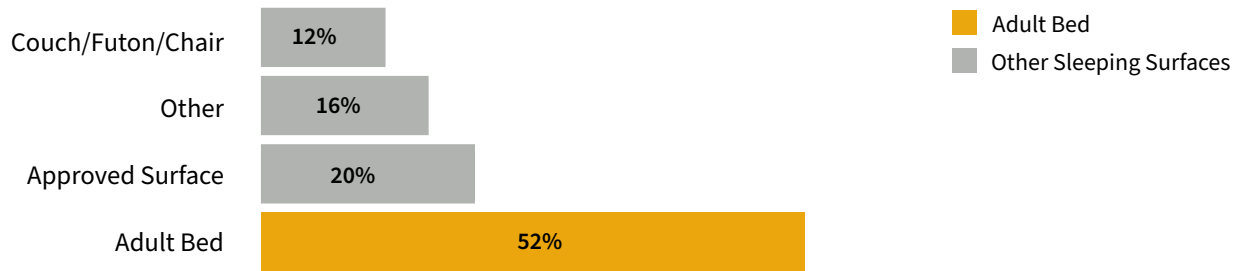
Distribution of Race Among Reviews of Infant Sleep-Related Deaths, from 2018 through 2022 (n=682).

Black children account for 36% of all CFR deaths and 54% of infant sleep-related death reviews. White children represent 61% of all CFR deaths and 43% of infant sleep-related death reviews. Children of other races represent 3% of all CFR deaths and 5% of infant sleep-related death reviews. This indicates a statistically significant difference in the distribution of race between infant sleep-related deaths reviewed and all CFR deaths, with Black infants being overrepresented.



Most infants died in an adult’s bed.

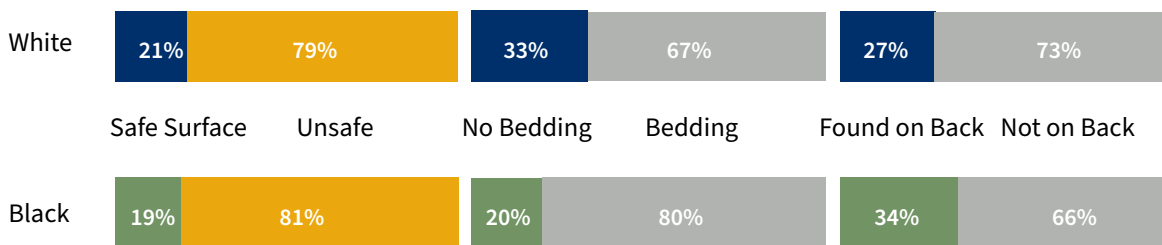
Distribution of Sleep Location Among Reviews of Infant Sleep-Related Deaths, from 2018 through 2022 (n=682).



Most infants (80%) were not on sleep surfaces recommended by the American Academy of Pediatrics. Adult beds represented 52% of all sleep surfaces, which remains consistent with previous findings. “Other” sleep surfaces include the floor, car seats, bouncers, swings, makeshift sleep surfaces, and unknown.

Unsafe sleep environment was the most prevalent risk factor found among deaths reviewed.

Distribution of Risks Factors Among Reviews of Infant Sleep-Related Deaths, from 2018 through 2022 (n=682).

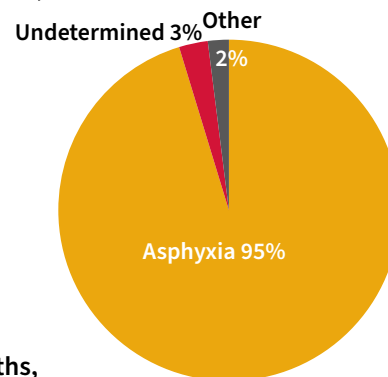


Although Black infants are overrepresented in sleep-related deaths reviewed, most infant sleep-related deaths reviewed occurred on unsafe sleep locations, regardless of race. Sleep surfaces classified as “safe” are cribs, bassinets, play pens, and bedside sleepers. Most infant sleep-related death reviews occurred on an unsafe sleep surface (e.g., with bedding and not placed on their backs). More Black infants were found to be sleeping with bedding (80%) compared to 67% of the White infant deaths reviewed. A more comprehensive look is needed to investigate the apparent racial disparity among infant sleep-related deaths.

Most deaths reviewed found the external cause of sleep-related infant deaths to be from asphyxia.

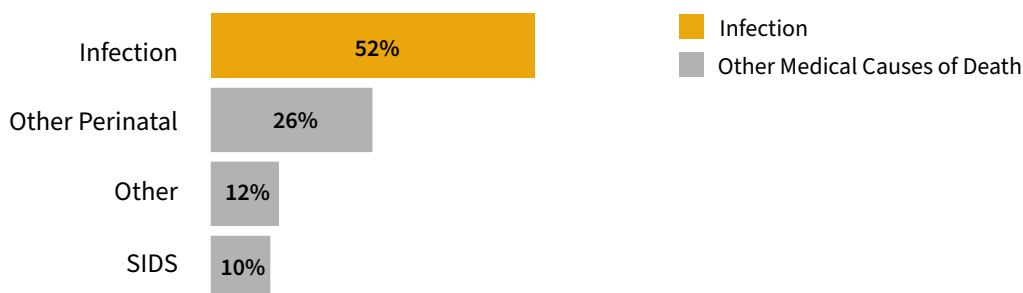
Distribution of External Cause of Death Among Reviews of Infant Sleep-Related Deaths, from 2018 through 2022 (n=403).

Among reviews of infant sleep-related deaths where the cause of death was determined to be external, 95% were from asphyxia. Only 2% were other external causes of death and 3% were undetermined.



Most medical infant sleep-related deaths were from infection.

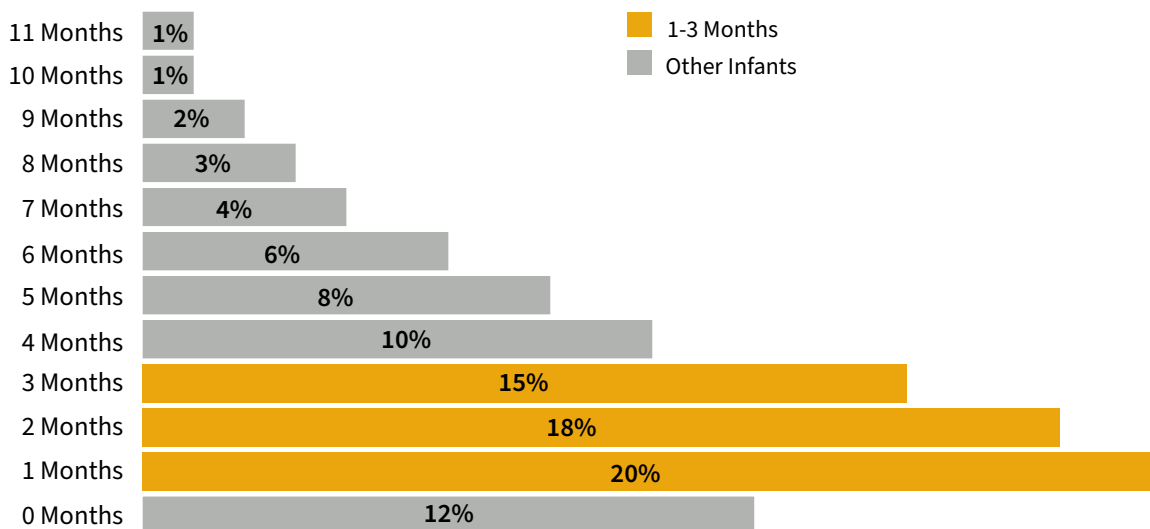
Distribution of Medical Cause of Death Among Reviews of Infant Sleep-Related Deaths, from 2018 through 2022 (n=73).



Among medical reviews of infant sleep-related deaths, 52% were from infection, 26% were due to other perinatal conditions (e.g., birth/pregnancy complications and prematurity), 12% were due to other medical conditions (e.g., respiratory, malnutrition/dehydration, defects, and undetermined medical causes), and 10% were determined to be due to SIDS.

Most infants died at 1 to 3 months old.

Distribution of Age in Months Among Reviews of Infant Sleep-Related Deaths, from 2018 through 2022 (n=682).



One-month old infants accounted for the highest percentage of infant sleep-related death reviews (20%), followed by infants two months of age (18%). Together, sleep-related deaths reviewed were most frequently among infants 1 to 3 months of age (53%). The frequency of infant sleep-related deaths decreased as age in months increased, except for infants less than one month of age.

PERINATAL CONDITIONS

Prematurity/perinatal conditions are the leading cause of child deaths in the country, with a death rate of 14.3 per 100,000 children. In 2021, preterm birth rates increased by 4%, with one in 10 babies born prematurely. Reducing prematurity has become a national priority.¹⁹ There were 41,766 prematurity deaths in the United States from 2017 through 2021.¹ Black women are more likely to have preterm births than White or Hispanic/Latino women. Additionally, Black children are especially at risk of death due to prematurity, with a death rate almost three times as high as White children.¹

Preterm birth is defined as birth at less than 37 weeks gestation. Low birth weight is defined as a weight less than 2,500 grams, moderately low birth weight is defined as weight between 1,500 and 2,499 grams, and very low birth weight is defined as weight less than 1,500 grams.⁷ In many cases, the causes of preterm birth are not fully understood. Factors involved in preterm birth include substance use, including alcohol and tobacco use, stress, infection, lack of prenatal care, pregnancy with multiples, and less than 18 months between pregnancies.¹² The World Health Organization has found that protective measures against either preterm birth or death resulting from preterm birth include a minimum of eight prenatal visits, better access to contraception, skin-to-skin contact, frequent breastfeeding, continuity of midwifery care, and steroid use for at-risk mothers to strengthen fetal lungs. Chronic conditions (e.g., diabetes and high blood pressure) also increase risks.¹³

In this report, a perinatal condition is defined as any condition occurring during pregnancy, at birth, and up to a year after birth that is directly attributed to an incident unique to that period. Perinatal conditions identified include prematurity, low birth weight, complications occurring during pregnancy or at birth (e.g., birth injury, chorioamnionitis, pre-eclampsia, IUGR, and Group B Sepsis), and diagnosed SIDS. In Ohio, local CFR boards found that 31% of deaths reviewed were due to perinatal conditions and resulting complications, which accounted 49% of all infant deaths reviewed. Perinatal conditions also represented 35% of all CFR deaths for Black children, 28% of all CFR deaths for White children, and 38.6% of all CFR deaths for children of other races. Therefore, perinatal conditions were the leading cause of death identified among all CFR deaths. The CFR case reporting system captures information about prematurity as both a condition of birth and a cause of death. Gestational age at birth is noted for infant deaths reviewed, regardless of the cause of death. Many infants born prematurely survive the immediate complications of their early birth but die from other causes, so this section covers deaths only related to prematurity/low birth weight and complications directly from those conditions.

Local CFR boards found the most significant risk for death by perinatal conditions was a prior history of preterm birth (84%). Additionally, 72% of childbearing parents did not attend the recommended minimum of eight prenatal visits to have sufficient prenatal care. Death was already expected among 54% of these births, due to known complications, and 20% of these births were a multiple gestation, which carries increased risks. Other notable risk factors include smoking during pregnancy (17%), alcohol or illicit substance use during pregnancy (8%), and intrauterine exposure to drugs (5%).

KEY FINDING:

Local CFR boards found that perinatal conditions were responsible for most child deaths reviewed.

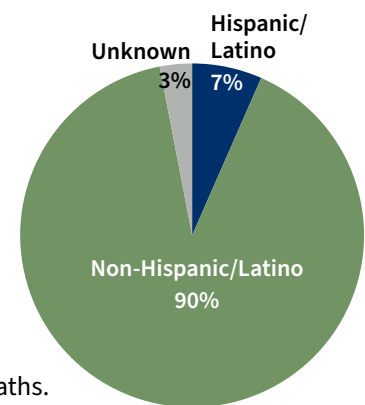
Perinatal Condition Review Findings

- Ninety-nine percent of deaths reviewed were for children that did not survive a perinatal condition long enough to see their first birthday.
- Ninety-six percent of deaths reviewed were due to prematurity and 4% were due to other perinatal conditions (e.g., birth/pregnancy complications or SIDS).
- Most childbearing parents of children dying from a perinatal condition had previous preterm births.
- Among infant death reviews for perinatal conditions, 56% of mothers did not attend eight or more prenatal visits, which according to WHO reduces risk of death due to prematurity and medical complications.
- Black children are overrepresented among reviews of deaths due to perinatal conditions.
- Most children were born extremely premature (i.e., before 28 weeks gestation).

There is no ethnic disparity among deaths due to perinatal conditions reviewed.

Distribution of Ethnicity Among Reviews of Deaths Due to Perinatal Conditions, from 2018 through 2022 (n=1,686).

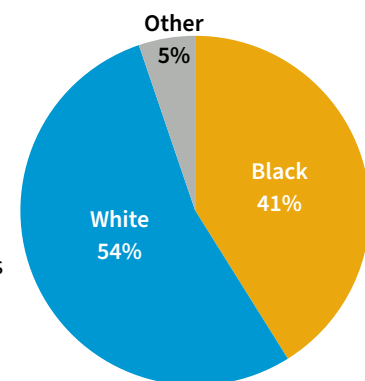
Hispanic/Latino children accounted for 7% of all CFR deaths and 7% of deaths reviewed due to perinatal conditions. Non-Hispanic/Latino children accounted for 91% of all CFR deaths and 90% of deaths reviewed due to perinatal conditions. Children of unknown ethnicities accounted for 3% of all CFR deaths and 3% of deaths reviewed due to perinatal conditions. There is no statistical difference in the distribution of ethnicities between deaths due to perinatal conditions and all CFR deaths.



There is a higher proportion of Black children among deaths reviewed due to perinatal conditions compared to all CFR deaths, although not statistically significantly different.

Distribution of Race Among Reviews of Deaths Due to Perinatal Conditions, from 2018 through 2022 (n=1,686).

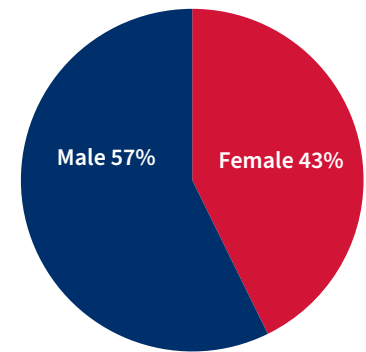
Black children account for 36% of all CFR deaths and 41% of deaths reviewed due to perinatal conditions. White children account for 61% of all CFR deaths and 54% of deaths reviewed due to perinatal conditions. Children of other races account for 3% of all CFR deaths and 5% of deaths reviewed due to perinatal conditions. There is no statistically significant difference in the distribution of race between deaths due to perinatal conditions and all CFR deaths.



There is no disparity between sexes among deaths reviewed due to perinatal conditions.

