

One Texan dies from drowning every day!
A report on fatal unintentional drownings, Texas, 2006-2020



Members of the Central Texas Drowning Prevention Action Team
August 2022

Molly B. Johnson, PhD, M.AmSAT



Research Scientist
Drowning Prevention and Water Safety Program
Trauma and Injury Research Center
Dell Children's Medical Center
Austin, Texas

Adjunct Professor
Kinesiology Department
University of the Incarnate Word
San Antonio, TX



Alissa Magrum

Executive Director, Colin's Hope
Co-Chair, Central Texas Drowning Prevention Action Team
Board Member, Texas Drowning Prevention Alliance
Austin, Texas

Karla Lawson, PhD, MPH



Director, Trauma and Injury Research Center
Dell Children's Medical Center
Austin, Texas

Associate Professor
Dept of Surgery and Perioperative Care
Dell Medical School
University of Texas at Austin



David Zane

Member, Central Texas Drowning Prevention Action Team
Member, International Drowning Researcher's Alliance
Injury Epidemiologist (Ret.)
Austin, Texas

Acknowledgements: Stewart Williams, BS, CPSTI & Elizabeth Boriack Nemec, MPH, CPST

Background

- Drowning
 - Major public health issue
 - Worldwide
 - 236,000 drowning deaths in 2019¹
 - Many more people experience non-fatal drowning
 - Estimated 2 non-fatal for every 1 fatal²



Background

- US States offer different drowning risk
- Factors affecting drowning risk in Texas
 - 2nd most populous state³
 - 30 million residents



- Year-round swim/boat weather⁴
- 6th highest # home pools⁵
 - 1 per 27,723 people
- Access to natural water
 - 6th or 7th most coastline⁶
 - Water-based recreation
 - Popular and accessible

Aim

- Describe unintentional drowning deaths among Texans
 - 15-year period: 2006 - 2020
 - Understand magnitude and trends
 - Year
 - Demographics
 - Setting
 - Relation to other states and the US



