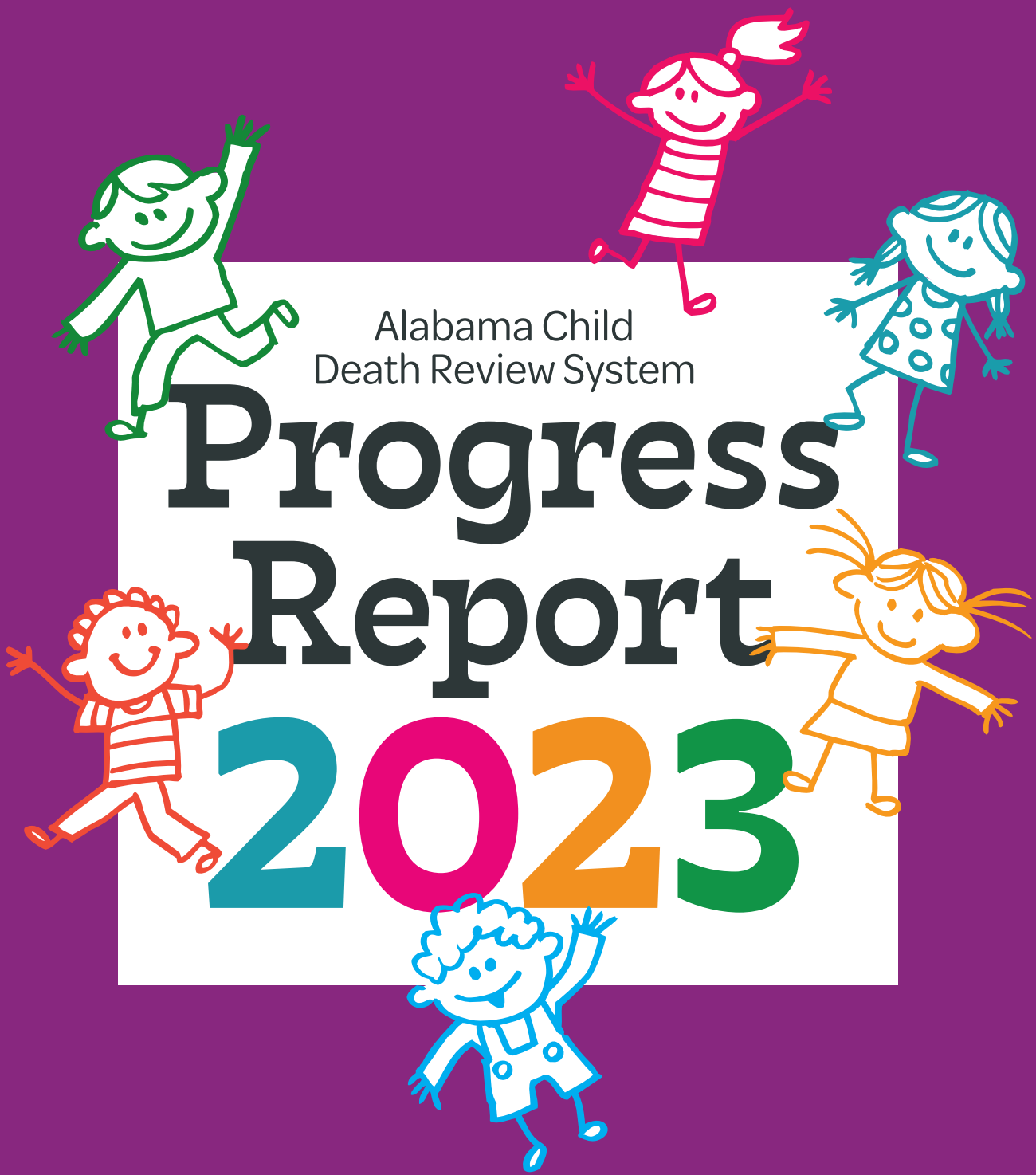
Alabama Child
Death Review System

Progress Report 2023



ACDRS
ALABAMA
CHILD DEATH
REVIEW SYSTEM

ALABAMA
PUBLIC
HEALTH

DEATHS AMONG CHILDREN IN ALABAMA
ALABAMA CHILD DEATH REVIEW SYSTEM

Progress Report - 2023

Scott Harris, M.D., M.P.H.
State Health Officer

Michele Jones, M.S.
Chief of Staff

Jamey Durham, M.B.A.
Director
Bureau of Prevention, Promotion, and Support

Gloria Davis, L.M.S.W.
Director
Surveillance Branch

Spencer Avant, L.B.S.W.
Program Coordinator
Alabama Child Death Review System

Stuart Hoyle, M.P.H.
Epidemiologist
Surveillance Branch

Alabama Child Death Review System
The RSA Tower, Suite 960
201 Monroe Street, Montgomery, AL 36104
(334) 206-2085 • (334) 206-3723 (Fax)
alabamapublichealth.gov/cdr

Alabama Department of Public Health
Bureau of Prevention, Promotion, and Support
Surveillance Branch

This report is based on the most recent data available as of August 2024.

Table of Contents

Introduction 4

Three Tiers of the Alabama Child Death Review System 4
- A. Alabama Department of Public Health Central Office Staff
- B. State Child Death Review Team
- C. Local Child Death Review Teams

National Fatality Review Case Reporting System 6

Alabama Child Death Review System Funding 6

Alabama Child Death Review System's Prevention Initiatives 6
- A. Sudden Unexpected Infant Death Investigation Training
- B. Car and Booster Seat Clinics
- C. Healthy Start: "Never Ever Shake a Baby"

2023 Recommendations to the Governor and Legislature 7

Key Findings 8
- A. Manner of Death Update for 2023
- B. Cause of Death Update for 2023
- C. Additional External Causes of Death

Location of Death 10

Review Process and Timeline 11

2023 Reviewed Child Deaths 13

Local Child Death Review Team Recognition 14

2023 Review Completion Rate by County 15

Alabama Child Death Trend Rates From 2012 to 2022 16

Manner of Death Summary – 2023 Reviewed Deaths 19

Cause of Death Summary – 2023 Reviewed Deaths 21

Review of the Common Causes of Child Death in Alabama 22
- A. Bodily Force and Weapon-related Deaths
- B. Sudden Unexpected Infant Deaths and Sleep-related Deaths
- C. Vehicle-related Deaths

State Child Death Review Team Members 27

Introduction

In 1997, Alabama enacted legislation creating the Alabama Child Death Review System (ACDRS) to review and identify unexplained or unexpected child deaths in Alabama with the purpose of developing strategies to prevent such deaths from occurring. ACDRS worked with 42 Local Child Death Review Teams (LCDRTs), the State Child Death Review Team (SCDRT), and the Alabama Department of Public Health (ADPH) Central Office staff to collect, review, consolidate, and utilize information on more than 2,670 child deaths since 2012. ACDRS's structure relies upon the time and effort volunteered by our team members throughout the state for in-depth reviews and prevention recommendations that provide the insight needed to prevent these deaths from continuing to occur. ADPH Central Office staff are grateful for each individual and organization that makes these efforts possible on behalf of Alabama's children.

In 2023, 793 children died in Alabama, based on a preliminary count of child deaths as of August 8, 2024, though this count is subject to change until the Center for Health Statistics within ADPH finalizes the data.* Every child's death is a tragedy, especially for the family and friends of the children lost. However, each death also serves as a powerful warning that other children remain at risk. To better understand how and why children die, the state tasks ACDRS with the following responsibilities: maintain statistics on child mortality; identify deaths that may result from abuse, neglect, or other preventable cases; and, from that information, develop and implement measures to help reduce the risk and incidence of future unexplained or unexpected child deaths in Alabama.

Child death reviews make a difference. Through death reviews, ACDRS has identified bodily force and weapon-related deaths; sleep-related and SUID; and motor vehicle incidents as the leading causes of death for 2023. This report highlights the leading manners and causes of death for Alabama's children, significant risk factors burdening children, recommendations created by SCDRT to reduce preventable child deaths, and statewide initiatives that have been established due to the child death review process. ACDRS seeks to honor the memory of children who died in Alabama with this report. Hopefully, these efforts will lead to a better understanding of how Alabama can be a safer, healthier place for children.

Three Tiers of the Alabama Child Death Review System

A. ADPH Central Office Staff

For administrative and budgetary purposes, the State Child Death Review Office is located within ADPH, Bureau of Prevention, Promotion, and Support. The ACDRS Central Office consists of three staff members: an ACDRS Program Manager, a Program Coordinator, and an Epidemiologist. ADPH Central Office staff is responsible for sending death certificates, providing technical assistance, and overseeing the data review process of LCDRTs. ADPH Central Office staff also assist with developing prevention initiatives, public awareness campaigns, and special interest programs.

B. State Child Death Review Team

SCDRT is a multidisciplinary, multiagency review team, composed of 28 members, which are listed below and the first 7 of whom are ex officio members:

- The Jefferson County Coroner, Medical Examiner.
- The State Health Officer, who serves as Chair.
- One member appointed by the Alabama Sheriff's Association.
- The Director of the Alabama Department of Forensic Sciences.
- The Commissioner of the Alabama Department of Human Resources.
- The Commissioner of the Alabama Department of Mental Health.
- The Director of the Alabama Department of Public Safety.

**ADPH Centers for Health Statistics, as of 8/20/2024.*

- One pediatrician with expertise in Sudden Infant Death Syndrome (SIDS) appointed by the Alabama Chapter of the American Academy of Pediatrics.
- One health professional with expertise in child abuse and neglect appointed by ADPH.
- One family practice physician appointed by the Alabama Academy of Family Physicians.
- One pediatric pathologist appointed by the Alabama Department of Forensic Sciences.
- Eight private citizens appointed by the Governor.
- One member of the clergy appointed by the Governor.
- One representative of the Alabama Coroner's Association.
- One representative of the Alabama Network of Children's Advocacy Centers.
- One representative of the Alabama Sheriff's Association.
- One representative of the Alabama District Attorney's Association.
- One specialist in pediatric emergency medicine appointed by the Medical Association of the State of Alabama.
- One representative of the Alabama Association of Chiefs of Police.
- The Chair of the Senate Health Committee or his/her designee and the Chair of the House Health Committee or his/her designee.

SCDRT serves as an advisory board with quarterly meetings to:

- Identify factors that make a child at risk for injury or death.
- Collect and share information among State Team members and agencies that provide services to children and families or investigate child deaths.
- Suggest and recommend improving coordination of services and investigations to appropriate participating agencies.
- Identify trends relevant to unexpected/unexplained child injury and death.
- Review reports from local child death teams and, upon request of a local team, individual cases of child deaths.
- Provide training and written materials to local teams to assist them in carrying out their duties.
- Develop a protocol for child death investigations and revise the protocol as needed.
- Educate the public in Alabama regarding the incidence and causes of child injury and death and the public role in aiding in reducing the risk of such injuries and fatalities.
- Provide the Governor and the Legislature with an annual, written report including, but not limited to, SCDRT's findings and recommendations of each of its duties, and provide copies of such report to the public.

C. Local Child Death Review Teams

Currently, all 67 counties in Alabama are represented by one of 42 multidisciplinary LCDRTs based in each judicial circuit. The district attorneys within these judicial circuits are responsible for appointing a local coordinator and/or overseeing the child death review process for their circuit. Each Alabama county is included in an LCDRT jurisdiction.

The following individuals are LCDRT members:

- The county health officer.
- The director of the county Department of Human Resources.
- The county district attorney.
- The medical examiner.
- The local coroner.
- One investigator with a local sheriff's department who is familiar with homicide investigation.
- One investigator with a local police department who is familiar with homicide investigation.

- One pediatrician, or if no pediatrician is available, a primary care physician appointed by the county medical society.
- One representative from a local child advocacy center, should one exist.

