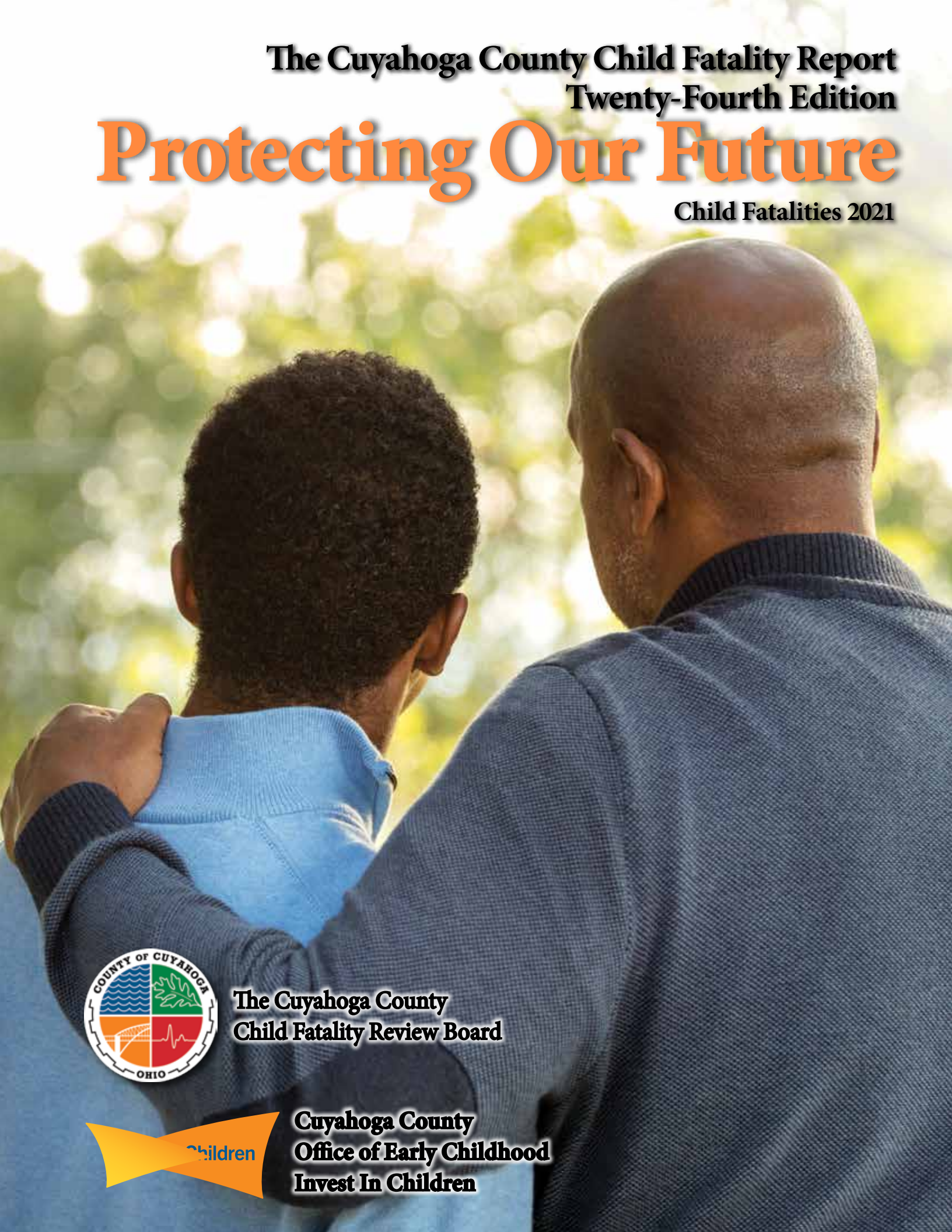
The Cuyahoga County Child Fatality Report
Twenty-Fourth Edition

Protecting Our Future

Child Fatalities 2021



The Cuyahoga County
Child Fatality Review Board

Cuyahoga County
Office of Early Childhood
Invest In Children

We dedicate this report to all the families who mourn the death of their child. The community honors their memory by pledging itself to a course of action that strives to prevent the death of another.

Recommendations

The purpose of the Cuyahoga County Child Fatality Review Board is to decrease the number of preventable child deaths. The Board reviews the deaths of all children less than 18 years old who live in Cuyahoga County. This confidential review is conducted by an interdisciplinary team who identifies the contributing causes, risk factors, and trends. The Board makes data-driven recommendations to protect the health and safety of all children in the community.

Infant Mortality and Inequities

1. Promote the strategies of the Ohio Equity Institute to reduce infant deaths and eliminate racial inequities in Cuyahoga County.

Prematurity

1. Support research and public awareness regarding the causes, risk factors, and lifelong effects of prematurity. Continue to educate women and expectant parents about the warning signs of preterm labor, the importance of interconception care, and the significance of a "Life Course Perspective" to decrease the risks of preterm births.
2. Support evidence-based and promising practices that decrease preterm births such as CenteringPregnancy® and appropriate birth spacing.
3. Promote a seamless system for perinatal services that also addresses the social determinants of health and the complex needs of many pregnant women by linking them to services for chronic health problems, drug treatment, mental health counseling, housing, and transportation.

Sleep Related Deaths

1. Partner with family serving agencies to provide safe sleep education to other infant caregivers, such as grandparents, relatives, and friends, with a focus on providing a safe sleep environment in any location.
2. Continue to educate childbirth instructors and staff at maternity and pediatric hospitals in Cuyahoga County about the importance of role modeling safe sleep in the hospital, educating all caregivers, having conversations with families about barriers to safe sleep, and providing tips to help parents continue safe sleep after discharge.
3. Increase home visitor programs and family serving agencies awareness of the components of a safe infant sleep environment by providing staff training on risk factors, local sleep related fatality data, and the most recent American Academy of Pediatrics safe sleep recommendations.
4. Promote the Ohio safe sleep campaign and the Cribs for Kids program to hospitals and agencies in Cuyahoga County.

Medically Related Deaths

1. Reinforce the importance of a medical home, care coordination, keeping appointments for children with chronic illnesses, and assessing for barriers and caregivers understanding of the treatment plan.
2. Reinforce among providers that multiple missed appointments for potentially life-threatening conditions (asthma, diabetes, acute mental health issues, etc.) are frequently noted in child fatality case reviews. Providers observing such patterns are in a unique position to assess the situation for barriers to compliance and determine if reporting a suspicion of medical neglect is warranted.

Unintentional Injuries

1. Support the Safe Kids/Safe Communities Coalition in their comprehensive efforts to prevent injuries and educate the community on safety issues that include child passenger seats/restraints; teen drivers; pedestrian, bus, and bicycle safety; and fire, water, and sports safety.
2. Partner with University Hospitals Rainbow Injury Prevention Center and MetroHealth Medical Center for a water safety initiative that includes swimming lessons, lake safety, and adult supervision of children.
3. Partner with child/family agencies to disseminate the message stressing the importance of adequate and appropriate adult supervision of children in homes, around water, and in neighborhoods.
4. Reinforce the importance of gun safety in the home: unloaded, locked and out of the reach of children.
5. Monitor the opioid epidemic in Cuyahoga County to identify how and where it is affecting the health, welfare and safety of children.

Homicide

1. Support educational programs that assist parents and guardians in understanding age appropriate behaviors, using alternative methods of discipline and choosing suitable caregivers.
2. Support domestic violence education and programs that: help families identify warning signs; outline actions to take, especially for escalating behaviors; provide access to counseling and emergency shelter; and initiate early intervention to limit the effects on children in the home.
3. Advocate for community-based safe haven centers for teens, to provide supervised activities and programs after school and on weekends.
4. Support the development and collaboration of violence intervention programs.

Suicide

1. Support school programs and mental health social platforms for depression awareness, bullying and suicide prevention that also include resources for assistance.
2. Advocate for additional inpatient child psychiatric beds to meet the mental health needs of this population.

Interagency

1. Strengthen the Cuyahoga County child protection system to ensure that institutions providing medical care or social services have real-time, cross-system collaboration and information sharing to better serve and protect children who have experienced, or are at high risk for, serious or life-threatening injury or medical neglect.

Technical Glossary

Infant – A person under 1 year of age.

Neonatal Period – The time period for all infants from their date of birth through the 27th day of life.

Postneonatal Period – The time period for all infants from the 28th day of life until the day before their 1st birthday.

Child – A person who has not yet reached their 18th birthday (all references to "child" in this report specify which age group/range is being discussed).

Cause of Death – Event that causes a physical problem, no matter how brief or prolonged, that leads to a child's death.

Manner of Death – Description of circumstances under which a child died. There are five categories for manner of death.

1. Natural: the death is a consequence of natural disease.
2. Accident: unintended and essentially unavoidable death, not by a natural, suicidal, or homicidal manner.
3. Suicide: death caused by self, with some degree of conscious intent.
4. Homicide: death caused by another human.
5. Undetermined: not enough evidence, yet or ever, to determine the manner of death.

Sleep Related Deaths – Deaths to infants under the age of 1 year that occur while sleeping. They can be classified as the following three types:

1. Sudden Infant Death Syndrome (SIDS): a sudden, unexplained death of an infant less than 1-year-old. It is a diagnosis of exclusion, meaning that after an extensive review of the infant's medical history, a complete autopsy, and a death scene investigation, no cause can be identified.
2. Accidental Suffocation: a result of another person lying on the baby, wedging of the baby, or the baby's face in a soft surface such as a pillow, blanket, or bumper pad.
3. Sudden Unexplained Infant Death (SUID)/Undetermined: ruled as the cause of death when an exact reason cannot be found, but the scene investigation indicates that there were dangers in the baby's sleep area.

All Other Races – A person who does not have ancestry in any of the original peoples of Europe, the Middle East, or Africa. It includes people, who indicate their race is not "White" or "Black," such as American Indian or Alaska Native, Asian, and Native Hawaiian or Other Pacific Islander, as well as ethnicities such as Hispanic.

Black – A person having origins in any of the black racial groups of Africa. It includes people who self-report their race as "Black" on demographic documents.

Hispanic – A person of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin regardless of race.

White – A person having ancestry in any of the original peoples of Europe, the Middle East, or North Africa. It includes people who self-report their race as "White" on demographic documents.

Rate – Measure that indicates how often an event is occurring during a certain time period; it is calculated by taking the count of an event during a specific time period and dividing this number by the population that is at risk for experiencing the event during the time period. Rates are often expressed in units of 10, such as per 100, per 1,000, or per 100,000.

> ***Example:*** *The infant mortality rate (IMR) is expressed as the number of deaths that occurred among infants 1 to 364 days old who were born alive during a given year, divided by the number of live births that occurred in the same year, multiplied by 1,000. Since 97 infants died during 2021, and there were 13,143 live births, the IMR is 7.4 per 1,000 live births (calculated by taking 97 divided by 13,143 and multiplying by 1,000).*

Ratio – Comparison made between two things; the fraction formed by the division of one amount by another.

> ***Example:*** *The population of Anytown, USA, was 100,000. It had 40,000 dwelling units. The ratio of people to dwelling units was 2.5 (100,000 divided by 40,000 equals 2.5).*

Trend – Term used to describe the general direction in which data are headed over a period of time. It often is demonstrated by placing a line in a chart. There needs to be a minimum of two data points to start a trend line, but as a general rule, most researchers prefer a minimum of six data points to predict a trend.

Inequity – Term used to describe an unfair difference between two groups.

> ***Example:*** *If the White infant mortality rate (IMR) was lower than the Black IMR, a racial inequity exists because one racial group (Black) has a higher rate of infant deaths compared to another racial group (White).*

First Ring Suburbs of Cleveland – Municipalities whose borders touch some portion of the city of Cleveland. See Appendix A in data tables section.

Outer Ring Suburbs of Cleveland – Municipalities whose borders don't touch some portion of the city of Cleveland. See Appendix A in data tables section.

There were 165 child deaths; tied for the second-lowest number of child deaths in county history.

The total number of child deaths increased by 13 in 2021 to a total of 165. This total number of child deaths was tied for the second-lowest number in the county's history. Deaths to children 1 to 9 years old increased by 70% while infant deaths decreased by 4% (from 101 to 97). The total number of infant deaths was also the lowest in the county's history. Child deaths between 10 and 17 years old increased by 10%. The total number of child deaths for 2021 included 97 infants and 34 children for both the 1 to 9 years old and the 10 to 17 years old age groups **(Table 1)**.

Table 1: Annual Number of Deaths by Age Group

Age Group	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total
Under 1 Year	131	133	121	155	128	118	120	120	101	97	**1,224**
1 - 9 Years	30	31	18	25	15	31	33	26	20	34	**263**
10 - 17 Years	21	22	26	20	29	39	32	28	31	34	**282**
Total	**182**	**186**	**165**	**200**	**172**	**188**	**185**	**174**	**152**	**165**	**1,769**

Lowest number of infant deaths in county history.

Ninety-seven infants died in 2021. This was 4 less than 2020 and 25 lower than the ten-year average of 122. There were 6 fewer infant deaths due to other medical causes and sleep related. There were two fewer infant motor vehicle deaths. Birth defects had the largest increase (from 12 in 2020 to 17 in 2021). Prematurity deaths increased by three and assault and other unintentional injury deaths increased by one in 2021.

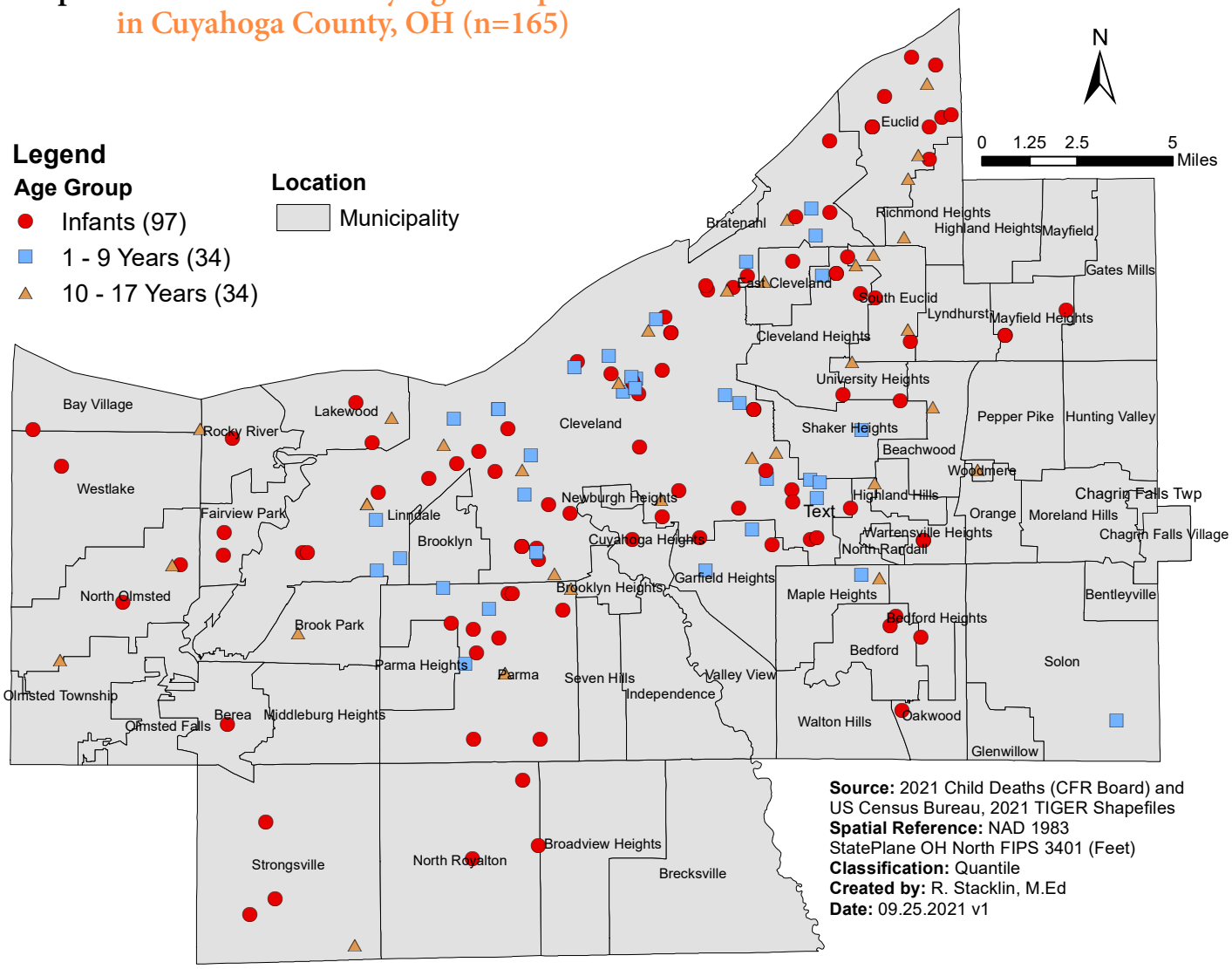
Highest number of child deaths between 1 and 9 years old in the last ten years.

Thirty-four children between 1 and 9 years of age died in 2021, which was 14 more than in 2020. Deaths caused by other medical causes increased by nine, and fire increased by four. Birth defects had three more deaths, while gunshot wound and cancer deaths increased by two. Hanging deaths increased by one. Prematurity, motor vehicle accident, assault, and poisoning deaths decreased by one.

Second-highest number of child deaths between 10 and 17 years old in the last ten years.

