

Open Water Drowning Prevention Policy Strategy: Life Jackets

BACKGROUND

- Life jackets reduce the risk of drowning for all age groups.
- In 2013, 77% of fatal boating accident victims drowned, and of those who drowned, 84% did not wear a life jacket.¹
- In Washington State, boating fatalities were more likely if life jackets were not worn, alcohol was present, and the incident involved a non-motorized boat.²
- In 2013, Researchers estimate that life jackets may prevent half of all boating-related deaths.³

STRATEGIES/OBJECTIVES

- Consider new legislation to increase life jacket wear among paddle craft users and consider improvements to the Washington State child life jacket law by requiring children ages 17 and under to wear life jackets on boats.
- Increase the number of life jacket loaner programs at sites used by swimmers and/or boaters.
- Promote life jacket use at city, county and state parks through life jacket sales and other life jacket education or promotional programs.
- Develop and promote standard signage for life jacket loaner programs.
- Develop and implement policies at the local level that allow life jacket use in pools and at bathing beaches.
- Develop and implement policies requiring mandatory life jacket use when on high-risk and/or high-use waterways.

SUMMARY OF ACTIVITIES

- The Washington State Parks and Recreation Boating Program committee drafted a model ordinance/policy requiring the use of life jackets. This policy can be used or adapted for local communities and can be found at www.seattlechildrens.org/dp.
- 2013 King County ordinance required the use of life jackets when in, on and next to rivers with high water flow. Spokane County already has an ordinance in place requiring life jackets on the Spokane River.

¹ United States Coast Guard, United States Department of Homeland Security. Recreational boating statistics 2013. Washington, DC: United States Coast Guard; 2014.

² Stempski S., Schiff M., Bennett E., and Quan L. (2014, March 31). A case control study of boat-related injuries and fatalities in Washington State. *Injury Prevention*. doi:10.1136/injuryprev-2013-041022

³ Cummings P., Mueller B.A. and Quan L. (2011). Association between wearing a personal floatation device and death by drowning among recreational boaters: A matched cohort analysis of United States Coast Guard data. *Injury Prevention*. 17:156-159.14

SUMMARY OF ACTIVITIES CONTINUED

- Conducted a number of different assessments of policies requiring life jacket use, including:
 - **Pool and Beach Policy Survey:** Assessed life jacket, clothing and diaper policies at Washington state pools and lifeguarded beaches. Most allowed life jacket use in shallow end, diapers, but did not allow street clothes in pools. (*Manuscript in progress as of July 2016*)
 - **Quantitative Study — Barriers to Life Jacket Use:** Surveys of 675 Washington State motor boaters identified three barriers to life jacket use among adult recreational boaters: life jackets are not comfortable, alcohol use, and perceived strong swimming ability as a novice. Facilitators for use included use of inflatable life jackets and boater education classes.⁴
 - **Low Life Jacket Use among Adult Recreational Boaters: A Qualitative Study of Risk Perception and Behavior Factors:** Focus groups of recreational boaters reported barriers to life jacket use were discomfort and the belief that life jacket use indicated inexperience or poor swimming ability. The reported facilitator for use would be mandating life jacket wear.⁵
 - **Life Jacket Observational Surveys:** Seattle Children’s partnered with the Washington State Parks and Recreation Boating Program in 2010 and with the consulting firm JSI in 2014 to conduct life jacket observational studies at boating and swimming sites across Washington State.⁶

Life Jacket Use While on a Boat Observations:

- Life jacket use among boaters in approximately 5,000 boaters across the state were observed for life jacket use in boats in 2014 (*Manuscript in progress*)
- When adults wear life jackets, children and teens are more likely to also wear a life jacket. If an adult wore a life jacket, 93% of children ages 6 to 12 wore a life jacket (compared to 80% for all children that age, regardless of whether an adult wore a life jacket) and 78% of teens ages 13 to 17 wore a life jacket (compared to 50% for all youth that age).
- Life jacket use was highest among groups required by law to wear a life jacket. This includes 82% of children ages 0 to 12; 97% of individuals using personal watercraft and 95% of individuals towed behind a boat.

