

# Epidemiology of Unintentional Drownings in Florida, 2001-2005

Office of Injury Prevention  
Florida Department of Health



# Definition of Drowning

The process of experiencing respiratory impairment from submersion/immersion in liquid with 3 possible outcomes:



- Mortality (Drowning Deaths)
- Morbidity (Near Drownings)
- No Morbidity

Data is available on drowning deaths (death certificate records) and near drownings (hospital discharge records).

# Data Sources and Case Definitions

- Drowning Deaths (Unintentional Only):
  - Florida Death Certificate Records (DOH)
  - ICD-10 Underlying Cause of Death Codes V90, V92 (Boating Accident Causing Drowning/Submersion), W65-W74 (Accidental Drowning/Submersion)
  - Breaks out drowning deaths in pools
- Near Drownings (Unintentional Only):
  - Florida Hospital Discharge Records (AHCA)
  - ICD-9-CM Discharge Diagnosis Codes 994.1 (Drowning/Nonfatal Submersion), E830, E832 (Boating Accident Causing Drowning/Submersion), E910 (Accidental Drowning/Submersion)
  - Does **NOT** break out near drownings in pools

# Florida Drowning Deaths, 2001-2005

	2001	2002	2003	2004	2005	Avg/Yr
Florida Residents	378	384	421	391	382	391
Non-Residents	73	74	85	66	73	74
Total	451	458	506	457	455	465
Rate Per 100,000 FL Residents	2.26	2.28	2.48	2.21	2.11	2.26
Rate Per 100,000 US Population*	1.14	1.19	1.13	1.12	N/A	1.15

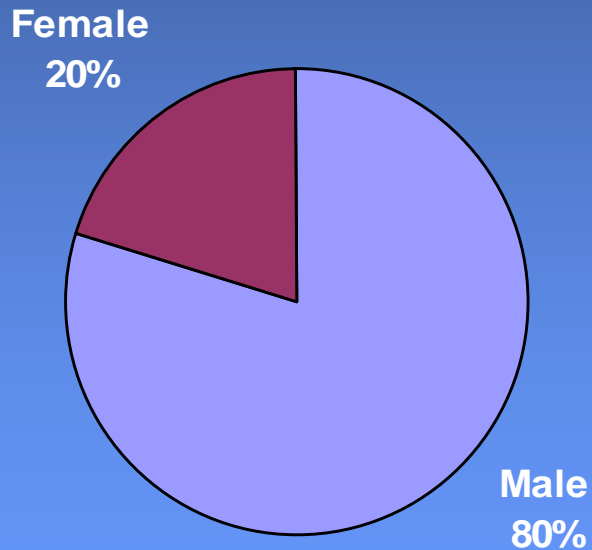
\*Data Source: CDC WISQARS (<http://www.cdc.gov/ncipc/wisqars/>)

# Florida Near Drownings, 2001-2005

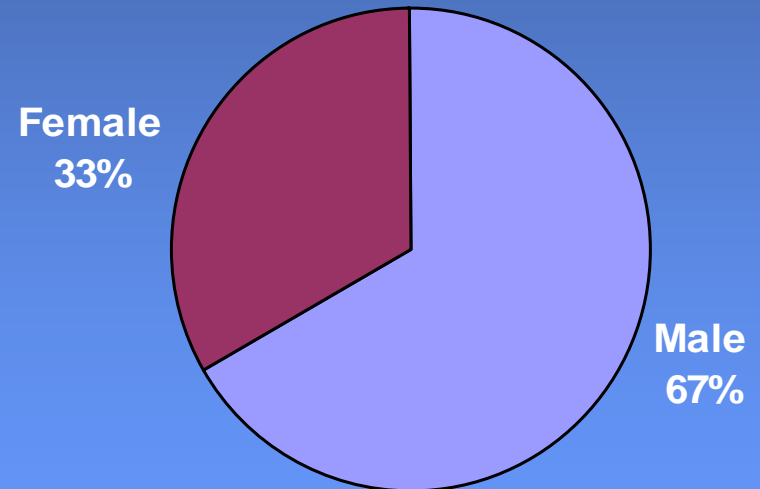
	2001	2002	2003	2004	2005	Avg/Yr
Florida Residents	415	494	461	454	440	453
Non-Residents	124	102	134	105	100	113
Total	539	596	595	559	540	566
Rate Per 100,000 FL Residents	2.71	3.17	2.88	2.75	2.62	2.82