Thirty-four children aged 10 to 17 years died in 2021; three more than in 2020. There were five more motor vehicle accidents, three more drowning deaths and poisoning had two more deaths. Assault and other unintentional injury deaths decreased by two in 2021. The categories of other medical causes, gunshot wound and cancer each had one fewer death.

Map 1: 2021 Child Deaths by Age Group in Cuyahoga County, OH (n=165)



Source: 2021 Child Deaths (CFR Board) and US Census Bureau, 2021 TIGER Shapefiles
Spatial Reference: NAD 1983 StatePlane OH North FIPS 3401 (Feet)
Classification: Quantile
Created by: R. Stacklin, M.Ed
Date: 09.25.2021 v1

Map 1 shows the location of all child deaths in 2021.[1] The largest percent of deaths (49%) occurred within the city of Cleveland which has only 22% of the child population in Cuyahoga County **(Table 6)**. Deaths of children living in the first ring suburbs accounted for 34% and the remaining 17% of children lived in the outer ring suburbs **(Appendix A)**.

Taking a Closer Look

The child death rate was the second-highest in the last ten years.

Figure 1 gives a historical perspective over the last 20 years in Cuyahoga County, and the state of Ohio since 2009.[2-5] The county child death rate has been consistently higher than the state of Ohio though both rates increased from 2020 to 2021. The county rate of child deaths in 2021 (64.0) was 10% higher than in 2020 but was slightly lower than the ten-year average (64.3). Thirteen more deaths in 2021 led to a 9% increase, which was, in large part, due to a significant increase of deaths to children 1 to 9 years. The rise in the number was mostly caused by medical-related deaths.

Figure 1: Total Child Deaths (age 0-17) Cuyahoga County and State of Ohio

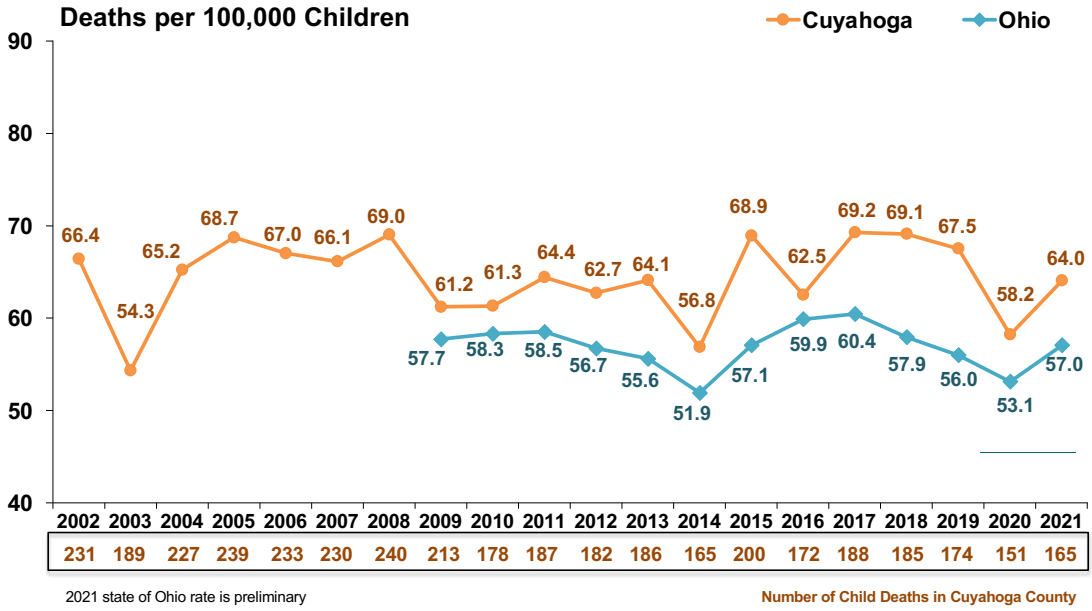


Table 2: Leading Causes of Death by Age Group in 2021

Cause of Death	Under 1 Year	1 - 9 Years	10 - 17 Years	Total
Prematurity	51	0	0	**51**
Other Medical Cause	10	12	3	**25**
Birth Defect	17	5	2	**24**
Sleep Related	17	0	0	**17**
Gunshot Wound	0	2	12	**14**
Drowning	0	2	4	**6**
Cancer	0	3	2	**5**
Motor Vehicle Accident	0	0	5	**5**
Fire	0	4	0	**4**
Hanging	0	1	3	**4**
Other Unintentional Injury	1	3	0	**4**
Assault	1	2	0	**3**
Poisoning	0	0	3	**3**
Total	**97**	**34**	**34**	**165**

Table 2 provides a breakdown of the leading causes of death by age group. This table has changed from previous years and now provides all deaths by cause and is not focused on the manner of death. This data is also available for the last 10 years **(Table 7)**. The majority (63%) of deaths continue to be rooted in medical causes such as prematurity, birth defects, cancer, infection, and other medical conditions **(Table 10)**. While prematurity continues to be the main cause of infant deaths, sleep related and birth defects were tied for the second-leading cause. Other medical cause was the leading cause of death in the 1- to 9-year-old age group, while gunshot wound was the leading cause of death in the 10- to 17-year-old age group.

The cause of death with the largest year-over-year decrease was sleep related (from 23 in 2020 to 17 in 2021). Deaths due to undetermined causes decreased by three and assault deaths decreased by two. There was one fewer death due to other unintentional injury.

There were eight more birth defect related deaths. Fire deaths increased by four and drowning deaths increased by three. Prematurity, other medical cause and motor vehicle accident deaths increased by two. There was one additional death each due to gunshot wound, cancer, hanging, and poisoning.

In 2021, there were two children in the 1- to 9-year-old age group that died due to complications from COVID-19. In Ohio, 26 children died of COVID-19 and more than 600 children in the United States passed away from this disease in 2021[6-7]. It is important to note that a COVID-19 vaccine for 5-11 year olds was not available until November 2021. For children 6 months to 4 years, it was not accessible until June 2022. While these numbers appear to have dropped in 2022 to date, the most effective way to protect children from this disease is getting them vaccinated, washing of hands frequently, and wearing a mask in areas with a lot of people, especially in indoor settings.

2021 Fast Facts

- *Infant deaths were the lowest in the county's history at 97.*
- *Prematurity related deaths were the second-lowest in the last ten years.*
- *Two children died from COVID-19.*

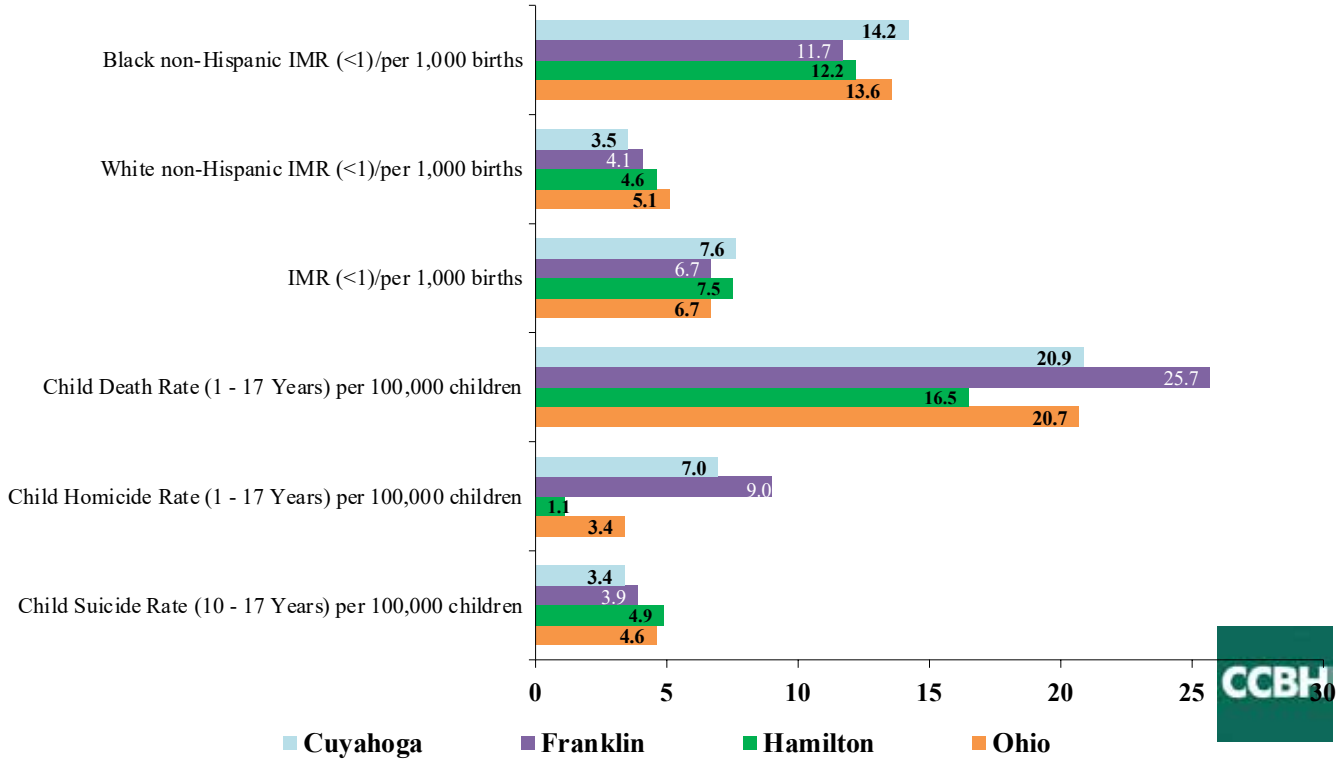
Peer County Comparisons

Cuyahoga County's Black non-Hispanic IMR remained above peer counties in 2020.

The Child Fatality Review Board[8] sought data sources that allowed direct comparisons to other large, urban areas [9-10] and the state of Ohio,[11-12] all of whom are focusing on child death and infant mortality rates (IMR). The other counties include Franklin (Columbus area) and Hamilton (Cincinnati area). The 2020 data were the most current data available.

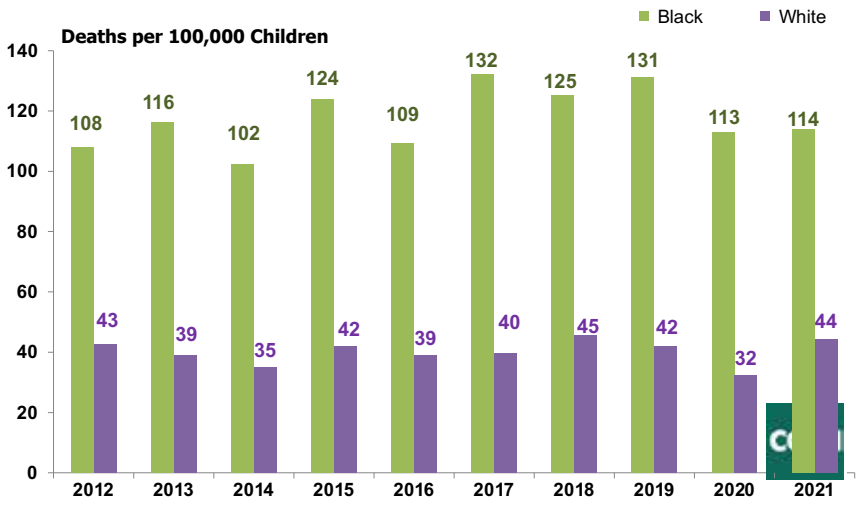
Cuyahoga (3.4 per 100,000 children) had the lowest child suicide rate in 2020 **(Figure 2)**. Rates where Cuyahoga County was lower than at least one of the other two counties and the state included the White infant mortality rate (IMR). The child homicide rate and child death rate were lower than one county, but higher than the state rate. The Black (14.2) and overall (7.6) IMR were the highest of all locales in 2020.

Figure 2: Peer County Comparisons in 2020



The Black-White infant death inequity ratio was the lowest in last ten years.

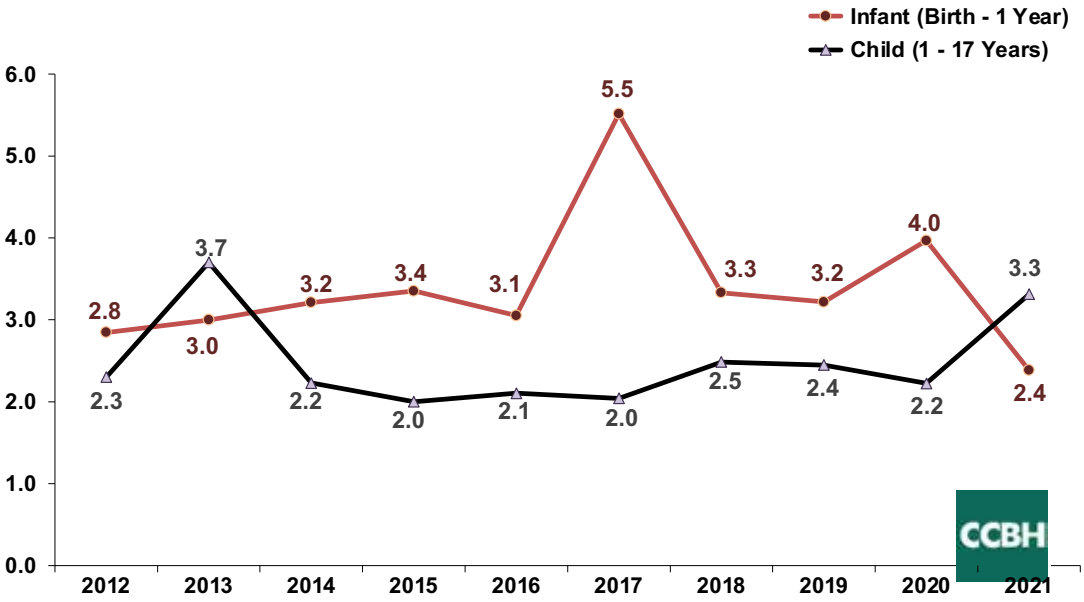
Figure 3: Child Death Rates by Race (age 0-17)



The Black-White child death racial inequity ratio decreased to 2.6 in 2021, which was the second-lowest ratio in the last ten years **(Table 9).** The ratio decreased because the White child death rate (44.5) increased by 37%, while the Black rate (114.0) increased by less than 1%. **(Figure 3)** The White rate was the second-highest rate in the last ten years. The Black rate was slightly below the ten-year average of 117.5. Of the 165 child deaths, 103 were Black, 58 were White, 3 were of another race, and one was of an unknown race.

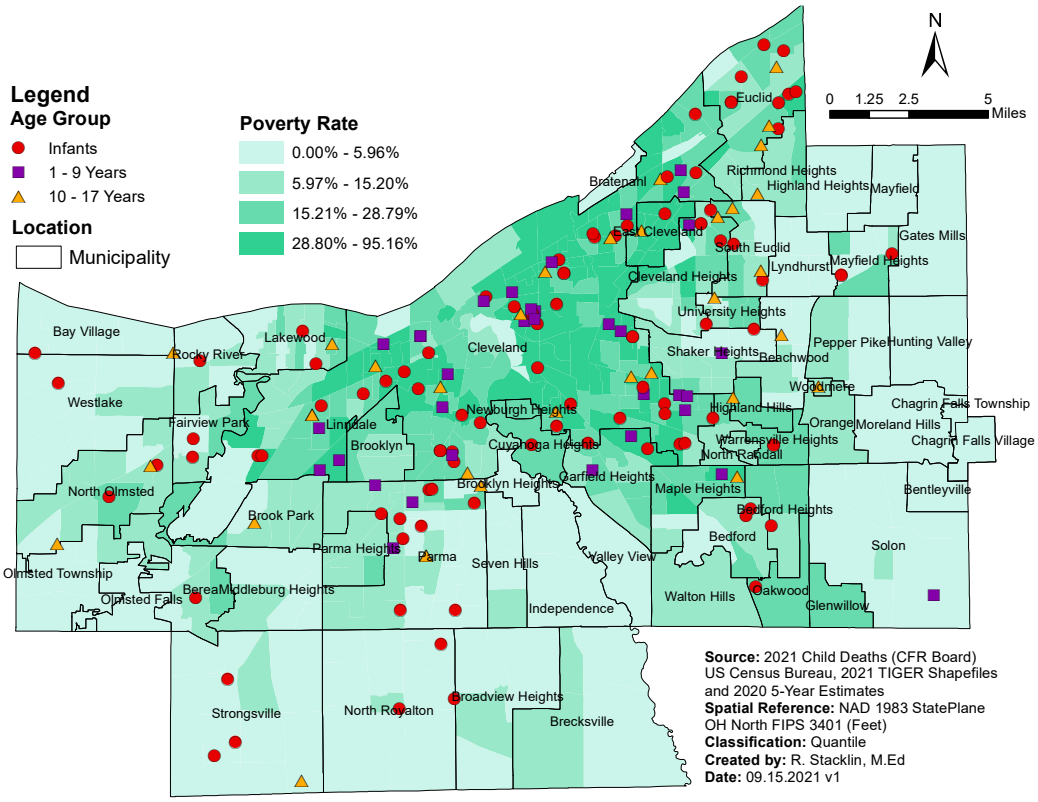
Figure 4: Infant and Child Deaths; Black-White Racial Inequity Ratio

It is important to look at the racial inequity for infants and children separately, as illustrated in **Figure 4**. The racial inequity of infant deaths (2.4) was the lowest in the last 10 years. The 2020 infant death racial inequity ratio in the state of Ohio is 2.7[13] and the US ratio is 2.4.[14] (most recent data available). The child Black-White racial inequity ratio of 3.3 was the second-highest in the last ten years.



