

# What Every Child Health Provider Needs to Know About Drowning



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Professor of Pediatrics, Oregon Health and Science University

Chair, AAP Council on Injury Violence and Poison Prevention







**“If a disease were  
killing our children  
in the proportions  
that injuries are,  
people would be  
outraged and  
demand that this  
killer be stopped.”**

**C. Everett Koop MD**  
**Former US Surgeon General**













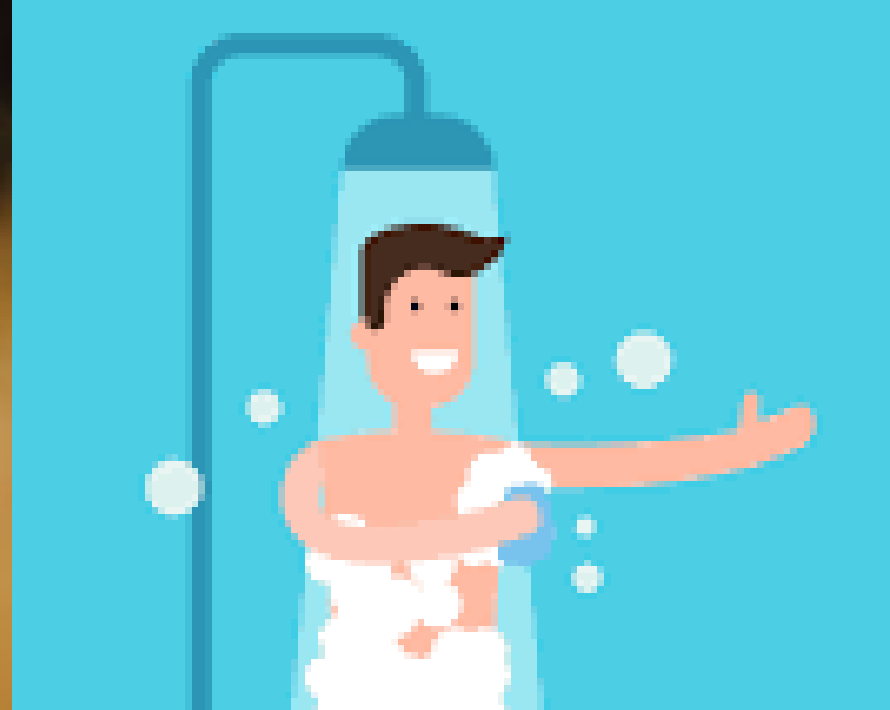


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I do not intend to discuss an unapproved/investigative use of a commercial product/device in my presentation