# Drownings by Sex, 2001-2005

**Drowning  
Deaths  
N = 2,326**

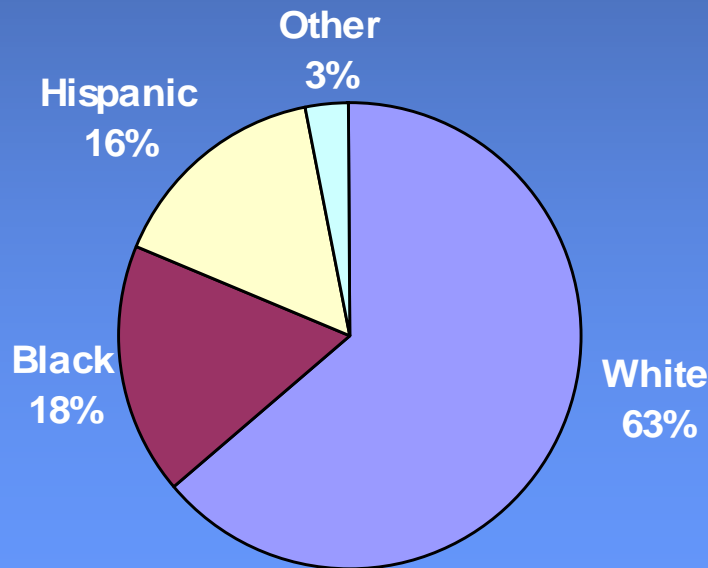


**Near Drowning  
Hospitalizations  
N = 2,829**

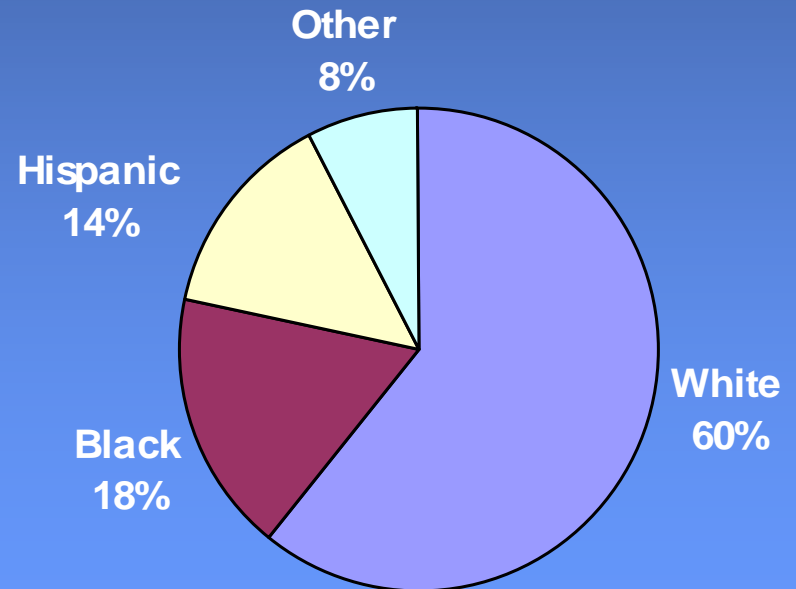


# Drownings by Race/Hispanic Ethnicity, 2001-2005

**Drowning Deaths**  
**N = 2,327**



**Near Drowning Hospitalizations**  
**N = 2,829**



## Drowning Deaths by Month, 1999-2006

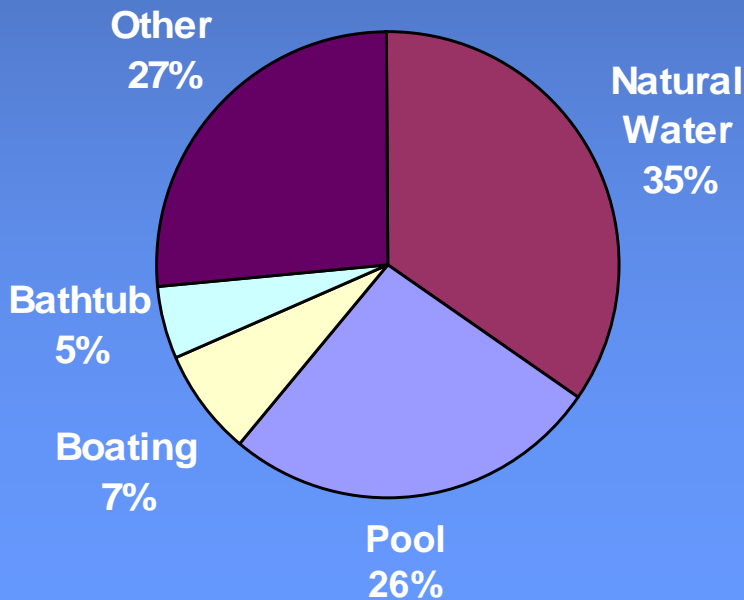
Yr	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Tot
99	23	17	29	44	47	46	50	61	35	35	27	19	433
00	23	27	30	38	50	51	50	47	38	25	22	24	425
01	18	25	29	50	54	52	56	49	37	25	30	26	451
02	20	23	43	50	60	53	43	50	36	27	26	27	458
03	20	26	43	44	58	65	68	53	45	40	29	15	506
04	31	24	40	34	58	58	54	43	42	29	21	23	457
05	31	18	32	38	48	45	71	53	39	28	27	30	460
06	26	16	33	60	45	62	55	44	33	23	12	0	409
<b>Avg</b>	<b>24</b>	<b>22</b>	<b>35</b>	<b>45</b>	<b>53</b>	<b>54</b>	<b>56</b>	<b>50</b>	<b>38</b>	<b>29</b>	<b>26</b>	<b>23</b>	<b>456</b>