Note: Infant ratio shows inequity between Black non-Hispanic and White non-Hispanic babies.
Child ratio is by race only.

Map 2: 2021 Child Deaths by Age Group and Poverty Rates by 2020 Census Tracts in Cuyahoga County, OH (n=165)



Map 2 illustrates the close relation between poverty, race, and child deaths.[15-16] The highest poverty levels are concentrated in the county's urban core with significantly lower levels of poverty in the outer ring suburbs. Less than six percent of people living in the lightest shaded area were below the federal poverty guideline, while the areas with darkest shade of green had 32% to over 95% of the population who lived in poverty. Black people (27.2%) in Cuyahoga County were almost three times as likely to live in poverty compared to White people (9.5%).[17] The 2021 federal poverty guideline for a family of four was $26,500.[18]

In the last ten years, the Black child death rate was nearly three times as high as the White rate in Cuyahoga County. The majority of Black child deaths occurred on the eastern side of the county, whereas the largest portion of White child deaths occurred on the western side. As is consistently the case from year-to-year, a higher rate of child deaths occurred in areas that experienced high levels of poverty.[19]

- *Black-White infant death inequity ratio lowest in last 10 years.*
- *If there was equity in child deaths, 63 Black children would have survived.*

Fast Facts 2021

Community Actions:

Ohio Equity Institute (OEI) for Equity in Birth Outcomes Initiatives

The Cuyahoga County Board of Health (CCBH) serves as the lead of the local OEI collaborative, the Cleveland Cuyahoga Partnership to Improve Birth Outcomes. This initiative explores public health strategies to eliminate health inequities in birth outcomes and improve local and state infant mortality rates and was established in 2014. In 2018, under the direction of the **Ohio Department of Health (ODH)**, the Cleveland/Cuyahoga County team expanded best practice strategies to include:

- Neighborhood Navigation – identify pregnant women who are currently not engaged in services and provide a connection to home visiting, clinical care and other services. The **Neighborhood Leadership Institute (NLI)** has implemented multiple outreach strategies to identify women which include community partnerships, canvassing, community events, and securing permission from **Cuyahoga County Health and Human Services** to have space in their offices to recruit women.
  - o Since January 2019, in partnership with NLI, over 3,700 unserved pregnant women have been connected to services.
- Social Determinants of Health (SDOH) Task Force – identify opportunities to adopt policies that impact social determinants of health.
  - o Policy/system changes include:
    - Increasing patient awareness of labor and delivery locations through the creation and integration of a palm card that is provided through home visiting programs and prenatal care visits.
    - Providing bus vouchers and improvements to transit waiting areas in targeted communities to improve the access and utilization of public transit. Transportation was identified as the number one barrier to health care in data that were collected through navigation services. The SDOH task force partnered with the **Greater Cleveland Regional Transit Authority** to secure a $500,000 grant for the Baby on Board project to address social determinants to improve health outcomes.
    - Improved coordination of pregnancy related referrals for families who utilize public assistance.
    - Enhanced coordination of referrals and follow up through the Unite Us platform, which allows direct electronic referrals between clinical and social service providers.
- Placed Based Approach - provide support to families who reside in targeted communities using the collective impact model. Systems, organizations, and residents come together to establish a common agenda, shared measurement systems, mutually reinforcing activities, continuous communication, and backbone support organizations to move community driven strategies forward. The One Community efforts in 44128 and 44137 informed strategies such as advocacy for labor and delivery services, breastfeeding friendly churches, first responder trainings, and community friendly events for families.
  - o Funding secured through **First Year Cleveland** and the ODH in 2022 enhanced capacity of the One Community effort to expand into additional zip codes. Priorities identified in 44108, 44110, and 44112 include social connectedness, health education, and resource connection. Activities will be implemented in 2023.
- A Fetal Infant Mortality Review (FIMR) Committee was established to review the root causes of fetal and infant deaths in Cuyahoga County **(Appendix B)**.
- A Fourth Trimester work group was developed to explore opportunities to address medical and social needs of mothers and fathers during the first few months after birth of the infant. The group is looking to pilot clinical health screenings for moms during pediatric appointments in addition to a community awareness effort that includes the Hear Her campaign.

Cuyahoga County's IMR was the lowest rate in the county's history.

The 2021 Cuyahoga County IMR was 7.4 infant deaths per 1,000 live births, the lowest rate in our county's history **(Figure 5)**. The current rate is based on 97 infant deaths among 13,143 live births (Table 6).[20] The county IMR of 7.4 remains higher than the preliminary 2021 Ohio IMR of 7.0,[21-22] and the finalized 2020 United States IMR of 5.4 (most recent data available).[23] *In order for Cuyahoga County to match the 2020 US IMR, 26 infants who died in 2021 would have needed to live.*

Figure 5: Infant Mortality Rate (IMR) per 1,000 Live Births

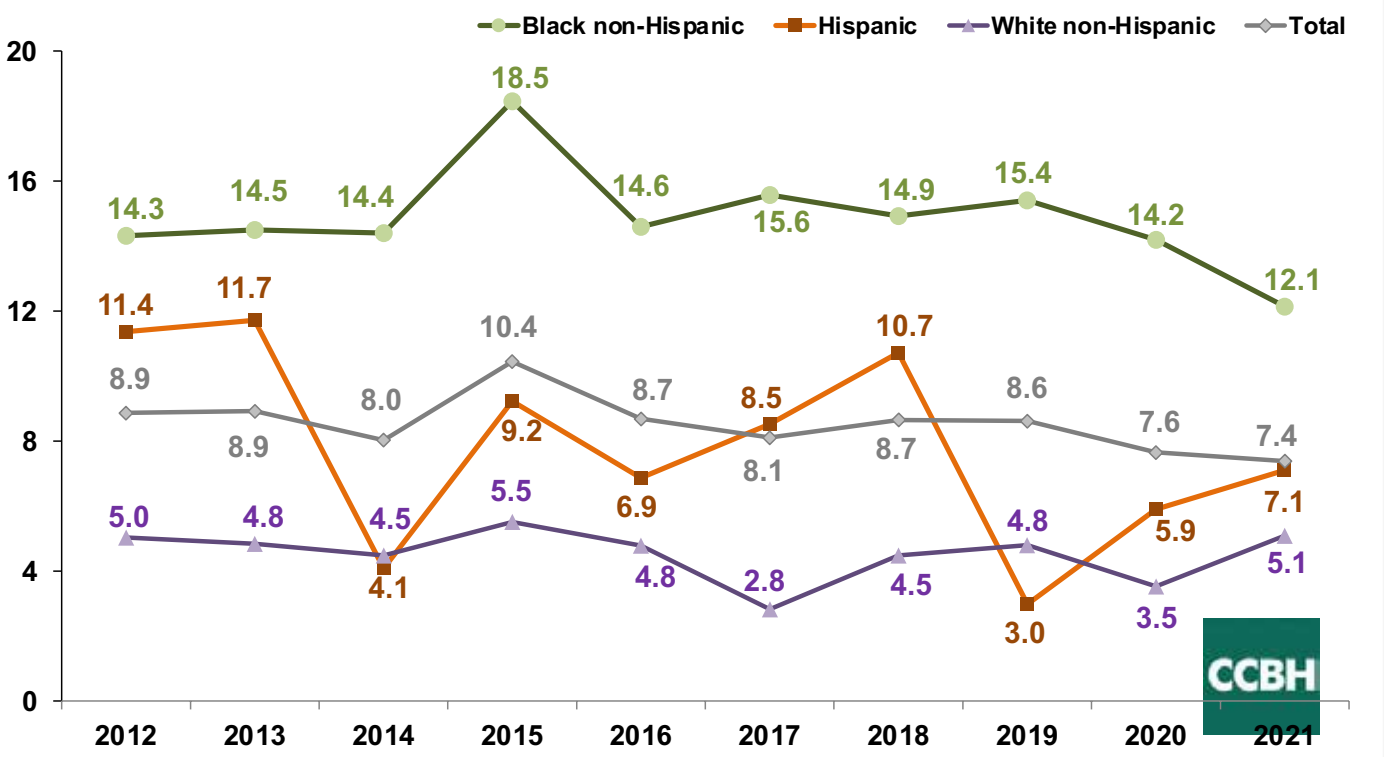


Figure 5 shows that the Black non-Hispanic IMR of 12.1 was nearly 15% lower than 2020 and the lowest rate in our county's history. The White non-Hispanic IMR of 5.1 was second-highest rate in the last ten years and increased by 44% from 2020. The Hispanic IMR of 7.1 was lower than the ten-year average rate of 7.7.

The most frequent causes of infant death continued to be prematurity (51), birth defects (17) and sleep related deaths (17) (Table 2). These top three causes accounted for 88% of all infant deaths. Of the 12 remaining infant deaths, 10 were medically related, one was due to an assault and one due to an unintentional injury.

Birth defects was tied for the second-leading cause of infant death in 2021. Nearly 60% of these deaths were due to congenital abnormalities. Thirty-five percent of these deaths were due to a heart defect and another 29% had multiple malformations. Chromosomal anomalies accounted for 35% of all birth defects, while 4% of these deaths were due to neural tube defects.

- *Black non-Hispanic IMR was the lowest rate in the county's history.*
- *Overall IMR was the lowest rate in the county's history.*
- *The Hispanic IMR was 8 % lower than its ten-year average.*

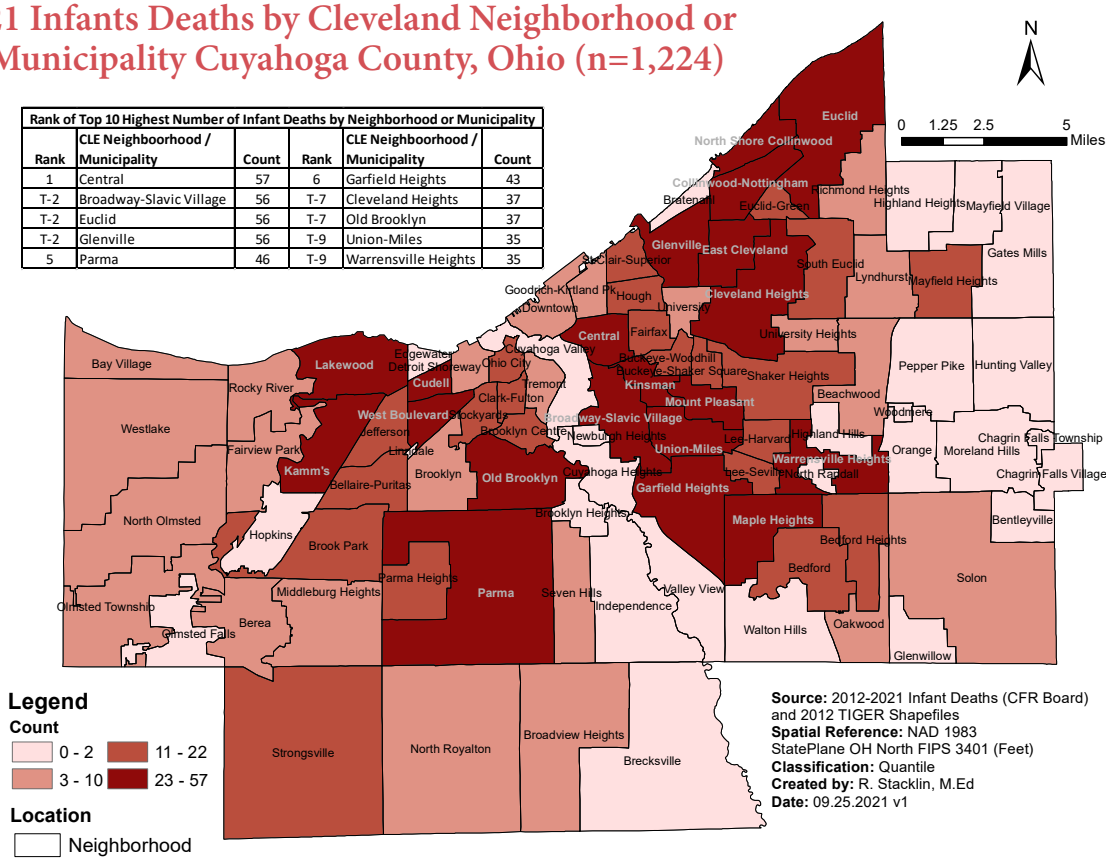
Fast Facts 2021

Map 3: 2012 to 2021 Infants Deaths by Cleveland Neighborhood or Suburban Municipality Cuyahoga County, Ohio (n=1,224)

Map 3 shows the frequency of infant deaths for the last ten years.[24] Locations that ranked in the top ten averaged three to five infant deaths each year and accounted for more than one-in-three infant deaths in Cuyahoga County. Eight of the top ten locales with the highest number of infant deaths are located on the eastern side of the county. Five locales are municipalities that are first ring suburbs.

Rank of Top 10 Highest Number of Infant Deaths by Neighborhood or Municipality

Rank	CLE Neighboorhood / Municipality	Count	Rank	CLE Neighboorhood / Municipality	Count
1	Central	57	6	Garfield Heights	43
T-2	Broadway-Slavic Village	56	T-7	Cleveland Heights	37
T-2	Euclid	56	T-7	Old Brooklyn	37
T-2	Glenville	56	T-9	Union-Miles	35
5	Parma	46	T-9	Warrensville Heights	35



Community Actions:

The **Cleveland Clinic Foundation (CCF), MetroHealth Medical Center (MHMC), and University Hospitals (UH)** continue to identify infant mortality as a key priority for community outreach. UH announced the opening of a labor and delivery unit with a neonatal intensive care unit at its Ahuja site in 2023. This new site will provide access to women living in the southeast side of Cuyahoga County where no labor and delivery service currently exists.

Home visiting programs for high-risk mothers and infants have been identified as best practice to improve birth outcomes.

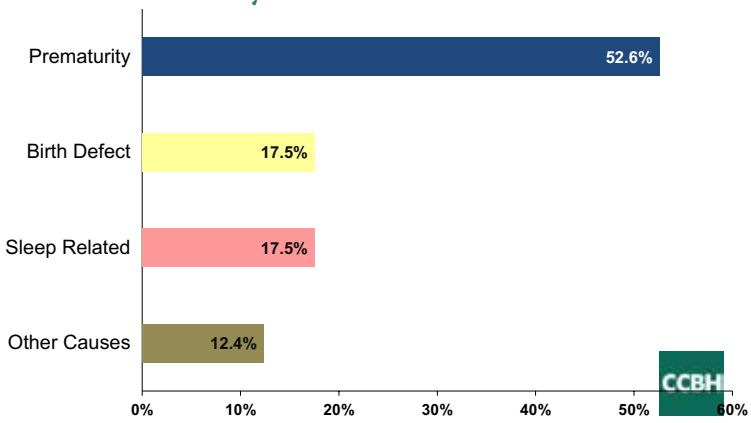
- The **MomsFirst Program** uses a community health worker model to provide support to women beginning with prenatal care and continues until a child is 18 months old. Core services include outreach, case management, health education, and interconception care. The program served 868 participants in 2021 and their infant mortality rate was 2.9.
- The **Cuyahoga County Board of Health Newborn Home Visiting Program (NHVP)** provides a home visit by a registered nurse after mom and baby are discharged from the hospital for qualifying families. The visit includes assessments of mom and baby, infant care education, breastfeeding support, discussion of available community resources, and referrals as needed. NHVP is currently at UH and MHMC and is in the process of expanding services to eligible mothers and babies at CCF Hillcrest and CCF Fairview.
- **Moms and Babies First (MBF)** is a public health initiative to reduce infant mortality and improve birth outcomes in at-risk African American communities. Using a community health worker model, the staff provides intensive case management to assist pregnant women and their families with accessing services, parenting, health education, family planning, and social service referrals until the child reaches age one. The program serves women in Euclid, East Cleveland, Cleveland Heights, University Heights, South Euclid, Bedford Heights, Garfield Heights, Maple Heights, Shaker Heights, Oakwood Village, Richmond Heights, Warrensville Heights, and Cleveland. In the 2021, MBF served 450 pregnant and postpartum women and families.
- **MHMC Nurse Family Partnership** serves low-income, first-time mothers during their pregnancy and for two years after the birth of the baby.

Prematurity

Second-lowest number of prematurity-related deaths in 2021.

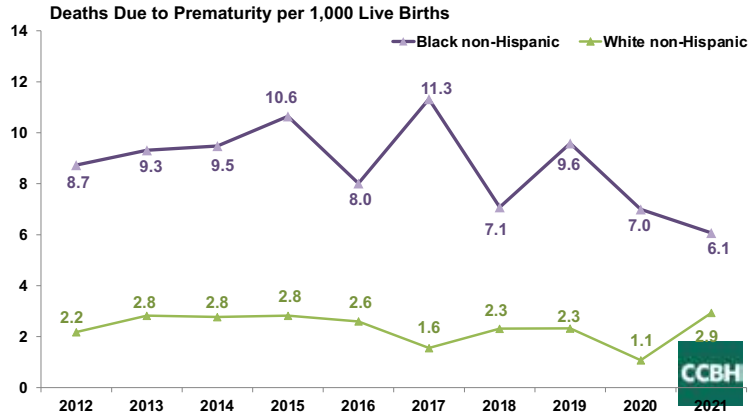
In 2021, 51 infants died due to prematurity, accounting for 53% of all infant deaths, which is the second-lowest proportion in the last ten years **(Figure 6)**. The cause-specific IMR for prematurity is 3.9 deaths per 1,000 live births (Table 6).[25] This is the second-lowest rate in the last ten years.