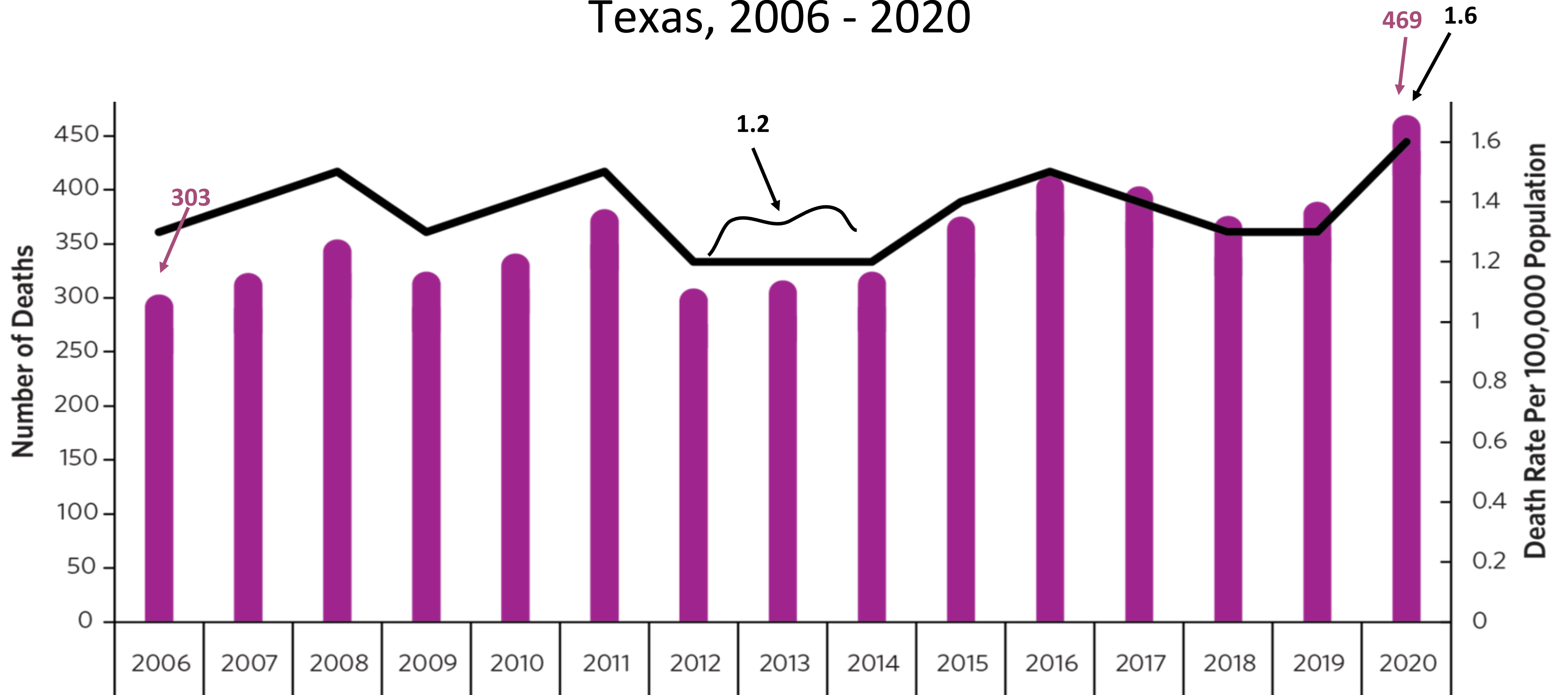
Methods - CDC WONDER

- Unintentional Drowning Deaths - Texas & US, 2006-2020
 - Total number of drowning deaths
 - Rate of drowning deaths
 - per 100,000 people
 - 95% Confidence interval of rate (CI)
 - Non-overlapping = significant difference
- Setting
 - Bathtub
 - Swimming pool
 - Natural water
 - Other or unspecified
 - Watercraft-related