⁴ Quistberg D., Quan L., Ebel B., Bennett E. and Mueller B. (2014, March 31). Barriers to life jacket use among adult recreational boaters. *Injury Prevention*. doi: 10.1136/injuryprev-2013-040973

⁵ Quistberg A., Bennett E., Quan L. and Ebel B. (2014). Low personal flotation device use among adult recreational boaters: A qualitative study of risk perception and behavior factors. *Accident Analysis and Prevention*. 62: 276-284

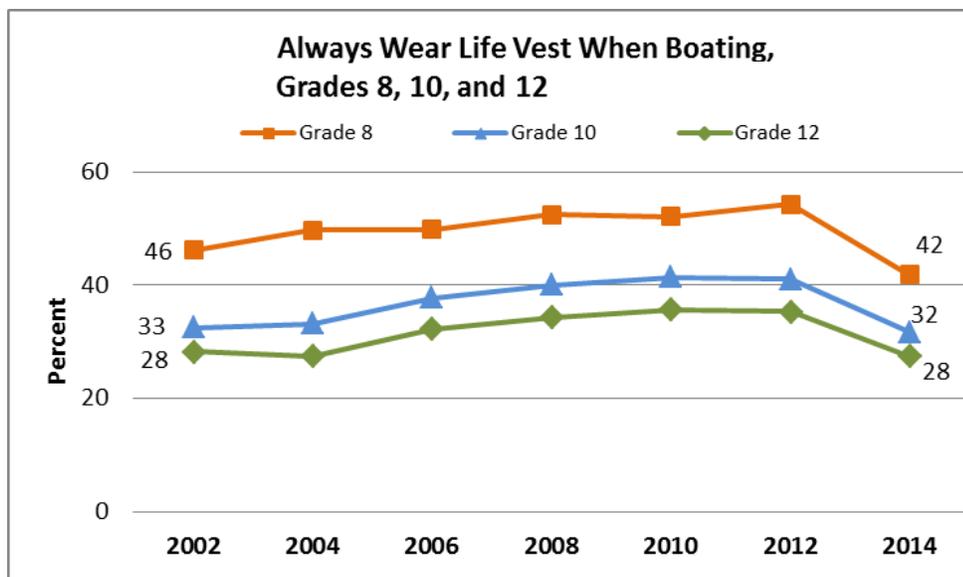
⁶ Chung C, Quan L, Bennett E, Kernic M, Ebel, B. Informing policy on open water drowning prevention: an observational survey of life jacket use in Washington State. *Injury Prevention*. 2014; 10.1136/injuryprev-2013-041005.

SUMMARY OF ACTIVITIES CONTINUED: Life Jacket Use While on a Boat Observations

- Life jacket use in non-mandated groups (individuals using kayaks, canoes, inflatables, motorized boats and anyone over age 12) was only 21%. Adult role modeling, however, increased the use among children and teens.

Life Jacket Use While Swimming/Wading Observations:

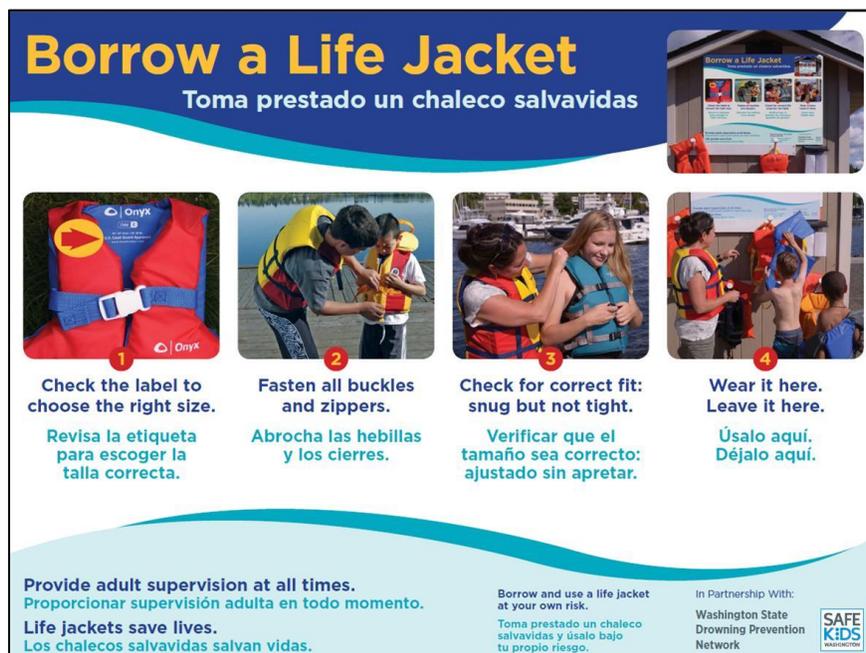
- Flotation device use among swimmers/waders: 1,967 persons were observed for use of flotation devices while swimming or wading at 10 designated swim sites in Washington State in 2014. (*Manuscript in progress as of July 2016*)
 - Flotation devices of all types were commonly used among all age groups. Life jacket use decreased with increasing age and is very low among adults.
 - Males were more likely than females to wear life jackets in all age groups while females were more likely to wear other types of flotation devices.
 - While in the water, 58.5% of children ages 6 and under were within an arm's length of an adult. Life jacket use was the same between those children who were within an arm's length of their caregiver and those who were further than an arm's length.
 - For those more than an arm's length away from an adult, boys were significantly more likely than girls to wear life jackets (66.7% of boys vs. 37.8% of girls).
- **Healthy Youth Survey (HYS) of Life Jacket Use** among public school students in grades 8, 10, and 12. Since 2002, WA State's HYS survey has included a question on life jacket use when boating. Until 2012 life jacket wear rates increased among all grades and were highest in 8th graders and decreased with each grade. Decreases in 2014 were unexplained. See HYS graph below:



- **Efforts to Increase Availability of Life Jackets:**

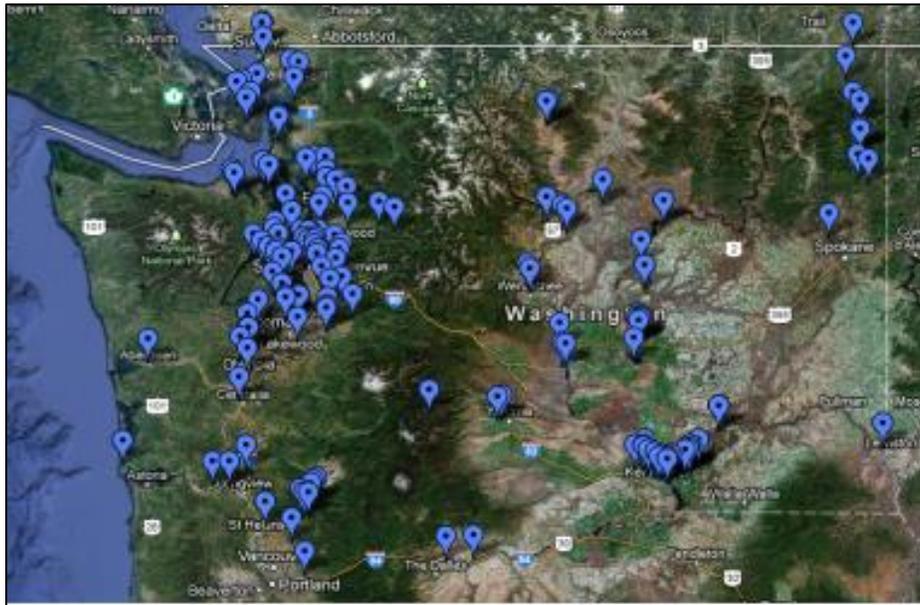
- A sustainable partnership with Big 5 Sporting Goods, the Washington Drowning Prevention Network, Spokane Regional Health District and Safe Kids Washington produced and distributed coupons statewide and online offering 25% off the purchase of life jackets at Big 5 Sporting Goods store locations.
- A partnership between Seattle Children’s, Seattle Parks and Recreation, and the U.S. Coast Guard Auxiliary led to coordinating, staffing and hosting 19 low-cost life jacket sales and life jacket fittings in the spring and summer at Green Lake from 2012 to 2016, a high-traffic lake and park in Seattle that also has a swimming pool. Customers were surveyed to learn about prior life jacket ownership, event satisfaction and their intention to wear life jackets. 65% of children and 57% of parents did not have a life jacket prior to the sale. 97% felt confident or very confident properly fitting a life jacket after attending the sale.
- An outreach effort starting in 2013 to Seattle Head Start families resulted in water safety education outreach and the distribution of over 300 life jackets. Evaluation showed a self reported increased awareness of drowning prevention among parents and a self reported increased knowledge of safe swimming locations. This strategy effectively reached diverse and low-income communities.
- A work group representing the Washington State Parks and Recreation Boating Program, Seattle Children’s and the Washington State Department of Health revised information regarding life jacket loaner programs; standardized the life jacket loaner program signage; and compiled a list of all known loaner programs in Washington State and made it available at www.seattlechildrens.org/dp.

Washington State Life Jacket Loaner Program Sign:



Washington State Life Jacket Loaner Program Locations:

Map of site locations can also be found at www.seattlechildrens.org/dp.



IMPACT

- Increased the number of life jacket loaner programs by 10% per year from 2012 to 2016, thus increasing access to life jackets and water safety information at public parks with water access.
- Increased the number of local policies requiring life jackets. In fact, on June 20, 2011, the King County Council passed a temporary, emergency ordinance requiring life jackets to be worn by everyone on the water on all rivers due to dangerously high water levels in the rivers. Over that time period, the life jacket wear-rate was very high and there were no drownings reported on the affected rivers. This is compared to 14 recreational river drowning deaths in the rest of Washington State.
- Increased availability of life jackets. More than 400 life jackets were properly fit and sold at low-cost life jacket sales from 2012 to 2016 and over 300 life jackets were distributed at Head Starts in King County from 2013 to 2016.

