

Overview of Unintentional Drownings in Florida, Broward and Miami-Dade Counties, 2001-2005

Drowning Prevention Workgroup Meeting
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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 W65-W74 (Accidental Drowning/Submersion)
 - Does not include drownings due to boating accidents
 - Does break 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), E910 (Accidental Drowning/Submersion) in any one of 10 Dx fields
 - Does not include drownings due to boating accidents
 - Does **NOT** break out near drownings in pools

Drowning Deaths, 2001-2005

(Residents Only)

	2001	2002	2003	2004	2005	Avg/Yr
Florida	359	358	381	355	353	361
Broward	52 (14%)	36 (10%)	46 (12%)	34 (10%)	31 (9%)	40 (11%)
Miami-Dade	40 (11%)	64 (18%)	48 (13%)	33 (9%)	45 (13%)	45 (12%)
Florida Rate/100K	2.14	2.12	2.24	2.01	1.96	2.09
Broward Rate/100K	2.98	2.15	2.65	1.96	1.77	2.30
Miami-Dade Rate/100K	1.71	2.71	2.03	1.36	1.82	1.92
U.S. Rate/100K*	1.14	1.19	1.13	N/A	N/A	1.15

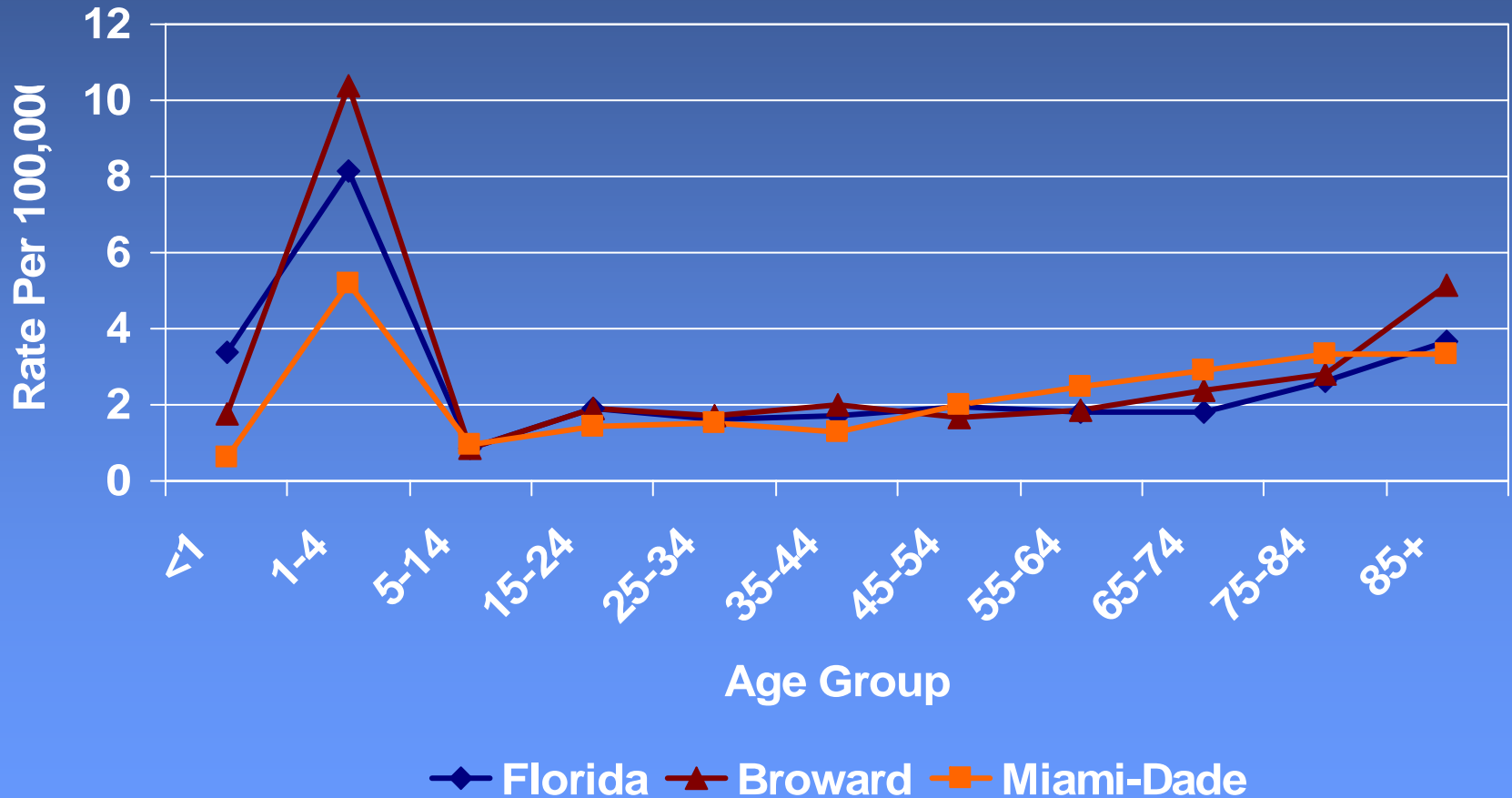
* Data Source: CDC WISQARS (<http://www.cdc.gov/ncipc/wisqars/>)