The role of LCDRTs is to hold local review sessions that collect, review, consolidate, and report information regarding child death to the SCDRT and ADPH Central Office staff. By law, LCDRTs are required to meet at least annually. The purpose of these reviews is to decrease the incidence of unexpected or unexplained child injury and death by providing a better understanding of the circumstances surrounding each one. LCDRTs accomplish this purpose by completing the following tasks:

- The identification of factors that put a child at risk of injury or death.
- The dissemination of information among the agencies that provide services to children and families, or which investigate child deaths or provide services.
- The improvement of local investigations of unexpected/unexplained child deaths by participating agencies.
- The improvement of existing services and systems and assisting in establishing additional services and systems to fill gaps in the community.
- The identification of trends relevant to unexpected/unexplained child injury and death.
- The education of the local public regarding the incidence and causes of child injury and death and the public role in aiding and reducing the risk of such injuries and fatalities.

LCDRT reviews are essential in formulating recommendations that will modify risk factors at both local and state levels. Furthermore, LCDRT reviews of child deaths occurring in 2023 are the foundation for this report.

National Fatality Review Case Reporting System (NFR–CRS)

LCDRTs and ADPH use NFR-CRS as a database and data collection methodology to capture information regarding the circumstances surrounding each reviewed child's death. This database serves as a case reporting tool that documents the often-complex conversations, discussions, and report reviews that happen during the death review process. NFR-CRS also documents many descriptive aspects of the death, such as the child's demographics, investigative actions, services provided or needed, risk factors, and LCDRT recommendations on how to prevent future child deaths in Alabama.

Alabama Child Death Review System Funding

ACDRS funding originates in Alabama's portion of the National Tobacco Settlement (NTS) through the Children First Trust Fund (CFTF). The sum of the funding equals 1 percent of the total CFTF portion of NTS but is not to exceed $300,000.

The Alabama Medicaid Agency also provides some supplemental funding to ACDRS through a reimbursement agreement. These funds are used solely for education and outreach efforts.

Alabama Child Death Review System's Prevention Initiatives

ACDRS has reviewed over 5,850 child deaths since 2000. Due to these reviews, educational programs and prevention initiatives, such as the Teen Driver Safety Campaign, Alabama Sudden Unexpected Infant Death (SUID) Investigation (SUIDI) Team, the Booster Seat Advocacy Program, and the Healthy Start: Never Ever Shake a Baby Program have been developed.

A. SUID Training

To improve data quality and reduce sleep-related child deaths, ACDRS conducted Child Injury and Death Scene Re-enactment and Scene Reconstruction Training sessions. Each session provided investigative protocols for law enforcement, Emergency Medical Services (EMS), district attorneys, medical examiners, coroners, and child protective services. ADPH social workers and nurses were also in attendance. Participants learned the skills necessary to conduct investigations: how to conduct witness interviews, how to perform doll re-enactments, and how to develop narrative reports for forensic pathologists that will provide the foundation for a more accurate determination of the cause of injury and the person(s) responsible.

By completing the training, investigators were provided the necessary tools and knowledge to complete SUIDI accurately. Standardized reporting forms from CDC and SUIDI demonstration dolls were distributed to investigators as investigative tools. The provided training, materials, and tools were based on a nationally established CDC curriculum and aligned with CDC guidelines. These training and tools should improve infant death scene investigations, the accuracy of infant death diagnoses, and the overall usefulness of the information regarding infant deaths collected by ACDRS. Thorough and standardized investigations will assist ACDRS in obtaining better data. Better data will lead to improved and targeted prevention strategies statewide. More information about safe sleep practices for children and other educational materials can be found on the ADPH website, alabamapublichealth.gov, by searching for SUID and Safe Sleep.

In September of 2023, ACDRS conducted a 2-day SUIDI training in Tuscaloosa, Alabama, with 40 attendees: including law enforcement, coroners, child advocates, nurses, and social workers. After the 2 days of regular SUIDI training, a third training day was also provided for those interested in being SUIDI trainers. This training taught law enforcement and coroners how to train others on SUIDI and will reduce ACDRS' dependence on external out-of-state trainers. ACDRS is looking forward to creating a pool of trainers that can help conduct future SUIDI training throughout the state.

B. Car and Booster Seat Clinics

ADPH has Child Passenger Safety Technicians certified through Safe Kids to educate caregivers on properly installing their child's car seat. In addition to educating caregivers on proper installation, pregnant women and families receiving federal assistance are eligible to receive a car seat provided by ACDRS. In 2023, 123 seats were provided to eligible families. More about this topic, information about state law, and links to informational materials can be found on the ADPH website, alabamapublichealth.gov, by searching for child restraints or car seats.

C. Healthy Start: Never Ever Shake a Baby

This prevention program targets one of the most serious forms of child abuse in children, Shaken Baby Syndrome (SBS). ACDRS funds The Family Center of Mobile to maintain a hospital based prevention program at the University of South Alabama Health Children's & Women's Hospital. The program focuses on reducing the stress of a new baby on the family and teaching parents how to calm a crying infant using Dr. Harvey Karp's "5S" method. Nearly all babies are shaken because of uncontrollable crying and the parent's frustration at their inability to calm the child. The program is offered directly to the patient while in the hospital, and the mother and other family members are encouraged to take the 30-minute class before leaving care. The class ends with the 8-minute video "Portrait of Promise," which details the devastating effects of SBS. Parents are asked to sign an affidavit stating they took the workshop and understand the dangers of shaking their child. They also promise to share the material provided with other caregivers for their new child. During the 2023 fiscal year (October 2022 through August 2023), the prevention program served 319 families. The numbers for these years are lower than previous years primarily due to Coronavirus Disease 2019 and hospital entry limitations.

ACDRS continues to rely on SCDRT, LCDRTs, strategic partners, and the public to promote the program's mission. Although significant improvements have been made, ACDRS will continue to make strides that reduce child death through awareness, education, and prevention efforts.

2023 Recommendations to the Governor and Legislature

SCDRT recommends the following ongoing prevention strategies:

Statewide

- Use alternative channels such as social service agencies, houses of worship, and youth organizations to implement prevention education statewide.
- Improve media coverage on suicide prevention to encourage those who are vulnerable or at risk to seek help.
- Support annual suicide prevention education in schools to promote emotional well-being and connectedness among the entire school community.
- Encourage the safe storage of firearms by distributing gun locks as a safety precaution.
- Implement public education and awareness campaigns about the need for adult supervision around open bodies of water.

- Expand and mandate SUIDI training for EMS, law enforcement, coroners, and child protective services.
- Educate new parents regarding newborn and infant safety recommendations, such as safe sleep environments and car seat use/installation.
- Increase rural car seat distribution/education.
- Prevent co-sleeping through public education and awareness campaigns.

Build Partnerships to Serve Alabama's Children and Families

- Establish a partnership with Nurse-Family Partnership.
- Increase collaboration with the Alabama Suicide Prevention and Resources Coalition.

Educate, Enforce, and Improve Graduated Driver's License (GDL) Policy

- Educate parents and law enforcement of GDL Law.
- Support further enhancement of the GDL by improving night driving restrictions for teen drivers (10 p.m.-5 a.m.).
- Include a questionnaire to determine knowledge of the GDL policy in the drivers' education exam.
- Implement a Statewide Teen Driver Safety Course for high school sophomores.

Cooperate and Collaborate for Legislative Action

- Improve ACDRS case review rates by considering alternative lead agencies for LCDRTs.
- Improve gun safety laws.

Improve Public and Private Funding for Children's Services

- Advocate for increased funding for children's services.
- Increase funding for mental health.
- Explore private funding as an avenue for additional support of ACDRS.

Create a Comprehensive Data System to Improve Prevention Initiatives

- Establish a standardized case management system for coroners and medical examiners.
- Increase collection and utilization of new sources of data.

Key Findings

In 2023, ACDRS reviews were completed for 231 child deaths, or 77.3 percent of the deaths eligible for review. Cases that meet the criteria for review are those involving deaths in Alabama of infants and children from live birth to less than 18 years of age whose deaths are considered unexpected or unexplained. Reviewed cases are categorized based on the manner and cause of death. The manner of death is classified based on the circumstances surrounding death. Cause of death refers to the primary underlying cause of death, which is the disease or injury/action initiating the sequence of events that led directly to death, or the circumstances of the accident or violence that produced the fatal injury. The five manners of death categories reviewed by ACDRS are accidents, homicides, suicides, undetermined manner, and pending/unknown manners of death.

Manner of Death Update for 2023

Reviews of qualifying deaths showed:

- Accidents (unintentional injury deaths) accounted for 92 reviewed deaths.

- Homicides accounted for 42 reviewed deaths.
- Suicides accounted for 34 reviewed deaths.
- Undetermined manner accounted for 56 reviewed deaths.
- Natural deaths accounted for less than 5 reviewed deaths.

Cause of Death Update for 2023

The circumstantial information in the following sections is not mutually exclusive of each other. A single death could involve a combination of circumstances listed below each cause of death.

Firearm, Weapon, and Assault-related Deaths

In 63 reviewed deaths, bodily force or a weapon was involved:

- In 57 reviewed weapon and assault cases, the child's death involved firearms.
- In 40 reviewed deaths, handguns were involved..

Motor Vehicle-related Incidents

In 46 reviewed deaths, the child was involved in a fatal vehicle-related incident:

- In 20 reviewed vehicle-related deaths, the child was a passenger.
- In 21 reviewed vehicle-related deaths, the child was the driver of the vehicle.
- In 15 reviewed vehicle-related deaths, speeding contributed to the event that caused death.
- In 8 reviewed vehicle-related deaths, drug use contributed to the event that caused death.
- In 9 reviewed vehicle-related deaths, alcohol use contributed to the event that caused death.
- In 11 reviewed vehicle-related deaths, a vehicle rollover occurred during the fatal event.
- In 24 reviewed vehicle-related deaths, a proper restraint was not in use at the time of the event.

Sleep-related Death and SUID

In 34 reviewed deaths, the child was sleeping or in the sleep environment at the time of death:

- In 39 reviewed sleep-related or SUID deaths, the child was not sleeping on a recommended sleep surface (such as a crib or bassinet).
- In 23 reviewed sleep-related deaths, the child was co-sleeping with an adult on the same sleep surface.

In 55 reviewed deaths, reviewers classified the incidents as SIDS or SUID and in 31 of the deaths, the sleep environment was found to have contributed to death.

Additional External Causes of Death

Drowning

In 20 reviewed deaths, drowning was the cause of death:

- In less than 5 reviewed deaths, the child drowned in a source of open water.
- In 11 reviewed deaths, the child drowned in a pool or hot tub.

Suffocation

In 27 reviewed deaths, asphyxiation was the cause of death:

- Of these asphyxiation deaths, 10 were determined to be sleep-related deaths caused by various hazards in the sleep environment.
- In 12 asphyxiation deaths, the child hung themselves.

Fire, Burns, or Electrocution

In less than 5 reviewed deaths, fires were the cause of death:

- In all of the reviewed deaths, the fire started in either a single-family home or a trailer/mobile home.