# Near Drownings by Quarter, 1999-2005

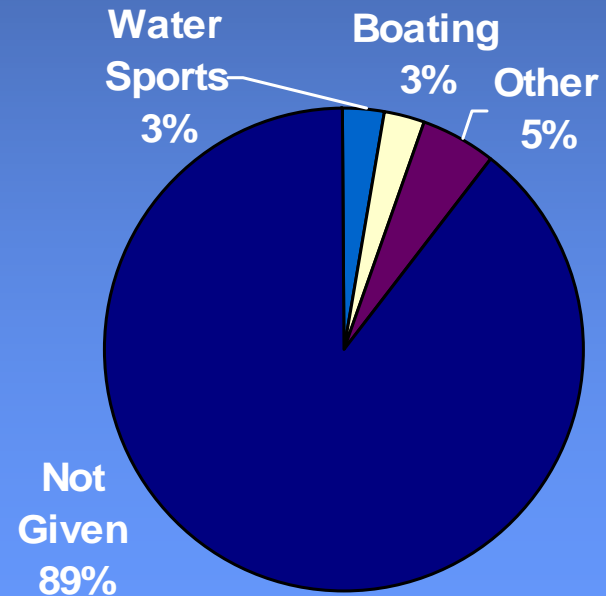
Year	1 <sup>st</sup> Qtr (Jan-Mar)	2 <sup>nd</sup> Qtr (Apr-Jun)	3 <sup>rd</sup> Qtr (Jul-Sep)	4 <sup>th</sup> Qtr (Oct-Dec)	Total
1999	87	177	179	84	527
2000	92	217	197	82	588
2001	108	199	167	65	539
2002	85	210	218	83	596
2003	97	203	194	101	595
2004	99	204	168	88	559
2005	95	186	190	69	540
<b>Avg</b>	<b>95</b>	<b>199</b>	<b>188</b>	<b>82</b>	<b>563</b>

