Childhood Drowning in Pools & Spas
June 30, 2022 CDPH Webinar

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We have no Conflicts of Interest (COI) or financial disclosures.

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Registration Pre-Webinar Survey

1. **How is your organization tracking drowning cases among children years of age?**
   a. Fatal
   b. Non-fatal

2. **Briefly describe how your organization addresses childhood drowning prevention among children?**
Partners for Childhood Drowning Prevention
AAP-OC

Foundations* Builds on 2012 Drowning of 1-4 Year Old Children in Swimming Pools and Spas Surveillance Handbook

- Focus pool drowning children 1-4 years of age
- Surveillance & Data
- Public Education Campaign, Webinars, Educational Modules, Strategic Policy Plan
- Lessons Learned & What’s Next?

*PCDP Foundations: Funded, in part, by the California Department of Public Health Kids' Plate Program

Advocacy from the medical office to the legislature

- Pediatric Residency Training
- AAP-CA State Government Affairs
- National State & Federal Government Affairs

Produced by the American Academy of Pediatrics Orange County: Partners for Drowning Prevention • www.aap-oc.org/pcdp • 2022
Childhood Drowning In Pools & Spas Objectives

● List 3 key facts about childhood drowning.

● Explain why pools and spa drowning prevention strategy is so important for California.

Definition of Drowning

The World Congress on Drowning and the World Health Organization in 2002 revised the definition of drowning:

“The process of experiencing respiratory impairment from submersion/immersion in liquid.”

www.pediatrics.org/cgi/doi/10.1542/peds.2010-1264
California Fatal Drowning Statistics by Incident Location in Children 0-17 Years of Age (2018-2020)

- Among children 0-17 yrs 57% of all fatalities are in pools
- Among children 1-4 yrs 70% of all fatalities are in pools

Source: CDPH EpiCenter, California Department of Public Health
Drowning in Children 1-4 Years of Age: California Residents (2018-2020)  
N=2,007  

For every fatality among 1-4 year olds, there are 13 non-fatal cases.

- For each child fatality there are 14 nonfatal injuries.
- Most events occur in swimming pools and spas.
- Children 1-4 years of age are at highest risk for both fatal and non-fatal drowning.
FROM THE AMERICAN ACADEMY OF PEDIATRICS  |  POLICY STATEMENT  |  MAY 01 2019

Prevention of Drowning

Sarah A. Denny, MD; Linda Quan, MD; Julie Gilchrist, MD; Tracy McCallin, MD; Rohit Shenoi, MD; Shabana Yusuf, MD; Benjamin Hoffman, MD; Jeffrey Weiss, MD; COUNCIL ON INJURY, VIOLENCE, AND POISON PREVENTION; Phyllis F. Agran, MD; Michael Hirsh, MD; Brian Johnston, MD; Lois K. Lee, MD; Kathy Monroe, MD; Judy Schaechter, MD; Milton Tenenbein, MD; Mark R. Zonfrillo, MD; Kyran Quinlan, MD

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https://doi.org/10.1542/peds.2019-0850

https://publications.aap.org/pediatrics/article/143/5/e20190850/37134/Prevention-of-Drowning
https://publications.aap.org/pediatrics/article/148/2/e2021052227/179784/Prevention-of-Drowning
Drowning can happen to any family. It’s quick, and it’s silent. Drowning is the single-leading cause of death among children aged 1-4, and a top 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.

#DrowningPrevention

### TABLE 1 Top Tips for Pediatricians

Assess all children for drowning risk on the basis of risk and age and prioritize evidence-based strategies:

- barriers;
- supervision;
- swim lessons;
- life jackets; and
- CPR.

Pediatricians are front line and 1st line of defense.
Known strategies to reduce drownings

Multiple layers of protection needed as no one method is 100%
CA Pool Safety Law: Barriers

• 1996 California Pool Safety Law required **one** barrier.

• 2017 California’s Swimming Pool Safety Act SB 442 (Health and Safety Code §§115920- 115929) pool or spa be equipped with **at least 2 of 7** specified drowning prevention safety features at time of transfer of property, construction or remodel.

**Survey:**
Name 1 of the 7 safety barriers that are written into California law.
Current California Pool Barrier Law

1) An enclosure that meets the requirements of Section 115923 and isolates the swimming pool or spa from the private single-family home.

2) Removable mesh fencing that meets American Society for Testing and Materials (ASTM) Specifications F2286 standards in conjunction with a gate that is self-closing and self-latching and can accommodate a key lockable device.

3) An approved safety pool cover, as defined in subdivision (d) of Section 115921.

4) Exit alarms on the private single-family home’s doors that provide direct access to the swimming pool or spa. The exit alarm may cause either an alarm noise or a verbal warning, such as a repeating notification that “the door to the pool is open.”

5) A self-closing, self-latching device with a release mechanism placed no lower than 54 inches above the floor on the private single-family home’s doors providing direct access to the swimming pool or spa.

6) An alarm that, when placed in a swimming pool or spa, will sound upon detection of accidental or unauthorized entrance into the water. The alarm shall meet and be independently certified to the ASTM Standard F2208 “Standard Safety Specification for Residential Pool Alarms,” which includes surface motion, pressure, sonar, laser, and infrared type alarms. A swimming protection alarm feature designed for individual use, including an alarm attached to a child that sounds when the child exceeds a certain distance or becomes submerged in water, is not a qualifying drowning prevention safety feature.

7) Other means of protection, if the degree of protection afforded is equal to or greater than that afforded by any of the features set forth above and has been independently verified by an approved testing laboratory as meeting standards for those features established by the ASTM or the American Society of Mechanical Engineers (ASME).
Goal......