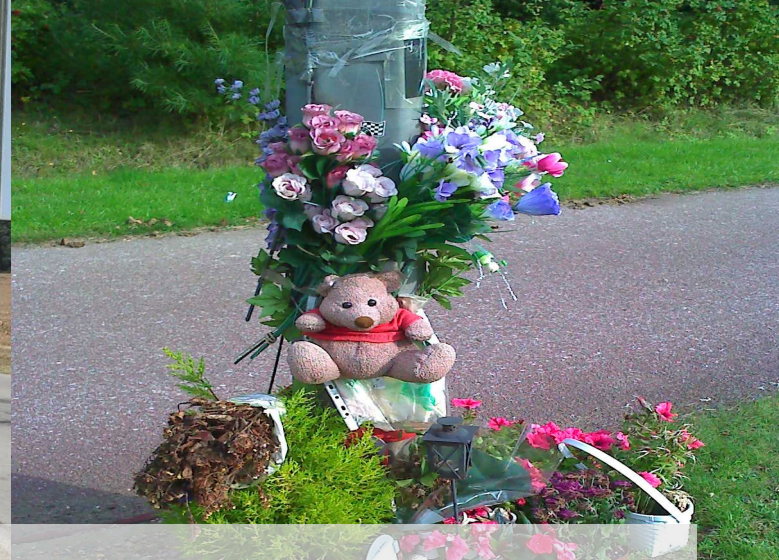










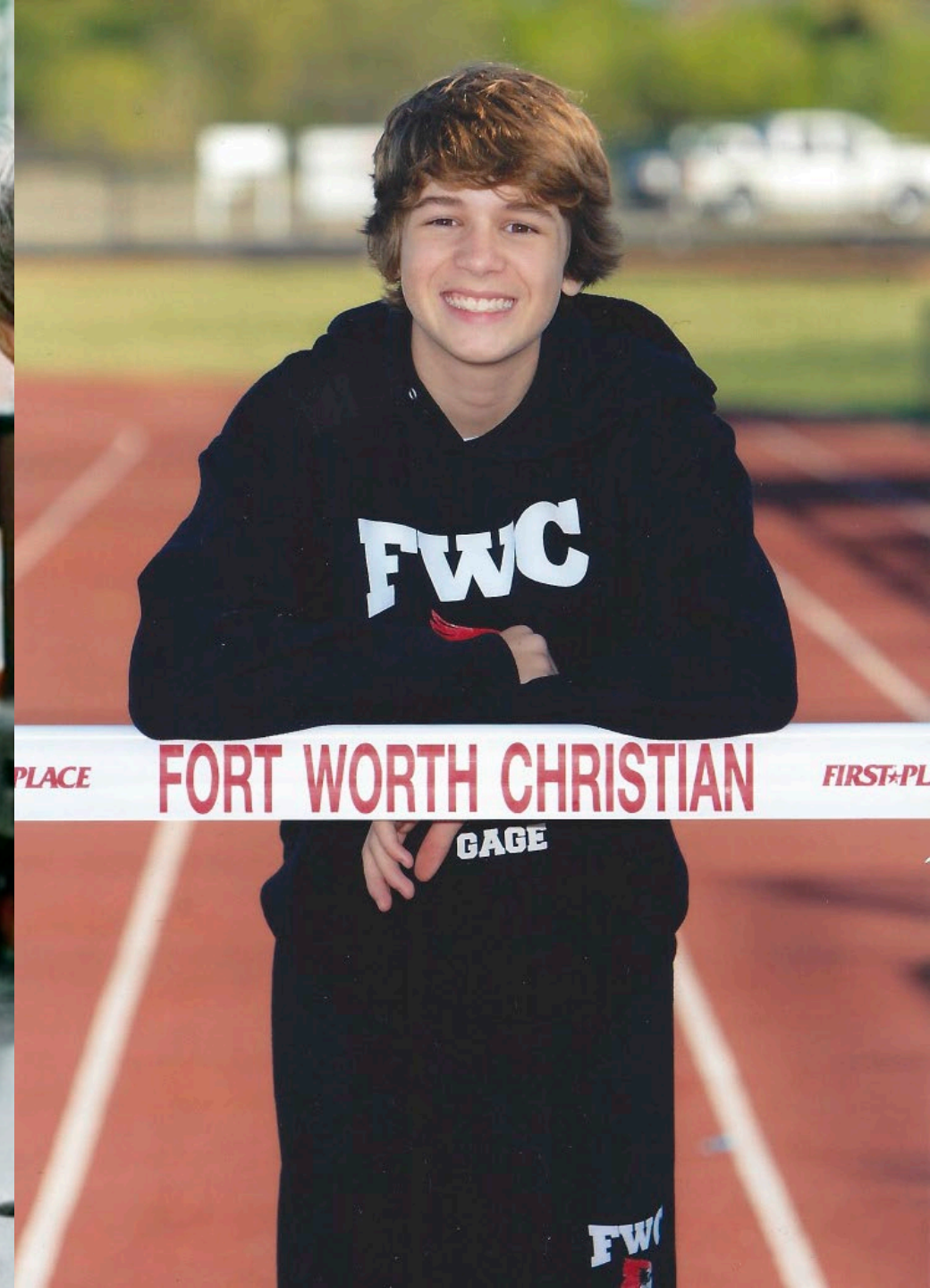


**18 children per week**















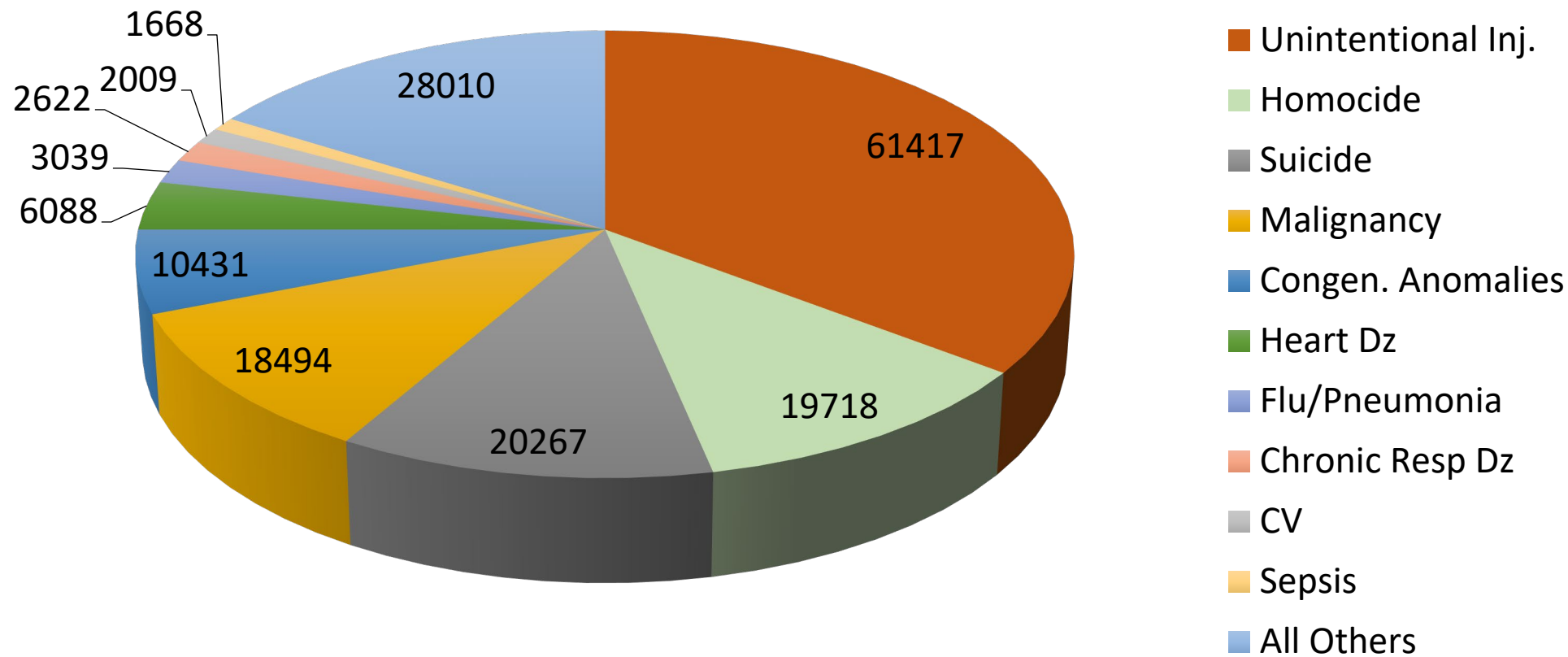




# Objectives

- By the end of this presentation, you should be able to:
  - Discuss the epidemiology of drowning for children and teens
  - Discuss the key points from the recently revised AAP policy statement on drowning prevention
  - Describe and employ materials in the AAP tool kit
  - Discuss national dissemination via social media and other media channels
  - Discuss partnership with families

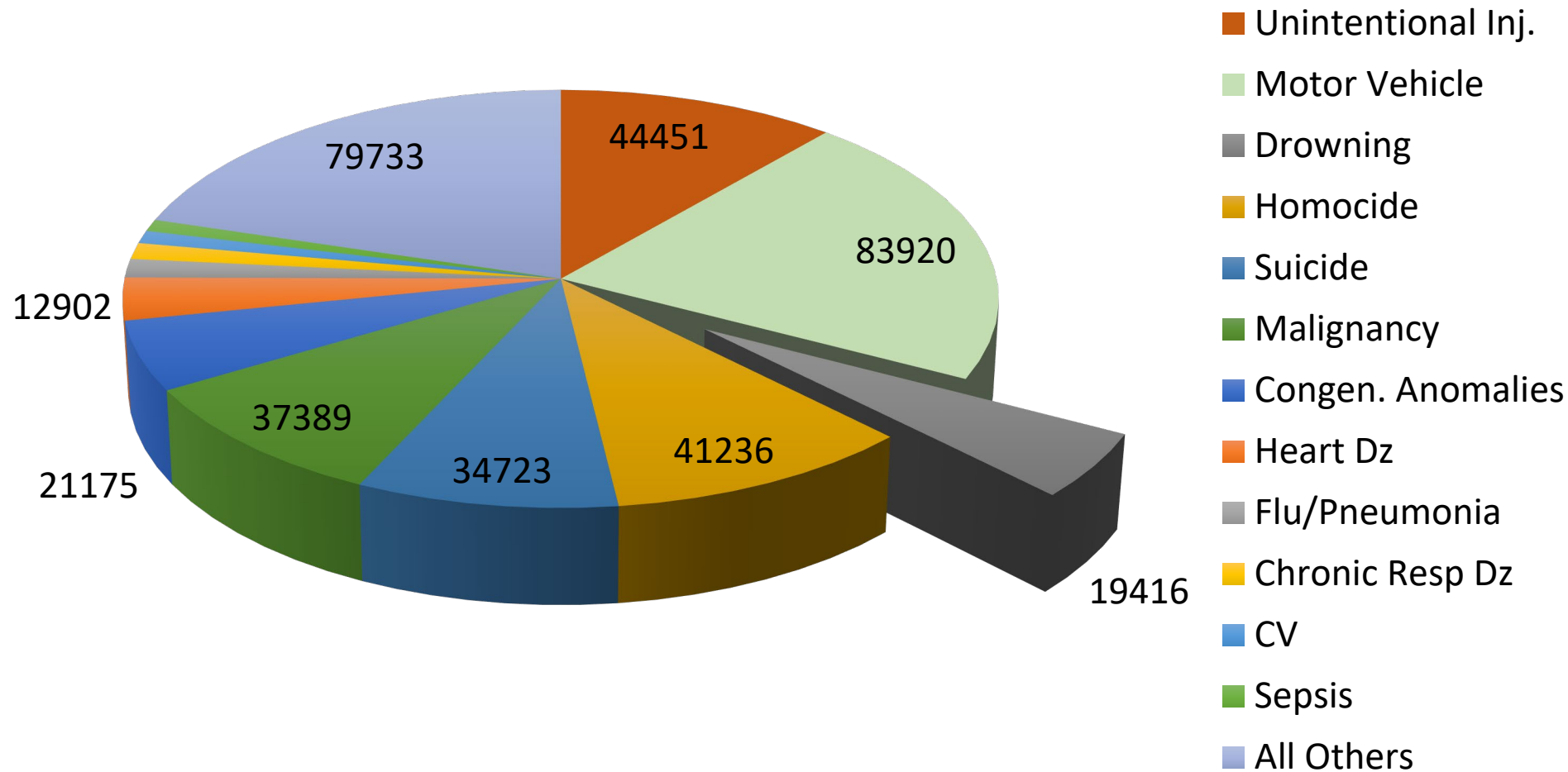
# Deaths 1-18 year 2000-2020



	Age Groups	
Rank	<1	1-18
1	Congenital Anomalies 107,836	<b>Unintentional Injury</b> <b>147,787</b>
2	Short Gestation 89,495	<b>Homicide</b> <b>41,236</b>
3	SIDS 40,207	Malignant Neoplasms 37,389
4	Maternal Pregnancy Comp. 32,540	<b>Suicide</b> <b>34,723</b>
5	<b>Unintentional Injury</b> <b>24,024</b>	Congenital Anomalies 21,175
6	Placenta Cord Membranes 20,508	Heart Disease 12,902
7	Bacterial Sepsis 13,920	Influenza & Pneumonia 5,699
8	Respiratory Distress 13,463	Chronic Low. Respiratory Disease 4,950
9	Circulatory System Disease 10,965	Cerebro-vascular 3,908
10	Neonatal Hemorrhage 10,036	Septicemia 3,605

