

# Reviewing Drowning Deaths: Key Questions and Prevention Resources

**Tuesday, May 19, 2020**  
**2:00 PM – 3:30 PM ET**



The National Center for Fatality Review and Prevention

# Acknowledgement

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# Housekeeping Notes

- **Webinar is being recorded and will be available within 2 weeks on our website: [www.ncfrp.org](http://www.ncfrp.org)**
- All attendees will be muted and in listen only mode
- Questions can be typed into the “Questions and Answer” (Q & A) box at the bottom pane of the webinar
- Due to the large number of attendees, we may not be able to get to all questions in the time allotted
  - All unanswered questions will be posted with answers on the NCFRP website

# Webinar Evaluation

- At the end of today's webinar, we encourage you to take a brief survey on how we did. Please take a moment and provide us with your feedback. It helps us to plan future webinar offerings!

<https://www.surveymonkey.com/r/32BRMMX>



# Welcome and Introduction



**Diane Pilkey, RN, MPH**  
Senior Nurse Consultant  
Health Resources and  
Service Administration  
Maternal and Child  
Health Bureau  
Emergency Medical  
Services for Children and  
Injury Prevention Branch



# About the National Center

- The National Center for Fatality Review and Prevention (NCFRP) is a resource and data center that supports child death review (CDR) and fetal and infant mortality review (FIMR) programs around the country.
- Supported with funding from the Maternal and Child Health Bureau at the Health Resources and Services Administration, the Center aligns with several MCHB priorities and performance and outcome measures such as:
  - Healthy pregnancy
  - Child and infant mortality
  - Injury prevention
  - Safe sleep



# HRSA's Overall Vision for NCFRP

- Through delivery of data, training, and technical support, NCFRP will assist state and community programs in:
  - Understanding how CDR and FIMR reviews can be used to address issues related to adverse maternal, infant, child, and adolescent outcomes
  - Improving the quality and effectiveness of CDR/FIMR processes
  - Increasing the availability and use of data to inform prevention efforts and for national dissemination
- Ultimate Goal:
  - Improving systems of care and outcomes for mothers, infants, children, and families



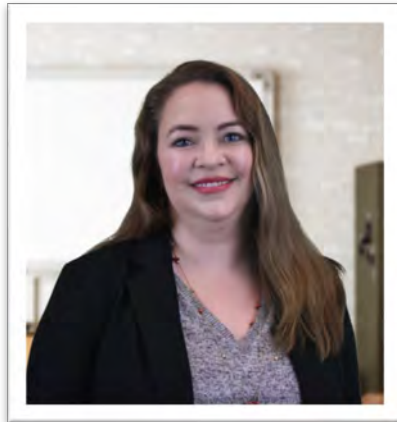
# Presentation goals

- Understand drowning data from the National Fatality Review-Case Reporting System (NFR-CRS)
- Understand what is and is not known about children's swimming ability in drowning cases
- Introduce the National Center's new guidance on drowning fatalities
- Identify effective prevention resources

# Speakers



Nicole Hughes  
Levi's Mom



Susanna Joy, MA

The National Center for Fatality Review and Prevention



Todd Porter, MD, MSPH, FAAP



Morag MacKay, MSPH

Levi  
Hughes











This is what  
Levi was  
wearing the  
night he  
drowned. The  
family was  
preparing to  
go crab  
hunting.





Thank  
you.



# National Fatality Review-Case Reporting System (NFR-CRS): Accidental Drowning

There were 5,463 accidental drownings entered in the NFR-CRS. Of those:



