MARYLAND STATE CHILD FATALITY REVIEW TEAM

2021 Annual Legislative Report

Health-General Article, §5-704(b)(12)

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https://health.maryland.gov/phpa/mch/Pages/cfr-home.aspx

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List of Abbreviations

CDRCRS	National Child Death Review Case Reporting System
CFR	Child Fatality Review
CPS	Child Protective Services
DHS	Department of Human Services
MDH	Maryland Department of Health
MMQRC	Morbidity, Mortality, and Quality Review Committee
NCFRP	National Center for Fatality Review and Prevention
NH	Non-Hispanic
OCME	Office of the Chief Medical Examiner
SIDS	Sudden Infant Death Syndrome
SUID	Sudden Unexpected Infant Death
ZCTA	ZIP Code Tabulation Area

Overview of Maryland Child Fatality Review

Child Fatality Review (CFR) is a systematic, multi-agency, and multi-disciplinary review of unexpected child deaths. This review process, which began in Los Angeles in 1978 as a mechanism to identify fatal child abuse and neglect, has grown into a national system to examine unexpected child fatalities and to inform prevention efforts.

The purpose of the Maryland State CFR Team (Team) is to prevent child deaths by:

(1) Understanding the causes and incidence of child deaths;
(2) Implementing changes within the agencies represented on the Team to prevent child deaths; and
(3) Advising the Governor, the General Assembly, and the public on changes to law, policy, and practice to prevent child deaths.

The Team envisions the elimination of preventable child fatalities in the state of Maryland. To achieve this goal, the Team aims to successfully use the CFR process to understand the circumstances around incidents of child fatality and to recommend strategies and policy change to prevent future fatalities.

The Maryland CFR Program (Program) was established by statute in Health - General Article, §5-702 and Senate Bill 464 (Chapter 355 of the Acts of 1999). The Program is housed within the Maryland Department of Health (MDH) for budgetary and administrative purposes. The 25-member Team is comprised of representatives from multiple State agencies and professional organizations, as well as two pediatricians and 11 members of the general public with interest and expertise in child safety and welfare, who are appointed by the Governor (see Appendix A). The Team meets at least four times a year to address 13 statutorily-mandated duties (see Appendix B).

The Team provides support to local CFR teams that operate in each jurisdiction. The local CFR teams receive notice from the Office of the Chief Medical Examiner (OCME) of unexpected resident deaths of children under age 18 years old. The local CFR teams are required to review each of these deaths. Local teams meet at least quarterly to review cases and make recommendations for local-level systems changes to statute, policy, or practice to prevent future child deaths, and work to implement these recommendations. This report covers data through calendar year 2020 for OCME-referred deaths.

Other multidisciplinary groups in Maryland have similar charges to prevent child injury and death. The State Council on Child Abuse and Neglect and the Citizen Review Board for Children examines policies and practices for protecting children. Also, the MDH Morbidity, Mortality, and Quality Review Committee (MMQRC), established by legislation in 2008, is charged with reviewing morbidity and mortality associated with pregnancy, childbirth, infancy, and early childhood. The MMQRC provides another opportunity for review and dissemination of information and recommendations developed through the CFR process. The local CFR teams also work collaboratively with local Fetal and Infant Mortality Review teams in several jurisdictions as well as with other review teams such as pedestrian fatality and overdose fatality programs.

Unexpected Child Deaths – Maryland, 2020

Childhood deaths are a major public health concern, as many of these deaths are preventable. Surveillance of childhood deaths is essential as it allows public health programs to measure the magnitude of the problem and assess the causes and populations affected. These data are crucial in identifying trends and targeting interventions to prevent childhood deaths. The CFR process reviews all unexpected child deaths referred by the OCME, as well as, whenever possible, other unexpected child deaths among Maryland residents identified by MDH or the Local CFR Teams. This subset of child deaths includes cases of Sudden Unexpected Infant Death (SUID), unintentional injury, homicide, suicide, and some deaths due to natural causes.[1] Epidemiologists within the MDH Maternal and Child Health Bureau analyzed OCME-referred child deaths for summary in this report.

An important aspect of Maryland's CFR review process is the local team's use of additional data sources – including medical records, school district data, police investigations, emergency medical service records, and investigations by the Department of Human Services (DHS) – to improve the overall quality of the case review data. In recent years, local CFR teams have received additional training to classify child deaths accurately and consistently. These data are then uploaded to the National Child Death Review Case Reporting System (CDRCRS), which was authorized in 2009 by House Bill 705 (Chapter 108 of the Acts of 2009 of the General Assembly of Maryland). Because of the improved capacity at the local level to report more accurate and complete data, fatality analysis in this report uses the data as reported to CDRCRS from local reviews, rather than the OCME data used in previous reports. Thus, the annual number of cases by different demographic characteristics may vary from previous annual reports. Due to the COVID-19 pandemic, some local CFR teams were unable to meet to review cases from 2019 and 2020, leading to the increased number of cases with a delayed review. Additional delays in the receipt of autopsy reports due to increased demands upon the OCME also contributed to the number of unreviewed cases.

In 2020, the OCME referred 160 unexpected child deaths to the local CFR teams for review. Figure 1 shows the distribution of these deaths by age. Sixty-one deaths (38 percent) occurred among infants (children under one year old), and 44 deaths (28 percent) occurred among children 15 to 17 years old. Of the 160 unexpected child deaths, 100 deaths (63 percent) occurred among male children and 60 deaths (37 percent) among female children.

Figure 1. Number of Unexpected Child Deaths by Age Group, Maryland, 2020*

- 44 (28%)
- 61 (38%)
- 21 (13%)
- 12 (8%)
- 22 (14%)

Legend:
- < 1 year old
- 1 to 4 years old
- 5 to 9 years old
- 10 to 14 years old
- 15 to 17 years old
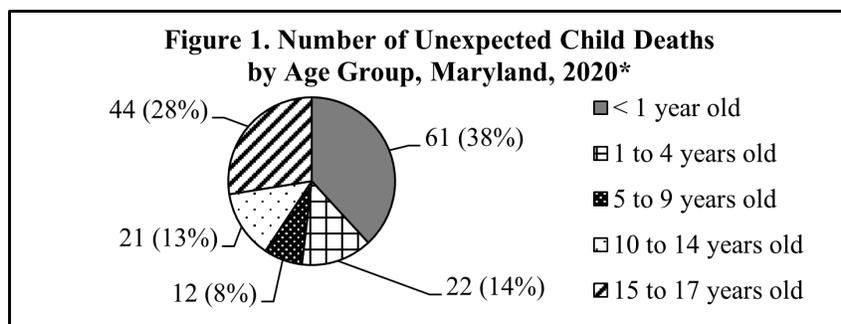
Source: CDRCRS, as of 08/02/2022.
*Percentages will total more than 100 percent due to rounding.

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[1] SUID is the sudden death of an infant less than one year of age that cannot be fully explained after a thorough review of the medical history, a complete autopsy, and examination of the death scene.

Figure 2 shows the distribution of unexpected child deaths by race and ethnicity in 2020. Non-Hispanic (NH) Black children had the highest number of unexpected deaths (93 cases), which was 5.5 times greater than the number of unexpected deaths among Hispanic children and 2.3 times greater than the number of unexpected deaths among NH White children.

Figure 2. Number of Unexpected Child Deaths by Race and Ethnicity, Maryland, 2020*
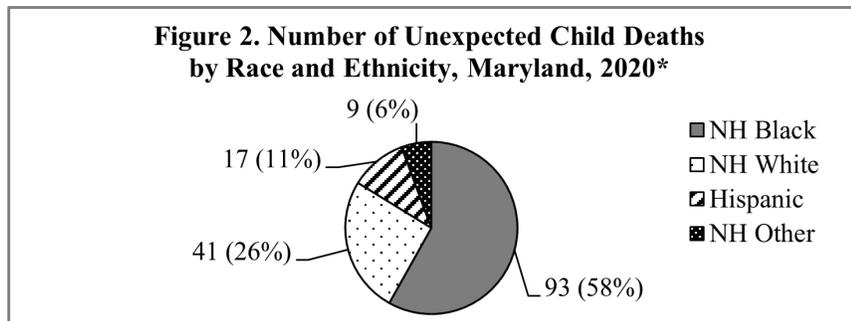
Source: CDRCRS, as of 08/02/2022.
*Percentages will total more than 100 percent due to rounding.

The number and percentage of child fatality cases occurring in 2020 by manner and cause of death categories are shown in Table 1. Most cases reviewed by teams are referred to teams by the OCME. Two deaths were not reviewed by the CFR teams due to the autopsy being unavailable, the death not being referred through the OCME, the teams not receiving immediate notification of the death, and/or time or resource constraints. Consistent with guidance provided by the National Center for Fatality Review and Prevention (NCFRP) to ensure the reporting of accurate and specific results of the child fatality review process, this report reflects reviews conducted by local CFR teams. Previously, if local teams deemed the manner of death to be undetermined, attempts were made to assign cases to a specific category. This year's report leaves all undetermined cases within the undetermined category.

Cases that are listed as "undetermined" include cases where it was not possible for the team to classify the death due to an injury, a medical cause, or the lack of consensus among the review team. Differentiating a cause of death from suicide, homicide, or accidents can be a difficult for teams. A case can also be classified as "unknown" if the team did not have information on the primary cause of death.

The leading manner of child deaths in 2020 was undetermined, accounting for 30 percent of all child deaths. Accidents were the second leading manner of child deaths, accounting for 24.4 percent of all child deaths. Motor vehicle accidents were the leading cause of accidental deaths (10.6 percent of all deaths). Homicide accounted for 15.6 percent and suicide accounted for 12.4 percent of child deaths in 2020, making them the third and fourth leading manners of death. Natural causes accounted for 14.4 percent of child deaths in 2020, with cardiovascular conditions accounting as the leading cause of natural deaths (3.8 percent of all deaths). Two cases (1.3 percent) were not reviewed for a manner and cause of death.

Local CFR teams reported 19 deaths (11.9 percent) resulting from confirmed abuse or neglect among the 160 deaths occurring in 2020, a decrease from 23 deaths (13.1 percent) in 2019. Teams incorporated information from autopsy records, DHS findings, and police investigations. Findings were shared by members of the local CFR team that determined that child abuse or neglect was indicated in the incident that led to the child's death.

Table 1. Unexpected Child Deaths by Manner and Cause of Death, Maryland, 2020	Number	Percent*
Undetermined	**48**	**30.0**
Undetermined if medical or external cause	46	28.8
Unknown cause	2	1.3
Accident	**39**	**24.4**
External – Motor Vehicle Accident	17	10.6
External – Asphyxia	6	3.8
External – Poisoning	5	3.1
External – Drowning	4	2.5
External – Other	3	1.9
External – Fire, burn, or electrocution	2	1.3
External – Fall or crush	2	1.3
Homicide	**25**	**15.6**
External – Weapon (including assault)	18	11.3
External – Poison	4	2.5
External – Other	1	0.6
External – Undetermined	1	0.6
Medical – Prematurity	1	0.6
Suicide	**23**	**14.4**
External – Weapon (including asphyxia)	8	5.0
External – Other	7	4.4
External – Asphyxia	5	3.1
External – Poison	2	1.3
External – Drowning	1	0.6
Natural	**23**	**14.4**
Medical – Cardiovascular	6	3.8
Undetermined if medical or external cause	3	1.9
Medical – Pneumonia	3	1.9
Medical – Asthma	2	1.3
Medical – Other medical cause	2	1.3
Medical – COVID-19	2	1.3
Medical – Congenital Anomaly	2	1.3
Medical – Influenza	1	0.6
Medical – Neurological, seizure	1	0.6
Medical – Other infection	1	0.6
Not Reviewed	**2**	**1.3**
Total	**160**	**100.0**

Source: CDRCRS, as of 08/02/2022.
*Rounding may cause variations in category percentages.

In Table 2, the number and percentage of deaths in 2020 are shown by jurisdiction of residence of the child at the time of death. Baltimore City had the highest number of child fatalities reviewed (21.3 percent), followed by Baltimore County (16.9 percent).

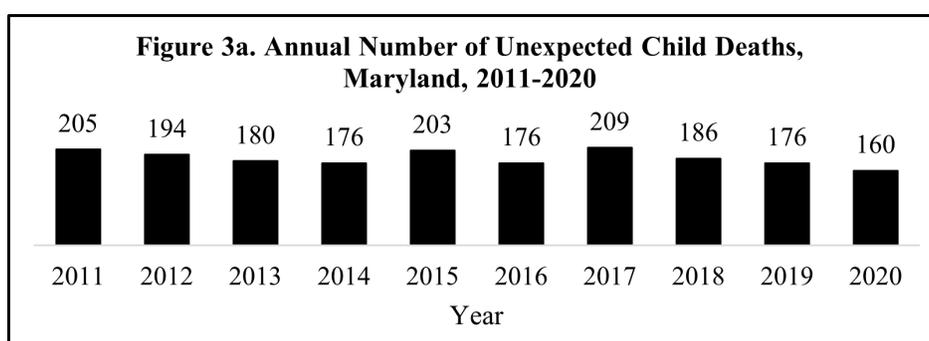| Table 2. Unexpected Child Deaths by Jurisdiction of Residence, Maryland, 2020*		
	Number	Percent
Baltimore City	34	21.3
Baltimore	27	16.9
Prince George's	14	8.8
Anne Arundel	14	8.8
Montgomery	14	8.8
Howard	12	7.5
Carroll	5	3.1
Charles	5	3.1
Frederick	5	3.1
Washington	5	3.1
Harford	4	2.5
St. Mary's	4	2.5
Wicomico	4	2.5
Calvert	3	1.9
Allegany	2	1.3
Cecil	2	1.3
Kent	2	1.3
Dorchester	1	0.6
Queen Anne's	1	0.6
Somerset	1	0.6
Talbot	1	0.6
Total	**160**	**100.0**

Source: CDRCRS, as of 08/02/2022.
*Caroline, Garrett, and Worcester counties had no child deaths and are not listed.
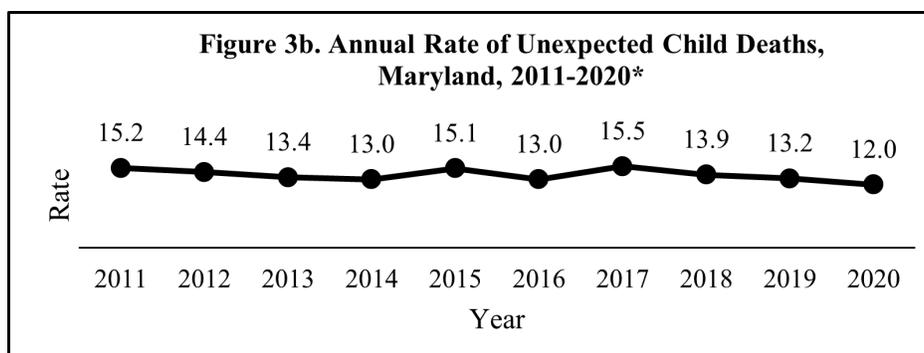
Trends in Maryland Unexpected Child Deaths

The data collection efforts of local CFR teams have undergone significant process improvements in recent years. Reports now rely on child demographic data input by CFR teams into a national database.[2] Prior to 2017, only case details provided by the OCME were used for reporting child demographic data. Thus, the annual number of cases by different demographic characteristics may vary from previous annual reports.