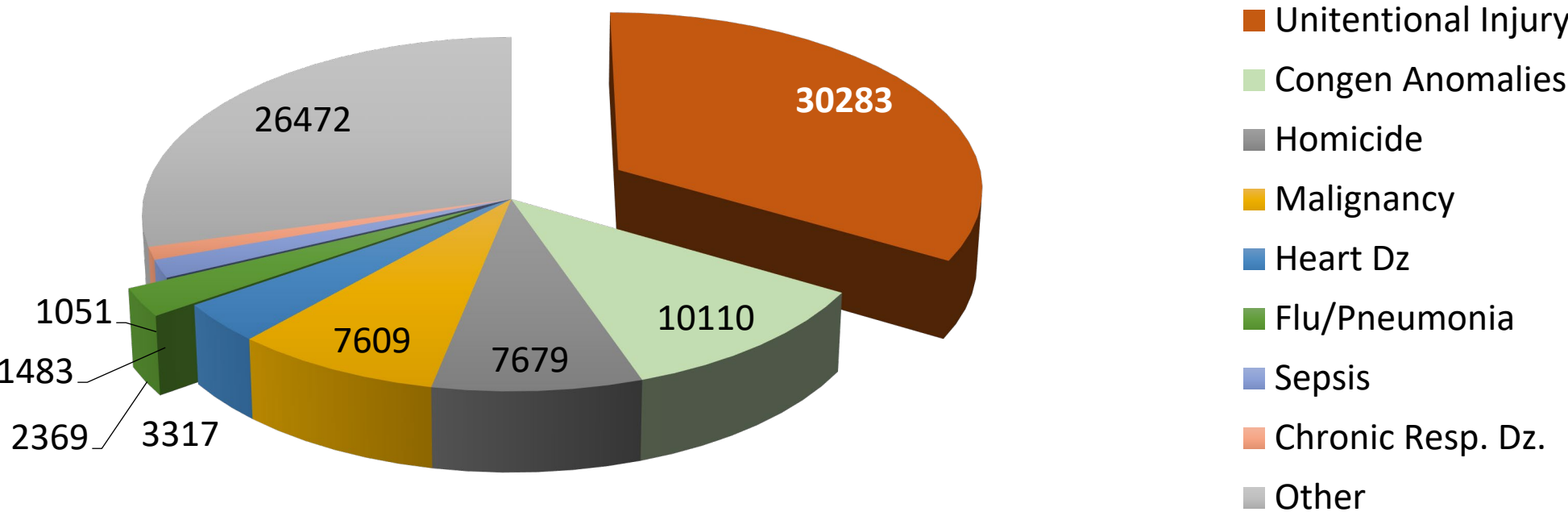


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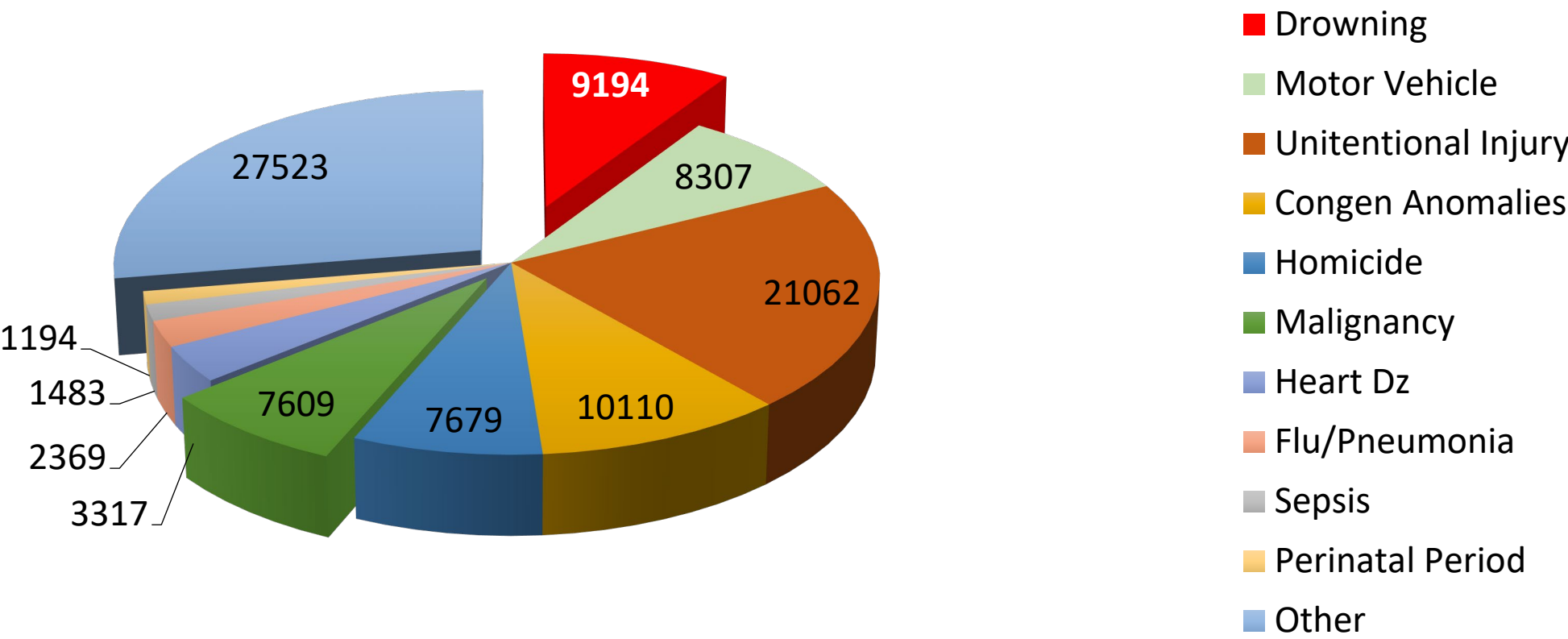
# Deaths 1-4 years 2000-2020



	Age Groups
Rank	<u>1-4</u>
1	<b>Unintentional Injury</b> 30,283
2	Congenital Anomalies 10,110
3	<b>Homicide</b> 7,679
4	Malignant Neoplasms 7,609
5	Heart Disease 3,317
6	Influenza & Pneumonia 2,369
7	Septicemia 1,483
8	Perinatal Period 1,194
9	Cerebro-vascular 1,051
10	Benign Neoplasms 1,039