**7 in 10  
were male**

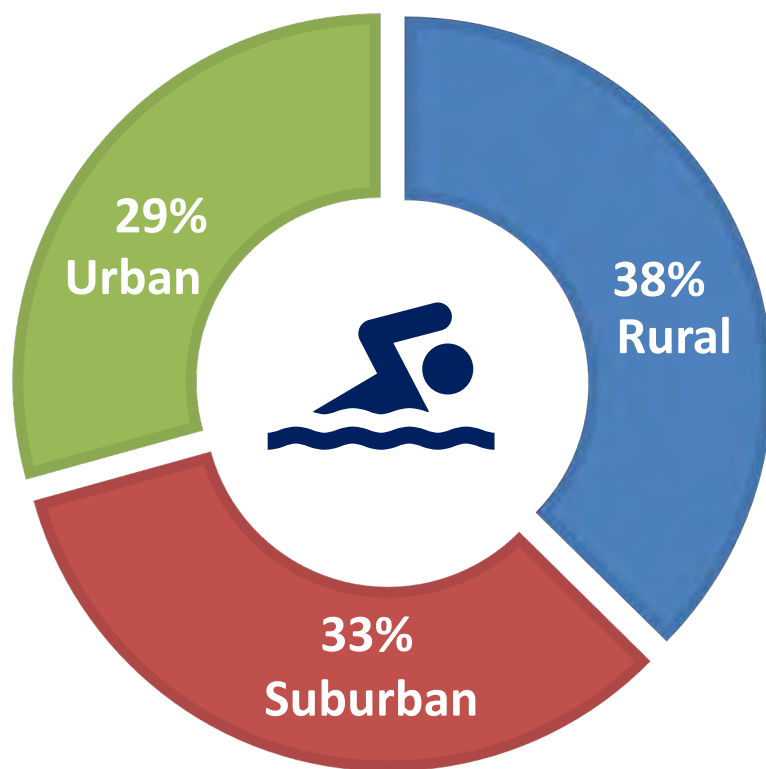


**58% were  
<4 years old**



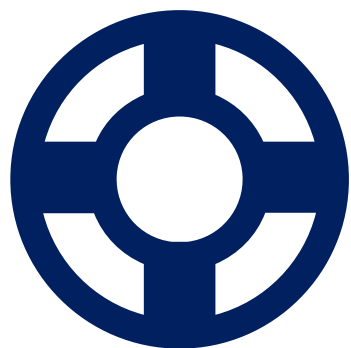
**21% non-  
Hispanic  
Black**

# Locations



**52% of the drownings took place at the home of a friend or relative, or at the child's own home.**

# Location



**49% were in  
a pool, hot  
tub or spa**



**33% were in  
open water**



**11% were in  
a bathtub**

# Supervision



**43 % had  
supervision**



**47% of  
supervisors were  
biological moms**

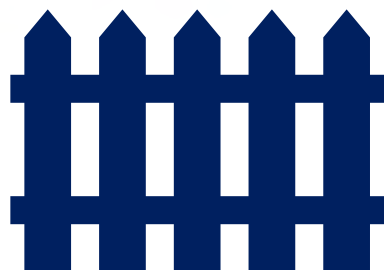


**41% needed  
supervision**



**83% of  
supervisors were  
family members**

# Barriers and Layers of Protection



**In 43% of pool or open water deaths, there were no barriers present.**



**In 30% of deaths, one layer of protection was breached.**

# Can child swim?



**Missing or unknown in  
41% of cases**

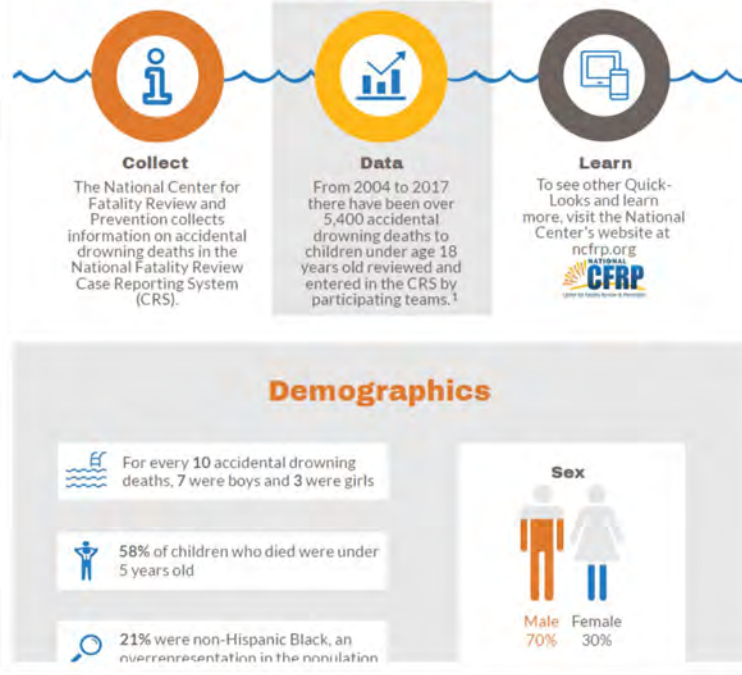
# New Resources



The National Center for Fatality Review and Prevention

## —National Center Quick-Look—

### Accidental Drowning Deaths



- National Center Quick Look: *Accidental Drowning Deaths*:  
<https://www.ncfrp.org/resources/quick-looks/>
- *Review of Drowning Fatalities: National Center Guidance Report*



