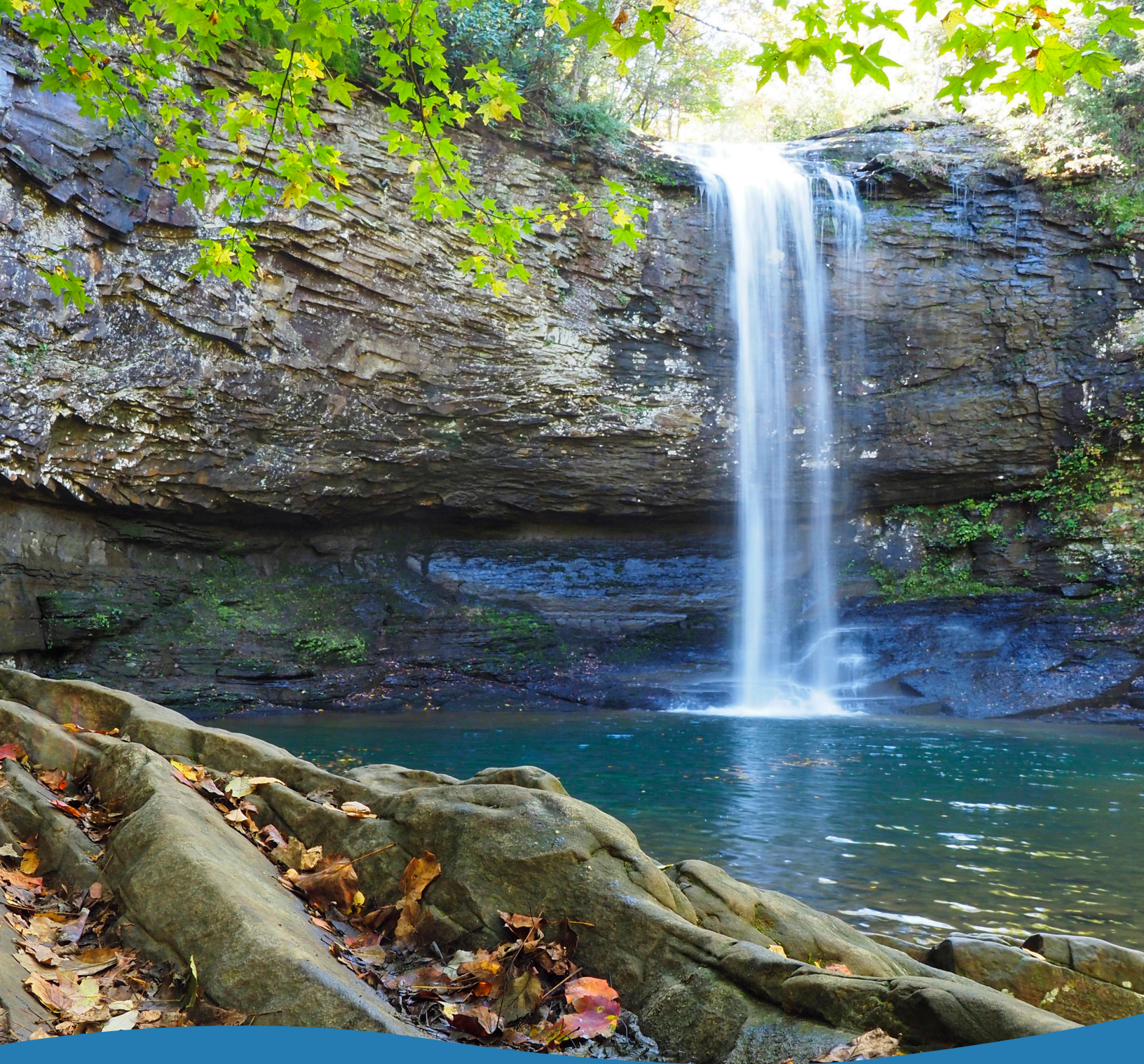




Georgia Drowning Data Report



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August 2026

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Introduction

Georgia is among the 10 most populous jurisdictions in the United States (U.S.). As of 2023, more than 11 million people resided in Georgia. Among these residents, 49% are male and 51% are female.¹ The median income is slightly below the national median income of the US (\$74.6k and \$77.7k, respectively).² The population age distribution varies slightly when compared to the US: the largest age group in the US is people aged 30 to 34; however, in Georgia, the largest age group is teenagers aged 15–19 years.^{2,3}

Georgia residents have significant exposure to both natural and man-made bodies of water. According to the U.S. Environmental Protection Agency, Georgia contains approximately 70,150 miles of rivers and streams, including 44,056 miles of perennial streams, 23,906 miles of intermittent streams, and 603 miles of ditches and canals.⁴ Georgia also boasts 4.8 million acres of wetlands, 425,382 acres of public lakes and reservoirs, 854 square miles of estuaries, and 100 miles of coastline.^{4,5} These water resources provide potable water and create abundant recreational opportunities for activities such as swimming, fishing, and boating—enjoyed by residents and visitors alike. While natural water bodies are well-documented, there is a notable absence of formal enumeration of private swimming pools. Estimates from private organizations suggest there are approximately 190,000 privately owned pools in Georgia.⁶

The abundance of inland and coastal waterways creates both economic and recreational opportunities. Between 2013 and 2022, Georgia averaged 10 million pounds of seafood harvested annually, with an average yearly value of \$18.7 million.⁷ Recreational exposure is also significant; Georgia's 60 state parks and historic sites offer paddling, swimming, boating, fishing, and diving opportunities.^{5,8}

Georgia's diverse aquatic environments present unique drowning hazards. The coastline, including Savannah, Tybee Island, and the Golden Isles, attracts significant tourism and maritime activity, where rip currents, shifting tides, and strong coastal currents pose considerable risks to swimmers and

boaters. Major rivers such as the Chattahoochee, Savannah, and Altamaha are popular for recreation but have hazards such as swift currents, dams, and fluctuating water levels that increase drowning risk. Georgia's large reservoirs, including Lake Lanier and Lake Allatoona, are major destinations for boating and swimming. However, deep waters, sudden drop-offs, and heavy boat traffic contribute to an increased risk of drowning, particularly in Lake Lanier. Coastal areas are vulnerable to hurricanes and storm surges, while inland communities face risks from flash flooding. These events can create dangerous water conditions, which may lead to drowning. This environmental landscape underscores the need for focused drowning prevention efforts across the state.

Drowning prevention landscape

Drowning prevention efforts in Georgia are diverse but fragmented. No single state entity is responsible for collecting, maintaining, and utilizing drowning-related data. Several initiatives and legislative measures involve multiple agencies, including the Department of Natural Resources (DNR), Department of Public Health (DPH), Child Fatality Review Unit within the Georgia Bureau of Investigation (GBI), and the Division of Family and Children Services (DFCS). While Child Death Review Teams collect critical information on drowning deaths, their scope is limited to individuals under 18, and not all eligible deaths are reviewed.

In 2015, Georgia's First Lady Sandra Deal and her Children's Cabinet launched the SPLASH water-safety campaign to reduce drowning deaths and injuries through six pillars: Supervision, Prevention, Life jackets, Arm's length, Swimming lessons, and Have a water safety plan.⁹ Relaunched in 2017, the SPLASH campaign partnered with DNR and DPH to provide personal flotation device (PFD) loaner stations at public swimming areas and boat ramps, as well as public service messaging and announcements.⁹ However, this campaign is currently unfunded and relies on donations from external partners. Public swimming pools, spas, and recreational water parks are subject to environmental health regulations for structural barriers and safety designs. There are no

regulations for private residential pools, though some counties have local regulations. Seventy-four counties maintain their own specific regulations for public swimming pools, spas, and recreational water parks.¹⁰

Recent state legislation includes:

- Senate Bill (SB) 107 (“Izzy’s Law,” 2023): Requires DPH to develop a model aquatic safety plan for private swimming instructors.¹¹
- House Bill (HB) 402 (2023): Requires schools to provide water safety education to parents/guardians of newly enrolled students under 18, or directly to students aged 18 and older.¹²
- SB 50 (2024): Allows local boards of education to grant course credit for lifeguarding and aquatic safety instruction in grades 9–12.¹³
- HB 471 (2025): Passed the House but tabled in the Senate. Requires hospitals and birthing centers to provide water safety education videos to parents/guardians, but does not specify the timeline of delivery for these videos.¹⁴

Outside of state government, multiple stakeholders contribute to drowning prevention work. There is one known local drowning prevention coalition, the Atlanta Water Safety Coalition (AWSC), established in 2023, which includes the following partners: YMCA of Metro Atlanta, City of Atlanta Parks and Recreation, Children’s Healthcare of Atlanta, The American Red Cross, Greater Atlanta Water Safety Alliance, WABE, 11Alive, SwemKids, and Sears Pool Management. AWSC’s mission is to improve access to and awareness of evidence-based drowning prevention tools and strategies in Metro Atlanta. Outside of Metro Atlanta, there are many YMCAs and other organizations such as SwemKids that are working to provide swimming skills and water safety training.



Piedmont Park, Atlanta, Georgia.



Situational assessment

A questionnaire was administered to ascertain the types of data collected on drowning events, examine how they are used, assess capacity for improving drowning surveillance efforts, and develop a roadmap for enhancing drowning data. Meetings were held to determine which governmental departments should be contacted to complete the survey, then individual meetings were held with those departmental representatives to identify who within the department was best suited to respond to the survey. For non-governmental entities, the Atlanta Water Safety Coalition was contacted to disseminate the survey to various private organizations that are involved in drowning prevention work. Georgia received 8 questionnaire responses, representing a mix of state government agencies/departments (n = 2) and non-profit entities (n = 6). Of these respondents, there were 7 unique data sources reported as being used for drowning prevention work. Those data sources include Civil Registration and Vital Statistics (CRVS), hospital, emergency department (ED), Emergency Medical Services (EMS), Child Death Review (CDR), law enforcement, and lifesaving organizations (Table 1).

Among reported data sources, 85% of respondents stated that all cases or a reasonably high proportion of cases are captured within Georgia and that data are collected in an ongoing and permanent manner.

It is important to note that law enforcement partners reported that law enforcement data systems are not set up to allow queries for

drowning incidents; as such, there must be proxy queries, such as searching for 'water rescues', to extract such information. Despite records that detail drowning incidents, the way these data systems are organized does not allow for specific drowning variables to be extracted and, therefore, are unusable by departments and/or agencies that would traditionally examine drowning data. If law enforcement data systems could be queried for drowning incidents and related information, a better understanding of the true drowning burden in Georgia could be reported, and drowning prevention strategies could be tailored to the highest risk people and activities.



Chattahoochee River and Pace Ferry Trail Bridge in Atlanta, Georgia.

Table 1. Breakdown of sources reported with date range data available.

Source	Years available
Civil Registration and Vital Statistics (CRVS)	1993 – 2023
Hospital	2001 – 2023
Emergency department (ED)	2001 – 2023
Emergency Medical Services (EMS)	2008 – Present
Child Death Review (CDR)	2012 – 2023
Law enforcement	1999 – Present
Lifesaving organizational ¹	2015 – Present, 2005 – Present

¹ Lifesaving organizational sources are data or resources that are unique and specific to a respondent's drowning prevention organization.

Data variables

Figure 1 provides a breakdown of variables that are available to the organization/agency accessing drowning data by reported data source. Data sources available to survey respondents in the non-profit sector were limited, with only lifesaving, CRVS, and hospital data systems available. However, substantially more sources of drowning data were available to state government agencies/departments.