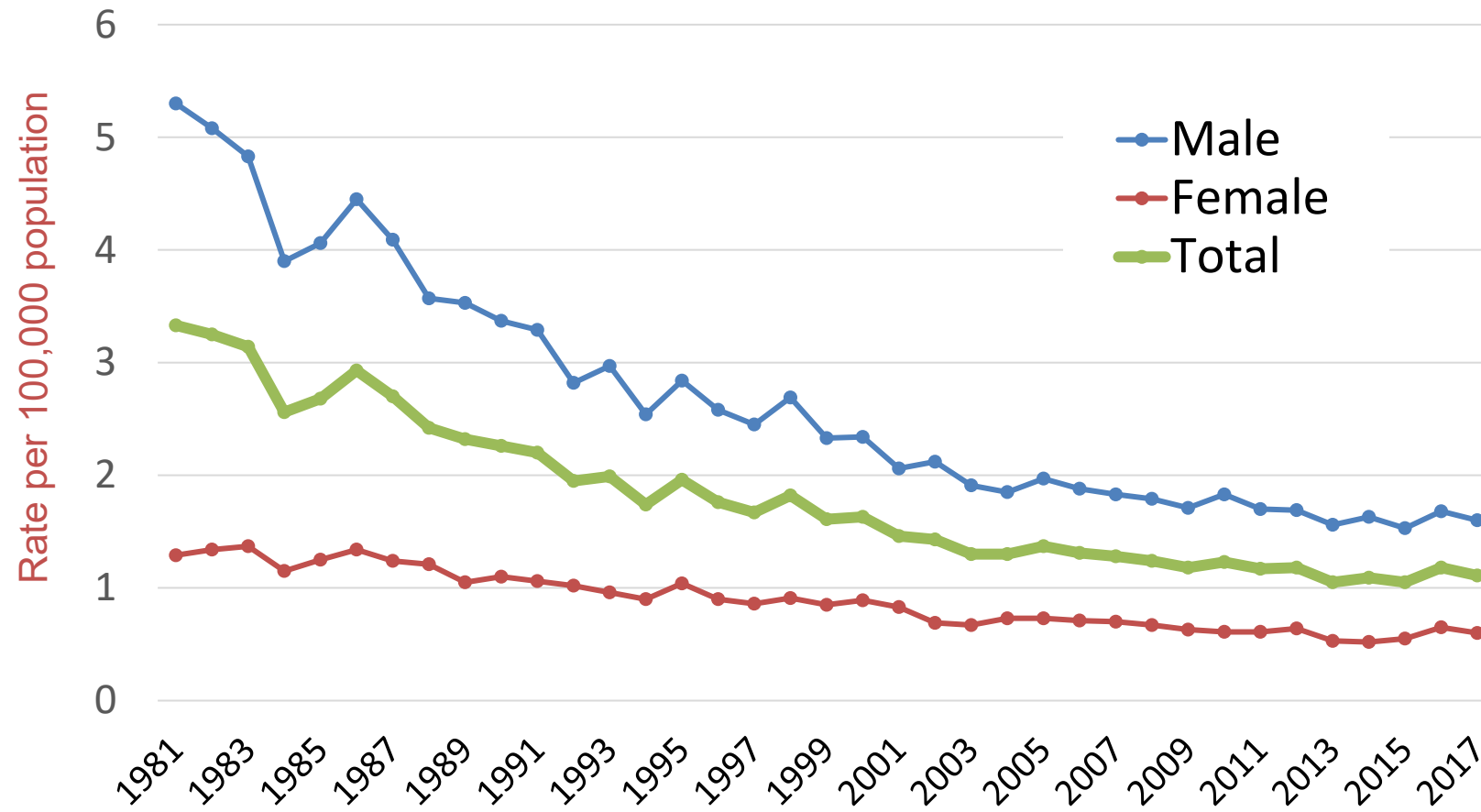


# Deaths 1-4 years 2000-2020



1-4
Unintentional Injury 14,260
Congenital Anomalies 4,932
Homicide 3,861
Malignant Neoplasms 3,757
Heart Disease 1,590
Influenza & Pneumonia 1,192
Septicemia 641
Chronic Low. Respiratory Disease 547
Perinatal Period 540
Cerebro-vascular 524

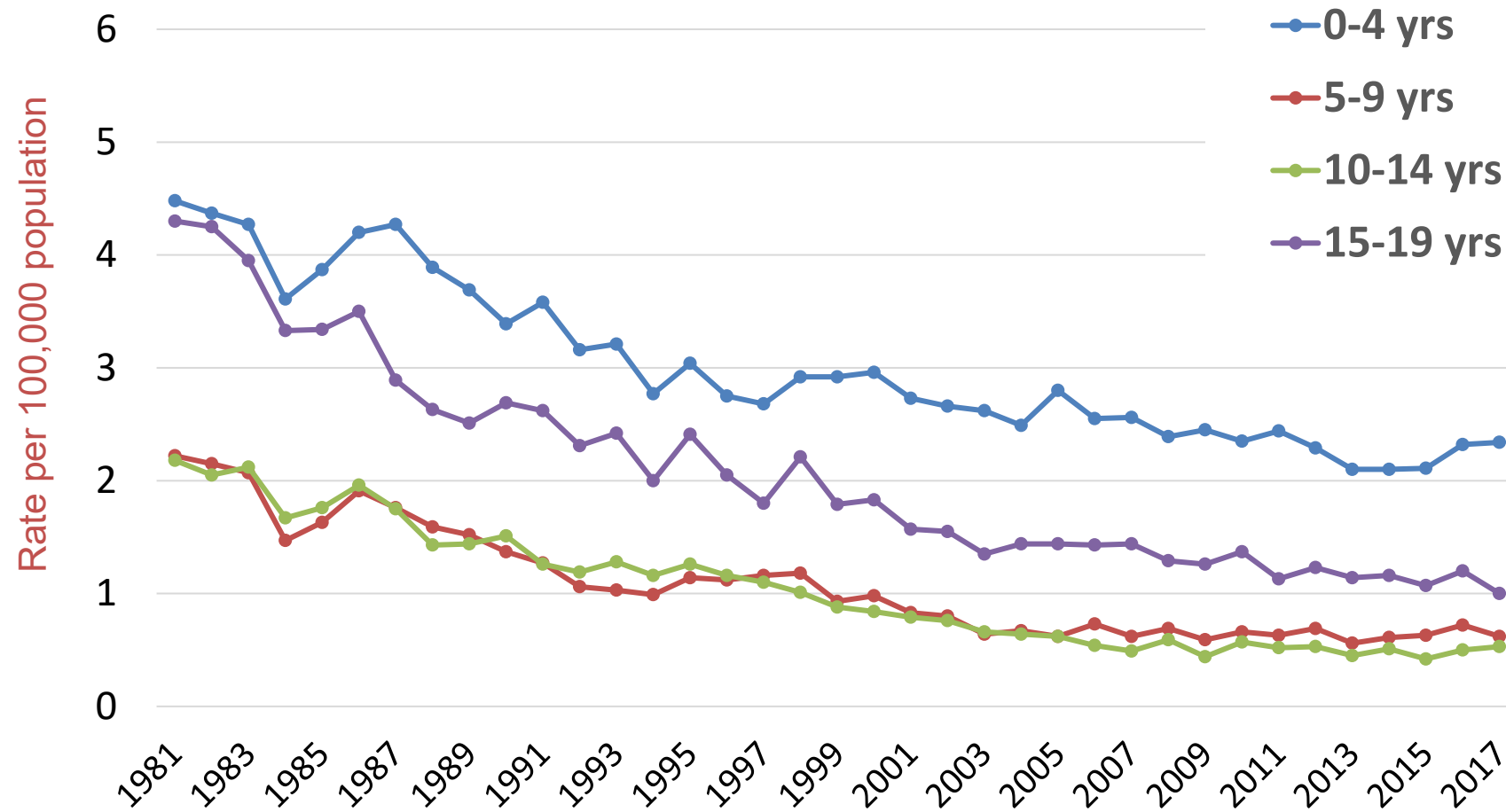
## Unintentional Drowning Death Rate of US Infants and Children Ages 0-19 by Gender, 1981-2017