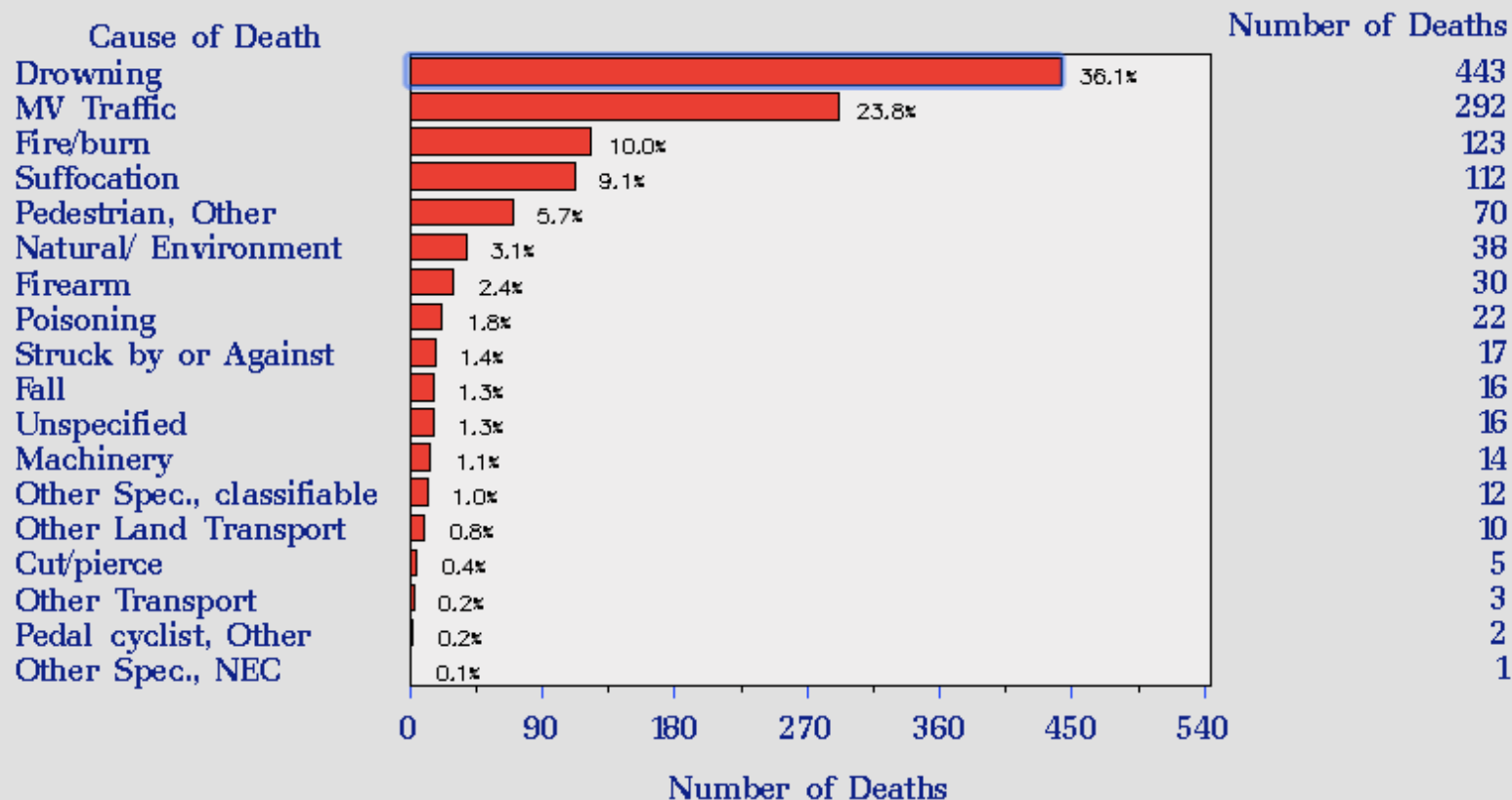
# Where Drowning Prevention Meets Child Death Investigations

Todd Porter, MD, MSPH, FAAP  
Pediatrician  
Denver Health Medical Center



**2018, United States**  
**Unintentional Injuries**  
**Ages 1–4, All Races, Both Sexes**  
**Total Deaths: 1,226**

Click on the colored bars to drill down to the ICD code level



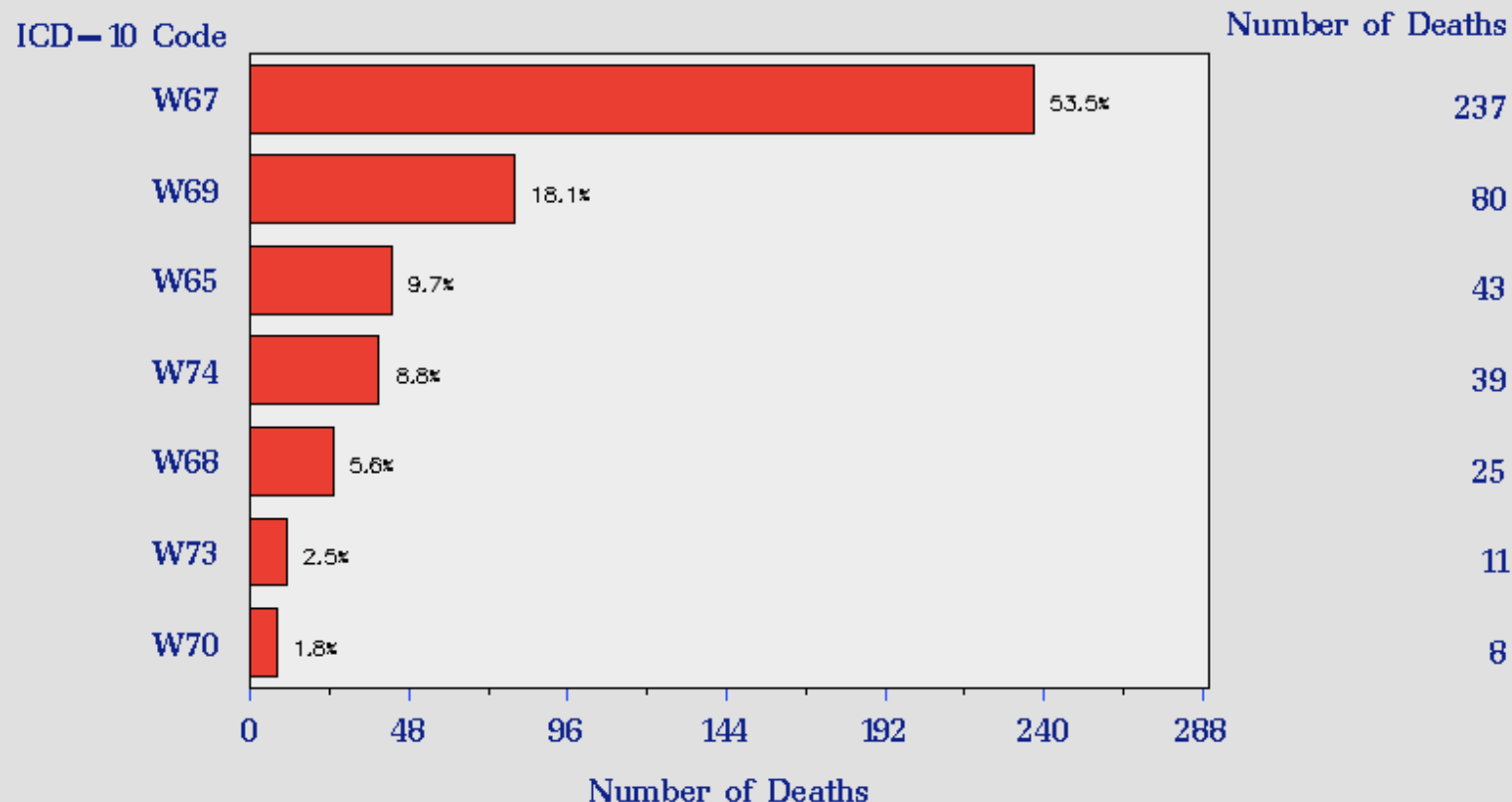
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 — est. 1860 —  
**FOR LIFE'S JOURNEY**