Near Drowning Hospitalizations, 2001-2005

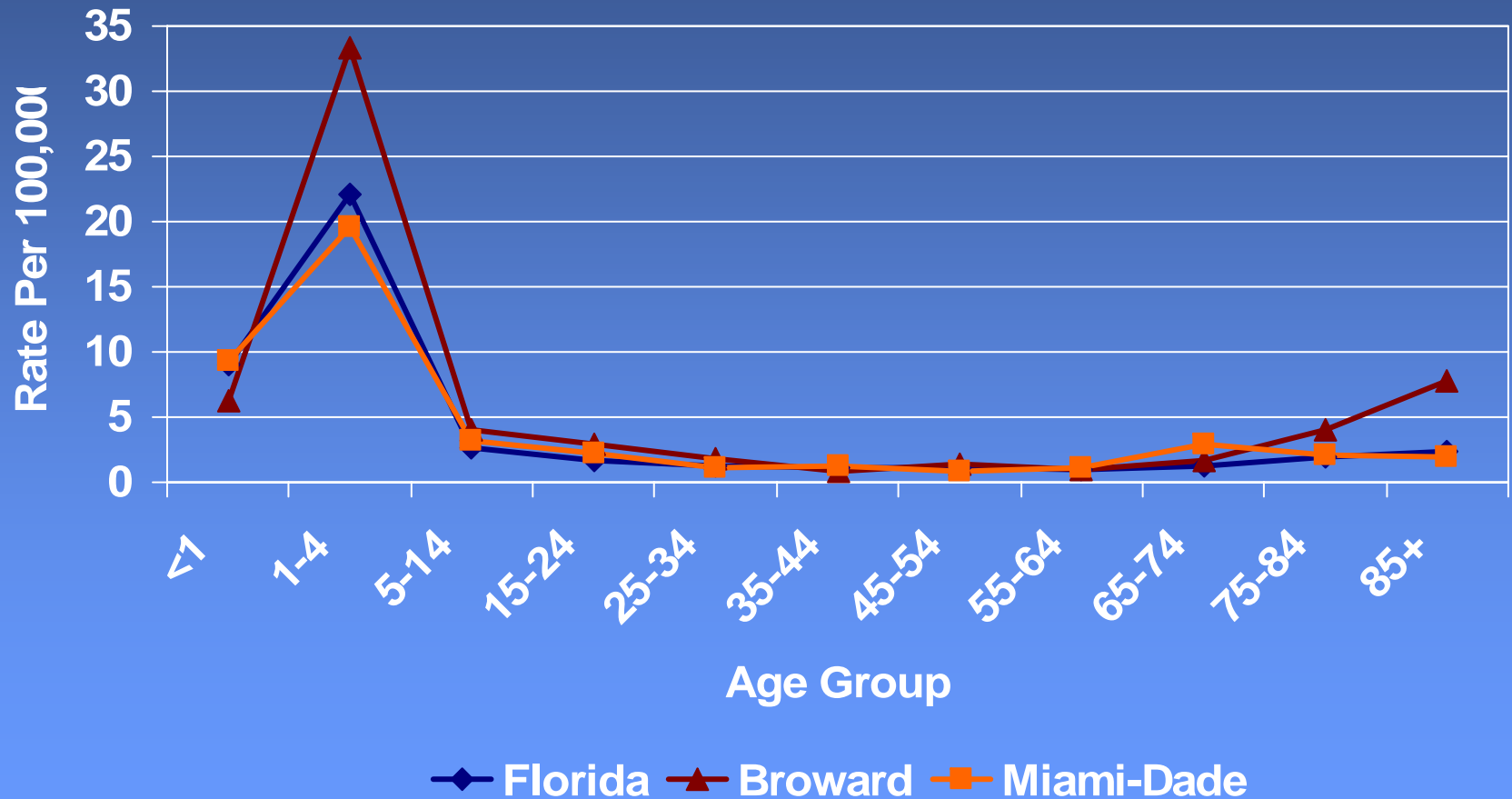
(Residents Only)

	2001	2002	2003	2004	2005	Avg/Yr
Florida	407	477	445	443	434	441
Broward	61 (15%)	84 (18%)	58 (13%)	77 (17%)	47 (11%)	65 (15%)
Miami-Dade	50 (12%)	76 (16%)	72 (16%)	64 (14%)	68 (16%)	66 (15%)
Florida Rate/100K	2.66	3.07	2.78	2.69	2.59	2.76
Broward Rate/100K	3.81	5.25	3.59	4.59	2.70	3.98
Miami-Dade Rate/100K	2.25	3.37	3.10	2.68	2.82	2.84