Figure 6: The Impact of Prematurity on Infant Deaths in 2021



The prematurity-related IMRs by race are illustrated in **Figure 7**. The Black non-Hispanic prematurity death rate of 6.1[26] is the lowest in the last ten years and 13% lower than the 2020 rate. The White non-Hispanic rate of 1.9[27] increased by 173% and was the highest rate in the last ten years. The Black-White racial inequity ratio decreased to 2.1, which was the lowest in the last ten years. If the 2021 Black non-Hispanic prematurity death rate was equal to the White non-Hispanic death rate, the overall black IMR would have decreased from 12.1[28] to 8.9.[29]

Figure 7: Rates of Infant Death Due to Prematurity by Race



The percentage of preterm births in Cuyahoga County increased from 11.4% in 2020 to 11.6% in 2021.[30-31] The 2021 Black non-Hispanic preterm birth rate of 15.5% was significantly higher than the White non-Hispanic preterm birth rate of 8.9%.[32] The county preterm birth rate was significantly higher than the preliminary 2021 Ohio preterm birth rate of 10.6%,[33] and the 2021 US preterm rate of 10.49%.[34] *Cuyahoga County would have needed 150 fewer preterm births in 2021 to equal the 2021 US rate.*

Economic, medical, and social risk factors that occurred in at least 15% of the prematurity-related deaths are listed for 2021 **(Table 3)**. Poverty, the most common risk factor, was noted in 67% of the cases. Mom with a chronic health condition was noted in 61% of prematurity related deaths. Obesity was the leading risk factor in the category "mom with a chronic health condition". Unplanned pregnancy, chorioamnionitis (infection of the membranes surrounding the fetus), and premature rupture of membranes (PROM), were three risk factors noted in at least 45% of all preterm deaths. Among those deaths due to prematurity where drug use was a risk factor, marijuana was the most commonly used drug.

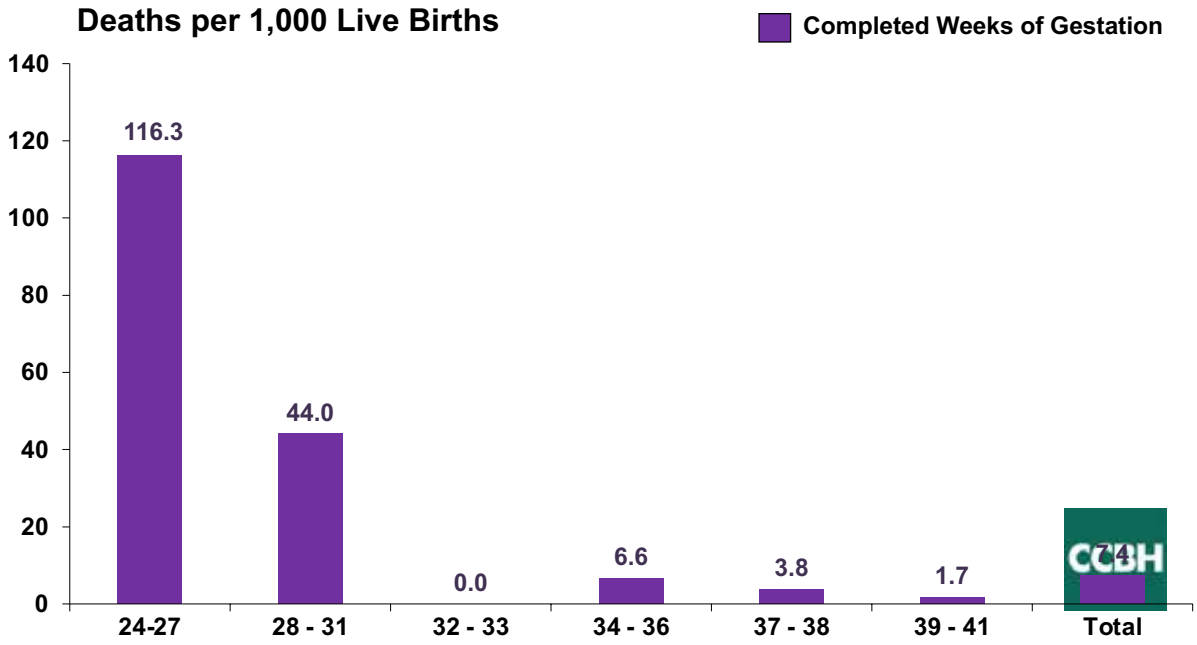
Table 3: Common Risk Factors Associated with 51 Deaths Due to Prematurity in 2021

Risk Factor	#	%
Poverty	**34**	**66.7**
Mom with a chronic health condition	**31**	**60.8**
Unplanned pregnancy	**28**	**54.9**
Chorioamnionitis	**25**	**49.0**
Premature rupture of membranes (PROM)	**23**	**45.1**
Placental abruption	**21**	**41.2**
Cervical insufficiency	**18**	**35.3**
Parental tobacco use	**17**	**33.3**
Previous fetal loss	**16**	**31.4**
Previous preterm delivery	**16**	**31.4**
Parental illicit drug use	**14**	**27.5**
Maternal history of mental health problems	**13**	**25.5**
Multiple gestation	**13**	**25.5**
Intrauterine tobacco exposure	**11**	**21.6**
Intrauterine drug exposure	**8**	**15.7**
Sexually transmitted infections - past history	**8**	**15.7**

Of the 51 infant deaths caused by prematurity, 38 (75%) were male and 28 (55%) were Black non-Hispanic. Infants who lived in the city of Cleveland accounted for 43% of these deaths, 35% lived in a first ring suburb, and 22% lived in an outer ring suburb. Prematurity continues to be the number one cause of infant death and is defined as a birth before 37 completed weeks of pregnancy. The majority of deaths occurred to infants born less than 23 weeks gestation (69%). Seventeen percent were born at 23 weeks and the remaining 14% were born between 24 and 30 weeks. Over half (53%) of the infants were born so early that they lived less than 12 hours, but 20% survived more than seven days.

Figure 8 illustrates the 2021 IMR by gestational age (stated in completed weeks of gestation) for infants born 24 weeks or more. For all babies born at 24 to 27 weeks of gestation, the IMR was 116.3.[35] The graph shows the IMR of infants 28 to 31 weeks (44.0).[36] No infants born at 32 to 33 weeks died in 2021 while, the IMR for babies born full term (37 weeks or more gestation) was 2.4.[37] *Full term infants were nearly 50 times more likely to survive than those born at 24 to 27 weeks.*

Figure 8: Infant Mortality Rate by Gestational Age in 2021



- *Black non-Hispanic infant deaths due to prematurity was the lowest in the last ten years.*
- *Prematurity accounted for 53% of infant deaths.*

Fast Facts 2021

Number of sleep related deaths was the third-lowest in the last ten years.

There were 17 sleep related deaths in 2021, which is six less than 2020 and the third-lowest total in the last ten years **(Table 4)**. Fourteen of the sleep related deaths were ruled as accidental suffocation (82%), which is the highest percentage in the last ten years. Conversely, SUID/undetermined deaths potentially due to hazards in the sleep environment was the lowest number in the last ten years. A large majority of infants (81%) were placed on their back, as self-reported by their caregiver at the time of death. *More than three-quarters (82%) of the babies were sleeping in an adult bed even though all but one infant had a crib, bassinet or portable crib available.* Sixty-five percent of sleep related deaths involved surface sharing with a parent or another sibling. For the 13th consecutive year, all sleep related deaths involved some type of sleep hazard (such as soft bed surface, position baby was placed for sleep, pillows, blankets, surface sharing, and other items in the sleep environment).

Table 4: Number of Sleep Related Deaths by Type and Presence of Risk Factors

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total
Type of Death											
SIDS	0	0	0	1	0	0	0	0	0	0	**1**
SUID/Undetermined	15	10	17	16	13	8	7	8	8	3	**105**
Accidental Suffocation	3	6	2	10	8	5	12	16	15	14	**91**
Total Number of Deaths	**18**	**16**	**19**	**27**	**21**	**13**	**19**	**24**	**23**	**17**	**197**
Risk Factors Present											
Surface sharing at time of death	13	11	10	17	13	13	11	16	13	11	**128**
Hazards in sleep area	18	16	19	27	21	13	19	24	23	17	**197**
Placed Sleep Position[1,2]											
Back	12	10	8	13	12	8	15	16	15	13	**122**
Stomach	4	2	7	8	5	4	0	6	3	2	**41**
Side	2	4	3	5	3	0	3	2	1	1	**24**
Crib Availability[3]											
No	7	5	4	4	3	4	4	6	7	1	**45**
Yes	10	10	15	21	18	8	15	16	12	15	**140**
Unknown	1	1	0	2	0	1	0	2	4	1	**12**

[1] One case in 2014-2018 & 2021 had an unknown sleep position & 2020 had 4 unknowns.
[2] Self reported during medical examiner's office death scene investigation.
[3] Either a crib, bassinet or portable crib.

Table 5 shows that, over a ten-year period, 68% of all sleep related deaths occurred in the city of Cleveland (135), with 24% in first ring suburbs (47) and 8% in outer ring suburbs (15). More male infants died in the sleep environment for the third consecutive year. The highest percentage of mothers who experienced an infant sleep related death were between 30 to 39 years old. Black non-Hispanic infants accounted for nearly 80% of sleep related deaths in the last ten years.

Sleep Related Deaths

Table 5: Sleep Related Death Demographics

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total
Neighborhood											
Cleveland	12	7	14	17	16	10	13	15	19	12	**135**
First Ring	4	8	4	7	4	2	5	6	3	4	**47**
Outer Ring	2	1	1	3	1	1	1	3	1	1	**15**
Infant's Sex											
Female	6	8	11	14	10	7	10	11	10	8	**95**
Male	12	8	8	13	11	6	9	13	13	9	**102**
Mom's Age											
< 20 Years	3	3	7	5	2	0	0	2	0	4	**26**
20 - 29 Years	11	11	10	15	17	11	16	17	14	6	**128**
30 - 39 Years	4	1	2	5	2	2	3	5	8	7	**39**
> 40 Years	0	1	0	2	0	0	0	0	1	0	**4**
Unknown	0	0	0	0	0	0	0	0	0	0	**0**
Infant's Race[1]											
Black non-Hispanic	14	12	16	21	15	12	16	18	18	14	**156**
Hispanic	0	1	1	1	1	0	1	0	0	1	**6**
White non-Hispanic	4	3	2	5	4	1	2	5	5	2	**33**
Total Number of Deaths	**18**	**16**	**19**	**27**	**21**	**13**	**19**	**24**	**23**	**17**	**197**

[1] One case in 2016 & 2019 was of another race.

Map 4: 2012 to 2021 Sleep Related Infant Deaths by Cleveland Neighborhood (n=135)

Map 4 illustrates the distribution of sleep related deaths in Cleveland neighborhoods over the last ten years. The top five neighborhoods (in green) are located on the east side of Cleveland and accounted for 41% of all sleep related deaths in Cleveland. Ten of the 12 neighborhoods with at least five deaths are located on the east side and these 12 neighborhoods account for nearly 60% of all sleep related deaths in Cleveland.

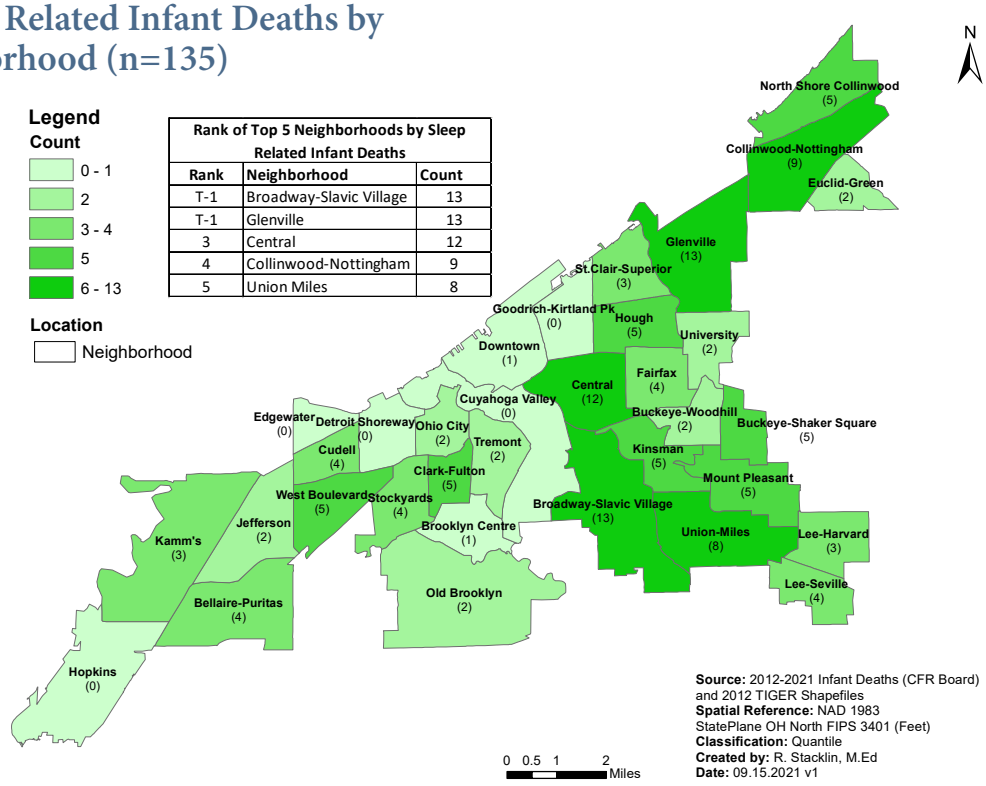


Figure 9: 2012-2021 Sleep Related Deaths by Age of Infant (n=197)

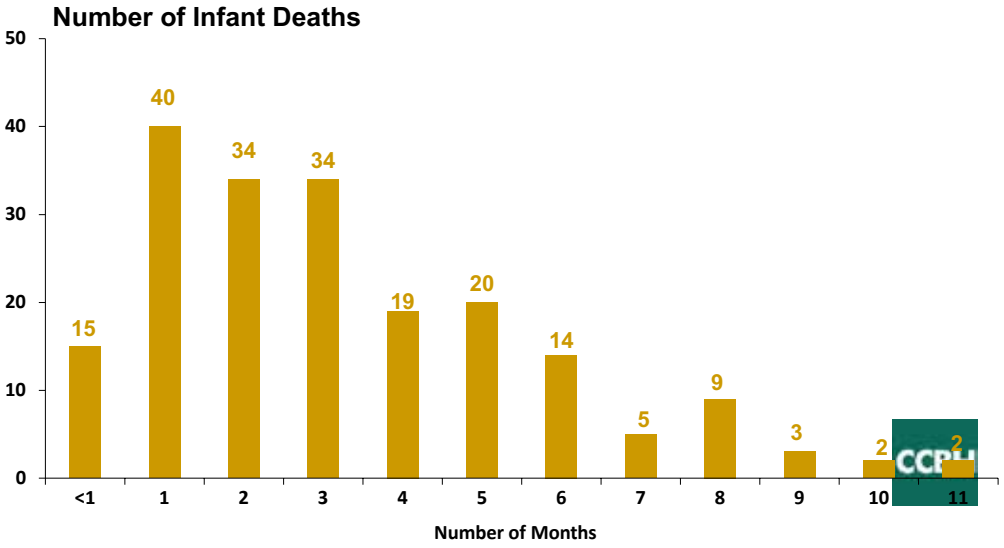
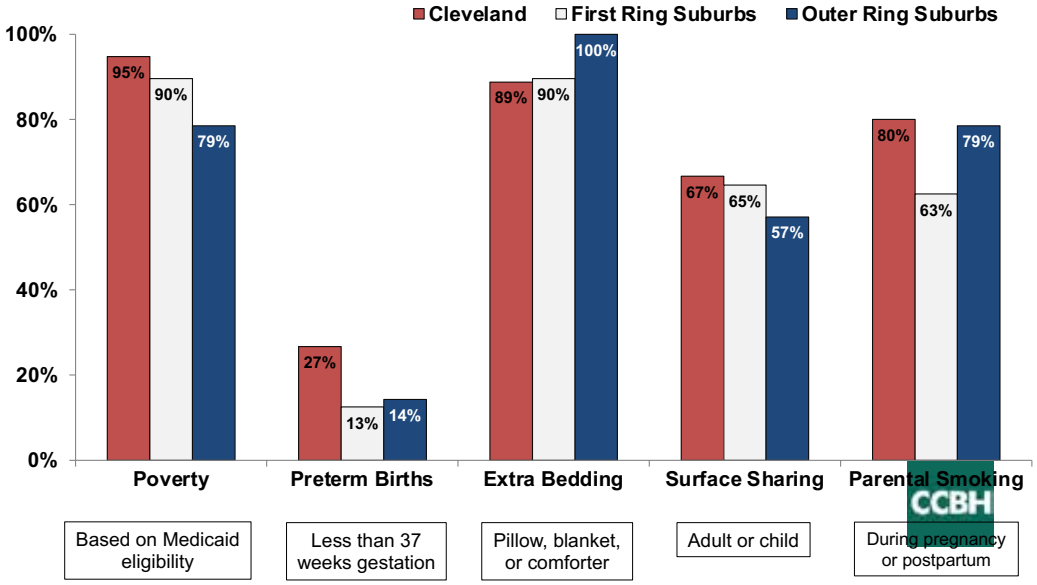


Figure 9 illustrates the age of infants when sleep related deaths occurred over a ten-year span. Eighty-nine percent of all sleep related deaths occurred when the infant was six months or younger. Almost 55% of all sleep related deaths happened when the infant was one month to three months old, the peak for sleep related deaths. Twenty-one infant sleep related deaths occurred to older infants (7 to 11 months old) in the last ten years, which is why the safe sleep message should be followed until at least the infant has his or her first birthday.