# Drownings by Place of Occurrence, 2001-2005

**Drowning Deaths**  
**N = 2,327**

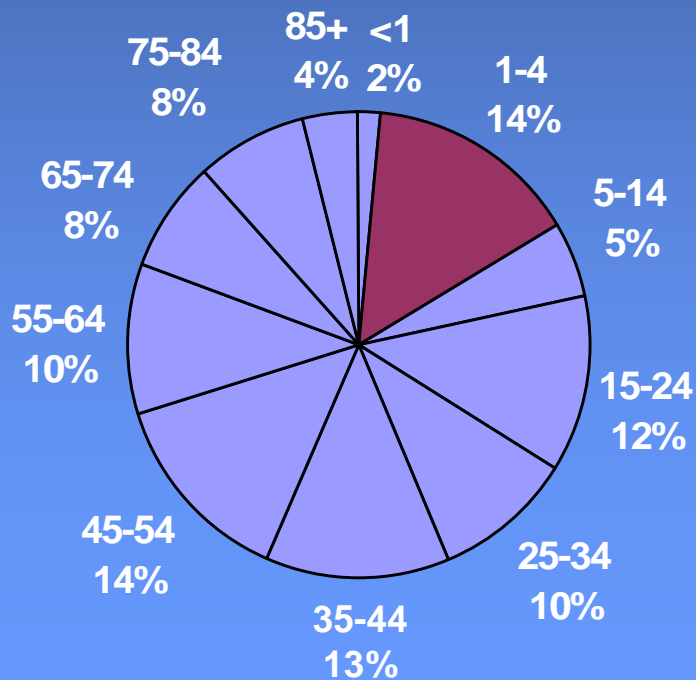


**Near Drowning Hospitalizations**  
**N = 2,829**

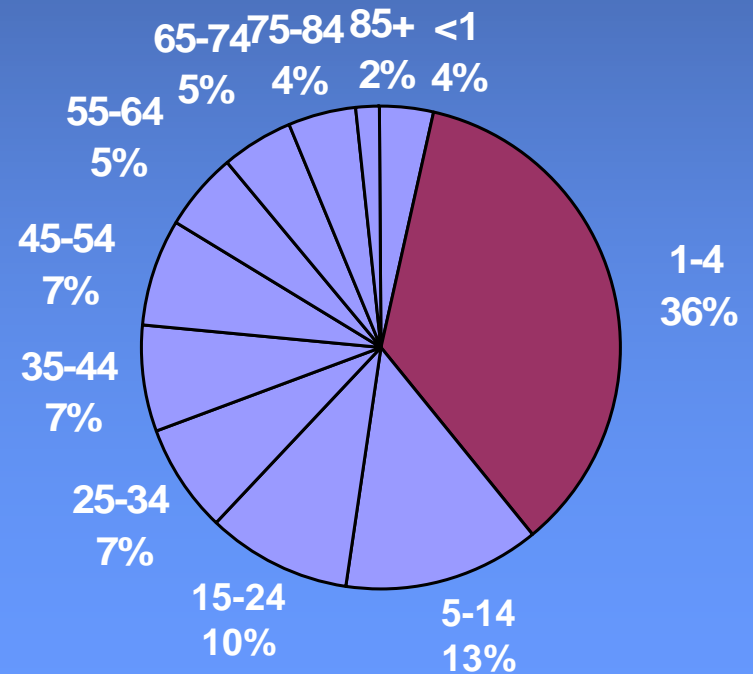


# Drownings by Age Group, 2001-2005

**Drowning Deaths**  
N = 2,318

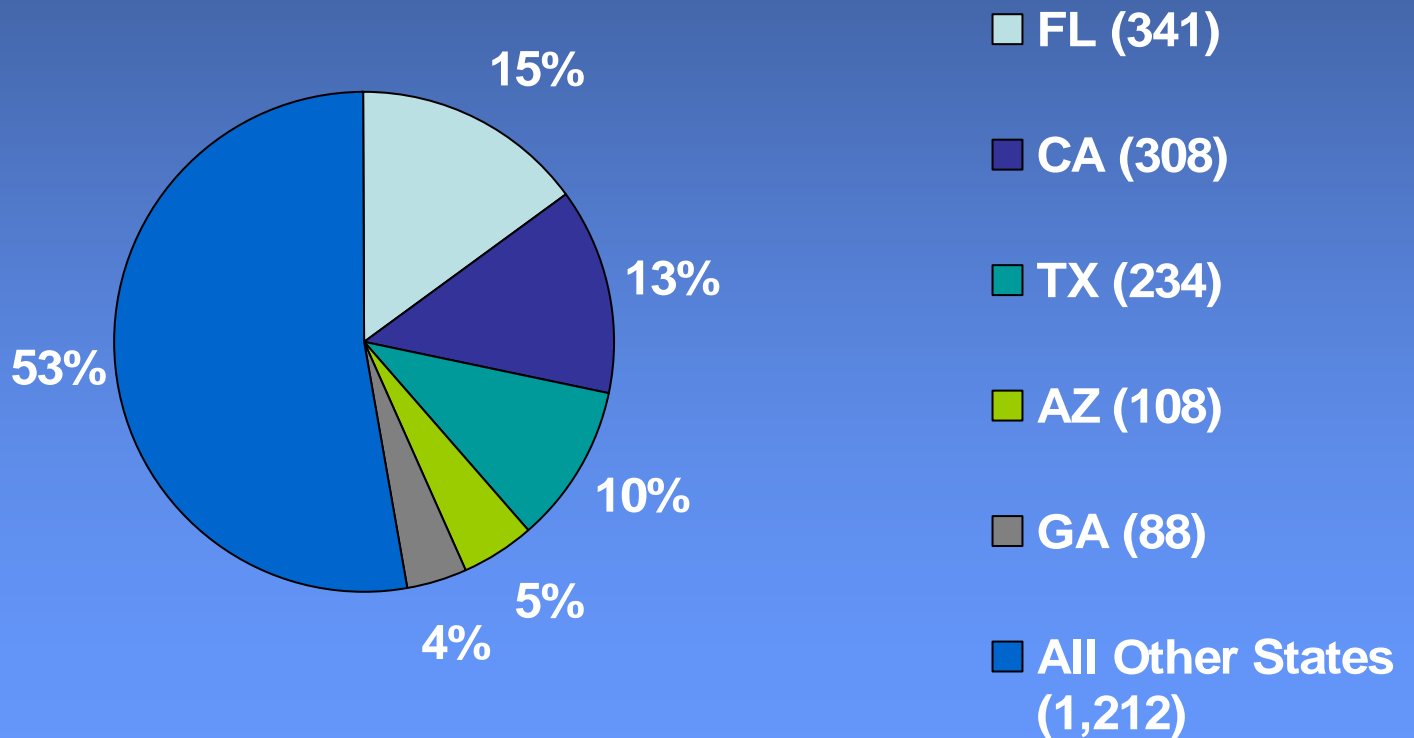


**Near Drowning Hospitalizations**  
N = 2,829

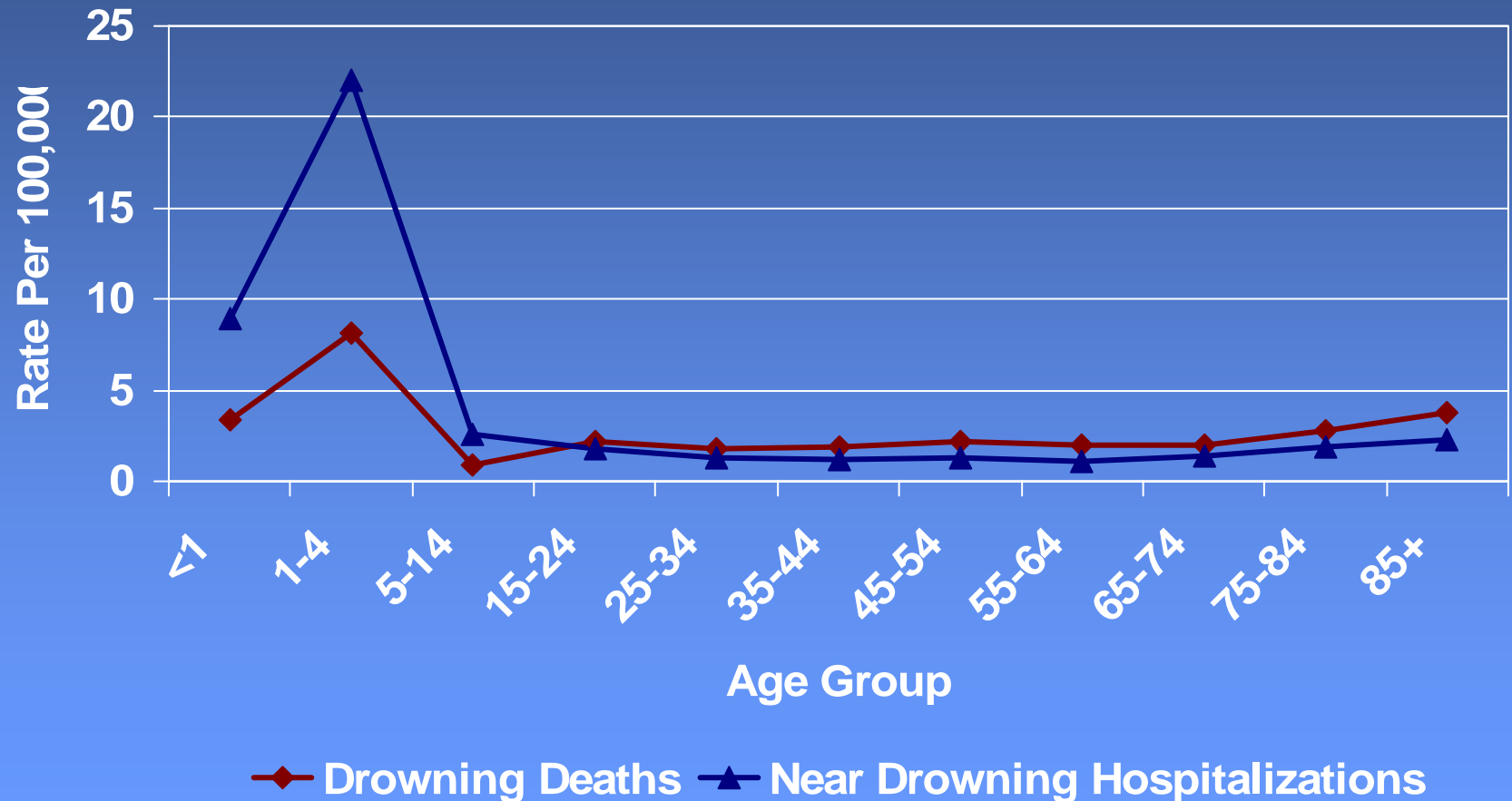


# Drowning Deaths of Top 5 States, Ages 1-4, 2000-2004

Total = 2,291 Drowning Deaths



# Drowning Rates by Age Group, 2001-2005



# Drowning Deaths and Rates of Selected States and US, Ages 1-4, 2000-2004

Rank	State	2000	2001	2002	2003	2004	Total	Rate
<b>1</b>	<b>FL</b>	<b>73</b>	<b>62</b>	<b>67</b>	<b>83</b>	<b>56</b>	<b>341</b>	<b>8.38</b>
2	AZ	23	27	19	20	19	108	6.50
