



# Canadian Drowning Prevention Plan

9<sup>th</sup> Edition (2022)

Drowning Prevention  
Research Centre 

## LAND ACKNOWLEDGEMENT

The Canadian Drowning Prevention Coalition acknowledges that the land on which we live and work is the traditional land of First Nations, Inuit and Métis People. We are committed to guiding principles which focus on the importance of being culturally respectful in approaches and interventions, reducing inequities, and learning from all communities.

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## FOREWORD

Drowning is a multi-sectoral public health issue that requires partnership among all stakeholders. Drowning threatens all populations, but risks parallel many social determinants of health, disproportionately affecting First Nations, Inuit and Métis peoples, new immigrants & rural populations. Drowning incidents impact individuals, families and communities.

The Canadian Drowning Prevention Plan (Plan) was first introduced in 2017 in response to Recommendation 3 in the World Health Organization's (WHO) *Global report on drowning* (WHO, 2014). The report outlined that a national plan should set relevant national targets; use evidence-based mechanisms to achieve targets; outline community actions, policy & legislation, and research; and, include human & financial resources to implement its goals.

With the amalgamation of the Canadian Drowning Prevention Coalition's (CDPC) operations into the Drowning Prevention Research Centre in 2021, the focus for the CDPC is to set drowning prevention priorities based on the analysis of research & evidence, identify gaps, and make recommendations. The CDPC undertook a review of its last five years of activity. The review reinforced a public health approach and resulted in a focus on seven (7) key areas: alcohol/substance related drowning; children 1 to 4 years; Indigenous peoples; new Canadians; northern, rural and cold water; recreational boating and PFD/lifejacket use; and, supervised settings.

This 9<sup>th</sup> edition of the Plan identifies & sets priorities to achieve key focus targets based on evidence that guides the development of prevention strategies. More information can be found in the accompanying Resource Guide. The successful implementation of this Plan will take place through engagement with government and other multi-sectoral partners and the identification of resources from the same to undertake this work.

We thank the Government of Canada, NGO's, academics, industry, civil society, and media participants in our effort to reduce drowning in Canada. We are fortunate to have Lisa Hanson Ouellette as our Project Manager. We extend thanks & appreciation to the DPRC and Lifesaving Society Ontario for providing stability & sustainability to our work.

Stephen B. Beerman MD, Co-Chair, Canadian Drowning Prevention Coalition

## EXECUTIVE SUMMARY

Drowning is a preventable public health issue. It is the third leading cause of unintentional injury death worldwide, and a substantial cause of morbidity and mortality in Canada. Approximately 460 people fatally drown in Canada each year, and more suffer non-fatal drowning incidents and injuries often resulting in long-term consequences.

Drowning cost Canadians \$191 million in 2018 (Parachute, 2021). While the number of fatal drownings is lower than previous years the number of hospitalizations due to drowning is on the rise. Numbers are expected to continue to increase as the categorization and classification of non-fatal drownings become part of the drowning data collection process and expand our understanding of the drowning burden in Canada.

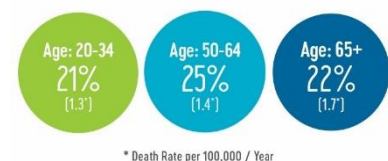
Recommendations are listed under each key target. The top five (5) overarching recommendations of this 9<sup>th</sup> edition include:

- Everyone in Canada should have basic swimming skills and CPR skills.
- Water safety & basic swim skills training should be embedded within the education system.
- Research and evaluation must engage at-risk populations and have positive impacts.
- Small vessel regulations should be amended to require that passengers of all ages wear a properly fitting, Transport Canada approved, personal floatation device or lifejacket while on or in a boat under 6m for any purpose.
- Actions & solutions targeting change must take place at local, provincial/territorial and national levels (e.g., 4-sided pool fencing).