In 2018:  
913 total  
unintentional  
drowning deaths

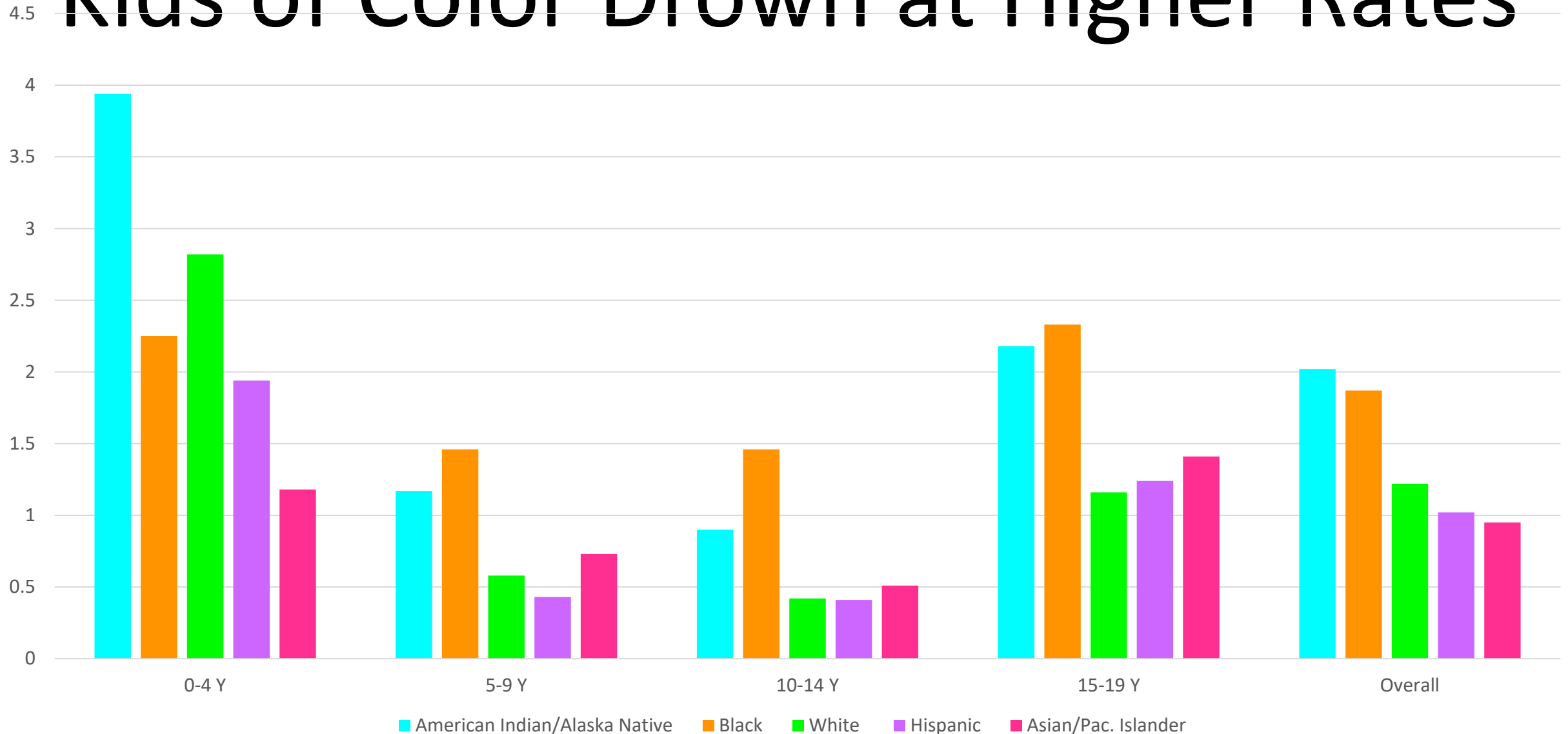


## Unintentional Drowning Death Rate of US Infants and Children, by Age Group, 1981-2017



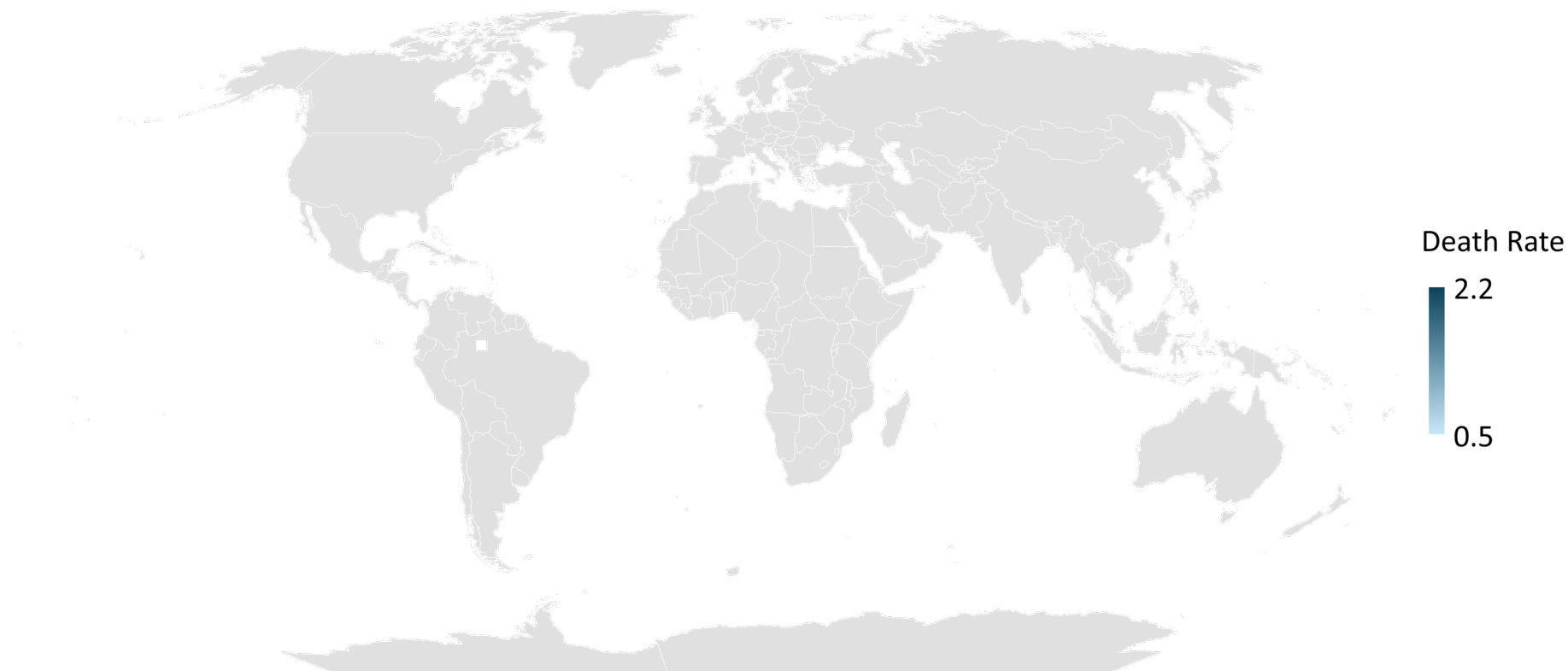
Source: AAP Analysis of CDC WISQARS fatal injury reports. February 2019  
(<https://webappa.cdc.gov/sasweb/ncipc/mortrate.html>)

# Kids of Color Drown at Higher Rates





## US Child (Ages 0-19) Unintentional Drowning Death Rates (per 100,000 Children) by State, 2012-2018 Annualized Average



Powered by Bing  
© Australian Bureau of Statistics, GeoNames, Microsoft, Navinfo, OpenStreetMap, TomTom

Source: NCHS National Vital Statistics System for number of deaths; US Census Bureau for population estimates.  
Retrieved from CDC/WISQARS [Fatal Injury Mapping](#).

American Academy of Pediatrics

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Age Group	Number of Deaths	Population***	Crude Rate
00-04	422	8,677,939	4.86
05-09	66	8,566,475	0.77
10-14	27	8,682,822	0.31
15-19	117	8,642,607	1.35
Total	<b>632</b>	<b>34,569,843</b>	<b>1.83</b>



Age Group	Number of Deaths	Population***	Crude Rate
00-04	553	27,401,912	2.02
05-09	115	27,684,619	0.42
10-14	70	27,999,803	0.25
15-19	197	29,185,044	0.68
Total	<b>935</b>	<b>112,271,378</b>	<b>0.83</b>

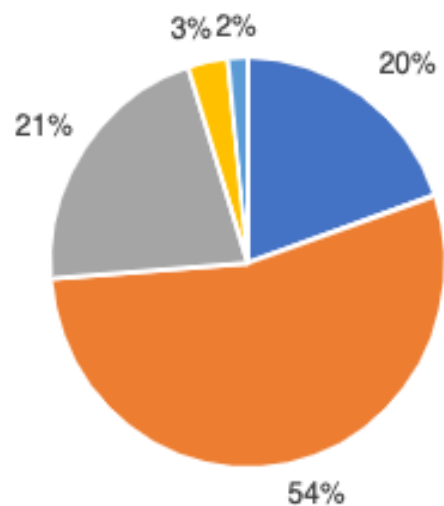
Age Group	Number of Deaths	Population***	Crude Rate
00-04	111	4,609,295	2.41
05-09	32	4,711,346	0.68
10-14	48	4,868,424	0.99
15-19	143	4,986,717	2.87
Total	<b>334</b>	<b>19,175,782</b>	<b>1.74</b>



Age Group	Number of Deaths	Population***	Crude Rate
00-04	30	1,031,047	2.91
05-09	24	1,015,166	2.36
10-14	23	1,053,162	2.18
15-19	35	1,023,426	3.42
Total	<b>112</b>	<b>4,122,801</b>	<b>2.72</b>