Figure 10: 2012-2021 Sleep Related Deaths by Neighborhood

Figure 10 examines the economic, environmental and medical risk factors noted in sleep related deaths by geographic location. In the last ten years, more than 90% of the infants who died from sleep related causes were Medicaid eligible. Less than one-in-four infants were born prematurely meaning that the large majority of these infants were healthy and thriving at the time of their death.



Environmental risk factors (extra bedding, parental tobacco use and surface sharing) were commonly found in these cases. In the last ten years, extra bedding was found in nearly 90% of all sleep related deaths, but the rate has decreased slightly to 87% of the deaths in the last five years. In 2021, all the infants had at least one piece of extra bedding in the sleep environment. Over the last ten years, more than 75% of the deaths had environmental smoking as a risk factor. When looking at the last five years, it rises to nearly 80%. From 2012 to 2021, 65% of infants shared their sleep surface with another child or adult. *The data suggest that environmental and economic risk factors far outweigh the impact of medical risk factors for sleep related deaths in Cuyahoga County.*

Sleep Related Deaths

- *Third-lowest number of sleep related deaths in the last ten years.*
- *In 82% of sleep related deaths, infants were sleeping in an adult bed.*

Fast Facts 2021

Community Actions:

First Year Cleveland (FYC) Safe Sleep Heroes Action Team 9 continued its work during 2021.

"This team focuses on promoting safe sleep and training others to become Safe Sleep Heroes for babies in our community. Action Team 9 includes parents, grandparents, caregivers, families who have experienced loss, faith-based leaders, and neighbors — anyone who cares about preventing sleep-related infant deaths and promoting the best sleep practices for babies in their lives and in their community. Through online, in person or virtual trainings the participants learn:

- The ABCDs of Safe Sleep.
- The stories of families who have experienced loss because of sleep-related deaths.
- How to be a safe sleep advocate for their baby and babies in their community.
- How to engage and educate others on the ABCDs of Safe Sleep."

From August 2018 to December 2021, over 18,000 people have been trained as Safe Sleep Heroes.

Action Team 9 members provided safe sleep education sessions for the staff at the **Journey Center** which offers emergency shelter for women and children impacted by domestic violence and child abuse. In partnership with the **Cuyahoga County Board of Health (CCBH)**, portable cribs were provided for families with infants that could be used while they were at the shelter and then take with them when they leave to ensure that safe sleep continues in their new home.

The action team members did safe sleep trainings for the **Cuyahoga Metropolitan Housing Authority** and at **Laura's House**, a shelter for women in crisis and their children. They also coordinated a Safe Sleep Sunday event with 15 churches participating.

An infant mortality module that includes safe sleep and racial inequities has been integrated into the Case Western Reserve University medical school curriculum.

In 2022 due to the restructuring of FYC, a safe sleep coalition has continued aspects of the work that was initiated in the Safe Sleep Heroes Action Team.

The staff of the **University Hospitals Rainbow Injury Prevention Center** visits all mothers on the postpartum floors in MacDonald Women's Hospital to deliver safe sleep education. They also coordinated the display of safe sleep posters in postpartum rooms and elevators.

The social work department at **MetroHealth Medical Center** developed safe sleep discussion points to review with parents and integrated these prompts into the electronic medical record.

Cleveland Clinic Hillcrest and Fairview Hospitals have initiated quality indicators for safe sleep in the neonatal intensive care units that include role modeling and parent education. They also display safe sleep posters in the hospital including above every diaper changing station.

The CCBH is a Cribs for Kids partner, providing one-on-one education often in the parent's home, and a free, portable crib to families in need. CCBH served over 700 families in 2021.

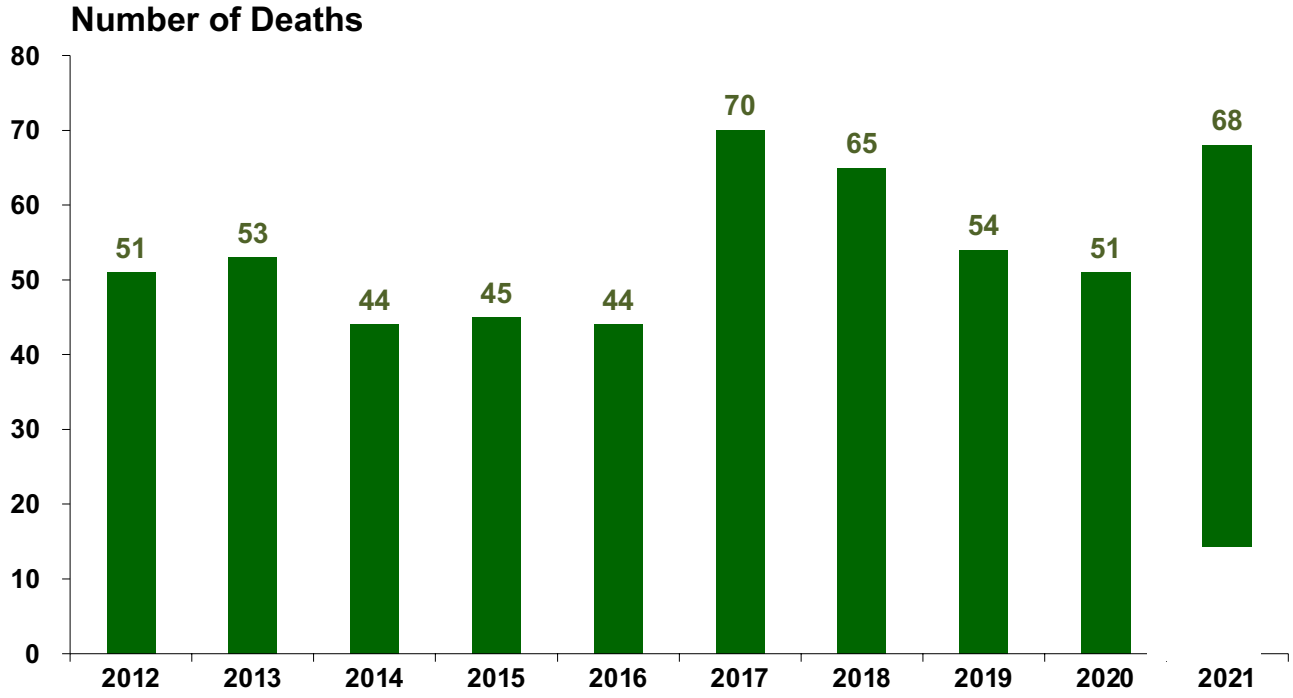
- CCBH provides safe sleep education for childbirth educators, social workers, and nursing staff at maternity and pediatric hospitals. Education is also made available for family serving agencies and for staff and clients of home visiting programs.
- CCBH offers safe sleep cards with the message, "I sleep Alone, on my Back, in an empty Crib, and Don't smoke around me". This also includes local data about sleep related deaths and a picture of a safe sleep environment. These cards continue to be distributed throughout Cuyahoga County to hospitals, home visiting programs, community centers, neighborhood clinics, churches, and family serving agencies.

Child Deaths (1 to 17 years)

68 child deaths were the second-highest total in the last ten years.

Sixty-eight children aged 1 to 17 died in 2021, which was 17 more deaths than 2020 **(Figure 11)**. The 2021 county child death rate (1 to 17 years) of 27.8 per 100,000[38] was higher than the preliminary 2021 rate for the state of Ohio (23.2)[39-40] and the 2020 United States rate (21.0) (most recent data available).[41-42]

Figure 11: Total Child Deaths Per Year (ages 1-17)



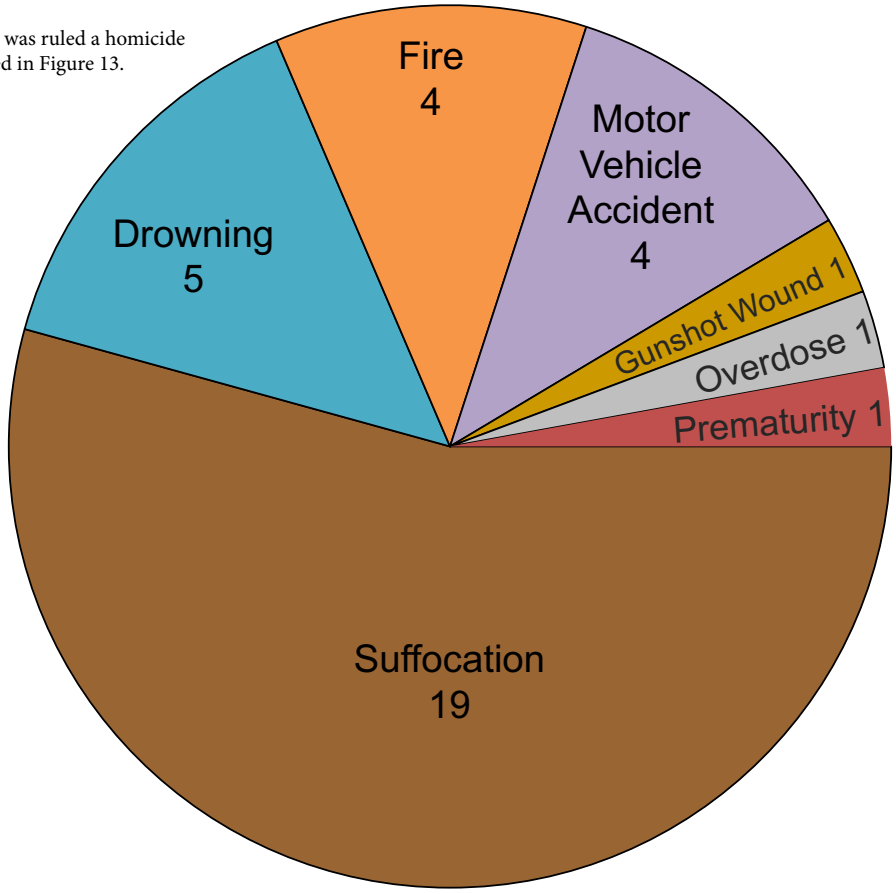
In 2021, 41 injury related deaths accounted for 60% of all fatalities among 1- to 17-year-olds and was higher than the ten-year average of 56.4% (Table 10). The 2021 Cuyahoga County injury death rate of 16.8 per 100,000 children 1- to 17 years[43] was more than 35% higher than the 2020 rates for the state of Ohio (12.2) and the United States (12.1) (most recent data available).[44-45] Injury related deaths were attributed to: gunshot wound (14), drowning (6) motor vehicle accident (5), fire (4), hanging (4), other unintentional injury (3), poisoning (3), and assault (2) (Table 2). The number of children who died as a result of gunshot wound, drowning, motor vehicle accident, fire, hanging, and poisoning increased, while deaths due to other unintentional injury and assault decreased in 2021.

The number of medical related deaths (27) was tied for the second-highest in ten years (Table 10). The causes of death included other medical causes (15), birth defects (7) and cancer (5) (Table 2). All three causes of death increased in 2021.

Highest number of unintentional injury deaths in the last ten years.

Figure 12: Unintentional Injury Deaths in Cuyahoga County in 2021 (n=35)

*Note: 1 Motor Vehicle Accident was ruled a homicide and not included, but is included in Figure 13.

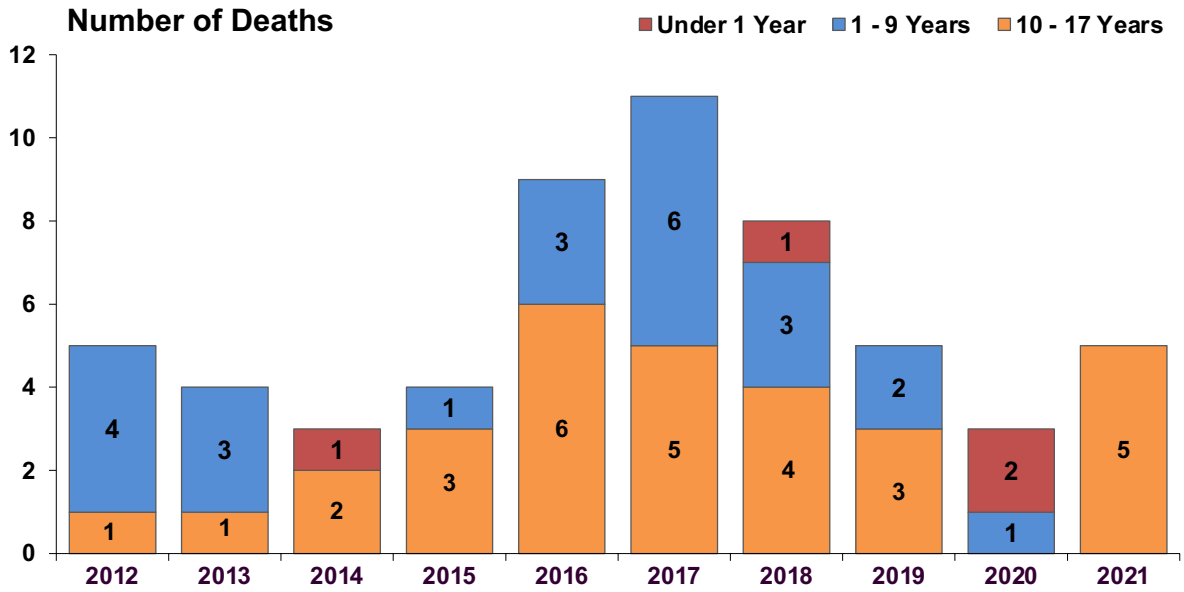


In 2021, 35 children of all ages died as a result of unintentional injuries, which was the highest number in the last ten years. The rise was due to significant increases in drowning and fire deaths. Of the 35 children, 24 were Black non-Hispanic (69%), 20 were male (57%) and 19 were city of Cleveland residents (54%). The causes for the 35 unintentional injury deaths are illustrated in **Figure 12**. Fourteen of the 19 suffocation deaths were related to unsafe infant sleep. The 2021 rate for unintentional deaths was 13.6 per 100,000.[46] This rate was higher than the 2020 rates (most recent data available) for Ohio (8.3), and the United States (7.9).[47-48]

Case reviews revealed risk factors identified in at least 50% of these deaths include poverty (27), child suspected history of abuse/neglect or domestic violence in the home (20) and parental suspected history of abuse/neglect as a child (20).

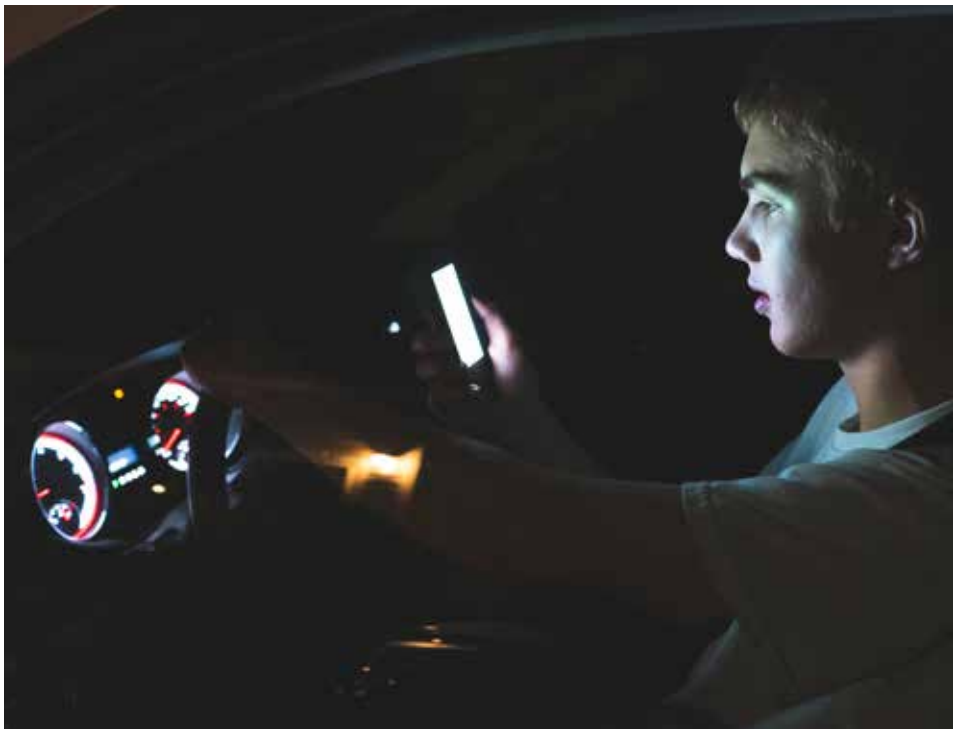
Figure 13: Total Motor Vehicle Deaths by Age Group per Year

Figure 13 gives a historical perspective of the age distribution for traffic related fatalities. There were no deaths to children less than 10 years of age, which was the first time this happened in the last ten years. For the first time since 2014, there were no child deaths in the 1- to 9- year age group.