3	AK	2	3	3	2	1	11	5.70
13	TX	50	47	37	57	43	234	3.39
18	HI	1	1	3	3	2	10	3.09
19	CA	71	68	60	52	57	308	3.05
--	US	493	458	454	456	430	2,291	2.94

# Florida Drowning Deaths Ages 0-4

	2001	2002	2003	2004	2005	Avg/Yr
Florida Residents	67	75	91	63	71	73
Non-Residents	6	1	8	3	4	4
Total	73	76	99	66	75	78
Rate Per 100,000 FL Res. 0-4	6.76	7.62	8.92	5.97	6.59	7.16
Rate Per 100,000 US Pop. 0-4*	2.72	2.65	2.60	2.45	N/A	2.61

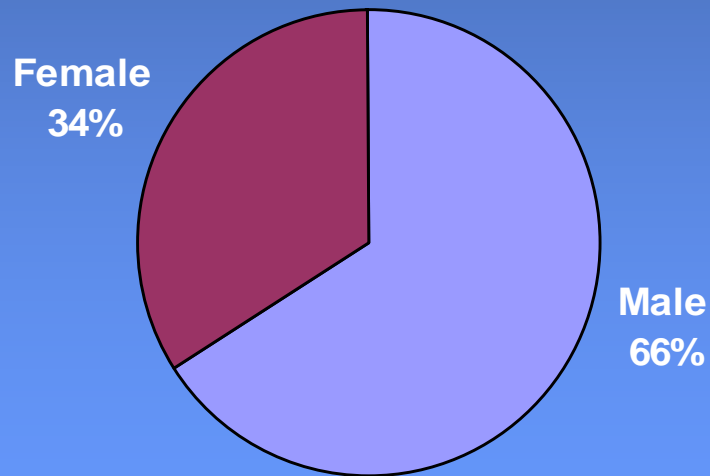
\*Data Source: CDC WISQARS (<http://www.cdc.gov/ncipc/wisqars/>)

# Florida Near Drownings Ages 0-4

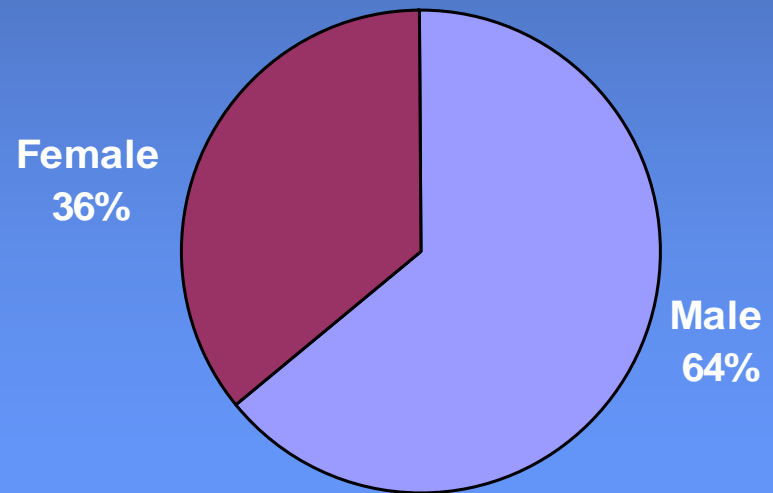
	2001	2002	2003	2004	2005	Avg/Yr
Florida Residents	170	204	216	200	202	198
Non-Residents	26	14	30	22	25	23
Total	196	218	246	222	227	222
Rate Per 100,000 FL Res. 0-4	17.2	20.7	21.2	19.0	18.8	19.4

