AAP and Watersafety

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What is Drowning? Definitions

Event during which airway is submerged in a liquid
Respiratory Distress

Fatal
Died

Nonfatal
Survived

No morbidity
Good outcome

With morbidity
Moderate
Severe
Learning objectives

Drowning
   Who are the High-risk groups?
   Where do pediatric age groups drown?
Prevention:
   What works?
   What is needed?

US Watersafety National Action Plan
Drowning is a Pediatric problem

10 Leading Causes of Injury Deaths by Age Group Highlighting Unintentional Injury Deaths, United States – 2018

<table>
<thead>
<tr>
<th>Rank</th>
<th>&lt;1</th>
<th>1-4</th>
<th>5-9</th>
<th>10-14</th>
<th>15-24</th>
<th>25-34</th>
<th>35-44</th>
<th>45-54</th>
<th>55-64</th>
<th>65+</th>
<th>Total</th>
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<tbody>
<tr>
<td>1</td>
<td>Unintentional Suffocation 977</td>
<td>Unintentional Drowning 443</td>
<td>Unintentional MV Traffic 341</td>
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<td>Unintentional Poisoning 14,978</td>
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<td>Unintentional Poisoning 5,068</td>
<td>Unintentional MV Traffic 5,328</td>
<td>Unintentional Poisoning 5,029</td>
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<td>Suicide Firearm 3,787</td>
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<td>Suicide Suffocation 2,481</td>
<td>Suicide Firearm 4,766</td>
<td>Unintentional Unspecified 4,607</td>
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<td>Unintentional Suffocation 30</td>
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<td>Suicide Suffocation 2,237</td>
<td>Suicide Suffocation 3,117</td>
<td>Homicide Firearm 2,560</td>
<td>Suicide Suffocation 1,934</td>
<td>Unintentional Suffocation 3,793</td>
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<td>Unintentional Drowning 39</td>
<td>Unintentional Pedestrian, Other 70</td>
<td>Unintentional Other Land Transport 26</td>
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<td>Unintentional Pedestrian, Other 15</td>
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<td>Homicide Cut/Pierce 455</td>
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<td>Two Tied 18</td>
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<td>Homicide Other Spec., NEC 14</td>
<td>Suicide Poisoning 20</td>
<td>Suicide Fall 205</td>
<td>Unintentional Fall 346</td>
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<td>Unintentional Suffocation 401</td>
<td>Undetermined Poisoning 704</td>
<td>Suicide Suffocation 1,014</td>
<td>Adverse Effects 4,604</td>
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</table>

Identifying who’s at risk for drowning
Characteristics of victims

Age
Sex
Race, ethnicity
Visitor, immigrant

Behaviors
Activities
Medical
condition
Number of fatal drownings
Location by Pediatric age group
California 2017-2019

- Sw pool
- Nat Water
- Bath
- Other
States with most fatal pool drownings in 1-4 yo

<table>
<thead>
<tr>
<th>State</th>
<th>2017 n (rate)</th>
<th>2019 n (rate)</th>
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<tbody>
<tr>
<td>California</td>
<td>24 (1.2)</td>
<td>31 (1.6)</td>
</tr>
<tr>
<td>Texas</td>
<td>30 (1.9)</td>
<td>30 (1.8)</td>
</tr>
<tr>
<td>Florida</td>
<td>45 (4.9)</td>
<td>28 (3.0)</td>
</tr>
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</table>

CDC Wonder
Risk factors for fatal drowning

Age: 1-4, 15-29 yo
Sex: Males
Nonwhite/ethnic minority
Alcohol use
In water activities- swimming, Xing rivers
Boating: Motorboat, hand powered craft
  No lifejacket use, No boater education
No Swimming lessons
Primary vs Secondary Prevention

DROWNING CHAIN OF SURVIVAL
A call to action

Prevent drowning
Be safe in & around water

Recognize distress
Ask someone to call for help

Provide flotation
To prevent submersion

Remove from water
Only if safe to do so

Provide care as needed
Seek medical attention

David Szpilman, Jonathon Webber, Linda Quan, Joost Bieren, Luiz Morizot-Leite, Stephen John Langendorfer, Steve Beerman, Bo Løfgren
Creating a drowning chain of survival. Resuscitation (2014), http://dx.doi.org/10.1016/j.resuscitation.2014.05.034
What Works: Circle of Drowning Prevention