The variables that both sector types (non-profit and state government) most frequently reported having access to included basic demographic variables such as sex, race/ethnicity, date of drowning, and age. Additionally, among state government agencies/departments, the body of water (water type) was a common variable reported across the data sources. Notably, swimming ability was only reported within CDR data, which only includes reviewed childhood (<18) fatalities in Georgia.

Figure 1. Percentage of reported variable access by organization type and data source.

Organization Type	Source Type	Variables															
		Activity	Age	Alcohol/Drug Use	Body of Water	Comorbidities	Date of Drowning	Environmental Conditions	Location	Other	PFD Usage	Race/Ethnicity	Rescue Attempted	Sex	Structural Barriers	Supervision	Swim Ability
Non-profit organization	Civil Registration/Vital Stats	0%	50%	0%	0%	0%	50%	0%	0%	100%	0%	50%	0%	50%	0%	0%	0%
	Hospital	0%	100%	0%	0%	0%	100%	0%	0%	100%	0%	100%	0%	100%	0%	0%	0%
	Lifesaving	50%	100%	50%	50%	50%	100%	50%	50%	0%	50%	100%	50%	100%	50%	50%	50%
State government agency/department	CDR	100%	100%	100%	100%	0%	100%	100%	100%	0%	100%	100%	100%	100%	100%	100%	100%
	Civil Registration/Vital Stats	0%	100%	100%	100%	100%	100%	0%	100%	0%	0%	100%	0%	100%	0%	0%	0%
	ED	100%	100%	0%	100%	100%	100%	0%	100%	0%	0%	100%	0%	100%	0%	0%	0%
	EMS	0%	100%	100%	0%	100%	100%	0%	100%	0%	0%	100%	0%	100%	0%	0%	100%
	Hospital	100%	100%	0%	100%	100%	100%	0%	100%	0%	0%	100%	0%	100%	0%	0%	0%
	Law Enforcement	0%	100%	0%	100%	0%	100%	0%	100%	100%	100%	100%	0%	100%	0%	0%	100%

Figure 2. Percentage of reported data usage by organization type and data source.

Organization Type	Source Type	Data Usage								
		Awareness	Linked w/ Other Data	Not Used	Other	Program Implementation/M&E	Public Facing Reports	Recordkeeping	Report/Data Sharing	Resource Allocation
Non-profit organization	Civil Registration/Vital Stats	100%	0%	0%	0%	100%	0%	50%	0%	50%
	Hospital	100%	0%	0%	0%	100%	0%	100%	0%	100%
	Lifesaving	50%	0%	50%	0%	50%	0%	50%	0%	100%
State government agency/department	CDR	100%	100%	0%	0%	0%	0%	0%	100%	0%
	Civil Registration/Vital Stats	0%	0%	0%	0%	0%	100%	0%	100%	0%
	ED	0%	0%	0%	0%	0%	100%	0%	100%	0%
	EMS	0%	100%	0%	0%	0%	0%	0%	100%	0%
	Hospital	0%	0%	0%	0%	0%	100%	0%	100%	0%
	Law Enforcement	100%	0%	0%	0%	0%	100%	0%	100%	0%

Data and implementation challenges

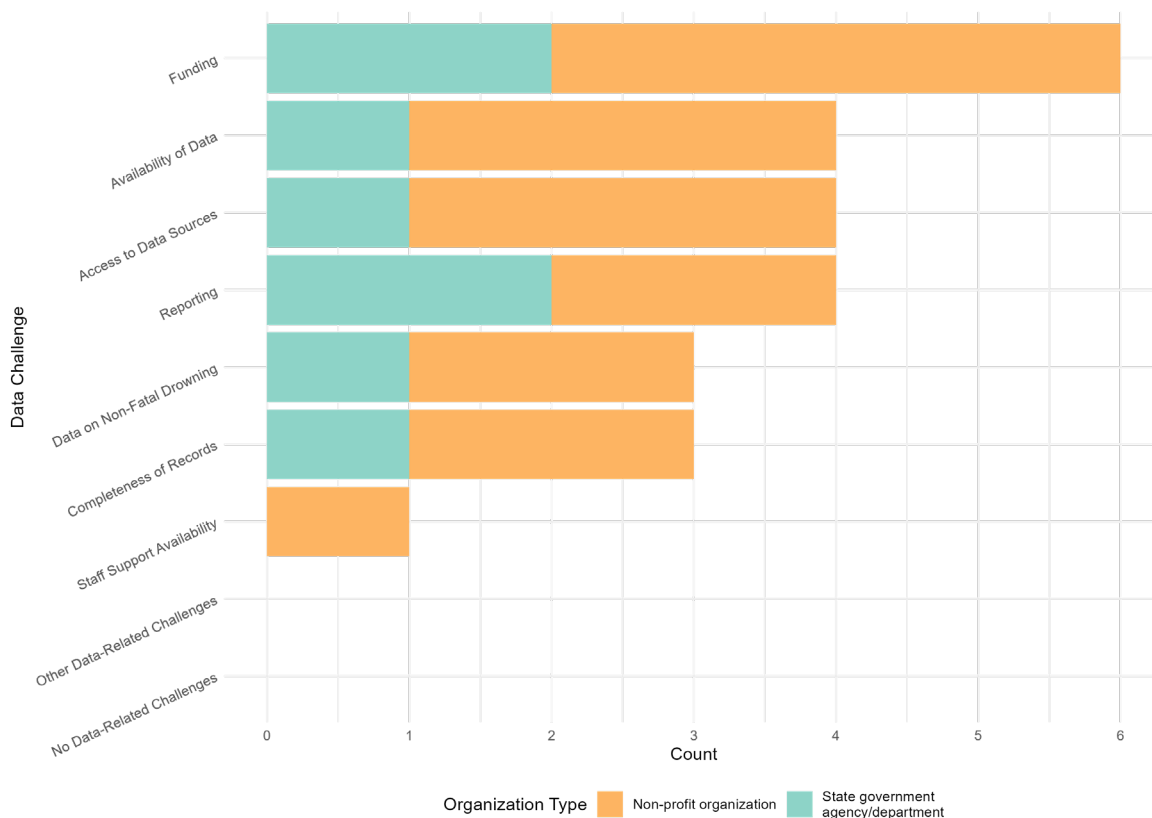
State government agencies:

- Of the two state government agencies represented, challenges such as data on non-fatal drowning, completeness of records, access to data sources, and availability of data were evenly reported as both being a challenge and not being a challenge, which highlights the variability in these data systems and presents opportunities for gleaning solutions to solve challenges (Figure 3).
- Both entities reported that reporting and funding were challenges, but did not report the availability of staff to support drowning prevention work as a challenge (Figure 3).
- Implementation challenges for these respondents were resource procurement and competing priorities (Figure 4).

Non-profit organizations:

- Data challenges varied but generally appeared to be more acute than those reported at the state level. The largest issue identified was funding, followed by the availability of data and access to data sources (Figure 3).
- Some organizations reported having no implementation challenges, while others reported “other implementation challenges,” which included getting buy-in from school systems to conduct water safety/swim skills training for students (Figure 4).

Figure 3. Reported data challenges by organization type.



Georgia Drowning Survey Section 6: Challenges

Figure 4. Reported implementation challenges by organization type.

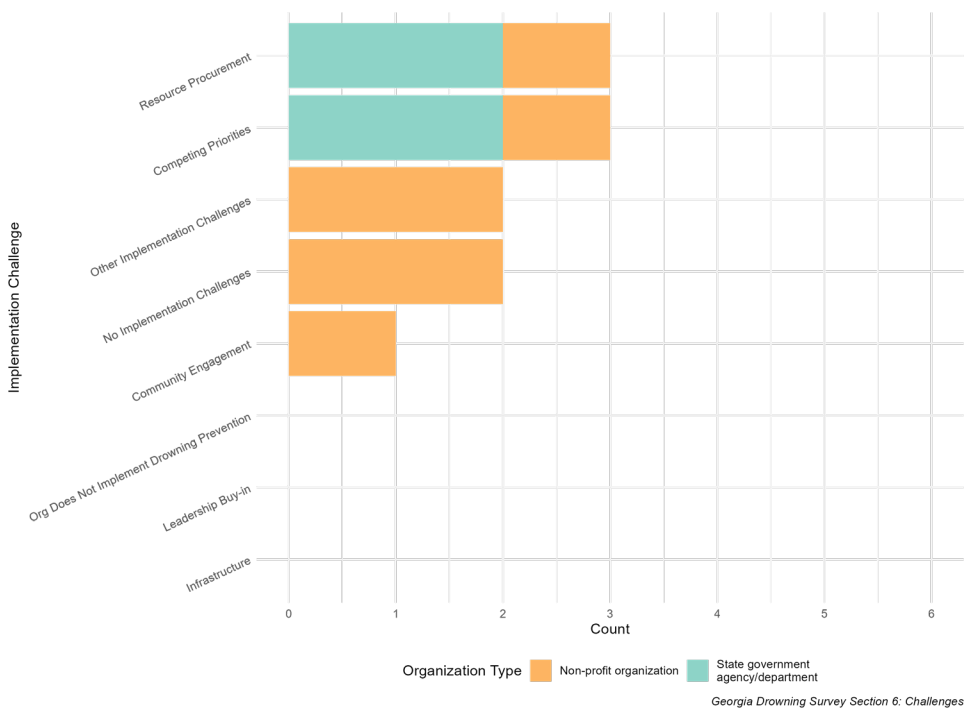


Table 2. Strengths and challenges of data sources identified.

Data source	Strengths	Challenges
Georgia Emergency Medical Services Information System (GEMSIS)	- Easily accessible - Every EMS encounter is entered into the system - Data are available in the system within days of encounter - Narratives can provide rich circumstantial detail that is otherwise missed by traditional variables collected	- International Classification of Diseases (ICD) codes are not consistently correctly coded, which makes case identification difficult - Narrative descriptions are not standardized - Data quality and completeness are lacking
Online Analytical Statistical Information System (OASIS)	- Contains hospital discharge, ED, and death record data - High data quality and completeness - Easily accessible	- Time delay (1 year) in receiving data into the system - Variables have changed over time, which makes analyses challenging
Department of Natural Resources (DNR)	Narrative reports can be used to determine circumstantial information	- There is no mandate to collect data on drowning incidents - Not easily accessible
Georgia Fire Incident Reporting System (GFIR)	Narrative reports can include detailed circumstantial information (like EMS reports)	- Narrative sections are not standard - Drowning reports are not easily accessible; they are filed under “water rescues”
Child Fatality Review	- Contains detailed information about the circumstances of drowning - Multiple sources of information, such as police reports, medical records, media reports, and/or autopsy reports, are used to inquire about the circumstances surrounding the death	- Not all reviewable deaths are reviewed - Does not include drowning deaths among adults

Programs/activities

There were 13 drowning prevention programs identified by the respondents (Table 3), and after de-duplication, 12 unique initiatives were identified. It is important to note that this list is not exhaustive, as it is limited to programs that were known to survey respondents. One of the state programs identified, the SPLASH campaign, operated by Georgia DPH and DNR, is not consistently active due to funding constraints. Most programs are focused on promoting water safety and raising awareness through campaigns. Training in water competency and swimming skills is provided exclusively by non-profit organizations, with state agencies playing a minimal role in direct program implementation. Notably, there were no dedicated state-level funding sources reported that support drowning prevention efforts in Georgia.

Table 3. Reported drowning prevention programs descriptions and status.