Drowning Death Rates by Age Group, 2001-2005

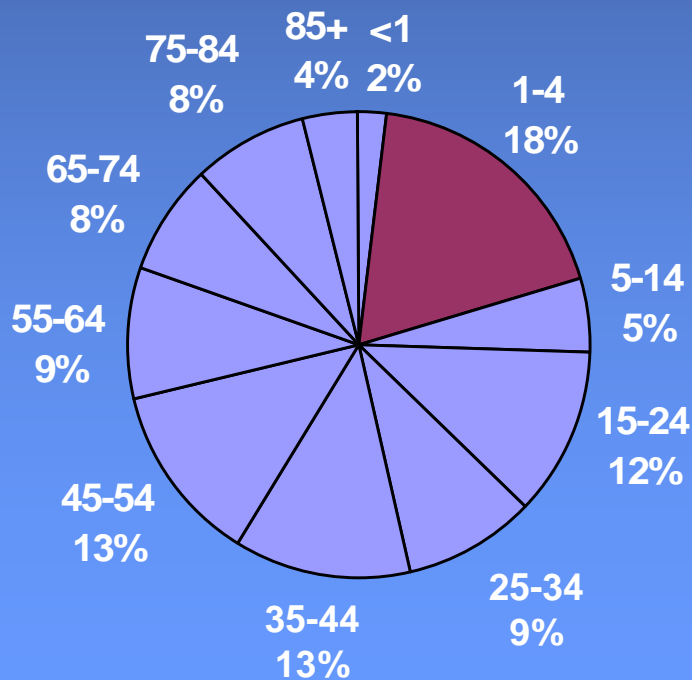


Near Drowning Hospitalization Rates by Age Group, 2001-2005

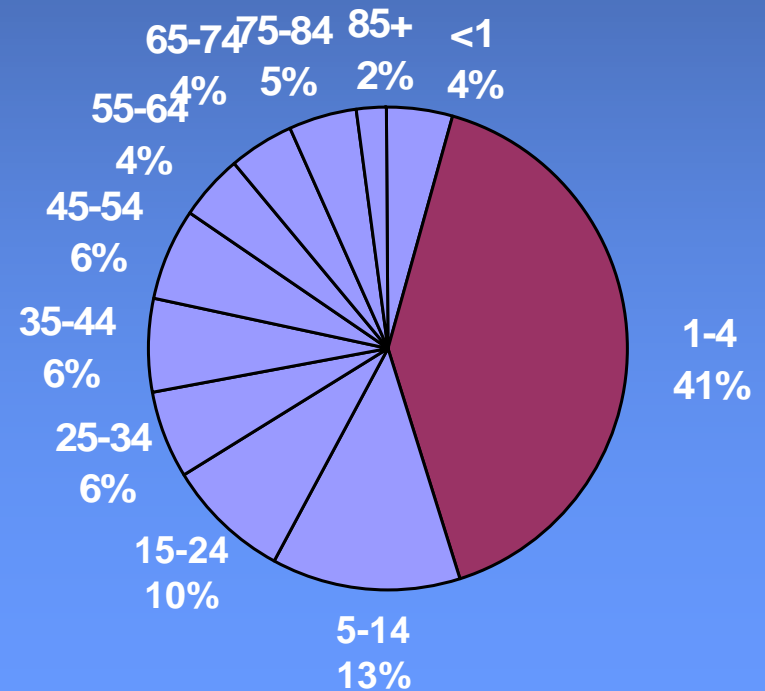


Drownings by Age Group, Florida Residents, 2001-2005

Drowning Deaths
N = 1,797

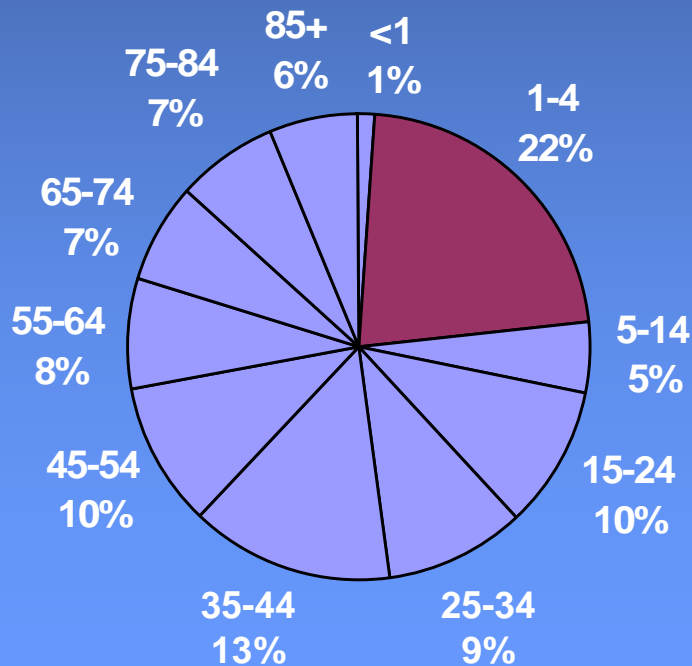


Near Drowning Hospitalizations
N = 2,206

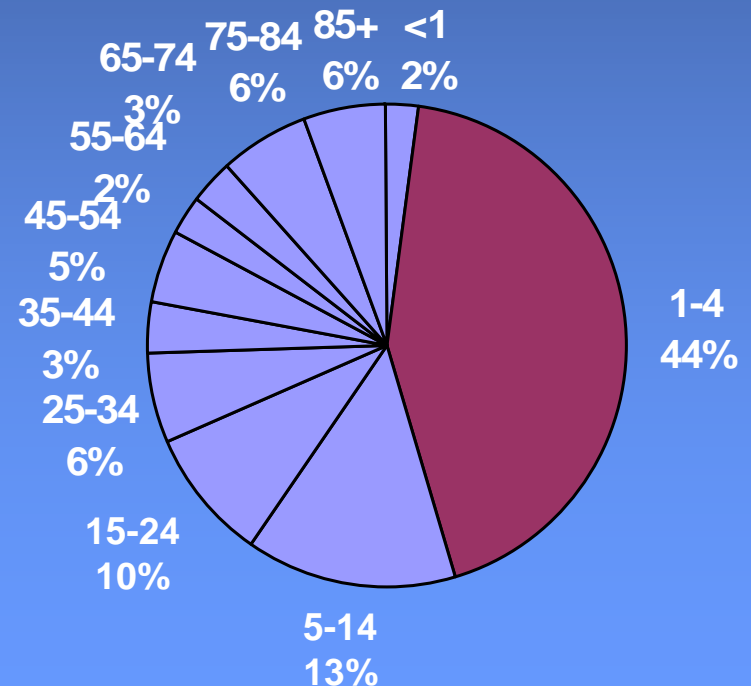


Drownings by Age Group, Broward Residents, 2001-2005

Drowning Deaths
N = 197

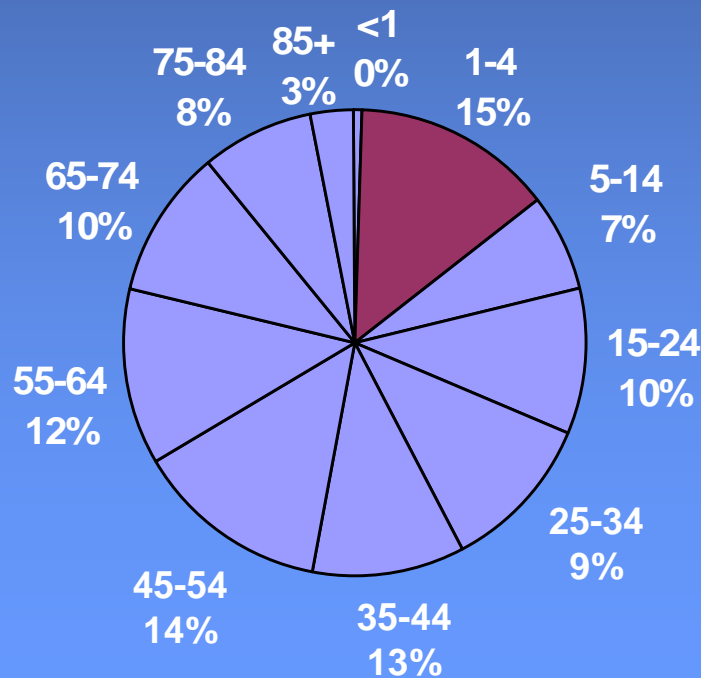


Near Drowning Hospitalizations
N = 327

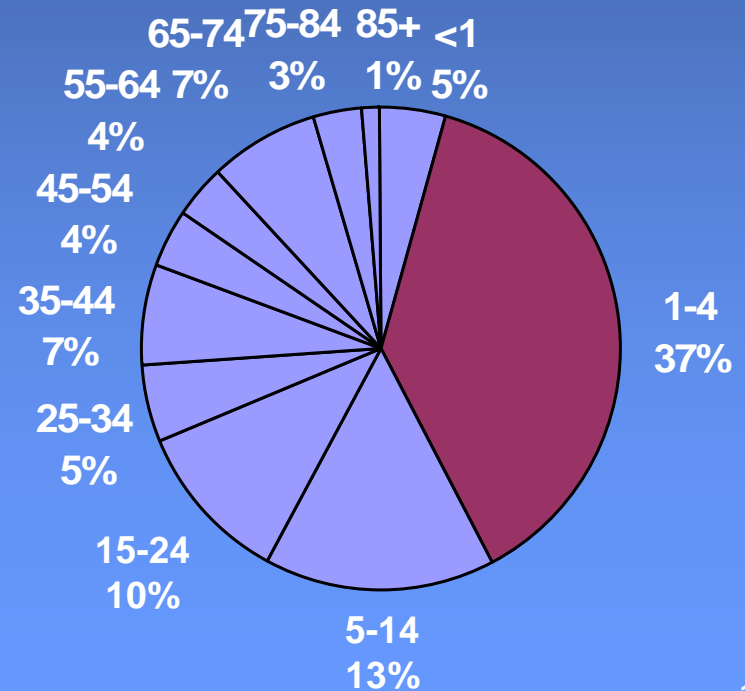


Drownings by Age Group, Miami-Dade Residents, 2001-2005

Drowning Deaths
N = 229



Near Drowning Hospitalizations
N = 330



Drowning Deaths and Rates of Selected States and US, Ages 1-4, 1999-2003

Rank	State	1999	2000	2001	2002	2003	Total	Rate
1	FL	71	73	62	67	83	356	9.00
2	AZ	17	23	27	19	20	106	6.61
3	MS	8	12	14	5	10	49	6.00
11	TX	50	50	47	37	57	241	3.59
14	CA	71	71	68	60	52	322	3.21