Figure 3a shows the annual number of unexpected child deaths referred by the OCME during the 10-year period from 2011 to 2020. Since 2011, the number of yearly child fatality cases has fluctuated between 160 and 209, with the fewest number of cases occurring in 2020. Since 2011, the number of referred unexpected child deaths has represented about 27 percent of all deaths of children under 18 years old.

Figure 3a. Annual Number of Unexpected Child Deaths, Maryland, 2011-2020

Year	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Number	205	194	180	176	203	176	209	186	176	160

Source: CDRCRS, as of 08/02/2022.

Figure 3b shows the annual rate of unexpected child deaths per 100,000 population for children 0 to 17 years old for the 10-year period from 2011 to 2020. The rate declined by 21 percent during this period.

Figure 3b. Annual Rate of Unexpected Child Deaths, Maryland, 2011-2020*

Year	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Rate	15.2	14.4	13.4	13.0	15.1	13.0	15.5	13.9	13.2	12.0

Source: CDRCRS, as of 08/02/2022.
*Rates per 100,000 population based on National Vital Statistics System population estimates.

Figure 4a shows the number of child fatality cases by age group over the five-year period from 2016 to 2020. Between 2019 and 2020, the number of deaths decreased among all age groups. Among infant deaths, 72 percent occurred between 1 month to 6 months of age, accounting for 28 percent of all unexpected child deaths.

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[2] National Child Death Review Case Reporting System. The National Center for Fatality Review and Prevention. Accessed 11 April, 2021. https://www.ncfrp.org/data/nfr-crs/

**Figure 4a. Number of Unexpected Child Deaths
by Age Group, Maryland, 2016-2020 (n=907)**

	2016	2017	2018	2019	2020
<1 year old	72	82	76	63	61
1 to 4 years old	26	33	31	26	22
5 to 9 years old	16	8	13	13	12
10 to 14 years old	22	23	11	22	21
15 to 17 years old	40	63	55	52	44

Source: CDRCRS, as of 08/02/2022.

Figures 4b and 4c show a much higher rate of unexpected child deaths among infants (children less than one year old) over the five-year period from 2016 to 2020. The overall rate of deaths among infants in Maryland was more than four times higher than the rate among children 15 to 17 years old during this period. The rate of deaths among children 15 to 17 years old has increased by 11 percent since 2016, as compared to the rate of deaths among infants which has decreased by 12 percent during the same time period.

**Figure 4b. Rates of Unexpected Child Deaths
for Infants <1 Year Old, Maryland, 2016-2020***

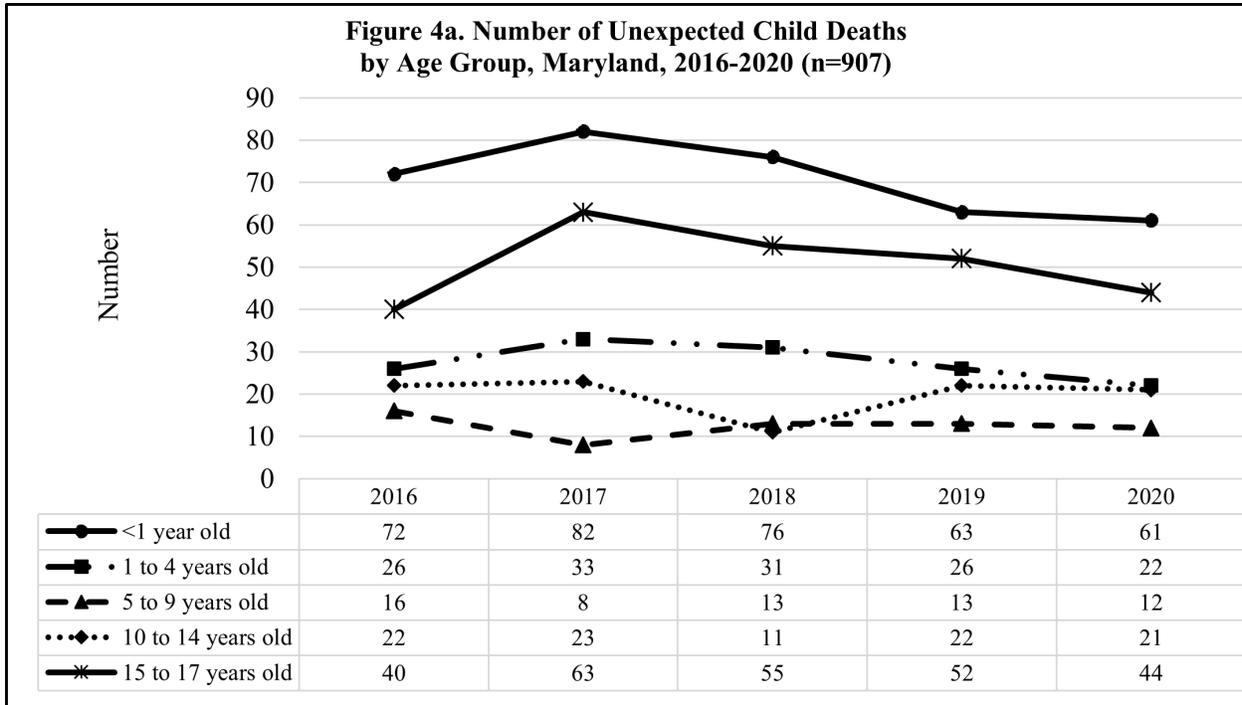|	2016	2017	2018	2019	2020
<1 year old	99.2	113.5	107.3	90.1	87.7

Source: CDRCRS, as of 08/02/2022.
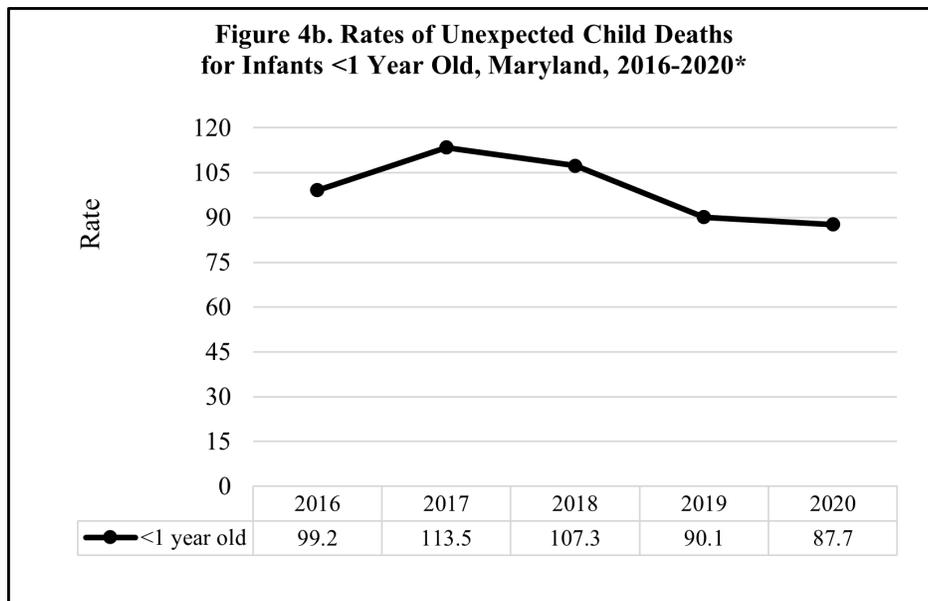*Rates per 100,000 population based on National Vital Statistics System population estimates.

Figure 4c. Rates of Unexpected Child Deaths for Children Ages 1 and Older by Age Group, Maryland, 2016-2020*
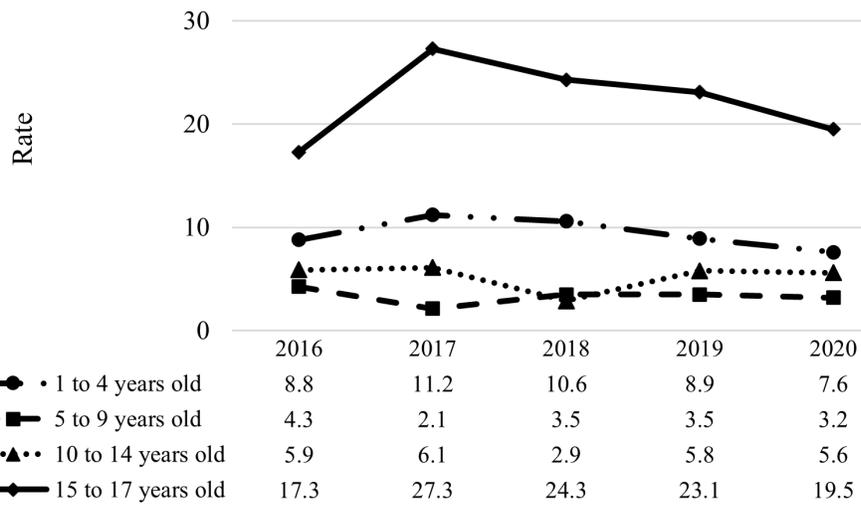
	2016	2017	2018	2019	2020
1 to 4 years old	8.8	11.2	10.6	8.9	7.6
5 to 9 years old	4.3	2.1	3.5	3.5	3.2
10 to 14 years old	5.9	6.1	2.9	5.8	5.6
15 to 17 years old	17.3	27.3	24.3	23.1	19.5

Source: CDRCRS, as of 08/02/2022.
*Rates per 100,000 population based on National Vital Statistics System population estimates.

Between 2016 and 2020, the number (Figure 5a) and rate (Figure 5b) of unexpected deaths was consistently higher among male children than among female children. In 2020, the number of unexpected deaths was 40 percent higher among male children than among female children.

Figure 5a. Number of Unexpected Child Deaths by Sex, Maryland, 2016-2020 (n=907)

	2016	2017	2018	2019	2020
Male	103	134	115	115	100
Female	73	75	71	61	60

Source: CDRCRS, as of 08/02/2022.

Figure 5b. Rates of Unexpected Child Deaths by Sex, Maryland, 2016-2020*

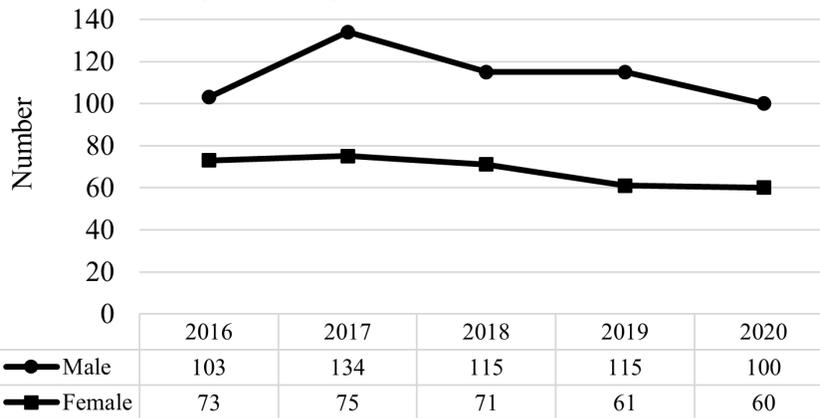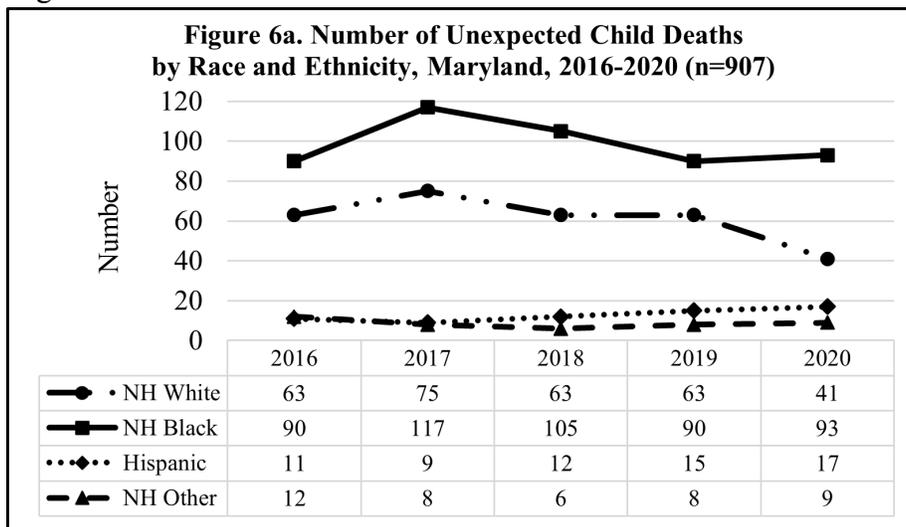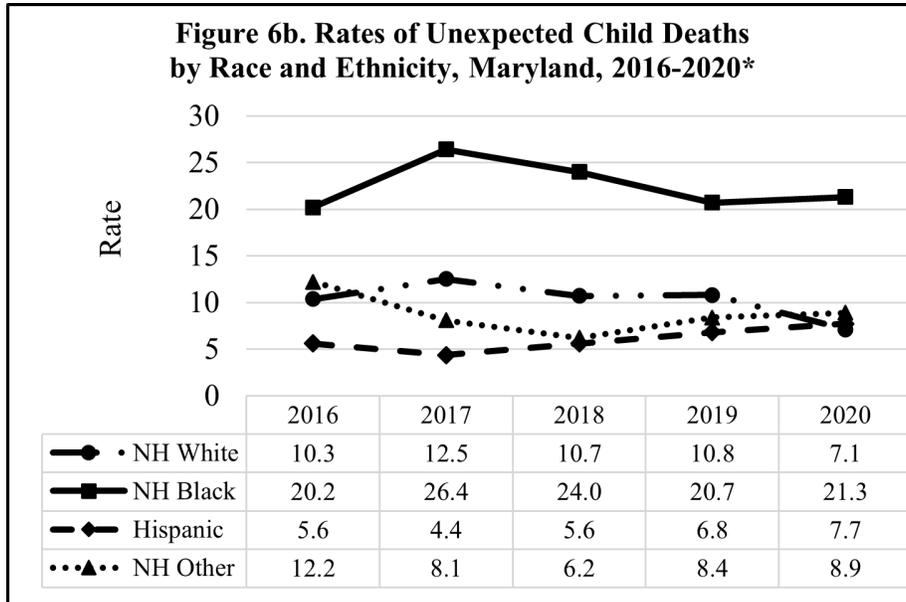|	2016	2017	2018	2019	2020
Male	15.0	19.5	16.8	16.9	14.7
Female	11.0	11.4	10.8	9.3	9.2
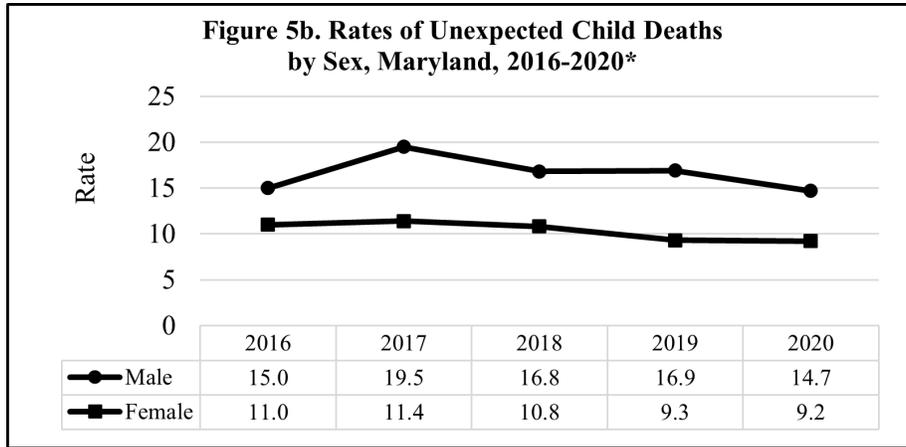
Source: CDRCRS, as of 08/02/2022.
*Rates per 100,000 population based on National Vital Statistics System population estimates.