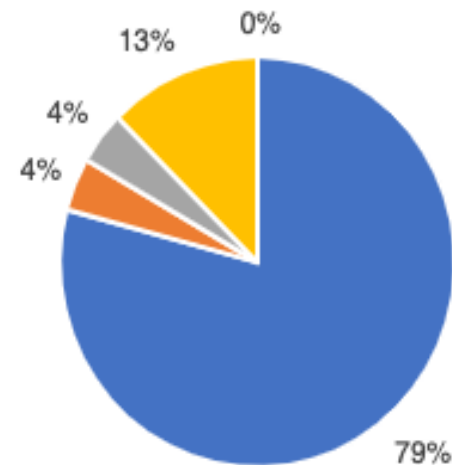


Overall Water Location Type; Ages 0 to 4



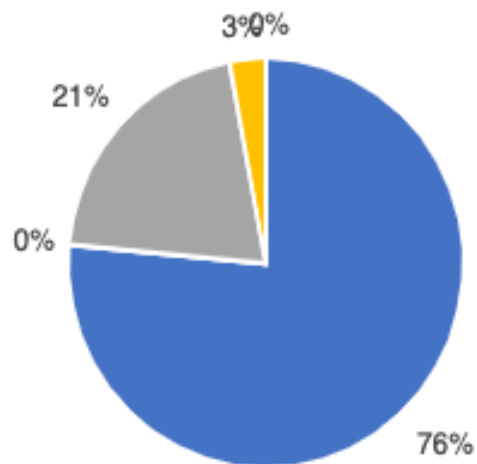
■ Natural Water ■ Res External ■ Res Internal ■ Community Pool ■ Unspecified

Overall Water Location Type; Ages 5 to 9



■ Natural Water ■ Res External ■ Res Internal ■ Community Pool ■ Unspecified

Overall Water Location Type; Ages 10 to 14

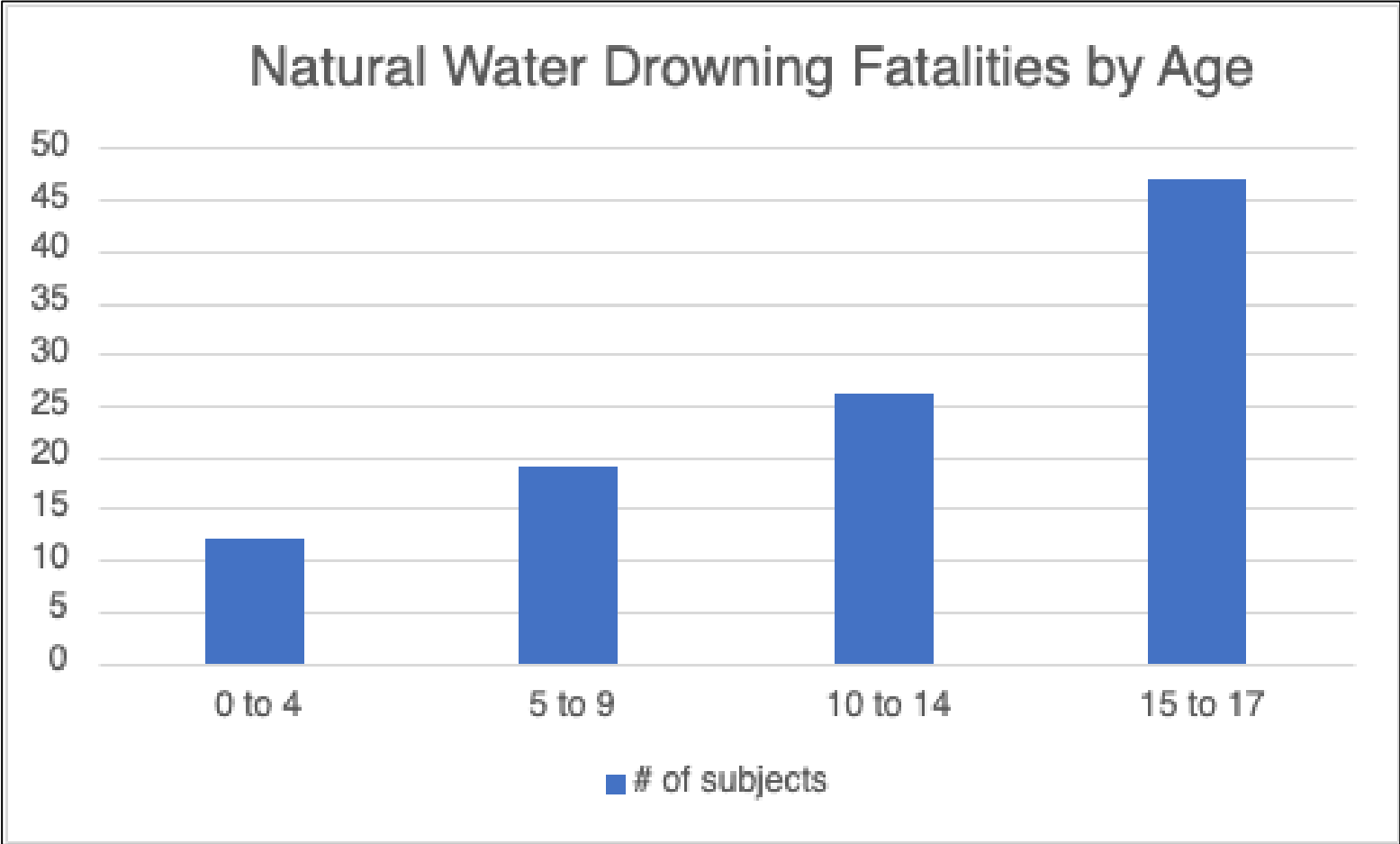


■ Natural Water ■ Res External ■ Res Internal ■ Community Pool ■ Unspecified

Overall Water Location Type; Ages 15 to 17



■ Natural Water ■ Res External ■ Res Internal ■ Community Pool ■ Unspecified





# BIPOC Kids Drown Almost Twice as Often in Natural Water

Population	Rate Per 100,00
Non-Hispanic White	9.6
BIPOC	18.5
<b>Relative Risk</b>	<b>1.927</b>

# Drowning on Private Property

Population	Rate Per 100,00
Non-Hispanic White	4.4
BIPOC	2.8
<b>Relative Risk</b>	<b>0.636</b>

# Drowning on Public Property

Population	Rate Per 100,00
Non-Hispanic White	0.45
BIPOC	1.84
<b>Relative Risk</b>	<b>4.089</b>



## POLICY STATEMENT

Organizational Principles to Guide and Define the Child Health  
Care System and/or Improve the Health of all Children

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# Prevention of Drowning

Sarah A. Denny, MD, FAAP,<sup>a</sup> Linda Quan, MD, FAAP,<sup>b</sup> Julie Gilchrist, MD, FAAP,<sup>c</sup> Tracy McCallin, MD, FAAP,<sup>d,e</sup>

Rohit Shenoi, MD, FAAP,<sup>e,f</sup> Shabana Yusuf, MD, Med, FAAP,<sup>e,f</sup> Benjamin Hoffman, MD, FAAP,<sup>g</sup> Jeffrey Weiss, MD, FAAP,<sup>h</sup> COUNCIL ON  
INJURY, VIOLENCE, AND POISON PREVENTION

# AAP Policy

“the AAP lays out strategies to protect children at each stage of their life. New parents are advised to be vigilant at bath time and to empty all buckets and wading pools immediately. All children should learn to swim, and children and teens should wear life jackets while near open bodies of water. Teens can learn CPR and other water safety skills.”

## AMERICAN ACADEMY OF PEDIATRICS

### POLICY STATEMENT

Organizational Principles to Guide and Define the Child Health Care System and/or Improve the Health of All Children