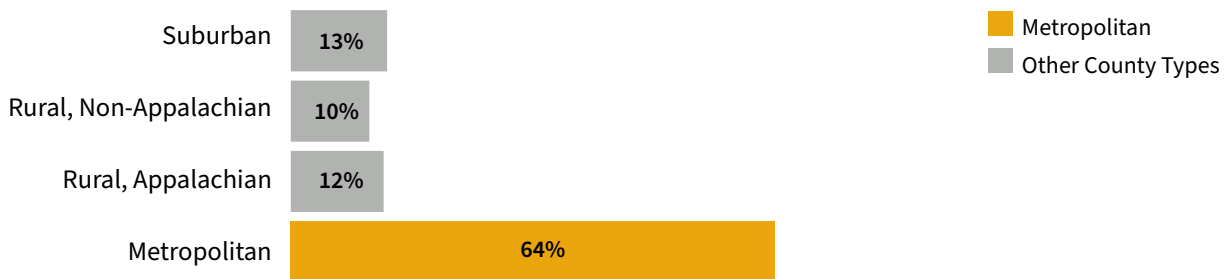
Distribution of Sex Among Reviews of Deaths Due to Perinatal Conditions, from 2018 through 2022 (n=1,686).

Males account for 58% of all CFR deaths and 57% of death reviews due to perinatal conditions. Females account for 42% of all CFR deaths and 43% of death reviews due to perinatal conditions. There is no statistically significant difference in the distribution of sex between deaths reviewed due to perinatal conditions and all CFR deaths.



Most child deaths reviewed due to perinatal conditions occurred in metropolitan counties.

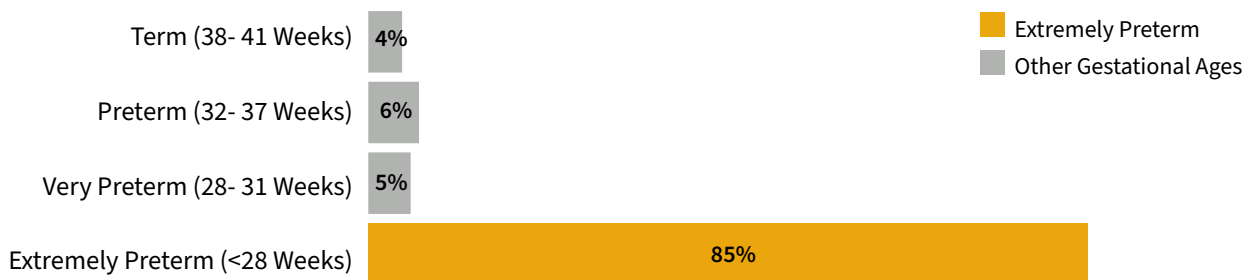
Distribution of Resident County Types Among Reviews of Deaths Due to Perinatal Conditions, from 2018 through 2022 (n=1,686).



Among deaths reviewed due to perinatal conditions from 2018 through 2022, 64% were from metropolitan counties, 12% were from rural Appalachian counties, 10% were from rural non-Appalachian counties, and 13% were from suburban counties. Among all CFR deaths, 58% of children were from metropolitan counties, 17% were from rural Appalachian counties, 12% were from rural non-Appalachian counties, and 13% were from suburban counties. The distribution of resident county types among reviews of deaths due to perinatal conditions was statistically different from all CFR deaths, with metropolitan county residents overrepresented.

Most deaths reviewed due to perinatal conditions occurred among children born extremely prematurely.

Distribution of Gestation Among Reviews of Deaths Due to Perinatal Conditions, from 2018 through 2022 (n=1,686).



Most deaths reviewed due to perinatal conditions were among children born before 38 weeks gestation (96%). Eighty-five percent of children were born extremely premature (i.e., prior to 28 weeks gestation), 5% were born very premature (i.e., between 28 and 31 weeks gestation), and 6% were born premature (i.e., between 32 and 37 weeks gestation). Only 4% of reviews were for children born at term (i.e., between 38 and 41 weeks gestation).

SUBSTANCE USE

According to results from the Youth Risk Behavior Survey, substance use among high school students was common in 2019, with 29% of students using alcohol, 22% using marijuana, and 7% misusing prescription opioids.⁸ There was a significant difference between sexes, with males being more likely to use harder drugs such as cocaine, meth, and heroin, and females more likely to misuse prescription opioids and binge drink alcohol. Risk factors of youth substance use include family substance use, peer substance use, childhood sexual abuse, rejection by the family, and lack of peer connectedness. Youth that are connected to their school and their family are less likely to engage in substance use.⁹

Nationally, there were 1,840 drug or alcohol induced child deaths from 2017 through 2020, with an unadjusted death rate of 0.6 per 100,000 children. The most common manners of death for substance use related fatalities were accidental (e.g., unintentional overdose) and suicide.¹ Several evidence-based strategies that are effective in preventing substance overdoses have been identified. Targeted naloxone distribution, Good Samaritan Laws, and syringe services programs that provide linkage to substance use disorder treatment, have all been shown to help prevent death among substance users.¹⁷ Among all ages (i.e., children and adults) Ohio had the sixth highest drug overdose death rate (47.8 per 100,000 persons) in the country in 2021.¹⁸ When separated by drug classes, Ohio ranked fifth in the country for death rates related to illicit fentanyl (38.5 per 100,000), seventh in the country for death rates involving stimulants (most commonly cocaine), and twentieth in the country for prescription opioids (4.8 per 100,000). However, most Ohio substance use deaths were due to polydrug use involving illicit fentanyl.

Local CFR boards found that, in Ohio, child deaths that resulted from intentional substance use and subsequent overdose and deaths that resulted from suicidal substance use represented 1% of all deaths reviewed from 2018 through 2022. These substance use deaths also represented 0.7% of deaths reviewed for all Black children and 1% of reviews for all White children.

KEY FINDING:

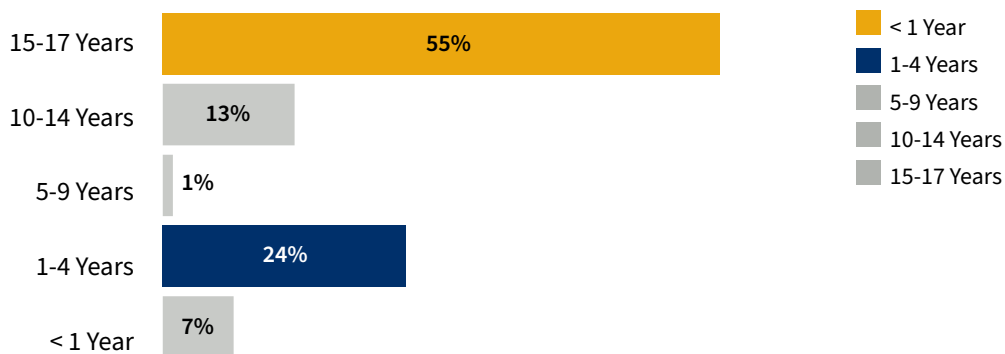
Local CFR boards in Ohio found that deaths from poisonings, substance use, and overdose accounted for 1.5% of reviews.

Substance Use Death Review Findings

- The leading manners of poisoning/overdose deaths were accidental (e.g., due to intentional drug use) and suicide, followed by homicide and accidental access to/ingestion of an unsecured substance.
- Most children who died from an accidental drug overdose or intentional suicide used prescription opioids.
- Most poisoning/overdose deaths were among teenagers (15 to 17 years old) and the second-leading age group of deaths was toddlers (1 to 4 years old).

Most poisoning/overdose deaths reviewed were among **teenagers or toddlers**.

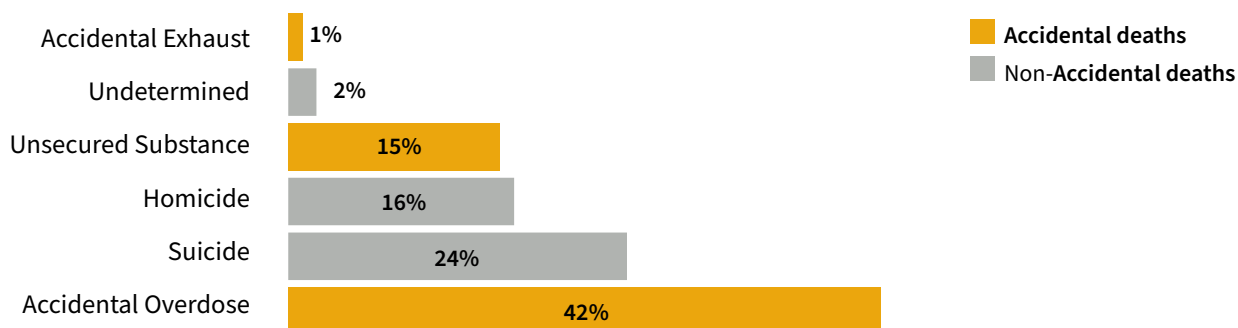
Distribution of Age Among Reviews of Substance Deaths, from 2018 through 2022 (n=80).



Teenagers (ages 15 to 17 years) accounted for most deaths (55%), followed by toddlers (1 to 4 years old) (24%), then preadolescents (ages 10 to 14 years) (13%). More instances of accidental ingestion of unsecured substances were reported among deaths reviewed from 2018 through 2022 compared to previous years; specifically, more toddler deaths related to substance use were reviewed.

Most substance use deaths reviewed were **accidental**.

Distribution of Manners of Death Among Substance Use Deaths, from 2018 through 2022 (n=80).

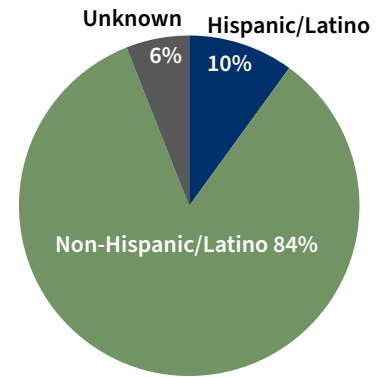


Most substance use deaths were accidental in manner (58%). Accidental overdose from intentional substance use accounted for 42% of substance use deaths reviewed, accidental ingestion of an unsecured substance accounted for 15% of substance use deaths reviewed, and accidental death do to exhaust or fume exposure from substance use accounted for 1% of substance use deaths reviewed. Suicide was the second leading manner of substance use deaths, accounting for 24% of all substance use deaths reviewed, followed by homicide (16%).

There is no ethnic disparity among deaths reviewed due to intentional substance use.

Distribution of Ethnicity Among Reviews of Deaths Due to Intentional Substance Use, from 2018 through 2022 (n=52).

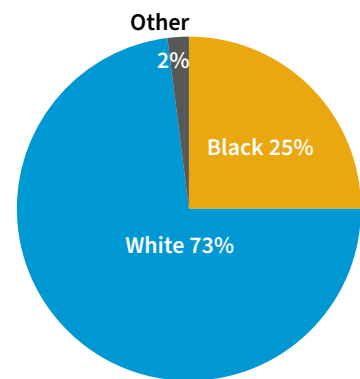
Hispanic/Latino children account for 7% of all CFR deaths and 10% of deaths reviewed due to intentional substance use. Non-Hispanic/Latino children accounted for 90% of all CFR deaths and 84% of deaths reviewed due to intentional substance use. Children of unknown ethnicities accounted for 3% of all CFR deaths and 6% of deaths reviewed due to intentional substance use. There is no statistical difference in the distribution of ethnicity between deaths reviewed due to intentional substance use and all CFR deaths.



Most deaths reviewed due to intentional substance use occur among White children.

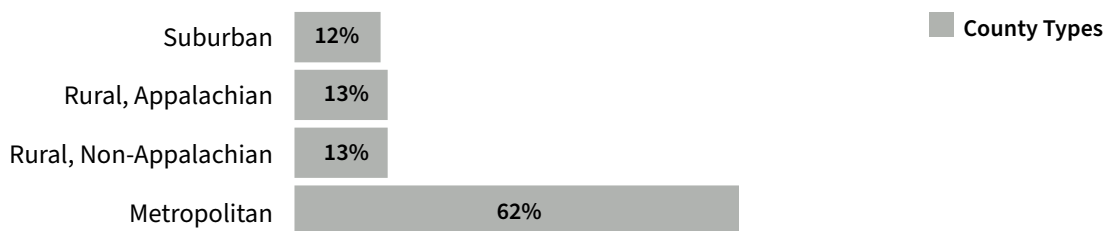
Distribution of Race Among Reviews of Deaths Due to Intentional Substance Use, from 2018 through 2022 (n=52).

Black children accounted for 22% of Ohio births, 36% of total CFR reviews, and 25% of death reviews due to intentional substance use. White children account for 70% of Ohio births, 61% of total CFR death reviews, and 73% of deaths due to intentional substance use.



There is no disparity between resident county types among intentional substance use deaths reviewed.

Distribution of County Type Among Reviews of Deaths Due to Intentional Substance Use, from 2018 through 2022 (n=52).

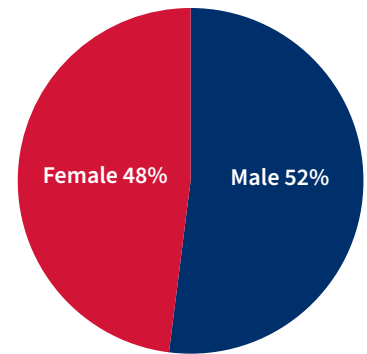


Among deaths reviewed due to intentional substance use from 2018 through 2022, 62% were from metropolitan counties, 13% were from rural Appalachian counties, 13% were from rural non-Appalachian counties, and 12% were from suburban counties. Among all CFR deaths, 58% of children were from metropolitan counties, 17% were from rural Appalachian counties, 12% were from rural non-Appalachian counties, and 13% were from suburban counties. There is no statistical difference in resident county types between intentional substance use deaths reviewed and all CFR deaths.

There was no disparity between sexes among intentional substance use deaths reviewed.

Distribution of Sex Among Reviews of Deaths Due to Intentional Substance Use, from 2018 through 2022 (n=52).

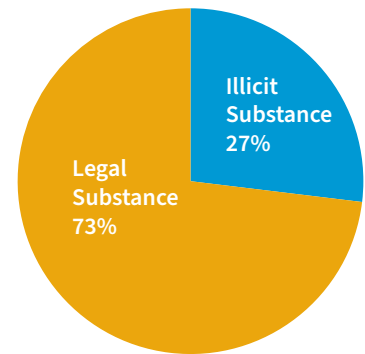
Males accounted for 58% of all CFR deaths reviewed and 52% of deaths reviewed due to intentional substance use. Females accounted for 42% of all CFR deaths and 48% of deaths reviewed due to intentional substance use. There is not a statistically significant difference in the distribution of sex between intentional substance use deaths reviewed and all CFR deaths.



Prescription opioids were mostly responsible for substance use deaths reviewed.

Distribution of Substances Used Among Reviews of Deaths Due to Intentional Substance Use, from 2018 through 2022 (n=52).

Among the 52 reviews for intentional substance use that resulted in suicide or accidental overdose deaths, 73% were due to legal substances and 27% were due to illicit substances. Polysubstance abuse was common among deaths reviewed, so in many cases it was not possible to isolate a single substance that resulted in death. However, the most frequent substance used was prescription opiates, which was involved in 16 substance death reviews, as well as 64% of reviews that noted prescription substance use, and 31% of all reviews for intentional substance use.



Cocaine was present in 43% of all deaths reviewed due to substance use involving illicit drugs and 12% of intentional substance use reviews among all deaths reviewed due to substance use. Fentanyl was present in 57% of all deaths reviewed due to substance use involving illicit drug use and 15% intentional substance use reviews among all deaths reviewed due to substance use. These findings are consistent with previous years.