Similarly, Figure 6a shows the continued disparities among racial and ethnic groups. In 2020, the number of unexpected child deaths among NH Black children was more than double the number of deaths among NH White children.

Figure 6a. Number of Unexpected Child Deaths by Race and Ethnicity, Maryland, 2016-2020 (n=907)

	2016	2017	2018	2019	2020
NH White	63	75	63	63	41
NH Black	90	117	105	90	93
Hispanic	11	9	12	15	17
NH Other	12	8	6	8	9

Source: CDRCRS, as of 08/02/2022.

Overall, the rate of unexpected deaths from 2016 to 2020 among NH Black children was 2.2 times greater than the rate among NH White children, and 3.9 times greater than the rates among Hispanic children (Figure 6b). The rate of unexpected deaths increased among Hispanic 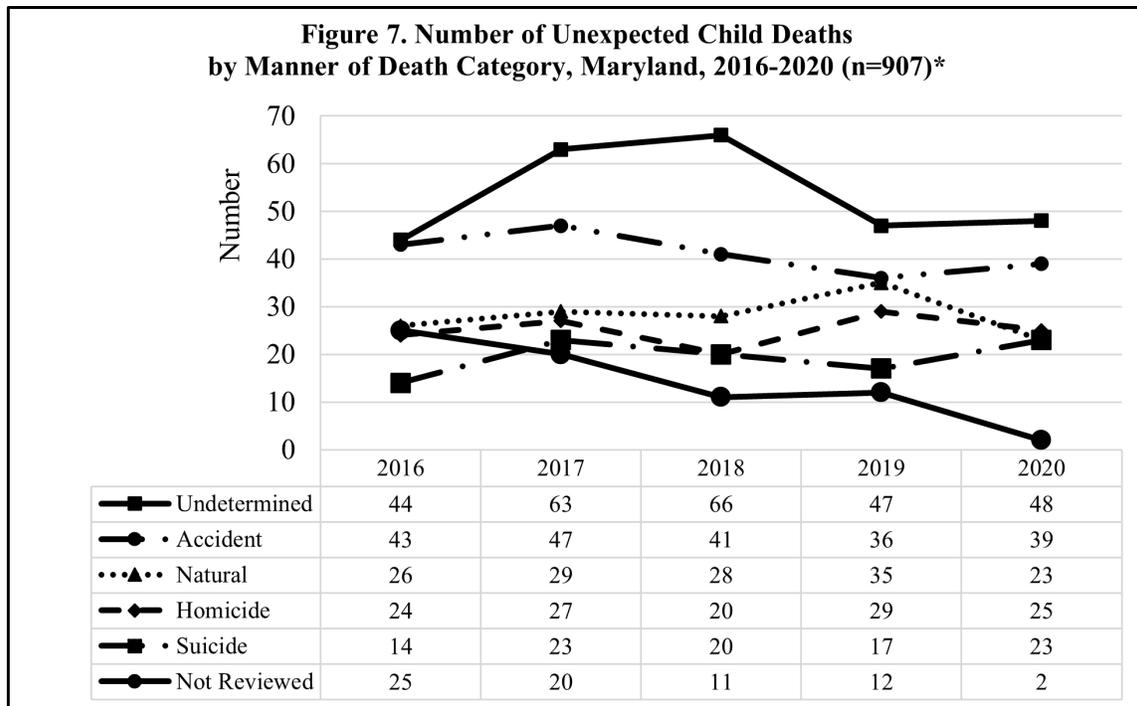children, from 5.6 per 100,000 population in 2016 to 7.7 per 100,000 population in 2020. In 2020, the rate of unexpected deaths among NH Black children was 3 times greater than the rate among NH White children.

Figure 6b. Rates of Unexpected Child Deaths by Race and Ethnicity, Maryland, 2016-2020*

	2016	2017	2018	2019	2020
• NH White	10.3	12.5	10.7	10.8	7.1
NH Black	20.2	26.4	24.0	20.7	21.3
Hispanic	5.6	4.4	5.6	6.8	7.7
NH Other	12.2	8.1	6.2	8.4	8.9

Source: CDRCRS, as of 08/02/2022.
*Rates per 100,000 population based on National Vital Statistics System population estimates.

Figure 7 shows the number of unexpected child deaths by manner of death during the period from 2016 to 2020. Undetermined was the leading manner of death for all years, followed by accidents. Approximately 9 percent of the deaths during this period were not reviewed.

Figure 7. Number of Unexpected Child Deaths by Manner of Death Category, Maryland, 2016-2020 (n=907)*

	2016	2017	2018	2019	2020
Undetermined	44	63	66	47	48
• Accident	43	47	41	36	39
Natural	26	29	28	35	23
Homicide	24	27	20	29	25
• Suicide	14	23	20	17	23
Not Reviewed	25	20	11	12	2

Source: CDRCRS, as of 08/02/2022.
*Figure excludes cases where manner was unknown (10 cases), pending (2 cases) or missing a response (1 case).

Table 3 shows the number of unexpected child deaths by jurisdiction of residence of the child at the time of death. Baltimore City has had the highest number of resident child deaths every year

of the past five years, but overall, the number of resident child deaths has decreased by 9 percent from 2016 to 2020. Anne Arundel, Baltimore, Montgomery, and Prince George's counties have consistently been in the top five. During the five-year period from 2016 to 2020, the number of resident child deaths decreased in Prince George's County by 12 percent, in Anne Arundel County by 26 percent, and in Montgomery County by 36 percent. During this five-year period, the number of resident child deaths nearly doubled in Baltimore County.

Table 3. Number of Unexpected Child Deaths by Jurisdiction of Residence, Maryland, 2016-2020 (n=907)						
	2016	2017	2018	2019	2020	Total
Baltimore City	38	49	49	36	34	206
Baltimore	14	35	24	30	27	130
Prince George's	16	23	20	13	14	86
Montgomery	22	18	17	12	14	83
Anne Arundel	19	16	9	22	14	80
Howard	8	4	7	7	12	38
Washington	5	14	5	6	5	35
Charles	5	7	7	6	5	30
Harford	9	4	6	7	4	30
Frederick	7	5	5	6	5	28
Wicomico	5	6	7	4	4	26
Cecil	6	5	4	7	2	24
Carroll	3	4	5	3	5	20
St. Mary's	2	4	6	2	4	18
Allegany	3	2	1	5	2	13
Calvert	2	4	2	2	3	13
Dorchester	2	1	4	1	1	9
Queen Anne's	1	1	3	1	1	7
Caroline	2	0	3	1	0	6
Kent	2	2	0	0	2	6
Somerset	2	2	0	1	1	6
Talbot	0	2	1	1	1	5
Worcester	2	1	0	2	0	5
Garrett	1	0	1	1	0	3
Total	**176**	**209**	**186**	**176**	**160**	**907**

Source: CDRCRS, as of 08/02/2022.

The rates of unexpected child death were highest in Kent County, Baltimore City, and Dorchester and Somerset counties (Figure 8). From 2016 to 2020, there were 39 unexpected child deaths per

100,000 population in Kent County, followed by 33 per 100,000 population in Baltimore City, and both Dorchester and Somerset counties had 27 per 100,000 population. The lowest rate of unexpected child death was among children in Montgomery County at 7 per 100,000 population.
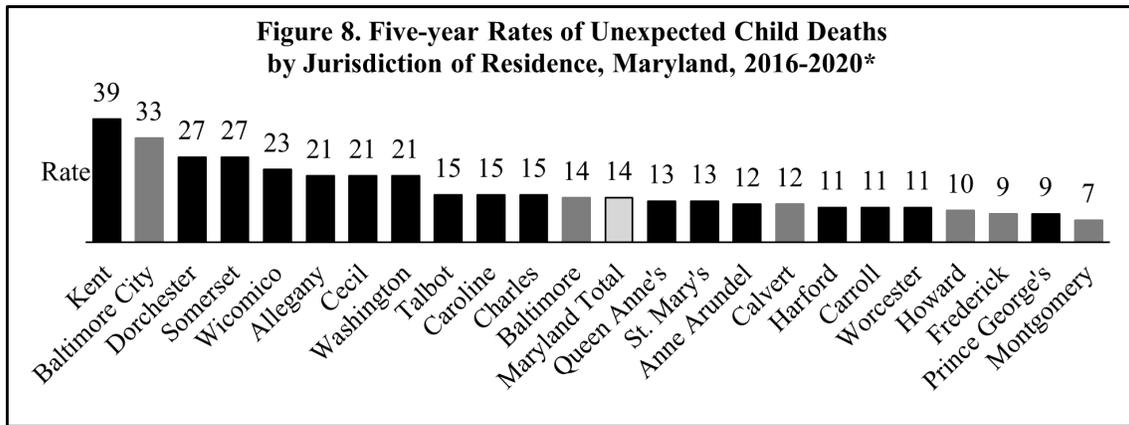
Figure 8. Five-year Rates of Unexpected Child Deaths by Jurisdiction of Residence, Maryland, 2016-2020*

Source: CDRCRS, as of 08/02/2022.
Rural jurisdictions are coded in black, urban jurisdictions in dark gray, and the Maryland total is outlined in black.
*Rates per 100,000 population based on National Vital Statistics System population estimates. Minimum five reviewed deaths for inclusion. Garrett County had fewer than five deaths and is excluded.

Sudden Unexpected Infant Deaths in Maryland

According to the Centers for Disease Control and Prevention, approximately 3,400 infants die suddenly and unexpectedly each year in the United States. While an exact cause of death cannot always be determined, unsafe sleep environments are factors in the majority of the investigations, indicating that the deaths could have potentially been prevented if safe sleep practices were always followed.[3]

These deaths are often not witnessed, the death scene may be disturbed before it can be examined, key facts may go unreported or are forgotten, and there may be no autopsy finding or medical test to prove the exact cause of death (e.g., suffocation). The mechanisms listed in the SUID Categorization Guide by the NCFRP that lead to many sleep-related deaths include:

- Accidental suffocation by a soft sleep surface (e.g., an adult bed, waterbed mattress, pillows, or couch or chair cushions) or other soft materials (e.g., stuffed toys, blankets, or crib bumpers) placed in the infant's sleep environment;

- Overlay: when a person rolls on top of or against the infant;

- Wedging or entrapment of the infant between two inanimate objects (e.g., a mattress and a wall or bed frame, or between furniture cushions);

- Other: when the infants airway is obstructed by something in the sleep environment other than soft bedding, overlay, or wedging or entrapment; and

- Multiple Mechanisms (ex. soft bedding and wedging).

The NCFRP defines SUIDs as deaths that occur suddenly and unexpectedly in previously healthy infants and have no obvious cause of death prior to investigation (unexplained). In cases of SUID there are two possible scenarios: 1) all potentially non-natural causes of death cannot reasonably be excluded by the investigation; or 2) there is an issue of concern. Issues of concern include an unsafe sleeping environment or other environmental concerns, previous Sudden Infant Death Syndrome (SIDS) in the immediate family, healed unexplained injuries, parental substance use, and other factors.

Even after a thorough investigation, there are some SUID cases where there is no evidence of a non-natural cause of death or circumstances that cause concern for investigators. These cases fall under the subcategory of SIDS. SIDS is a diagnosis of exclusion of SUID, assigned only when all known and possible causes of death have been ruled out.

For the purposes of data analysis, a case is considered a SUID if the manner or cause of death meets the following criteria:
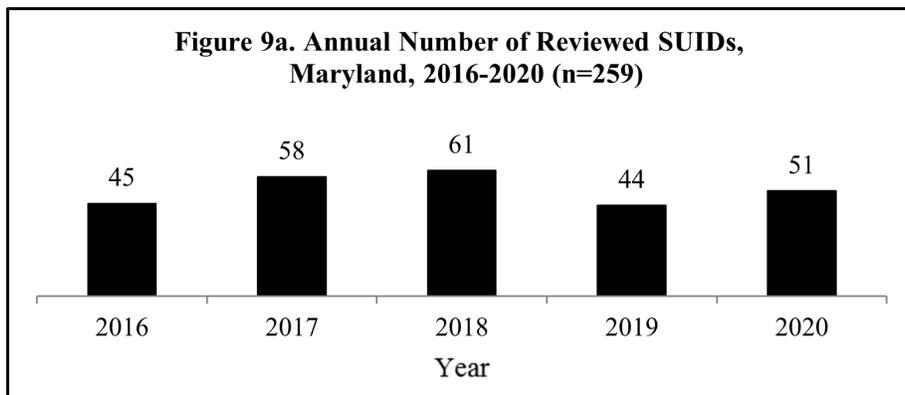
- The cause of death is undetermined or unknown;
- The cause of death was one of the following injury causes:
    - Asphyxia;
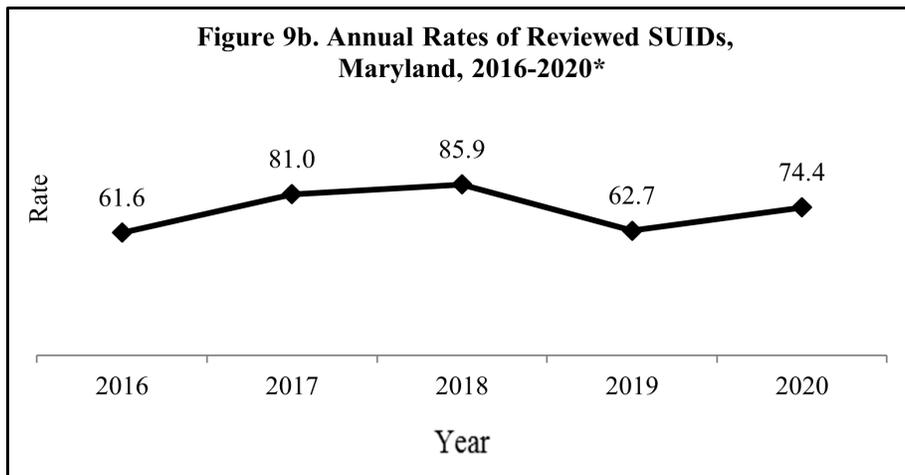   - Undetermined causes; or

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[3] Key components of a safe sleep environment are placing infants to sleep alone, on their backs, on a firm sleep surface with no soft objects, and in a smoke-free environment.