Drowning Prevention

American Red Cross
**Barriers: Prevent Access**

Isolation Fencing

Four-sided pool fencing

- 50% decrease drowning deaths
  - Maricopa Cty, USA
  - New Zealand
  - Failures due to inadequate fence/gate

*Enforcement*
Evidence for Pool covers, pool alarms, door alarms? None

No national law, no state law requires pool isolation fencing

California barrier law requires any 2 of 7 interventions
• Isolation fence - removable mesh isolation fence
• Pool cover - Pool alarm
• Door alarm - Doors self-closing, self-latching
• Other verified system

What’s needed: State/national 4-sided fencing mandate
Life Jackets

Must be US Coast Guard approved
Must fit and be secured/buckled

Evidence WEARING life jackets works:

• Decreased drowning death risk in boats by 50% nationally (Cummings, 2011)
• Decreased drowning death risk in boating accidents by 40%, WA State (Stempski)
• Mandated wear decreased boat related drowning deaths by 50%, Australia (Bugeja, 2019)

California law
• Appropriate size USCG approved life jacket for each person must be IN the boat
• Age 13 and under must wear life jacket
• ALL ages on Personal Watercraft
• ALL ages being towed
Life jackets: What’s needed

Mandate life jacket wear in boats/vessels
- All Ages
- Age 18 and under

Better Life jacket design
- More comfortable
- More fashionable

Flotation alternatives for swimming
Swimming Lessons

Decreased drowning deaths in < 5 yo children:
• No swim lessons increased likelihood of death RR=2.3 (1.4 to 4.5) Yang 2007- China
• Any “formal swim lessons” decreased likelihood of death 50% among children 1-4 yo - Brenner 2009- USA

Decreased drowning deaths in older children:
• SwimSafe Rahman 2012 Bangladesh

2010 AAP Policy Report
   Supported swim lessons
2019 AAP Policy Report
   Support swim lessons ≥12 month old
What’s needed for Swim Lessons?

Access

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**Taken Formal Swim Lessons 10th Graders Healthy Youth Survey**

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>White*</td>
<td></td>
</tr>
<tr>
<td>Asian*</td>
<td></td>
</tr>
<tr>
<td>Black*</td>
<td></td>
</tr>
<tr>
<td>AI/AN*</td>
<td></td>
</tr>
<tr>
<td>PI</td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td></td>
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</table>

* Non-Hispanic

AI/AN=American Indian/Alaska Native
PI=Pacific Islander
Define Adequate supervision

Preparation
- Preset rules

Availability of life jackets
- Site hazard assessment

Designated water watcher
- Attentive: Not distracted, not impaired
- Close: Arm’s length for poor swimmers
- Capable: recognize, respond, rescue
- Ratio: observer to “swimmers”
What’s needed for Supervision?
First Aid teaching

Recognition
“I thought he was kidding”

Safe Rescue
Aug 9, 2021
California father drowns at Lake Powell after saving his child

CPR
Bystander CPR improves outcome
National Water Safety Action Plan

Strategic direction
Framework
Priorities

Awareness
Better data
Reporting

Relevant partners
Consensus
Scope

• 10-year plan
• Focus on 5 evidence-based strategies and data/surveillance plus necessary infrastructure and capacity to support implementation

• Life Jackets / PFDs and Other Floatation
• Water Safety / Water Competency / Swimming Lessons
• Supervision/Lifeguards

• Rescue/CPR
• Barriers, Entrapment & Electrical Safety
• Data/Public Health Surveillance
Three Stage Development Process

Stage 1
- Decide on scope and framework (complete)
- Establish initial website and communications (complete)
- Obtain funding for staff (ongoing)
- Appoint working group co-chairs (complete)

Stage 2
- Establish multi-sectoral working groups (complete)
- Establish scope and sub-working groups (complete)
- Conduct environmental scan and gaps analysis (complete)
- Develop recommendations, draft models and national implications (Sep 2021)

Stage 3
- Review & revision of draft models (Fall 2021)
- Blue Ribbon Panel (Winter 2022)
- Preparation of final documents (Spring 2022)
- Launch of USNWSAP (Spring 2022)

www.watersafetyUSA.org
Data/Surveillance

DATA NEEDED FROM:

Lifeguard
EMS
Police/Marine patrol
Emergency dept
Hospital
Medical examiner/coroner

EXISTING SURVEILLANCE BY:

Parks- State, NPS
Child Death Review
USCG Boating Accident Report
CDC Mortality
KEEP THIS FAMILY WATER SAFE