SUICIDE

Suicide is death caused by injuring oneself with the intent to die. A suicide attempt is when someone harms themselves with any intent to end their life that does not result in death.¹⁰ According to the CDC, suicide is the second leading manner of child death nationally. The unadjusted national suicide death rate is 2.4 per 100,000 children and suicide accounted for 6,937 deaths between 2017 and 2020 nationally. Of these 6,937 suicide deaths, 3,320 were by hanging, strangulation, and suffocation. Native Americans and Alaskan Natives have the most risk of suicide and, with an unadjusted death rate of 4.2, they have almost double the death rate by suicide of White children.¹

In Ohio, local CFR boards found that suicides accounted for 5.3% of all deaths reviewed from 2018 through 2022. Suicides also represented 3% of all deaths reviewed for Black children, 7% of all deaths reviewed for White children, and 4% of all deaths reviewed for children of other races.

There are several factors that increase a child's suicide risk (e.g., history of mental health conditions, chronic pain, substance use, impulsivity, adverse childhood experiences, financial problems, domestic violence, loss of connectedness, stigma around mental health treatment, bullying, and discrimination). People who experience violence have a higher risk of suicide. Protective factors include a support network that supports connectedness, skills in coping and problem solving, sense of cultural identity, and availability of physical and behavioral healthcare.¹¹

KEY FINDING:

Local CFR boards in Ohio found that White children die more by suicide (78%).

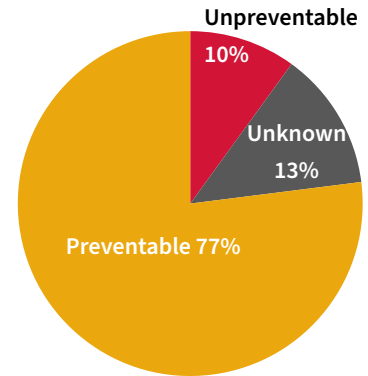
Suicide Death Review Findings

- More males accounted for suicide deaths reviewed.
- Communicating suicidal thoughts to peers or an adult, in either a joking or serious manner, was the most common indicator of suicidal ideation present among suicide deaths reviewed.
- The most common causes of suicide deaths were gunshot wounds and hangings.
- Teenagers (15 to 17 years old) were the most common age group among suicide deaths reviewed.

Most suicide deaths reviewed were preventable.

Distribution of Preventability Among Reviews of Suicide Deaths, from 2018 through 2022 (n=289).

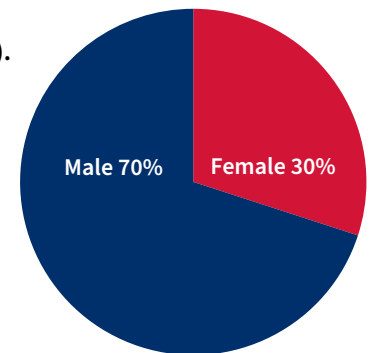
Local CFR boards found that 77% of suicide deaths reviewed were preventable, which remains consistent with previous years. Recommendations made to prevent suicide included creating anti-bullying programs in schools, increasing firearm safety education in both parents and children (e.g., encouraging locking guns), mentorship programs for new students, anti-bullying support for homeschooled children, stronger messaging surrounding available mental health resources, better cooperation between different providers of at-risk children, an increase in mental health service providers in rural non-Appalachian counties, and an overall decrease in the wait time to see mental health professionals.



Males were overrepresented among suicide deaths reviewed.

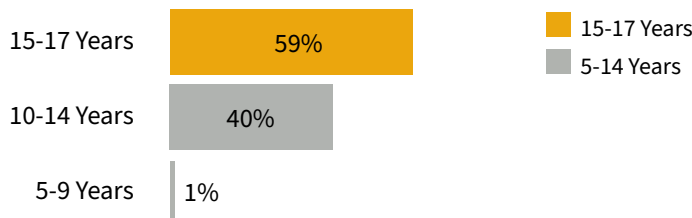
Distribution of Sex Among Reviews of Suicide Deaths, from 2018 through 2022 (n=289).

Males accounted for 58% of all CFR deaths and 70% of suicide deaths reviewed. Females accounted for 42% of all CFR deaths and 30% of suicide deaths reviewed. There is a statistically significant difference in the distribution of sex between suicide deaths reviewed and all CFR deaths, with males being overrepresented.



Most suicides reviewed occurred among children 15 to 17 years old.

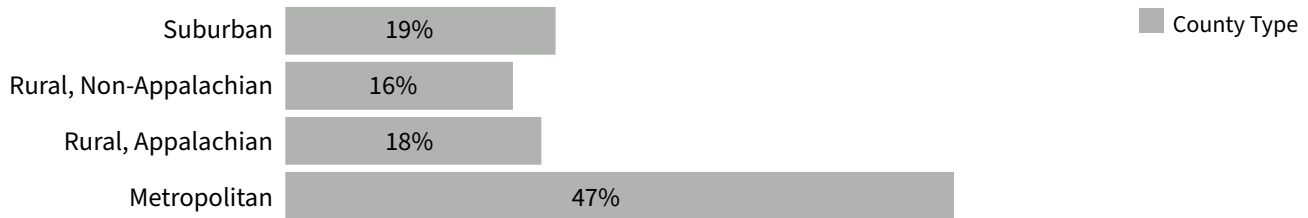
Distribution of Age Among Reviews of Suicide Deaths, from 2018 through 2022 (n=289).



Local CFR boards found that 59% of reviews for suicides, among children 5 to 17 years old, were teenagers 15 to 17 years old. Preadolescent and young teens ages 10 to 14 years accounted for 40% of suicides reviewed, and young children ages 5 to 9 accounted for 1% of suicides reviewed.

Suicide deaths are overrepresented among resident children of suburban and rural non-Appalachian counties.

Distribution of Resident County Type Among Reviews of Suicide Deaths, from 2018 through 2022 (n=289).

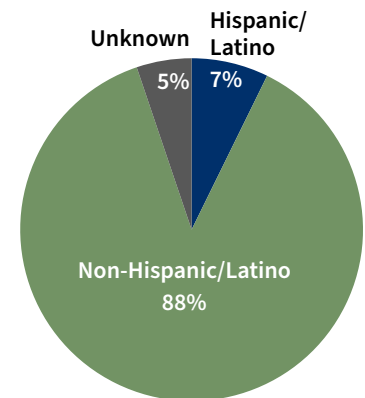


Among deaths reviewed due to suicide from 2018 through 2022, 47% were from metropolitan counties, 18% were from rural Appalachian counties, 16% were from rural non-Appalachian counties, and 19% were from suburban counties. Among all CFR deaths, 58% were from metropolitan counties, 17% were from rural Appalachian counties, 12% were from rural non-Appalachian counties, and 13% were from suburban counties. These differences show a statistically significant difference in the distribution of resident county types between suicide death reviewed and all CFR deaths, with residents of suburban and rural non-Appalachian counties being overrepresented.

There is no ethnic disparity among suicide deaths reviewed.

Distribution of Ethnicity Among Reviews of Suicide Deaths, from 2018 through 2022 (n=289).

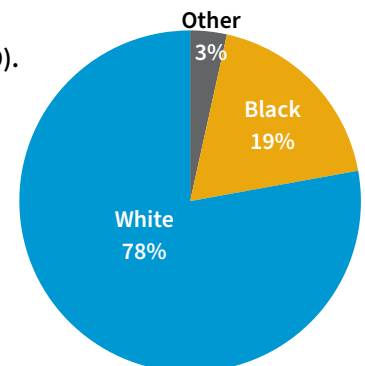
Hispanic/Latino children account for 7% of all CFR deaths and 7% of suicide deaths reviewed. Non-Hispanic/Latino children accounted for 91% of all CFR deaths and 88% of suicide deaths reviewed. Children of unknown ethnicities accounted for 3% of all CFR deaths and 5% of suicide deaths reviewed. There is not a statistically significant difference in the distribution of ethnicity between suicide deaths reviewed and all CFR deaths.



More White children die by suicide.

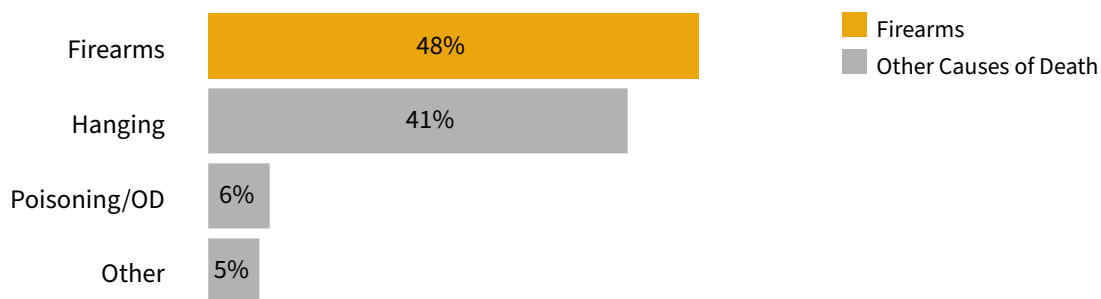
Distribution of Race Among Reviews of Suicide Deaths, from 2018 through 2022 (n=289).

White children account for 61% of all CFR deaths and 78% of suicide deaths reviewed. Black children account 36% of all CFR deaths and 19% of suicide deaths reviewed. Children of other races account for 3% of all CFR death reviews and 3% of suicides. There is a statistically significant difference in the distribution of race between suicide deaths reviewed and all CFR deaths, with White children being overrepresented.



Most suicide deaths reviewed were due to firearms.

Distribution of Causes Among Reviews of Suicide Deaths, from 2018 through 2022 (n=288).



Among the 289 suicide deaths reviewed, 288 were due to external injury and one cause of death could not be determined. Firearm injury was the leading cause of death by external injury among suicide deaths reviewed (48%). The second leading cause of death by external injury for suicide deaths reviewed was hanging (41%). Poisoning or overdose accounted for 6% of suicide deaths reviewed and “other” external causes of death accounted for 5% of suicide deaths reviewed. External causes of death include drowning, falls/crashes, external injuries caused by vehicles, and unknown external causes.

The most common indicator of suicide risk was communicating suicidal thoughts.

Distribution of Life Stressors Among Reviews of Suicide Deaths, from 2018 through 2022 (n=289).

Life Stressors	Percent	Count
Communicated Suicidal Thoughts	41%	118
Recent Argument with Parents	14%	41
Had History of Self-Harm	15%	43
Depression, Anxiety, or Bipolar Disorder	14%	41
Substance Abuse History	14%	40
Bully Victim	13%	39
Recent Breakup	10%	30
Parents Divorced	9%	27
Economic Hardship	6%	18
Sexual Identity or Orientation	6%	16
Hopelessness	5%	15
Nonfatal Prior Attempts	5%	13
Loved One Previously Committed Suicide	5%	13

Evaluating life stressors in children may give an indication of suicide risk. It is important to note that data analysis on the frequency of these life stressors is done based on the data that is available, so it is possible there is a higher frequency of life stressors, but family members or local CFR boards were not able to find that information. Although there is almost always missing information, exploring these circumstances can give a better understanding of suicide deaths. The above categories of life stressors are not mutually exclusive; it is likely that the same child will have more than one of these stressors in their life prior to suicide.

The most noteworthy finding was that a large percentage of children have previously told someone of their thoughts of suicide, in either a joking or serious manner. Those involved in a child's life (e.g., all adults, caregivers, teachers, parents, and peers) need to be aware that communication of suicidal thoughts is the most common indicator of suicide risk among children. Suicide awareness and education may help family, friends, school faculty, and community members better identify children at risk for suicide.

VEHICULAR INJURIES

According to the CDC, vehicular injuries were the fifth leading cause of child deaths from 2017 through 2020, accounting for 8,509 of deaths and an unadjusted death rate of 2.9 per 100,000 children. Black children and Native American/Alaskan Natives were almost tied for the highest death rates between all races. Included in this category are all deaths of children who are drivers, passengers, pedestrians, or bicyclists involved in external injury deaths due to vehicular accidents/collisions.

In Ohio, local CFR boards found that vehicular related deaths accounted for 6% of all deaths reviewed from 2018 through 2022. Vehicular deaths also represented 3% of all deaths reviewed for Black children, 8% of all deaths reviewed for White children, and 7% of all deaths reviewed for children of other races.

KEY FINDING:

Local CFR boards in Ohio found 89% of vehicular deaths were preventable.

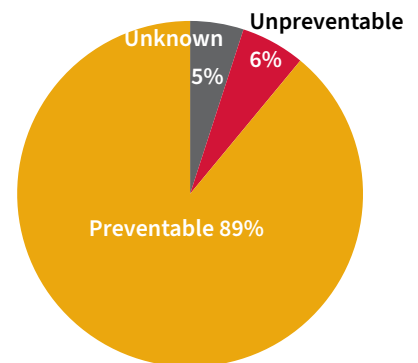
Vehicular Review Findings:

- Among vehicular deaths reviewed, accidents accounted for 96% and homicides accounted for 2%.
- Most vehicular deaths reviewed were among children who were passengers in a vehicle driving on a rural road.
- Less than half (45%) of vehicular deaths reviewed included children that were restrained (e.g., wearing a seatbelt).
- Among vehicular deaths reviewed, most pedestrian and cyclist deaths occurred on a city street.

Most vehicular deaths reviewed were preventable.

Distribution of Preventability Among Reviews of Vehicular Deaths, from 2018 through 2022 (n=327).

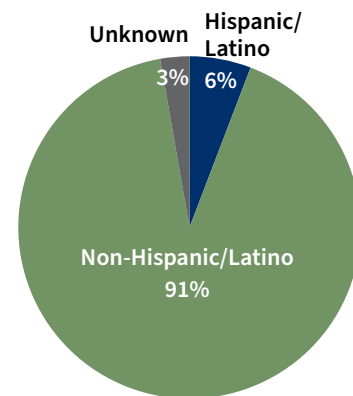
Local CFR boards found that 89% of vehicular deaths reviewed were preventable, 6% were unpreventable, and preventability could not be determined in 5% of deaths reviewed.



There is no ethnic disparity among vehicular deaths reviewed.

Distribution of Ethnicity Among Reviews of Vehicular Deaths, from 2018 through 2022 (n=327).

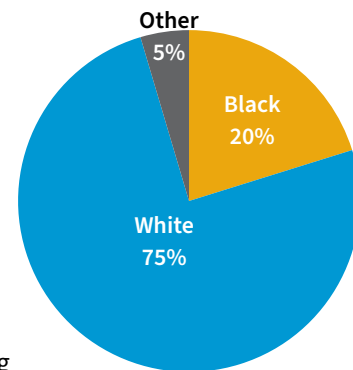
Hispanic/Latino children accounted for 7% of all CFR deaths and 6% of vehicular deaths reviewed. Non-Hispanic/Latino children accounted for 90% of all CFR deaths and 91% of vehicular deaths reviewed. Children of unknown ethnicities accounted for 3% of all CFR deaths and 3% of vehicular deaths reviewed. There is not a statistically significant difference in the distribution of ethnicity between vehicular deaths reviewed and all CFR deaths.



White children may be overrepresented among vehicular deaths.

Distribution of Race Among Reviews of Vehicular Deaths, from 2018 through 2022 (n=327).