18	HI	2	1	1	3	3	10	3.14
--	US	490	493	458	454	456	2,351	3.04

Drowning Deaths Ages 0-4, 2001-2005

(Residents Only)

	2001	2002	2003	2004	2005	Avg/Yr
Florida	67	75	91	63	71	73
Broward	10 (15%)	5 (7%)	17 (19%)	8 (13%)	6 (8%)	9 (12%)
Miami-Dade	6 (9%)	6 (8%)	9 (10%)	5 (8%)	8 (11%)	7 (10%)
Florida Rate/100K	6.76	7.62	8.92	5.97	6.59	7.16
Broward Rate/100K	9.46	4.84	16.00	7.20	5.48	8.58
Miami-Dade Rate/100K	3.92	3.94	5.76	3.07	4.74	4.28
U.S. Rate/100K*	2.72	2.65	2.60	N/A	N/A	2.65

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

Near Drowning Hospitalizations

Ages 0-4, 2001-2005

(Residents Only)

	2001	2002	2003	2004	2005	Avg/Yr
Florida	169	204	216	200	202	198
Broward	28 (17%)	37 (18%)	32 (15%)	34 (17%)	17 (8%)	30 (15%)
Miami-Dade	19 (11%)	34 (17%)	32 (15%)	27 (14%)	27 (13%)	28 (14%)
Florida Rate/100K	17.06	20.72	21.18	18.96	18.76	19.33
Broward Rate/100K	26.49	35.81	30.03	30.60	15.52	27.60
Miami-Dade Rate/100K	12.42	22.31	20.47	16.55	15.99	17.51