- o Unknown causes; and
- ● The cause of death was one of the following medical causes:
  - o SIDS;
  - o Undetermined causes; or
  - o Unknown causes.

Only cases that had a completed review by local teams were included in the analysis. In Maryland, there was an average of 52 SUID cases referred for review by the local CFR teams per year between 2016 and 2020. A total of 259 reviewed SUID cases occurred between 2016 and 2020 (Figure 9a). Three (one percent) of these deaths were attributed to SIDS. From 2016 to 2020, the annual rate of Child Fatality Review SUID cases increased from 61.6 deaths per 100,000 live births to 74.4 deaths per 100,000 live births (Figure 9b).

Figure 9a. Annual Number of Reviewed SUIDs, Maryland, 2016-2020 (n=259)

Year	Number
2016	45
2017	58
2018	61
2019	44
2020	51

Source: CDRCRS, as of 08/02/2022.

Figure 9b. Annual Rates of Reviewed SUIDs, Maryland, 2016-2020*

Year	Rate
2016	61.6
2017	81.0
2018	85.9
2019	62.7
2020	74.4

Source: CDRCRS, as of 08/02/2022.
*Rates per 100,000 live births based on Maryland Vital Statistics Administration live birth data.

Of the 259 SUID cases from 2016 to 2020, 202 (78 percent) occurred during the period from birth through four months of age (Figure 10). The majority of SUIDs occurred at 1 month of age (21 percent), followed closely by two months of age (19 percent). Fifty-four percent of these deaths occurred among male infants, and 46 percent occurred among female infants (Figure 11).

Figure 10. Number of Reviewed SUIDs by Age in Months, Maryland, 2016-2020 (n=259)

Number

Age in Months	Number
0	34
1	55
2	50
3	38
4	25
5	16
6	18
7	7
8	12
9	2
10	1
11	1

Age in Months

Figure 11. Number and Rate of Reviewed SUIDs by Sex, Maryland, 2016-2020 (n=259)*

Male — Number: 140, Rate: 77.4

Female — Number: 119, Rate: 68.6

Of the reviewed SUIDs occurring from 2016 to 2020, 151 deaths (58 percent) occurred among NH Black infants (Figure 12a). Considering the population of infants by race and ethnicity, the SUID rate among NH Black infants was 2.3 times greater than the rate among NH White infants, and 5.9 times greater than the rate among Hispanic infants (Figure 12b).

Figure 12a. Number of Reviewed SUIDs by Race and Ethnicity, Maryland, 2016-2020 (n=259)

- NH Black: 151 (58%)
- NH White: 86 (33%)
- Hispanic: 14 (5%)
- NH Other: 8 (3%)
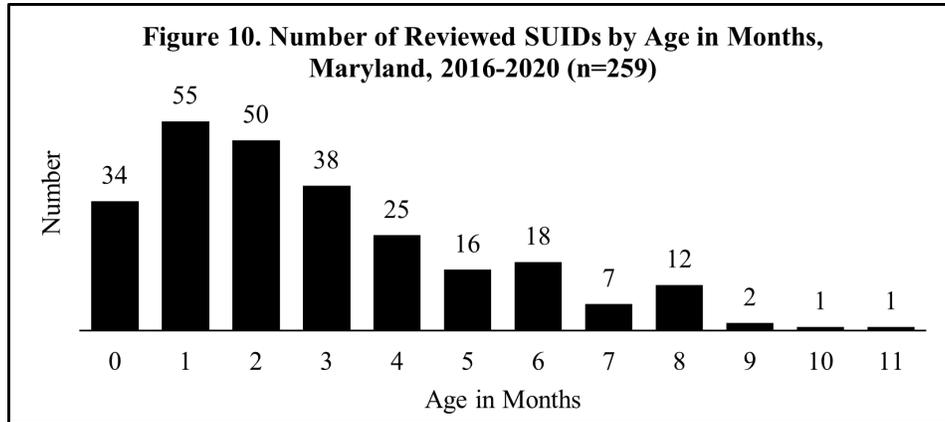
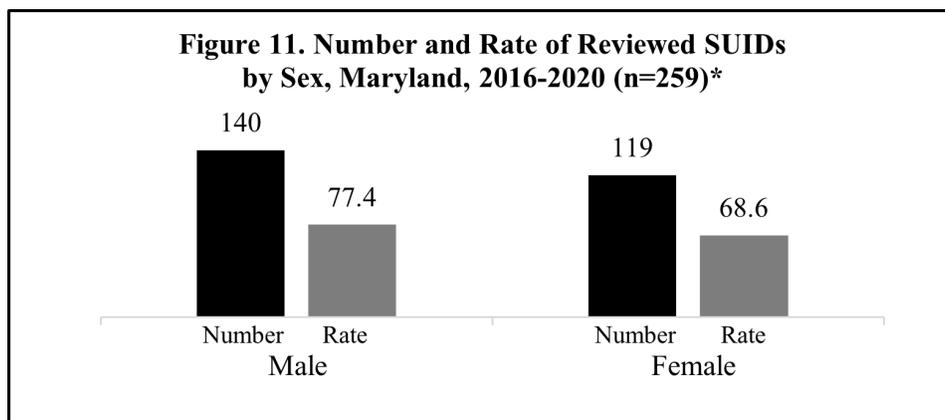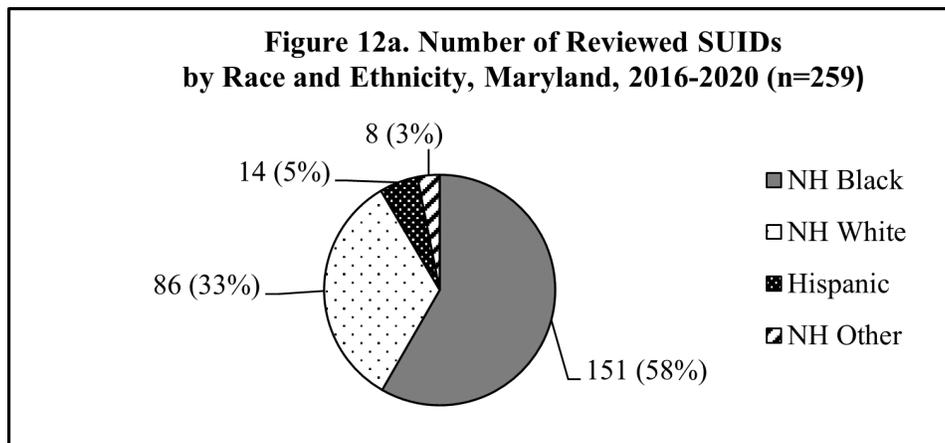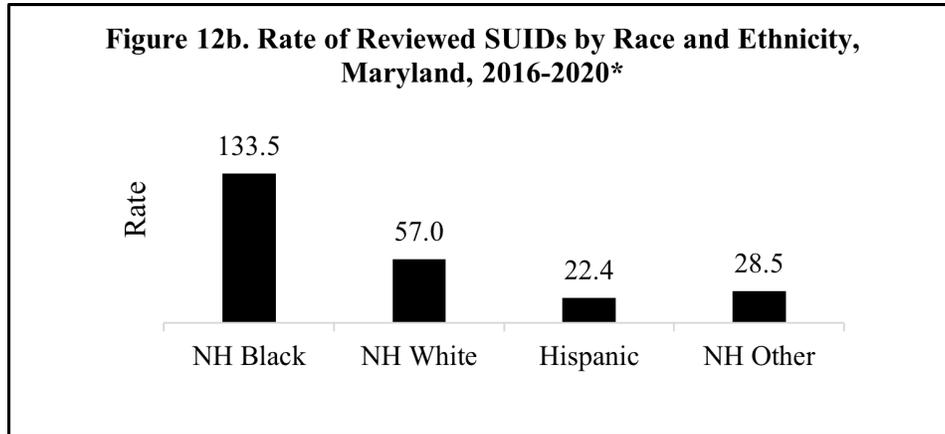**Figure 12b. Rate of Reviewed SUIDs by Race and Ethnicity, Maryland, 2016-2020***

Source: CDRCRS, as of 08/02/2022.
*Rates per 100,000 live births based on Maryland Vital Statistics Administration live birth data.

Table 4 shows the number of SUIDs by jurisdiction of residence of the infant at the time of death from 2016 to 2020. The largest number of SUIDs occurred among residents of Baltimore City, which accounted for 23 percent of all SUIDs during this period. The number of SUID cases is small, which makes it difficult to identify trends across jurisdictions.

Table 4. Number of Reviewed SUIDs by Jurisdiction of Residence, Maryland, 2016-2020 (n=259)*

	2016	2017	2018	2019	2020	Total
Baltimore City	4	14	15	12	15	60
Baltimore	4	11	9	5	6	35
Prince George's	6	4	12	3	3	28
Anne Arundel	8	5	4	2	5	24
Montgomery	4	4	5	2	5	20
Washington	2	7	1	3	1	14
Wicomico	1	2	3	3	2	11
Howard	3	0	1	3	1	8
Charles	3	1	1	2	1	8
Frederick	1	3	1	2	1	8
Cecil	4	1	1	0	1	7
Allegany	1	0	0	3	2	6
Calvert	0	2	2	0	2	6
Dorchester	0	1	3	0	1	5
Carroll	0	0	2	1	1	4
Harford	2	0	0	1	1	4
Queen Anne's	0	1	1	1	0	3
Kent	1	1	0	0	0	2
Somerset	0	1	0	0	1	2
St. Mary's	0	0	0	0	2	2
Garrett	0	0	0	1	0	1
Worcester	1	0	0	0	0	1
Total	**45**	**58**	**61**	**44**	**51**	**259**

Source: CDRCRS, as of 08/02/2022.

*Caroline and Talbot counties had no SUID deaths during the time period shown.

Similar to overall child death rates, the greatest number of SUID cases came from urban areas, but the rates were highest in Maryland's rural counties (Figure 13). Infants residing in Dorchester County had the highest rate of SUID cases at 275.6 deaths per 100,000 live births during the period from 2016 to 2020, which was 3.7 times the statewide rate of 75.3 deaths per 100,000 live births during the same period. Montgomery County had the lowest rate of reportable SUID cases at 32.4 deaths per 100,000 live births from 2016 to 2020, which was less than half of the Statewide rate of SUID cases.
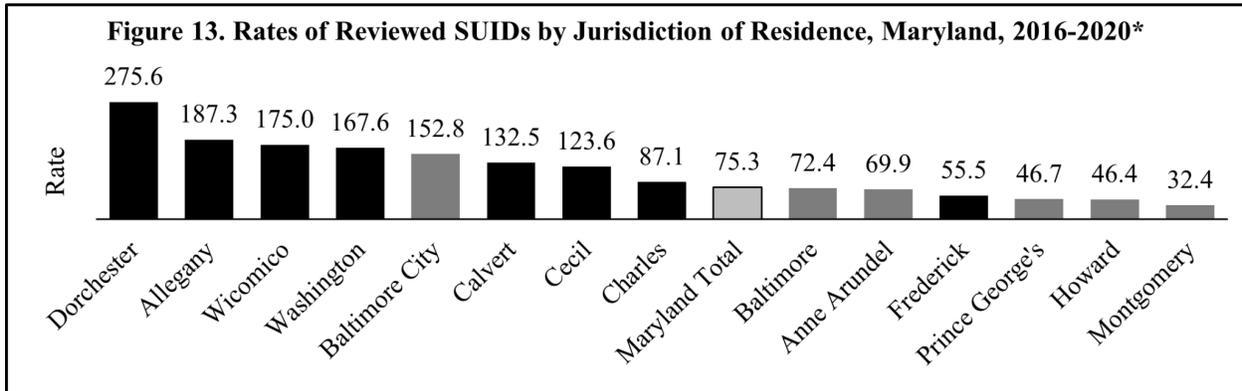
Figure 13. Rates of Reviewed SUIDs by Jurisdiction of Residence, Maryland, 2016-2020*
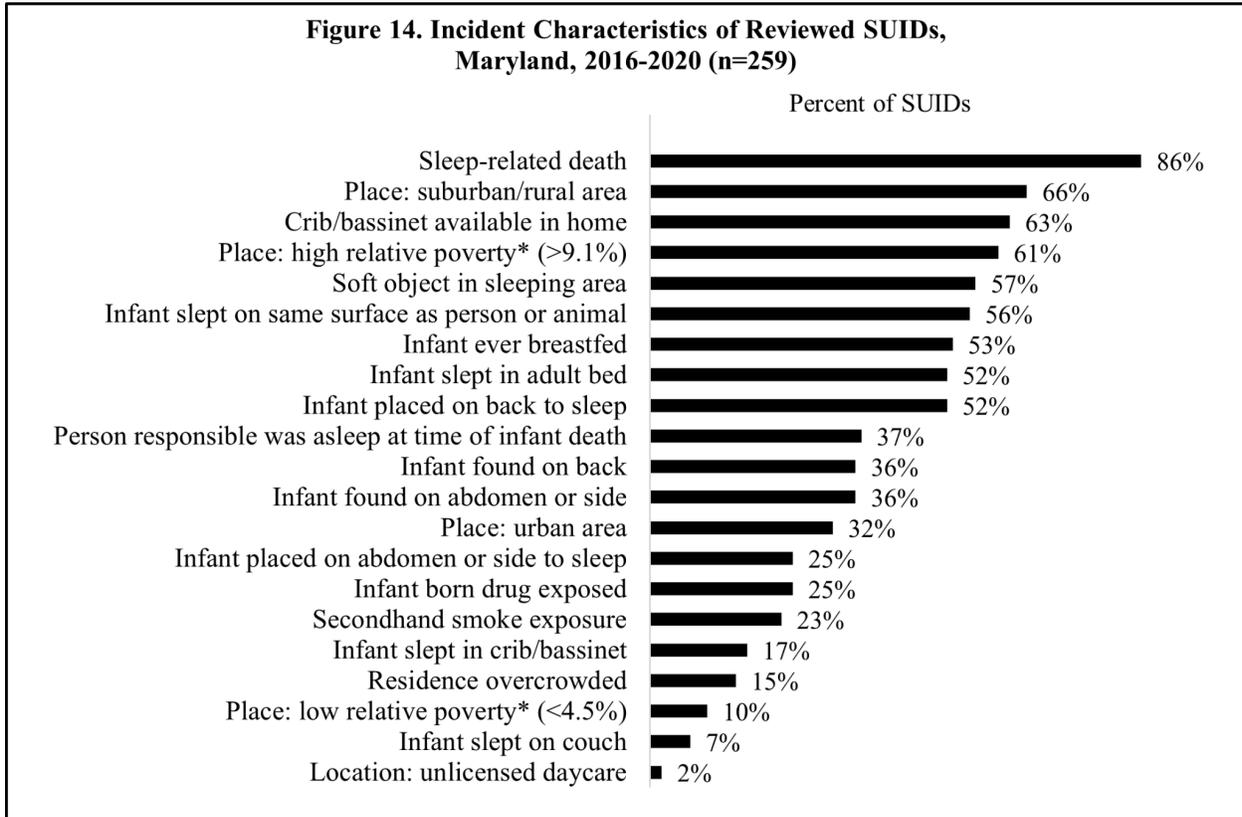
Source: CDRCRS, as of 08/02/2022.
Rural jurisdictions are coded in black, urban jurisdictions in dark gray, and Maryland total is outlined in black.
*Rates per 100,000 live births based on Maryland Vital Statistics Administration live birth data. Minimum five SUID cases.
Carroll, Garrett, Harford, Kent, Queen Anne's, St. Mary's, Somerset, and Worcester counties had fewer than five SUID cases and are not displayed. Caroline and Talbot counties had no SUID cases.