# Drownings Ages 0-4 by Sex, 2001-2005

**Drowning  
Deaths  
N = 389**

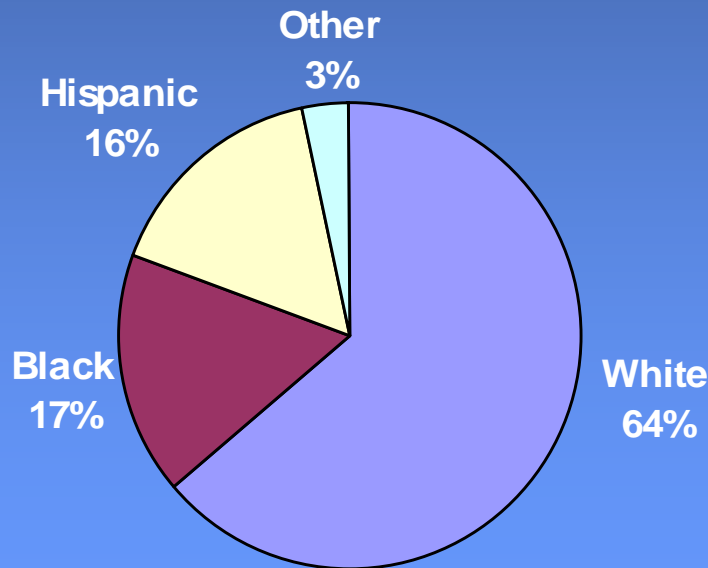


**Near Drowning  
Hospitalizations  
N = 1,109**

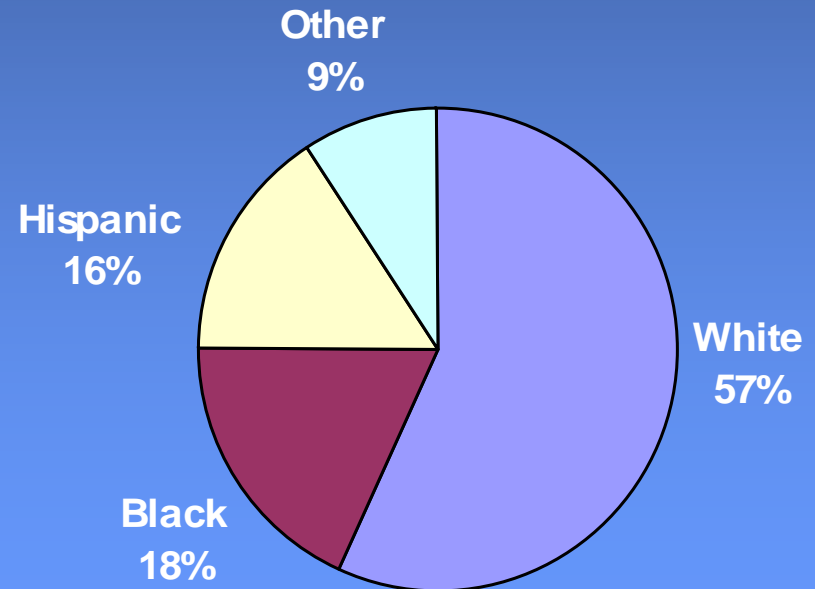


# Drownings Ages 0-4 by Race/ Hispanic Ethnicity, 2001-2005

**Drowning  
Deaths  
N = 389**



**Near Drowning  
Hospitalizations  
N = 1,109**



## Drowning Deaths Ages 0-4 by Month, 1999-2006

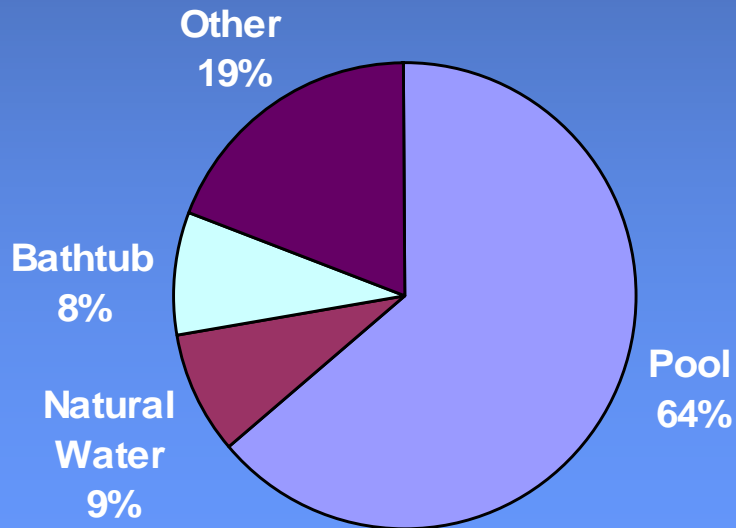
Yr	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Tot
99	4	3	7	10	11	9	10	11	8	3	5	4	85
00	2	4	7	14	12	12	11	7	9	2	3	4	87
01	7	3	7	9	12	7	7	8	5	3	3	2	73
02	4	3	6	6	16	8	6	10	3	5	6	3	76
03	7	2	11	11	12	13	12	4	8	11	5	3	99
04	6	1	8	1	10	3	12	7	7	5	3	3	66
05	6	3	6	8	13	6	8	7	3	7	6	2	75
06	5	4	9	7	8	13	4	8	7	7	2	0	74
<b>Avg</b>	<b>5</b>	<b>3</b>	<b>8</b>	<b>8</b>	<b>12</b>	<b>9</b>	<b>9</b>	<b>8</b>	<b>6</b>	<b>5</b>	<b>4</b>	<b>3</b>	<b>80</b>