2018, United States  
Unintentional Injuries – Drowning  
Ages 1–4, All Races, Both Sexes  
Total Deaths: 443

Put mouse on colored bars to see the full ICD code description.

Run report on full 4–char ICD code, sorted by:

1. [Number of Deaths](#) 2. [ICD Code](#)

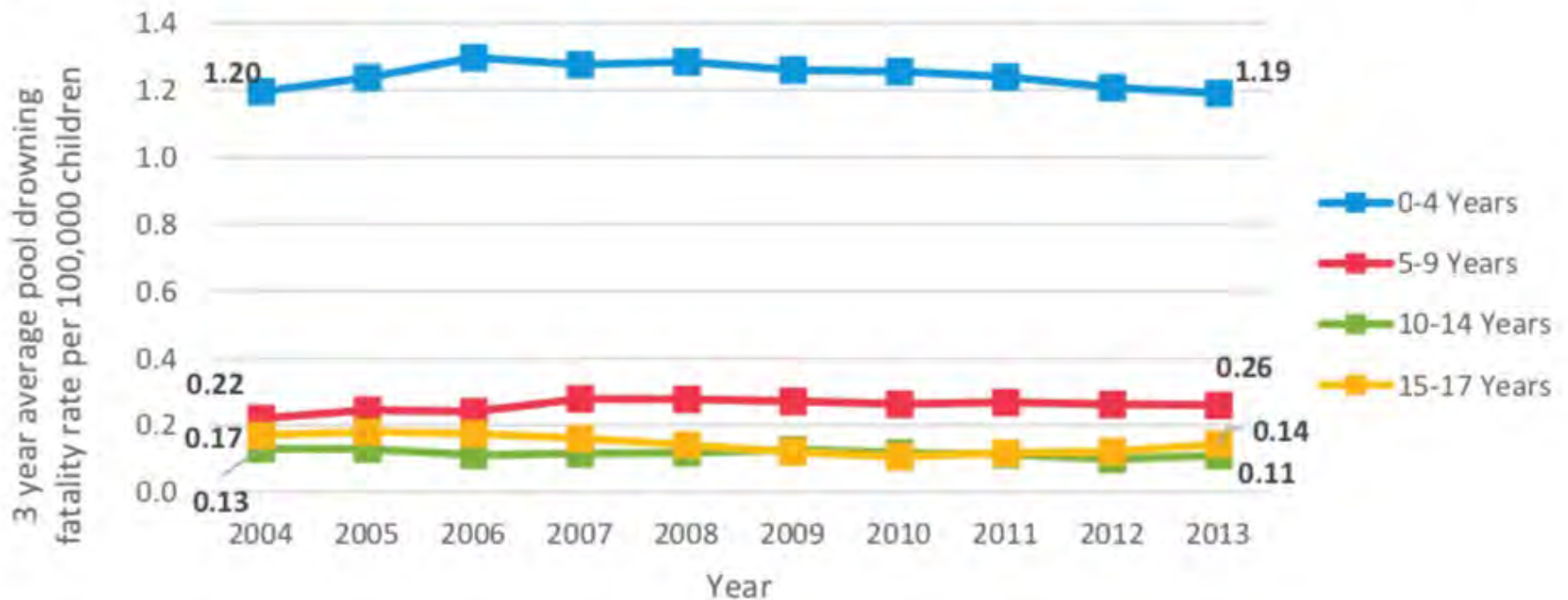


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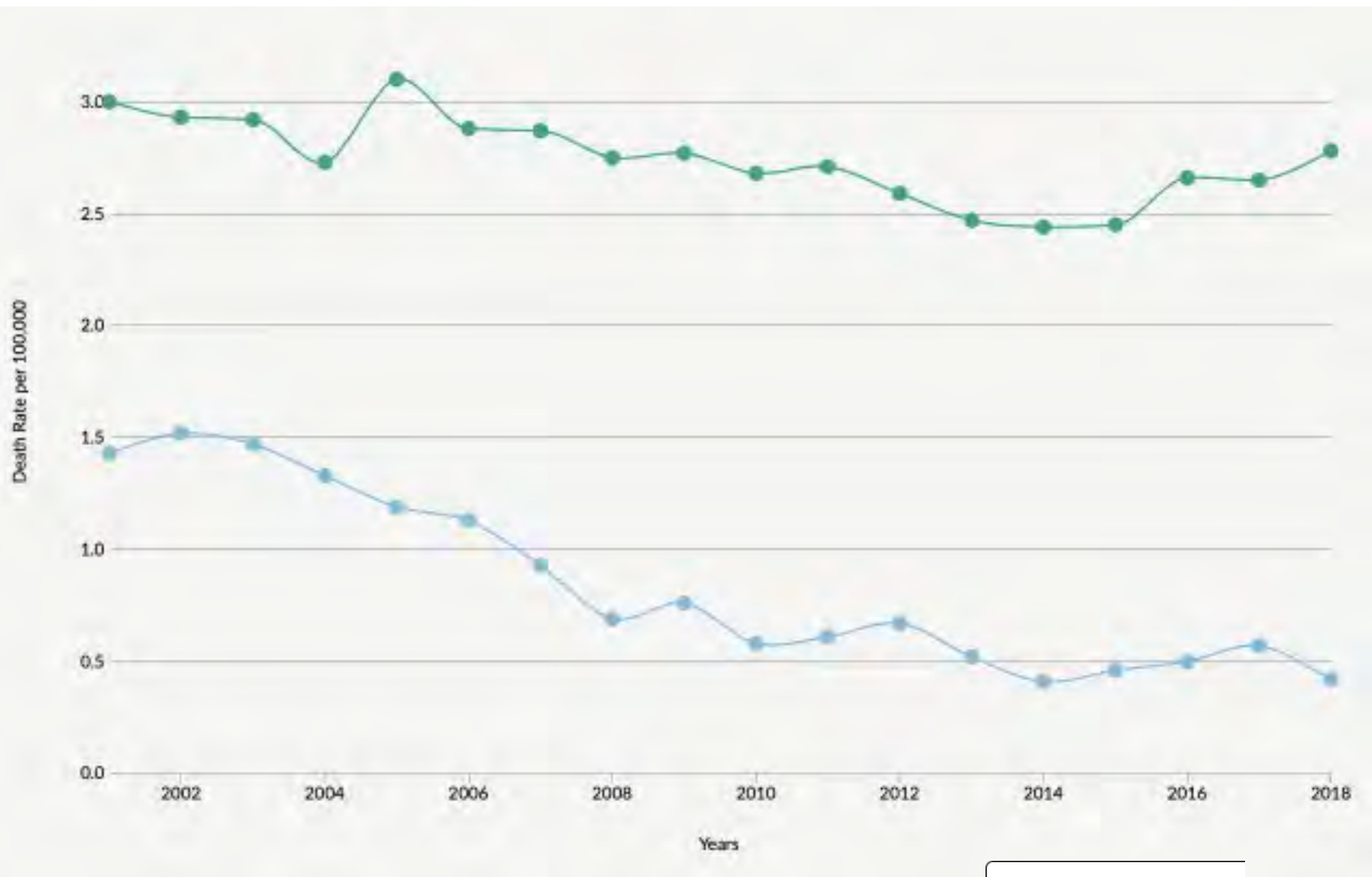
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**Figure 5. There have been no significant improvements in age-specific pool fatalities in the last 10 years<sup>4</sup>**



**Dangerous Waters:** Profiles of Fatal Childhood Drownings in the U.S. 2005-2014. June 2016



Legend:

- All Intents Occupant
- Unintentional Drowning



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# Water Competency

- Water competency is the ability to anticipate, avoid, and survive common drowning situations.<sup>1</sup>

The components of water competency include water safety awareness, basic swim skills and the ability to recognize and respond to a swimmer in trouble.

Basic swim skills include: ability to enter the water, surface, turn around, propel oneself for at least 25 yards, float or tread water, then exit the water.<sup>2</sup>

Water competency can further be broken down into 1) Safe entry, 2) Breath control, 3) stationary surface (floating / treading water), 4) Water orientation (rolling front to back), 5) Propulsion competence (swim on front or back), 6) underwater (underwater swimming), 7) safe exit.<sup>3</sup>

1. Water Safety USA. Become Water Competent. Available at: <https://www.watersafetyusa.org/water-competency.html#components> . Accessed May 7, 2020.