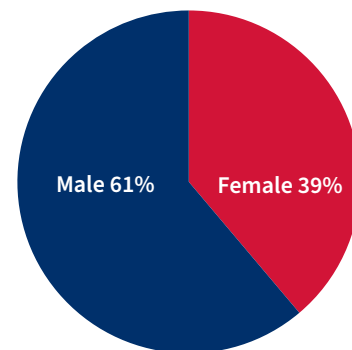
Among all CFR deaths 61% of children were White, 36% of children were Black, and 3% were other races. White children accounted for 75% of vehicular deaths reviewed, Black children accounted for 20% of vehicular deaths reviewed, and children of other races accounted for 5% of vehicular deaths reviewed. The distribution of race is significantly different between vehicular deaths reviewed and all CFR deaths, with White children being overrepresented among vehicular deaths reviewed.



More males die in vehicular deaths.

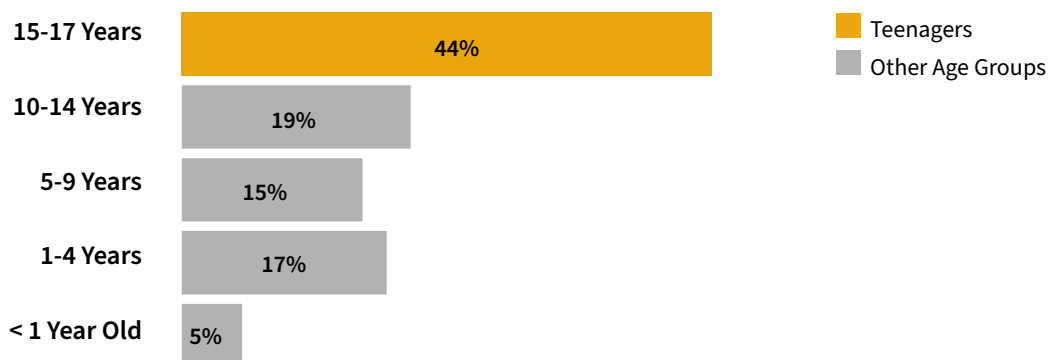
Distribution of Sex Among Reviews of Vehicular Deaths, from 2018 through 2022 (n=327).

Males accounted for 58% of all CFR deaths and 61% of vehicular deaths reviewed. Females accounted for 42% of all CFR deaths and 39% of vehicular deaths reviewed. The difference in the distribution of sex among vehicular deaths reviewed is not statistically significant when compared to all CFR deaths.



Most vehicular deaths were among teenagers.

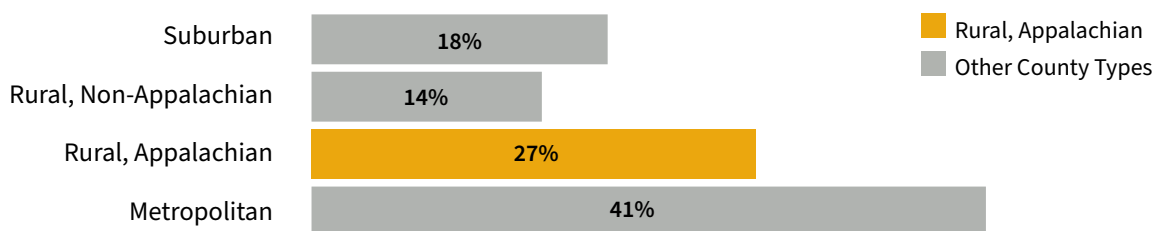
Distribution of Age Among Reviews of Vehicular Deaths, from 2018 through 2022 (n=327).



Teenagers (ages 15-17 years) accounted for most vehicular deaths reviewed (44%). The second most represented age group among vehicular deaths reviewed was preadolescents (ages 10 to 14 years), which accounted for 19% of vehicular deaths reviewed. Young children (5 to 9 years old) accounted for 15% of vehicular deaths reviewed, toddlers (ages 1 to 4 years) accounted for 17% of vehicular deaths reviewed, and infants (less than one year of age) accounted for 5% of all vehicular deaths reviewed.

Rural Appalachian county residents are overrepresented among vehicular deaths reviewed.

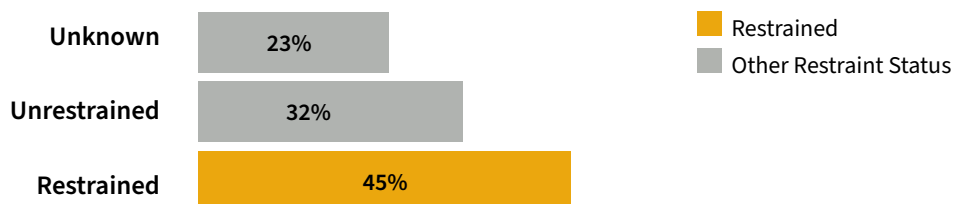
Distribution of Resident County Type Among Reviews of Vehicular Deaths, from 2018 through 2022 (n=327).



Among deaths reviewed due to vehicular incidents from 2018 through 2022, 41% were from metropolitan counties, 27% were from rural Appalachian counties, 14% were from rural non-Appalachian counties, and 18% were from suburban counties. Among all CFR deaths, 58% of children were from metropolitan counties, 17% were from rural Appalachian counties, 12% were from rural non-Appalachian counties, and 13% were from suburban counties. There is a statistically significant difference in the distribution of resident county types between vehicular deaths reviewed and all CFR deaths.

Less than half of children who died in vehicular crashes were restrained.

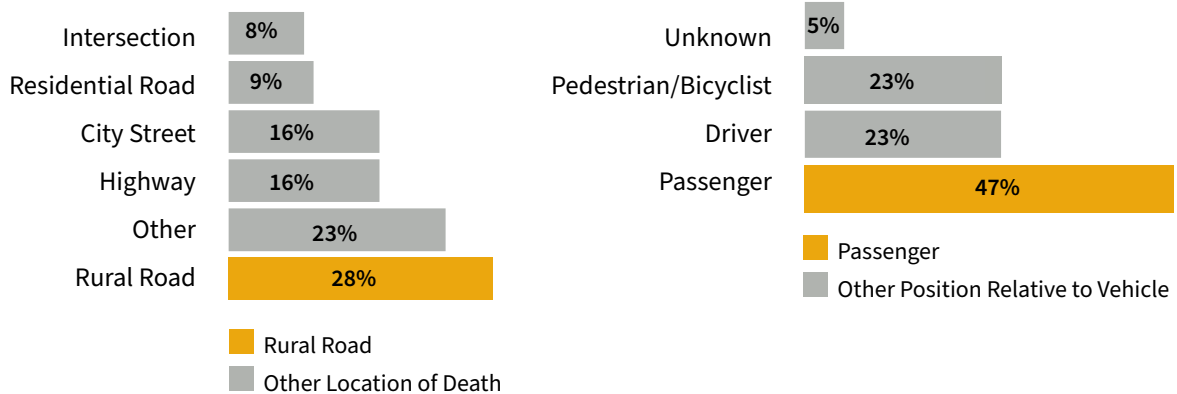
Child's Restraint Status While in a Vehicle Among Reviews of Vehicular Deaths, from 2018 through 2022 (n=199).



Among vehicular deaths reviewed, only 45% of children were restrained. Local CFR boards also found that 32% of vehicular deaths reviewed were unrestrained and 23% of vehicular deaths reviewed were missing restraint information.

Most child deaths reviewed due to vehicular crashes were among passengers on rural roads.

Child’s Position Relative to Vehicle, and Location of Vehicular Crash Among Reviews of Vehicular Deaths, from 2018 through 2022 (n=327).

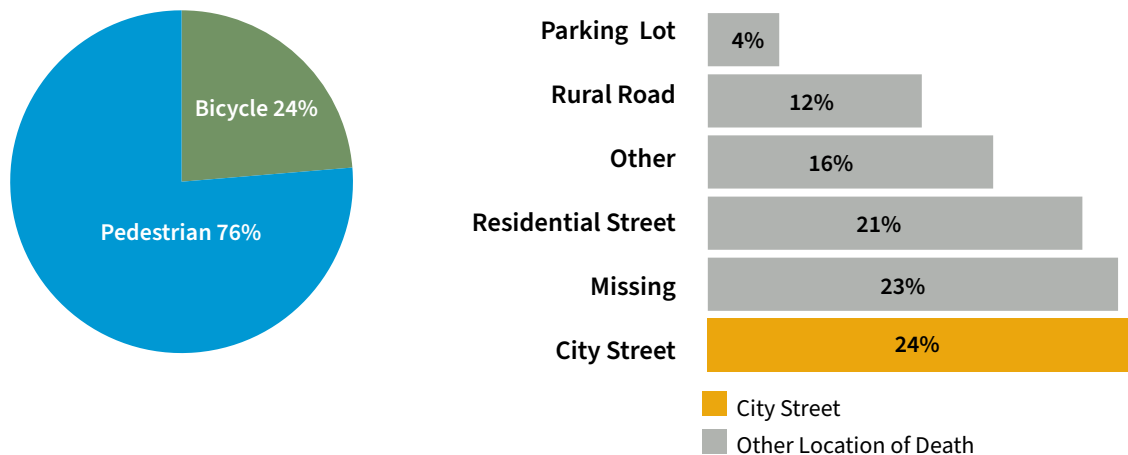


Vehicular crashes resulting in child death occurred most frequently on rural roads, which accounted for 28% of all vehicular deaths reviewed. Other locations (e.g., unknown locations, off road, train tracks, and parking lots) accounted for 23% of all vehicular deaths reviewed. Highways and city streets each accounted for 16% of vehicular deaths reviewed.

Most vehicular deaths reviewed were for children who were passengers in a vehicular crash. Children were passengers in 47% of vehicular deaths reviewed, drivers in 25% of vehicular deaths reviewed, pedestrians or bicyclists in 23% of vehicular deaths reviewed, and in 5% of vehicular deaths reviewed, the position of the child relative to their vehicle was unknown.

Most pedestrian/bicyclist incidents among child deaths reviewed occurred on a city street.

Location of Death Among Reviews of Vehicular Deaths of Children While not in a Vehicle, from 2018 through 2022 (n=76).



Among the vehicular deaths reviewed that did not occur in/on a motor vehicle, 76% of children were pedestrians and 24% of children were on a bicycle. Many deaths reviewed were missing information on the road type, but city streets accounted for the most vehicular deaths reviewed of children involving bicycles (24%). Most of these children were either on a city street (24%) or a residential street (21%) when walking or bicycling. For 23% of these deaths reviewed, the location of the child was missing or unknown. Residential streets are where 21% of incidents occurred among vehicular deaths reviewed involving pedestrians or bicyclists, followed by “other” locations (e.g., highways, train tracks, intersections, and off road) and rural roads (12%).



REVIEWS FOR 2018-2022 BY AGE GROUP

INFANTS: AGES 0 TO 364 DAYS

Infant mortality is an important gauge of the health of a community because infants are uniquely vulnerable to the many factors that impact health, including socioeconomic disparities. Infants bear the heaviest burden of child deaths, compared to any other age groups, both nationally and for the state of Ohio. According to the CDC, the highest national child death rate from 2017 through 2020 was among infants, with an unadjusted death rate of 551 per 100,000 children. The leading causes of infant deaths were congenital anomalies and prematurity. In Ohio, the infant death rate from 2017 through 2020 is even higher than the national infant death rate, with an unadjusted rate of 693 per 100,000 children.

However, there is a substantial racial disparity, with Black infants overrepresented. The crude death rate by race was 473 per 100,000 for Asian/Pacific Islander infants, 1,442 per 100,000 for Black infants, and 528 per 100,000 for White infants.¹ Local CFR boards in Ohio found that 62% of all deaths reviewed from 2018 through 2022 were for infants. Children younger than one year of age have the largest burden of deaths reviewed among all age groups, and this trend is consistent with previous years. Infant deaths also represented 68% of all deaths reviewed for Black children, 59% of all deaths reviewed for White children, and 66% of all deaths reviewed for children of other races, showing that infants account for the most deaths reviewed across all races.

Among all CFR deaths of infants, 40% of birth mothers did not attend the recommended number of prenatal visits to have sufficient prenatal care. This was much more frequent than years prior to COVID-19. Infants were expected to die in 32% of infant deaths reviewed due to medical complications. Additionally, 31% of infant deaths reviewed involved a mother that had an infection or medical complication during pregnancy. Other notable risk factors include 13% of mothers smoking during pregnancy and 11% of mothers using illicit substances (e.g., marijuana, cocaine, heroin, fentanyl, ecstasy, opioids, and methamphetamines) or alcohol during pregnancy.

KEY FINDING:

Local CFR boards in Ohio found that most infant deaths reviewed for external injury deaths were due to asphyxia or aspiration.

Infant Review Findings

- Most infants died by natural causes from a medical condition.
- Black infants are overrepresented among infant death reviews.
- The most frequent medical cause of death was prematurity/low birth weight.

Most infants died from **medical** conditions.

Distribution of Primary Cause of Death Among Reviews of Infant Deaths, from 2018 through 2022 (n=3,415).



Medical conditions were the most common cause of death among infants, accounting for 77% of infant deaths reviewed. External injuries accounted for 15% of infant deaths reviewed and primary cause of death could not be determined in 8% of infant deaths reviewed.

Most infants died by **natural** causes.

Distribution of Manner of Death Among Reviews of Infant Deaths, from 2018 through 2022 (n=3,415).

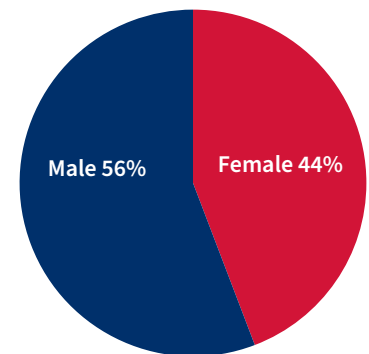


Local CFR boards found that most infant deaths reviewed were of natural manner (78%). Accidents accounted for 13% of infant deaths reviewed, 8% of infant deaths reviewed had undetermined or pending manners, and 1% of infant deaths reviewed were homicides.

More **males** die in infancy.

Distribution of Sex Among Reviews of Infant Deaths, from 2018 through 2022 (n=3,415).

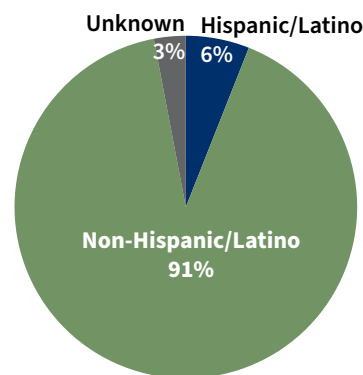
Males accounted for 58% of CFR deaths and 56% of infant deaths reviewed. Females accounted for 42% of CFR deaths and 44% of infant deaths reviewed. There is a statistically significant difference in the distribution of sex between infant death reviews and all CFR deaths, with males being overrepresented.



There is no ethnic disparity among infant deaths reviewed.

Distribution of Ethnicity Among Reviews of Infant Deaths, from 2018 through 2022 (n=3,415).

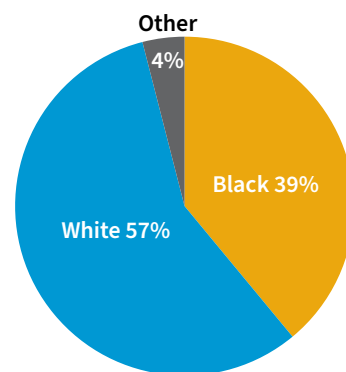
The distribution of ethnicity among infant deaths reviewed is similar to the distribution among all CFR deaths. Hispanic/Latino children accounted for 7% of all CFR deaths and 6% of infant deaths reviewed. Non-Hispanic/Latino children account for 90% of all CFR deaths and 91% of infant deaths reviewed. Children of unknown ethnicities accounted for 3% of all CFR deaths and 3% of infant deaths reviewed. There is not a statistically significant difference in the distribution of ethnicity between infant deaths reviewed and all CFR deaths.