# Near Drownings Ages 0-4 by Quarter, 1999-2005

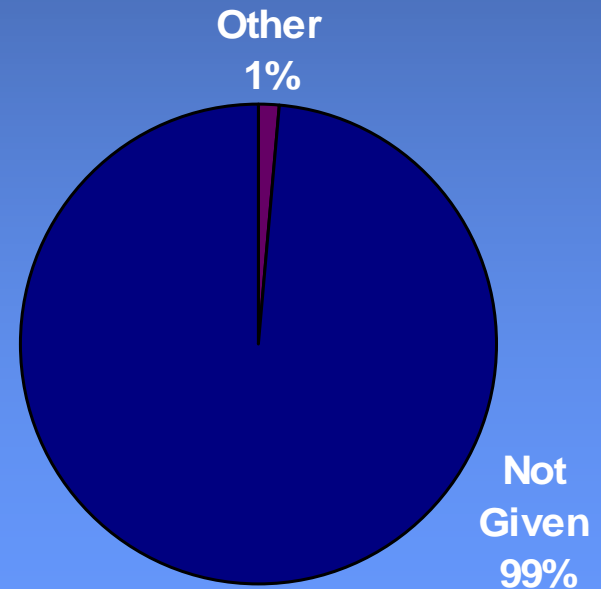
Year	1 <sup>st</sup> Qtr (Jan-Mar)	2 <sup>nd</sup> Qtr (Apr-Jun)	3 <sup>rd</sup> Qtr (Jul-Sep)	4 <sup>th</sup> Qtr (Oct-Dec)	Total
1999	40	64	68	29	201
2000	42	76	67	30	215
2001	47	67	59	23	196
2002	33	74	80	31	218
2003	43	84	71	48	246
2004	41	76	66	39	222
2005	47	78	75	27	227
<b>Avg</b>	<b>42</b>	<b>74</b>	<b>69</b>	<b>32</b>	<b>218</b>