All OCME-referred deaths, including SUIDs, are required to be reviewed by the local CFR team in the jurisdiction of residence. Due to the COVID-19 pandemic, team meetings were delayed. As previously stated, data from these case reviews are entered into CDRCRS, which is maintained by the NCFRP. Maryland data have been entered into the CDRCRS since January 2010. The SUID case reviews entered into the CDRCRS database were further analyzed to determine more detailed information surrounding these deaths. Information on each item was not available for every case as the specific information may not have been known or reported. Therefore, the numbers of cases shown in Figure 14, Table 5, and Table 6 represent a minimum number of cases with a given characteristic or multiple characteristics.

Figure 14 shows incident characteristics of SUIDs in Maryland. The death was determined to be sleep-related in 86 percent of the 259 SUID cases. Sixty-six percent of cases occurred in suburban or rural areas. In 56 percent of cases, the infant was sleeping on the same surface as a person or animal, otherwise known as "bed-sharing." Sixty-one percent of the infants lived in zip codes with high relative poverty. Thirty-six percent of the infants were found on their abdomen or side. Twenty-three percent of the infants were exposed to secondhand smoke. Two percent of SUID cases occurred at an unlicensed daycare setting.

Figure 14. Incident Characteristics of Reviewed SUIDs, Maryland, 2016-2020 (n=259)

Percent of SUIDs

Characteristic	Percent
Sleep-related death	86%
Place: suburban/rural area	66%
Crib/bassinet available in home	63%
Place: high relative poverty* (>9.1%)	61%
Soft object in sleeping area	57%
Infant slept on same surface as person or animal	56%
Infant ever breastfed	53%
Infant slept in adult bed	52%
Infant placed on back to sleep	52%
Person responsible was asleep at time of infant death	37%
Infant found on back	36%
Infant found on abdomen or side	36%
Place: urban area	32%
Infant placed on abdomen or side to sleep	25%
Infant born drug exposed	25%
Secondhand smoke exposure	23%
Infant slept in crib/bassinet	17%
Residence overcrowded	15%
Place: low relative poverty* (<4.5%)	10%
Infant slept on couch	7%
Location: unlicensed daycare	2%

Source: CDRCRS, as of 08/02/2022.
*Poverty estimates are taken from US Census American Community Survey 2018 five-year ZIP code tabulation area (ZCTA) estimates; one percent of SUIDs had missing ZCTA information. Poverty rates are defined by the percentage of residents reporting poverty status in the past 12 months on the survey. The low and high poverty percentage cut points used are based on the first and third quartile of Maryland ZCTA poverty rates, respectively.
**Percentages will total more than 100 percent, as multiple characteristics often applied to the same case.

Table 5 shows the characteristics of the primary caregiver for SUIDs. A biological parent was the primary caregiver in 245 (94.6 percent) of the cases. Seventy-one (27.4 percent) caregivers were younger than 25 years old, 64 (24.7 percent) were receiving social services, 251 (96.9 percent) had a high school education or less, 39 (15.1 percent) were low income, 72 (27.8 percent) were unemployed, and 36 (13.9 percent) had a history of substance use. One hundred thirty-nine (53.7 percent) caregivers ever breastfed their infant. Twenty-eight (10.8 percent) caregivers had an open Child Protective Services (CPS) case at the time of death.

Table 5. Caregiver Characteristics Associated with Reviewed SUIDs, Maryland, 2016 - 2020 (n=259)		
	Number	Percent
Primary caregiver obtained 12 years or less of education	251	96.9
Primary caregiver was biological parent	245	94.6
Infant was ever breastfed	139	53.7
Primary caregiver receiving social services*	64	24.7
Low-income family	39	15.1
Primary caregiver history of substance abuse	36	13.9
Primary caregiver was unemployed	72	27.8
Primary caregiver <25 years old	71	27.4
Child had open Child Protective Services (CPS) case at death	28	10.8

Source: CDRCRS, as of 08/02/2022.
*Social services include: Medical Assistance; Temporary Assistance for Needy Families; Special Supplemental Nutrition Program for Women, Infants, and Children; and Supplemental Nutrition Assistance Program.
**Percentages will total more than 100 percent, as multiple characteristics often applied to the same case.

Table 6 compares characteristics of bed-sharing and non-bed-sharing sleep-related SUID cases. More than half (64.7 percent) of all sleep-related SUID cases from 2016 to 2020 occurred when the infant was bed-sharing. Racial and ethnic disparities persist in SUID bed-sharing, with the number of deaths being 1.9 times higher among NH Black infants compared to NH White infants, and more than twenty-nine times higher than among Hispanic infants.

Of the SUIDs involving bed-sharing, 43.3 percent of caregivers had a history of substance use disorder. Approximately 24.8 percent of these families were receiving social services at the time of the infant's death, providing an opportunity for healthcare providers and social service agencies to reinforce safe sleep practices with the parent or caregiver of an infant, and highlights the importance of identification of families with risk factors that can contribute to SUID fatalities so that they can be educated on safe sleep practices.

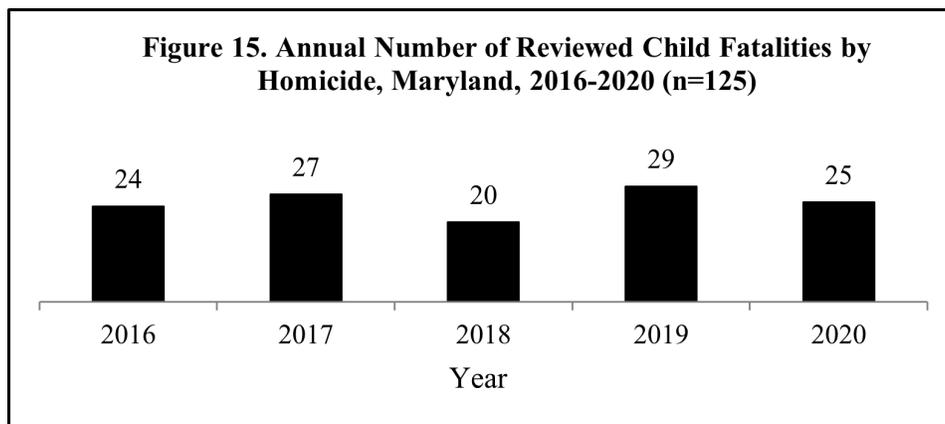| Table 6. Comparison of Bed-Sharing and Non-Bed-Sharing Among Sleep-Related SUIDs Reviewed, Maryland, 2016-2020 (n=218) **		
	Non-bed-sharing (n=77) n (%)	Bed-sharing (n=141) n (%)
Place:		
Urban area	20 (26.0)	54 (38.3)
Suburban/rural area	56 (72.7)	86 (61.0)
Residence overcrowded	0 (0.0)	4 (2.8)
Secondhand smoke exposure	18 (23.4)	40 (28.4)
Infant sleep position and environment:		
Placed on stomach or side to sleep	24 (31.2)	39 (27.7)
Placed on back to sleep	47 (61.0)	77 (54.6)
Sleeping in crib or bassinet*	35 (45.5)	4 (2.8)
Sleeping in adult bed*	21 (27.3)	110 (78.0)
Sleeping on couch*	2 (2.6)	16 (11.4)
Crib or bassinet available in home	58 (75.3)	93 (66.0)
Characteristics of infant:		
Infant's mean age (months)	3.6	2.9
Race – NH Black	41 (53.3)	88 (62.4)
NH White	26 (33.8)	46 (32.6)
Hispanic*	7 (9.1)	3 (2.1)
Breastfed	42 (54.6)	80 (56.7)
Characteristics of primary caregiver:		
High school education or less	75 (97.4)	140 (99.3)
Receives social services^	20 (26.0)	35 (24.8)
Low income	18 (23.4)	16 (11.4)
Characteristics of caregiver at time of death:		
Biological parent*	56 (72.7)	125 (88.7)
<25 years old	21 (27.3)	31 (22.0)
Male	12 (15.6)	33 (23.4)
History of mental illness*	10 (13.0)	36 (25.5)
History of substance abuse	23 (29.9)	61 (43.3)
Impaired by drugs or alcohol	1 (1.3)	11 (7.8)

Source: CDRCRS, as of 08/02/2022.
*Denotes differences that are greater than would be expected by chance alone, i.e. a statistically significant difference at $p<0.05$.
**Unknown bed-sharing status cases not included in this table.
^Includes Women, Infants, and Children, Home Visiting, Temporary Assistance for Needy Families, Medicaid, Food Stamps/SNAP/EBT, Section 8 housing, and Social Security Disability Insurance.
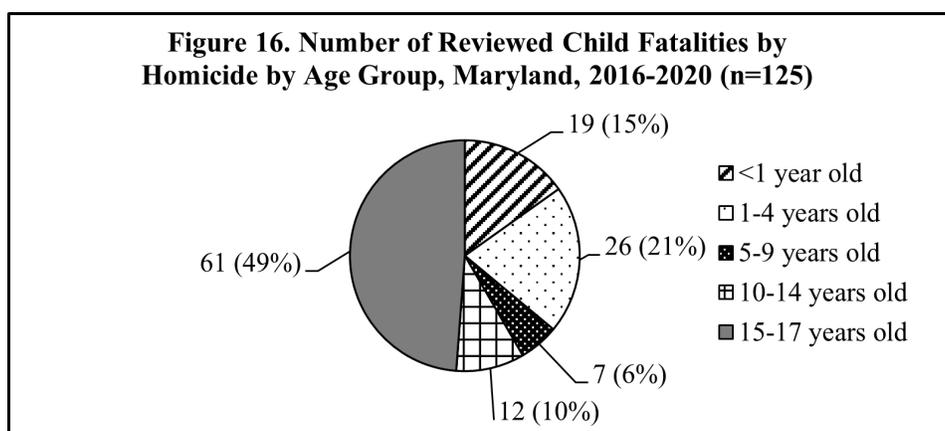
Homicide Deaths in Maryland

Death by homicide was the fourth leading manner of reviewed unexpected child deaths during the five-year period from 2016 to 2020, accounting for 14 percent of deaths. Only deaths that were reviewed by the local CFR teams were included in this analysis. Death by homicide was the third leading manner of death to children 15 to 17 years old during the same period, accounting for 26 percent of deaths.

Figure 15. Annual Number of Reviewed Child Fatalities by Homicide, Maryland, 2016-2020 (n=125)

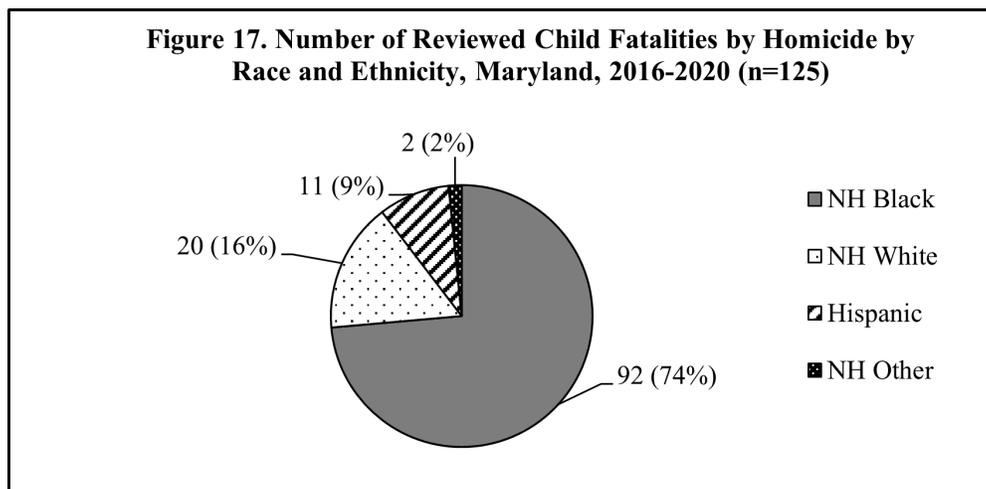| Year	2016	2017	2018	2019	2020
Number	24	27	20	29	25

Source: CDRCRS, as of 08/02/2022.

Of the 125 deaths by homicide occurring in the five-year period from 2016 to 2020, 49 percent were among children 15 to 17 years old (Figure 16). Fifteen percent of deaths were among infants under the age of one, and 21 percent were among children one to four years old. Seventy-one percent of deaths by homicide occurred among male children and 29 percent among female children.