Black infants are overrepresented among infant deaths reviewed.

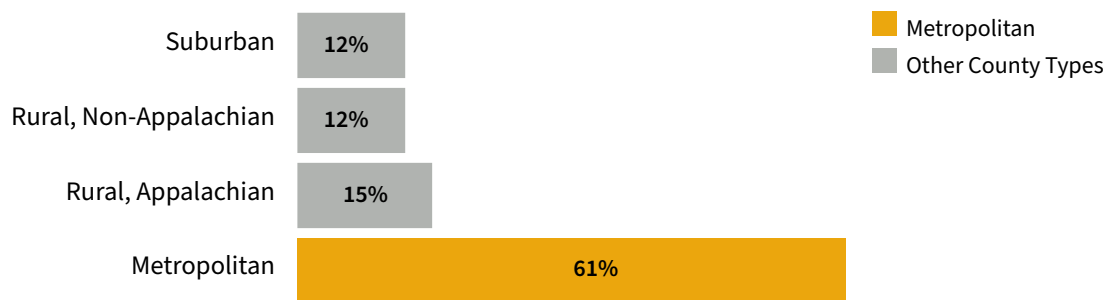
Distribution of Race Among Reviews of Infant Deaths, from 2018 through 2022 (n=3,415).

Black children account for 36% of all CFR deaths and 39% of infant deaths reviewed. White children accounted for 61% of all CFR deaths and 57% of infant deaths reviewed. Children of other races accounted for 3% of all CFR deaths and 4% of infant deaths reviewed. There is a statistically significant difference in the distribution of race between infant deaths reviewed and all CFR deaths.



Metropolitan counties may be overrepresented among infant deaths reviewed.

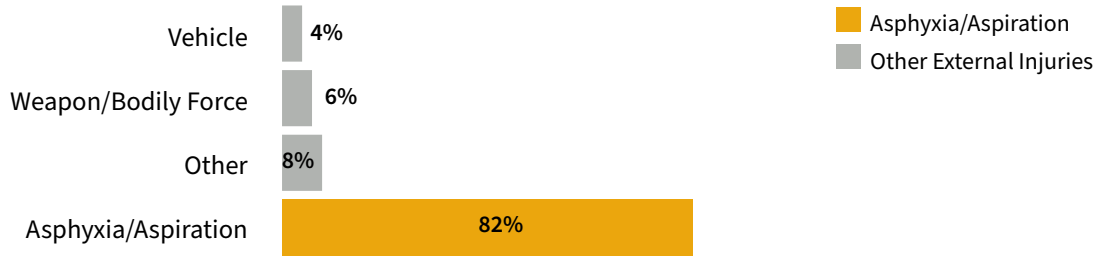
Distribution of Resident County Type Among Reviews of Infant Deaths, from 2018 through 2022 (n=3,415).



Among infant deaths reviewed from 2018 through 2022, 61% were from metropolitan counties, 15% were from rural Appalachian counties, 12% were from rural non-Appalachian counties, and 12% were from suburban counties. Among all CFR deaths, 58% of children were from metropolitan counties, 17% were from rural Appalachian counties, 12% were from rural non-Appalachian counties, and 13% were from suburban counties. There is a statistically significant difference in the distribution of residential county types between infant deaths and all CFR deaths.

Most external injury deaths reviewed among infants were by **asphyxia/aspiration**.

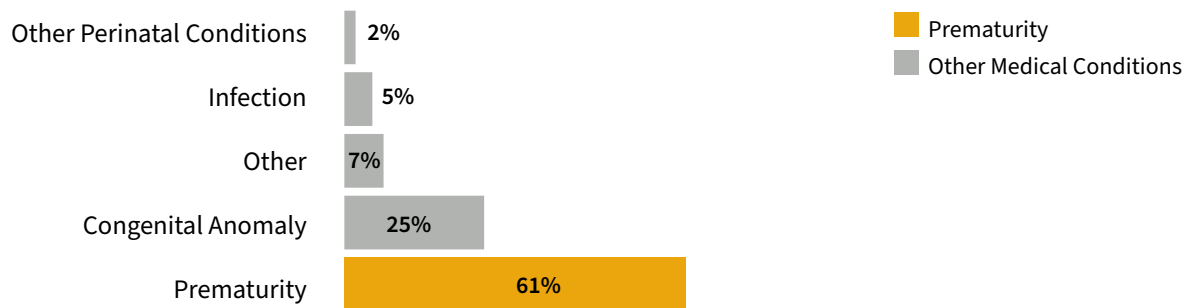
Distribution of External Injury Among Reviews of Infant Deaths, from 2018 through 2022 (n=505).



The most frequent cause of death due to external injury among infants was asphyxia/aspiration (82%). Other external causes (e.g., drowning, fall/crush, poisoning, fire/electrocution, and unknown external causes) accounted for 8% of external deaths reviewed among infants. Injuries from weapons or bodily force accounted for 6% of external injury deaths reviewed among infants and vehicles accounted for 4% of external injury deaths reviewed among infants.

Most medical condition deaths among infants were due to **prematurity**.

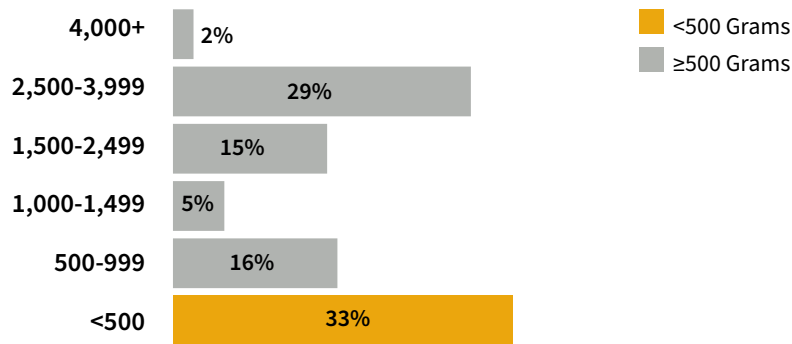
Distribution of Medical Conditions Among Reviews of Infant Deaths, from 2018 through 2022 (n=2,884).



Prematurity was the leading medical cause of death among all infant deaths reviewed (61%). Congenital anomalies accounted for 25% of infant deaths reviewed due to medical causes. Other medical conditions (e.g., cancer, cardiovascular conditions, malnutrition/dehydration, diabetes, neurological conditions, respiratory conditions, SIDS, and undetermined cause of medical death) accounted for 7% of infant deaths reviewed due to medical causes. Infection (e.g., flu, COVID-19, RSV, sepsis, MRSA, pneumonia, and the common cold) accounted for 5% of infant deaths reviewed due to medical causes. Other perinatal conditions are conditions not related to prematurity (e.g., complications during pregnancy or birth) and accounted for 2% of infant deaths reviewed due to medical causes.

Infant deaths occurred primarily among infants with extremely low birth weight.

Distribution of Birthweight in Grams Among Reviews of Infant Deaths, from 2018 through 2022 (n=3,415).



Among all infant deaths reviewed, most (33%) had “extremely low” birth weight (e.g., less than 500 grams). Low birth weight (less than 2,500 grams) accounted for 69% of all infant deaths reviewed. This is consistent with previous years.

TODDLERS: AGES 1 TO 4 YEARS

According to the CDC, the national death rate of children ages one through four years is 22.7 per 100,000 children. The leading causes of death nationally for toddlers (ages one through four years) from 2017 through 2020 were accidental external injury, with an unadjusted mortality rate of 7.6 per 100,000 children, congenital anomalies (2.5 per 100,000 children), cancer (2.3 per 100,000 children), and homicidal assault (2.0 per 100,000 children).¹

In Ohio, 10.7% of all CFR deaths were among toddlers. Toddlers also represented 10% of all deaths reviewed of Black children, 11% of all deaths reviewed of White children, and 9% of all deaths reviewed of children of other races.

KEY FINDING:

Local CFR boards in Ohio found that 47% of toddler deaths were preventable.

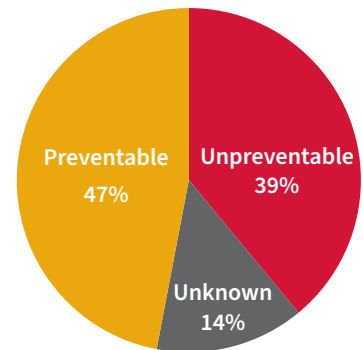
Toddler Death Review Findings

- There were no apparent racial, ethnic, or sex disparities among toddler deaths reviewed.
- The leading manner of death among toddler deaths reviewed was natural.
- Most toddler deaths reviewed due to external injury were due to drowning, bodily force, and vehicular incidents.
- Most toddler deaths reviewed due to medical conditions were due to congenital anomalies and infections.

Forty-seven percent of deaths were preventable.

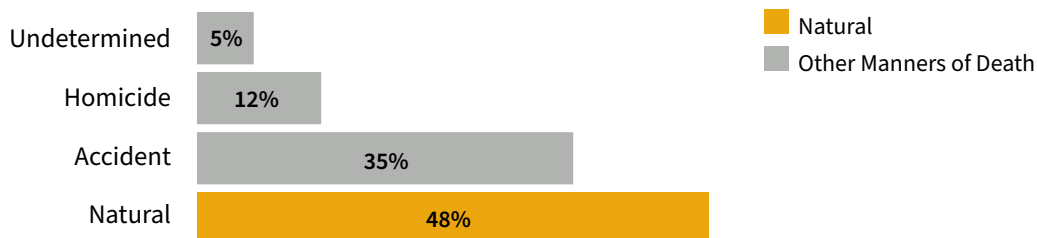
Distribution of Preventability Among Reviews of Deaths in Children Ages 1 to 4, from 2018 through 2022 (n=585).

Among toddler deaths reviewed, 39% were determined to be unpreventable. Forty-seven percent of toddler deaths reviewed were determined to be preventable and 14% of toddler deaths reviewed were of unknown preventability.



Most toddlers died from natural manner.

Distribution of Manner of Death Among Reviews of Deaths in Children 1 to 4 Years, from 2018 through 2022 (n=585).

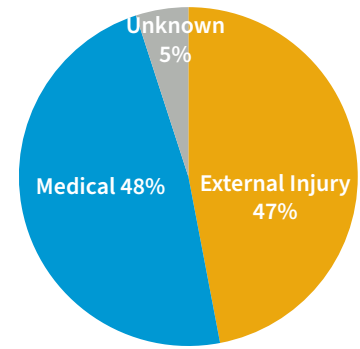


Among all deaths reviewed among toddlers from 2018 through 2022, 48% were due to a natural manner of death, 35% were due to an accidental manner of death, 12% were from homicidal manner of death, and 5% of toddler deaths reviewed had undetermined manner of death.

There is no disparity in primary causes of death among toddler deaths reviewed.

Distribution of Primary Causes of Deaths Among Reviews of Deaths in Children Ages 1 to 4 Years, from 2018 through 2022 (n=585).

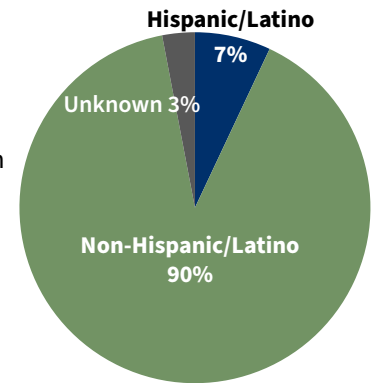
Primary causes of death among toddlers were almost evenly distributed between external injuries (47%) and medical conditions (48%).



There is no ethnic disparity among toddler deaths reviewed.

Distribution of Ethnicity Among Reviews of Death in Children 1 to 4 Years, from 2018 through 2022 (n=585).

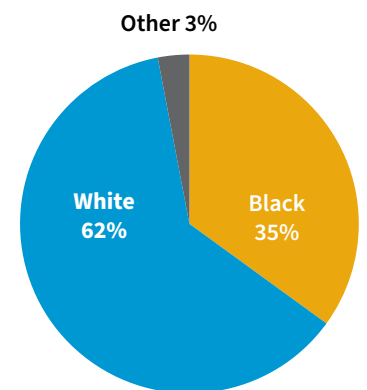
The distribution of ethnicity among toddler deaths reviewed is similar to the distribution of ethnicity among all CFR deaths. Hispanic/Latino children accounted for 7% of all CFR deaths and 7% of toddler deaths reviewed. Non-Hispanic/Latino children accounted for 90% of all CFR deaths and 90% of toddler deaths reviewed. Children of unknown ethnicities accounted for 3% of all CFR deaths and 3% of toddler deaths reviewed. There is no statistically significant difference in the distribution of ethnicity between toddler deaths reviewed and all CFR deaths.



There is no disparity between races among toddler deaths reviewed.

Distribution of Race Among Reviews of Deaths in Children Ages 1 to 4, from 2018 through 2022 (n=585).

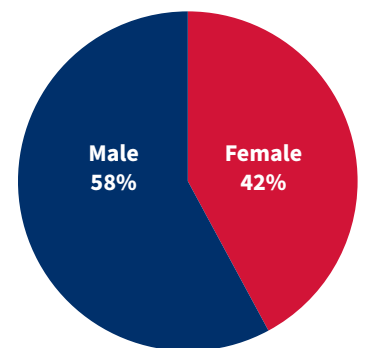
The distribution of race among toddler deaths reviewed is similar to the distribution of race among all CFR deaths. Black children accounted for 36% of all CFR deaths and 35% of toddler deaths reviewed. White children accounted for 61% of all CFR deaths and 62% of toddler deaths reviewed. Children of other races accounted for 3% of all CFR death reviews and 3% of toddler deaths reviewed. There is no statistically significant difference in the distribution of race between toddler deaths reviewed and total CFR deaths.



Most toddler deaths were males.

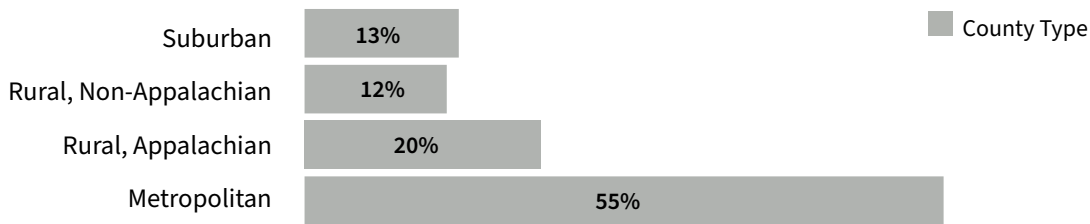
Distribution of Sex Among Reviews of Deaths in Children 1 to 4 Years, from 2018 through 2022 (n=585).

Males accounted for 58% of all CFR deaths and 58% of toddler deaths reviewed. Females accounted for 42% of all CFR deaths and 42% of toddler deaths reviewed. There is no statistically significant difference in the distribution of sex between toddler deaths reviewed and all CFR deaths.



There is no disparity between resident county types among toddler deaths reviewed.