Florida Resident 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	2	7	9	11	8	8	9	8	1	5	4	76
00	2	4	7	11	12	12	10	7	8	2	3	4	82
01	7	3	5	9	11	7	6	7	4	3	3	2	67
02	4	3	6	6	16	8	6	9	3	5	6	3	75
03	7	2	10	11	10	12	10	2	8	11	5	3	91
04	6	1	8	1	9	3	11	7	7	4	3	3	63
05	5	3	5	8	13	4	8	7	3	7	6	2	71
06	5	4	6	6	7	9	2	1					40
Avg	5	3	7	8	11	8	8	7	6	5	4	3	75

Broward Resident Drowning Deaths Ages 0-4 by Month, 1999-2006

Yr	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Tot
99			2	1		1	1	3	1				9
00		1	1		2	1	1		1				7
01	2		1			3	1	1	1			1	10
02		1			2						1	1	5
03	2	1	1		1	4	2		4	2			17
04	1		1		1		3				1	1	8
05			2		2		1				1		6
06			2					1					3
Tot Avg	5	3	10	1	8	9	9	5	7	2	3	3	9

Miami-Dade Resident Drowning Deaths Ages 0-4 by Month, 1999-2006

Yr	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Tot
99	1				2	1	1		1		2	1	9
00	1	1	1	1	1	2	1	2					10
01	1	2	1	1				1					6
02					3	1	1	1					6
03	2		2		2	2					1		9
04	1		2						1	1			5
05				2	3		1			2			8
06							1						1
Tot Avg	6	3	6	4	11	6	5	4	2	3	3	1	8