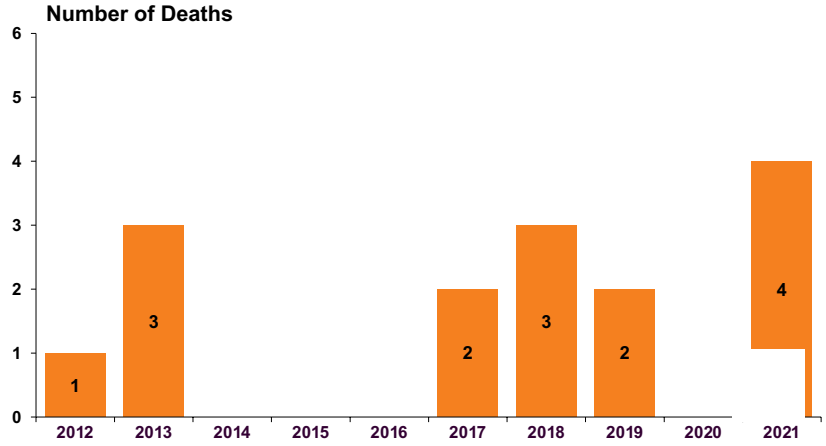
Of the 5 motor vehicle deaths, 3 were passengers and 2 were drivers. All cases had speeding noted as a risk factor in the death. Four of the five were either 16 or 17 years of age and three had a positive toxicology for drugs in their system. One of the motor vehicle accident deaths was ruled as a homicide as the driver was fleeing the police.

Cuyahoga County's rate for children (2.0 per 100,000)[49] in the 1- to 17- age category was lower than the 2020 state of Ohio (2.5) and the national rate (3.1) (most recent data available).[50-51] Motor vehicle accident related deaths in the US accounted for 44% of all unintentional injury deaths for children, while the state of Ohio accounted for 41%.[52-53]



Unintentional Injury Deaths

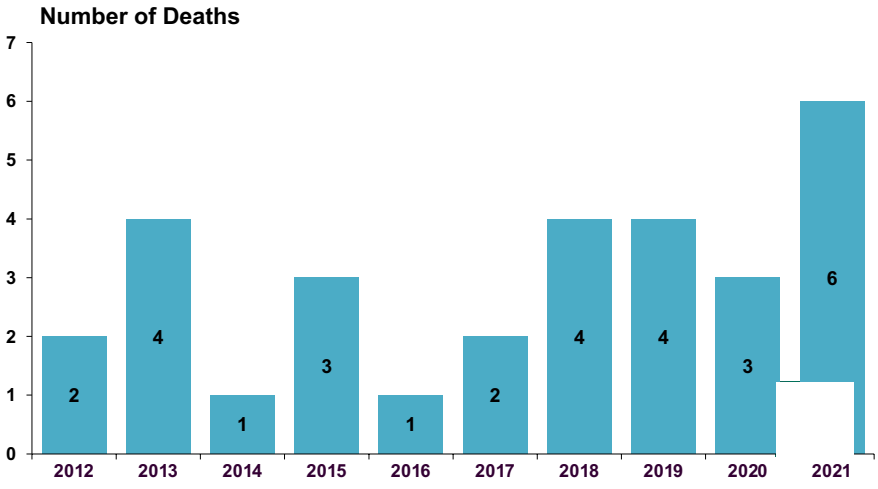
Figure 14: Total Fire Deaths Per Year



Four accidental fire deaths occurred in 2021, which is the highest total in the last ten years **(Figure 14)**. Between 2012 to 2016 there were four fire deaths, but between 2017 to 2021 there have been 11 fire deaths. The children that died in fire deaths were between 3 and 9 years of age and all were city of Cleveland residents. Two children were Hispanic and two were male. The following risk factors were noted in at least 75% of the 2021 fire deaths and include history of domestic violence in the home, lack of a working smoke detector, parental use of illicit drugs, parental history of suspected child abuse or neglect as a child, paternal criminal history, and poverty. The Cuyahoga County fire death rate for children 1- to 17- years (1.6 per 100,000)[54] was five times higher than the 2020 rate for the state of Ohio and the US (both at 0.3 per 100,000) (most recent data available).[55-56]

Six drowning deaths in 2021 was the highest in the last ten years **(Figure 15)**. Between 2012 to 2016 there were 11 drowning deaths, but 19 such deaths occurred in the last five years. The age range in drowning deaths was from 3- to 17- years with four deaths to children 10 years of age or older. Five of the children did not know how to swim and one had an unknown swimming ability. Four of the children lived in a first ring, west side suburb and three were males. Two children were Black non-Hispanic, two were Hispanic and two were White non-Hispanic. Lack of adequate supervision and poverty were the two risk factors noted in at least four drowning deaths. The Cuyahoga County 1-to-17 year olds drowning death rate (2.5 per 100,000)[57] was significantly higher than the 2020 state of Ohio (1.4) and US rate (1.1) (most recent data available).[58-59]

Figure 15: Total Drowning Deaths per Year



Community Actions:

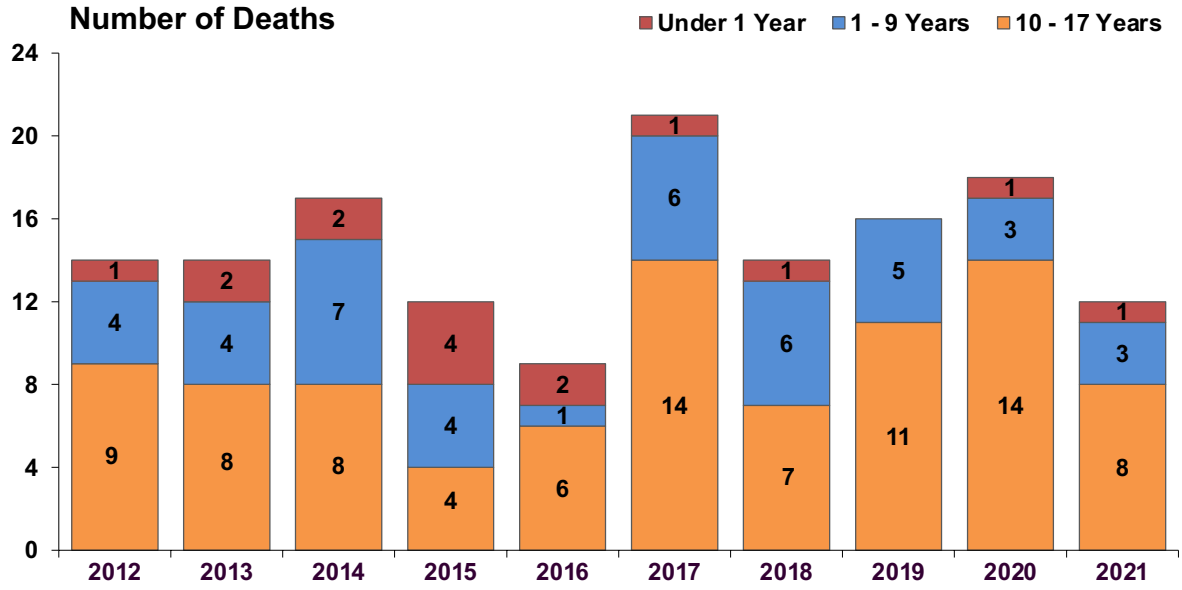
University Hospitals Rainbow Injury Prevention Center hosted a Water Safety Rodeo in Berea in May 2022 that featured community partners and hands on water safety activities and education. They also developed a new water safety campaign "Splish, Splash Safety" that included billboards, banners, and yard signs. Water safety pledge cards and activity sheets were used at events throughout the summer.

MetroHealth Buckeye Resource Center collaborated with **Harvey Rice School** for a swim education program during the summer.

Highest number of deaths by suicide in the last ten years.

Intentional injury deaths include homicide and suicide. Twelve homicides in 2021 tied with 2015 for the second-lowest total in the last ten years. **Figure 16** illustrates that 1 infant, 3 children ages 1 to 9 years, and 8 children ages 10 to 17 years, died due to homicide. The 3 child deaths among children aged 1 to 9 years was tied with 2020 for the second-lowest number in the last ten years.

Figure 16: Total Child Homicide Deaths by Age Group per Year

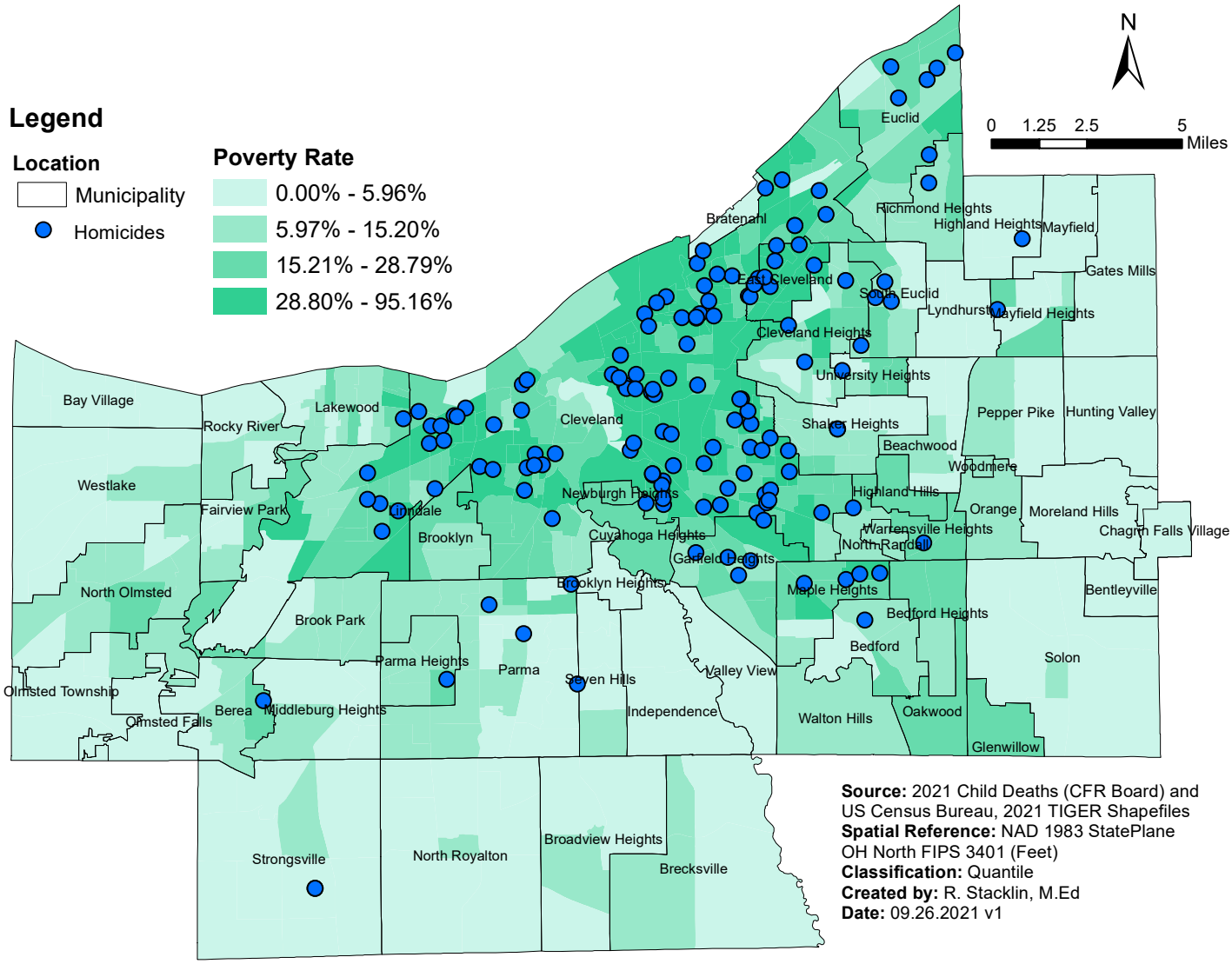


For the 1-to-17-year-olds, homicide was the second-leading cause of death in 2021 in Cuyahoga County as well as the state of Ohio and the United States in 2020 (most recent data available). The county child homicide rate (4.5 per 100,000)[60] was higher than the state of Ohio (3.4 per 100,000) and the US rate (2.6 per 100,000) in 2020 (most recent data available).[61-62]

Of the 12 homicide victims this year, 11 were boys, 9 were Black non-Hispanic children, 6 lived in the city of Cleveland, and 6 lived in the first ring suburbs. The number of Cleveland homicides tied with 2018 for the lowest number in the last ten years, while the number of homicides in first ring suburbs tied with three other years as the highest in the last 10 years. From 2012 to 2016 there were 12 homicides in first ring suburbs, whereas there have been 29 homicides in the last five years. The ages of the children were <1 year (1), 2 years (1), 5 years (1), 6 years (1), 13 years (1), 14 years (2), 16 years (1) and 17 years (4). All but one of the eight homicides to children between 10 and 17 years of age were gun related. Three of the four homicides to children under 10 years of age were due to physical abuse.

Case reviews revealed risk factors associated in more than half the homicides include child suspected history of abuse/neglect or domestic violence in the home (9), gun access (9), history of child abuse (9), history of child neglect (9) poverty (9), negative influence of family and/or friends (8), and child illicit drug abuse (7).

Map 5: 2012 to 2021 Child Homicides (n=147) and Poverty Rates in Cuyhoga County, OH



Source: 2021 Child Deaths (CFR Board) and US Census Bureau, 2021 TIGER Shapefiles
Spatial Reference: NAD 1983 StatePlane OH North FIPS 3401 (Feet)
Classification: Quantile
Created by: R. Stacklin, M.Ed
Date: 09.26.2021 v1

Map 5 displays the association between poverty and child homicides in the last ten years. From 2012 to 2021, there have been 147 homicides. Nearly two-thirds (65%) of the children resided in the city of Cleveland where poverty is most concentrated in Cuyahoga County. In fact, more than 80% of city of Cleveland homicides had poverty noted as a risk factor (67% for first ring suburb homicides and 44% of outer ring suburb homicides). This map can assist in targeted prevention efforts to reduce child homicides.

Figure 17: Total Firearm Deaths by Manner per Year

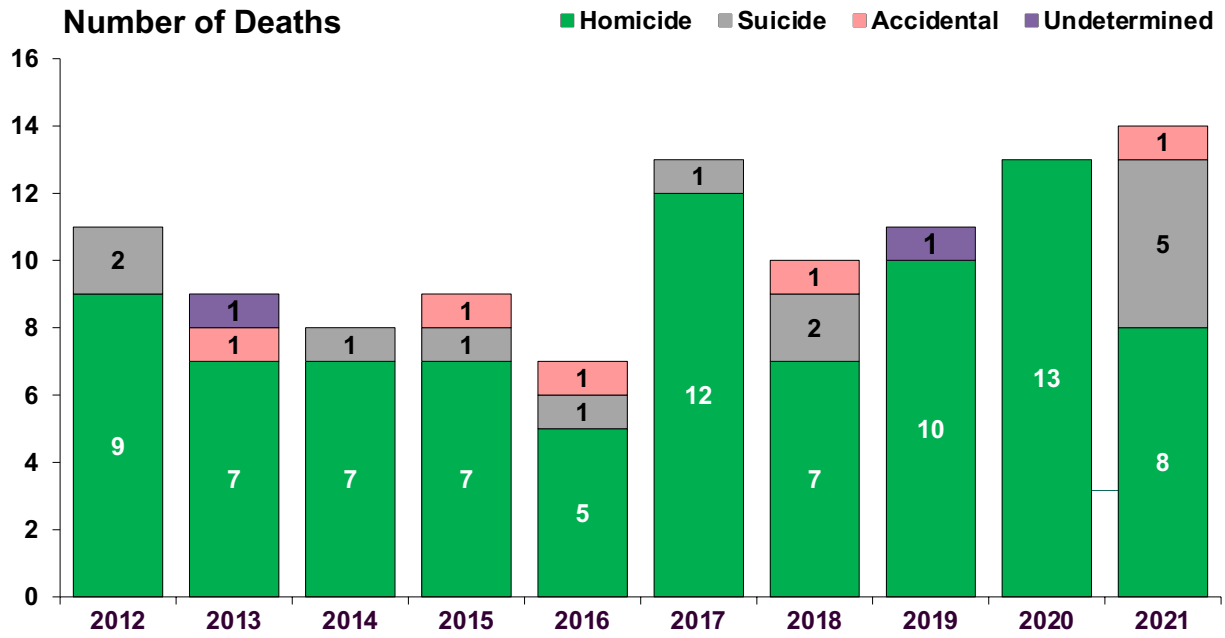


Figure 17 portrays the number of firearm deaths by manner (homicide, suicide, accidental, and undetermined) over a ten-year span. In 2021 there were 14 firearm deaths, which was the highest number in the last ten years. Eight gun deaths were homicide, five were suicide and one was ruled an accident. Five suicide gun deaths were the highest in the last ten years. Both boys and girls had ten year highs in these type of deaths. The child firearm death rate in Cuyahoga County (5.7 per 100,000)[63] was higher than the state of Ohio (3.9) and the United States (3.3).[64-65]

Community Actions:

University Hospitals Rainbow Injury Prevention Center distributes gun safety handouts through members of the Safe Kids Coalition. They are in the process of establishing a gun safety education partnership with the Euclid Police Department.