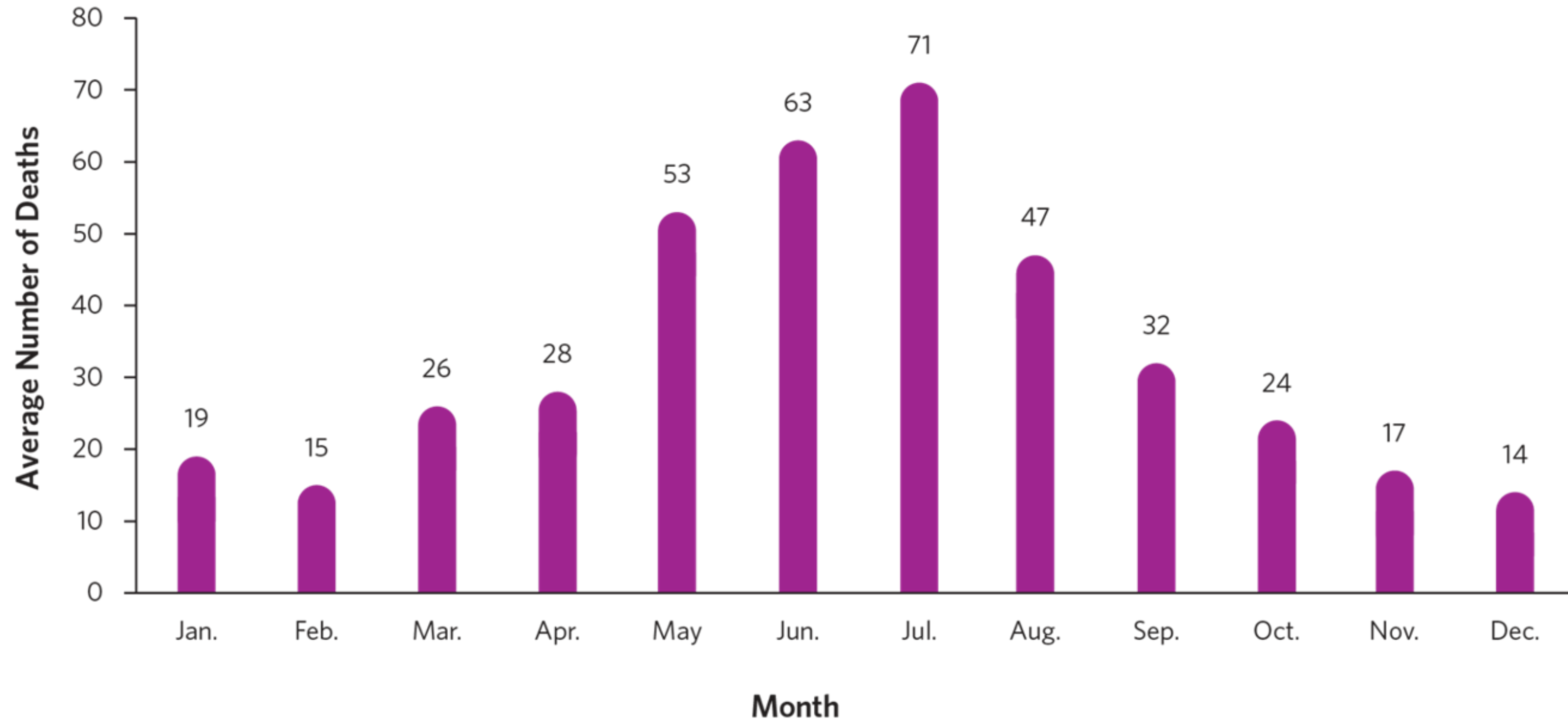
Results

- 5,401 Texans died from unintentional drownings
 - 15-year period, 2006-2020
- Average 360 deaths per year
 - About one per day
- Unintentional drowning deaths recently increased
 - 2020 compared to all prior 14 years
 - Higher total number
 - Higher death rate

Number and Rate of Fatal Unintentional Drownings by Year Texas, 2006 - 2020



Average Number of Fatal Unintentional Drownings by Month Texas, 2017 - 2020



Results - By Gender

	Number	Percent	Rate	CI
<i>Male</i>	4,165	77%	2.1	2.0-2.2
<i>Female</i>	1,236	23%	0.6	0.6-0.7

Rate is per 100,000 population

CI = 95% Confidence Interval.

Non-overlapping CI = significantly different rates.

Results - By Race

	Number	Percent	Rate	Rate (95% CI)
<i>White</i>	4,289	79.4%	1.3	1.3-1.4
<i>Black or African-American</i>	876	16.2%	1.7	1.6-1.8
<i>Asian or Pacific Islander</i>	225	4.2%	1.2	1.0-1.3
<i>American Indian or Alaska Native</i>	11	0.2%	Unreliable	-

Results - By Ethnicity

	Number	Percent	Rate	Rate (95% CI)
<i>Not Hispanic or Latino</i>	3,945	73.0%	1.6	1.6-1.7
<i>Hispanic or Latino</i>	1,433	26.5%	0.9	0.9-1.0

Results - Drowning Deaths By Age Group

Age Group (years)	Number	Rate	95% CI
< 1	67	1.1	0.9-1.5
1-4	798	3.4	3.2-3.6
5-14	370	0.6	0.6-0.7
15-24	838	1.5	1.4-1.6
25-34	752	1.3	1.2-1.4
35-44	660	1.2	1.1-1.3
45-54	655	1.3	1.2-1.4
55-64	586	1.4	1.3-1.5
65-74	368	1.4	1.3-1.5
75-84	230	1.7	1.5-1.9
85+	75	1.4	1.1-1.8

Note: Over 1,200 children under the age of 15 years fatally drowned

Number, Percent Total, and Yearly Average of Fatal Unintentional Drownings by Setting Texas, 2006 - 2020

Setting	Underlying Cause of Death Code	Number	Yearly Average	Percent Total
Bathtub	W65-W66	583	39	10.8%
Swimming Pool	W67-W68	1,157	77	21.4%
Natural Water	W69-W70	2,278	152	42.2%
Other or Unspecified	W73-W74	1,032	69	19.1%
Watercraft-Related	V90, V92	351	23	6.5%

Percent of Total Fatal Unintentional Drownings within Each Age Group Occurring in Location of Greatest Hazard Texas, 2006 - 2020