Figure 16. Number of Reviewed Child Fatalities by Homicide by Age Group, Maryland, 2016-2020 (n=125)

- 19 (15%)
- 26 (21%)
- 7 (6%)
- 12 (10%)
- 61 (49%)

Legend:
- <1 year old
- 1-4 years old
- 5-9 years old
- 10-14 years old
- 15-17 years old

Source: CDRCRS, as of 08/02/2022.
*Percentages will total more than 100 percent due to rounding.

Seventy-four percent of deaths by homicide occurred among NH Black children, 16 percent among NH White children, and 9 percent among Hispanic children (Figure 17).

Figure 17. Number of Reviewed Child Fatalities by Homicide by Race and Ethnicity, Maryland, 2016-2020 (n=125)

Source: CDRCRS, as of 08/02/2022.
*Percentages will total more than 100 percent due to rounding.

Deaths by homicide by jurisdiction of residence are shown in Table 7. Between 2016 and 2020, Baltimore City had the highest number of homicide deaths (66 cases), followed by Anne Arundel County (17 cases), and Baltimore County (13 cases).

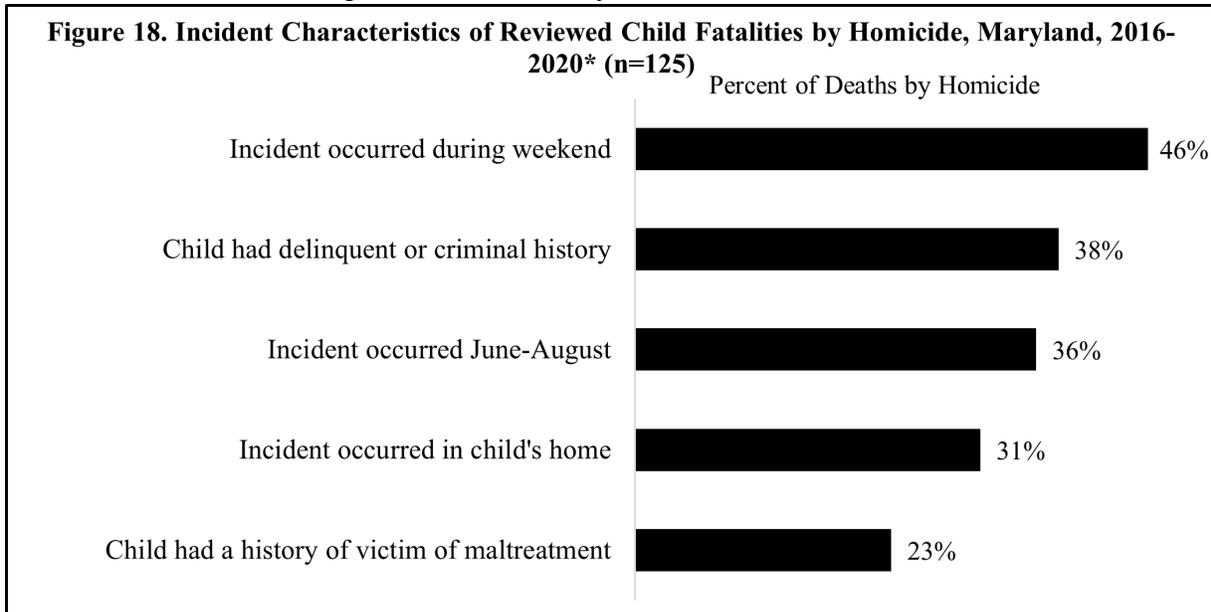| Table 7. Number of Reviewed Child Fatalities due to Homicide by Jurisdiction of Residence*, Maryland, 2016-2020 (n=125)						
	2016	2017	2018	2019	2020	Total
Baltimore City	13	12	14	15	12	66
Anne Arundel	4	6	0	4	3	17
Baltimore	3	2	1	6	1	13
Prince George's	1	2	1	1	2	7
Charles	0	1	3	0	1	5
Harford	0	1	0	1	1	3
Howard	0	1	0	0	2	3
Cecil	0	1	0	1	0	2
Frederick	0	0	0	0	2	2
St. Mary's	1	0	1	0	0	2
Allegany	1	0	0	0	0	1
Carroll	1	0	0	0	0	1
Washington	0	0	0	0	1	1
Wicomico	0	1	0	0	0	1
Worcester	0	0	0	1	0	1
Total	**24**	**27**	**20**	**29**	**25**	**125**

Source: CDRCRS, as of 08/02/2022.

Table 8 shows homicide deaths by cause of death. Weapons were the leading cause of death by homicide (81.6 percent), which included firearm (64 percent of cases) and knife/sharp instrument (13.6 percent). Homicide by poisoning made up 7.2 percent of cases, fire, burn, or electrocution made up 2.4 percent of cases, and motor vehicles were 1.6 percent of cases.

Table 8. Number and Percent of Reviewed Child Fatalities by Homicide, by Cause of Death, Maryland, 2016-2020		
	Number	Percent
External – Weapon (including body part)	103	81.6
Firearm	80	64.0
Knife/sharp instrument	17	13.6
Other/unknown	6	4.8
External – Poison	9	7.2
External – Fire, burn, or electrocution	3	2.4
External – Other	5	4.0
External – Motor Vehicle Accident	2	1.6
External – Unknown cause	1	0.8
Medical – Other medical Cause	1	0.8
Undetermined if medical or external cause	1	0.8
Total	**125**	**100**

Source: CDRCRS, as of 08/02/2022.

Figure 18 shows incident characteristics of children who died by homicide in Maryland. Forty-six percent of the children had problems in school. Thirty-eight percent had a history of delinquent or criminal history. Forty-six percent occurred over the weekend and 36 percent occurred over the summer between June and August. Thirty-one percent of incidents occurred in the child's home and 23 percent had a history of maltreatment.

Figure 18. Incident Characteristics of Reviewed Child Fatalities by Homicide, Maryland, 2016-2020* (n=125)

Percent of Deaths by Homicide

Incident occurred during weekend	46%
Child had delinquent or criminal history	38%
Incident occurred June-August	36%
Incident occurred in child's home	31%
Child had a history of victim of maltreatment	23%

Source: CDRCRS, as of 08/02/2022.
*Percentages will total more than 100 percent, as multiple characteristics often applied to the same case.

Table 9 compares characteristics of firearm and non-firearm homicide deaths. Homicides caused by both firearms and non-firearms were more common among males and NH Black children. Homicides caused by firearm were more common among children 10 and older. Sixty-nine percent of the non-firearm cases were child abuse or neglect, and in 46.7 percent of the non-firearm cases the perpetrator was the biological parent.
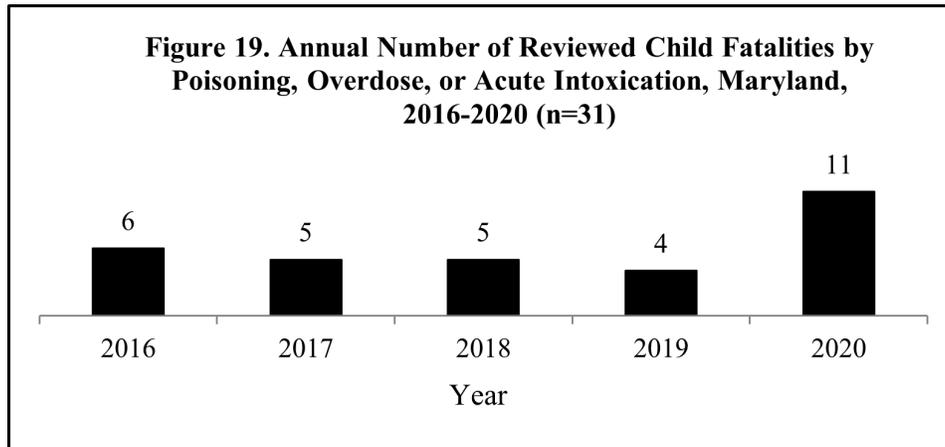
Table 9. Differences in Characteristics of Firearm and Non-Firearm Reviewed Child Fatalities by Homicide, Maryland, 2016-2020 (n=125)	Non-Firearm (n=45) n (%)	Firearm (n=80) n (%)
Place:		
Urban area	24 (53.3)	51 (63.8)
Suburban/rural area	18 (40.0)	28 (35.0)
Incident occurred in child's home*	28 (62.2)	11 (13.8)
Demographic Characteristics of Child:		
Gender: Male*	26 (57.8)	63 (78.8)
Race: Non-Hispanic Black	33 (73.3)	59 (73.8)
Age: 10 years or older*	5 (11.1)	68 (85.0)
Insurance: Medicaid	32 (71.1)	52 (65.0)
Incident Characteristics:		
Child had delinquent or criminal history*	3 (6.7)	44 (55.0)
Child had problems in school*	6 (13.3)	54 (67.5)
Child had history as victim of maltreatment	11 (24.4)	18 (22.5)
Child had open CPS case at time of death	6 (13.3)	6 (7.5)
Child had history of substance abuse*	2 (4.4)	30 (37.5)
Child abuse/neglect*	31 (68.9)	7 (8.8)
Person responsible was biological parent*	21 (46.7)	6 (7.5)
Person responsible had delinquent or criminal history*	20 (44.4)	7 (8.8)

Source: CDRCRS, as of 08/02/2022.

*Denotes differences that are greater than would be expected by chance alone, i.e. a statistically significant difference at p<0.05.
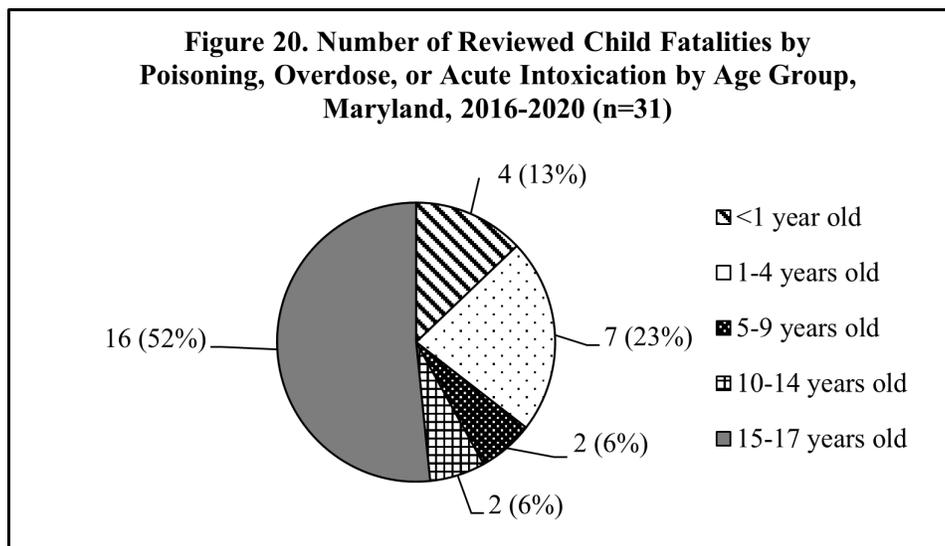
Deaths by Poisoning, Overdose, or Acute Intoxication in Maryland

Poisoning, overdose, or acute intoxication contributed to 31 unexpected child deaths during the five-year period from 2016 to 2020 (Figure 19). Only deaths which were reviewed by the local teams were included in this analysis. Eight of these deaths (25.8 percent) were of an accidental manner, nine (29 percent) were homicide, seven (22.5 percent) were suicide, and for seven (22.5 percent) the manner was undetermined.

Figure 19. Annual Number of Reviewed Child Fatalities by Poisoning, Overdose, or Acute Intoxication, Maryland, 2016-2020 (n=31)

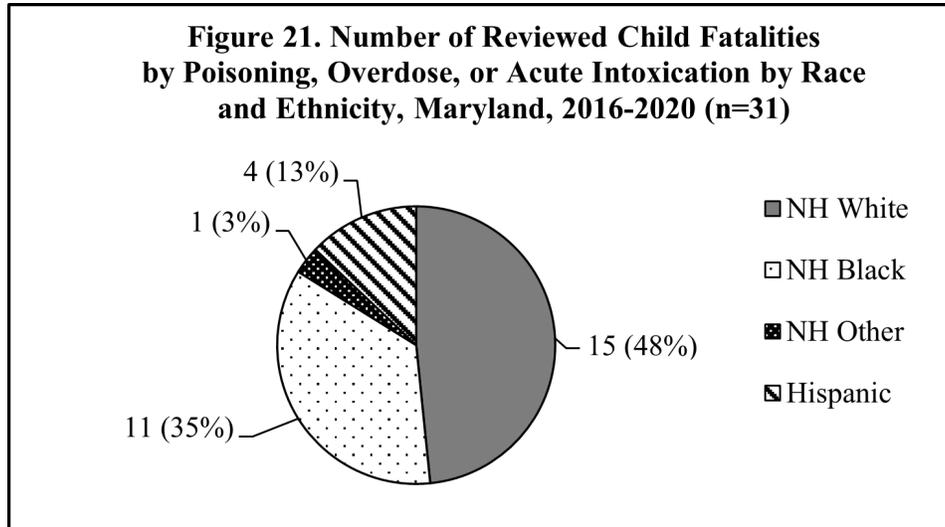| Year	Number
2016	6
2017	5
2018	5
2019	4
2020	11

Source: CDRCRS, as of 08/02/2022.

Of the 31 deaths by poisoning, overdose, or acute intoxication occurring in the five-year period from 2016 to 2020, 52 percent were among children 15 to 17 years old (Figure 20). Fifty-two percent of deaths by poisoning, overdose, or acute intoxication occurred among female children and 48 percent among male children.

Figure 20. Number of Reviewed Child Fatalities by Poisoning, Overdose, or Acute Intoxication by Age Group, Maryland, 2016-2020 (n=31)

- <1 year old: 4 (13%)
- 1-4 years old: 7 (23%)
- 5-9 years old: 2 (6%)
- 10-14 years old: 2 (6%)
- 15-17 years old: 16 (52%)

Source: CDRCRS, as of 08/02/2022.

Forty-eight percent of the deaths by poisoning, overdose, or acute intoxication occurred among NH White children, 35 percent among NH Black children, and 13 percent among Hispanic children (Figure 21).

**Figure 21. Number of Reviewed Child Fatalities
by Poisoning, Overdose, or Acute Intoxication by Race
and Ethnicity, Maryland, 2016-2020 (n=31)**

Source: CDRCRS, as of 08/02/2022.

Deaths by poisoning, overdose, or acute intoxication by jurisdiction of residence are shown in Table 10. Baltimore County had the highest number of deaths by poisoning, overdose, or acute intoxication (9 cases), followed by Baltimore City (6 cases).