2. Quan L, Ramos W, Harvey C, et al. Toward defining water competency.: an American red cross definition. *Int J Aquatic Res Educ*. 2015;9(1):3.

3. Stallman RK, Moran Dr K, Quan L, Langendorfer S. From swimming skill to water competence: towards a more inclusive drowning prevention future. *Inj J Aquatic Res Educ*. 2017;10(2):3

# American Academy of Pediatrics Prevention of Drowning Policy Statement

## 2003

there are no data to show that swimming lessons actually decrease the risk of drowning. Thus, swimming lessons are not recommended as a means of drowning prevention, and the [AAP] states that “**children are generally not developmentally ready for formal swimming lessons until after their fourth birthday.**”

Prevention of Drowning in Infants, Children, and Adolescents. Ruth A. Brenner and Committee on Injury, Violence, and Poison Prevention. *Pediatrics* 2003;112;440

# American Academy of Pediatrics Prevention of Drowning Policy Statement

## 2010

2009 Brenner study concluded that swimming lessons do not increase the risk of drowning in 1-4 yr olds and may actually provide a reduction in drowning risk in this age group

In light of this new research, it is reasonable for the AAP to relax its policy regarding the age at which children should start learning water-survival skills.

The evidence no longer supports an advisory against early aquatic experience and swimming lessons for children of any specific age. However, the current evidence is insufficient to support a recommendation that all 1-4 year old children receive swimming lessons.

**Prevention of Drowning.** Committee on Injury, Violence, and Poison Prevention. *Pediatrics* 2010; 126:178

# American Academy of Pediatrics Prevention of Drowning Policy Statement

## 2019

Learning to swim needs to be seen as a component of water competency.

Evidence suggests that many children older than 1 year will benefit from swim lessons.

A parent's decision about when to initiate swim lessons must be individualized

There is tremendous variability among swim lessons, and not every program will be right for each child.

There is need for a broad and coordinated research agenda to address not just the efficacy of swim lessons for children age 1 through 4 years but also the many components of water competency for the child

**Prevention of Drowning.** Sarah A. Denny et al. Council on Injury, Violence, and Poison Prevention. *Pediatrics*. March 15, 2019



# Lessons learned from the Brenner Study?

- 2009 Ruth Brenner case-control study identified drowning cases through recruitment and participation of medical examiners & coroners in 6 states from 2003-2005. In 1-4 yr olds: of the 159 cases identified, only 61 parents (38%) were reached & agreed to participate.

Limitation of study included small sample size causing wide confidence interval (0.01 to 0.97) with adjusted OR of 0.12

“To enable researchers to replicate these findings, we recommend collection of information about swimming lessons as part of routine investigation of all childhood drowning deaths.”

“In the absence of uniform reporting of this information by all medical examiners and coroners, it will be difficult to collect this type of data on a larger sample”

Brenner RA, et al. Association between swimming lessons and drowning in childhood: a case-control study. *Archives of pediatrics & adolescent medicine*. 2009; 163(3):203-210

# Assessment of Water Competency: Where Drowning Prevention Meets Child Death Investigations

## Current NCFRP Case Reporting System

Child able to swim? (N/A, Yes, No, U/K)

## Brenner NICHD Study Data Abstraction Questions

### Formal Swimming Lessons

Children sometime receive formal swimming lessons that are paid for or that are received as part of another activity such as day care, school or camp. Had (child's name) ever taken formal swimming lessons? Yes or No

How old was (child's name) when (he/she) took (his/her) first formal swimming lessons? \_\_\_\_ (age)

What was the name of the swimming course? For example, Aquatots, Water Babies, or Beginning Swimming.

Course #1 name: \_\_\_\_ Course #2 name: \_\_\_\_.

Could you please tell me the name of the facility and sponsoring organization that offered this course and the city and state in which the facility is located. Facility: \_\_\_\_ Sponsoring Organization: \_\_\_\_ City: \_\_\_\_ State: \_\_\_\_ (for each course)

The first skill is helping children feel comfortable in the water; like getting them used to putting their face in the water.

Would you say these lessons focused on this..... (not at all, a little, some, or A lot?)

Treading water. Would you say the lessons focused on this...(not at all, a little, some, or A lot?)

Floating on (his/her) back. (not at all, a little, some, or A lot?)

### WATER COMPETENCY

Could (child's name) float on (his/her) back without support for 10 seconds? \_\_\_\_ Yes/No/Never attempted

Could (child's name) swim on (his/her) back for about 15 feet without stopping? \_\_\_\_ Yes/No/Never attempted

Could (child's name) jump in the pool, swim out 5 feet, and then swim back to the edge of the pool? \_\_\_\_

Yes/No/Never attempted

How old was (child's name) when (he/she) was first able to swim without help or without using a life preserver or other flotation device for assistance? \_\_\_\_ (months/years) - enter '99' if unable to swim

# Closing thoughts

## **Remember the commentary of Brenner article:**

“To enable researchers to replicate these findings, we recommend collection of information about swimming lessons as part of routine investigation of all childhood drowning deaths.”