Age Group (Years)	Location	Percent Total
<1	Bathtub	64.2%
1-4	Swimming Pool	51.5%
5-14	Swimming Pool	39.5%
15-24	Natural Water	60.8%
25-34	Natural Water	55.8%
35-44	Natural Water	51.8%
45-54	Natural Water	44.1%
55+	Natural Water	35.8%

Leading Causes of Death, Children Aged 1-4 Years Texas, 2006 - 2020

Cause of Death	Number of Deaths
Unintentional Injuries	2,329
Birth Defects	687
Cancer	571
Assaults (Homicide)	551
Heart Disease	248

Leading Mechanisms of Unintentional Injury

Drowning	798
Motor Vehicle Traffic	650

Comparison of Fatal Unintentional Drowning Statistics, Texas and U.S.

Time Period	Fatal Drowning Statistics	TX	CI[*]	U.S.	CI[*]
2006-2020	Total drownings deaths	5,401	n/a	59,581	n/a
	Drowning death rate	1.4	1.3-1.4	1.3	1.2-1.3
	Drowning death rate range	1.2-1.6	n/a	1.1-1.4	n/a
	Year with highest drowning death rate	2020	n/a	2020	n/a
2020	Drowning death rate	1.6	1.4-1.7	1.4	1.3-1.4



1 out of every 9 drowning deaths in the U.S. occurred in Texas

Comparison of Fatal Unintentional Drowning Rates, Texas and U.S.

Demographic	Demographic Characteristics	TX	CI*	U.S.	CI*
Gender	Male	2.1	2.1-2.2	2.0	1.9-2.0
	Female	0.6	0.6-0.6	0.5	0.5-0.5
Race	White	1.3	1.3-1.4	1.2	1.2-1.2
	Black or African American	1.7	1.6-1.8	1.4	1.4-1.4
	Asian or Pacific Islander	1.3	1.1-1.5	1.0	1.0-1.1
	American Indian or Alaska Native	<i>Unreliable</i>	n/a	1.7	1.6-1.9
Ethnicity	Hispanic or Latino	0.9	0.9-1.0	0.9	0.9-1.0
	Not Hispanic or Latino	1.6	1.6-1.7	1.3	1.3-1.3

Comparison of Fatal Unintentional Drowning Rates, Texas and U.S.

Demographic	Demographic Characteristics	TX	CI [^]	U.S.	CI [^]
Age Group (years)	< 1	1.1	0.9-1.5	1.0	0.9-1.1
	1-4	3.4	3.2-3.6	2.7	2.6-2.7
	5-14	0.6	0.6-0.7	0.6	0.6-0.6
	15-24	1.5	1.4-1.6	1.3	1.3-1.4
	25-34	1.3	1.2-1.4	1.2	1.1-1.2
	35-44	1.2	1.1-1.3	1.1	1.1-1.1
	45-54	1.3	1.2-1.4	1.3	1.2-1.3
	55-64	1.4	1.3-1.5	1.3	1.3-1.3
	65-74	1.4	1.3-1.5	1.4	1.3-1.4
	75-84	1.7	1.5-1.9	1.7	1.6-1.7
	85+	1.4	1.1-1.8	1.6	1.6-1.7

Fatal Unintentional Drowning Number and Age-Adjusted Rate, by State, 2006-2020

State	Number	Age Adjusted Rate
Vermont	123	1.3
Colorado	983	1.2
Indiana	1,130	1.2
North Carolina	1,764	1.2
California	6,433	1.1
Iowa	495	1.1
Kansas	497	1.1
Michigan	1,697	1.1
New Hampshire	228	1.1
Utah	490	1.1
Wisconsin	953	1.1
Minnesota	854	1.0
Rhode Island	150	1.0
Virginia	1,307	1.0
Illinois	1,772	0.9
Maryland	831	0.9
Nebraska	243	0.9
Ohio	1,621	0.9
Connecticut	469	0.8
Delaware	107	0.8
Pennsylvania	1,528	0.8
Massachusetts	780	0.7
New Jersey	937	0.7
New York	2,055	0.7
District of Columbia	52	0.6
Total	59,581	1.3