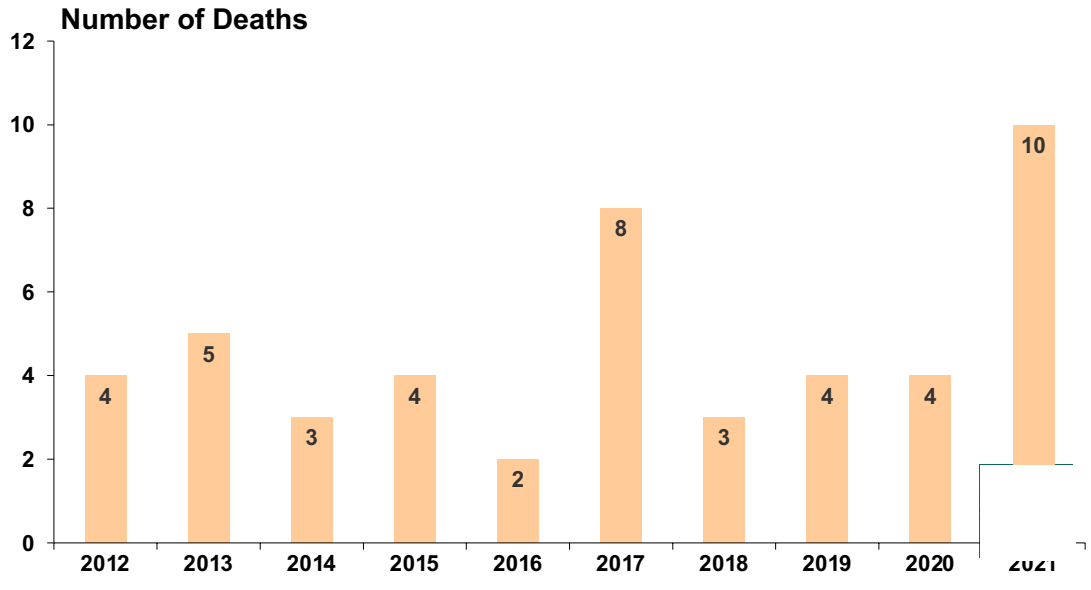
Cleveland Division of Police provides gun safety education at elementary schools and daycares using the National Rifle Association Eddie Eagle Gun Safe Program. They also distribute gun locks to the **MomsFirst Program** and during community outreach events.

The Cuyahoga County Camp HOPE America program, managed by the **Witness Victim Service Center (WVSC)**, continues to provide a trauma-informed camping experience for children residing in Cuyahoga County that have been impacted by violence and trauma. The camp focuses on building resiliency and helping children who have been exposed to trauma find pathways to hope and healing. As part of the Camp HOPE program, the Pathways program was introduced to youth and their families. Pathways has year-round programming and mentoring. The program goal is to provide educational opportunities and meaningful activities while promoting positive relationship among peers.

The Defending Childhood program, managed by the WVSC, is a county-wide comprehensive program that seeks to prevent and reduce the impact of children's exposure to violence in their homes, schools, and communities. It serves children between the ages of 0 to 17 years. It provides trauma informed, therapeutic treatment to children impacted by trauma. Select behavioral health agencies are contracted to provide these services.

Intentional Injury Deaths

Figure 18: Total Child Suicide Deaths per Year



There were 10 suicides in 2021, which was the highest in the last ten years and tied with 2004 for the highest in the last 30 years (**Figure 18**). Ages ranged from 12 to 17 years old. Five were males and five were Black non-Hispanic children. This year saw the highest number of Black non-Hispanic children die by suicide in the last 10 years. Four deaths were residents of outer ring suburbs and four lived in first ring suburbs. Five children used a gun, three died by hanging and two by an overdose.

According to the CDC, in 2020 (most recent data available), suicide was the second-leading cause of death among 10- to 17-year-olds in the United States and third-leading cause in the state of Ohio.[66] The Cuyahoga county rate (8.5 per 100,000)[67] was more than 80% higher than the 2020 state of Ohio rate (4.6) and nearly 70% higher than the US rate (5.0).[68-69] According to the Cuyahoga County Youth Risk Behavior Survey in 2021, high school students self-reported that 15.4% had seriously considered attempting suicide and 7.6%* had attempted suicide within the last year.[70]

*self-reported by the teens based on their perceptions, not a universally applied definition of what constitutes a suicide attempt.

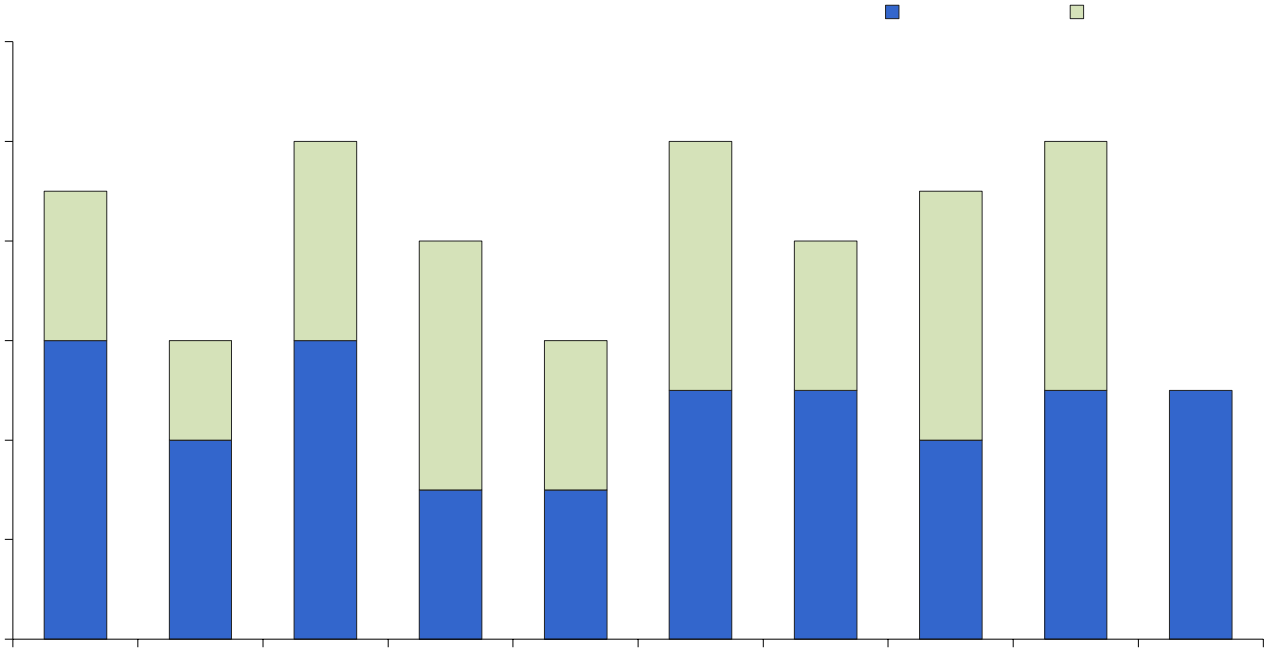
Community Actions:

The **Alcohol, Drug Addiction, and Mental Health Services (ADAMHS) Board** of Cuyahoga County has many programs and outreach efforts to address child mental health and suicide prevention.

- Life Is Better With You Here campaign focuses on Black teens struggling with their mental health and encourages conversations about preventing suicide. Reaching out to others is also a component of the campaign. It is a multimedia approach with messaging on social media, radio, television, billboards and bus ads. It also includes stories focused on youth mental health and suicide prevention.
- The ADAMHS Board and Effective Leadership Academy launched an online youth wellness platform with accessible resources for youth that include wellness videos, community resources, and a wellness pitch competition.
- The Cuyahoga County Board of Health and the ADAMHS Board were partners on the Adverse Childhood Experiences (ACEs) grant that developed a video series about healing from trauma and ACEs called Our Stories, Our Healing.
- The ADAMHS Board continues to provide anti-bullying messages, sponsored the Teen Mental Health Summit, and worked with high school students to promote the use of the Crisis Text Line.

MetroHealth Medical Center is opening a new psychiatric hospital with an adolescent floor by the end of 2022.

Figure 19: Child Deaths due to Abuse and Neglect



In 2021, there were 5 abuse or neglect related child deaths, which was the lowest number in the last ten years **(Figure 19)**. The 2021 total was three lower than the 10-year average of eight. The national rate for child fatalities due to abuse or neglect was 2.38 per 100,000 children (federal fiscal year 2020 [October 2019 – September 2020]).[71] The 2021 county child abuse or neglect fatality rate of 1.94 per 100,000 children[72] is lower than the national rate.

Of the 5 child abuse victims, 5 were males, 3 were White non-Hispanic, and 3 were residents in a first ring suburb. The ages ranged from 1 day to 6 years old, with 3 of the deaths occurring to children 4 years of age or younger. Four of the 5 abuse cases were ruled as homicides. The top 5 risk factors are poverty (5), maternal history of mental health illness (4), parental use of illicit drugs (4), parental use of tobacco (4), history of abuse and neglect to a victim's parent as a child (3), and paternal history of mental health illness (3).

2021 Fast Facts

- *Child deaths by suicide hit a ten-year high.*
- *Lowest number of child abuse and neglect deaths in the last decade.*
- *Gun-related deaths were the highest in the last ten years.*

Data Tables

Table 6: Demographic Profiles and Cause Specific Rates

	2020 Census Data[1]	
	Population Under 18 Years	Percent of Population Under 18
Cuyahoga County (Total)	257,707	21
Cuyahoga County (Black)	90,375	25
Cuyahoga County (White)	130,482	17
City of Cleveland	83,340	22

Annual Birth Data[2]	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Cuyahoga County	14,783	14,920	15,079	14,843	14,747	14,558	13,871	13,937	13,204	13,143
% Black non-Hispanic	38.7	38.8	37.8	38.0	38.1	38.8	37.7	38.2	37.9%	38.1%
% Hispanic	6.5	6.3	6.5	6.6	6.9	7.3	7.4	7.2	7.7%	7.7%
% White non-Hispanic	49.7	49.9	50.3	50.2	49.6	48.7	49.9	49.4	49.4%	49.6%

Annual Death Data	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Annual Child Deaths	182	186	165	200	172	188	185	174	152	165
Annual Infant Deaths	131	133	121	155	128	118	120	120	101	97
% Infants to Total Deaths	72.0	71.5	73.3	77.5	74.4	62.8	64.9	69.0	66.4	58.8

Child Mortality / 100,000 Children	62.7	64.1	56.8	68.9	62.5	69.2	69.1	67.5	58.2	64.0
Annual Total Medical Death Rate	47.5	47.5	40.7	50.3	45.4	44.9	47.1	44.6	35.2	40.7
Cancer	2.1	1.4	1.7	1.7	1.1	0.7	3.0	0.8	1.9	1.9
Annual Total Injury Death Rate	15.2	16.5	16.2	18.6	17.1	24.3	21.7	22.5	23.0	23.3
Gunshot Wound	3.8	3.1	2.8	3.1	2.5	4.8	3.7	4.3	5.0	5.4
Motor Vehicle Accident	1.7	1.4	1.0	1.4	3.3	4.1	3.0	1.9	1.1	1.9
Fire	0.3	1.0	0.0	0.0	0.0	0.7	1.1	0.8	0.0	1.6
Drowning	0.7	1.4	0.3	1.0	0.4	0.7	1.5	1.6	1.1	2.3
Poisoning	0.0	0.3	0.7	0.0	0.4	2.2	0.7	1.2	0.8	1.2

Infant Mortality / 1,000 Births	8.9	8.9	8.0	10.4	8.7	8.1	8.7	8.6	7.6	7.4
Neonatal Mortality / 1,000 Births	6.5	6.7	6.2	7.3	6.1	6.0	5.9	5.7	4.7	5.0
Postneonatal Mortality / 1,000 Births	2.4	2.2	1.8	3.2	2.6	2.1	2.8	2.9	2.9	2.4
Prematurity	5.1	5.5	5.1	5.9	4.7	5.6	4.4	5.0	3.6	3.9
SIDS Only	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
SIDS and Sleep Related	1.2	1.1	1.3	1.8	1.4	0.9	1.4	1.7	1.7	1.3

[1] 2016-2021 rates use American Community Survey estimates, 2011-15 rates use 2010 decennial census count.
[2] Ohio Department of Health, Ohio Public Health Information Warehouse. Available at https://odhgateway.odh.ohio.gov/EDWS/DataCatalog (accessed Aug 22, 2022).
[3] 2020 birth count includes 2 births that the state file geocoded to another county.

Table 7: Cause of Death by Age Group and Year

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total per Cause
Prematurity											**706**
Under 1 Year	76	82	77	87	69	81	61	70	48	51	
1 - 9 Years	0	1	0	0	0	0	1	0	1	0	
10 - 17 Years	1	0	0	0	0	0	0	0	0	0	
Birth Defect											**252**
Under 1 Year	25	23	13	21	22	12	23	15	12	17	
1 - 9 Years	9	9	2	4	4	4	3	3	2	5	
10 - 17 Years	1	3	3	1	4	5	3	0	2	2	
SIDS and Sleep Related Deaths											**197**
Under 1 Year	18	16	19	27	21	13	19	24	23	17	
Cancer and Other Medical Conditions											**269**
Under 1 Year	10	10	9	15	13	6	11	10	16	10	
1 - 9 Years	11	7	5	11	5	9	14	10	4	15	
10 - 17 Years	6	4	10	6	8	5	10	7	7	5	
Gunshot Wound											**105**
Under 1 Year	0	0	0	1	0	0	0	0	0	0	
1 - 9 Years	2	1	2	3	1	0	2	2	0	2	
10 - 17 Years	9	8	6	5	6	13	8	9	13	12	
Motor Vehicle Accident											**57**
Under 1 Year	0	0	1	0	0	0	1	0	2	0	
1 - 9 Years	4	3	0	1	3	6	3	2	1	0	
10 - 17 Years	1	1	2	3	6	5	4	3	0	5	

Table 7 continued on page 31

Table 7: Cause of Death by Age Group and Year (Continued)

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total per Cause
Assault											**39**
Under 1 Year	1	1	1	2	2	0	0	0	0	1	
1 - 9 Years	1	2	4	1	1	5	3	0	3	2	
10 - 17 Years	1	0	2	0	1	2	0	1	2	0	
Hanging											**31**
1 - 9 Years	0	0	0	0	0	0	0	0	0	1	
10 - 17 Years	2	5	2	3	2	5	2	3	3	3	
Drowning											**30**
Under 1 Year	1	0	0	0	0	1	0	0	0	0	
1 - 9 Years	1	3	0	2	0	0	0	2	2	2	
10 - 17 Years	0	1	1	1	1	1	4	2	1	4	
Poisoning											**20**
Under 1 Year	0	1	0	0	0	1	0	0	0	0	
1 - 9 Years	0	0	2	0	1	2	2	1	1	0	
10 - 17 Years	0	0	0	0	0	3	0	2	1	3	
Fire											**15**
Under 1 Year	0	0	0	0	0	0	0	0	0	0	
1 - 9 Years	1	3	0	0	0	2	3	2	0	4	
10 - 17 Years	0	0	0	0	0	0	0	0	0	0	
Other Accidents[1]											**28**
Under 1 Year	0	0	0	2	0	1	2	0	0	1	
1 - 9 Years	0	2	3	2	0	2	1	2	3	3	
10 - 17 Years	0	0	0	1	1	0	0	0	2	0	
Undetermined											**18**
Under 1 Year	0	0	1	0	1	3	2	1	0	0	
1 - 9 Years	1	0	0	1	0	1	1	2	3	0	
10 - 17 Years	0	0	0	0	0	0	1	0	0	0	
Total per Year	**182**	**186**	**165**	**200**	**172**	**188**	**184**	**173**	**152**	**165**	**1,767**

[1] Includes falls, violence of undetermined origin, and other accidents.
[2] There is a 2018 and 2019 case where the cause of death is unknown due to lack of information because death occurred outside state of Ohio.