## **Remember the 2019 AAP Policy statement on Drowning Prevention:**

There is tremendous variability among swim lessons

There is need for a broad and coordinated research agenda to address not just the efficacy of swim lessons for children age 1 through 4 years but also the many components of water competency for the child

The data you collect during drowning death investigations on a child's prior participation in formal swimming lessons and water competency matters and has the potential to inform policy by providing much needed evidence of effectiveness of type of formal swim lesson programs for 1-4 year olds



# Drowning Prevention: Evidence-informed Solutions and Available Resources

Morag MacKay

Director of Research, Safe Kids Worldwide  
Chair, U.S. National Water Safety Action  
Plan Steering Committee

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# Evidence-informed Strategies

- Water Competency, Swim Lessons and Survival Swim Skills
- 4-sided isolation fencing around pools
- Life jackets
- Supervision / Lifeguards
- Rescue / CPR

Source: AAP, 2017



# Resources for Water Safety



Water safety  
guidance, tips  
and educational  
resources

- American Academy of Pediatrics [www.aap.org](http://www.aap.org)
- Safe Kids Worldwide [www.safekids.org](http://www.safekids.org)
- Pool Safety Campaign [www.poolsafely.gov](http://www.poolsafely.gov)
- Drowning Prevention @ CPSC [www.cpsc.gov](http://www.cpsc.gov)
- The ZAC Foundation [www.thezacfoundation.org](http://www.thezacfoundation.org)
- Make the Minute Matter  
[www.maketheminutematter.org](http://www.maketheminutematter.org)



## Pool Safety Checklist

### TIPS FOR PARENTS

- ❑ **Watch kids when they are in or around water, without being distracted.** Keep young children and weak swimmers within arm's reach of an adult. Make sure older children swim with a partner every time.
- ❑ **Teach children how to swim.** Every child is different, so enroll children in swim lessons when they are ready—consider their age, development and how often they are around water.
- ❑ **Make sure kids learn water survival skills.** Children should be able to do these five things:
  1. Step or jump into water over their head and return to the surface.
  2. Turn around in the water and orient to safety.
  3. Float or tread water.
  4. Combine breathing with forward movement in the water.
  5. Exit the water.
- ❑ **Install fences around pools.** Fences should be at least 4 feet high, self-closing and self-latching gates.
- ❑ **Empty kids' pools.** Pools should be emptied and drained after each use.
- ❑ **Know what to do in an emergency.** CPR and first aid skills may help you save a life.



## Open Water Safety Checklist

### Tips for Families When Visiting Oceans, Lakes and Rivers

- ❑ **Watch kids when they are in or around water, without being distracted.** Keep young children and weak swimmers within arm's reach of an adult. Make sure older children swim with a partner every time.
- ❑ **Choose a Water Watcher.** When there are several adults present, choose one to be responsible for watching children in or near the water for a certain period of time, such as 15 minutes. After 15 minutes, select another adult to be the Water Watcher.
- ❑ **Teach children how to swim.** Every child is different, so enroll children in swim lessons when they are ready—consider their age, development and how often they are around water.
- ❑ **Make sure kids learn water survival skills.** Children should be able to do these five things:
  1. Step or jump into water over their head and return to the surface.
  2. Turn around in the water and orient to safety.
  3. Float or tread water.
  4. Combine breathing with forward movement in the water.
  5. Exit the water.

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## Pool Safety Facts

for Parents and Kids



### Did you know?



Drowning is silent. There can be very little splashing, waving or screaming.



Watching your child in the water is your responsibility. A lifeguard's job is to enforce rules, scan, rescue and resuscitate.

Drowning is quick. Once a child begins to struggle, you may have less than a minute to react.



Swim lessons are essential, but skill level varies. Many children who drowned in pools reportedly knew how to swim.



### Make sure kids learn how to swim and develop these 5 water survival skills.



1. Step or jump into water over their head and return to the surface.



2. Float or tread water for one minute.



3. Turn around in a full circle and find an exit from the water.



4. Swim 25 yards to the exit.



5. Exit from the water without using the ladder.

Watch your kids when they are in and around water, without distraction.



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Learn more at [safekids.org](http://safekids.org).

### CHOOSE THE RIGHT LIFE JACKET BASED ON YOUR CHILD'S WEIGHT

8 to 30 pounds Infant	30 to 50 pounds Child	50 to 90 pounds Youth	All jackets should be U.S. Coast Guard-approved.
 <p>Grab handles help retrieve the child out of the water.</p> <p>Head supports help keep the child's head above water.</p> <p>Crotch straps help keep the life jacket from riding up.</p>		 <p>Fit is important for keeping a child's head above water, so do not get a too-big life jacket thinking he or she will grow into it.</p> <p>The more straps a life jacket has, the more adjustments can be made for sizing.</p>	

### FITTING AND WEARING A LIFE JACKET

- Select the proper U.S. Coast Guard-approved life jacket.
- Fasten all straps and clips for a snug fit.
- Check fit by lifting up the shoulders of the life jacket. The child's chin and ears should not slip through.
- Familiarize your child with a life jacket beforehand so he or she will be comfortable wearing it and hopefully less likely to panic during the activity.