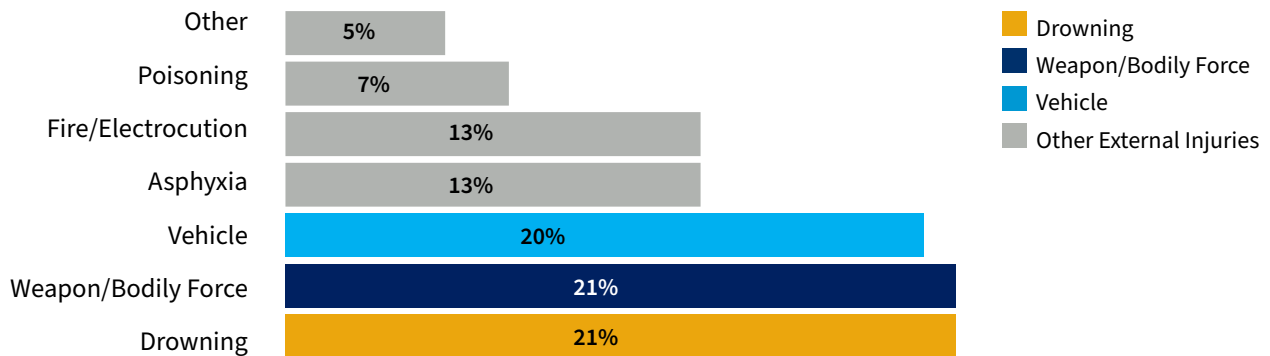
Distribution of County Types Among Reviews of Deaths in Children 1 to 4 Years, from 2018 through 2022 (n=585).



Among toddler deaths reviewed from 2018 through 2022, 55% were from metropolitan counties, 20% were from rural Appalachian counties, 12% were from rural non-Appalachian counties, and 13% were from suburban counties. Among all CFR deaths, 58% of toddlers were from metropolitan counties, 17% were from rural Appalachian counties, 12% were from rural non-Appalachian counties, and 13% were from suburban counties. There is no statistically significant difference in the distribution of resident county types between toddler deaths reviewed and all CFR deaths.

Most toddlers died from drowning, a weapon or bodily force, or a vehicular incident.

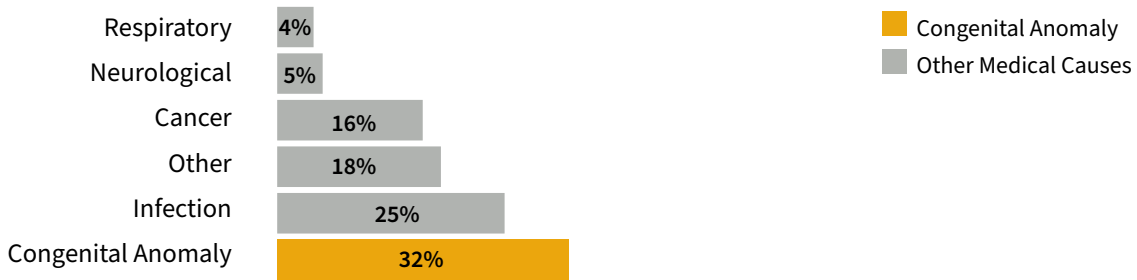
Distribution of External Injuries Among Reviews of Deaths in Children 1 to 4 Years, from 2018 through 2022 (n=277).



The three leading causes of death from external injury remain consistent from previous years. Among all reviews of deaths among toddlers ages 1 to 4 years, 21% died from drowning, 21% died from the physical trauma from a weapon or bodily force, and 20% died from a vehicular incident. Asphyxia was responsible for 13% of reviews, as well as fire/electrocution. Poisoning only represented 7% of death reviews, and deaths due to other external causes, such as animal bites, falls/crushes, exposure, and undetermined causes, accounted for 5% of reviews.

Most medical deaths in toddlers were congenital anomalies.

Distribution of Medical Causes Among Reviews of Deaths in Children 1 to 4 Years, from 2018 through 2022 (n=280).



The leading cause of medical deaths reviewed among toddlers was congenital anomaly (32%). Infection (e.g., COVID-19, influenza, and pneumonia) was the second leading cause of medical death among toddler deaths reviewed (25%). Other medical conditions (e.g., unknown causes, diabetes, conditions that originated during perinatal period, malnutrition/dehydration, and conditions not otherwise categorized) accounted for 18% of all medical deaths reviewed among toddlers.

YOUNG CHILDREN: AGES 5 TO 9 YEARS

According to the CDC, the leading causes of death for young children (ages 5 to 9 years) nationally from 2017 through 2020 were accidental external injuries, cancer, congenital anomalies, and homicidal assault. Among the deaths due to accidental external injuries in young children, the leading causes of death were vehicular injuries, drowning, and fire-related deaths. Nationally, young children accounted for the lowest death rate during the same period, compared to all other age groups (3.52 per 100,000 children).¹

In Ohio, local CFR boards found that young children accounted for 6% of all CFR deaths from 2018 through 2022. This age group accounted for the lowest number of deaths reviewed. Deaths of young children also represented 5% of all CFR deaths for Black children, 6% of CFR deaths for White children, and 6% of CFR deaths for children of other races.

KEY FINDING:

Local CFR boards in Ohio found that 42% of deaths reviewed for young children were preventable.

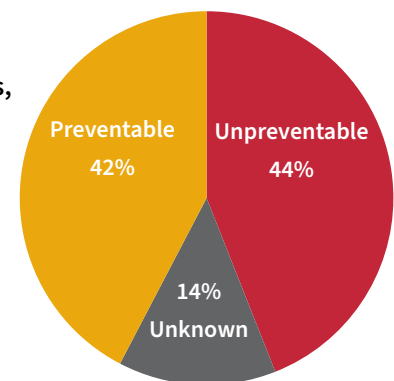
Young Children Death Review Findings

- There were no racial, ethnic, or sex disparities among deaths of young children (ages 5 to 9 years).
- The leading manner of young child deaths reviewed was natural (54%).
- Most deaths due to external injury among young children were due to vehicular incidents (36%) and bodily force or weapons (21%).
- Most deaths due to a medical condition among young children were from cancer (28%), congenital anomalies (19%), and infections (19%).

Forty-two percent of young child deaths were preventable.

Distribution of Preventability Among Reviews of Deaths in Children Ages 5 to 9 Years, from 2018 through 2022 (n=300).

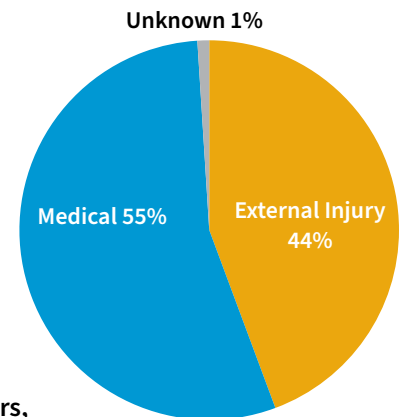
Among deaths reviewed of young children, 42% were determined to be preventable and 44% were determined to be unpreventable. Fourteen percent of deaths reviewed among young children could not determine preventability.



More young children died from medical conditions.

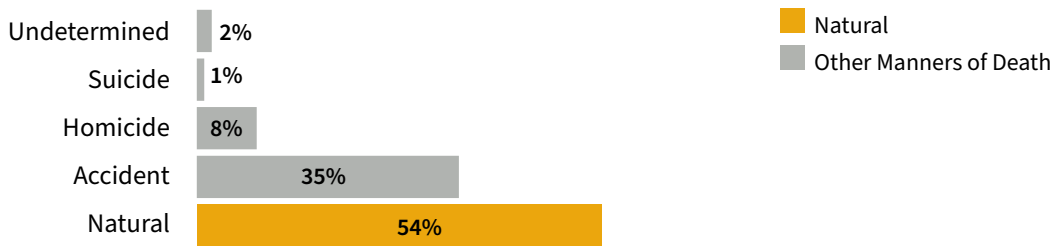
Distribution of Primary Causes of Death Among Reviews of Deaths in Children Ages 5 to 9 Years, from 2018 through 2022 (n=300).

The primary causes of death among deaths reviewed of young children were medical conditions (55%) and external injury (44%). Only 1% of young children deaths reviewed could not determine the primary cause of death.



Most young children died in a natural manner.

Distribution of Manner of Death Reviews Among Deaths in Children Ages 5 to 9 Years, from 2018 through 2022 (n=300).

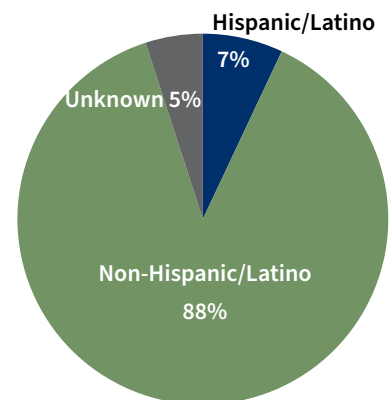


Most deaths reviewed of young children were by natural causes (54%), followed by accidental causes (35%) and homicide (8%). Only 2% of young children deaths reviewed were of undetermined manner of death.

There is no ethnic disparity among young child deaths reviewed.

Distribution of Ethnicity Among Reviews of Deaths in Children Ages 5 to 9 Years, from 2018 through 2022 (n=300).

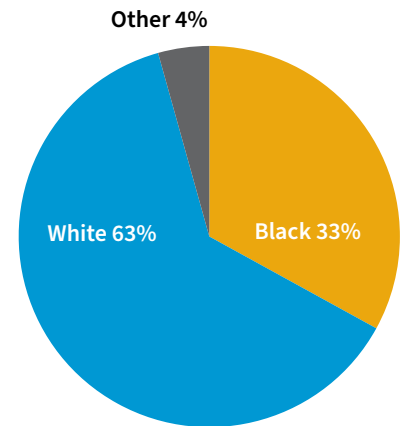
The distribution of ethnicity among young children (ages 5 to 9 years) is similar to the distribution of ethnicity among all CFR deaths. Hispanic/Latino children accounted for 7% all CFR deaths and 7% of young child deaths reviewed. Non-Hispanic/Latino children accounted for 90% of all CFR deaths and 88% of young child deaths reviewed. Children of unknown ethnicities accounted for 3% of all CFR deaths and 5% of young child deaths reviewed. There is no statistically significant difference in the distribution of ethnicity between young child deaths reviewed and all CFR deaths.



There is no racial disparity among young child deaths reviewed.

Distribution of Race Among Reviews of Deaths in Children Ages 5 to 9 Years, from 2018 through 2022 (n=300).

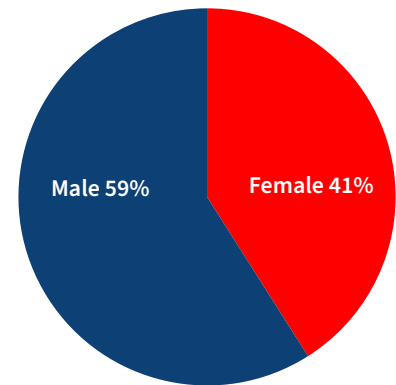
The distribution of race among young children (ages 5 to 9 years) is similar to the distribution among all CFR deaths. Black children accounted for 36% of all CFR deaths and 33% of young child deaths reviewed. White children accounted for 61% of all CFR deaths and 63% of young child deaths reviewed. Children of other races accounted for 3% of all CFR deaths and 4% of young child deaths reviewed. There is no statistically significant difference in the distribution of race between young child deaths reviewed and all CFR deaths.



More males die as young children.

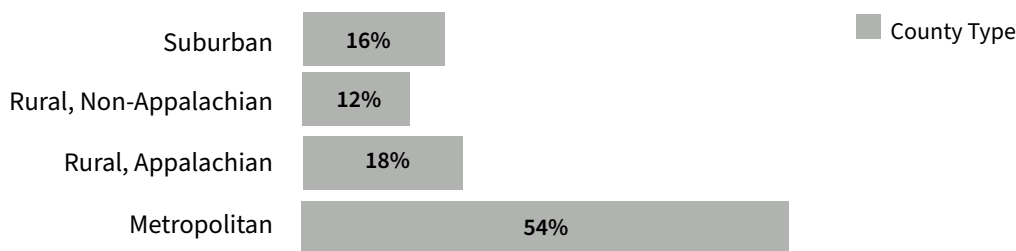
Distribution of Sex Among Reviews of Deaths in Children Aged 5 to 9, from 2018 through 2022 (n=300).

Males accounted for 58% of all CFR deaths and 59% of young child deaths reviewed. Females accounted for 42% of all CFR deaths and 41% of young child deaths reviewed. There is no statistically significant difference in the distribution of sex between young child deaths reviewed and all CFR deaths.



There is no disparity between resident county types among young child deaths reviewed.

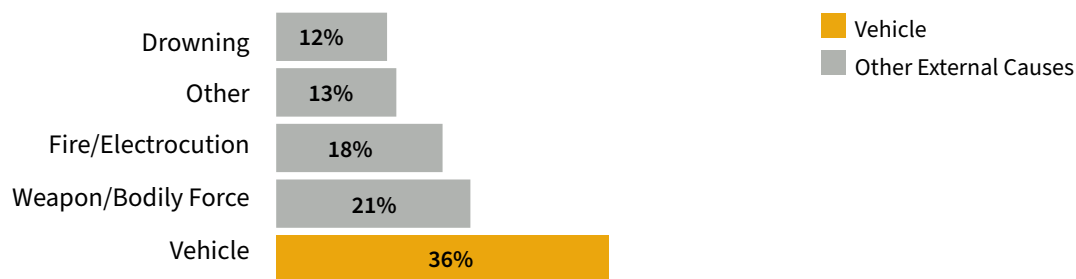
Distribution of Resident County Types Among Reviews of Deaths in Children 5 to 9 Years, from 2018 through 2022 (n=300).



Among young child deaths reviewed from 2018 through 2022, 54% were from metropolitan counties, 18% were from rural Appalachian counties, 12% were from rural non-Appalachian counties, and 16% were from suburban counties. Among all CFR deaths, 58% were from metropolitan counties, 17% were from rural Appalachian counties, 12% were from rural non-Appalachian counties, and 13% were from suburban counties. The difference in distribution between resident county types among young child deaths reviewed and all CFR deaths was not statistically significant.

Most external deaths reviewed among young children were due to **vehicles**.

Distribution of External Causes Among Reviews of Deaths in Children 5 to 9 Years, from 2018 through 2022 (n=133).



Vehicles were the leading cause of external deaths among deaths reviewed for young children (36%). This is consistent with previous years. The second-leading cause of external injury deaths reviewed among young children was traumatic injury due to weapons or bodily force (21%), followed by fire/electrocution (18%). Other deaths (e.g., fall/crush, poisoning/overdose, and asphyxia) accounted for 13% of external injury deaths reviewed among young children.

Most medical deaths reviewed among young children were from **cancer**.

Distribution of Medical Causes Among Reviews of Deaths in Children 5 to 9 Years, from 2018 through 2022 (n=164).



For medical deaths reviewed among young children, cancer was the leading cause of death (28%). This is consistent with previous years. The second leading causes of medical deaths reviewed among young children were congenital anomalies (19%) and infections (19%). Infections included, but are not limited to, influenza, pneumonia, and COVID-19. Other medical conditions (e.g., diabetes, malnutrition/dehydration, cardiovascular conditions, conditions not otherwise specified, and unknown causes of medical death) accounted for 14% of medical deaths reviewed among young children.