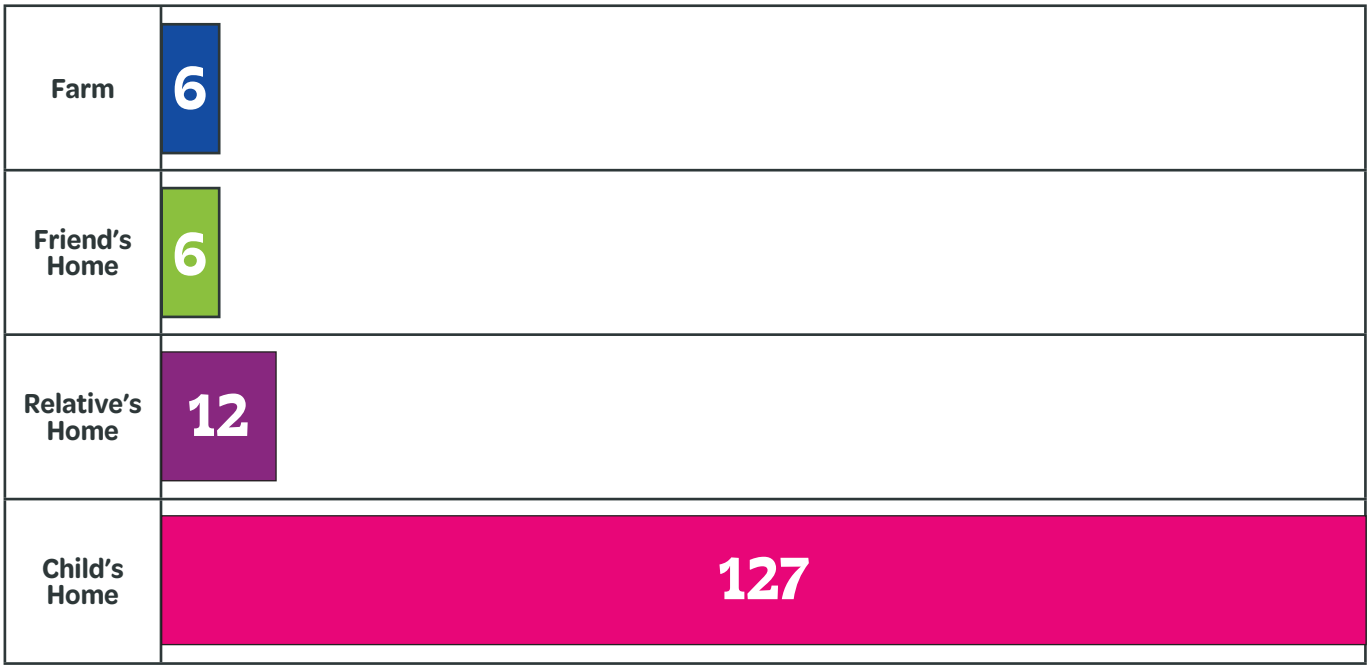
Poisoning or Overdose

In 11 reviewed deaths, poisoning or an overdose were the cause of death:

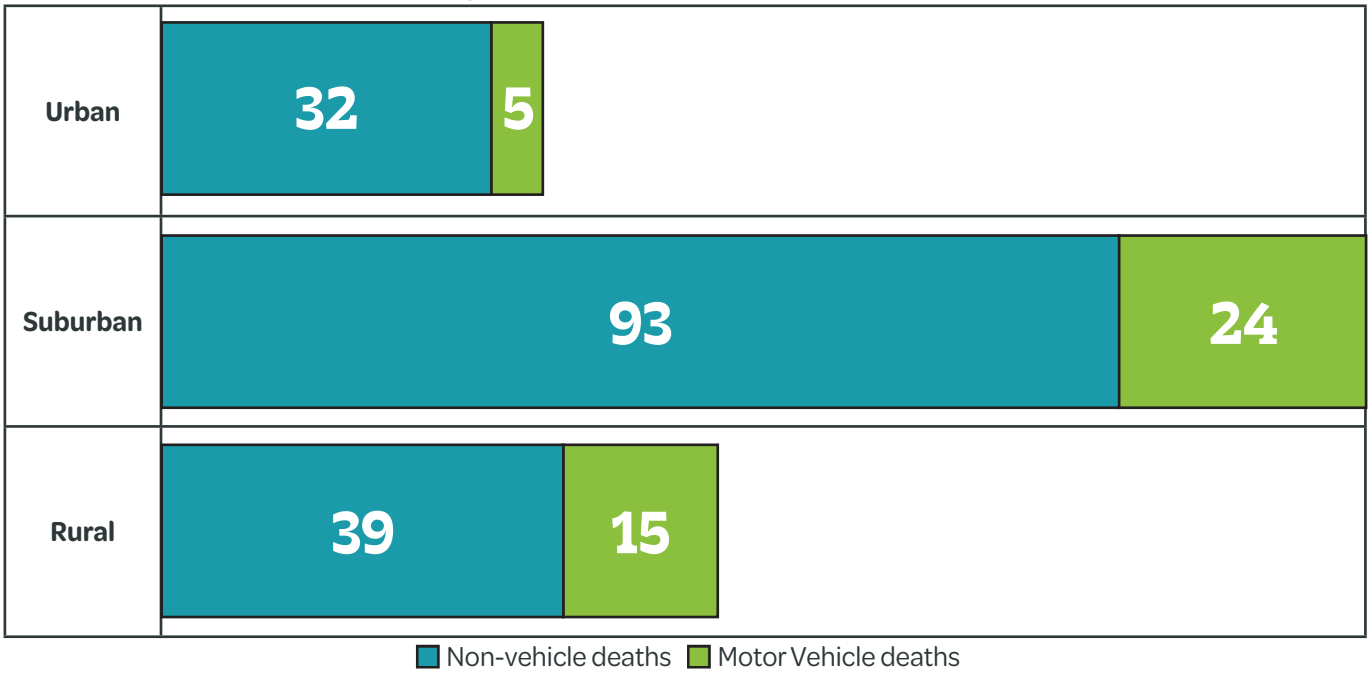
- Of these reviewed deaths, 5 were accidental poisonings.

Location of Death

Location of Child's Death - 2023 Non-vehicle Reviewed Deaths



Location of Child's Death by Geographic Area - 2023



Review Process and Timeline

Review Process

The ACDRS Central Office receives copies of all Alabama death certificates issued for decedents under 18 years of age. ACDRS assesses each certificate to determine if it meets review criteria. Cases that meet the criteria are then assigned to the appropriate LCDRT on a case-by-case basis.

Upon reviewing individual cases, LCDRTs complete the appropriate data collection form and submit the information to the ACDRS Central Office. LCDRTs make recommendations to SCDRT and take appropriate actions within communities to prevent additional deaths.

The ACDRS Central Office collects and analyzes information submitted by LCDRTs to answer requests for specific data and generate reports.

SCDRT meets quarterly to review the statewide data, consider LCDRT recommendations and performance, and conduct general ACDRS business. SCRDT acts on ACDRS issues through educational programs, informational publications, and other similar efforts.

Efforts to Increase Review Rates

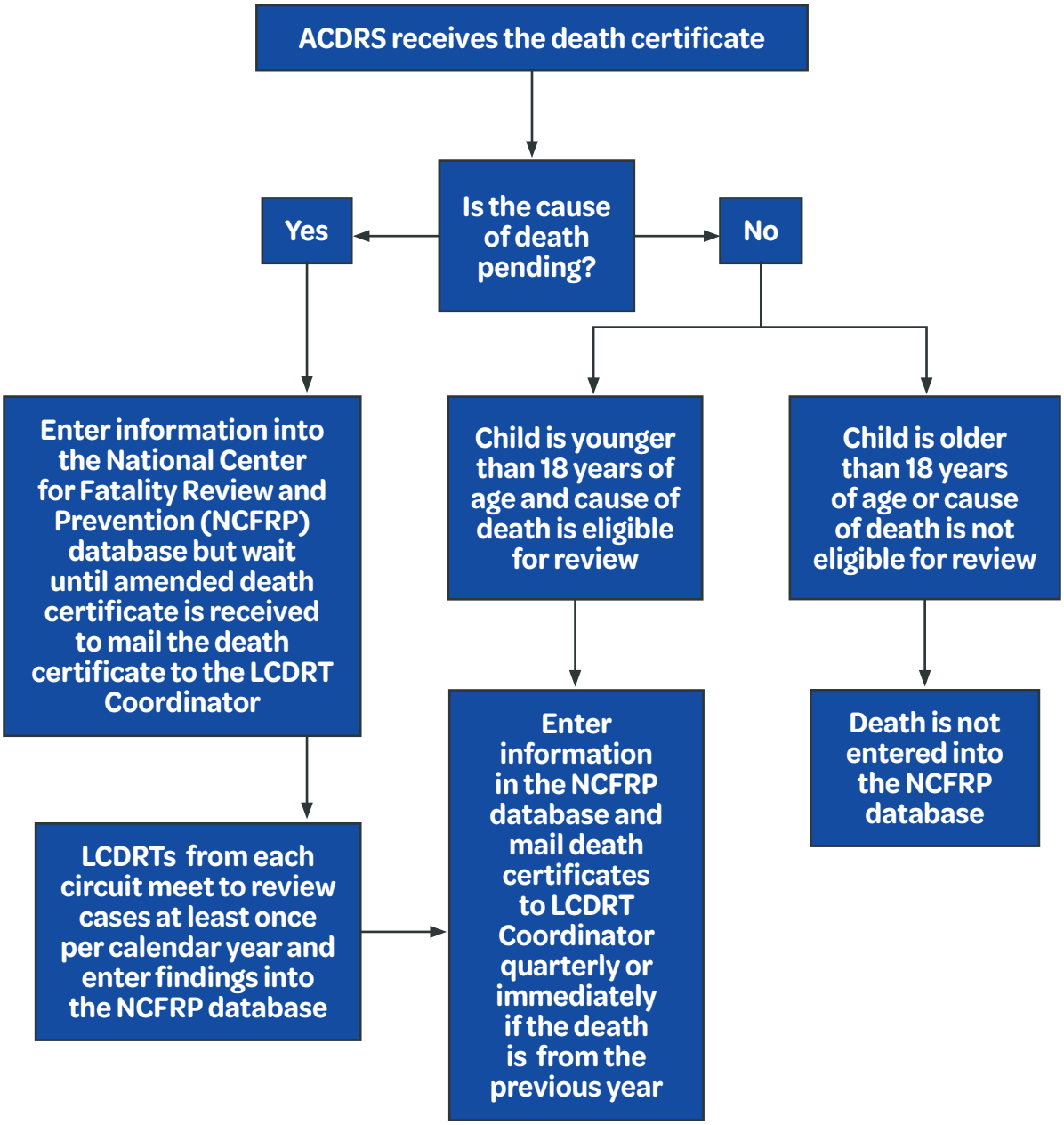
ACDRS Central Office staff:

- Maintain a constant flow of communication with local team coordinators.
- Attend local review team meetings and enter data when needed.
- Develop a tool that makes the review process more streamlined.
- Mail death certificates quarterly and encourage quarterly meetings.

Case Review Criteria

To be considered for ACDRS review, the case must meet the following criteria:

- The deceased must have died in Alabama.
- The deceased must have been born alive. ACDRS does not review fetal deaths.
- The deceased must be less than 18 years of age.
- The cause of death must be non-medical, unexpected, or unexplained.