# Drownings Ages 0-4 by Place of Occurrence, 2001-2005

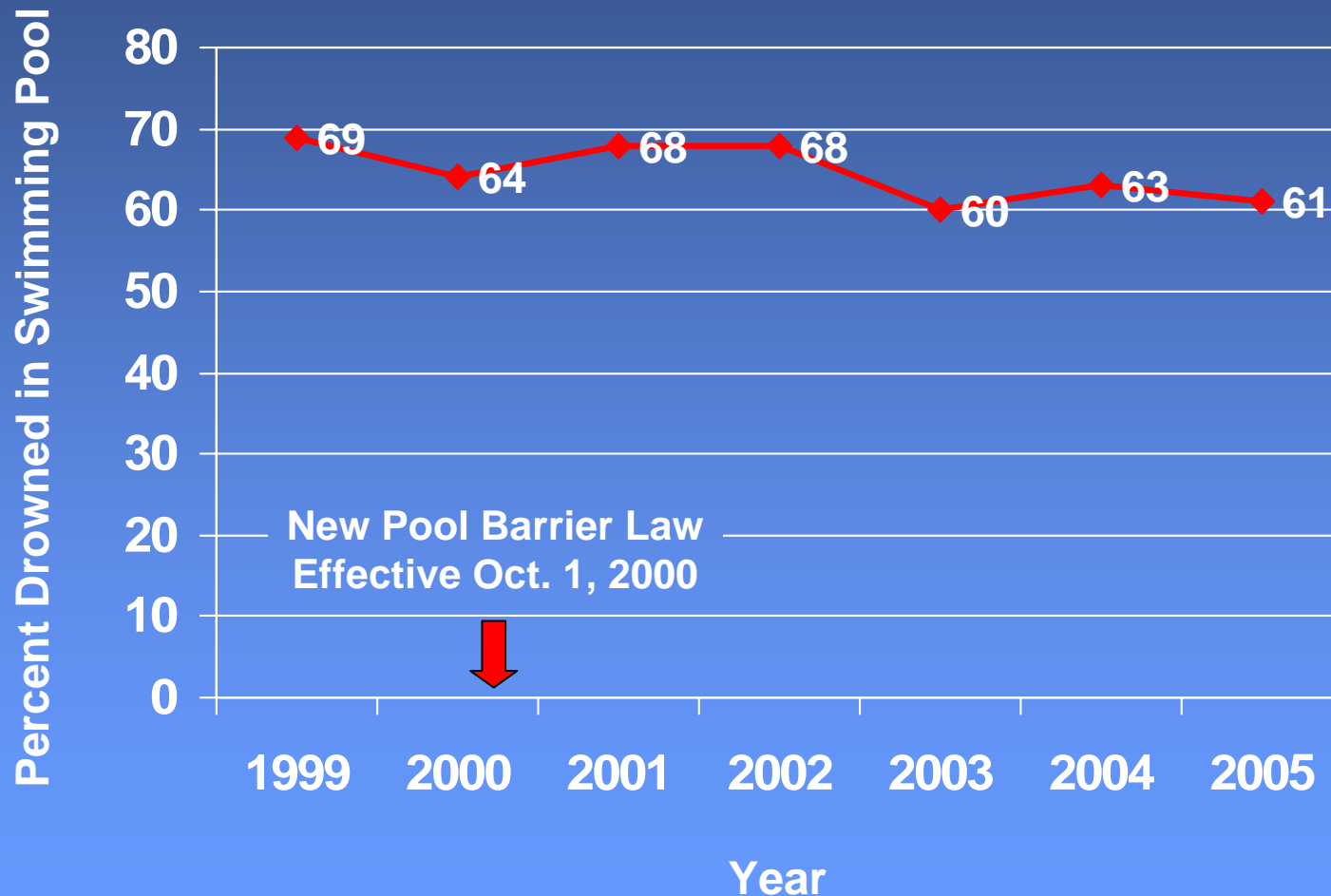
**Drowning Deaths**  
**N = 389**



**Near Drowning Hospitalizations**  
**N = 1,109**



# Percentage of Drowning Deaths in Florida Swimming Pools, Ages 0-4, 1999-2005



# Statewide Residential Swimming Pool Survey



- Conducted by DOH in Summer 2006 by contacting all 67 Florida county property appraisers' offices
- Total: **1.1 million** (59 counties reporting)
- Number Built After October 1, 2000: **226,000** (48 counties reporting)
- Percentage Built After October 1, 2000: **21%**
- Includes only permanent in-ground pools that are assessed on property tax rolls
- Does not include kiddie pools and above-ground pools that are not assessed for property taxes

## Pool Drowning Deaths Ages 0-4, 2001-2005, and Pools by County, 2006

County	# Deaths	Rank	# Res. Pools	Rank
Broward	29	1	113,157	1
Miami-Dade	23	2	76,477	3
Hillsborough	22	3	71,960	4
Orange	21	4	61,096	7
Palm Beach	14	5	101,463	2
Brevard	10	6	43,153	9
Duval	10	6	23,226	17
Lee	10	6	62,481	6
Pinellas	10	6	65,505	5
Polk	9	10	29,291	13
Seminole	8	11	38,086	10
Marion	6	12	13,077	23
Pasco	6	12	29,760	12
Osceola	5	14	18,943	18
St. Lucie	5	14	18,301	20
Volusia	5	14	27,622	14

# Review of CPSC Investigations of Toddler Pool Drowning Deaths



- Conducted by DOH in Summer 2006 by reviewing 58 cases of toddler pool drowning deaths in Florida between 2003-2006 investigated by the U.S. Consumer Product Safety Commission
- **71%** of cases accessed the pool through a door leading from the home to the pool area
- Most drownings occurred while caregiver was engaged in **routine household activity** (using the bathroom, cooking/eating, talking, watching TV, reading, etc.) that allowed a **lapse in supervision** of the toddler to occur

# Water Watcher Tag with DOH Drowning Prevention Message



## Water Watcher Pledge

To help protect children from drowning, I will . . .

- ★ Constantly watch the children who are in or near water and keep them within reach.
- ★ Give this tag to another adult who agrees to actively watch the children if I need to leave for any reason.
- ★ Make sure rescue equipment is easily accessible. Keep telephone and emergency numbers with me.
- ★ Latch gates, lock doors, use alarms and create two or more barriers to the pool, spa, or any water.
- ★ Once I leave the water, I will make sure a child cannot return without my knowledge.



**Drowning is silent and fast. Supervision is your child's best protection.**

[www.imsafe.com](http://www.imsafe.com)

# Summary of 2001-2005 Drowning Data

- Average of 465 drowning deaths of Florida residents and non-residents every year
- Average of 566 hospitalizations for near drownings in Florida every year
- Florida's overall drowning death rate was twice the national rate in 2001-2004
- Over a quarter of all drowning deaths in 2001-2005 occurred in swimming pools
- Children ages 1-4 made up the largest % of drowning deaths and near drownings

# Children Ages 0-4

- Make up the largest % of drowning deaths and hospitalizations for near drownings
- Have the highest drowning death rate and hospitalization rate of any age group
- FL made up the largest % of US drowning deaths ages 1-4 (also highest rate in US)
- About two-thirds of drowning deaths ages 0-4 occur every year in swimming pools
- Education needed on active supervision of children and proper use of pool barriers

# Contact Information



Florida Department of Health  
Office of Injury Prevention  
4052 Bald Cypress Way, Bin C-15  
Tallahassee, FL 32399-1735  
(850) 245-4144

<http://www.doh.state.fl.us/injury/>