Table 8: Annual Number of Infant Deaths by Ethnicity or Race

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total
Black non-Hispanic	82	84	82	104	82	88	78	82	71	56	809
Hispanic	11	11	4	9	7	9	11	3	6	7	78
White non-Hispanic	37	36	34	41	35	20	31	33	23	33	323
Subtotal	**130**	**131**	**120**	**154**	**124**	**117**	**120**	**118**	**100**	**96**	**1,210**
All Other Races	1	2	0	1	3	1	0	2	1	1	12
Missing Race Info	0	0	1	0	1	0	0	0	0	0	2
Total	131	133	121	155	128	118	120	120	101	97	1,224
Rates of Death											
Black non-Hispanic Infant Mortality / 1,000 Births[1]	14.3	14.5	14.4	18.5	14.6	15.6	14.9	15.4	14.2	12.1	15.3
Hispanic Infant Mortality / 1,000 Births[2]	11.4	11.7	4.1	9.2	6.9	8.5	10.7	3.0	5.9	7.1	7.7
White non-Hispanic Infant Mortality / 1,000 Births[3]	5.0	4.8	4.5	5.5	4.8	2.8	4.5	4.8	3.5	5.1	4.6
Ratio of Black to White IMR	2.8	3.0	3.2	3.4	3.1	5.5	3.3	3.2	4.0	2.4	3.3

[1] Total Infant Black non-Hispanic deaths/total Black non-Hispanic live births x 1,000 (annual birth data in Table 6)
[2] Total Hispanic deaths/total Hispanic live births x 1,000 (annual birth data in Table 6)
[3] Total Infant White non-Hispanic deaths/total White non-Hispanic live births x 1,000 (annual birth data in Table 6)

Table 9: Annual Number of Child Deaths by Race and Age Group

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total
Race and Age Group											
Black											
Under 1 Year	84	86	83	107	83	89	80	82	74	57	864
1 - 9 Years	17	25	10	15	9	17	21	17	13	22	156
10 - 17 Years	14	13	16	10	16	23	19	16	17	24	158
Total	115	124	109	132	108	129	120	115	104	103	1,178
White											
Under 1 Year	46	45	37	47	40	28	40	36	24	38	388
1 - 9 Years	13	6	8	9	6	13	12	9	7	11	94
10 - 17 Years	7	9	9	9	12	16	12	12	13	9	105
Total	66	60	54	65	58	57	64	57	44	58	587
Other											
Under 1 Year	1	2	0	1	4	1	0	2	2	2	15
1 - 9 Years	0	0	0	1	0	1	0	0	0	0	2
10 - 17 Years	0	0	1	1	1	0	1	0	1	1	5
Total	1	2	1	3	5	2	1	2	3	3	22
Missing Race Info	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**1**	**1**	**3**
Rates of Death											
Black Crude Death Rate[1]	108.0	116.4	102.4	124.0	109.5	132.1	125.2	131.2	113.1	114.0	117.5
White Crude Death Rate[2]	42.7	38.8	34.9	42.0	39.0	39.6	45.4	42.0	32.4	44.5	40.1
Ratio of Black to White	2.5	3.0	2.9	2.9	2.8	3.3	2.8	3.1	3.5	2.6	2.9
Black Death Rate (excl Infants)[3]	30.8	37.8	25.8	24.8	26.9	43.5	44.5	40.1	34.5	53.7	36.2
White Death Rate (excl Infants)[4]	13.6	10.2	11.6	12.2	12.8	21.3	17.9	16.4	15.5	16.2	14.8
Ratio of Black to White (excl Infants)	2.3	3.7	2.2	2.0	2.1	2.0	2.5	2.4	2.2	3.3	2.5

[1] Total Black deaths/90,375 x 100,000 (2020 census data)
[2] Total White deaths/130,482 x 100,000 (2020 census data)
[3] Total Black deaths (exclude Infants)/90,375 minus Black live births x 100,000 (2020 census data)
[4] Total White deaths (exclude Infants)/130,482 minus White live births x 100,000 (2020 census data)

Data Tables

Table 10: Cause of Death by Age Group and Year

	2012	2013	2014	2015	2016	2017	2018[1]	2019[1]	2020	2021	Total
Total Injury Related Deaths											
Under 1 Year	20	18	23	31	24	18	24	25	25	19	227
1 - 9 Years	10	14	11	10	6	19	15	11	13	14	123
10 - 17 Years	14	16	13	13	17	29	19	22	22	27	192
Total	44	48	47	54	47	66	58	58	60	60	542
Total Deaths from Medical Causes											
Under 1 Year	111	115	98	124	104	100	95	95	76	78	996
1 - 9 Years	20	17	7	15	9	12	18	15	7	20	140
10 - 17 Years	7	6	13	7	12	10	13	5	9	7	89
Total	138	138	118	146	125	122	126	115	92	105	1,225
TOTAL ALL CAUSES	182	186	165	200	172	188	184	173	152	165	1,767

NOTE: Injury related deaths include sleep related accidental suffocation and "undetermined" deaths of infants, but not SIDS deaths.
[1] There is a 2018 and 2019 case where the cause of death is unknown due to lack of information because death occurred outside state of Ohio.

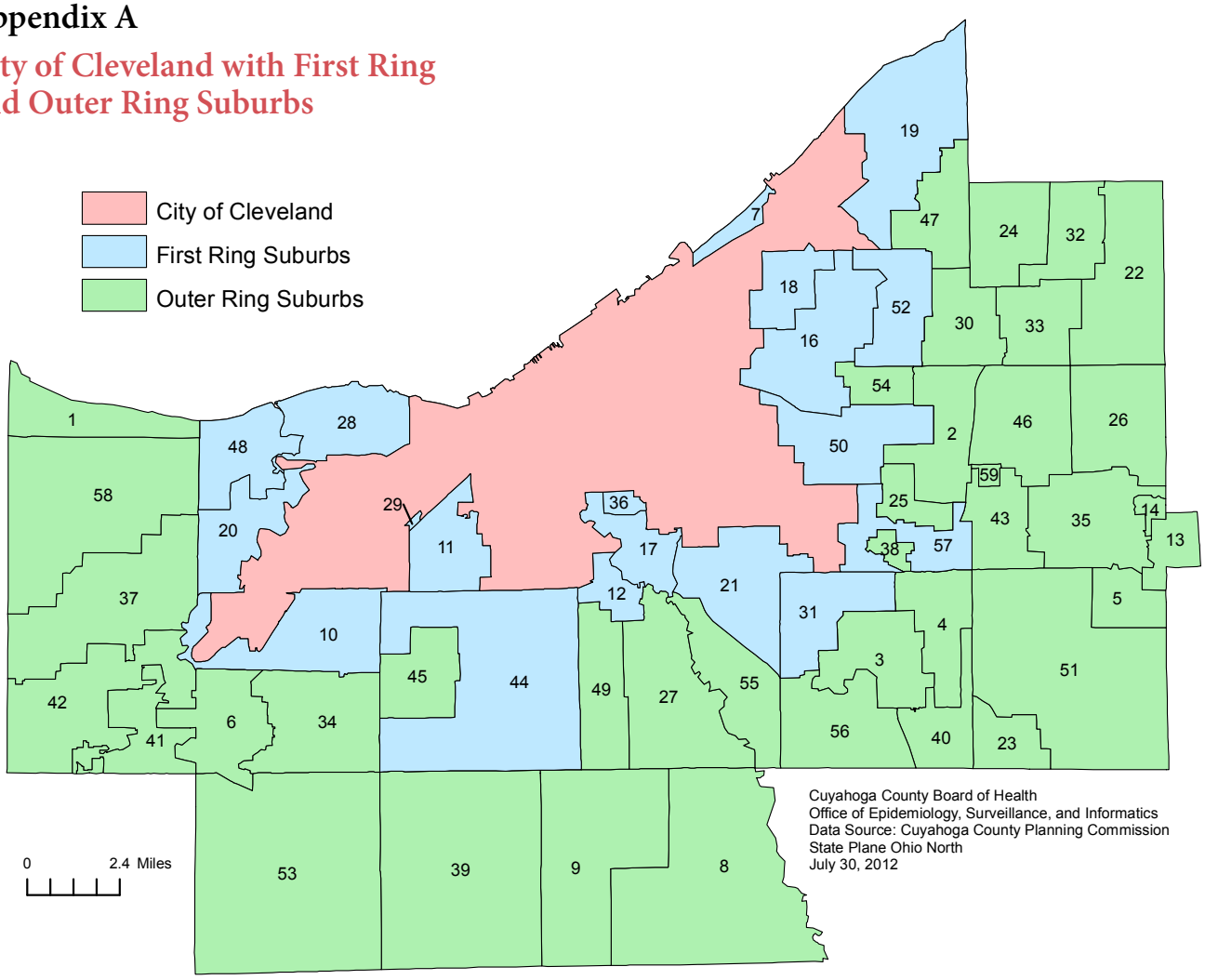
Table 11: Annual Number of Child Deaths by Sex and Age Group

	2012[1]	2013	2014[1]	2015	2016	2017	2018	2019[1]	2020	2021	Total
Sex and Age Group											
Female											
Under 1 Year	52	64	49	70	57	52	43	54	43	39	523
1 - 9 Years	18	15	10	6	8	13	17	9	8	12	116
10 - 17 Years	10	8	10	7	11	9	7	10	12	10	94
Total	80	87	69	83	76	74	67	73	63	61	733
Male											
Under 1 Year	78	69	71	85	71	66	77	65	58	59	699
1 - 9 Years	12	16	8	19	7	18	16	17	12	21	146
10 - 17 Years	11	14	16	13	18	30	25	18	19	24	188
Total	101	99	95	117	96	114	118	100	89	104	1,033
TOTAL ALL	181	186	164	200	172	188	185	173	152	165	1,766

[1] In 2012, 2014 and 2019 one infant had unknown sex.

Appendix A

City of Cleveland with First Ring and Outer Ring Suburbs



Number	Municipality	Number	Municipality	Number	Municipality
1	Bay Village	22	Gates Mills	41	Olmsted Falls
2	Beachwood	23	Glenwillow	42	Olmsted Township
3	Bedford	24	Highland Heights	43	Orange
4	Bedford Heights	25	Highland Hills	44	Parma
5	Bentleyville	26	Hunting Valley	45	Parma Heights
6	Berea	27	Independence	46	Pepper Pike
7	Bratenahl	28	Lakewood	47	Richmond Heights
8	Brecksville	29	Linndale	48	Rocky River
9	Broadview Heights	30	Lyndhurst	49	Seven Hills
10	Brook Park	31	Maple Heights	50	Shaker Heights
11	Brooklyn	32	Mayfield	51	Solon
12	Brooklyn Heights	33	Mayfield Heights	52	South Euclid
13	Chagrin Falls	34	Middleburg Heights	53	Strongsville
14	Chagrin Falls Township	35	Moreland Hills	54	University Heights
16	Cleveland Heights	36	Newburgh Heights	55	Valley View
17	Cuyahoga Heights	37	North Olmsted	56	Walton Hills
18	East Cleveland	38	North Randall	57	Warrensville Heights
19	Euclid	39	North Royalton	58	Westlake
20	Fairview Park	40	Oakwood	59	Woodmere
21	Garfield Heights				

Appendix B

CUYAHOGA COUNTY FIMR
FETAL INFANT MORTALITY REVIEW

Program Description:

The Cuyahoga County Board of Health (CCBH) implemented the first county-wide Fetal Infant Mortality Review (FIMR) Program in 2014. The FIMR Program examines local infant mortality issues through the review of infant deaths and fetal deaths 20 weeks or more gestation.

Figure 1: Number of Fetal Deaths in Cuyahoga County (2016-2021) [n=538]

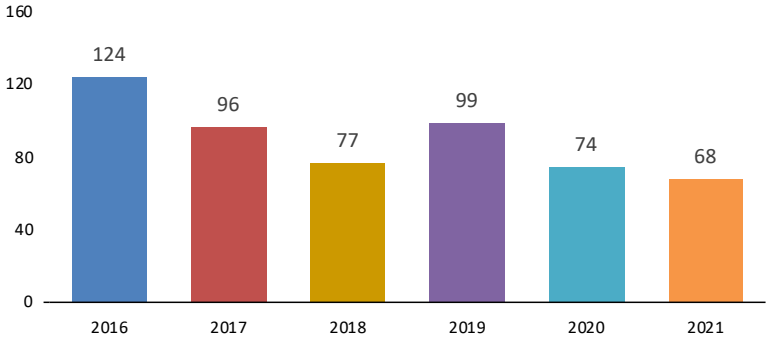


Figure 1 shows that since 2016, there has been a net decrease of 45.2% in fetal deaths. The 2021 Cuyahoga County fetal mortality rate (FMR) was 5.17 per 1,000 live births plus fetal deaths which is lower than the 2020 Ohio and US rate, which are both 5.74. (most recent data available).

Figure2: Gestational Age of Fetal Deaths (2016-2021) [n=538]

Figure 2 shows the gestational age of all fetal deaths from 2016-2021. Forty percent of fetal deaths occurred before the age of viability (24 weeks gestation). Looking closer, 42.9% of fetal losses occurred in the third trimester (beginning at 28 weeks), a time when babies have a high survival rate.

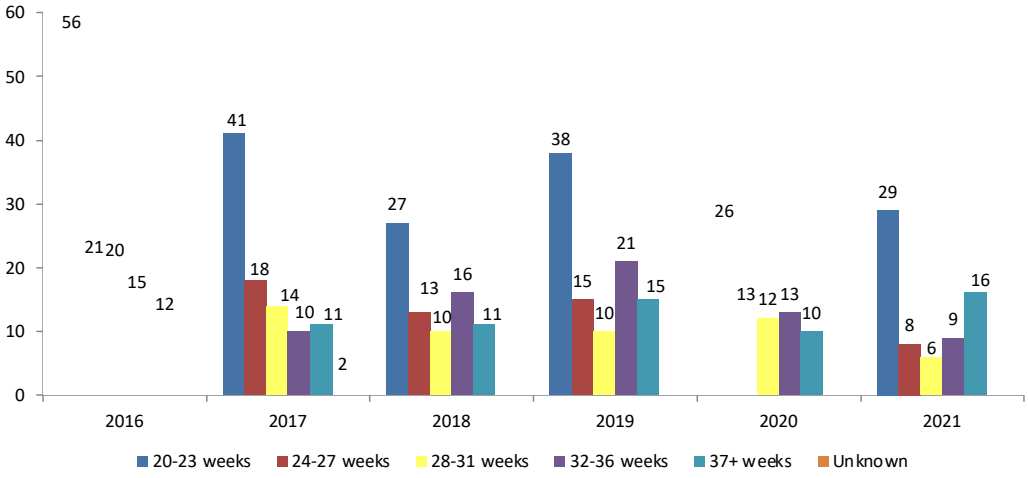


Figure 3: Fetal Deaths by Race of the Mother (2016-2021) [n=538]

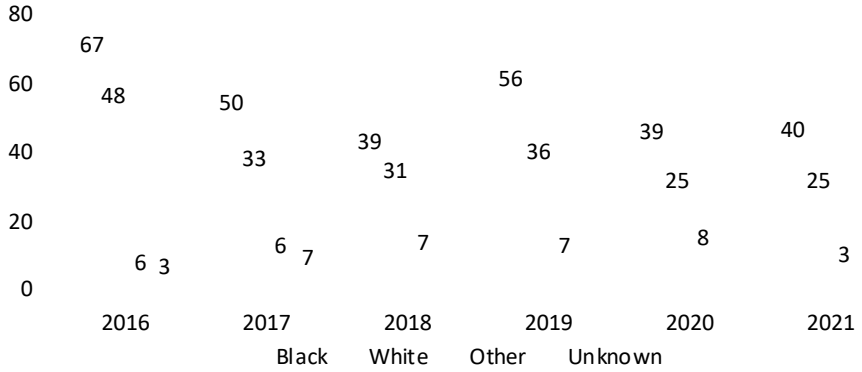


Figure 3 illustrates fetal deaths by race in Cuyahoga County. The Black fetal mortality rate (7.96) was almost twice as high as the White fetal mortality rate (3.99) in 2021. These rates are lower than the 2020 Ohio FMR rates of 10.53 and 4.86 respectively.

Appendix B

Table 1: FIMR Reviewed Cases

Demographics in 2014-2021	
Type of Loss	
Fetal	**66**
Infant	**29**
Insurance*	
Medicaid	**50**
Private	**41**
Mother's Race**	
Black	**42**
White	**38**

* 4 Moms were uninsured
** 7 Moms were of Hispanic ethnicity and 8 Moms were of another race.

Table 1 shows the demographics of the 95 FIMR cases that have been reviewed from 2014-2021.

Table 2: Ongoing FIMR Community Initiatives

Initiative	Action
Encourage maternity patients to use emergency rooms with labor and delivery services, when needed, for better pregnancy outcomes.	A palm card was created and provided to pregnant women to increase awareness of labor and delivery locations in Cuyahoga County.
Eliminate transportation barriers for maternity and pediatric appointments.	The Baby On Board Project provides bus vouchers and improvements to transit waiting areas in targeted communities.

Table 2 displays two FIMR community initiatives that have been developed and implemented in 2021.

Table 3: FIMR Case Review

Team Recommendations in 2021
Promote fetal movement awareness education and the importance of reporting decreased movement.
Support interconception health patient education.
Support alternate grief support methods to encourage families that are hesitant to reach out for services.
Improve policy for working pregnant moms/families (maternity/paternity leave).
Support cultural awareness education among providers for improved patient care.
Promote COVID-19 awareness in pregnant women or women of childbearing age.
Provide ACEs (Adverse Childhood Events) education for community members.
Support dual diagnosis services for mental health and drug abuse for women of childbearing age.
Support CenteringPregnancy, especially for moms with multiple stressors and lack of support.
Encourage on-going training for staff in non-OB emergency departments to account for staff turnover.

Suggested citation: The Cuyahoga County Child Fatality Review Board. Protecting our future: Child fatalities for 2021 (24th ed.) (2022) Cuyahoga County, Ohio.

Footnotes

[1] US Census Bureau. 2021 TIGER/Line® Shapefiles: US county subdivisions. https://www.census.gov/cgi-bin/geo/shapefiles/index.php

[2] Ohio Department Health (ODH), Ohio Public Health Information Warehouse. Preliminary 2021 mortality data.
The Department specifically disclaims responsibility for any analyses, interpretations or conclusions.
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Cuyahoga County Child Fatality Review Board Membership 2021-2022

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Daralynn Constant
Kim Harris

Lt. Maurice Brown
Cleveland Div. of Police

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Daralynn Constant, LISW-S
Rainbow Babies & Children's Hospital

Cuyahoga County Medical Examiner's Death Scene Investigation Team

Erin DiVincenzo, MS, LPCC-S
Alcohol, Drug Addiction & Mental Health Services Board

Anna Faraglia, JD
Cuyahoga County Prosecutor's Office

Josh Friedman, MD
MetroHealth Medical Center/ Cleveland Clinic Foundation

Susan Hatters Friedman, MD
University Hospitals Cleveland Medical Center
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Thomas Gilson, MD
Cuyahoga County Medical Examiner

Sgt. Teresa Gomez
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