ACDRS receives the death certificate
Is the cause of death pending?
Yes
No
Enter information into the National Center for Fatality Review and Prevention (NCFRP) database but wait until amended death certificate is received to mail the death certificate to the LCDRT Coordinator
Child is younger than 18 years of age and cause of death is eligible for review
Child is older than 18 years of age or cause of death is not eligible for review
LCDRTs from each circuit meet to review cases at least once per calendar year and enter findings into the NCFRP database
Enter information in the NCFRP database and mail death certificates to LCDRT Coordinator quarterly or immediately if the death is from the previous year
Death is not entered into the NCFRP database

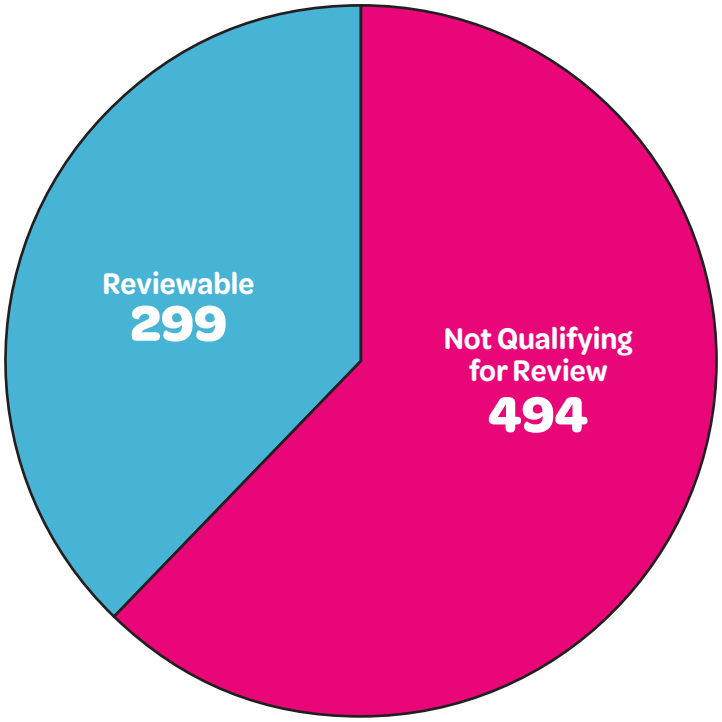
2023 Reviewed Child Deaths

Local Child Death Review Team Success Rates

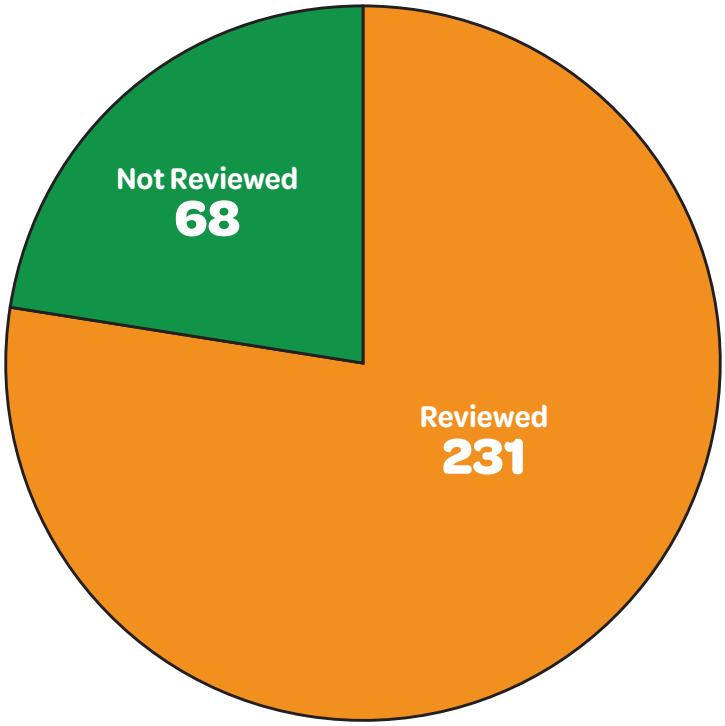
Child Deaths

Based on a preliminary count, there were a total of 793 child deaths in Alabama during 2023* and of these, 299 qualified for review under ACDRS guidelines. Of the qualified deaths, LCDRTs returned 231 completed reviews, or 77.3 percent.

2023 Child Deaths Qualifying for Review



2023 Qualifying Child Deaths Reviewed



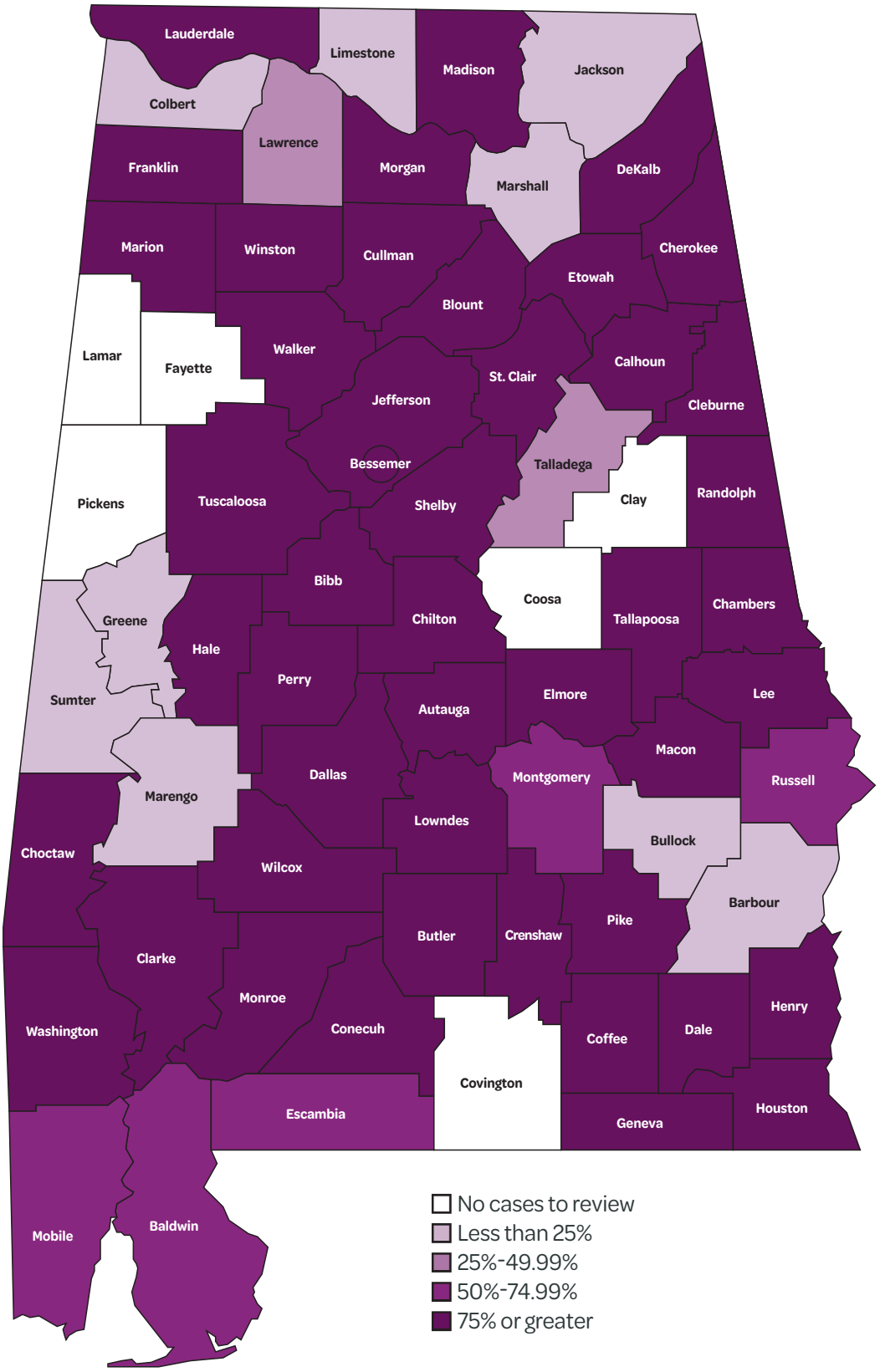
**ADPH Centers for Health Statistics, as of 8/20/2024.*

LCDRT Recognition

The ACDRS goal is for each LCDRT to have a 100 percent case completion rate. The table below recognizes the outstanding efforts of several LCDRTs that achieved this goal. Unfortunately, pending death certificates often prevent LCDRTs from reaching 100 percent completion, as the death is difficult to review without the official cause and manner.

LCDRT Recognition		Completion (%)
Team 1	Choctaw, Clarke, and Washington	100.00
Team 2	Butler, Crenshaw, and Lowndes	100.00
Team 9	Cherokee and DeKalb	100.00
Team 10B	Bessemer	100.00
Team 11	Lauderdale	100.00
Team 12	Coffee and Pike	100.00
Team 16	Etowah	100.00
Team 18	Shelby	100.00
Team 19	Autauga, Chilton, and Elmore	100.00
Team 25	Marion and Winston	100.00
Team 30	St. Clair	100.00
Team 32	Cullman	100.00
Team 33	Dale and Geneva	100.00
Team 34	Franklin	100.00
Team 35	Conecuh and Monroe	100.00
Team 37	Lee	100.00
Team 41	Blount	100.00

2023 Review Completion Rate by County



LCDRT Recognition	
Team 1	Choctaw, Clarke, and Washington
Team 2	Butler, Crenshaw, and Lowndes
Team 3	Barbour and Bullock
Team 4	Bibb, Dallas, Hale, Perry, and Wilcox
Team 5	Chambers, Macon, Tallapoosa, and Randolph
Team 6	Tuscaloosa
Team 7	Calhoun and Cleburne
Team 8	Morgan
Team 9	Cherokee and DeKalb
Team 10A	Jefferson
Team 10B	Bessemer
Team 11	Lauderdale
Team 12	Coffee, Pike
Team 13	Mobile
Team 14	Walker
Team 15	Montgomery
Team 16	Etowah
Team 17	Greene, Marengo, and Sumter
Team 18	Shelby
Team 19	Autauga, Chilton, and Elmore
Team 20	Henry and Houston
Team 21	Escambia
Team 22	Covington
Team 23	Madison
Team 24	Fayette, Lamar, and Pickens
Team 25	Marion and Winston
Team 26	Russell
Team 27	Marshall
Team 28	Baldwin
Team 29	Talladega
Team 30	St. Clair
Team 31	Colbert
Team 32	Cullman
Team 33	Dale and Geneva
Team 34	Franklin
Team 35	Conecuh and Monroe
Team 36	Lawrence
Team 37	Lee
Team 38	Jackson
Team 39	Limestone
Team 40	Clay and Coosa
Team 41	Blount

Alabama Child Death Trend Rates from 2012 to 2022*

Trends in Rate of Death by Manner and Race

As the following graphs indicate, African American and Caucasian children suffer from a disproportionately higher rate of death depending on their manner of death. African American children usually suffer a much higher rate of death from homicide, and Caucasian children generally suffer a higher rate of suicide. Regarding accidental manners of death, African American and Caucasian rates of death vary from year to year.

In the following graphs of race and manner of death, certain races and ethnicities were excluded due to extremely small counts of related deaths, which triggered ACDRS' internal suppression rules. This measure preserves the confidentiality of the data collected by ACDRS.

The rates depicted in the following graphs are calculated by dividing the number of an affected population, such as child deaths, by the total number of children in Alabama and then multiplying by 100,000 to normalize the calculation and allow easy comparisons between different races and ethnicities. The following calculation is used to determine rates.

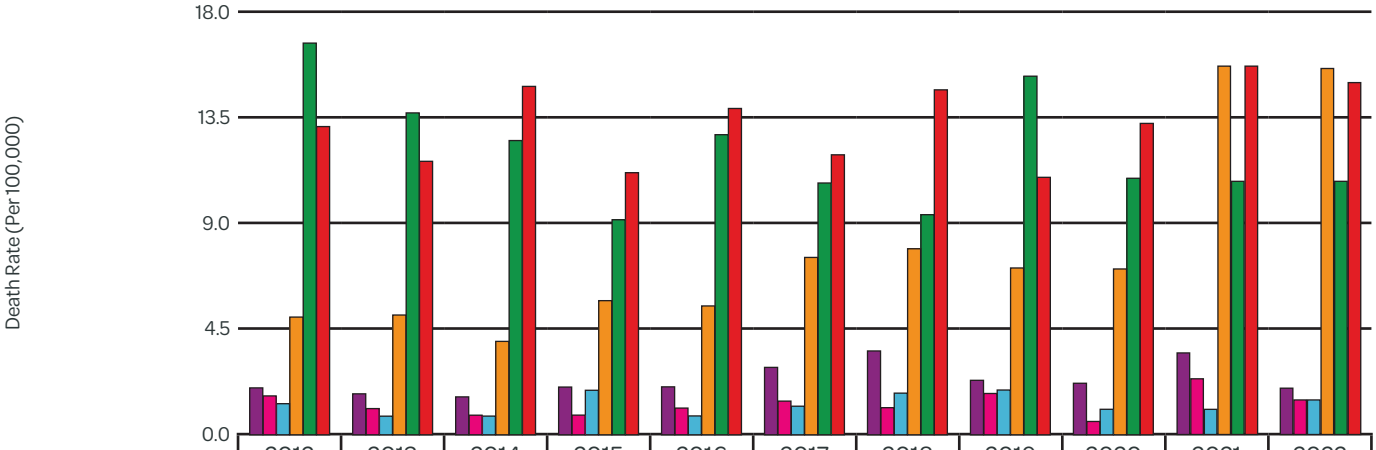
(# Child Deaths / Total # of Children in Alabama) × 100,000 = Rate

An example of a rate calculation:

(45 African American Accidental Deaths / 337,717 African American Children in Alabama*) × 100,000 =
13.3 African American Accidental Child Deaths per 100,000 in 2020

National and statewide population statistics have not been finalized and released for 2023 at the time of this report. As such, rates of death for 2023 will be included in future reports.