Florida Resident Near Drownings Ages 0-4 by Quarter, 1999-2005

Year	1 st Qtr (Jan-Mar)	2 nd Qtr (Apr-Jun)	3 rd Qtr (Jul-Sep)	4 th Qtr (Oct-Dec)	Total
1999	38	59	59	24	180
2000	39	68	55	29	191
2001	40	60	49	20	169
2002	31	70	75	28	204
2003	39	72	64	41	216
2004	37	71	57	35	200
2005	40	70	66	26	202
Avg	38	67	61	29	195

Broward Resident Near Drownings Ages 0-4 by Quarter, 1999-2005

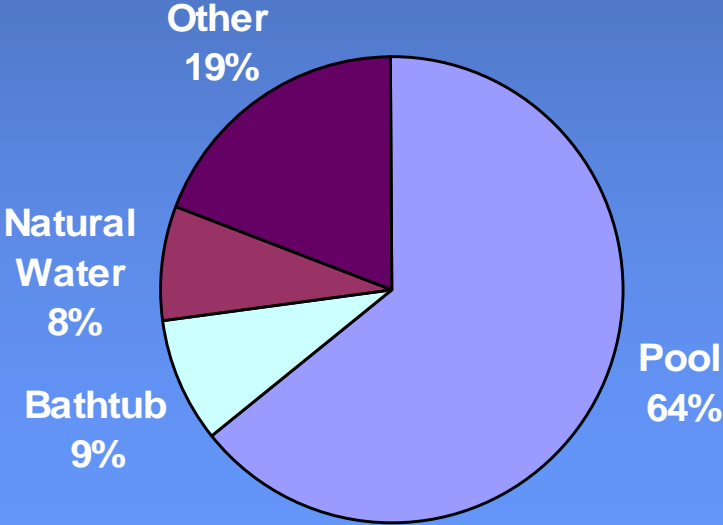
Year	1 st Qtr (Jan-Mar)	2 nd Qtr (Apr-Jun)	3 rd Qtr (Jul-Sep)	4 th Qtr (Oct-Dec)	Total
1999	5	5	7	6	23
2000	2	11	9	1	23
2001	6	10	7	5	28
2002	8	9	15	5	37
2003	9	5	12	6	32
2004	4	16	11	3	34
2005	3	9	3	2	17
Avg	5	9	9	4	28

Miami-Dade Resident Near Drownings Ages 0-4 by Quarter, 1999-2005

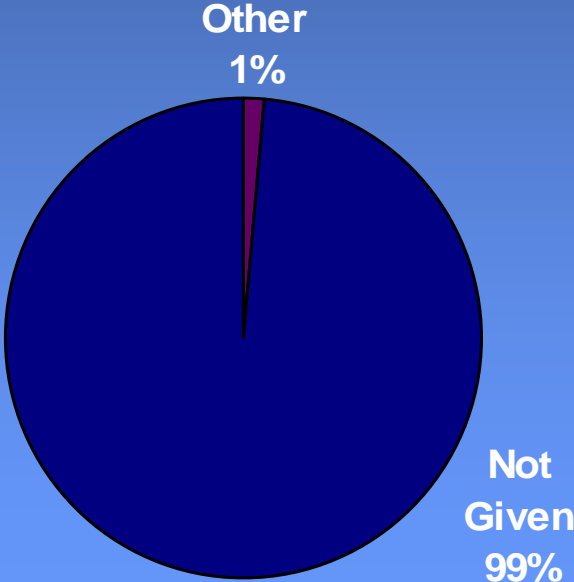
Year	1 st Qtr (Jan-Mar)	2 nd Qtr (Apr-Jun)	3 rd Qtr (Jul-Sep)	4 th Qtr (Oct-Dec)	Total
1999	4	11	15	4	34
2000	2	6	9	5	22
2001	1	6	11	1	19
2002	0	12	17	5	34
2003	5	11	9	7	32
2004	1	12	13	1	27
2005	1	12	12	2	27
Avg	2	10	12	4	28

