Drowning and submersion deaths include deaths involving swimming pools, natural open water (rivers, lakes, or seas), bathtubs and other bodies of water where no watercrafts were involved.

**Deaths from Drowning**

Drowning is an important injury concern, as it was the 2nd leading cause of unintentional injury death for children 1 to 4 years of age. From 1999 through 2001, 351 Georgians drowned, an average of 117 per year. Of these, 37% were children under the age of five or young adults between the ages of 15 and 24 years. Eighty percent (80%) were male, and 62% were white (Table 14).

| Table 14. Number of Deaths by Age, Race and Sex: Drowning, Georgia, 1999-2001 |
|------------------|------------------|------------------|------------------|------------------|
|                  | White            | Black            | Other            | Total            | Average per year |
|                  | Male  Female     | Male  Female     | Male  Female     | Male  Female     |                 |
| Under 5          | 20  16           | 8  2             | 2  1             | 49  16           |
| 5-14             | 11  6            | 27  6            | 0  1             | 51  17           |
| 15-24            | 47  3            | 32  2            | 2  0             | 86  29           |
| 25-44            | 45  10           | 24  2            | 1  0             | 82  27           |
| 45-64            | 34  12           | 14  1            | 0  0             | 61  20           |
| 65+              | 10  3            | 5  4             | 0  0             | 22  7            |
| Total            | 167  50          | 110  17          | 5  2             | 351  117         |
The death rate from drowning in Georgia decreased from 1979 to 1993 but remains slightly higher than the US rate (Figure 37). From 1999 through 2001, if the death rate for drowning in Georgia had been equal to the death rate for drowning in the United States, an estimated 10 persons per year would not have died from drowning in Georgia (Table 1).

**Figure 37. Age-Adjusted Death Rates: Drowning, Georgia and US, 1979-2001**

![Graph showing age-adjusted death rates for drowning in Georgia and US, 1979-2001.]

NOTE: The dotted line indicates a change in coding systems used for cause of death. ICD-9 codes were used in 1979-1998 and ICD-10 codes were used in 1999-2001.

Children 1 to 4 years of age and young adults 15 to 24 years of age had a significantly higher risk for drowning than other age groups (Figure 38).
The rate of drowning was about four times higher for males (2.3 per 100,000 population) than for females (0.6 per 100,000 population). Whites (1.4 per 100,000 population) were slightly less likely than blacks (1.8 per 100,000 population) to die from drowning. Among the race/ethnic/sex groups, black males had the highest drowning rate (3.2 per 100,000 population) (Figure 39).

Figure 39. Age-Adjusted Death Rates by Race and Sex: Drowning, Georgia and US, 1999-2001

More than one-third (39%) of all the drownings occurred in open water, and almost half (48%) of the open water victims were teenagers or young adults between 15 and 34 years of age. Of those who drowned in a swimming pool (14% of all drownings), 59% were children ages 1 to 14 years old. (Figure 40).

Figure 40. Drowning by Type, Georgia, 1999-2001
Map 10. Age-adjusted Death Rate by County of Residence: Drowning, Georgia, 1994-2001

Drownings per 100,000 population
- Rate not calculated (less than 10 deaths)
- >1.4
- >=1.4 and <1.9
- >=1.9
Hospitalizations from Near Drowning

From 1999 through 2001, 188 Georgians were hospitalized for near-drowning, an average of 63 per year, resulting in an average of 400 days in hospital stay and nearly $1.3 million in hospital charges per year. Although drowning incidents resulted in fewer hospitalizations than deaths, near-drownings ranked 2nd in hospital charges per visit among all the injury mechanisms, with average charges of approximately $21,000. Of all those hospitalized for near-drownings, 42% were children under 5 years of age, 61% were males, and 47% were whites (Table 15).

Table 15. Number of Hospitalizations by Age, Race and Sex:
Near-Drowning, Georgia, 1999-2001

<table>
<thead>
<tr>
<th>Age Group</th>
<th>White Male</th>
<th>White Female</th>
<th>Black Male</th>
<th>Black Female</th>
<th>Hispanic Male</th>
<th>Hispanic Female</th>
<th>Total*</th>
<th>Average per Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 5</td>
<td>29</td>
<td>17</td>
<td>15</td>
<td>4</td>
<td>1</td>
<td>3</td>
<td>79</td>
<td>26</td>
</tr>
<tr>
<td>5-14</td>
<td>9</td>
<td>3</td>
<td>16</td>
<td>16</td>
<td>0</td>
<td>0</td>
<td>52</td>
<td>17</td>
</tr>
<tr>
<td>15-24</td>
<td>5</td>
<td>1</td>
<td>12</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>21</td>
<td>7</td>
</tr>
<tr>
<td>25-44</td>
<td>8</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>18</td>
<td>6</td>
</tr>
<tr>
<td>45-64</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>65+</td>
<td>7</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>10</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>61</td>
<td>28</td>
<td>49</td>
<td>21</td>
<td>5</td>
<td>3</td>
<td>188</td>
<td>63</td>
</tr>
</tbody>
</table>

*Total includes all other races/ethnicity.

Children under 5 years of age had the highest hospitalization rates among all age groups (Figure 41).

Figure 41. Age-Specific Hospitalization Rates:
Near-Drowning, Georgia, 1999-2001
The rate of near-drowning hospitalization was higher among males (rate 1.1 per 100,000 population) than among females (rate 0.5 per 100,000 population). Whites (0.6 per 100,000 population) and blacks (0.8 per 100,000 population) were equally likely to be hospitalized for near-drowning. However, black males had the highest near-drowning hospitalization rate among all race/ethnic/sex groups (Figure 42).

More than half of the hospitalizations for near-drowning (55%) occurred after incidents in swimming pools, and almost 78% of persons affected were children under 15 years of age. Near-drowning incidents in open water accounted for 24% of hospitalizations with a majority (77%) of those affected being children under 15 years old (Figure 43.)

There were too few hospitalizations per county to allow for calculation of reliable county-specific hospitalization rates for near drowning.
**Drowning Related Prevention Strategies**

Many of the drownings could have been prevented through constant adult supervision of children near swimming pools and open water (lakes, ponds, etc), enforcing ordinances for child proof fencing around pools, covering pools with appropriate covers, and using effective barriers around ponds and open water. Parental knowledge of cardiopulmonary resuscitation (CPR) could greatly increase the chance for survival or reduce the severity of injury to children in near-drowning cases. Other prevention measures include utilizing Coast Guard approved personal floatation devices (PFD) when involved in water-related recreational activities, avoiding swimming after dark, and avoiding the use of alcohol or other drugs before and during recreational water activities.

**Injury Prevention Programs for Drowning Related Injuries**

The Injury Prevention Section of the Georgia Department of Human Resources, Division of Public Health, works with local communities and other state agencies to develop drowning prevention programs. These include the support of PFD provision programs on major open water recreational waterways. These programs have frequently involved partnerships with local coalitions through which the Injury Prevention Section provides district or county specific data on drowning or near drowning related mortality and morbidity.
Drowning Prevention Resources

The following organizations and web sites provided recommendations and best practices on preventing drowning related deaths and near-drowning injuries.

- American Academy of Pediatrics
  [http://www.aap.org/family/tipppool.htm](http://www.aap.org/family/tipppool.htm)

- The Medical Center of Central Georgia

- American Red Cross

- U.S. Consumer Product Safety Commission

- Children’s Safety Network

- National Safety Council

- U.S. Coast Guard, Office of Boating Safety

- The United States Lifesaving Association
  [http://www.usla.org/index.html](http://www.usla.org/index.html)