Organization	Status	Description
Albany Area YMCA	Current and active	Provides annual scholarships for swimming lessons to families in need.
Albany Area YMCA	Current and active	Offers after-school water safety and swimming lessons during the school year.
Albany Area YMCA	Current and active	Hosts summer day camp swimming lessons, and partners with local agencies for water safety.
Albany Area YMCA	Current and active	Offers 300+ free swimming lessons every May through the Swim for Life initiative.
Albany Area YMCA	Current and active	Provides family swimming lessons to help parents and children learn together.
Children's Healthcare of Atlanta	Current and active	Conducts drowning prevention classes and awareness campaigns.
Family YMCA of Greater Augusta	Current and active	Delivers the Safety Around Water program, including swimming lessons to second-grade classes via school partnerships.
Georgia Department of Public Health	Previous/no longer active	Ran the SPLASH campaign promoting swimming safety via materials, messaging, and life jackets.
Georgia Department of Public Health	Current and active	Implements Izzy's Law, requiring safety standards for swimming instruction programs.
Georgia DNR Law Enforcement Division	Previous/no longer active	Promoted the SPLASH campaign, emphasizing the importance of supervision, life jackets, and water safety planning.
YMCA of Georgia's Piedmont, Inc.	Current and active	Offers the Safety Around Water program to underserved youth with both land and pool safety training.
YMCA of Georgia's Piedmont, Inc.	Current and active	Teaches swimming lessons for all ages to improve water safety and swimming proficiency.
YMCA of Metro Atlanta	Current and active	Conducts an eight-part Safety Around Water program with skill-building and safety instruction for children.

Figure 5. Reported types of support by organization type.

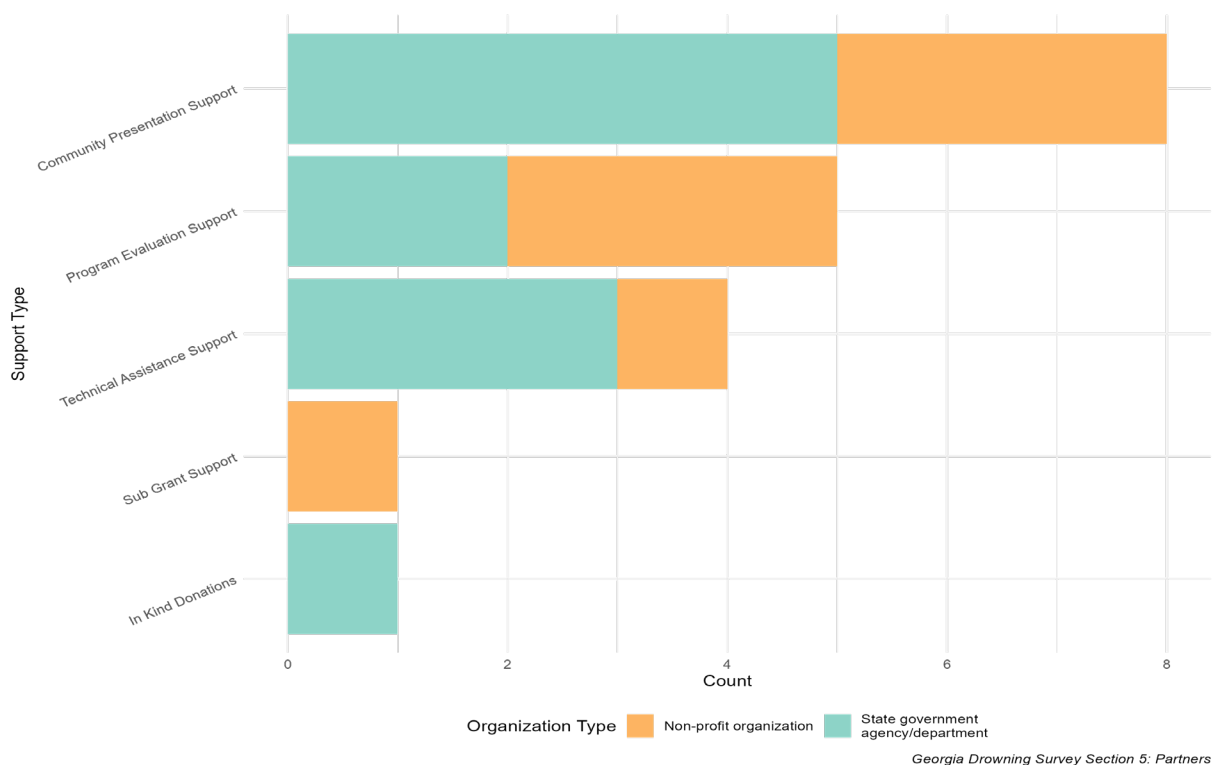
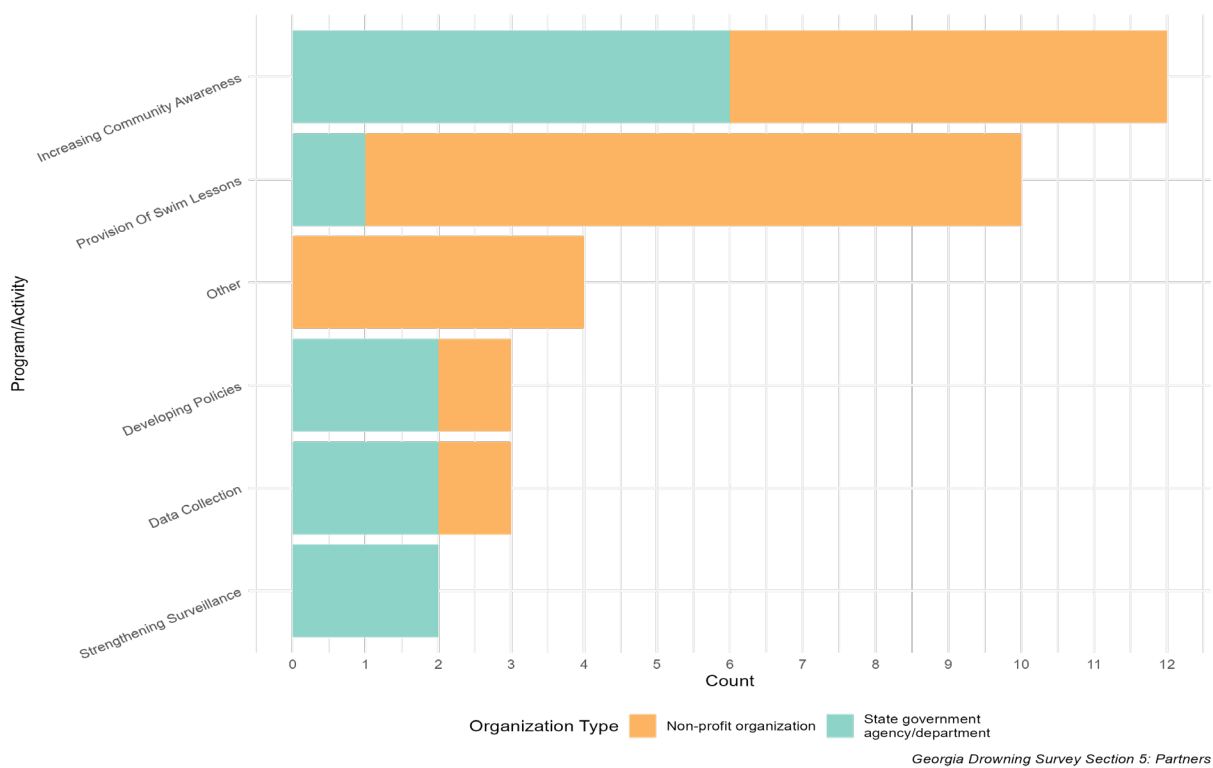


Figure 6. Reported program activities by organization type.





Burden and circumstances of drowning in Georgia

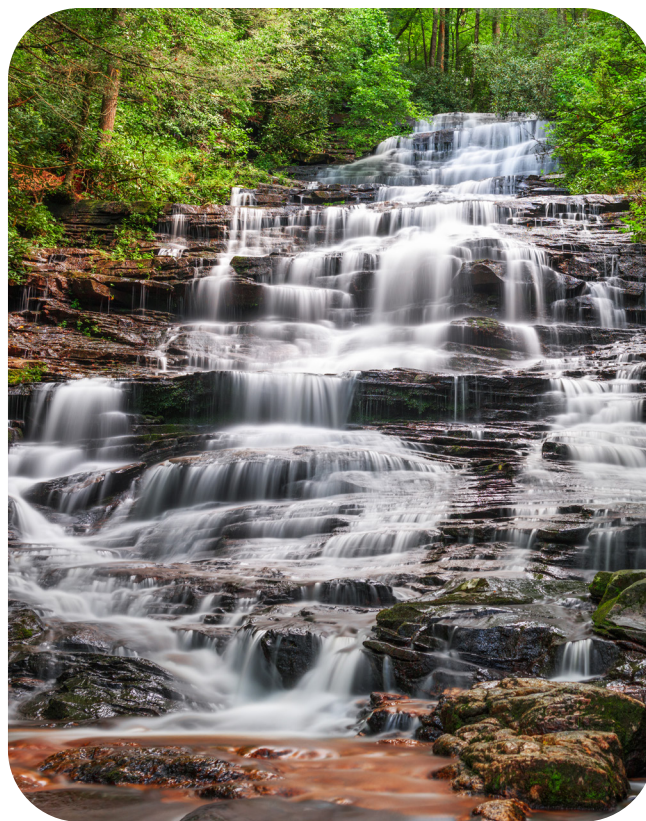
Methods

International Classification of Disease 10th revision (ICD-10) codes were used to identify drowning deaths and ICD-10 Clinical Modification (ICD-10-CM) codes were used to identify drowning-related emergency department visits and hospitalizations; Table 4 shows specific ICD-10 and ICD-10-CM codes. To better understand the full burden of drowning, expanded inclusion criteria for drowning deaths and hospitalizations were developed and used throughout this report. Deaths from OASIS 2009–2023 were identified as unintentional drowning if there was an unintentional drowning ICD-10 code in either the underlying cause of death or multiple causes of death fields. This differs from the approach typically used for identifying fatal drowning, which only utilizes the underlying cause of death field. The expanded criteria captured 15.62% more unintentional drowning deaths compared to the traditional approach from 2009 to 2023. Intentional drowning and drowning deaths of undetermined intent were also identified.

Emergency department (ED) visit data in OASIS, and hospitalization data from OASIS 2016–2023 were limited to ED visits that did not result in hospitalization or death, and hospitalizations that did not result in death. Traditionally, hospitalizations are only considered drowning-related if the primary diagnosis is an injury and there is a drowning ICD-10-CM code in a subsequent field, while ED visits are considered drowning-related if there is a drowning ICD-10-CM code anywhere in the record.¹⁵ For this report, both ED visits and hospitalizations were identified as unintentional drowning if there was an ICD-10-CM code related to unintentional drowning anywhere in the record. The expanded hospitalization inclusion criteria captured 47.91% more unintentional drowning hospitalization cases than would have been identified had hospitalizations been limited to a primary diagnosis of injury only. ED and hospital data were limited to 2016 due to coding changes at the end of 2015, going from the 9th to the 10th revision of ICD clinical modification codes. Intentional and undetermined intent

drowning-related ED visits and hospitalizations were also identified.

Rates were calculated as the number of drowning deaths, ED visits, or hospitalizations per 100,000 state residents overall and by year, sex, age group, race/ethnicity, and region using population estimates from the U.S. Census Bureau (vintage 2023 estimates for 2020 to 2023, vintage 2020 estimates for 2010 to 2019, and intercensal 2010 estimates for 2009 from: <https://www2.census.gov/programs-surveys/popest/datasets/>). Rates were age-adjusted to the 2000 U.S. standard population using the direct method.¹⁶ The number of drowning deaths, ED visits, and hospitalizations were also calculated for incidents that occurred in Georgia among non-residents of Georgia. Unless otherwise noted, the focus of this report is on unintentional drowning among state residents.