## DROWNING IN CANADA

Fatal drowning data has been collected in Canada since the 1990s. Analysis of the most recent<sup>1</sup> (2013-2017) available water-related fatality data for Canada (Lifesaving Society, 2020) reveals the following profile of drowning mortality in Canada:

- Highest rates are among men 50 to 64 years-old (25%), seniors 65 years and older (22%), and young adults 20 to 34 years of age (21%).
- Water-related fatalities are most likely to occur May to September on weekends in natural bodies of water – i.e., lakes (34%) and rivers (29%).
- Fewer drowning deaths occur in man-made settings, but among these bathtubs (12%) and private pools (9%) are most common.
- Almost two-thirds of all fatal unintentional drowning occur during a recreational activity, and another quarter during daily living activities.
- Drowning during aquatic activities (26%) such as swimming, wading; and boating (24%) and are the most common.
- 956 recreational boating-related fatalities occurred between 2008-2017 (a crude death rate of 0.27 per 100,000 population/year)
- More than 9 in 10 (92%) drownings among children under 5 years old occur during absent or distracted supervision.



<sup>1</sup> The pandemic resulted in limited access to Coroner & Medical Examiners in 2021. A complete picture of fatal drowning in Canada for 2018 is currently unavailable.

Long-term progress has been made in reducing death by drowning. Yet, more than 460 preventable, unintentional, water-related fatalities occur each year. This reinforces the need for continued drowning prevention efforts.

## Expanding understanding of the drowning problem

### Economic burden

According to Parachute Canada<sup>2</sup>, "of all causes of injury, drowning has one of the highest costs per death and the highest cost per case" (Parachute, 2021). In 2018, drowning cost Canadians \$191 million (Parachute, 2021). This total is based on 280 deaths, 217 hospitalizations, 1,700 emergency room visits, 18 disabilities. The cost breakdown for each incident by type was: \$623,226 per fatal drowning death; \$27,981 per hospitalization; \$4,019 per emergency room visit cost; and \$115,825 for each drowning-related disability; plus, \$5 per capita in indirect costs (Parachute, 2021).

### Non-fatal drowning

Much remains unknown about the drowning problem in Canada. There is a scarcity of data on non-fatal drowning. Defining and categorizing non-fatal drowning has been undertaken by the WHO Working Group on Non-fatal drowning since 2017. The final definition and protocols for collecting and categorizing non-fatal drowning data will be finalized in 2022. Training materials are currently under development.

According to the WHO Working Group on Non-fatal drowning, *non-fatal drowning* occurs when "the process of respiratory impairment is stopped before death." (S. Beerman, J.J.L.M Bierens, T. Clemens, D. Meddings, A. Rahman, D. Szpilman, 2019). Non-fatal drowning can result in a range of outcomes, from no injuries to serious injuries or permanent disability.

In 2021, the DPRC prepared an *Ontario Non-Fatal Drowning Report* (DPRC, 2021) for Lifesaving Society Ontario. "The data were made available by Public Health Ontario, based on the Canadian Institute for Health Information (CIHI) National Ambulatory Care Reporting System (NACRS). The full burden of non-fatal drowning is unknown. This report does not include non-fatal drowning incidents where the person was treated at the scene of the drowning and did not seek further medical attention, those who attended a family physician or clinic, and those who did not receive any treatment at all. If data from these sources were available, the number of non-fatal drownings included in this report would be even higher" (DPRC, 2021).

Figure 1: Fatal to Non-fatal drowning ratio, Ontario Non-fatal Drowning Report, 2021

Drowning research and prevention activities have typically focused on fatal drowning; however, there are many more non-fatal drowning incidents than drowning deaths each year. For every fatal drowning in Ontario, there are nearly **four non-fatal drownings** that are serious enough to require an emergency department visit.

<b>152</b>	<b>95</b>	<b>543</b>
Average number of fatal drowning deaths each year*	Average hospitalizations due to non-fatal drowning each year	Average emergency department visits due to non-fatal drowning each year

<sup>2</sup> Parachute Canada is the overarching organization that collects, analyses, reports, and compares all injuries in Canada, including drowning incidents. The Drowning Prevention Research Centre (DPRC) collects, analyses and reports on drowning data. The Canadian Drowning Prevention Coalition's (CDPC) multi-sectoral experts use data, seek evidence to identify priorities, make recommendations through the Canadian Drowning Prevention Plan, and advocate for changes in legislation. Lifesaving Society Canada (LSC) and its Branches, alongside CDPC multi-sectoral stakeholders, share reports and recommendations through communication activities and initiatives. LSC also uses data findings to guide program development and conduct advocacy campaigns focused on drowning prevention and public safety on, on and around water.