Rate of Death by Manner and Race 2012-2022^

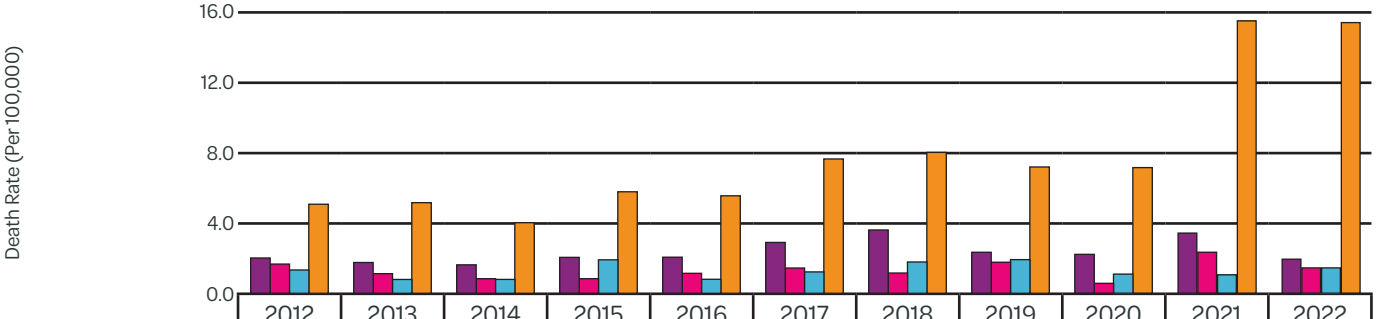


	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
W Suicide Rate	2.0	1.8	1.6	2.1	2.1	2.9	3.6	2.3	2.2	3.5	2
B Suicide Rate	1.7	1.1	0.9	0.9	1.2	1.5	1.2	1.8	0.6	2.4	1.5
W Homicide Rate	1.4	0.8	0.8	1.9	0.8	1.2	1.8	1.9	1.1	1.1	1.5
B Homicide Rate	5.1	5.1	4.0	5.8	5.5	7.6	8.0	7.1	7.1	15.7	15.6
W Accident Rate	16.8	13.8	12.6	9.2	12.8	10.8	9.4	15.3	11.0	10.8	10.8
B Accident Rate	13.2	11.7	14.9	11.2	14.0	12.0	14.8	11.0	13.3	15.7	15

**ADPH Centers for Health Statistics, as of 8/20/2024.*

^CDC WONDER. Causes of death are pulled from death certificates and are based on the following International Classification of Diseases (ICD-10) codes: accidental causes of death from V01 to X59, suicide causes of death from X60 to X84, and homicide causes of death from X85 to Y09.

Rate of Death by Violent Manner and Race 2012-2022^

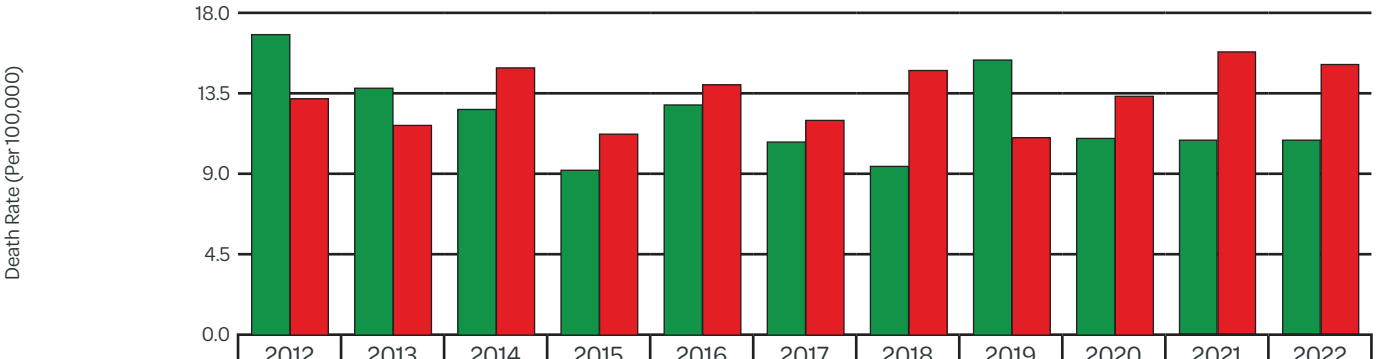


	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
W Suicide Rate	2.0	1.8	1.6	2.1	2.1	2.9	3.6	2.3	2.2	3.5	2
B Suicide Rate	1.7	1.1	0.9	0.9	1.2	1.5	1.2	1.8	0.6	2.4	1.5
W Homicide Rate	1.4	0.8	0.8	1.9	0.8	1.2	1.8	1.9	1.1	1.1	1.5
B Homicide Rate	5.1	5.1	4.0	5.8	5.5	7.6	8.0	7.1	7.1	15.7	15.6

As shown in the preceding graph, African American children suffer a significantly larger rate of death from homicide, and Caucasian children suffer a higher rate of suicide. The rate of homicide in African American children is drastically higher than that of Caucasian children and was increasing for the period between 2014 and 2018. The rate of homicide for African American children showed a decrease in 2019, and a slight further decrease in 2020. However, this trend sharply reversed for African American children during the COVID-19 pandemic, with the rate of homicide for African American children more than doubling. An upward trend for homicides within the population of Caucasian children was present from 2016 to 2019, followed by a decrease in homicide rates observed in 2020. An increase in the homicide rate among Caucasian children was seen in 2022; however, it was not as large as the increase in homicide rates among African American children during 2021 and 2022.

The rate of suicide for Caucasian children increased each year from 2014 to 2018, as shown in the preceding graph. This upward trend among Caucasian suicides stopped in 2019, and a decline in suicide rates was observed through 2020. However, a large increase in the suicide rate among Caucasian children in 2021 was seen during the COVID-19 pandemic before the rate came back down in 2022. Among African American children, suicide rates increased each year from 2016 to 2019 and declined in 2020. However, African American children's rate of suicide increased more than the increase in the suicide rate among Caucasian children in 2021.

Rate of Accidental Death by Race 2012-2022^



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
W Accident Rate	16.8	13.8	12.6	9.2	12.8	10.8	9.4	15.3	11.0	10.8	10.8
B Accident Rate	13.2	11.7	14.9	11.2	14.0	12.0	14.8	11.0	13.3	15.7	15

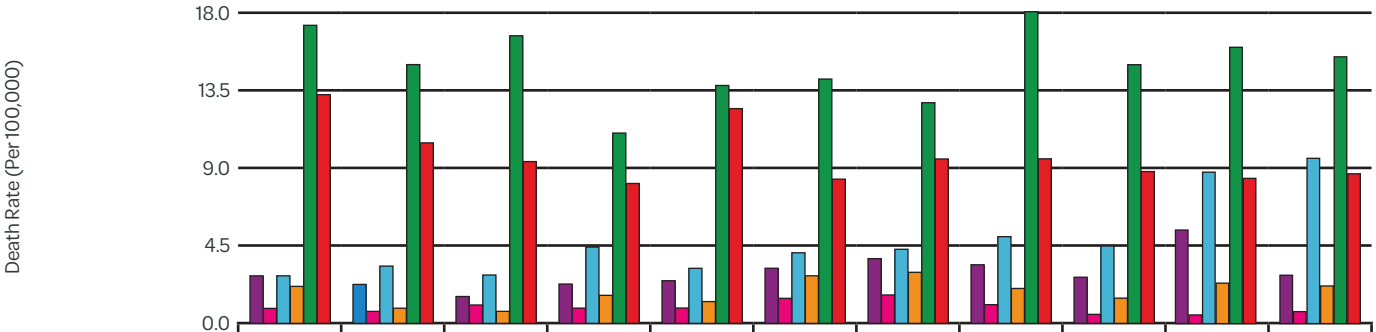
As the preceding graph indicates, African American and Caucasian children often suffer from differing rates of accidental death depending on the year. Accidental death rates among children typically surpass rates of death for violent manners. However, in 2021, the accident rate for African American children was equal to the homicide rate, and in 2022, the homicide rate was higher than the accident rate. Though rates based on race fluctuate from year to year, COVID-19 had an impact on the rate of death of both Caucasian and African American children during 2021 and 2022.

^CDC WONDER. Causes of death are pulled from death certificates and are based on the following International Classification of Diseases (ICD-10) codes: accidental causes of death from V01 to X59, suicide causes of death from X60 to X84, and homicide causes of death from X85 to Y09.

Trends in Rate of Death by Manner and Gender

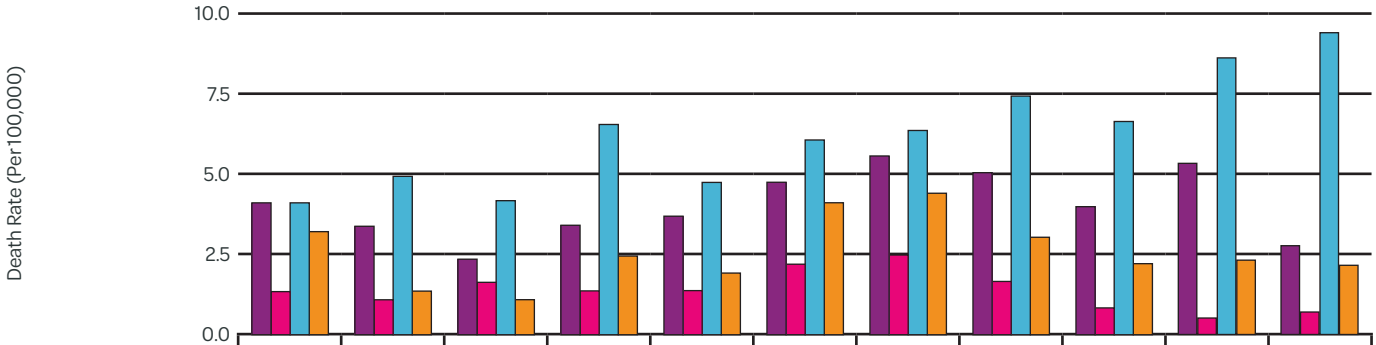
Male children have historically had a higher rate of death for both accidental and violent manners than female children. This higher rate of death persists through all 11 years included in the three following graphs.