Summary

Better understanding of fatal unintentional drowning patterns among Texans

- Over 5,000 Texans have died (2006-2020)
 - A Texan fatally drowns ~every day
- Higher risk of death
 - Males
 - 1-4 year olds
 - Not hispanic or Latino
 - Black or African-Americans
- Age is determinant of drowning setting
 - Under 1: bathtubs
 - 1-14 years: swimming pool
 - 15+: natural waters
- Natural Water poses greatest hazard, overall

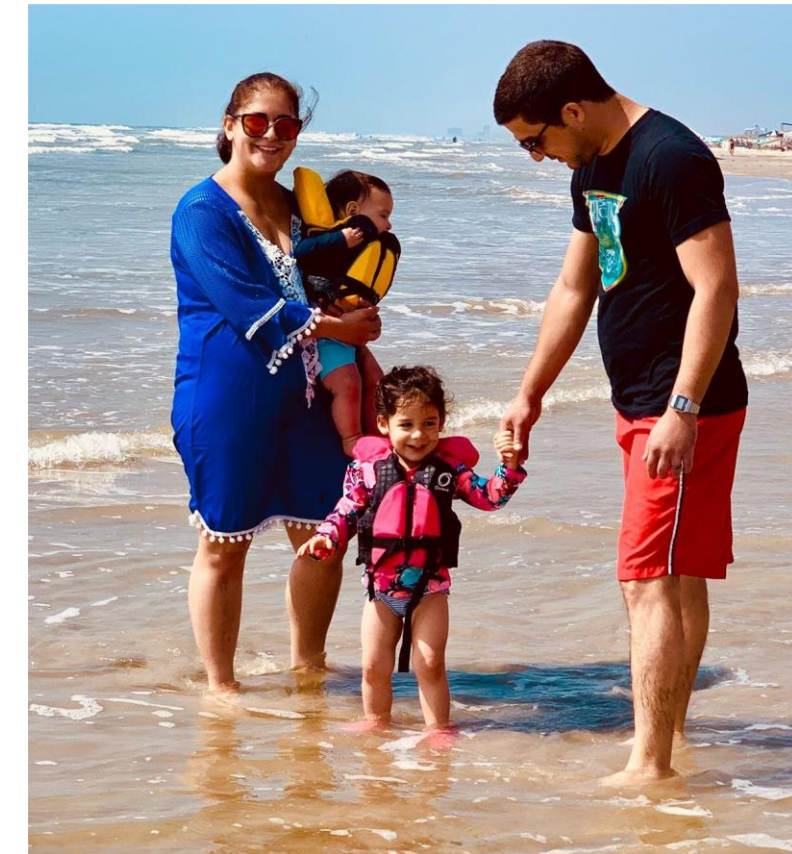
Summary

Texas compared to other states/U.S.

- 3rd highest total drowning burden
- Within top 20 drowning rate

- Rate of drowning for 1-4 year olds - highest age group
 - Rate for Texas is even higher than U.S. (3.4 vs 2.7)

- Rate of drowning for Black or African Americans
 - Rate for Texas is even higher than U.S. (1.7 vs 1.4)



Discussion

- Unintentional Drowning deaths and rate for 2020 > previous years
 - Due to Covid-19 pandemic?
 - Decreased number of toddlers swimming during pandemic in US⁷
 - Also decreased swim lesson attendance
 - -> increased risk for non-swimmers?
 - People engaging in water-based activities
 - -> increased exposure?
 - Home pools
 - Natural water excursions replacing indoor activities
 - Largest drowning death increase 2019-2020⁸
 - 20-24 year olds
 - Natural water



- Will the increase in drowning persist?