## *Intentional drowning*

Until 2022, Canadian fatal drowning data reporting has focused on unintentional water-related fatalities. A broader understanding of the drowning issue will now include intentional drowning. The type of data collected will expand to include intentional drownings – i.e., homicides, suicides, and missing persons presumed drowned – to better illustrate the full scope of the burden. With a more complete knowledge and understanding of drowning more informed interventional targets can be achieved.

## *Who is included in data collection?*

Engaging at-risk populations is essential in research design (new) and in the evaluation of existing evidence. Frameworks exist to guide drowning prevention research among diverse groups of people – e.g., First Nations Information Governance Centre’s (FNIGC) OCAP training (FNIGC, 2022) and Gender Based Analysis+ (GBA+) (Women and Gender Equality Canada, 2021).



## Gaps in research, regulations and legislation

Technical working groups identify gaps in research, regulations and legislation that would benefit from further work:

### *Research*

Research is a means of expanding knowledge, clarifying issues, providing evidence, and enhancing decision-making capabilities for policy, regulation and legislation. The following are gaps in research that would benefit from examination for the first time or closer examination in the case of those that have been explored:

- Non-fatal drowning
- Intentional drownings
- Drowning incidents by about and for First Nations, Inuit, and Métis people
- Drowning rate among New Canadians since years of immigration
- Impact of Coroners’ recommendations
- Cost-effectiveness of interventions
- Determining effective interventions to reduce alcohol-related injuries
- Determining effective ways of educating rescuers on safe rescues
- Determining the validity of “swim tests”
- Understanding socioeconomic & social determinants of health and their impacts on drowning
- Effectiveness of technologies in reducing drownings
- Examine benefits of having CPR skills/training linked to drivers’ licenses



### *Regulations and legislation*

Public safety legislation and regulation can contribute to a reduction in fatal and non-fatal drowning. Canadian legislation and regulations exist which apply to marine shipping, recreational and commercial vessels, water transport, infrastructure, and others. Research and evidence can serve to inform policy and contribute to amendments to existing legislation and regulations that will reduce drownings in the following areas:

- PFD/Lifejacket wear for recreational boating. The requirements of lifejackets being worn by all by vessel size.
- PFD/Lifejacket wear for crew members working on a deck of any commercial fishing vessel.
- Consistent legislation and regulations for public pools and waterfronts are needed across Canada.
- Consistent four-sided, backyard/residential pool fencing legislation is needed across Canada.

## CANADA'S KEY TARGET AREAS

This Plan takes a public health approach to drowning prevention which requires understanding the burden, the inequality of the burden, key focus targeting of interventions, and impact measurement. Designing interventions that engage the populations at-risk and have positive impact is essential. This approach requires careful planning based on existing data and evidence. Education, social innovations, persistence, resourcing, and effective implementation play key roles in successful drowning mortality and morbidity reduction.

To achieve the overall vision of zero drowning deaths in Canada, the CDPC identified key focus targets for drowning reduction. Key focus targets refer to areas for action and impact that have been identified by the steering committee, the CDPC, Canadians, data and evidence. These areas include high-risk age groups, high-risk behaviours, marginalized populations that are disproportionately affected by drowning, and high-risk sectors or activities.

Figure 2: Canada's 7 Drowning Prevention Targets



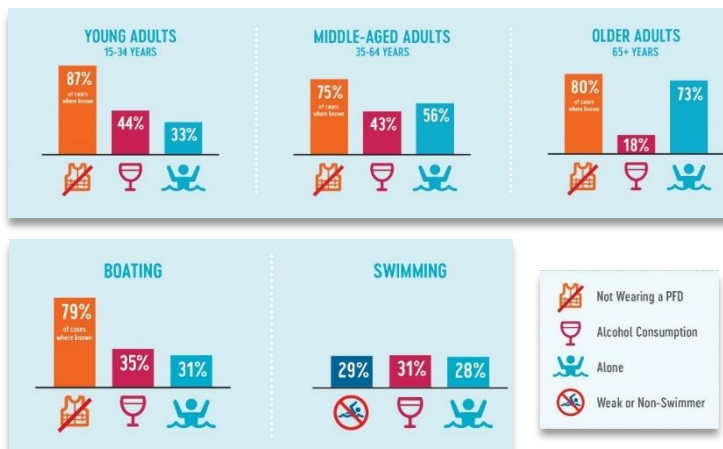
## Alcohol and substance use

### Targets & Timelines

To be determined pending creation of new technical working group.