Rate of Death by Manner and Gender 2012-2022^



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
M Suicide Rate	2.8	2.3	1.6	2.3	2.5	3.2	3.8	3.4	2.7	5.4	2.8
F Suicide Rate	0.9	0.7	1.1	0.9	0.9	1.5	1.7	1.1	0.6	0.5	0.7
M Homicide Rate	2.8	3.4	2.8	4.4	3.2	4.1	4.3	5.1	4.5	8.7	9.5
F Homicide Rate	2.2	0.9	0.7	1.7	1.3	2.8	3.0	2.1	1.5	2.4	2.2
M Accident Rate	17.3	15.0	16.7	11.0	13.8	14.2	12.8	18.0	15.0	15.9	15.3
F Accident Rate	13.3	10.5	9.4	8.1	12.4	8.4	9.5	9.5	8.8	8.4	8.6

Rate of Death by Violent Manner and Gender 2012-2022^

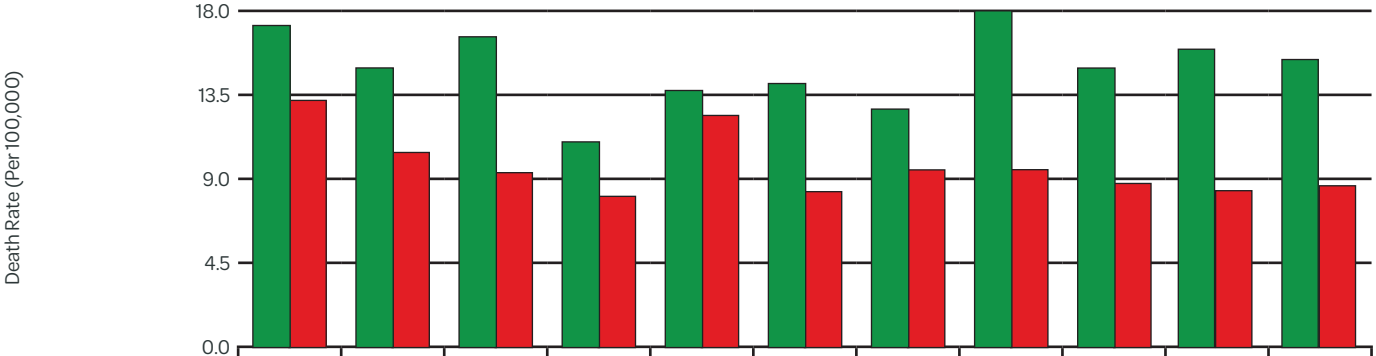


	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
M Suicide Rate	2.8	2.3	1.6	2.3	2.5	3.2	3.8	3.4	2.7	5.4	2.8
F Suicide Rate	0.9	0.7	1.1	0.9	0.9	1.5	1.7	1.1	0.6	0.5	0.7
M Homicide Rate	2.8	3.4	2.8	4.4	3.2	4.1	4.3	5.1	4.5	8.7	9.5
F Homicide Rate	2.2	0.9	0.7	1.7	1.3	2.8	3.0	2.1	1.5	2.4	2.2

As shown in the preceding graph, male children typically suffer a significantly higher rate of death from homicide and suicide than female children. From 2014 to 2018, the rate of suicide for male children increased annually. Furthermore, between 2016 and 2018, the difference between the rates of suicide and homicide for male children significantly narrowed. The upward trend in suicide rates among male children is also present among female children from 2015 to 2018. In 2021 and 2022, the homicide rates for males increased significantly, nearly doubling the 2020 rate in 2021, and more than doubling the 2020 rate in 2022. Male children's rate of suicide also doubled from 2020 to 2021 during the COVID-19 pandemic, though the rate dropped back to a similar rate from 2020 in 2022. For female children, suicide rates and homicide rates stayed relatively similar with no drastic changes as seen in male children.

^CDC WONDER. Causes of death are pulled from death certificates and are based on the following International Classification of Diseases (ICD-10) codes: accidental causes of death from V01 to X59, suicide causes of death from X60 to X84, and homicide causes of death from X85 to Y09.

Rate of Death by Manner and Gender 2012-2022^



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
M Accident Rate	17.3	15.0	16.7	11.0	13.8	14.2	12.8	18.0	15.0	15.9	15.3
F Accident Rate	13.3	10.5	9.4	8.1	12.4	8.4	9.5	9.5	8.8	8.4	8.6

As shown in the preceding graph, male children have historically suffered from a higher rate of accidental death than female children. No large changes in rate of accidental child death were seen in 2021 and 2022.

Manner of Death Summary – 2023 Reviewed Deaths

Manner of death is a determination of the broad classification of death and is typically made by a coroner, medical examiner, police, or other official. The distinction between manner and cause of death is that cause is a specific disease, injury, or other mechanism of death, whereas manner is primarily a legal determination.

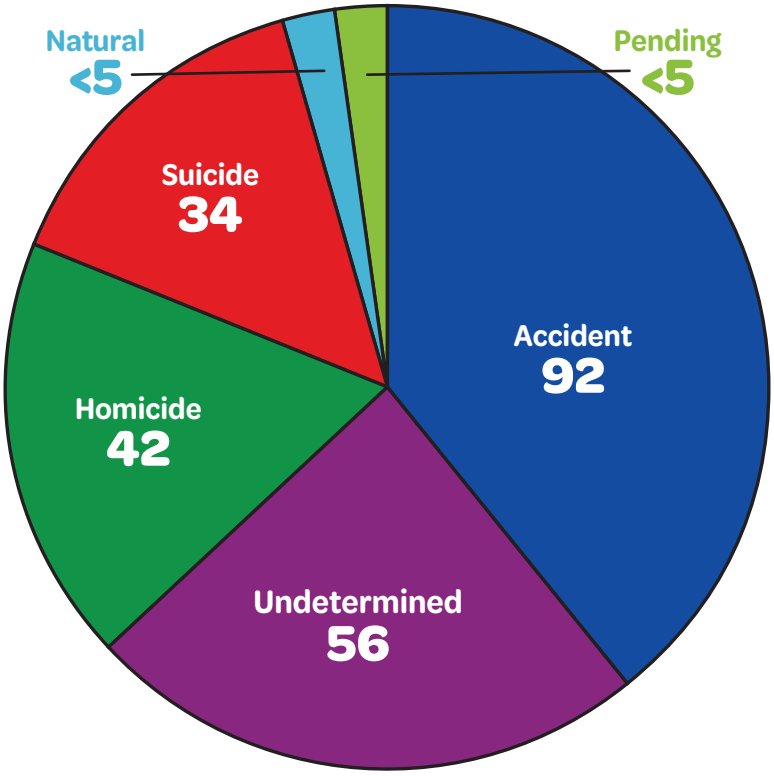
For the purposes of this report, manner of death refers to 1 of the 6 general categories of death listed on the Alabama Death Certificate. The six categories are:

1. Pending Investigation: a death that is still under review by coroners or medical examiners.
2. Accident: a death resulting from a non-intentional injury.
3. Homicide: a death resulting from an intentional act committed by another person to cause fear, harm, or death.
4. Suicide: a death that results from an intentional, self-inflicted act committed to self-harm or which causes death.
5. Undetermined Circumstances (Undetermined): a death in which, after all available information has been considered, information pointing to one manner of death is no more compelling than one or more competing manners of death.
6. Natural Causes: death not due to external means (i.e., a death that occurred as the expected outcome of a disease, birth defect, or congenital anomaly). In other words, death results from natural or medical causes, such as illness or disease. Normally, ACDRS does not review such cases. However, reviewed cases in which the cause of death is initially classified as pending or unknown are commonly discovered upon review to have occurred by natural causes.

As information was collected, unclassified manners of death not currently marked as an official manner are included as "other" manners of death. This manner of death may contain natural deaths that do not generally qualify for inclusion in ACDRS as they have not been classified or reviewed at the time of this report.

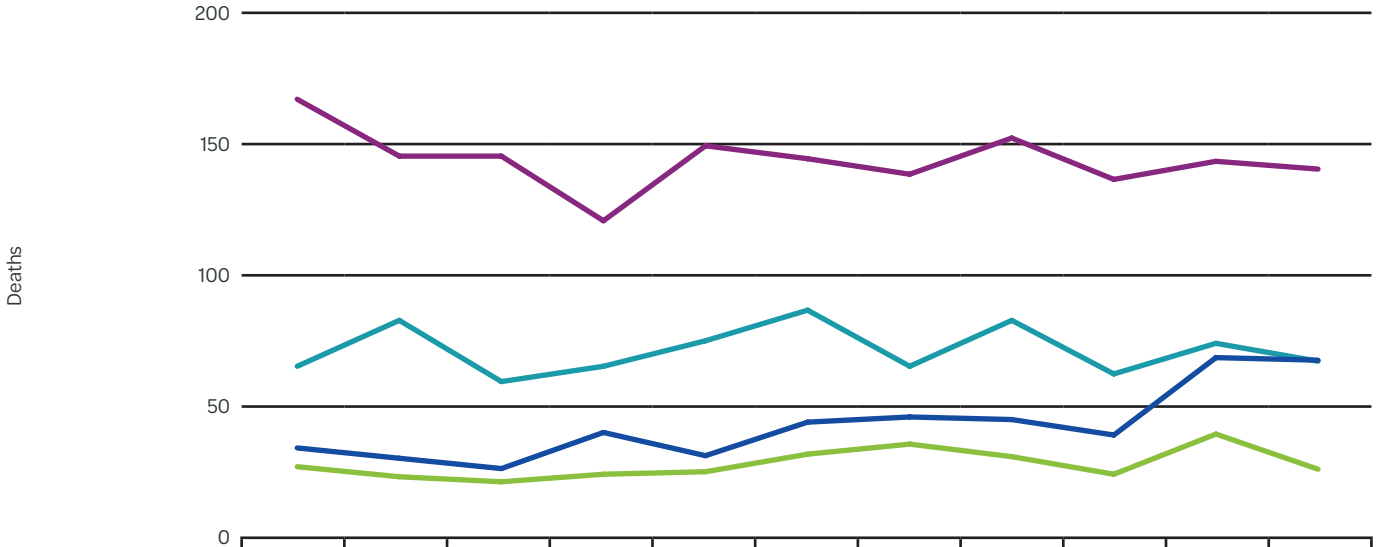
^CDC WONDER. Causes of death are pulled from death certificates and are based on the following International Classification of Diseases (ICD-10) codes: accidental causes of death from V01 to X59, suicide causes of death from X60 to X84, and homicide causes of death from X85 to Y09.

Manner of Death for Reviewed Child Deaths - 2023



The following graph shows the trend of Alabama child deaths for the listed manners of death from 2012 to 2022. National and statewide population statistics have not been finalized and released for 2023 at the time of this report. As such, rates of death for 2023 will be included in future reports.

Major Child Death Manners 2012-2022^



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Suicide	21	17	15	18	19	26	30	25	18	34	20
Homicide	28	24	20	34	25	38	40	39	33	63	62
All Accidental	161	139	139	114	143	138	132	146	130	137	134
All Undetermined	59	77	53	59	69	81	59	77	56	68	61

^CDC WONDER. Causes of death are pulled from death certificates and are based on the following ICD-10 codes: suicide causes of death from X60 to X84, homicide causes of death from X85 to Y09, accidental causes of death from V01 to X59, and undetermined causes of death from R99 and Y10-Y34. Data for 2023 is from ACDRS.