Table 10. Number of Reviewed Child Fatalities by Poisoning, Overdose, or Acute Intoxication by Jurisdiction of Residence*, Maryland, 2016-2020 (n=31)						
	2016	2017	2018	2019	2020	Total
Baltimore	0	1	3	2	3	9
Baltimore City	1	1	1	0	3	6
Montgomery	2	1	0	0	0	3
Anne Arundel	0	0	0	1	1	2
Frederick	1	0	0	0	1	2
Harford	2	0	0	0	0	2
Cecil	0	1	0	0	0	1
Charles	0	0	1	0	0	1
Howard	0	0	0	0	1	1
Prince George's	0	0	0	0	1	1
Talbot	0	0	0	0	1	1
Washington	0	0	0	1	0	1
Wicomico	0	1	0	0	0	1
Total	**6**	**5**	**5**	**4**	**11**	**31**

Source: CDRCRS, as of 08/02/2022.
*Allegany, Calvert, Caroline, Carroll, Dorchester, Garrett, Kent, Queen Anne's, St. Mary's, Talbot, and Worcester counties do not appear as there were no child fatalities by poisoning, overdose, or acute intoxication reviewed from 2016-2020.
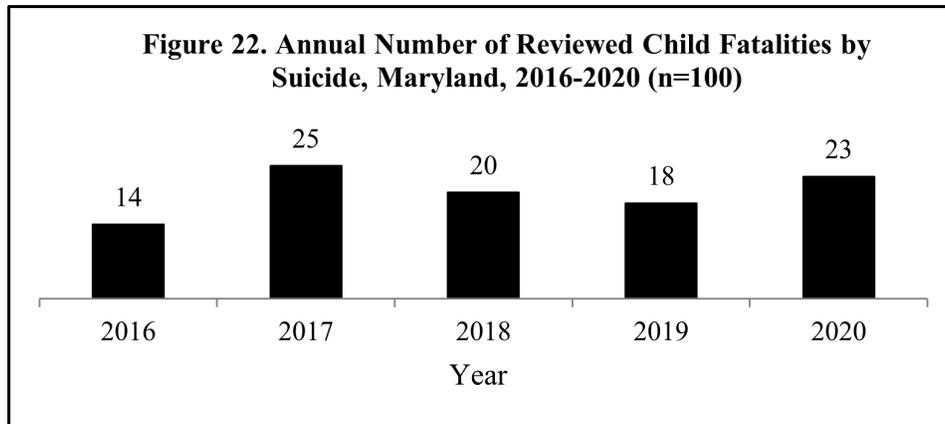
Table 11 shows the substances implicated in the deaths by poisoning, overdose, or acute intoxication from 2016 to 2020. Due to many of the cases involving more than one substance, the cases shown do not add up to the number of overdose deaths. Prescription medications were found in 26 incidents and illicit substances were found in 29 incidents. Over the counter medications were found in three incidents and alcohol in one incident.

Table 11. Substances Implicated in Reviewed Child Fatalities by Poisoning, Overdose, or Acute Intoxication, Maryland, 2016-2020 (n=31)	
Substance	Number* and Percent of Deaths
Prescription – Antidepressant	7 (22.6%)
Prescription – Pain medication – Opioid	9 (29.0%)
Prescription – Pain medication – Non-opioid	1 (3.2%)
Prescription – Methadone	4 (12.9%)
Prescription – Other	5 (16.1%)
Illicit – Pain medication – Opioid	11 (35.5%)
Illicit – Heroin	4 (12.9%)
Illicit – Cocaine	3 (9.7%)
Illicit – Other	11 (35.5%)
Over-the-counter medication	3 (9.7%)
Alcohol	1 (3.2%)

*Due to many cases involving more than one substance, cases will not add up to the number of overdose deaths.
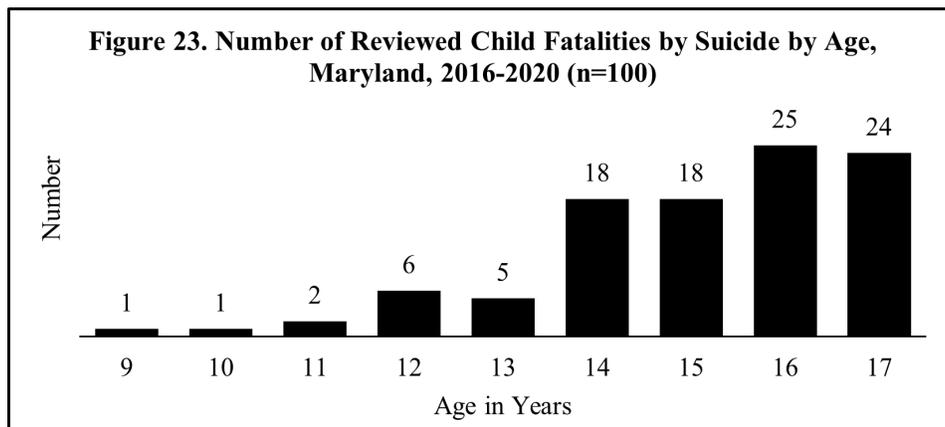Source: CDRCRS, as of 08/02/2022.

Suicide Deaths in Maryland

Death by suicide was the fourth leading manner of reviewed unexpected child deaths during the five-year period from 2016 to 2020, accounting for 11 percent of deaths. Only deaths which were reviewed by the local teams were included in this analysis. Death by suicide was the second leading manner of death for children 15 to 17 years old during the same period, accounting for 26 percent of reviewed deaths. The highest number of cases was seen in 2017 with 25 cases, followed by 23 cases in 2020 (Figure 22).

Figure 22. Annual Number of Reviewed Child Fatalities by Suicide, Maryland, 2016-2020 (n=100)

| Year	2016	2017	2018	2019	2020
Number	14	25	20	18	23

Source: CDRCRS, as of 08/02/2022.

Of the 100 deaths by suicide occurring in the five-year period from 2016 to 2020, 85 percent were among children 14 to 17 years old (Figure 23). Seventy-five percent of deaths by suicide occurred among male children and 25 percent occurred among female children.

Figure 23. Number of Reviewed Child Fatalities by Suicide by Age, Maryland, 2016-2020 (n=100)

Age in Years	9	10	11	12	13	14	15	16	17
Number	1	1	2	6	5	18	18	25	24

Source: CDRCRS, as of 08/02/2022.

Fifty-four percent of deaths by suicide occurred among NH White children, 29 percent among NH Black children, 10 percent among Hispanic children, and 7 percent among NH children of other races (Figure 24).

Figure 24. Number of Reviewed Child Fatalities by Suicide by Race and Ethnicity, Maryland, 2016-2020 (n=100)
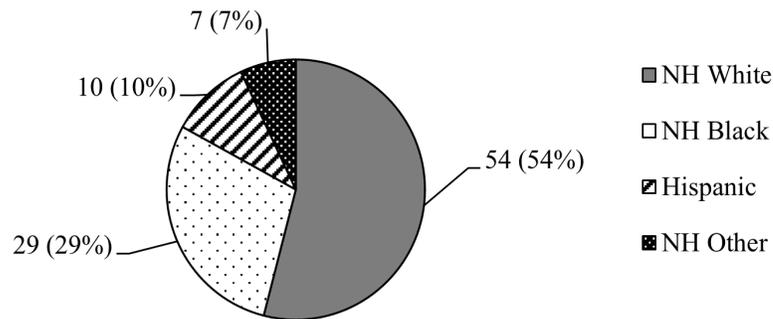
Source: CDRCRS, as of 08/02/2022.

Suicide deaths by jurisdiction of residence are shown in Table 12. Baltimore County had the largest number of suicide deaths between 2016 and 2020 with 19 cases, followed by Montgomery County with 15 cases.

Table 12. Number of Reviewed Child Fatalities due to Suicide by Jurisdiction of Residence, Maryland, 2016-2020 (n=100)*						
	2016	2017	2018	2019	2020	Total
Baltimore	0	7	3	3	6	19
Montgomery	4	4	2	0	5	15
Howard	0	2	3	2	3	10
Anne Arundel	2	0	0	4	2	8
Baltimore City	2	2	0	2	1	7
Frederick	3	0	2	1	0	6
Prince George's	0	1	1	1	3	6
Calvert	1	1	0	1	0	3
Carroll	1	0	1	1	0	3
Cecil	0	1	1	1	0	3
Harford	0	0	2	0	1	3
St. Mary's	0	2	1	0	0	3
Washington	1	1	0	1	0	3
Allegany	0	2	1	0	0	3
Kent	0	1	0	0	1	2
Wicomico	0	1	1	0	0	2
Charles	0	0	1	1	0	2
Dorchester	0	0	1	0	0	1
Queen Anne's	0	0	0	0	1	1
Total	**14**	**25**	**20**	**18**	**23**	**100**

Source: CDRCRS, as of 08/02/2022.

Table 13 shows suicide deaths by cause of death. Asphyxia was the leading cause of death among suicide cases (54 percent), followed by firearm (33 percent), and poisoning (8 percent). All of the asphyxia deaths were due to hanging.

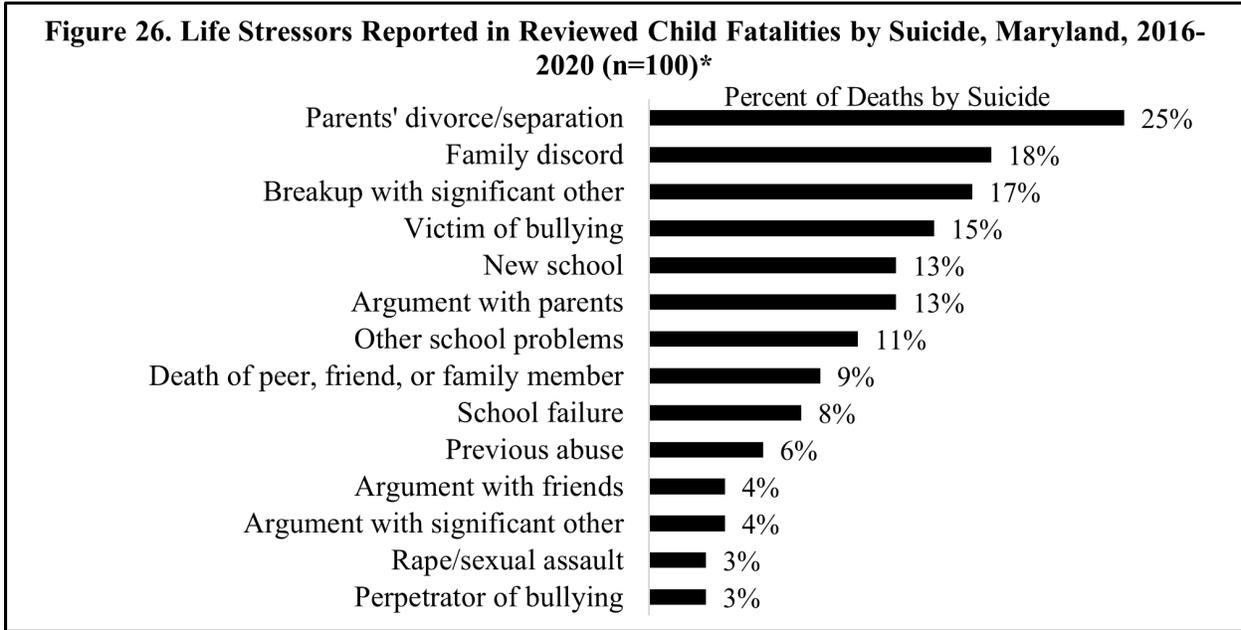| Table 13. Number and Percent of Reviewed Child Fatalities by Suicide, by Cause of Death, Maryland, 2016-2020 (n=100)		
	Number	Percent
Asphyxia	54	54.0
Firearm	33	33.0
Poisoning	8	8.0
Fall or Crush	2	2.0
Drowning	1	1.0
Other	1	1.0
Missing	1	1.0
Total	**100**	**100**

Source: CDRCRS, as of 08/02/2022.

Figure 25 shows incident characteristics of children who died by suicide in Maryland from 2016 to 2020. Fifty-four percent of the children received mental health services in the past, 42 percent were receiving mental health services at the time of death, and 29 percent were on medications for mental illness. The teams reported that 12 percent of children who died by suicide had issues which prevented them from receiving mental health services, such as lack of parental follow through with mental health service recommendations. Nineteen percent had a history of substance abuse, and 15 percent had a history of self-harm. Fifty-seven percent communicated their suicidal thoughts or intentions.

Figure 25. Incident Characteristics of Reviewed Child Fatalities by Suicide, Maryland, 2016-2020 (n=100)*

Percent of Deaths by Suicide

Incident occurred in child's home	84%
Incident occurred September-May	80%
Incident occurred Monday-Thursday	60%
Communicated suicidal thoughts or intentions	57%
Received mental health services in the past	54%
Had problems in school	44%
Currently receiving mental health services	42%
Talked about suicide	32%
On medications for mental illness	29%
History of substance abuse	19%
History of self harm	15%
Issues prevented receiving mental health services	12%
Delinquent or criminal history	9%

Source: CDRCRS, as of 08/02/2022.
*Percentages will total more than 100 percent, as multiple characteristics often applied to the same case.

Figure 26 shows life stressors occurring in the lives of children who died by suicide around the time of their death. Twenty-five percent of children who died by suicide were impacted by their parents' divorce or separation, 18 percent were experiencing family discord, and 13 percent were having arguments with parents. Seventeen percent were experiencing a breakup with a significant other. Fifteen percent had been the recent victim of bullying. Thirteen percent were attending a new school and 11 percent were experiencing problems at school.

Figure 26. Life Stressors Reported in Reviewed Child Fatalities by Suicide, Maryland, 2016-2020 (n=100)*

Percent of Deaths by Suicide

Life Stressor	Percent
Parents' divorce/separation	25%
Family discord	18%
Breakup with significant other	17%
Victim of bullying	15%
New school	13%
Argument with parents	13%
Other school problems	11%
Death of peer, friend, or family member	9%
School failure	8%
Previous abuse	6%
Argument with friends	4%
Argument with significant other	4%
Rape/sexual assault	3%
Perpetrator of bullying	3%

Source: CDRCRS, as of 08/02/2022.
*Percentages will total more than 100 percent, as multiple characteristics often applied to the same case.

Table 14 compares characteristics of asphyxia (hanging) and firearm suicide deaths. Suicide by asphyxia and by firearm were both more common among males than females. Suicide was more likely to occur among NH White males. Suicide by asphyxia cases were more likely to be currently taking medications for mental illness. Suicide deaths by asphyxia occurred more often in the child's home than suicide deaths by firearm, and previous communication of suicidal thoughts or ideations were more commonly reported among suicide deaths by asphyxia; however, these two differences were not statistically significant.