### Data

- Between 2013-2017, alcohol was present in 44% of fatal drownings among those 15-34 years old, 43% of fatal drownings among those 35-64 years old, and 18% of fatal drownings among those 65+ years old (Lifesaving Society, 2020).
- Between 2013-2017, alcohol was present in 35% of all boating-related fatalities and 31% of swimming-related fatalities (Lifesaving Society, 2020).



- Between 2008-2017, 13% of recreational boating-related fatalities had evidence of illegal\* drug consumption in their blood at the time of the incident (DPRC, 2021). \* Marijuana was legalized in Canada in 2019, as such it was not included as an illegal drug during the study.
- Between 2008-2017, legal or illegal drugs were found in the bloodstream during post-mortem toxicological analysis in 20% of all recreational boating-related deaths (DPRC, 2021).

### Evidence

- Lifesaving Society Canada, National Drowning Report, 2020 Edition.
- Parachute Canada website (Parachute, 2022).
- Recreational boating-related fatalities in Canada, 2008-2017 (DPRC, 2021)

### Gaps

- Effective interventions to reduce alcohol and substance consumption during aquatic activities.

### Recommendations

- To be determined.

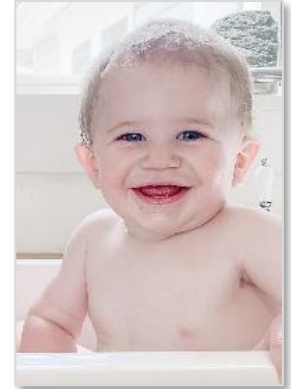
## Children 1 to 4 years old

### Targets & Timelines

- ⊗ To reduce drownings among children 1 to 4 years of age by 95% in five years (2027)

### Data

- Children can drown in as little as 2.5 centimeters/1 inch of water with heightened risk due to: 1) a lack of understanding of the dangers of water; 2) mobility (e.g. walking, running, or crawling) and inability to swim; 3) smaller lungs; and, 4) reduced balance & co-ordination increasing risk of falling into water (Parachute, 2021).
- Pools and bathtubs (artificial bodies of water) pose the greatest risk of drowning (Lifesaving Society, 2020).
- 92% of drownings occur due to absent adult supervision (Lifesaving Society, 2020).
- Death rate in children under 5 years of age (1.0 per 100,000 population) has been consistent for 10 years (2007-2016) (Lifesaving Society, 2020).



### Evidence

- Lifesaving Society Canada, National Drowning Report, 2020 Edition.
- Parachute Canada website (Parachute, 2022).

### Gaps

- Consistent legislation requiring 4-sided pool fencing across Canada.
- Effective communication strategies focused on reducing drownings that incorporate current perceptions (as defined by GBA+) of drowning prevention initiatives, as well as attitudes towards water safety, among parents/guardians and caregivers of children 1 to 4 years of age.

### Recommendations

- Explore attitudes & perceptions of parents/guardian and caregivers of children 1 to 4 years of age using GBA+ to understand water safety behaviors, perceptions & experiences of drowning prevention education, programs and messaging through focus groups/panel discussions.
- Complete an environmental scan of drowning prevention programs & resources.
- Provide evidence to inform national education campaign messaging to be incorporated into existing programs and resources that address the following key concerns linked to drownings among children 1 to 4 years old:
  - 1) consistent, uninterrupted child supervision in all settings by a designated responsible adult;
  - 2) different settings in which children 1 to 4 years of age can drown and how (e.g., pond, slough, bathroom, etc.);
  - 3) protecting children from unsupervised entry (e.g. fences with gates and locks);
  - 4) the wearing of properly fitted lifejackets by children 1 to 4 years at all times when in, on and around water (note: PFDs and lifejackets for persons under 9kgs/20lbs are not Transport Canada approved);
  - 5) CPR training for parents & caregivers is needed; and
  - 6) basic swimming & lifesaving skills training for parents/guardians, caregivers, supervisors is needed.
- Identify further actions and solutions at the local, provincial and national levels within policy, research, public education, public outreach, and the development of new resources and/or programs. An example of action includes elevating focus on safety with a multilayered approach that includes provincial and municipal government advocacy for legislation and regulations requiring new and existing pools (single-family and multi-family residences, etc.) to have 4-sided fencing (min. height of 1.2m/4ft) and a self-closing and self-latching gate. A second example of action includes mandatory wear of PFDs/lifejackets among children.