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

Drowning Deaths
N = 367

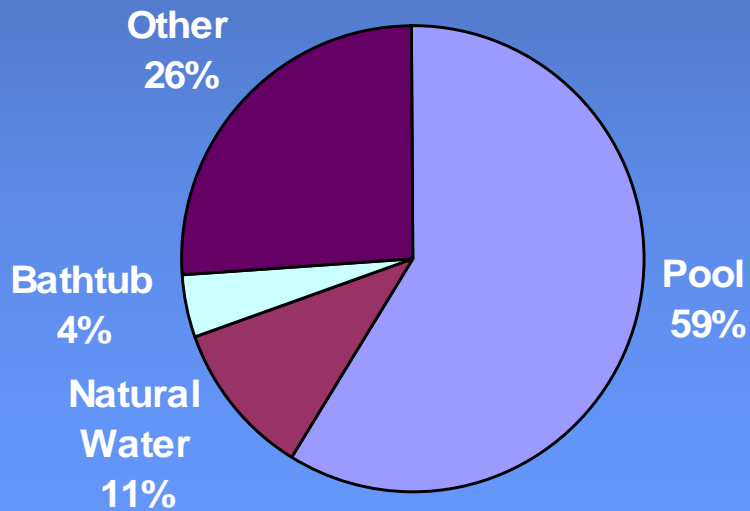


Near Drowning Hospitalizations
N = 991

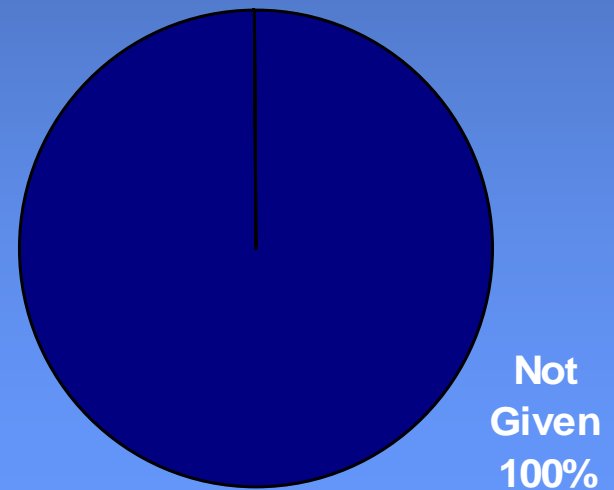


Broward Resident Drownings Ages 0-4 by Place of Occurrence, 2001-2005

**Drowning
Deaths
N = 46**

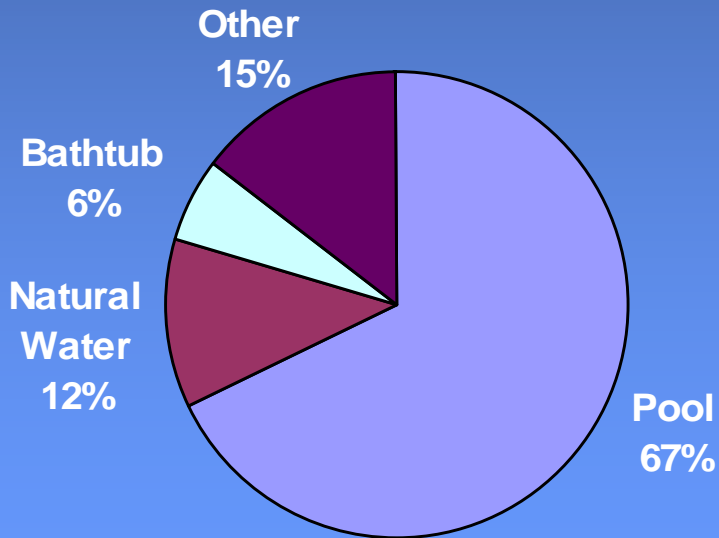


**Near Drowning
Hospitalizations
N = 148**

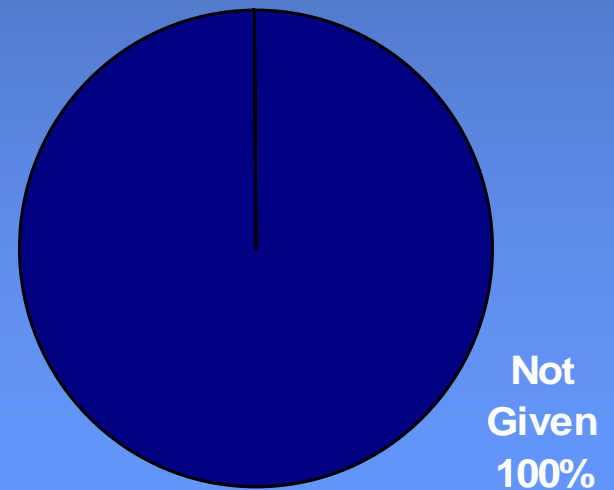


Miami-Dade Resident Drownings Ages 0-4 by Place of Occurrence, 2001-2005

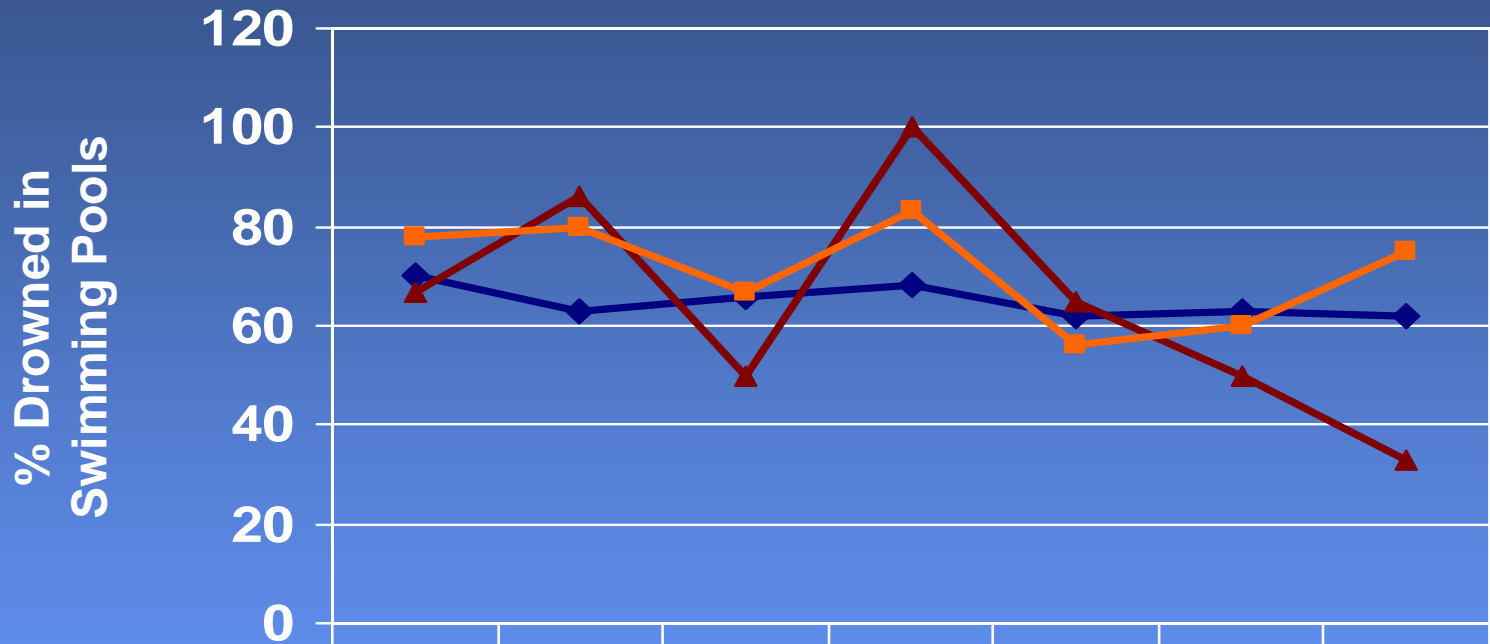
Drowning Deaths
N = 34



Near Drowning Hospitalizations
N = 139



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



	1999	2000	2001	2002	2003	2004	2005
◆ Florida	70	63	66	68	62	63	62
▲ Broward	67	86	50	100	65	50	33
■ Miami-Dade	78	80	67	83	56	60	75

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

Conclusions

- Florida's overall drowning death rate was twice the national rate in 2001-2003.
- Florida's drowning death rate for children ages 0-4 is the highest in the nation.
- Children ages 0-4 contribute significantly to overall drowning mortality and morbidity in Florida.
- Swimming pools contribute significantly to drowning deaths of children ages 0-4.
- Reducing the number of drownings of children ages 0-4 would reduce Florida's high overall drowning rates.

Strategy to Reduce Overall Drownings Statewide

- Identify and select counties that contribute the most number of drownings among children ages 0-4 for drowning prevention activities (May 2006).