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# Resources for Swim Lessons

- American Red Cross [www.redcross.org](http://www.redcross.org)
- YMCA [www.ymca.net](http://www.ymca.net)
- USA Swimming Foundation  
[www.usaswimmingfoundation.org](http://www.usaswimmingfoundation.org)
- Gold Fish Swim Schools  
[www.goldfishswimschool.com](http://www.goldfishswimschool.com)
- Starfish Aquatics [www.starfishaquatics.org](http://www.starfishaquatics.org)



# Resources for Supervision/Lifeguards

Lifeguard  
training

- American Red Cross [www.redcross.org](http://www.redcross.org)
- YMCA [www.ymca.net](http://www.ymca.net) (contact local YMCA)
- United States Lifesaving Association (USLA)  
[www.usla.org](http://www.usla.org)

Supervision  
resources (Water  
Watcher Card)

- Safe Kids Worldwide  
[www.safekids.org](http://www.safekids.org)



# Resources for Rescue / CPR

- CPR training
- American Red Cross [www.redcross.org](http://www.redcross.org)
  - YMCA (check with your local Y)
  - Fire/Rescue (check with your local department)

- Bystander  
rescue  
educational  
materials
- American Red Cross [www.redcross.org](http://www.redcross.org)



# Resources for Pool Fencing

Pool barrier  
guidelines

- CPSC [www.cpsc.gov](http://www.cpsc.gov)

Pool fencing  
legislation

- California Pool Safety Act (2018)



Safety Barrier Guidelines  
for Residential Pools  
Preventing Child Drownings

U.S. Consumer Product  
Safety Commission



# Resources for Life Jackets

Life Jacket Loaner  
Board Guidance

- U.S. Army Corps of Engineers [www.corpslakes.erdc.dren.mil](http://www.corpslakes.erdc.dren.mil)
- Boat U.S. Foundation [www.boatus.org](http://www.boatus.org)

Life Jacket Guidance

- Water Safety USA [www.watersafetyusa.org](http://www.watersafetyusa.org)
- U.S. Coastguard [www.uscgboating.org](http://www.uscgboating.org)



# U.S. NATIONAL WATER SAFETY ACTION PLAN

## Development



Establish scope and select a framework that supports both development and implementation



Establish multi-sectoral working groups to develop goals, objectives and actions



Convene a high-level expert panel to finalize the plan



# How You Can Get Involved



[www.watersafetyusa.org/nwsap](http://www.watersafetyusa.org/nwsap)

# Questions?



# Questions

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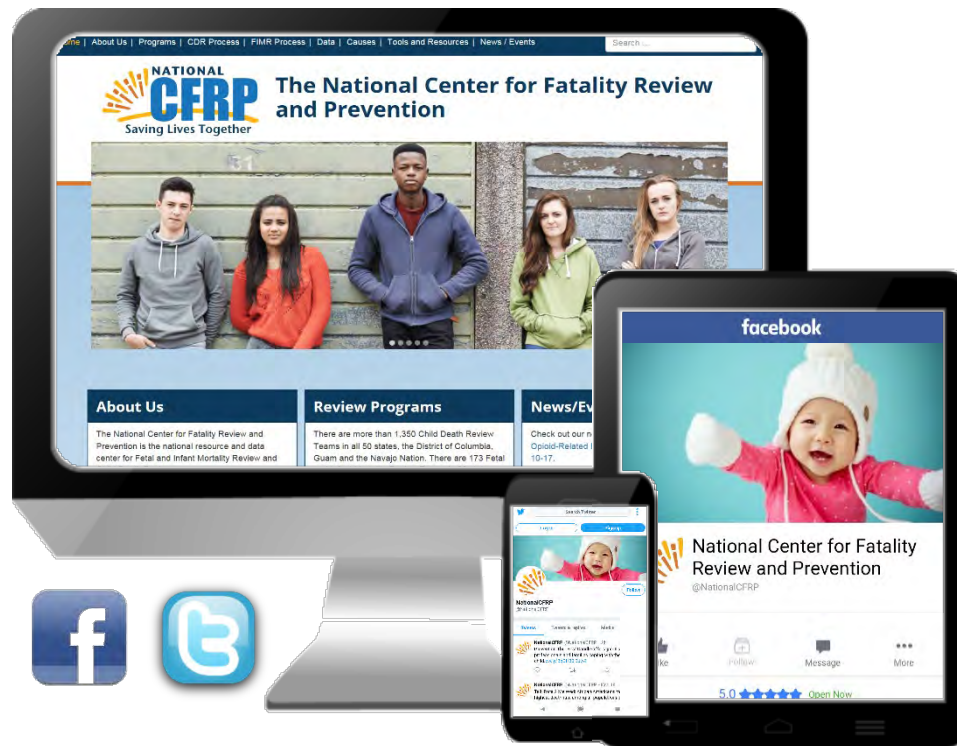
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<https://www.surveymonkey.com/r/32BRMMX>

- Thank you for taking the time to join us today!

# NCFRP is on Social Media: NationalCFRP



# THANK YOU!

Additional questions can be directed to:  
[info@ncfrp.org](mailto:info@ncfrp.org)