## First Nations, Inuit and Métis People

### Targets & Timelines

- ⊗ To support three technical working groups (First Nations, Inuit, Métis peoples) on drowning prevention led by and for First Nations, Inuit and Métis people.

### Data

To date, data on water-related fatalities among Indigenous persons has been collected and analyzed by non-Indigenous persons. It is necessary to learn how information about Indigenous persons should be collected and shared to ensure no harm is done to the Indigenous community and/or individuals. Knowledge about water-related fatalities among Indigenous peoples is limited and future research should be driven by Indigenous researchers. In accordance with First Nation's OCAP principles, the CDPC welcomes opportunities to partner with First Nations, Inuit and Metis peoples in research and water-related fatalities prevention.

The CDPC respectfully shares the following summary data based on coroner and medical examiner reports:

- Indigenous peoples have a drowning rate that is substantially higher than that of non-Indigenous Canadians.
- Drowning in the Indigenous population is reported to be 6 times higher than the Canadian average (Health Canada, 2001) (Red Cross, 2000) (Pike I, 2015).
- Drowning among Indigenous children is as much as 15 times higher than the Canadian average (Health Canada, 2001) (Red Cross, 2000) (Pike I, 2015).
- Indigenous people comprise about 4.9% of Canada's population (Indigenous Services Canada, 2021), but account for approximately 26% of drowning cases that involve a snowmobile, 16% of drownings due to a fall into water, 10% of recreational drowning fatalities, and 9% of boating-related drowning deaths (Red Cross, 2000).
- High risk of drowning in Indigenous populations is linked to proximity to open water (Red Cross, 2000)

### Evidence

- To date, most drowning research about First Nations, Inuit, Métis peoples has been undertaken by non-Indigenous researchers and organizations.
- Emily Francis, PhD(c), Royal Roads University, is an Ally. She follows OCAP principles. With community approval she continues to work with *Nuu-chah-nulth First Nations* resulting in greater cultural awareness and understanding needed in the design and delivery of water safety programs.
- Dr. Audrey Giles, University of Ottawa, is an Ally. She is an advocate for including cultural and geographical aspects to drowning prevention programs. For 25 years, she has worked with communities in the Northwest Territories and Nunavut to ensure traditional knowledge and local considerations are included in training in water and boating safety.

### Gaps

- Research on drowning incidents by, about and for First Nations, Inuit, and Métis people.
- Research for water and boating safety programs and resources reflective of community members' traditional knowledge, land- and water-based practices, and geographic and cultural environments.
- Non-Indigenous researchers' and governments' knowledge, understanding and incorporation of OCAP principles.
- Coroner/Medical Examiners' reports to identify First Nations, Inuit, Métis, or Indigenous.

### Recommendation

First Nations, Inuit, Métis peoples form technical working groups to guide Indigenous researchers (and Allies, where approved) to research drowning incidents in respective First Nations, Inuit, Métis territories and/or communities.

## New Canadians

### Targets & Timelines

- ⊗ By 2026, implement survival swimming skills training to all new Canadians within the first three years of their arrival to Canada.

### Data

- People new to Canada are four times more likely to be unable to swim than those who were born in Canada (Lifesaving Society, 2016).
- Youth aged 11 to 14 new to Canada are five times more likely to be unable to swim than their Canadian-born classmates. 93% of new Canadians of this age indicate they participate in activities in, on, or around water (Lifesaving Society, 2011).
- Newcomers to Canada have different knowledge and/or experiences around issues of water safety/drowning prevention. New Canadians tend to be more fearful of water than those born in Canada making them more vulnerable to drowning (Lifesaving Society, 2010).
- Most new Canadians have had a lack of or limited exposure to water for recreation. For many, learning to swim and water safety is not part of their experience in their home country (Lifesaving Society, 2010).
- It is important to reach new Canadians with water safety/drowning prevention information and provide opportunities for them to learn survival swimming skills (Lifesaving Society, 2010).
- Boating and swimming are two important areas where new Canadians need more information and education to reduce their risk of drowning when it comes to being in, on or around water (Lifesaving Society, 2010).