Minnehaha Falls in Rabun County, Georgia.

Table 4. International Classification of Disease 10th revision (ICD-10) and ICD-10-Clinical Modification (ICD-10-CM) codes used to identify drowning deaths (ICD-10) and emergency department visits and hospitalizations (ICD-10-CM).

Fatal

Unintentional drowning: Underlying cause of death = V90, V92, W65-W74 OR multiple cause of death = V90, V92, W65-W74 and the underlying cause of death ≠ X60-X99, Y00-Y34, Y87, U01-U03.

Intentional drowning: Underlying cause of death = X71, X92 OR underlying cause of death = X60-X99, Y00-Y09, Y87.0, Y87.1, U01-U03 and multiple cause of death = V90, V92, W65-W74, Y21, OR multiple cause of death = X71, X92 and underlying cause of death ≠ V90, V92, W65-W74, Y21.

Undetermined intent drowning: Underlying cause of death = Y21 OR underlying cause of death = Y10-Y34, Y87.2 and multiple cause of death = V90, V92, W65-W74, X71, X92 OR multiple cause of death = Y21 and underlying cause of death ≠ V90, V92, W65-W74, X71, X92.

T75.1: In the multiple cause of death field T75.1 is considered unintentional drowning if there are no intentional or undetermined injury codes present in the record: X60-X99, Y00-Y38, Y87, U01-U03. If intentional or undetermined injury codes are present in the record, T75.1 is coded as intentional or undetermined intent.

Nonfatal (ED visits and hospitalizations): All codes have a 7th character of A or missing.

Unintentional drowning: V90, V92, W16 with 6th character=1, W16.41, W16.91, W22.041, W65-W74 anywhere in the record.

Intentional drowning: X71, X92 and no other drowning codes present.

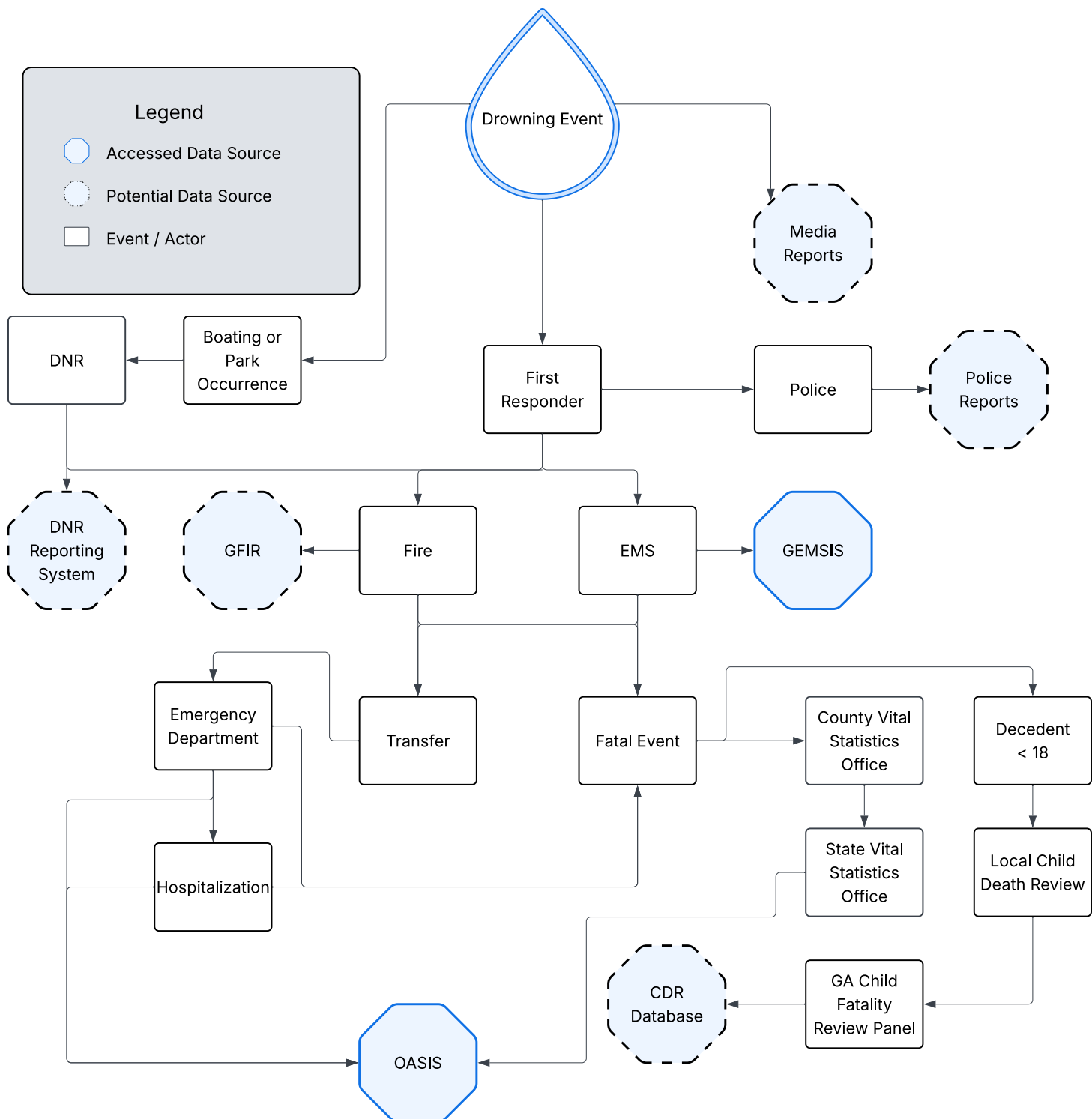
Undetermined intent drowning: Y21 and no other drowning codes present.

Primary diagnosis of injury (only traditional hospitalizations): S00-S99, T07-T34, T36-T50 with a 6th character of 1, 2, 3, or 4 except T36.9, T37.9, T39.9, T41.4, T42.7, T43.9, T45.9, T47.9, and T49.9 with fifth character of 1, 2, 3, or 4, T51-T76, T79, O9A.2-O9A.5, T84.04, M97.

T75.1: Considered unintentional drowning if there are no intentional or undetermined intent injuries anywhere in the record: X71-X83, X92-X99, Y00-Y09, Y21-Y33, Y38, R45.88, T14.191, T36-T50 with 6th character=2,3,4 except T36.9, T37.9, T39.9, T41.4, T42.7, T43.9, T45.9, T47.9, and T49.9 where fifth character=2,3,4, T51-T65 with 6th character=2,3,4 except T51.9, T52.9, T53.9, T54.9, T56.9, T57.9, T58.0, T58.1, T58.9, T59.9, T60.9, T61.0, T61.1, T61.9, T62.9, T63.9, T64, and T65.9 where the fifth character = 2,3,4, T71 with sixth character=2,3,4, T74, T76. If there are intentional or undetermined intent injuries in the record drowning was coded as intentional or undetermined intent.

Data sources gathered from the analysis and the situational assessment survey were used to map the data collection ecosystem for drowning occurrences (Figure 7). The data collection map illustrates the pathways through which a drowning event ultimately reaches one of the data sources that were identified in this report. Figure 7 identifies sources that were able to be accessed and used for data analysis, as well as future data sources that can be analyzed to further elucidate the drowning burden in Georgia.

Figure 7. Drowning event to data collection map.



Overview

We examined drowning records from 2009 to 2023 that occurred among both Georgia residents and non-residents. These include data from multiple sources: ED visits ($n = 2,911$), hospitalizations ($n = 487$), death records ($n = 2,466$), and EMS encounters ($n = 1,467$). However, the years covered varied by source: death records span the full period (2009–2023), ED and hospitalization data are available from 2016–2023, and EMS data cover 2018–2023.

ED visits had the highest drowning rate among Georgia residents at 3.35 per 100,000 ($n = 2,629$), while hospitalizations reflected the lowest rate at 0.60 per 100,000 ($n = 487$). The overall age-adjusted drowning fatality rate among Georgia residents was 1.45 per 100,000 population ($n = 2,255$). The age-adjusted EMS contact rate was 1.69 per 100,000 ($n = 1,034$). Non-resident data were not available for hospitalizations, and residency was often not indicated in EMS data. However, death records showed 211 non-resident drowning fatalities (8.56% of all cases), and ED data documented 282 visits by non-residents (9.69% of all cases).

Most cases were unintentional. ED data showed that 95.51% of cases were unintentional, 2.59% intentional, and 1.90% undetermined. Hospitalization records reflected a comparable distribution: 94.46% unintentional, 3.08% intentional, and 2.46% undetermined. Among fatalities, 90.55% were unintentional, 7.54% were intentional, and 1.91% were of undetermined intent. Due to inconsistencies in ICD coding within the EMS system, intentionality could not be determined and was therefore excluded from this analysis.

Time-trends

Globally, drowning rates have been decreasing over the past decade; however, this trend does not hold for the United States, and more specifically, for Georgia.¹⁷ From 2009 to 2013, drowning death rates in Georgia steadily declined, reaching 0.99 per 100,000 in 2013. Since 2018, however, drowning death rates have increased, with the two highest rates in the study period occurring in 2022 (1.49 per 100,000) and 2023 (1.47 per 100,000)—almost a 50% increase from 2013 to 2023.

Interestingly, ED visit rates do not follow the same pattern. Between 2016 and 2023, ED visit rates for drowning incidents declined by approximately 7%. Over that same period, drowning death rates rose by nearly 2.5%, while hospitalization rates dropped by 12.5%. In 2020, the rates of drowning-related deaths, hospitalizations, and ED visits were all lower than in other years, with hospitalizations and ED visits reaching their lowest levels of the entire study period. This reduction in drowning rates is likely linked to decreased healthcare utilization and the closure of public swimming areas during the COVID-19 pandemic.

The time-series analysis reveals a concerning pattern: rising mortality rates alongside declining ED and hospitalization rates. This may indicate that more individuals are dying from drowning before receiving medical care. These findings underscore the urgent need for expanded water safety education and swimming skill programs in Georgia.

Table 5. Average annual counts and rates for unintentional drowning-related emergency department visits, hospitalizations, and fatalities among Georgia residents.