Table 14. Differences in Characteristics of Firearm and Asphyxia Reviewed Child Fatalities by Suicide, Maryland, 2016-2020 (n=87)	Firearm (n=33) n (%)	Asphyxia (n=54) n (%)
Demographic Characteristics of Child:		
Gender: Male	30 (90.9)	41 (75.9)
Race: NH White*	23 (69.7)	24 (44.4)
Race: NH Black	8 (24.2)	18 (33.3)
Age: 15-17 years old	23 (69.7)	34 (63.0)
Insurance: Medicaid	5 (15.2)	18 (33.3)
Insurance: Private	19 (57.6)	23 (42.6)
Health Characteristics of Child:		
Received mental health services in the past	14 (42.4)	31 (57.4)
Currently receiving mental health services	10 (30.3)	24 (44.4)
On medications for mental illness*	4 (12.1)	18 (33.3)
Incident Characteristics:		
Occurred in child's home	26 (78.8)	49 (90.7)
Child communicated suicidal thoughts or intentions	13 (39.4)	33 (61.1)
Previous suicide attempts	1 (3.0)	7 (13.0)

Source: CDRCRS, as of 08/02/2022.
*Denotes differences that are greater than would be expected by chance alone, i.e. a statistically significant difference at $p<0.05$.

Impact of COVID-19 on Child Fatalities and Child Fatality Review in Maryland

In 2020, COVID-19 was reported to be the immediate or underlying cause of death in two cases. Both children lived in an area where a stay-at-home order was not in place at the time of their death. The children were exposed to COVID-19 within 14 days of their death.

The local teams noted in 21 cases that COVID-19 indirectly contributed to the death, but was not the immediate or underlying cause of death. Of the two direct cases and 21 indirect cases, 15 noted disruptions or significant changes to school, eight noted disruptions or significant changes to medical care, six noted disruptions or significant changes to the living environment, five noted disruptions or significant changes to mental health or substance use care, and two noted disruptions or significant changes to daycare (Table 15). A stay-at-home order was in place during the death of 10 of the indirect cases. Three cases noted disruptions or significant changes to employment, one case noted disruptions or significant changes to social services, and one case noted disruptions or significant changes to legal proceedings. In addition, in one case, an infant died of unsafe sleep factors and was diagnosed with COVID-19 at autopsy.

In 2020, the COVID-19 pandemic impacted the team's ability to conduct the fatality reviews by causing 32 team reviews to be conducted remotely and by causing the team leaders to be redirected to the COVID-19 response for 32 teams (Table 15).

Table 15: Impact of COVID-19 in Death Reviews, 2020	
	Number
Family Experienced Significant Changes:	
School	15
Daycare	2
Employment	3
Social services (unemployment assistance, TANF, WIC)	1
Living environment	6
Medical care	8
Mental health or substance use	5
Legal proceedings within criminal, civil, or family courts	1
Stay at home order was in place at the time of child's death	10
Child exposed to COVID-19 within 14 days of death	2
COVID-19 impact on all 2020 team reviews:	
Remote reviews negatively impacted review process	32
Team leaders redirected to COVID-19 response	32

Source: CDRCRS, as of 08/02/2022.

Summary and Recommendations

Between 2016 and 2020, 907 unexpected child deaths were referred by the OCME to the Child Fatality Review Program and reviewed by local teams. Reviews of infants under 1 year old comprised the majority of the reviews, followed closely by cases 13 to 17 years old. The number of reviews between 2016 and 2020 increased by 3 percent for Black NH children and 35 percent for Hispanic children. The majority of cases with known causes of death were considered accidents. Between 2016 and 2020, Baltimore City had the highest number of resident child deaths reviewed at 23 percent of cases, followed by Baltimore County at 14 percent of cases. The rates of unexpected child death were highest in Kent County at 39 deaths per 100,000 population, followed by Baltimore City at 33 deaths per 100,000 population.

The annual rate of SUID cases reviewed increased by 12 percent between 2016 and 2020. Within this same time period, there were 259 SUIDs reviewed by local teams. The majority of SUID cases were 1 year old (21 percent), followed by 2 years old (19 percent). Fifty-eight percent of SUID cases occurred among NH Black infants. In 2020, the number of SUID cases reviewed for NH Black infants was over two times greater than the number reviewed for NH White infants, and more than five times greater than the number reviewed for Hispanic infants. The largest number of SUIDs occurred among Baltimore City residents, accounting for 23 percent of all SUIDs between 2016 and 2020. Dorchester County had the highest rate of SUID cases at 275.6 deaths per 100,000 live births, followed by Allegany County at 187.3 deaths per 100,000 live births. Approximately 86 percent of SUID cases reviewed were sleep-related.

Death by homicide was the fourth leading manner of reviewed unexpected child deaths during the five-year period from 2016 to 2020. Of the 125 deaths by homicide, occurring in the five-year period from 2016 to 2020, 49 percent were among children 15 to 17 years old. Seventy-one percent of deaths by homicide occurred among male children and seventy-four percent of deaths by homicide occurred among NH Black children. Weapons were the leading cause of death by homicide (82 percent). Between 2016 and 2020, Baltimore City had the highest number of homicide deaths (53 percent).

Poisoning, overdose, or acute intoxication contributed to 31 unexpected child deaths during the five-year period from 2016 to 2020. Of the 31 deaths, 52 percent were among children 15 to 17 years old and 48 percent occurred among NH White children. Between 2016 and 2020, Baltimore County had the highest number of deaths by poisoning, overdose, or acute intoxication (29 percent). Illicit opioid pain medications were found in the majority of these incidents.

Between 2016 and 2020, there were 100 suicides reviewed by local teams, in which 85 percent were among children 14 to 17 years old. Fifty-four percent of deaths by suicide occurred among NH White children, 28 percent among NH Black children, and 10 percent among Hispanic children. Approximately 75 percent of deaths by suicide occurred among male children. The largest number of suicides occurred among residents of Baltimore County, which accounted for 19 percent of all suicides reviewed during this period. Asphyxia was the leading cause of death by suicide (54 percent) followed by firearm (33 percent). Over half of cases communicated suicidal thoughts or intentions. More than a quarter of children who died by suicide were impacted by their parents' divorce or separation.

In response to the 2021 review of referred child deaths in Maryland, the Team puts forth the following recommendations and proposed actions for the State agencies represented on the Team.

Recommendations Related to Sudden Unexplained Infant Death (SUID)

1) Provide statewide, standardized, consistent, infant-safe sleep education, and increase community awareness of SUID associated risk factors and harm reduction, especially in jurisdictions with the highest SUID rates and disproportionately affected communities.
2) Collaborate with relevant community partners, including the Perinatal Quality Collaborative (PQC), the Perinatal Support Program, CPS, fire departments, police departments, hospitals, daycare centers or sites, K-12 schools and medical providers, to disseminate safe sleep education materials and conduct trainings.
3) Conduct a multi-media campaign across all jurisdictions in Maryland, which will include educational materials, and public service announcements (PSAs) on the TV and radio.
4) Partner with the PQC, the Perinatal Support Program, and providers to create policy changes that will require obstetrician (OB) offices, birthing hospitals, Federally Qualified Health Centers (FQHCs), and pediatric offices to conduct safe sleep education.

Recommendations Related to Homicide

1) Continue to promote the American Academy of Pediatrics recommendation that healthcare providers incorporate questions regarding the presence of firearms and ammunition in all locations in a child's environment, into the medical history assessment to provide counseling on risk reduction.
2) Partner with police departments, CPS, the Department of Human Services (DHS), the Department of Juvenile Services (DJS), and the larger criminal justice system to provide gun safety resources and gun injury prevention education.
3) Increase gun safety education statewide that includes messaging on proper gun storage in homes where children reside or have access, for both the general public and purchasers of firearms.
4) Conduct a gun-safety multi-media campaign across all jurisdictions in Maryland, including printing educational materials, social media outreach to pre-teens and teens, and PSAs on the TV and radio.

Recommendations Related to Overdose

1) Continue with the previous State CFR recommendation of increasing community access to risk reduction approaches such as naloxone and fentanyl testing strips to address overdoses amongst older teens.
2) Encourage pediatric healthcare providers to become trained and be comfortable with diagnosing and prescribing Opioid Use Disorder (OUD) medications, particularly for children under 18 years old.
3) Ensure in-patient beds in Maryland for teens with significant opioid or other substance use disorders (SUDs) requiring residential treatment, and the ability for teens to receive

medication for OUD if admitted to a residential facility for behavioral or mental healthcare.

4) Increase messaging and education for safe storage of illicit and prescription drugs when children have access to the home.

Recommendations Related to Suicide

1) Encourage healthcare providers to screen for depression during pediatric encounters in adolescents age 12-18 in alignment with the U.S. Preventive Services Task Force recommendations.
2) Promotion of the 988 suicide and crisis line statewide.
3) Partner directly with school nurses, in-school mental health providers, community-based providers, and the Maryland Parent Teacher Association to conduct education campaigns and outreach.
4) Encourage schools to involve peers in all school-wide education campaigns on suicide awareness/prevention and conduct frequent social media campaigns aimed at pre-teens and teens with similar messaging.
5) Widely disseminate suicide prevention trainings to both individuals and programs,— for example, sports teams, faith-based organizations and programs, community-based youth organizations, and parents.
6) Improve access to mental health providers in Maryland and the ability to be screened for acute psychiatric disorders, then referred promptly for care.

Recommendations Related to COVID-19

1) Conduct a multi-media campaign across all jurisdictions in Maryland, including PSAs on the TV and radio, surrounding vaccinations, boosters, and infection control and prevention practices.
2) Increase parental awareness of when pediatric patients with COVID-19 should seek prompt medical assistance and/or call 911 for significant COVID-19 symptoms.
3) Optimize treatment of chronic health conditions to ensure underlying medical conditions are maximally treated prior to the exposure or infected with COVID-19.

General Recommendations

1) Continue to address racial disparities in child fatality.
2) Utilize both risk-reduction and prevention language for all statewide media campaigns aimed at reducing child fatalities.
3) Continue workforce development for all medical providers who interact with the pediatric population.
4) Encourage families with children to have a medical home.

Enhancing the process of generating recommendations and translating them into actionable steps is a priority of the Program. These recommendations guide the State and its partners in shaping child fatality prevention initiatives. As an integral part of the recommendation generating process, each year local CFR coordinators and State CFR team members systematically review

the recommendations from the previous year. Lastly, these recommendations inform the annual application guidance for the local CFR programs.

Appendix A: 2021 State Child Fatality Review Team Members

Health-General Article §5-703(a), Annotated Code of Maryland provides that the Team shall be a multidisciplinary and multi-agency review team, composed of at least 25 members, including:

(1)   Attorney General – Christle Sheppard Southall, Esq, designee;

(2)   Chief Medical Examiner – Victor Weedn, MD, designee;

(3)   Secretary of Human Resources – Jacqueline Gray, designee;

(4)   Secretary of Health – Sadie Peters, MD, designee;

(5)   State Superintendent of Schools – Lynne Muller, PhD, designee;

(6)   Secretary of Juvenile Services – Jenny Maehr, MD, designee;

(7)   Special Secretary for Children, Youth and Families – permanent vacancy due to the sunset of the Office for Children, Youth, and Families in 2005;

(8)   Secretary of State Police – Sgt. David Sexton, designee;

(9)   President of the State's Attorneys' Association – Debbie Feinstein, JD, designee;

(10)   Chief of the Division of Vital Records – Monique Wilson, DrPH, designee;

(11)   A Representative of the Center for Infant and Child Loss – LaToya Bates, LCSW-C, Director, Center for Infant and Child Loss;

(12)   Director of the Behavioral Health Administration – Maria-Radowski-Stanco, MD, designee;

(13)   Two pediatricians with experience in diagnosing and treating injuries and child abuse and neglect, appointed by the Governor from a list submitted by the state chapter of the American Academy of Pediatrics:

        Richard Lichenstein, MD, FAAP;
        Leen Dev, MD; and

Members of the general public with interest or expertise in child safety or welfare, appointed by the Governor, including child advocates, CASA volunteers, health and mental health professionals, and attorneys who represent children:

Richelle J. Cricks, CNM, MSN	Laurel Moody, RN, MS
Patricia K. Cronin, LCSW-C	Shantell Roberts
Dermott Garrett	Kate Schneider
Mary C. Gentile, LCSW-C	Joyce P. Williams, DNP
Ivone Kim, MD	Anntinette Williams, LICSW

Appendix B: Duties of the State Child Fatality Review Team

Health-General Article, §5-704 (b), sets forth the Team's 13 duties. To achieve its purpose, the State CFR Team shall:

1) Undertake annual statistical studies of the incidence and causes of child fatalities in the State, including an analysis of community and public and private agency involvement with the decedents and their families before and after the deaths;

2) Review reports from local teams;

3) Provide training and written materials to the local teams established under §5-705 of this subtitle to assist them in carrying out their duties, including model protocols for the operation of local teams;

4) In cooperation with the local teams, develop a protocol for child fatality investigations, including procedures for local health departments, law enforcement agencies, local medical examiners, and local departments of social services, using best practices from other states and jurisdictions;

5) Develop a protocol for the collection of data regarding child deaths and provide training to local teams and county health departments on the use of the protocol;

6) Undertake a study of the operations of local teams, including the State and local laws, regulations, and policies of the agencies represented on the local teams, recommend appropriate changes to any regulation or policy needed to prevent child deaths, and include proposals for changes to State and local laws in the annual report required by paragraph (12) of this subsection;

7) Consider local and statewide training needs, including cross-agency training and service gaps, and make recommendations to member agencies to develop and deliver these training needs;

8) Examine confidentiality and access to information laws, regulations, and policies for agencies with responsibility for children, including health, public welfare, education, social services, mental health, and law enforcement agencies, recommend appropriate changes to any regulations and policies that impede the exchange of information necessary to protect children from preventable deaths, and include proposals for changes to statutes in the annual report required by paragraph (12) of this subsection;

9) Examine the policies and procedures of the State and local agencies and specific cases that the State Team considers necessary to perform its duties under this section, in order to evaluate the extent to which State and local agencies are effectively discharging their child protection responsibilities in accordance with:

    i) The State plan under 42 U.S.C. §5106a(b);

    ii) The child protection standards set forth in 42 U.S.C. §5106a(b); and

    iii) Any other criteria that the State Team considers important to ensure the protection of children;

10) Educate the public regarding the incidence and causes of child deaths, the public role in preventing child deaths, and specific steps the public can undertake to prevent child deaths;

11) Recommend to the Secretary any regulations necessary for its own operation and the operation of the local teams;

12) Provide the Governor, the public, and subject to §2-1257 of the State Government Article, the General Assembly with annual written reports, which shall include the State Team's findings and recommendations; and

13) In consultation with local teams:

   i) Define "near fatality"; and

   ii) Develop procedures and protocols that local teams and the State Team may use to review cases of near fatality.