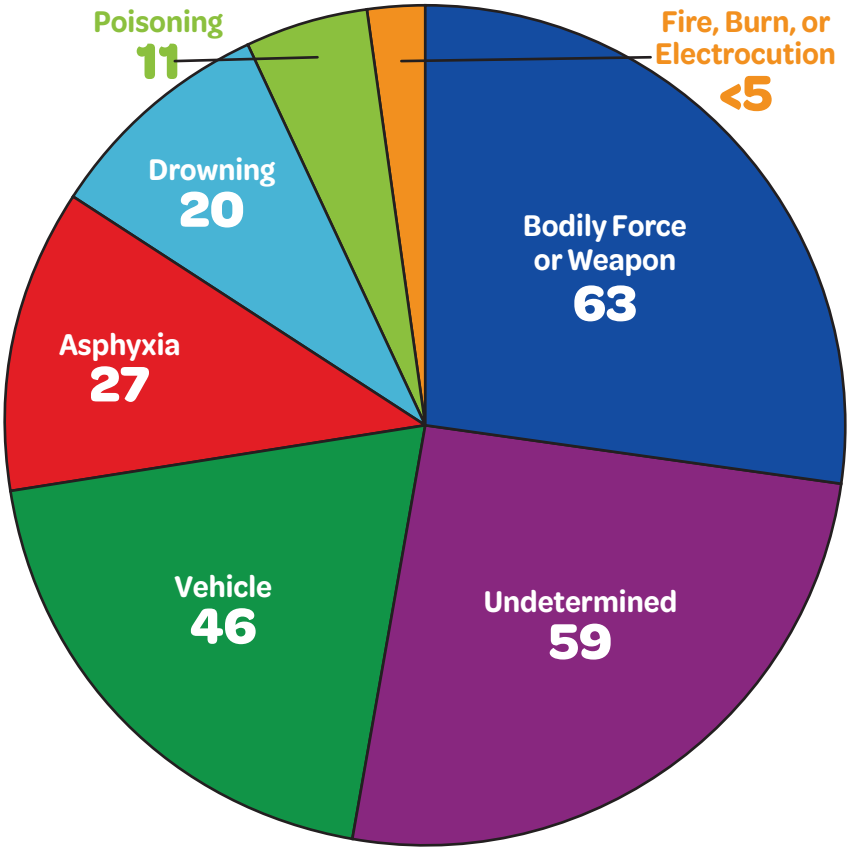
Cause of Death Summary – 2023 Reviewed Deaths

For the purpose of this report, the term "cause of death" refers to the disease, injury, or mechanism of action initiating the sequence of events that leads directly to death, or the circumstances of the accident or violence that produced the fatal injury.

In 2023, the three most frequently reviewed known causes of death due to injury were:

1. Bodily force or Weapon-related causes (63 deaths).
2. Undetermined - Sleep-related and SUID causes (58 deaths).
3. Vehicle-related causes (46 deaths).

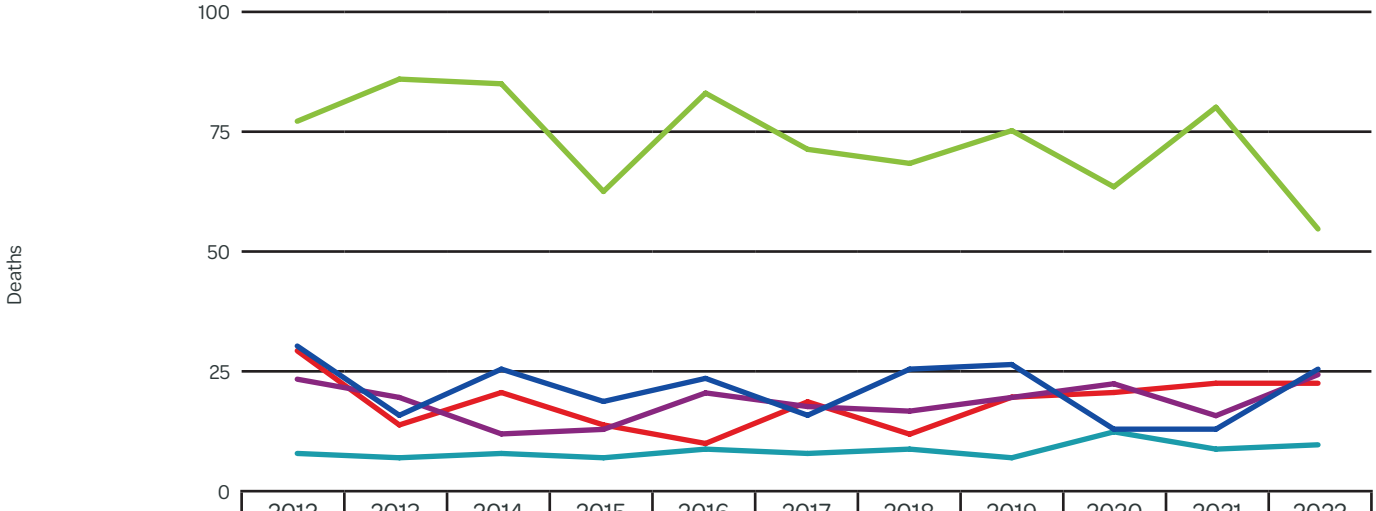
Cause of Death for Reviewed Child Deaths - 2023



Sleep-related causes of death are included in the pie charts above as a part of the undetermined cause of death.

The following graph shows the trend of Alabama child deaths for the listed causes of death over the period from 2012 to 2022. National and statewide population statistics have not been finalized and released for 2023 at the time of this report.

Accidental Child Deaths - 2012-2022^



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Vehicle	77	86	85	62	83	71	68	75	63	80	54
Drowning	30	15	25	18	23	15	25	26	12	12	25
Asphyxia	23	19	11	12	20	17	16	19	22	15	24
Fire/Smoke*	7	6	7	6	8	7	8	6	12	8	9
Other Accidental	29	13	20	13	9	18	11	19	20	22	22

Review of Common Causes of Child Death in Alabama

A. Bodily Force and Weapon-related Deaths

This category includes deaths due to physical force caused by another person and weapon related injuries, either accidentally or intentionally inflicted. Bodily force encompasses all physical force caused by another person against a child and includes, but is not limited to, hitting, kicking, throwing, dropping, or pushing. Types of weapons include, but are not limited to, firearms, sharp or blunt instruments, and explosive devices. The use of bodily force or weapons in this category may be determined to be self-injury; the result of violence, such as gang-related activity; the result of aggressive behavior, such as bullying or a heated argument; or accidental, as in cases of a child playing with a weapon or showing it to friends.

During 2023, there were 63 reviewed deaths caused by bodily force or weapon-related incidents among children in Alabama.

Cause of Death Details:

- In 57 reviewed bodily force or weapon-related cases, the child's death involved a firearm.
- In 40 of reviewed deaths, a handgun was involved.
- In 7 reviewed deaths, a long gun, such as a shotgun, hunting rifle, or assault rifle, was involved.
- In less than 5 reviewed deaths, bodily force was the cause of death.

Circumstances of Death Details:

- In 25 reviewed deaths, the child caused injury to themselves with a firearm. These deaths include both accidental and intentional harm.
- In 11 reviewed deaths, the firearm causing the child's injury was used in the commission of a crime.
- In 6 reviewed deaths, the child was injured in a drive-by shooting.

^CDC WONDER. Causes of death are based on the following ICD-10 codes: vehicle cause of death from V01 to V89, drowning causes of death from W65 to W74, asphyxia causes of death from W75 to W84, fire and smoke-related causes of death from X00 to X09, and other accidental causes from W00 to W64, W85 to W99, and X10 to X59.

- In 5 reviewed deaths, the child was injured in an act of child abuse.
- In 6 reviewed deaths, the child was playing with a firearm when the injury occurred.

Storage and Ownership of the Firearm Causing Injury:

- In 14 reviewed deaths, the firearm was loaded when the child obtained possession of the weapon.
- In less than 5 reviewed deaths, the firearm was locked up, but the child managed to gain access to it.
- In 17 reviewed deaths, the firearm was not kept locked away from the child.
- In 16 reviewed deaths, the owner of the firearm was a caregiver, a parent, or a direct family member of the child who died.
- In 7 reviewed deaths, the owner of the firearm was an extended family member of the child who died.
- In 5 reviewed deaths, the owner of the firearm was a stranger to the child.

Homicides and Suicides

During 2023, there were 42 reviewed homicides:

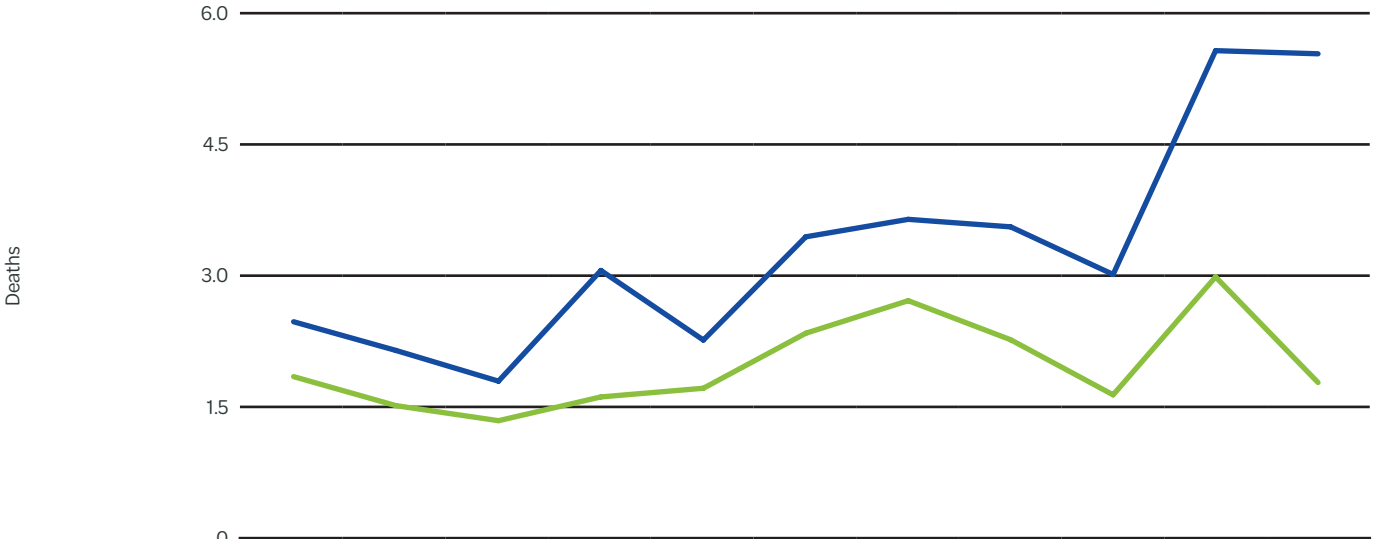
- In 28 reviewed deaths, a firearm was used, and of those deaths, 17 involved the use of a handgun.

During 2023, there were 34 reviewed suicides:

- In 21 reviewed suicides among children, a firearm was involved.
  - In 15 reviewed deaths a handgun was involved, and in 5 reviewed deaths a long gun was involved.
  - In 11 reviewed deaths, the firearm was owned by the child's caregiver.
  - In 6 of these deaths, the firearm was not kept locked away from the child.
- In 13 reviewed suicides, the child died from asphyxiation.
  - In 8 of these asphyxiation deaths, the child hung themselves.

As shown in the following graph, the homicide rate among children declined from 2018 to 2020. However, in 2021, a significant spike in homicide and suicide rates occurred and the rates remained high in 2022. The suicide rate increased in 2021 but decreased to a level similar to 2020's rate in 2022. National and statewide population statistics have not been finalized and released for 2023 at the time of this report.

Rate of Violent Deaths Among Children - 2012-2022^



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Rate - Suicide	1.87	1.53	1.35	1.63	1.73	2.37	2.75	2.30	1.66	3.03	1.80
Rate - Homicide	2.49	2.16	1.81	3.08	2.28	3.47	3.67	3.58	3.04	5.61	5.58

^Causes of death are pulled from death certificates and are based on the following ICD-10 codes: suicide causes of death from X60 to X84, and homicide causes of death from X85 to Y09. Population counts gathered from CDC WONDER - https://wonder.cdc.gov/ucd-icd10.

B. SUID and Sleep-related Deaths

Sleep-related and SUID are deaths that can be attributed to specific causes or factors in the sleep environment after investigation and are distinct from Sudden Infant Deaths (SIDs), which cannot be attributed to any established cause or contributing factor. These deaths typically occur in children under 12 months of age, just as in SIDs, and are commonly classified as undetermined manners of death, due to the difficulty of establishing convincing contexts of injury for such deaths. These deaths may be attributed to improper sleep surfaces, co-sleeping, toys or other objects in the sleep environment, and other hazards that affect the child's health.

SUID and Sleep-related Deaths

For 2023, there were 34 reviewed sleep-related deaths and 55 reviewed SUIDs (31 of which sleep environment contributed).