Variable		Emergency department visits (2016–2023)		Hospitalizations (2016–2023)		Fatalities (2009–2023)	
		Annual average count	Rate per 100,000 residents*	Annual average count	Rate per 100,000 residents*	Annual average count	Rate per 100,000 residents*
Sex	Male	179.50	3.63	37.12	0.74	103.93	2.07
	Female	134.38	2.78	20.38	0.40	32.20	0.61
Age	<1 year	17.75	14.11	2.38	1.89	1.33	1.04
	1–4 years	136.25	26.07	19.38	3.71	16.07	3.04
	5–9 years	41.12	5.94	6.75	0.98	6.07	0.87
	10–14 years	20.00	2.72	4.12	0.56	4.53	0.63
	15–19 years	20.38	2.75	3.00	0.40	9.73	1.35
	20–24 years	13.25	1.83	2.75	0.38	10.13	1.41
	25–34 years	19.88	1.34	6.12	0.41	17.73	1.24
	35–44 years	17.62	1.25	2.38	0.17	14.20	1.02
	45–54 years	12.88	0.92	2.75	0.20	16.60	1.18
	55–64 years	7.12	0.55	2.75	0.21	16.47	1.35
	65–74 years	4.75	0.51	2.75	0.29	13.27	1.62
	75+ years	2.88	0.49	2.38	0.40	10.00	1.90
Race/ ethnicity	American Indian or Alaska Native	1.38	7.25	0.25	1.04	0.13	0.63
	Asian	4.62	1.07	1.38	0.34	3.27	0.94
	Black or African American	82.62	2.54	16.00	0.48	44.00	1.34
	Native Hawaiian or other Pacific Islander	0.12	1.04	0.00	0.00	0.07	0.64
	White	193.75	4.48	34.12	0.73	77.47	1.40
	Hispanic or Latino	13.00	0.96	1.00	0.08	9.60	0.87
	Multiracial	18.38	5.65	4.75	1.87	0.20	0.11
	Unknown	†	†	†	†	†	†
	Other	†	†	†	†	1.40	†
Residence region	1-1 Northwest	19.62	3.19	1.38	0.20	8.33	1.26
	1-2 North Georgia	11.12	2.52	0.38	0.07	4.27	0.90
	2 North	28.00	4.20	3.25	0.42	14.13	2.04
	3-1 Cobb-Douglas	18.12	2.21	2.00	0.21	7.27	0.83
	3-2 Fulton	52.88	5.92	14.38	1.56	9.00	0.94
	3-3 Clayton	0.88	0.28	0.00	0.00	1.67	0.58
	3-4 GNR	19.25	1.73	0.08	0.08	8.00	0.75
	3-5 DeKalb	23.50	3.26	7.50	1.05	5.33	0.75

* Rates per 100,000 residents for sex, race/ethnicity, and residency region are adjusted for age; rates for age groups are age specific.

† Race unknown is not present in fatal, hospital, or emergency department data. Race other is not present in hospital or emergency data. A rate could not be calculated for fatalities involving race other due to population-level estimates not being available.

Table 5. Average annual counts and rates for unintentional drowning-related emergency department visits, hospitalizations, and fatalities among Georgia residents.

Variable		Emergency department visits (2016–2023)		Hospitalizations (2016–2023)		Fatalities (2009–2023)	
		Annual average count	Rate per 100,000 residents*	Annual average count	Rate per 100,000 residents*	Annual average count	Rate per 100,000 residents*
Residence region	4 District 4	23.62	3.02	1.62	0.20	9.67	1.13
	5-1 South Central	4.25	3.26	0.12	0.09	3.27	2.12
	5-2 North Central	14.00	2.86	8.62	1.78	9.07	1.67
	6 East Central	13.75	2.95	4.50	0.93	9.80	2.01
	7 West Central	13.88	4.11	2.12	0.62	6.40	1.72
	8-1 South	8.25	3.27	0.62	0.23	5.73	2.16
	8-2 Southwest	7.25	2.29	0.50	0.17	6.13	1.72
	9-1 Coastal	25.50	4.24	8.25	1.32	14.60	2.33
	9-2 Southeast	15.38	4.44	0.25	0.06	8.27	2.24
	10 Northeast	14.50	2.97	1.12	0.20	5.13	1.04

* Rates per 100,000 residents for sex, race/ethnicity, and residency region are adjusted for age; rates for age groups are age specific.

† Race unknown is not present in fatal, hospital, or emergency department data. Race other is not present in hospital or emergency data. A rate could not be calculated for fatalities involving race other due to population-level estimates not being available.

Age

Age trends in unintentional drowning among Georgia residents largely mirror national patterns. Due to constraints in the 2009 census age groupings, <1 year and 1–4-year-olds were combined into a single 0–4 year category for fatality data. This grouping was not necessary for ED and hospitalization data, as those datasets were only available for 2016 onward.

Among unintentional drowning deaths, children aged 1–4 had the highest rate at 3.04 per 100,000. Hospitalization data, however, revealed a different trend: children aged 1–4 had the highest rate at 3.71 per 100,000, while adults aged 75+ had a significantly lower rate of 0.40 per 100,000. Similarly, ED visit rates were highest among children 1–4 (26.07 per 100,000) and lowest among those 75+ (0.49 per 100,000). These findings suggest that when older adults experience a drowning event, it is more likely to be fatal.

Notably, bathtub drowning accounted for about 17% of drowning deaths among adults aged 75+ compared to 11% of adults aged 18–74. Drowning in older adults often involves another medical episode that might have otherwise been survivable if the person had not been in the water (e.g., hypoglycemia, seizure, stroke, heart attack, syncope).

The overall fatal-to-non-fatal drowning ratio in Georgia was 1:2.87, but this varied considerably by age. For infants (<1 year), there were nearly 16 non-fatal incidents for every fatal drowning incident. In contrast, adults aged 75+ had a reversed ratio of 1:0.47, indicating more fatal than non-fatal outcomes. This inverse trend with age may reflect factors such as greater supervision in early childhood, a higher likelihood of seeking medical attention for children, and a decreased likelihood of rescue or recovery in older adults.

The drowning setting also varies by age group. Among children aged 0–4, 59% of drowning deaths occurred in pools, while bathtubs accounted for only 11%. A similar pattern was observed among children aged 5–9, with 52.4% of drowning deaths occurring in pools. In contrast, natural bodies of water were the most common setting for drowning

deaths among individuals aged 10–34, accounting for approximately 30% of deaths. For adults aged 35–74, natural water settings remained the leading setting for drowning deaths, followed closely by bathtubs.

Figure 8. Rates by age group and data source.

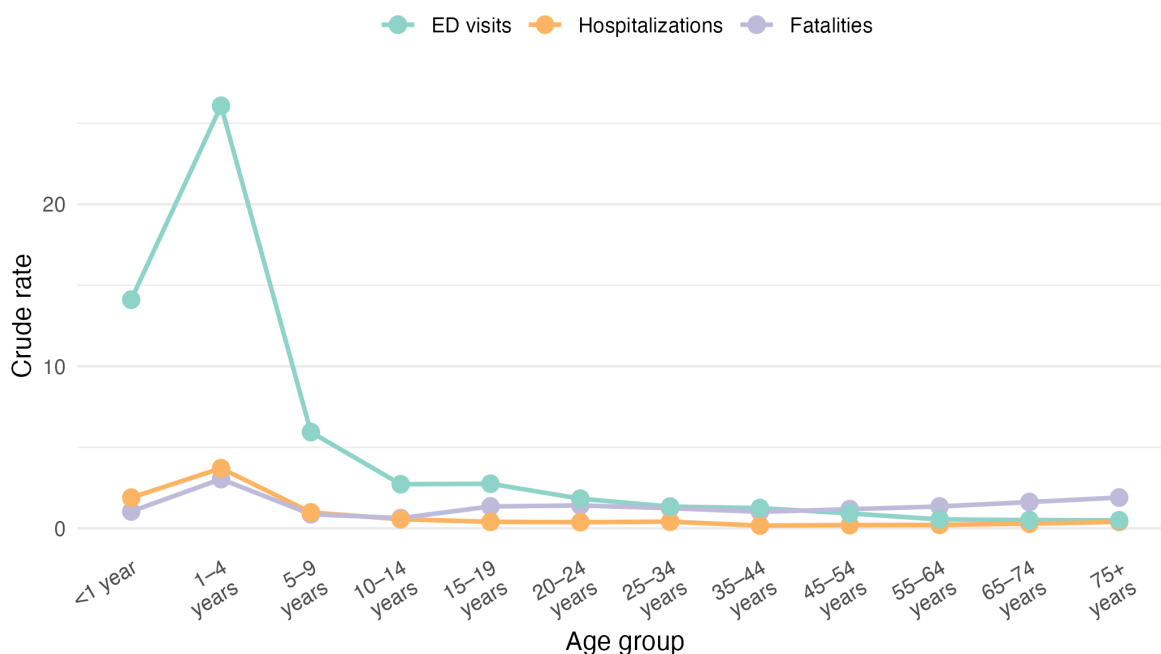
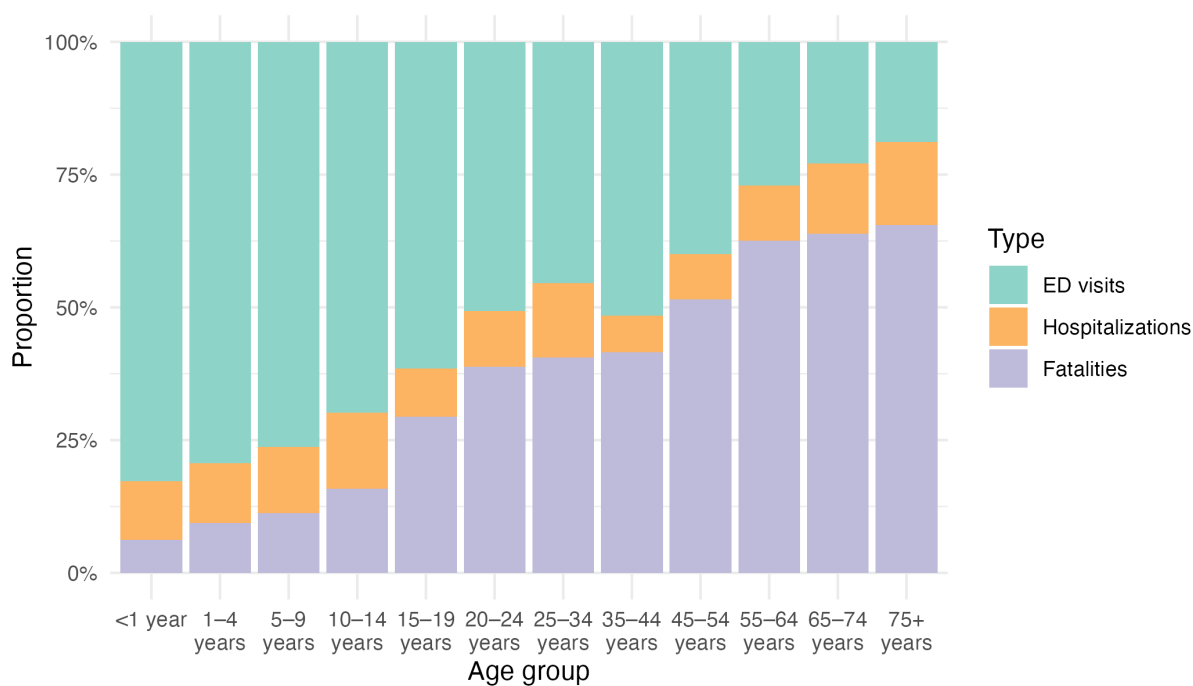


Figure 9. Proportion of drowning by age group and data source.



Sex

Sex-based differences in drowning in Georgia show distinct patterns, with men consistently experiencing higher rates of both fatal and non-fatal drowning compared to women. The fatal drowning rate for men was 2.07 per 100,000, with a non-fatal rate of 4.37 per 100,000—resulting in a fatal-to-non-fatal ratio of 1:5.21. For women, the fatality rate was lower at 0.61 per 100,000, with a non-fatal rate of 3.18 per 100,000. While men experience more drowning fatalities than women, the disparity is less pronounced for non-fatal incidents. This relatively small difference in non-fatal drowning rates suggests that although men are more likely to be involved in severe or deadly incidents, non-fatal incidents occur at similar rates between the sexes.

There were also notable differences in the setting of drowning deaths. Among women, nearly half of fatal incidents occurred in bathtubs (23.4%) or pools (25.8%). In contrast, only 6.5% of drowning deaths among men occurred in bathtubs and 16.9% in pools. Most male drowning deaths occurred in natural bodies of water (29.6%) or were classified as unspecified (28%). However, settings for non-fatal drowning were more evenly distributed and appeared similar between men and women.