HEALTH EQUITY CONSIDERATIONS

- Life jacket observation studies did not evaluate the association between flotation device use and ethnicity, race, familiarity with site, swimming ability or comfort in the water.
- Although the life jacket observation study was conducted throughout the state, the high wear rates observed may be unique to Washington State due to the state's long-term focus on life jacket use.

HEALTH EQUITY CONSIDERATIONS CONTINUED

- Race and ethnicity were associated with use of life jackets in the Healthy Youth Survey (HYS), a finding supported by studies in other regions and among high risk youth.
- Low-cost life jacket sales were located in Seattle's fairly affluent Green Lake neighborhood and thus may not have reached high risk diverse groups.

PARTNERS

- Washington State Parks and Recreation Boating Program
- Big 5 Sporting Goods
- Safe Kids Washington and local Safe Kids coalitions
- Seattle Parks and Recreation
- Spokane Regional Health District
- U.S. Coast Guard Auxiliary
- Mustang Survival

The 2011 King County life jacket ordinance was supported by:

- King County's executive, who proposed the ordinance
- Sheriff Marine Patrol, responsible for warnings and tickets when life jacket laws are broken
- Multiple water recreation and safety organizations
- Washington State Parks and Recreation Boating Program

DISSEMINATION

- Presentations locally, nationally and internationally routinely included content specific to increasing life jacket use.
- **Abstract Presentations:**
 - Quistberg DA, Bennett E, Mueller BA, Ebel BE. Observations of Boaters' Use of Personal Flotation Devices: Implications for increasing PFD Use in Children and Youth. Pediatric Academic Societies Annual Conference 2012. April 27 – May 1. Boston, MA.
 - Bennett E, Williams K, Quan L. Strategy for Open Water Drowning Prevention, 2013 Safe Kids Childhood Injury Prevention Conference. July 19-22, 2013; Washington D.C.

DISSEMINATION CONTINUED: Abstract Presentations

- Mercado-Crespo MC, Quan L, Bennett E, et al. Can you really swim? Validation of self- and parent reports of swim skill among children attending community-based pools in Washington State: A prospective study. Oral presentation at 142nd APHA Annual Meeting and Exposition. November 15 - November 19, 2014; New Orleans, LA.
- Stempski S, Quan L, Bennett E. New Science on Boating Behavior and Risk Boating Policy. Poster presentation at World Conference on Drowning Malaysia. November 8, 2015; Penang, Malaysia.
- Mercado-Crespo MC, Quan L, Bennett E, et al. Can you really swim? Validation of self- and parent reports of swim skill among children attending community-based pools in Washington State: A prospective study. Poster presentation at World Conference on Drowning. November 8, 2015; Penang, Malaysia.
- **Publications:**
 - Chung C., Quan L., Bennett E., Kernic M. and Ebel B. (2014). Informing policy on open water drowning prevention: An observational survey of life jacket use in Washington State. *Injury Prevention*. doi: 10.1136/injuryprev-2013-041005
 - Quistberg A., Bennett E., Quan L. and Ebel B. (2014). Low personal flotation device use among adult recreational boaters: A qualitative study of risk perception and behavior factors. *Accident Analysis and Prevention*. 62: 276-284
 - Quistberg D., Quan L., Ebel B., Bennett E. and Mueller B. (2014). Barriers to life jacket use among adult recreational boaters. *Injury Prevention*. doi: 10.1136/injuryprev-2013-040973
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LESSONS LEARNED

- There was a lack of consensus to pursue new statewide mandates to wear life jackets, such as on paddle craft or among teens. Evidence was clear from the various observational and qualitative studies published and/or conducted during the course of this grant, that very high rates of life jacket use can be achieved when it is mandated. However, the evidence was ineffective. Therefore, other strategies are needed to promote life jacket wear and strengthening of existing laws. These might include improving the comfort of the product and changing perceptions around life jacket use.
- The very high wear rate among observed boating adolescents (who are not required to wear life jackets) and the trend until 2012 of reported higher wear rates by surveyed high school students suggest that “growing up” with life jackets increases wear rates. Other ways to change cultural norms need to be pursued to increase wear rates.

LESSONS LEARNED CONTINUED

- After convening a stakeholder group in partnership with the Northwest Marine Trade Association to review potential policy opportunities related to water recreation and water safety, a policy brief was developed on potential life jacket requirements based on national recommendations and local data. Despite support for stronger life jacket legislation by some stakeholders, the group opted to focus on boating under the influence for statewide policy change instead of a life jacket policy.
- Requiring life jacket use can be achieved for specific age groups, specific settings (i.e. docks, high-risk waterways, etc.) and specific types of activity, such as boating or swimming in rivers as well as personal watercraft and towing sports.
- Future work is needed to improve drowning reporting to assist in developing policies and laws that are evidence based.

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