PREADOLESCENTS: AGES 10 TO 14 YEARS

According to the CDC, the leading cause of death among preadolescents (ages 10 to 14 years) nationally, from 2017 through 2020, was accidental injury, with an unadjusted death rate of 3.9 per 100,000 children. The leading cause of accidental deaths was vehicular among preadolescents. The next leading causes of death among preadolescents were suicide (2.7 per 100,000) and cancer (2.0 per 100,000 children).¹

In Ohio, local CFR boards found that 9% of all CFR deaths from 2018 through 2022 were for preadolescents. Children in this age group also represented 7.1% of all deaths reviewed for Black children, 11% of all deaths reviewed for White children, and 11% of all deaths reviewed for children of other races.

KEY FINDING:

Local CFR boards in Ohio found that 49% of deaths reviewed for preadolescents were preventable.

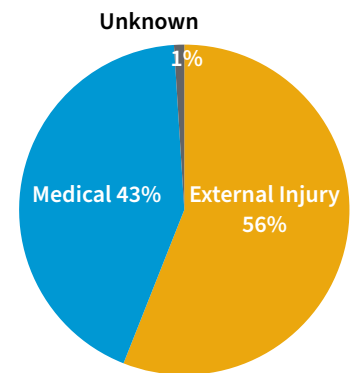
Preadolescent Death Review Findings

- Most preadolescent deaths due to a medical condition were from cancer and congenital anomalies.
- Most preadolescent deaths due to external injury were from weapons or bodily force, hanging or asphyxia, and vehicular incidents.
- The leading manner of death among preadolescents was natural.

Fifty-six percent of deaths reviewed among preadolescents were due to external injuries.

Distribution of Primary Causes of Death Among Reviews of Deaths in Children Ages 10 to 14 Years, from 2018 through 2022 (n=522).

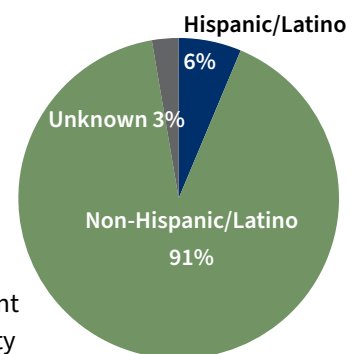
The leading primary cause of death among deaths reviewed for preadolescents was external injuries (56%), which is consistent with previous years. Medical causes of death accounted for 43% of preadolescent deaths reviewed, and only 1% of preadolescent deaths reviewed were of unknown primary cause.



There is no ethnic disparity among preadolescent deaths reviewed.

Distribution of Ethnicity Among Reviews of Deaths in Children 10 to 14 Years, from 2018 through 2022 (n=522).

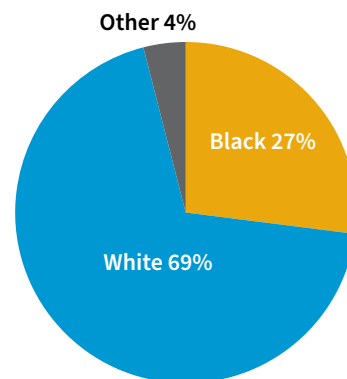
The distribution of ethnicity among preadolescent deaths reviewed is similar to the distribution of ethnicity among all CFR deaths. Hispanic/Latino children accounted for 7% of all CFR deaths and 6% of preadolescent deaths reviewed. Non-Hispanic/Latino children accounted for 90% of all CFR deaths and 91% of preadolescent deaths reviewed. Children of unknown ethnicities accounted for 3% of all CFR deaths and 3% of preadolescent deaths reviewed. There is no statistically significant difference in the distribution of ethnicity between preadolescent deaths reviewed and all CFR deaths.



White children are overrepresented among preadolescent deaths reviewed.

Distribution of Race Among Reviews of Deaths in Children 10 to 14 Years, from 2018 through 2022 (n=522).

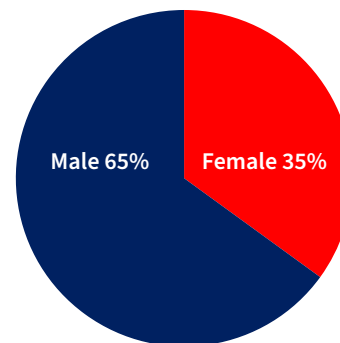
White children accounted for 60% of all CFR deaths and 69% of preadolescent deaths reviewed. Black children accounted for 37% of all CFR deaths and 27% of preadolescent deaths reviewed. Children of other races accounted for 3% of all CFR deaths and 4% of preadolescent deaths reviewed. The distribution of race among preadolescent deaths reviewed is significantly different from the distribution of race among all CFR deaths, with White children being overrepresented among preadolescent deaths.



Males are overrepresented among preadolescent deaths reviewed.

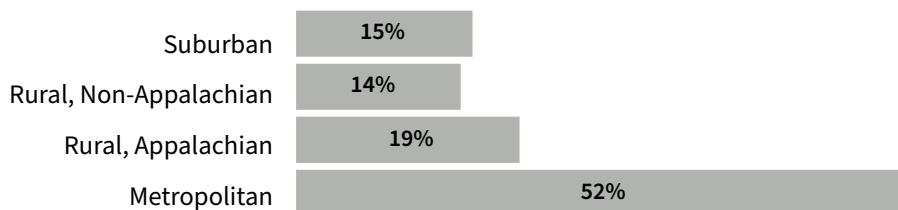
Distribution of Sex Among Reviews of Deaths in Children 10 to 14 Years, from 2018 through 2022 (n=522).

Males accounted for 58% of all CFR deaths and 65% of preadolescent deaths reviewed. Females represent 42% of all CFR deaths and 35% of preadolescent deaths reviewed. The distribution of sex among preadolescent deaths reviewed is significantly different from the distribution of sex among all CFR deaths, with males being overrepresented.



There is no disparity between county types among preadolescent deaths reviewed.

Distribution of County Types Among Reviews of Deaths in Children 10 to 14 Years, from 2018 through 2022 (n=522).



Among preadolescent deaths reviewed from 2018 through 2022, 52% were from metropolitan counties, 19% were from rural Appalachian counties, 14% were from rural non-Appalachian counties, and 15% were from suburban counties. Among all CFR deaths, 58% were from metropolitan counties, 17% were from rural Appalachian counties, 12% were from rural non-Appalachian counties, and 13% were from suburban counties. The distribution of county types among preadolescent deaths reviewed and all CFR deaths was not statistically significant.

Most preadolescent deaths reviewed were **natural** in manner.

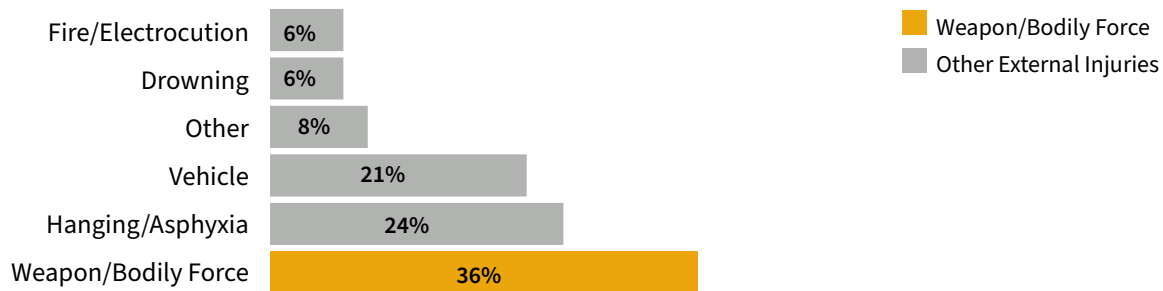
Distribution of Manners of Death Among Reviews of Deaths in Children 10 to 14 Years, from 2018 through 2022 (n=522).



The leading manner of death among preadolescent deaths reviewed was natural (43%). This is consistent with previous years. The second leading manner of death among preadolescent deaths reviewed was accident (26%), followed by suicide (22%).

The leading cause of external injury deaths among preadolescents was trauma by **weapon or bodily force**.

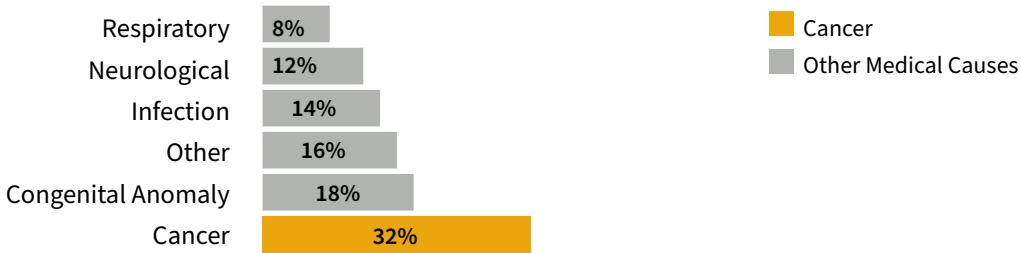
Distribution of External Injuries Among Reviews of Deaths in Preadolescents and Young Teens 10 to 14 Years of Age, from 2018 through 2022 (n=295).



The leading cause of external injury deaths among preadolescents was traumatic physical injury from a weapon or bodily force (35%). Hanging/asphyxia was the second-leading cause of external injury death among preadolescent deaths reviewed (24%), followed by vehicular-related injuries (21%). Other external injury deaths (e.g., exposure, fall/crush, poisoning/overdose, and undetermined cause of external injury) accounted for 8% of preadolescent deaths reviewed due to external injuries.

Most preadolescent deaths reviewed due to medical causes were from cancer.

Distribution of Medical Conditions Among Reviews of Deaths in Preadolescents and Young Teens 10 to 14 Years of Age, from 2018 through 2022 (n=223).



The leading cause of medical deaths reviewed for preadolescents was cancer (32%). The second-leading medical cause of death among preadolescent deaths reviewed was congenital anomalies (18%). Other medical causes of death (e.g., diabetes, cardiovascular conditions, complications from conditions present at birth, unknown causes, and medical conditions not otherwise listed) accounted for 16% of preadolescent deaths reviewed due to medical causes. Infections (e.g., influenza, pneumonia, COVID-19, and other infections not otherwise listed) accounted for 14% of preadolescent deaths reviewed due to medical causes.

TEEN DEATHS: AGES 15 TO 17 YEARS

According to the CDC, the national leading cause of death of teenagers (ages 15 to 17 years) between 2017 and 2020 was external injuries, with injuries due to vehicular accidents being the leading cause of death. Among the deaths due to medical conditions, the national leading causes of death of teenagers between 2017 and 2020 were cancer and cardiovascular conditions.¹

In Ohio, local CFR boards found that 12% of deaths reviewed from 2018 through 2022 were for teenagers (ages 15 to 17 years). Teenagers accounted for the second highest number of deaths reviewed, behind infants. Deaths reviewed for teenagers also represented 10% of all CFR deaths for Black children, 14% of all CFR deaths for White children, and 8% of all CFR deaths for children of other races.

KEY FINDING:

Local CFR boards in Ohio found that 62% of deaths reviewed for teenagers were preventable.

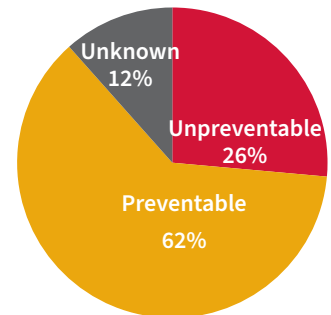
Teen Death Review Findings

- Most deaths among teenagers due to a medical condition were from cancer, congenital anomalies, and infection.
- Most deaths among teenagers due to external injuries were due to weapons or bodily force, vehicular incidents, and hanging/asphyxia.
- The leading manner of death among teenagers was accidental.

Most deaths reviewed among teenagers were preventable.

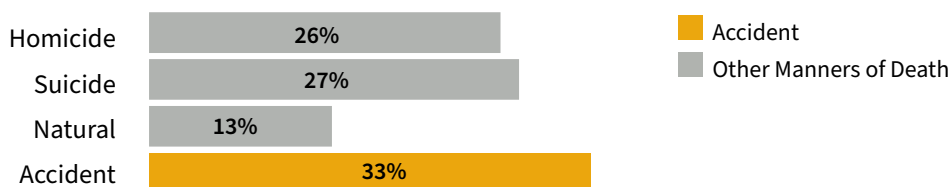
Distribution of Preventability Among Reviews of Deaths in Teens 15 to 17 Years, from 2018 through 2022 (n=660).

Most deaths reviewed among teenagers were determined to be preventable (62%). Twenty-six percent of deaths reviewed among teenagers were determined to be unpreventable, and preventability was unknown for 12% of deaths reviewed among teenagers.



Most teens died by accident.

Distribution of Manner of Death Among Reviews of Deaths in Teens 15 to 17 Years, from 2018 through 2022 (n=660).

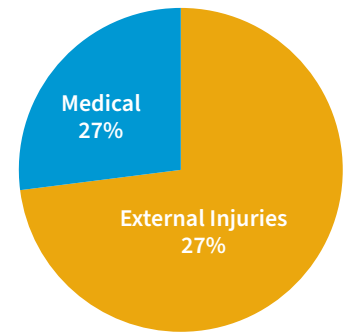


The leading manners of death for teenagers were accidents (33%), suicides (27%), and homicides (26%). Natural deaths only accounted for 13% of all deaths reviewed among teenagers.

Most teens died from external injuries.

Distribution of Primary Causes of Death Among Reviews of Deaths in Teens 15 to 17 Years, from 2018 through 2022 (n=660).

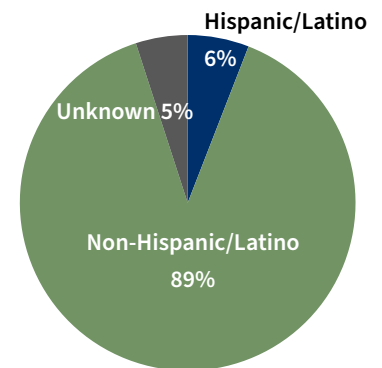
The leading primary cause of death among reviews for teenagers was external injury (73%). Deaths from medical conditions accounted for 27% of deaths reviews among teenagers.



There is no ethnic disparity in deaths reviewed among teenagers.

Distribution of Ethnicity Among Reviews of Deaths in Teens 15 to 17 Years, from 2018 through 2022 (n=660).

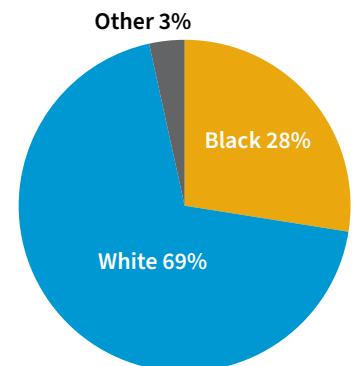
The distribution of ethnicity in deaths reviewed among teenagers is similar to the distribution of ethnicity among all CFR deaths. Hispanic/Latino children accounted for 7% of CFR deaths and 6% of deaths reviewed among teenagers. Non-Hispanic/Latino children accounted 90% of CFR deaths and 89% of deaths reviewed among teenagers. Children of unknown ethnicity accounted for 3% of CFR deaths and 5% of deaths reviewed among teenagers. There is no statistically significant difference in the distribution of ethnicities among teenage deaths reviewed and all CFR deaths.



White children are overrepresented among teenage deaths reviewed.

Distribution of Race Among Reviews of Deaths in Teens 15 to 17 Years, from 2018 through 2022 (n=660).