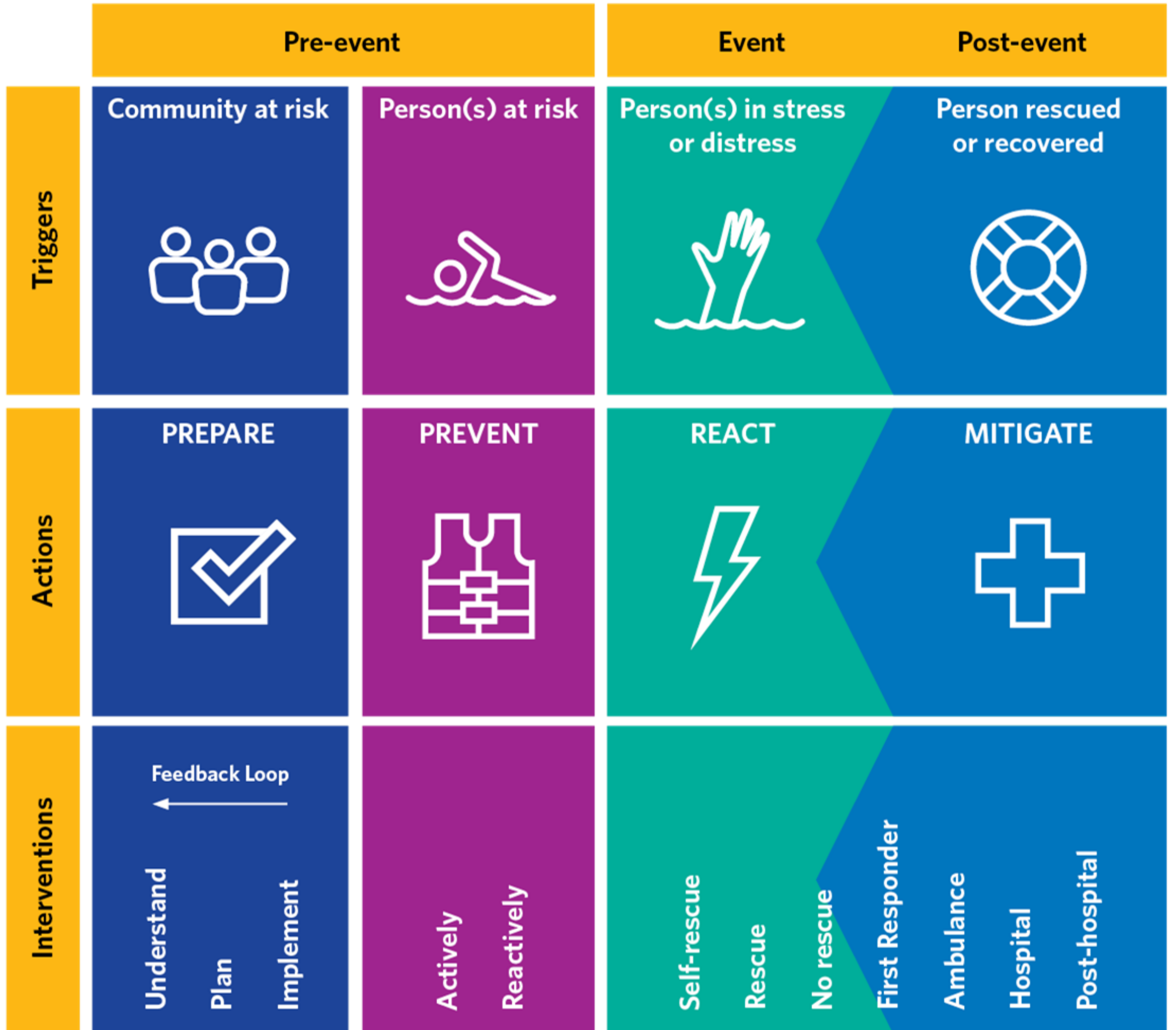
Limitations

- Data based on residency, not drowning location
 - Included Texas residents who died from drowning outside Texas
 - Excluded non-Texans who died from drowning in Texas
- Month and Year of death
 - Not always the month or year of submersion incident
- Rates were calculated per population and not per exposure
- Fatal drownings only
 - Non-fatal drownings not included
 - Estimate ~ 10,000 more non-fatal drownings²