 - These counties (which include Broward and Miami-Dade) may not have the highest rates (although they may still be higher than the national rate), but they contribute large numbers to the overall statewide rate.
 - Usually these are the most populous counties with the largest number of swimming pools = more exposure.
 - Reducing the number of drownings in these counties among children ages 0-4 would reduce the overall statewide rate.

Strategy to Reduce Overall Drownings Statewide

- Recommend timing drowning prevention awareness activities in these top counties to ramp up in mid-spring and lasting through the summer.
 - May has the highest average number of drowning deaths of Florida children ages 0-4 between 2001-2005 (11).
 - Second quarter (April-June) has the highest average number of hospitalizations for near drownings of Florida children ages 0-4 between 2001-2005 (67).

Possible Next Steps – Broward and Miami-Dade Drowning Data

- As needed, conduct more localized analyses of drowning data using the following data sources:
 - Death certificate data
 - Hospital discharge data
 - Emergency department data
 - ESSENCE syndromic surveillance data
- Map drowning data by ZIP code or geocoding.
- If feasible, consider using the following to gather circumstantial info on drownings/near drownings:
 - Medical examiner data
 - Chart reviews of hospital/ED patient records

GIS Mapping of Injury Rates

Age-Adjusted
Near Drowning
Hospitalization
Rates by
County of
Residence,
Florida, 2004