### Evidence

- A study that examined the association between duration of residence in Canada and risk of unintentional injury among children and youth found that risk of drowning was highest in recent immigrants who had lived in Canada for fewer than five years (Lifesaving Society, 2010).
- Findings from a 2019 pilot study (Thornccliffe, Ontario) support the scaling up and expansion of the project to reach new Canadian communities across Canada (Lifesaving Society, 2019).

### Gaps

- Boating and swimming are two important areas where new Canadians need more information and education to reduce their risk of drowning when it comes to being in, on or around water.

### Recommendations

- With Lifesaving Society Ontario as the lead, scale up the Thornccliffe pilot program across Canada, utilizing funding secured from the *Dr Tom Pashby Fund for Sports Safety*, with provincial leads. This includes the dissemination of water safety information to new Canadians in welcome centers, and the delivery of survival swimming to Grade 3 students.
- Support Lifesaving Society Branches with research that will help them to obtain funding from their provincial governments and other funders for survival swimming lessons.



## Northern Canada, rural areas and cold water

### Targets & Timelines

- ⊗ To respect and learn from northern Indigenous and rural practices and ensure that recommended drowning prevention strategies are appropriate to ensure a reduction in drownings in northern Canada and rural areas.

### Data

- Canada has an abundance of natural bodies of water, many of which sustain very cold temperatures year-round. Immersion death in cold water is frequent in northern countries such as Canada (Red Cross, 2010).
- 150 people die as a result of cold-water immersion each year (Lifesaving Society, 2020)
- Drowning rates are highest in the Yukon, Northwest Territories, and Nunavut (Lifesaving Society, 2020)
- Drowning risk in Northern Canada is increased by proximity to water and lower water temperatures (Pike I, 2015).
- Rural residence has been associated with higher risk of drowning (Health Canada, 2001).
- More drowning fatalities have been occurring in rural areas in recent years than in the past (Red Cross, 2000).
- Climate change in the North increases risk (e.g., snowmobile usage in unpredictable ice conditions) (Nunavut Government)



### Evidence

- Operation Life Preserver – Dr. Gordon Giesbrecht (University of Manitoba), Ted Rankin (Playsafe Productions), the Canadian Rangers, Craig Lingard, Benoit Laflamme, the Canadian Coast Guard, Air Inuit, and First Air.
- Northern New Ambassador Program – Supported by Department of Defense and the Rangers.
- Various – Dr. Audrey Giles, cultural anthropologist (Northwest Territories and Nunavut communities) advocating for and incorporating traditional knowledge and local considerations in water training and boating safety.
- Lifesaving Society Canada, National Drowning Report
- Cold Water Boot Camp

### Gaps

- Teaching methods or information that may have originated from Southern provinces may be inappropriate for the North.
- Accessibility to affordable lifejackets and safety equipment can be limited or unavailable in some communities.
- Summarize initiatives already in place and compare these projects to determine gaps.
- A list identifying and describing disparities that exist (e.g., lack of access to 'learn to swim' programs).

### Recommendations

- To be determined.

## Recreational boating and PFD/lifejacket wear

A scoping reviewing focused on water transport-related drownings (WTRD) is complete and analysis well underway by the technical working group (TWG) focusing on WTRD (2018-2022). A final report will be available in mid-2022 and shared on the DPRC's website. The final report will end the work of the technical working group focused on water transport-related drownings as a key target area. It will also mark the beginning of research focused on recreational boating and PFD/lifejacket use.

### *Targets & Timelines*

- ⊗ By 2024, Small Vessels Regulation (SOR/2010/91 – 204(a)/310(1)(a)(i)/302 be amended (or similar Provincial legislation be enacted) to require mandatory wear of a PFD by all age groups for vessels under 6'.
- ⊗ By 2026, alcohol use during boating activities will decrease by 25%. Methods of measure to be developed.