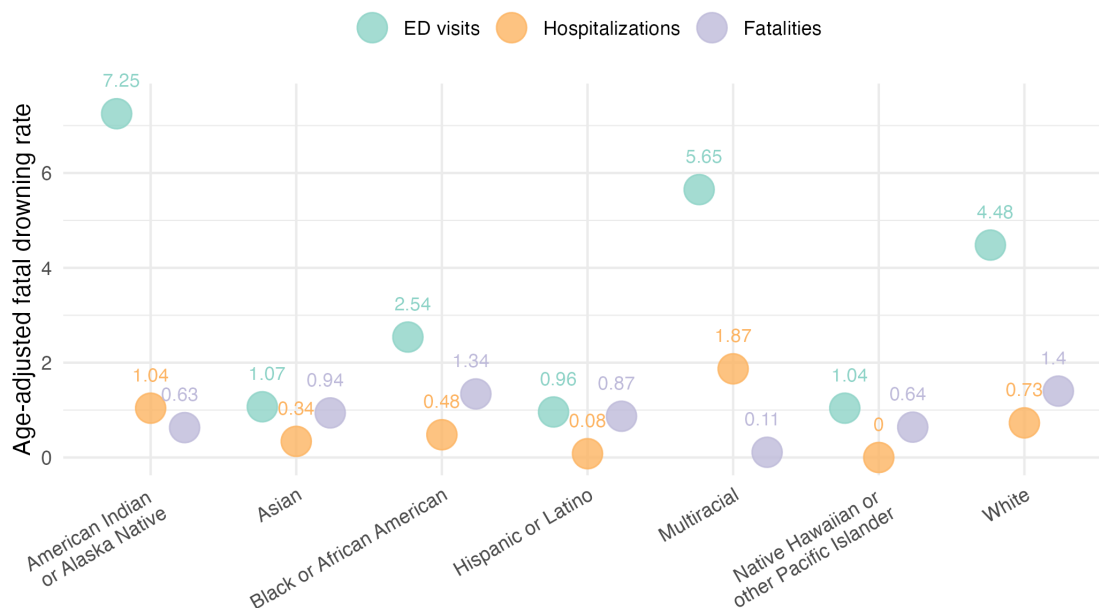
Additionally, the age distribution of drowning victims was comparable across sexes.

Race/ethnicity

Drowning rates and outcome severities vary across racial and ethnic groups in Georgia. American Indian or Alaska Native (AI/AN) individuals had the highest rate of non-fatal drowning at 8.29 per 100,000, yet a relatively low fatal drowning rate of 0.63 per 100,000. The group with the second-highest non-fatal drowning rate was multiracial individuals, at 7.52 per 100,000; however, their fatality rate was much lower at just 0.11 per 100,000.

Notably, the ratio of fatal to non-fatal drowning also varies by group. Black or African American individuals had a ratio of 1:2.25, compared to a higher ratio of 1:3.72 among White individuals. Despite this, fatal drowning rates for these two groups were similar—1.34 per 100,000 for Black or African Americans and 1.40 per 100,000 for White individuals. Disparities become more apparent when comparing non-fatal drowning rates: Black or African Americans had a rate of 3.02 per 100,000, while White individuals had a higher rate of 5.21 per 100,000. Hispanic or Latino individuals had the lowest fatal and non-fatal drowning rates among the groups.

Figure 10. Age-adjusted rates by race/ethnicity and data source.



Regions of drowning occurrence

There are clear regional hotspots for drowning across Georgia when examining both fatal and non-fatal rates among state residents. Across the 18 public health districts in Georgia, fatal drowning rates varied widely, ranging from 0.58 to 2.33 per 100,000. Ten of the 18 districts had fatality rates exceeding the state average. Districts 9-1 (Coastal) and 9-2 (Southeast) reported the highest fatal drowning rates at 2.33 and 2.24 per 100,000, respectively. In contrast, District 3-3 (Clayton) had the lowest fatality rate at 0.58 per 100,000. Districts in the southeast portion of Georgia have greater access and subsequent exposure to natural bodies of water than other districts throughout the state.

Non-fatal drowning rates also showed significant variation, ranging from 0.28 to 7.48 per 100,000. District 3-2 (Fulton) recorded the highest non-fatal rate at 7.48 per 100,000, nearly double the state average. Despite this, the fatal drowning rate in

District 3-2 (Fulton) was relatively low at 0.94 per 100,000, suggesting that for approximately every eight non-fatal drowning incidents, there is one fatal drowning. This disparity may reflect the availability and responsiveness of emergency medical services and hospital infrastructure, which could improve survival outcomes.

A closer look at District 9-1 (Coastal) reveals further disparities when stratified by sex and age. The fatal drowning rate among men was significantly higher than that of women at 3.51 per 100,000 male residents. Within this group, men aged 75 and older experienced the highest fatality rate at 6.14 per 100,000, which is 1.83 times the district's overall rate. Pools were the most common body of water involved in drowning incidents among male victims in District 9-1, accounting for 17% of cases. Additionally, 25% of drowning deaths in this district involved non-residents, likely reflecting the impact of tourism and vacation-related exposures in coastal areas.

Figure 11. Unintentional age-adjusted fatality rates by district, Georgia, 2009–2023.

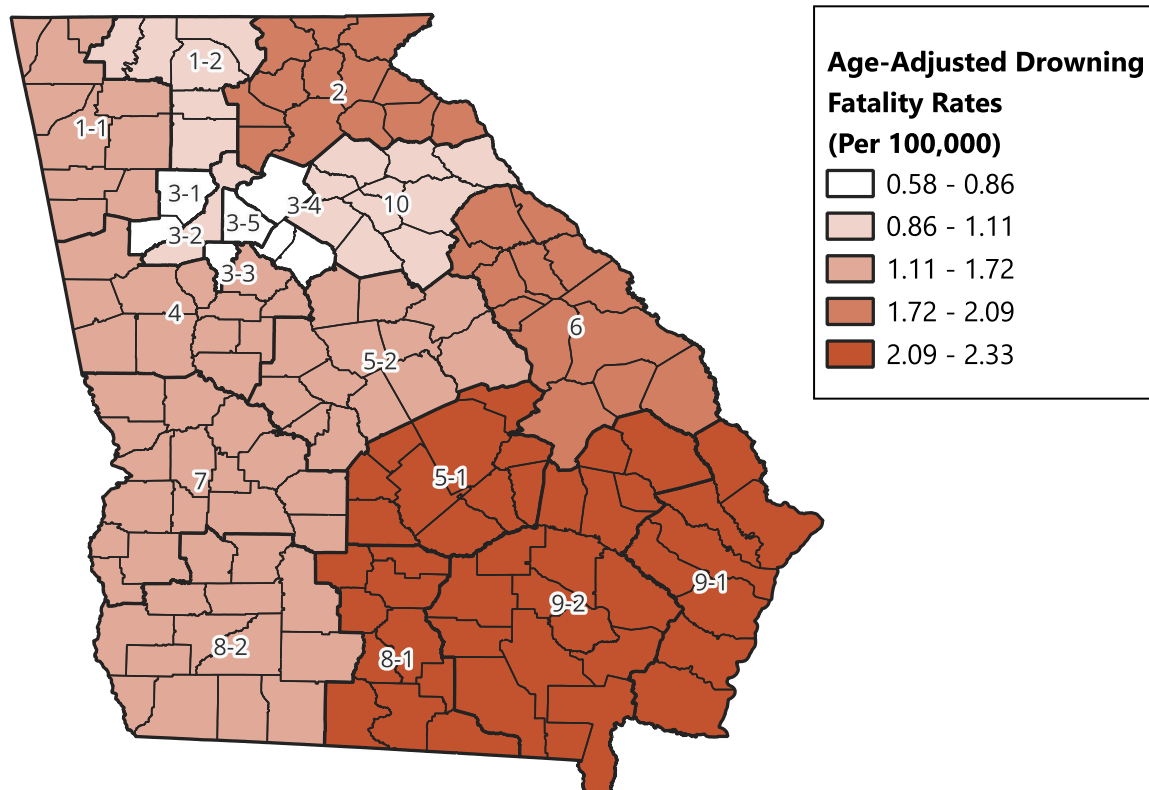


Figure 12. Unintentional age-adjusted hospitalization drowning rates by district, Georgia, 2016–2023.

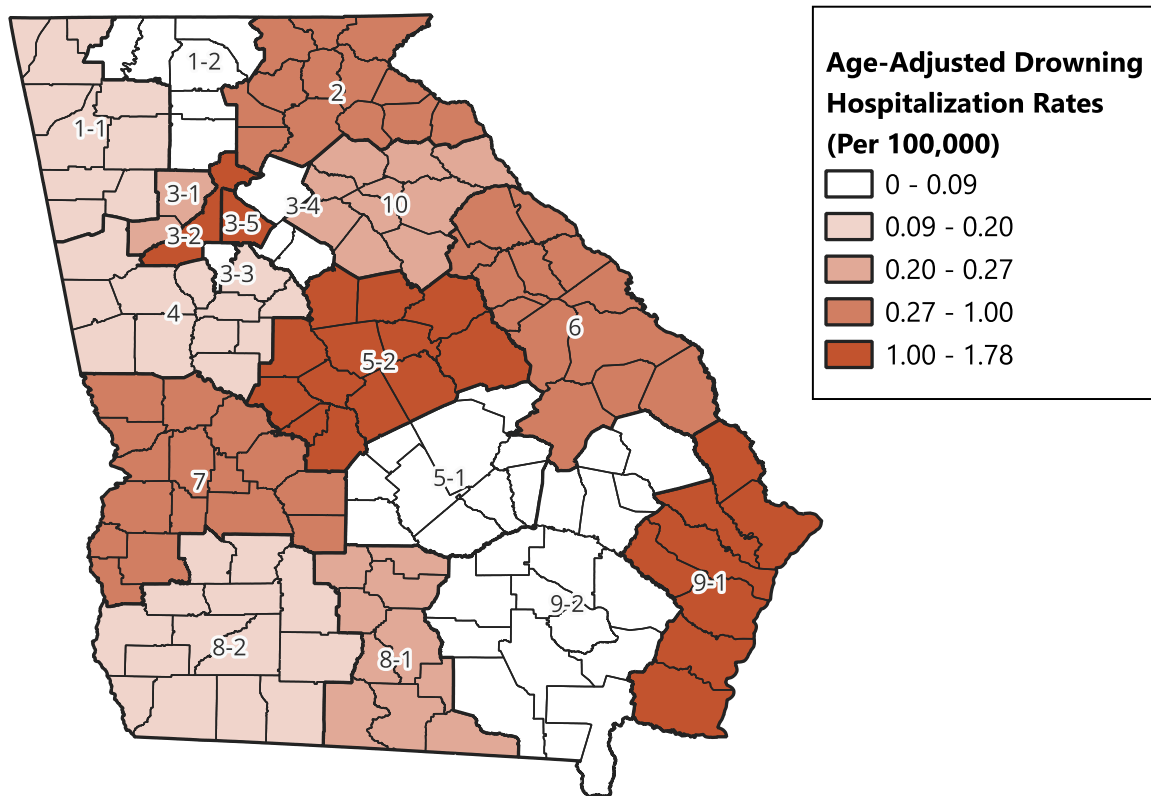
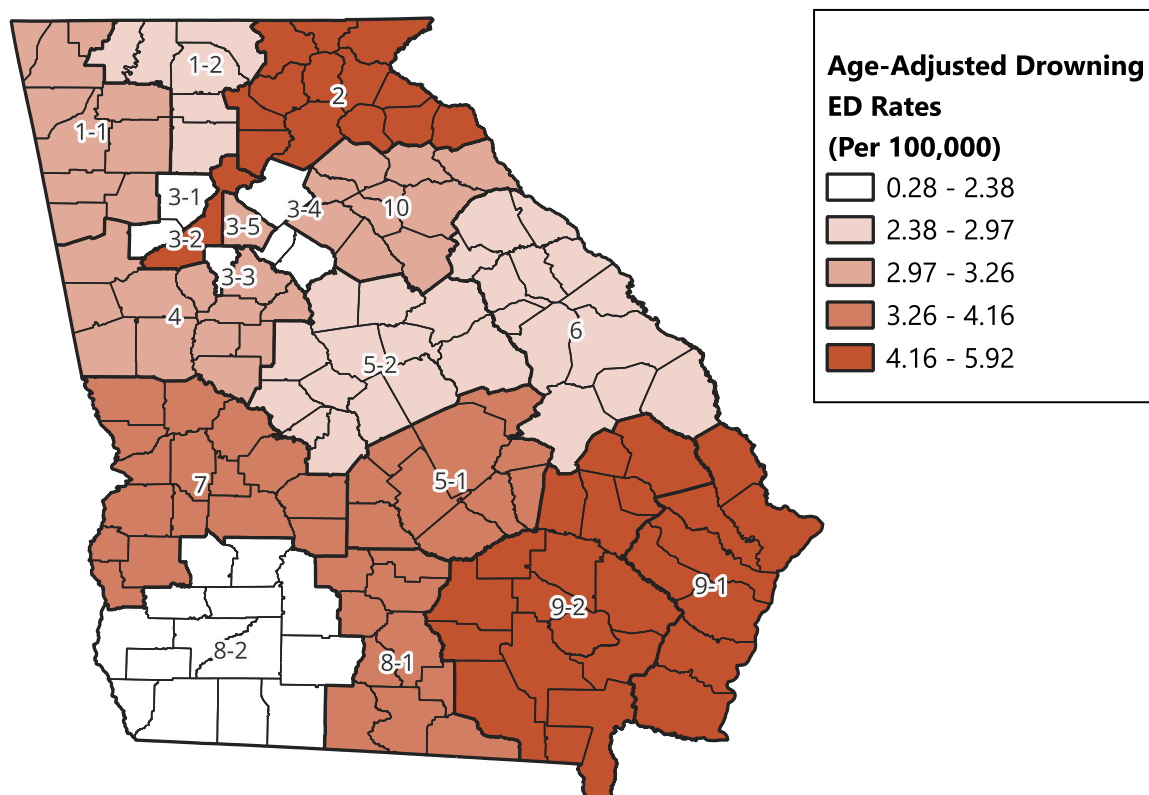