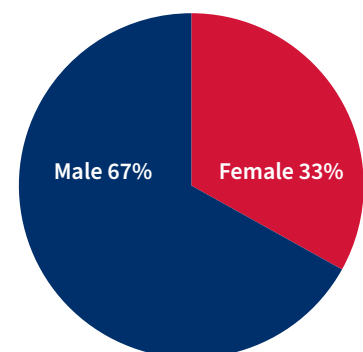
White children account for 60% of all CFR deaths and 69% of deaths reviewed among teenagers. Black children account for 37% of all CFR deaths and 28% of deaths reviewed among teenagers. Children of other races account for 3% of all CFR deaths and 3% of deaths reviewed among teenagers. The distribution of race among teen deaths reviewed and all CFR deaths was statistically different, with White children being overrepresented among teenage deaths.



Males are overrepresented among teenage deaths reviewed.

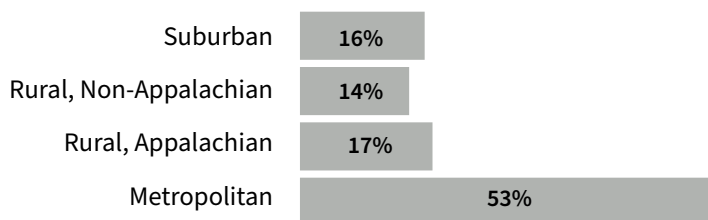
Distribution of Sex Among Reviews of Deaths in Teens 15 to 17 Years, from 2018 through 2022 (n=660).

Males accounted for 58% of CFR deaths and 67% of deaths reviewed among teenagers. Females represented 42% of CFR deaths and 33% of deaths reviewed among teenagers. There is a statistically significant difference in the distribution of sex between deaths reviewed among teenagers and total CFR deaths, with males being overrepresented.



There is no disparity between resident county types among teenage deaths reviewed.

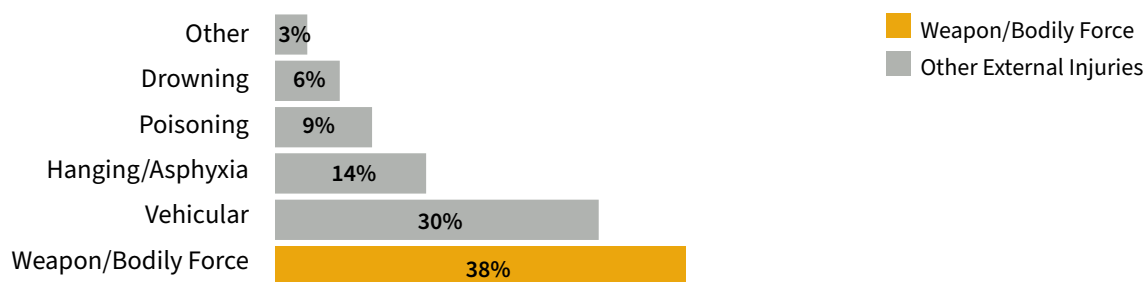
Distribution of County Types Among Reviews of Deaths in Teens 15 to 17 Years, from 2018 through 2022 (n=660).



Among teenage deaths reviewed from 2018 through 2022, 53% were from metropolitan counties, 17% were from rural Appalachian counties, 14% were from rural non-Appalachian counties, and 16% were from suburban counties. Among all CFR deaths, 58% were from metropolitan counties, 17% were from rural Appalachian counties, 12% were from rural non-Appalachian counties, and 13% were from suburban counties. The distribution of resident county types among teenage deaths reviewed was not statistically different from the distribution of resident county types among all CFR deaths.

The leading cause death due to external injuries among teenage death reviews was trauma by weapon or bodily force.

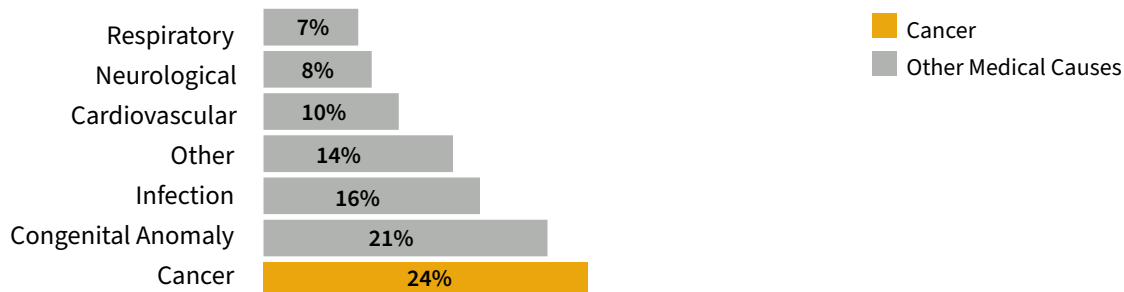
Distribution of External Injuries Among Reviews of Deaths in Teens 15 to 17 Years, from 2018 through 2022 (n=479).



The leading cause of external injury death among teenagers was traumatic physical injury from a weapon or bodily force (38%). Hanging/asphyxia was the second-leading cause of external injury death among teenage deaths reviewed (24%), followed by vehicular-related injuries (21%).

Cancer was the leading cause of medical deaths reviewed among teenagers.

Distribution of Medical Conditions Among Reviews of Deaths in Teens 15 to 17 Years, from 2018 through 2022 (n=177).



Cancer was the leading cause of medical deaths reviewed among teenagers (24%), which is consistent with previous years. Genetic and congenital anomalies were the second leading cause of deaths reviewed among teenagers (21%), followed by infections (16%). Other medical conditions (e.g., unknown conditions, malnutrition, diabetes, malnutrition/dehydration, and medical conditions not otherwise listed) accounted for 14% of medical deaths among teenage deaths reviewed.



Appendices

APPENDIX I: Overview of Ohio Child Fatality Review Program

While mortality data provides an overall picture of child deaths by number and cause, it is from a careful study of every child's death that public health professionals can learn how best to respond to a death and how best to reduce the incidence of preventable child deaths. Recognizing the need to better understand why children die, former Governor Bob Taft signed a bill into law in July 2000 mandating child fatality review (CFR) boards in each of Ohio's counties to review the deaths of children younger than 18.

Local CFR teams will:

- Promote cooperation, collaboration, and communication among all groups that serve families and children.
- Maintain a database of all child deaths to develop an understanding of the causes and incidence of those deaths.
- Recommend and develop plans for implementing local service and program changes and advise Ohio Department of Health of data, trends, and patterns found in child deaths.

While membership varies among local boards, the law requires that minimum membership include:

- County coroner or designee.
- Chief of police or sheriff or designee.
- Executive director of a public children service agency or designee.
- Public health official or designee.
- Executive director of a board of alcohol, drug addiction, and mental health services or designee.
- Pediatrician or family practice physician.

Additional members are recommended and may include the county prosecutor, fire/emergency medical service representatives, school representatives, representatives from Ohio Family and Children First Councils, other child advocates, and other child health and safety specialists. The local health commissioner serves as board chairperson in many counties.

CFR boards must meet at least once a year to review all deaths of child residents of that county. The basic review process includes:

- The presentation of relevant information.
- The identification of contributing factors.
- The development of data-driven recommendations.

Local CFR board review meetings are not open meetings, and all discussion and work products are confidential.

Each local CFR board provides data to the Ohio Department of Health by recording information on a case report tool before entering it into a national web-based data system. The report tool and data system were developed by the National Center for Fatality Review and Prevention (NCFRP) with a cooperative agreement from the federal Maternal and Child Health Bureau within the U.S. Health Resources & Services Administration. The tool captures information about the factors related to each death and the often-complex conversations that happen during the review process in a format that can be analyzed on the local, state, or national level. This report is based on the analysis of data from the NCFRP data system.

The Ohio Department of Health is responsible for providing technical assistance and annual training to the CFR boards. Throughout the year, conference calls and NCFRP webinars provide additional training opportunities for Ohio's local boards.

Ohio Department of Health staff coordinate the data collection, assure the maintenance of a web-based data system, and analyze the data reported by the local boards. The annual state report is prepared and published jointly with the Ohio Children's Trust Fund. As the value of CFR has been promoted widely, Ohio Department of Health staff receive many requests for data reports on specific topics or for specific geographic regions.

By reporting the information by year of death, it is possible to compare CFR data with data from other sources such as vital statistics. In making such comparisons, it is important to use caution and acknowledge the unique origins and purposes for each source of data. CFR data included in this report are the outcome of thoughtful inquiry and discussion by a multi-disciplinary group of community leaders who consider all the circumstances surrounding the death of each child. They bring to the review information from a variety of agencies, documents, and areas of expertise. Their careful review process results in a thorough description of the factors related to child deaths.

Despite their best efforts, CFR boards are not able to review every child death. Some reviews must be delayed until all legal investigations and prosecutions are completed. Some deaths occur outside the county of residence or outside the state, resulting in long delays in notification to the CFR board. Due to these variables, it is usually impossible to find an exact number-for-number match between CFR data and data from other sources such as vital statistics. The unique role of CFR data is to provide a comprehensive depth of understanding to augment other, more one-dimensional data.

APPENDIX II: Fetal Infant Mortality Review (FIMR)

Using the Life Course Framework and building on the successful model of Child Fatality Review, the Ohio Department of Health initiated an additional review program in 2014 to fully understand the issues of fetal and infant mortality. Fetal Infant Mortality Review (FIMR) is a multi-disciplinary, multi-agency, community-based program that identifies local infant mortality issues through the review of fetal and infant deaths and develops recommendations and initiatives to reduce infant deaths.

The FIMR process includes the following:

- Identification of cases based on the infant mortality issues of the community.
- Collection of appropriate records from medical, social service, and other providers.
- Maternal interview.
- Abstraction of available records to produce a de-identified case summary.
- Presentation of de-identified case summary to review team.
- Development of data-driven recommendations.
- Implementation of recommendations to prevent future deaths.

The classic FIMR includes two components: a case review team (CRT) and a community action team (CAT).

- **CRT:** Reviews case summaries and develops recommendations.
 - Diversity and community involvement in the CRT is key.
 - CRT members should have influence and commitment to improvement of services.
 - Members should be those who provide services for families as well as community advocates. Recommended professionals include representatives from local health department, obstetrics/gynecology, social services, sudden infant death syndrome agencies, Medicaid, WIC, minority advocacy, childcare providers, drug treatment centers, and hospital administrators.
- **CAT:** Reviews the recommendations presented by the CRT and develops a plan to implement these interventions.
 - It is recommended that an existing community group serve as the CAT, rather than creating a new team. Examples of possible CAT teams: Healthy Mothers/Healthy Babies program, Prenatal/Perinatal Regional Consortium, Community Advisory Board, mayor's or county commissioners' blue-ribbon panel on infant mortality.
 - The CAT coordinates its plan with the CRT and shares its interventions.

Key roles for local FIMR programs include coordinator, abstractor, and interviewer. These positions can be held by one person, or three different, coordinated staff members. Most of the FIMR budget is spent on salaries for these positions.

- **Coordinator:** Oversees the FIMR process, including selection of cases to review, monitoring case preparation, coordination of team meetings and activities, and summarization of data for local and state teams.
- **Abstractor:** Requests medical/social services records, enters appropriate information (including maternal interview) into the database system, and prepares case summary.
- **Interviewer:** Tracks, contacts, and engages the mother/family of the infant who died, conducts interview, and provides information to abstractor.

Similarities of FIMR and CFR:

- Both are local systems, with local control and determination.
- Both are public health focused.
- Both are prevention focused.
- Neither is a medical peer review system.
- Neither is investigative or prosecutorial.
- Neither is research.

Differences between FIMR and CFR:

- CFR is mandated by the Ohio Revised Code, FIMR is not.
- FIMR has two teams, a CRT (review team) and a CAT (action team).
- FIMRs usually review a relevant sample of cases, which includes fetal deaths and infant deaths up to one year of age; CFR in Ohio reviews all child deaths from birth through age 17.
- FIMR is de-identified, whereas CFR is confidential.
- FIMR includes a maternal/family interview.
- FIMR includes lay community members on the case review team.
- FIMR teams usually include more obstetrics/gynecology, maternal-fetal medicine, and neonatology representatives than CFR.

Ohio currently has ten FIMR teams:

- Butler County.
- Columbus City (Franklin County).
- Cuyahoga County.
- Dayton-Montgomery County.
- Hamilton County.
- Lorain County.
- Lucas County.
- Mahoning County.
- Stark County.
- Summit County.

Cause of Death: The disease or injury that initiated the train of events leading directly to death, or the circumstances of the accident or violence that produced the fatal injury.

Congenital Anomaly: Category of cause of death includes deaths caused by congenital malformations, deformations, and chromosomal anomalies, and congenital disorders.

County Type: Ohio's 88 counties have been categorized into four county types. This report divides counties into Appalachian, rural non-Appalachian, metropolitan, and suburban.

Ethnicity: Ethnicity determines whether a person is of Hispanic origin or not.

Hispanic: The dictionary definition of "Hispanic" is "of or relating to the people, speech, or culture of Spain," and "Latino" is a person of Latin American origin. Due to the definitions, a Latino child may not necessarily be Hispanic, so it is important that both terms are used to be inclusive of more children. Federal agencies define "Hispanic or Latino" as "a person of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin regardless of race."²²

Infant Death: The death of a live-born baby before his or her first birthday.

Infant Mortality Rate: The number of infant deaths in a specific year divided by the number of live births within that same year, multiplied by 1,000.

Manner of Death: Manner of death is a classification of deaths based on the circumstances surrounding a cause of death and how the cause came about. The five manner of death categories on the Ohio death certificate are natural, accident, homicide, suicide, or undetermined/pending/unknown.

Ohio Equity Institute (OEI): The Ohio Equity Institute for Equity in Birth Outcomes, is a partnership between ODH and nine urban communities to improve birth outcomes and reduce racial disparities in infant deaths.

Prematurity: Category of infant cause of death comprised of short gestation and low birth weight as well as several other causes.

Preventability: The community or an individual could reasonably have changed the circumstances that led to a death.

Race/Ethnicity: The federal definitions of race are as follows:²³ "White" refers to a person having origins in any of the original peoples of Europe, the Middle East, or North Africa; "Black" or "African American" refers to a person having origins in any of the Black racial groups of Africa; "American Indian" or "Alaska Native" refers to a person having origins in any of the original peoples of North and South America (including Central America) and who maintains tribal affiliation or community attachment; "Asian" refers to a person having origins in any of the original peoples of the Far East, Southeast

Asia, or the Indian subcontinent including, for example, Cambodia China, India, Japan, Korea, Malaysia, Pakistan, the Philippine Islands, Thailand, and Vietnam; “Native Hawaiian” or “Other Pacific Islander” refers to a person having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands. For this report, in cases where the ethnicity or race of a child was unknown, or not entered in the vital statistics or CFR data, the ethnicity or race of the biological parents was used as a proxy. In the instance of multiracial or multiethnic parents, the most minority ethnicity or race was used in defining the child’s demographics. This is consistent with how demographics are treated in the CFR data.

SIDS: Sudden infant death syndrome, a category for infant cause of death. The sudden death of an infant younger than one that cannot be explained after a thorough case investigation, including a complete autopsy, examination of the death scene, and review of the clinical history.

Vital Statistics: The statewide system for the registration of births, deaths, fetal deaths, and other vital events that happen within the State of Ohio.

WIC: The Special Supplemental Nutrition Program for Women, Infants, and Children is a federal program administered by the state to income eligible women and their children up to age 5. The program improves pregnancy outcomes by providing or referring to support services.

APPENDIX V: References

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