Vision ZERO

One More Drowning
Is
One Too Many
Lessons Learned
Surveillance • Changing Norms for Safety • New Approaches

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Learning Objectives

• Discuss some of the “why” that our current drowning strategies are not getting us to Vision Zero Childhood Drownings.

• Review the “Spectrum of Prevention” model.

• List two Action Items that can contribute to the prevention of childhood drowning within your organization’s scope of practice.
1. **How is your organization tracking drowning cases among children years of age?**
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Your Fatal and Non-fatal Drowning Data *(from survey)*

- Excel spreadsheet to track inpatients (unsure of ED tracking practice)
- Report from EHR to capture ED and inpatient admits
- Through mortality data, and EMS data
- We don’t track data
Your Drowning Prevention Strategies (from survey)

- Social worker and Injury Preventionist speak with admitted patients. Every admitted patient receives “welcome bag” with injury prevention materials included.
- Safety consult by social worker. MDs and nurses review safety information with families and patients prior to discharge.
- Via Federal Grant funding for the County
- Parent education partnering with PHD including social media
Have you heard about?

www.lbc.co.uk/news/swimmer-saving-by-coach-breaks-silence/
Known strategies to reduce drownings

Multiple layers of protection needed as no one method is 100%
INJURY IS NO ACCIDENT

Multiple Layers of Protection Are Needed.
   Adult Supervision is essential but not sufficient in itself.

Pre-Event: Prevention Education: Children & Adults • Plan for Adult Supervision
• 4-Sided Pool Fence • USCG Life Jacket (PFD) • Swim Lessons • CPR & Lifeguards

Event: Water Rescue → CPR → EMS 911 Response

Post-Event: Prevent repeat occurrence.
SPECTRUM of PREVENTION

- Requires all of these to be addressed for an effective strategy plan to be developed.

- What are our roles(s)?
  - Out of our silos as educators, community, regulatory agencies, policy advocates, etc.

Fig. 3. The Spectrum of Prevention's multiple levels of intervention used together produce greater results than a single intervention activity (Cohen and Smith 1999).
(2022)

U.S. NATIONAL WATER SAFETY ACTION PLAN

(to follow National Plan)
2.12 Injury Prevention Program—TYPE II

- **Utilize available data:** Identify high rates of injury and the populations in which these injuries occur. Analyze data to determine the mechanisms of injury, injury severity, and contributing factors. Utilize multiple injury and death data sources to reflect the true burden of injury.
- **Target at-risk populations:** Identify, understand, and target efforts toward at-risk populations while being sensitive to generational differences, as well as cultural, religious, and other established customs. Engage target population as a key stakeholder in development, implementation, and evaluation of the intervention.¹
- **Leverage partnerships:** Make use of other trauma centers, prehospital organizations, public health and violence prevention organizations, law enforcement agencies, schools, churches, and others interested and involved in community injury prevention efforts.
- **Choose effective or well-informed intervention strategies:** New intervention program development, assessment, and implementation are complex and time-consuming. Not all proven interventions work in every population. Evidence-informed interventions may still require adaptation for demographic and risk factor differences.²,⁶
- **Develop a plan:** Logic models are a best-practice method to plan intervention strategies and should be utilized to outline the intervention effort, including delineating risk and protective factors.⁷

**Evaluate:** Develop surveillance and monitoring tools to assess not only the available performance indicators of the trauma center’s prevention efforts but also the prevention effectiveness. Evaluation efforts should start at program inception with a feasibility assessment and include intermediate and long-term outcomes.
- **Communicate:** Partner with local print and broadcast media, and be prepared for many opportunities for trauma center leaders to serve as a reliable source of injury prevention information. Understand your stakeholders and the at-risk populations, and articulate your prevention message based upon their vantage point.⁷
- **Advocate:** Elected and appointed leaders can help implement prevention efforts if the trauma center understands their goals and ways to work with them to create effective laws promoting prevention.
Surveillance

- Data must be accurate and include fatal and non-fatal.
- Policies & Strategies must be data-driven.
  - “Barriers in the political process may inhibit the use of scientific evidence in policymaking,...”
- Statewide coordinated data collection system
- Statewide strategic plan based on data, evidence, impact and feasibility.
  - Think big
  - Phase strategies
  - Model Child Occupant Protection- 1st CA Law SB 537 1982. We have come a long way.
Norms for Safety (not all inclusive)

- A pool without a fence is like a car without a car seat for the toddler.
  - The only evidence-based barrier in the Pool Safety Law is an isolation fence.

- U.S. Coast Guard approved life vests are life-saving.
  - Floaties are aquatic toys.

- Swimming is a life savings skills for all.
  - Water competency is an equity/health disparities issue.
    - Race/Ethnicity is likely a proxy for social and cultural differences
New Approaches *(not all inclusive)*

- There MUST be a plan to address ALL levels of the Spectrum concurrently.
- Social and multimedia are here to stay... we need to partner with our communications expert colleagues.
- We need to share our successes and challenges within the prevention community. (Don’t recreate ... down the silos!)

*EXAMPLE: Partners for Drowning Prevention is a multidisciplinary collaboration that has created a prevention community that crosses geographic boundaries.*
New Approaches

SHARE YOUR VIEWS!
References

Sarah A. Denny, Linda Quan, Julie Gilchrist, Tracy McCallin, Rohit Shenoi, Shabana Yusuf, Benjamin Hoffman, Jeffrey Weiss, COUNCIL ON INJURY, VIOLENCE, AND POISON PREVENTION. Prevention of Drowning Pediatrics May 2019, 143 (5) e20190850; DOI: 10.1542/peds.2019-0850


SB 855 Author (Newman D) Childhood Drowning Data Collection Pilot Program. Sponsors: AAP-CA and CA Alliance for YMCA’s. Establish a CDPH statewide drowning data collection system with consistent reporting and analysis