Figure 13. Unintentional age-adjusted ED drowning rates by district, Georgia, 2016–2023.



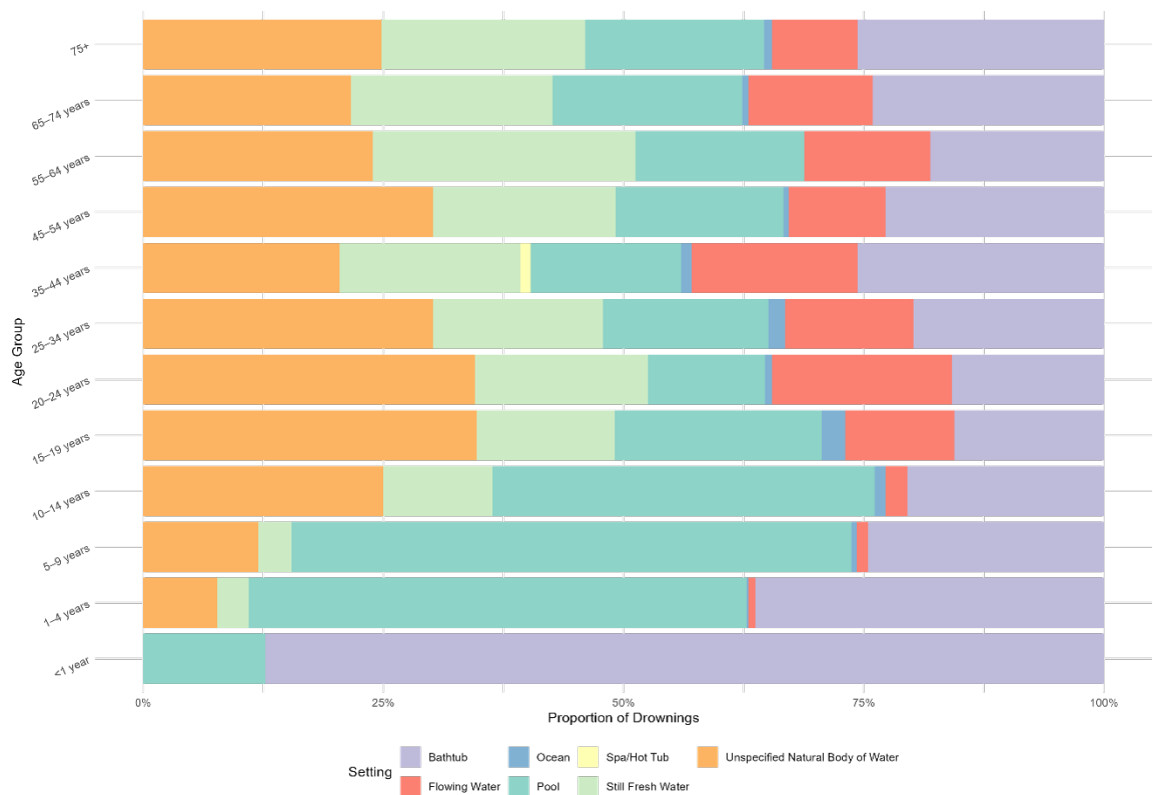
Bodies of water

Drowning prevention strategies differ by the type of water involved. The most effective prevention measures for bathtub drowning will differ from those for incidents in flowing water, such as rivers or streams. ICD-10 codes were used to identify the drowning settings in this analysis; however, ICD-10 codes provide limited information about the types of settings. Free text sections were available for death record data and were used to refine and identify drowning settings. These sections were not available for ED and hospitalization data, so reporting for those datasets relied exclusively on ICD-10 codes.

individuals age. Children aged 1–9 years experience a large share of drowning in pools and still fresh water. In contrast, adolescents and young adults (ages 10–24) face increasing risk in natural bodies of water and flowing water, especially among teens, where “natural body of water” represents the highest proportion of drowning settings. For adults over 25, the proportions stabilize, with bathtubs, oceans, and still fresh water each accounting for a sizeable share. These patterns reflect changing behaviors and environments across life stages and underscore the need for age-specific prevention strategies, such as home safety for infants, pool fencing and supervision for young children, and water safety education for teens and adults engaging in outdoor recreation.

Figure 14 illustrates that drowning settings vary across the life span. A striking trend is the high proportion of bathtub-related drowning among infants under 1 year, which gradually declines as the

Figure 14. Proportion of unintentional fatal and non-fatal drowning of Georgia residents by age group and setting.



Source: OASIS
*Unknown Locations Excluded

Motor vehicle crash and watercraft-related drowning

Motor vehicle crashes (MVCs) represent a significant public health burden in Georgia. According to OASIS, the age-adjusted death rate for MVCs was 14.3 per 100,000 during the 2009–2023 study period. Mortality data reveal a noteworthy intersection between MVCs and unintentional drowning: approximately 15% (n = 355) of drowning fatalities were motor vehicle or watercraft related. Of those, half involved a motor vehicle and half involved a watercraft. Nearly half of these deaths occurred among individuals aged 25–54, and approximately 80% were male.

Non-fatal drowning incidents also frequently involved motor vehicles or watercraft. Motor vehicle involvement was identified in 21% (n = 543) of ED visits, and of those, 99% (n = 537) were watercraft related. Ten percent (n = 46) of hospitalizations related to non-fatal drowning involved a motor vehicle or watercraft, with 22% (n = 10) of those involving a motor vehicle. Trends in sex and age group distribution for motor vehicle and watercraft-related non-fatal drowning incidents followed similar trends in sex and age group distribution as those observed in the fatality data.

Drug/alcohol use

Alcohol use is a well-established risk factor for drowning, particularly when consumption reaches excessive levels. Despite this, documentation of alcohol involvement in drowning incidents remains limited. Among fatal drowning incidents, only 2% (n = 41) noted alcohol use, while 10% (n = 50) of hospitalizations mentioned it. In contrast, less than 1% of ED visits for drowning involved alcohol. This distribution suggests that alcohol use may contribute to more severe outcomes, such as death or hospitalization, rather than less severe incidents resulting in ED visits, or that alcohol involvement is not recorded consistently.

Georgia Emergency Medical Services Information System (GEMSIS)

EMS data from 2018 to 2023 were analyzed to identify drowning-related encounters that may not have resulted in contact with an ED or hospital and were therefore not captured. Because EMS ICD coding is not tied to reimbursement, it can be an unreliable indicator for identifying drowning incidents. To improve the accuracy, multiple data points were used for case validation.

Records were identified as drowning-related if the narrative section mentioned “drowning” or “submersion” and if the dispatch reason, caller reason, or EMS assessment was coded as drowning-related. While this process may have excluded some true drowning cases, it reduced the number of false positives. Ultimately, this methodology identified 1,467 drowning-related EMS encounters during the study period, regardless of patient residency or incident intentionality.

On average, there were 245 drowning-related EMS encounters per year. Encounters decreased annually until 2021, when there was a 46.39% increase from 2020. The age-adjusted drowning rate based on EMS encounters was 2.16 per 100,000 in 2021, exceeding Georgia’s drowning fatality rate for that year. EMS encounter rates for children aged 1–4 were more than six times higher than the overall age-adjusted rate at 13.59 per 100,000. This was lower than the ED rate for that age group but significantly higher than hospitalization and fatality rates.

By race, American Indian/Alaska Native (AI/AN) and Native Hawaiian/Pacific Islander (NHPI) groups had the highest age-adjusted drowning-related EMS encounters at 3.79 and 2.86 per 100,000, respectively. However, it is important to note that fewer than 10 cases were recorded among these groups, rendering the rates statistically unstable. Black or African American and White individuals had the next highest rates at 2.86 and 2.18 per 100,000, respectively, and accounted for the largest number of cases, with 472 and 634 encounters.

Rapid resuscitation and emergency medical care are known to reduce drowning-related morbidity and mortality. The average time from the 911 call to EMS arrival at the patient's side was 17.9 minutes. Response time varied by water body type: flowing water incidents had the longest average time at 39.98 minutes, while bathtubs and pools had the shortest, at around 12 minutes. Response times also varied by EMS district. District 8-1 (South) had the longest average response time at 32.47 minutes, while District 8-2 (Southwest) had the shortest response time at 11.43 minutes. For reference, the overall EMS encounter median was 11 minutes.



Sunset over Lake Lanier in northern Georgia.



Limitations

There are no widely established minimum datasets for collecting drowning data. This lack of standardization contributes to incomplete data and limits understanding of the burden and circumstances of drowning, particularly for non-fatal incidents. As a result, there are several limitations in the datasets analyzed for this report, especially circumstantial details such as alcohol use, drowning setting, supervision of minors, presence of structural barriers, and other factors shown in Figure 1.

Georgia maintains comprehensive drowning death, ED, and hospital data through OASIS. However, unlike death records, ED and hospital records lack narrative text. Without narratives, these datasets rely exclusively on ICD-10-CM codes to identify drowning settings. ICD-10-CM codes provide only limited options—such as pools, bathtubs, unspecified natural bodies of water, or other unspecified. Through text mining of death record narratives, we were able to reclassify nearly 50% of drowning fatalities initially coded as “natural water” into more specific categories (e.g., flowing water). The absence of this level of detail in ED and hospitalization data makes it more difficult to design targeted, setting-specific drowning prevention strategies.