Sleep-related deaths and SUIDs are not mutually exclusive or mutually inclusive in the following counts, and there is significant overlap. For example, the 31 SUIDs that the sleep environment contributed to are included in the 34 sleep-related death count. Furthermore, many SUIDs are determined to have sleep related connections without a specific cause of death. However, not all SUIDs are sleep related deaths and not all sleep-related deaths are SUIDs.

Manner of Death - Sleep-related:

- In 25 reviewed deaths, the manner of death was undetermined.
- In 6 reviewed deaths, the manner of death was accidental.
- In less than 5 reviewed deaths, the manner was natural or still pending.

Cause of Death - Sleep-related:

- In 7 reviewed deaths, the cause of death was unintentional asphyxia.
- For the remaining 27 reviewed deaths, the cause of death was undetermined or unknown.

SUID and Sleep-related Deaths - Sleep Surface:

- In 7 sleep-related SUIDs, the child was sleeping on a recommended sleep surface (such as a crib or bassinet).
- In 34 reviewed sleep-related SUIDs and less than 5 sleep-related deaths, the child was sleeping on an unrecommended sleep surface (such as an adult bed or couch).
- In 23 reviewed sleep-related SUIDs and less than 5 sleep-related deaths, the child was sleeping on an adult bed.

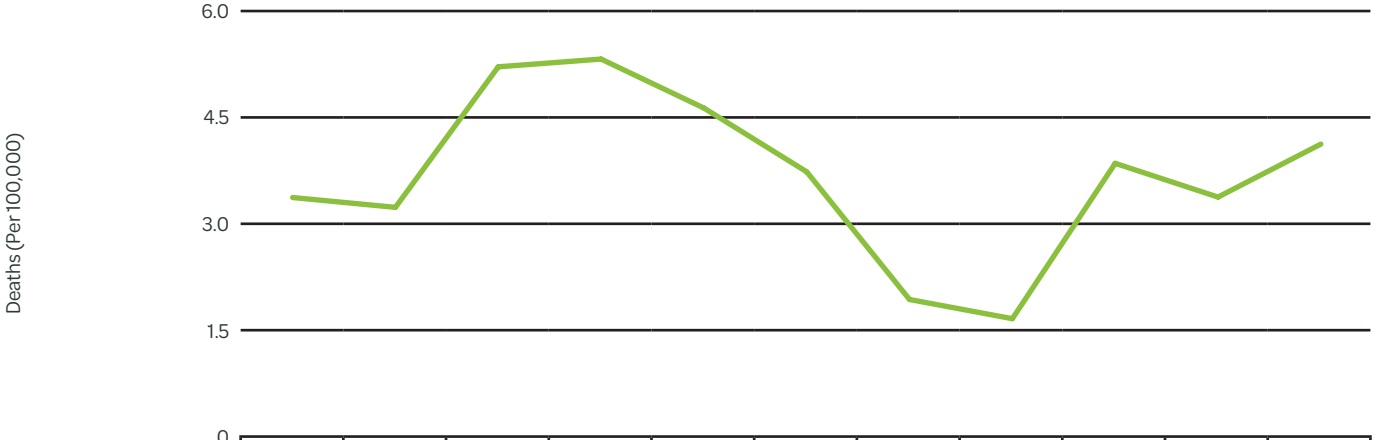
Sleep-related Deaths - Co-Sleeping:

- In 19 reviewed sleep-related SUIDs and in less than 5 sleep-related deaths, the child was co-sleeping with only an adult(s) on the same sleep surface.

ACDRS has strived to increase the proper use of SIDs and SUIDs classifications and has worked with coroners, medical examiners, law enforcement, and others within Alabama to educate people about classifying death in this use. Only through the proper classification of these types of death can an accurate view of the burden that SIDs and SUIDs place on Alabama children be measured and addressed.

As shown in the following graph, the rate of SIDs and SUIDs is variable, which could be due to difficulties in defining a cause of child death that is characterized by being sudden, unexpected, and to a certain degree unexplainable. Some stability has occurred in the rate of SIDS and SUID, specifically between 2020 and 2022, with rates between 3.5 and 4.2 per 100,000. This could be a result of SUIDI training conducted with death investigation organizations around Alabama, and other attempts to standardize this cause of death in the state. National and statewide population statistics have not been finalized and released for 2023 at the time of this report.

Rate of SIDS/SUID - 2012 to 2022^



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Rate of SIDS/SUID	3.5	3.3	5.3	5.4	4.7	3.8	2.0	1.7	4.0	3.5	4.2

C. Vehicle-related Deaths

This category includes all deaths occurring in children who are drivers, passengers, pedestrians, or occupants of all forms of vehicles, including bicycles, motorcycles, all-terrain vehicles (ATVs), trains, etc. The manner of death is usually accidental but can also include suicides or homicides. Some of the following circumstances may not be mutually exclusive and may be used to describe a single vehicular fatality.

Vehicle-related Deaths

For 2023, there were 46 reviewed deaths from motor vehicle-related incidents.

Child Position in or Around the Vehicle:

- In 20 reviewed deaths, the child was a passenger.
  - In 7 reviewed deaths where the child was the passenger, the child was sitting in the front seat of the vehicle.
  - In 6 reviewed deaths where the child was the passenger, the child's biological parent was driving during the fatal event.
- In 21 reviewed deaths, the child was the driver of the vehicle.
- In 5 reviewed deaths, the child was a pedestrian or riding a bicycle at the time of the event.

The majority of motor vehicle-related deaths occurred in passenger cars, with trucks and sport utility vehicle (SUVs) incidents resulting in fewer child deaths. Passenger car incidents resulted in 19 child deaths, followed by 9 deaths in trucks, and 6 deaths occurring in SUVs.

Circumstances Contributing to the Vehicle-related Incident

Driver Behavior:

- In 15 reviewed deaths, speeding was reported as a contributing factor.
- In 8 reviewed vehicle-related deaths, drug use contributed to the event that caused death.
- In 9 reviewed vehicle-related deaths, alcohol use contributed to the event that caused death.
- In 9 reviewed deaths, reckless driving was reported as a contributing factor.
- In 7 reviewed deaths, driver inexperience was reported as a contributing factor.

Fatal Event and Driving Conditions:

- In 11 reviewed deaths, the vehicle rolled over during the fatal event.
- In less than 5 reviewed deaths, weather or road hazards contributed to the fatal event.
- In 5 reviewed deaths, unsafe driving, distracted driving, or driver inexperience contributed to the fatal event.

^Causes of death are pulled from death certificates and are based on the following ICD-10 codes: SIDS, SUID, and other ill-defined causes of death R95. Population counts gathered from CDC WONDER - https://wonder.cdc.gov/ucd-icd10.

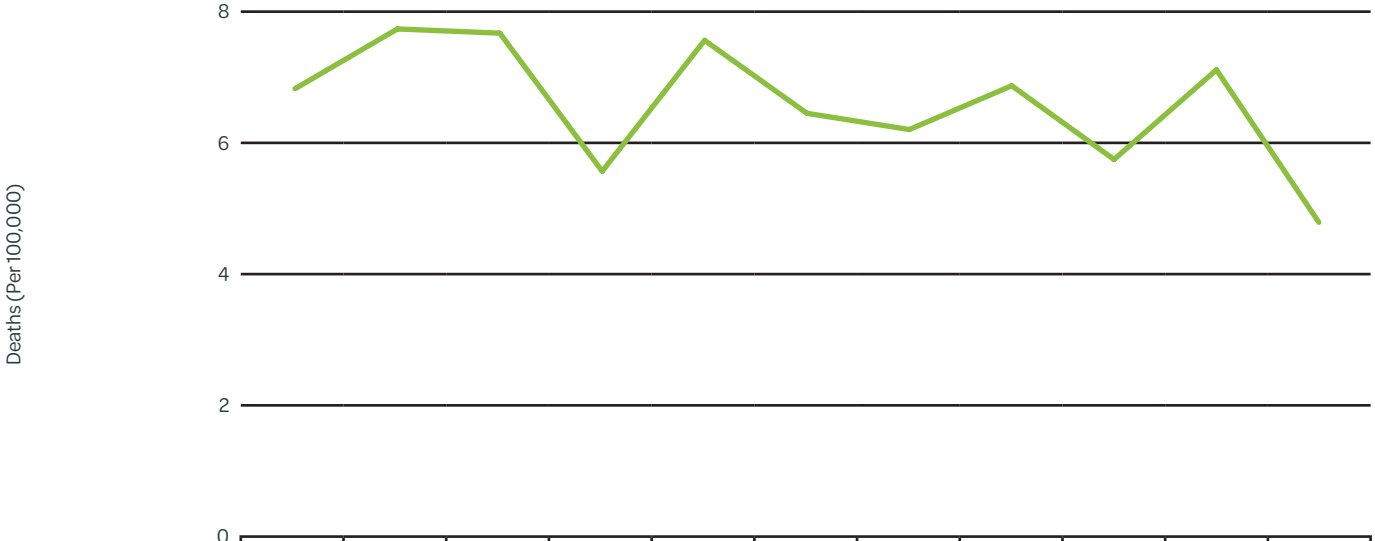
Seatbelt and Other Restraint Use:

- In 9 reviewed vehicle-related deaths, a proper restraint was in use at the time of the event.
- Of the 9 restraints in use during the event, 7 were shoulder belts.
- In 24 reviewed vehicle-related deaths, a proper restraint was not in use at the time of the event.

For the remaining reviewed deaths, source documents did not report restraint use for the child(ren) involved.

As shown in the following graph, the rate of child death from vehicle-related incidents has been on a downward trend since 2012. National and statewide population statistics have not been finalized and released for 2023 at the time of this report.

Rate of Ground Vehicle-related Child Death - 2012 to 2022^



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Vehicle	6.85	7.74	7.67	5.62	7.57	6.48	6.24	6.89	5.79	7.13	4.86

^Causes of death are pulled from death certificates and are based on the following ICD-10 codes: vehicle-related causes of death from V01 to V89. Population counts gathered from CDC WONDER - https://wonder.cdc.gov/ucd-icd10.

State Child Death Review Team Members

Scott Harris, M.D., M.P.H.
State Health Officer/Chair
Alabama Department of Public Health

Gregory Davis, M.D.
Coroner/Medical Examiner
Jefferson County

Sheriff Jimmy Lambert
Alabama Sheriff's Association

Angelo Della Manna
Director
Alabama Department of Forensic Sciences

Nancy Buckner
Commissioner
Alabama Department of Human Resources

Kimberly Boswell
Commissioner
Alabama Department of Mental Health

Colonel Jonathan Archer
Director
Alabama Department of Public Safety

Marsha Raulerson, M.D., FAAP
Alabama Academy of Pediatrics Appointee

Candice Dye, M.D.
Alabama Department of Public Health Appointee

Max Capouano, M.D
Alabama Academy of Family Physicians Appointee

David Rydzewski, M.D.
Alabama Department of Forensic Sciences Appointee

Bruce Wilson
Alabama Coroners Association Appointee

Lynn Bius
Alabama Network of Children's Advocacy Centers Appointee

Sheriff Bill Franklin
Alabama Sheriff's Association Appointee

Bob Wilters
Alabama District Attorney's Association Appointee

Shaundra Blakemore, M.D.
Pediatric Emergency Medicine Specialist
Medical Association of the State of Alabama Appointee

Chief Justin Lovvorn
Alabama Association of Chiefs of Police Appointee

Representative Paul Lee
Chair
House Health Committee

Senator Jim McClendon
Chair
Senate Health Committee

LaBeatrix Tatum
Clergy
Governor Appointee

Crys Fuller
Private Citizen
Governor Appointee

David Peeples
Private Citizen
Governor Appointee

Kristin Byrd
Private Citizen
Governor Appointee

Dr. Jennifer McCain
Private Citizen
Governor Appointee

Tonita Phipps
Private Citizen
Governor Appointee

Tim Davis
Private Citizen
Governor Appointee

Bob Hinds
Private Citizen
Governor Appointee