Moving Forward

Consider all time points in the Drowning Timeline



Next Steps

Next Steps

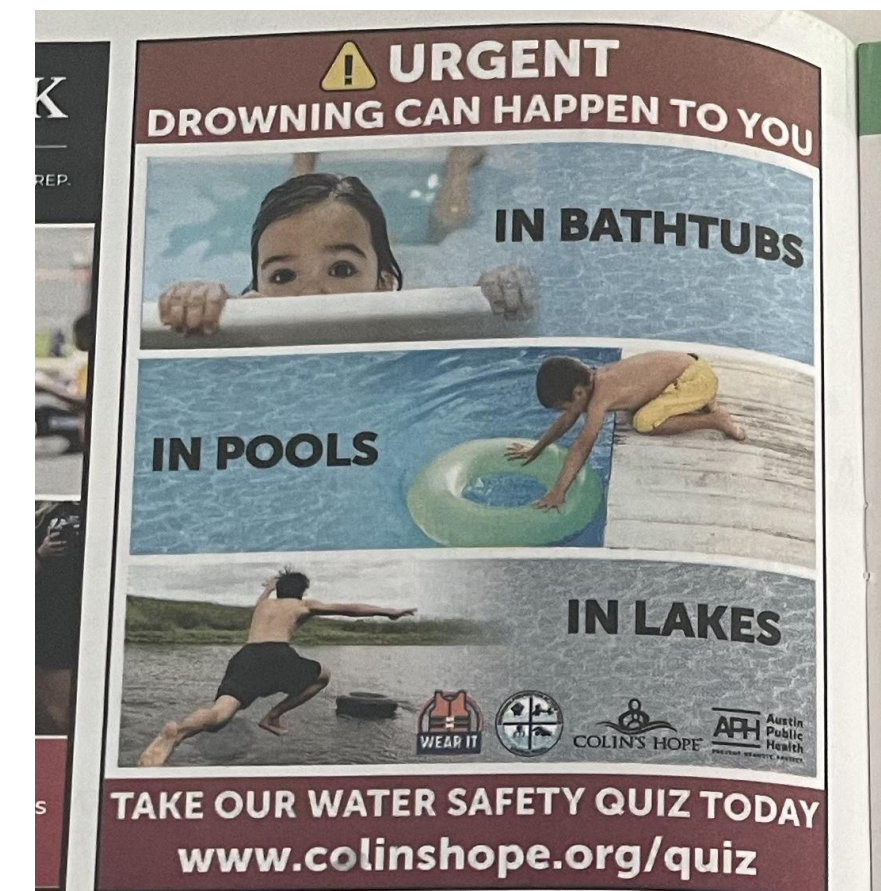
- Continue to promote layers of protection⁹
 - Constant Visual Supervision
 - Barriers to Water
 - Water Competency and Swim Safety Skills
 - Wear U.S. Coast Guard Approved Life Jackets
 - Learn CPR



Next Steps continued

Next Steps

- Educate parents, caregivers, and children about water safety (early and ongoing)
- Consistent & effective water safety messaging
 - Interested in developing research collaborations
- Better reach to ALL communities with water safety education
- Better collaboration in communities around water safety
- Target groups with high drowning rates
 - 1 - 4 year olds
 - Black or African Americans



Next steps - research

Next Steps - Research

■ Supervision

- Caregivers of toddlers report willingness to leave toddlers unattended¹⁰
 - Owning home pool predictive of less attentive supervision behavior
- Poor adult swimmers perceive arm's reach supervision as less necessary than good or non-swimmers¹¹

■ Barriers to water & water safety devices

- Pilot study of WAVE Drowning Detection System¹²
- Survey of TX pool owners
 - Effectiveness of barriers and devices
 - Unauthorized pool access





Molly Johnson, PhD

Research Scientist

Drowning Prevention and Water Safety Program

Trauma and Injury Research Center

Dell Children's Medical Center

Austin, Texas

molly.johnson2@ascension.org

Karla Lawson, PhD, MPH

Director, Trauma and Injury Research Center

Dell Children's Medical Center

Austin, Texas

kalawson@ascension.org



Alissa Magrum

Executive Director, Colin's Hope

Co-Chair, Central Texas Drowning Prevention Action Team

Board Member, Texas Drowning Prevention Alliance

Austin, Texas

alissa.magrum@colinshope.org

David Zane

Public Health Injury Epidemiologist (retired)

Volunteer - reduce drowning and other injuries

Austin, Texas

dzane11613@gmail.com

Resources

To access the report for more details:

https://www.dellchildrens.net/wp-content/uploads/sites/60/2022/08/texas_drowning_report.pdf



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