For EMS data, ICD-10 coding is not tied to reimbursement and is therefore less reliable for identifying drowning incidents. Before case refinement, many encounters coded as a drowning were unrelated events—such as respiratory distress from pneumonia or other respiratory illness—identified through narrative review. To improve accuracy, case refinement required multiple data points to confirm an actual submersion incident. This refinement and incomplete data led to a reduction of identified cases, which underestimates the true number of drowning-related EMS encounters.

Some potentially valuable data sources were not accessible for the study period, including police, fire and rescue, and DNR reports. Through discussion with partners, it was identified that these reporting systems were not built to easily identify drowning cases, and proxy measures would have to be deployed to locate relevant records. For example, in DNR and fire and rescue reporting, all “water rescues” would need to be extracted and then individually vetted for drowning-related event characteristics to determine whether they were true drowning incidents.

Fishing on the Chattahoochee River.





Lessons and considerations

Lesson 1. Drowning data collection is decentralized across multiple agencies/ departments.

Drowning data in Georgia are collected and stored by multiple entities, including Child Death Review (CDR) teams, law enforcement, emergency medical services (GEMSIS), and the Georgia Fire Incident Reporting (GFIR) system. However, these datasets are not routinely linked or shared. This lack of coordination limits the ability to conduct comprehensive surveillance, identify patterns, and inform prevention strategies.

Consideration 1. Promote and institutionalize multisectoral collaboration among governmental agencies that collect drowning-related data, in the same way OASIS connects fatality, ED, and hospitalization data through a longitudinal identifier. Establishing formal mechanisms for data sharing and integration will improve surveillance quality, support data-driven decision-making, and strengthen prevention initiatives statewide.

Lesson 2. There is a lack of standardization of data elements collected from a drowning event.

Critical contextual information from drowning incidents is not standardized across systems. Variables such as alcohol or other drug involvement, high-risk medical conditions (e.g., epilepsy, cardiovascular disease, autism), protective factors (e.g., fencing, life jackets, supervision, CPR), and type of water body are often missing or inconsistently recorded in EMS, ED, and hospitalization data. These details must frequently be inferred from ICD-10 codes or extracted from narrative reports, limiting comprehensive analysis and comparability across systems. Subsequently,

this makes tailoring drowning prevention strategies more difficult.

Consideration 2. Develop and adopt a standardized set of core drowning data elements to be collected across all relevant systems. Standardization will enhance surveillance, enable data-informed decision-making, and strengthen prevention strategies.

Lesson 3. The majority of drowning prevention programming occurs outside of state government, with implementation led by non-profit organizations.

Most drowning prevention programs in Georgia are implemented by non-profit organizations, with minimal direct involvement or coordination from the state government. There is no dedicated funding mechanism for state-led drowning prevention initiatives. While programs such as swimming lessons and water competency training are primarily driven by the non-profit sector, critical drowning surveillance data are almost exclusively collected by governmental agencies. This disconnect limits the ability of program implementers to access timely data to guide interventions.

Consideration 3. Establish routine data-sharing practices between state agencies and external partners, such as publishing annual drowning reports. Ensure that governmental agencies have active representation in local and state-level water safety coalitions to strengthen cross-sector collaboration and better align programming with population-level risk. Additionally, dedicated funding to lead drowning prevention initiatives could help alleviate this disconnect.

Lesson 4. GEMSIS has the potential to provide rapid and critical contextual data on drowning incidents.

GEMSIS captures near-real-time data from all EMS agencies across Georgia, often within days of an incident, and provides detailed narrative reports accessible to the Georgia Department of Public Health. However, these narratives are unstructured and lack standardized data elements, making the extraction and analysis of key information labor-intensive.

Additionally, GEMSIS data are not linked to other health datasets (e.g., ED, hospitalizations, or death records), which limits their utility for longitudinal tracking of outcomes.

Consideration 4. Incorporate structured, drowning-specific data fields in GEMSIS, triggered when an incident is flagged as a drowning or submersion event. This would improve the consistency and completeness of critical contextual data. Furthermore, the development of a unique identifier aligned with identifiers used in systems like OASIS or Child Death Review would facilitate data linkage and enhance the ability to track outcomes across the continuum of care.

Lesson 5. Data on the use of protective factors that decrease the risk of drowning do not exist in Georgia.

Georgia does not systematically collect data on the use of evidence-based drowning prevention interventions (e.g., pool fencing, swimming skills training, life jacket use, lifeguards, CPR training). Regulatory mechanisms for pool fencing exist, but there is no standardized system to assess coverage. Similarly, while non-governmental organizations provide swimming instruction, there is no comprehensive database capturing the content, reach, or participant outcomes of these programs. Without state-level funding, public health agencies and community programs lack the necessary data to target limited resources efficiently.

Consideration 5. Partner with municipalities enforcing pool fencing and organizations providing swimming training to collect intervention data. Additionally, explore the use of geospatial technologies—such as LiDAR imagery—to estimate unfenced pools, enhance surveillance, and support focused prevention strategies.



Conclusions

Drowning remains a persistent and multifaceted public health challenge in Georgia, with more than 7,300 fatal and non-fatal drowning cases documented between 2009 and 2023. This report shows that fatal drowning rates have risen over the last decade, especially since 2018, despite declines in drowning-related ED visits and hospitalizations. These trends highlight the complex nature of drowning risk, shaped by Georgia's abundant and diverse water environments, from bathtubs and swimming pools to coastal waters and fast-moving rivers.

Significant disparities were identified across age, sex, region, and race/ethnicity. Children aged 0–4 and adults aged 75+ have the highest fatal drowning rates, which may be due to older adults increased fall risk and higher prevalence of bathroom-related injuries¹⁸, with natural water posing the most significant risk for adolescents and adults. Males account for most fatalities, especially in natural water settings. Regions with high tourist activity, such as coastal districts, faced disproportionately high fatal drowning rates. These trends emphasize the need for focused, context-specific prevention strategies.

Data fragmentation emerged as a significant barrier to effective surveillance and intervention. Drowning data are siloed across unlinked systems (GEMSIS, OASIS, Child Death Review), each capturing only part of the picture. Inconsistent data elements, such as the lack of standardized fields for alcohol use, medical conditions, and protective factors (e.g., life jackets, fencing), limit the ability to conduct robust analyses and craft responsive interventions. There is a disconnect between data custodians and program implementers. While state agencies maintain most of the drowning surveillance data, non-profit organizations are the primary drivers of programmatic prevention efforts. There is minimal integration between data and programming, and no dedicated state-level funding exists to support systematic drowning prevention.

Despite these challenges, opportunities for improvement are clear. GEMSIS shows promise as a rapid, context-rich data source if enhanced with structured drowning-specific fields and linked to other health datasets. Recent legislative actions, such as Izzy's Law and mandatory water safety education in schools, signal growing momentum for prevention.

Georgia's drowning prevention strategy must prioritize coordinated, data-driven action across sectors. Formalizing partnerships between key stakeholders, including public health agencies, EMS providers, local governments, community-based organizations, and academic institutions, will be critical to bridge the current disconnect between data ownership and program implementation. Establishing a statewide drowning prevention coalition or task force could provide a structured platform for these entities to align on common goals, share data, and develop integrated prevention strategies.

Standardizing core data elements across all drowning-related reporting systems should be a top priority to improve data surveillance across the state. The inclusion of consistent variables such as alcohol or other drug involvement, protective factors, medical history, and detailed drowning setting would dramatically improve the quality and comparability of data. This could be accomplished through revising reporting protocols in systems such as GEMSIS, OASIS, and law enforcement databases, as well as leveraging new technologies, such as geospatial mapping, to supplement surveillance of environmental risks like unfenced pools.

Improving access to and usability of existing data for community-based programs will strengthen the ability to design and evaluate interventions specific to each public health district in the state. This includes establishing secure, routine data-sharing agreements between state agencies and non-profit partners, as well as providing resources and training on data interpretation and use.

A sustainable funding mechanism and formalizing public and private partnerships would enable the expansion of swimming instruction programs, public awareness campaigns, infrastructure improvements (e.g., personal flotation device loaner stations and signage at high-risk sites), and evaluation of program impact.

By focusing on strategic collaboration, data standardization, expanded data access, and sustained funding, Georgia can take the next critical steps toward reducing preventable drowning deaths and injuries and ultimately create safer aquatic environments for all Georgians and visitors to the State.



Savannah, Georgia skyline on the Savannah River.

References

1. Georgia Department of Public Health, Office of Health Indicators for Planning OASIS. Accessed March 13, 2025. <https://oasis.state.ga.us/oasis/webquery/qryPopulation.aspx>
2. Georgia - Census Bureau Profile. Accessed March 19, 2025. <https://data.census.gov/profile/Georgia?g=040XX00US13#income-and-poverty>
3. United States - Census Bureau Profile. Accessed March 19, 2025. https://data.census.gov/profile/United_States?g=010XX00US#populations-and-people
4. Georgia Rivers. Georgia River Network. Accessed March 13, 2025. <https://garivers.org/georgia-rivers/>
5. Georgia's Natural Resources | Department Of Natural Resources Division. Accessed March 13, 2025. <https://gadnr.org/resources>
6. How Many Swimming Pools Are In the U.S.? - Pool Research. July 18, 2022. Accessed March 13, 2025. <https://poolresearch.com/us-pool-data/>
7. Commercial Fishing Licenses & Regulations | Department Of Natural Resources Division. Accessed March 13, 2025. <https://coastalgadnr.org/CommercialFishing>
8. Department Of Natural Resources Division. Accessed March 13, 2025. <https://coastalgadnr.org/>
9. SPLASH! / Wear It! - Anti-drowning & Safe Boating Campaigns | Department Of Natural Resources Division. Accessed March 19, 2025. <https://gadnrle.org/wear-it>
10. Pools | Georgia Department of Public Health. Accessed May 30, 2025. <https://dph.georgia.gov/environmental-health/pools>
11. Georgia General Assembly - SB 107. Accessed March 19, 2025. <https://www.legis.ga.gov/legislation/64094>
12. Michigan Department of Health and Human Services. (n.d.). *Injury & violence prevention*. <https://www.GeorgiaGeneralAssembly.com/legislation/64361>
13. Georgia General Assembly - SB 50. Accessed March 19, 2025. <https://www.legis.ga.gov/legislation/63783>
14. Georgia General Assembly - HB 471. Accessed March 19, 2025. <https://www.legis.ga.gov/legislation/70388>
15. Thomas KE, Johnson RL. State Injury Indicators: Instructions for Preparing 2022 Data. Atlanta (GA): Centers for Disease Control and Prevention, National Center for Injury Prevention and Control; 2024
16. Anderson RN, Rosenberg HM. Age Standardization of Death Rates: Implementation of the Year 2000 Standard. National vital statistics reports; vol 47 no 3. Hyattsville, Maryland: National Center for Health Statistics, 1998
17. Global Status Report on Drowning Prevention 2024. WHO Accessed July 25, 2025. <https://www.who.int/publications/i/item/9789240103962>
18. Kim GS, Kim N, Shim MS, Lee JJ, Park MK. Understanding the Home Environment as a Factor in Mitigating Fall Risk among Community-Dwelling Frail Older People: A Systematic Review. Chen QW, ed. *Health & Social Care in the Community*. 2023;2023:1-17. doi:10.1155/2023/8564397

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