### Prevention of Drowning

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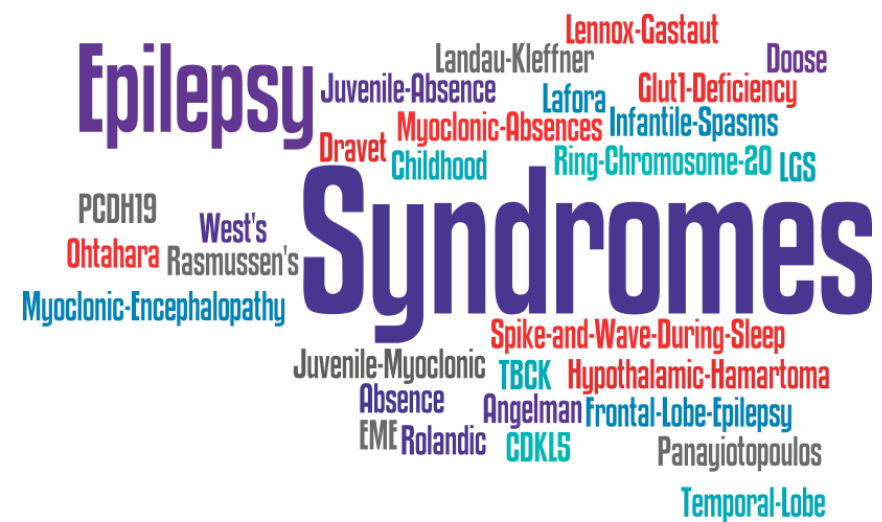
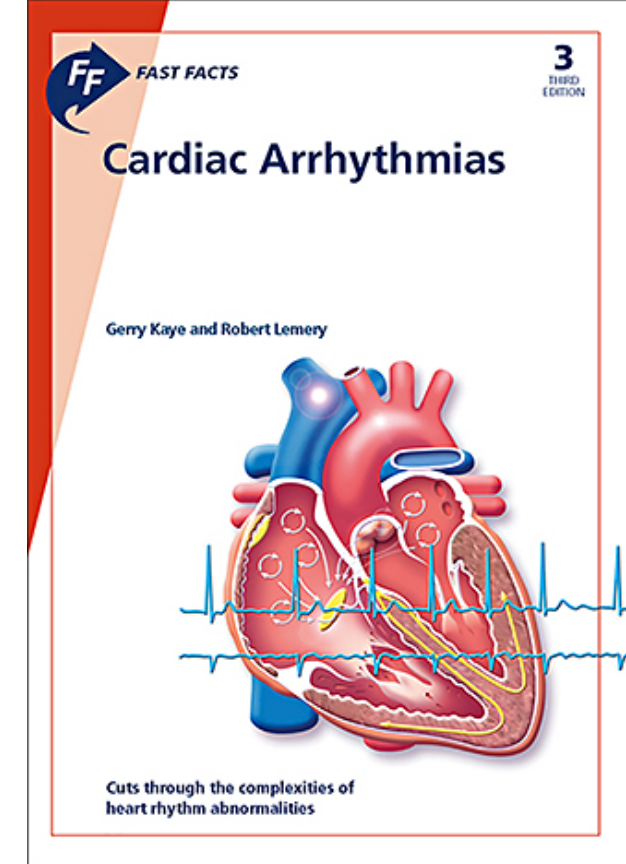
**ABSTRACT.** Drowning is a leading cause of injury-related death in children. In 2017, drowning claimed the lives of almost 1000 US children younger than 20 years. A number of strategies are available to prevent these tragedies. As educators and advocates, pediatricians can play an important role in the prevention of drowning.

ABBREVIATION: CPR, cardiopulmonary resuscitation.

### BACKGROUND

Drowning is the leading cause of injury death in US children 1 through 4 years of age and the third leading cause of unintentional injury death among US children and adolescents 5 through 19 years of age.<sup>1</sup> In 2017, drowning claimed the lives of almost 1000 US children. Fortunately, childhood unintentional drowning fatality rates have decreased steadily from 2.68







# Racial and Ethnic Disparities

- Access
- Cultural or religious barriers



# SWIM LESSONS

For All Skill Levels







*"Parents revealed some of the reasons they hadn't enrolled their children in swimming lessons yet. Many told me that because they never learned to swim themselves, they were afraid of water and didn't encourage their children to get into lessons."*

Steen James MD FAAP

# Water Competence Skills are Essential Life Skills



Your teen is  
in the driver's  
seat but

**YOU'RE IN  
CONTROL.**

Talk with your teen about the rules for the road.

Wear seat belts | No speeding | No texting | No alcohol or drugs  
Limit extra passengers





Otteroo Recalls Baby Floats Due to Drowning Risk from  
Deflations (Recall Alert)



There is NO  
EVIDENCE that  
Infant Survival  
Swim Classes  
Work





**U.S.**

## **Hero Bus Driver Saves Toddler Found 'Wandering' Alone**

BY **SARA SANTORA** ON 8/10/21 AT 3:21 PM EDT





# Young children are by nature curious, impulsive and fast

- Around 70% of swimming pool drowning for young kids occurs when it is not swim time
- Children should not be able to get into water if there is not adequate supervision





# Barriers



Constant, Close and Capable Supervision

WATER WATCHER

**Absolutely Essential,  
But Completely  
Insufficient**

N.  
10\*

For water safety tips please visit:  
[www.safekids.org/water](http://www.safekids.org/water)

Guardian





# Life Jackets







## Stearns Original Puddle Jumper Kids Life Jacket | Life Vest for Children

by **STEARNS**  
206 answered questions  
**#1 Best Seller** in Suitcases

Was: \$49.99  
Price: **\$46.99 & FREE Shipping**  
You Save: **\$3.00 (6%)**

Get \$70 off instantly: Pay **\$0.00** \$46.99 upon approval for the Amazon Prime Rewards Visa Card. No annual fee.

Color: **3D Cat Mermaid**



- The Stearns Original Puddle Jumper Life Jackets have been tested and approved by the U.S. Coast Guard for use as Type V/III personal flotation devices in, on, or near the water
- Meet strict requirements for use on boats, in public pools, and at water parks that require Coast Guard-approved devices
- Nylon shell for durability
- Playful designs make water safety fun for kids
- Give beginners confidence when learning how to swim

Roll over image to zoom in



Roll over image



Roll over image to zoom in

## Stearns Original Puddle Jumper Kids Life Jacket | Life Vest for Children

**STEARNS**  
206 answered questions  
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Was: **\$49.99**  
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You Save: **\$3.00 (6%)**

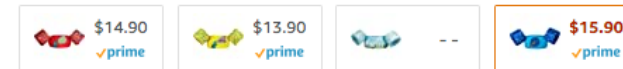
## Blue Mars Kids Swim Vests, Floaties for Toddler Girls and Boys from 20 to 50 pounds.

by **Blue Mars**  
★★★★☆ 527 ratings | 13 answered questions  
**Amazon's Choice** for "baby arm floaties"

Price: **\$15.90** ✓prime FREE One-Day & FREE Returns

Get \$70 off instantly: Pay **\$0.00** \$15.90 upon approval for the Amazon Prime Rewards Visa Card. No annual fee.

Color: **Rocket !**



- 🌐 | **Reliability** | Durable material , heavy stitching, against ripping, enjoy happy summer with a safe guarantee
- 🌐 | **Best for kids 1 to 4 years** | **Best weight range from 25 – 45 lbs**
- 🌐 | **EN Standard (EN 13138-1: Buoyant aids for swimming instruction) verified** | Flotation device keeps your kids safe in water, it best choice for swimming in pool
- 🌐 | **Slide Buckle** | Extra slide buckle, double safe buckle ensure your kids safety, release the tension of always being concerned about the strap loose when your kids playing in water
- 🌐 | **Guarantee** | Blue Mars offers 6 months extra guarantee in case there any quality problems, please feel free to contact us, our email: [bluemars2020@outlook.com](mailto:bluemars2020@outlook.com)

[Report incorrect product information.](#)

**\$15.90**  
✓prime FREE One-Day  
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Order within 13 hrs and 35 mins  
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Buy Now

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Sold by **Blue Mars for Kids and**  
Fulfilled by Amazon.

☐ Add gift options

**Deliver to Jane - Portland 97210**

Add to List

# DROWNING CHAIN OF SURVIVAL

A call to action



Szpilman D, Webber J, Quan L, Bierens J, Morizot-Leite L, Langendorfer SJ, Beerman S, Løfgren B. Creating a Drowning Chain of Survival. *Resuscitation*. 2014 Sep;85(9):1149-52.



# CPR



Loss & Grieving

# My Toddler Drowned And I Want Others To Know The Risks Even When Kids Aren't Swimming

by Nicole Hughes

July 16, 2018

Updated September 3, 2019

SHARE



Nicole Hughes

*Trigger warning: child loss*

We were never supposed to leave our beach vacation early to plan a funeral for our 3-year-old son. And, yet, within the course of one week, we had driven to the beach, returned without him, and held his funeral.



## Bode and Morgan Miller open up about daughter's drowning and share new mission

The couple is trying to "live our days with purpose" by sharing message about pool safety.

July 30, 2018, 6:29 AM CDT / Source: TODAY

By Eun Kyung Kim and Molly Palmer



## Drowning Prevention



Drowning can happen to any family. It's quick, and it's silent. Drowning is the No. 1 cause of death among children aged 1-4, and it is the second-leading cause of death among teens. We can lower these rates if pediatricians, parents and policy-makers work together to implement the types of solutions we know will keep children safe. Please share these resources with parents and caregivers.

#Drowning

## Supervision is essential!

Assign a **water watcher** – an adult who will pay constant attention to children in the water.



**If you are the water watcher, be sure to:**

- Put down your cell phone
- Avoid other activities
- Supervise even if there are lifeguards
- Switch off with another adult for breaks



# POOL SAFETY

If you own a home with a pool – or are visiting a home with a pool – take steps to protect children from drowning.

After birth defects, drowning is the **No. 1** cause of death for children ages 1-4 years. Many of these children drown in pools at people's homes – often during times no one was supposed to be swimming. Children can climb out a window, crawl through a doggy door, or exit an unattended door to get to the pool. Drowning is silent and happens in minutes.

Every pool should have a fence that surrounds all four sides, **especially the side that separates the house from the pool**. The fence should be non-climbable, at least 4 feet high, and have a gate that is self-closing and self-latching.



**Swimming lessons** can help reduce the risk of drowning for children.

Some kids may be ready to start swim lessons after age 1.

**LIFEGUARD**  
  
**ON DUTY**

An adult should **constantly watch children** at all times when they are in or by the pool. **Learn CPR.**



Pool covers, door alarms, window guards and **pool alarms** can be additional layers of protection when used with a fence.

Keep toys **out of the pool** when not in use.



healthychildren.org

Powered by pediatricians. Trusted by parents.  
Part of the American Academy of Pediatrics

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# Social Media Graphics

Download and share these drowning prevention graphics on Facebook, Twitter and Instagram!

Stay within **arm's reach** whenever your baby is near water.

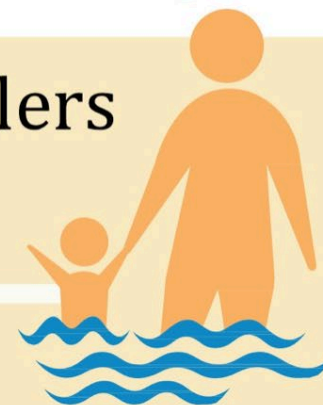


Never leave a child **alone in a bathtub** or in the care of another child, even for a moment.



## Drowning prevention is a family activity!

**Swim lessons** for parents and toddlers are a first step toward water safety.



Assign a **water watcher**—an adult who will pay constant attention to children in the water.

**If you are the water watcher, be sure to:**

- Put down your cell phone
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- Supervise even if there are lifeguards
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Pediatrics  
JOURNAL OF CHILDREN®







**Amer Acad Pediatrics** ✓ @AmerAcadPeds · May 23

Drowning is the leading injury-related cause of death for children age 1–4. It's quick & it's silent, but it's also preventable. Join us TODAY for a [#DrowningPrevention](#) day of action from 9 AM–9PM ET. Share [#DrowningPrevention](#) resources & personal stories to help raise awareness.

Spreading  
the message



Join us  
with the  
hashtag  
**#DrowningPrevention.**

**[aap.org/drowning](http://aap.org/drowning)**

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 **healthychildren.org**  
Powered by pediatricians. Trusted by parents.



7



113



135





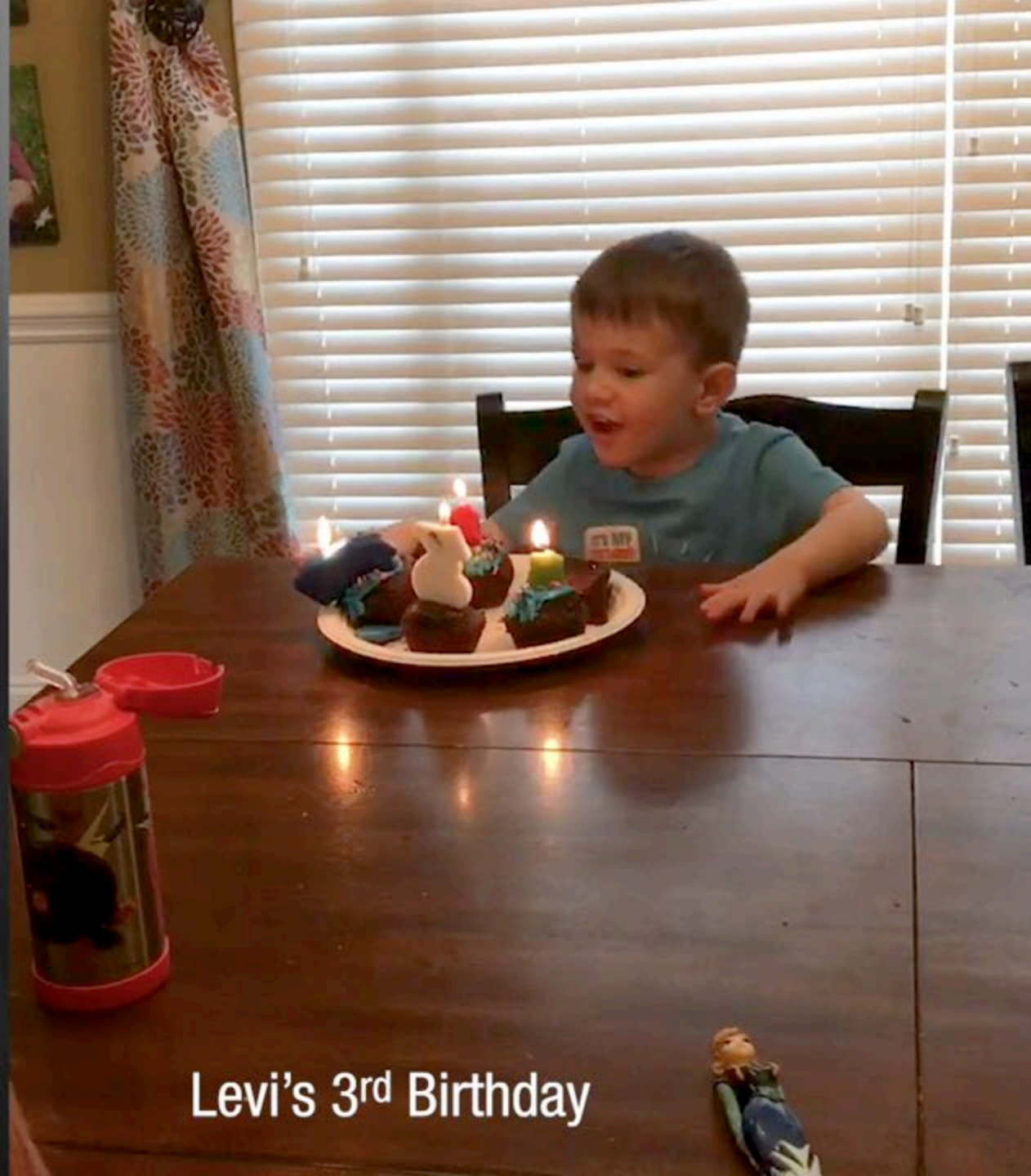
## Partnering with Families



**American Academy of Pediatrics, SoCal @AAPCA2 · Mar 16**

Bode Miller shares the heartbreaking story of losing his daughter Emmy to drowning last summer--we need to be more vigilant in our anticipatory guidance of water safety 😞





Levi's 3<sup>rd</sup> Birthday













change  
philosophy purpose inquiry  
means help create  
engagement  
Yes  
way must see  
telling

# Conversation

key Change daily  
building words deliberately use time important  
requires Conversation part conversations involve always container roles organisation's view  
deliberately use time important  
take organisations people themes message following shape  
open vision asking Employer effectively leadership describe walls engaged Leaders Effective need  
meaning quality questions require clear Given Synchronicity needs someone business action meaningful  
vision asking Employer effectively leadership describe walls engaged Leaders Effective need

Questions?





# Contact Info:

- Ben Hoffman MD FAAP CPST-I
  - [hoffmanb@ohsu.edu](mailto:hoffmanb@ohsu.edu)
  - @drbenhoffman
  - aap.org/drowning
  - aap.org/elections

**OK PEDIATRICIANS**



**NOW IT'S YOUR TURN!**

**Layers of Protection**

- Barriers
- Constant, Close, Capable Supervision
- Water Competence
- Life Jackets
- CPR