### *Data*

According to the Recreational boating-related fatalities in Canada, 2008-2017 report (DPRC, 2021):

- There are approximately 96 recreational boating-related deaths each year in Canada.
- There were 956 recreational boating-related fatalities equating to a crude death rate of 0.27 per 100,000 population/year and accounting for approximately one-quarter of all water-related deaths.
- Males account for 90% of fatal incidents.
- Lakes are the most frequent location where fatalities occur.
- Highest death rates are in Newfoundland and Labrador, the Northwest Territories and the Yukon.
- May through August is the most common time of year and July is the most common month. Weekends the most frequent time of the week with Saturday being the most common day.
- Powerboats are the most common type of watercraft in use at the time, and canoes the second most common.
- Causes of incidents include poor weather conditions, alcohol consumption, and not wearing a PFD/lifejacket.

The overall wear rate ranges between 25-34% with variances based on age, vessel type, and location (i.e., in-land vs. ocean) (Canadian Safe Boating Council, 2022) (Transport Canada, 2022).

Children 6-12 years of age have a significantly higher and the highest wear rate among boaters (Canadian Safe Boating Council, 2022).

### *Evidence*

- Parachute Canada, Canadian Marine Advisory Council presentation (November 2021), "Amendment to Small Vessel Regulations: Mandatory Wearing of Life Jacket/Personal Floatation Device".
- Drowning Prevention Research Centre, Recreational boating-related fatalities in Canada, 2008-2017 report (DPRC, 2021) and online map (DPRC, 2022).
- Transport Canada, "Mandatory Wear Observations: Summer 2021" Preliminary Results (2022).
- Canadian Safe Boating Council, "Research that floats: Observational Lifejacket Wear Research" (2022).
- Scoping review by the TWG: WTRD (Fall 2022).

### *Gaps*

- Cannabis monitoring, enforcement, and methods of measure.
- Regulation requiring mandatory PFD/lifejacket wear for all ages in vessels under 6'.

### *Recommendation*

- Amend the federal small vessel regulations or enact provincial legislation to require that all passengers of all ages wear a properly fitting, approved, personal floatation device or lifejacket while on or in a boat under 6m for any purpose.

## Supervised settings

### Targets & Timelines

- ⊗ By 2025, identify and enact actions that will result in zero drownings within supervised settings.

### Data

- Approximately 4% of all unintentional water-related fatalities in Canada occur during occupational activities (Lifesaving Society, 2020).
- Approximately 3% of all drownings occur during group (i.e., school, daycare, camp group) outings (DPRC, 2021).
- Approximately 1% occur under lifeguard or instructor supervision (Lifesaving Society, 2020).
- Between 2008-2017, 30 out of 4582 fatal drownings occurred in supervised settings (an average of 3 per year). Of these, 73% were in lifeguarded supervised settings (DPRC, 2021).

### Evidence

- Lifesaving Society National Drowning reports and provincial and regional drowning reports.
- Coroner Inquests into drownings at public pools produce recommendations and provide lessons learned.

### Gaps

- Targeted videos delivering specific safety messages to high risk groups.
- Infographics in urban and rural supervised settings.
- Research on and use of drowning prevention technologies.
- Consistent implementation of Coroner Inquest recommendations in all provinces and territories.

### Recommendations

- Support the development of a generic safety plan for supervised settings (and include Indigenous and new Canadian participation) by the Lifesaving Society.
- Support the development and distribution of a culturally appropriate safety toolkit for pool operators that will allow them to evaluate risk in their setting.
- Provide tools to pool operators that will address the risks supervised settings and enhance safety with work to be completed by the Lifesaving Society.
- Assist in activities linked to legislation and regulations in all provinces requiring pool operators to enforce and administer a bather admission standard.



## REFERENCES

- Canadian Safe Boating Council. 2022.** *Research that Floats: Observational Lifejacket Wear Research*. s.l. : Canadian Safe Boating Council, 2022.
- DPRC. 2022.** Drowning Prevention Research Centre Canada. *drowningresearch.ca*. [Online] DPRC, 2022. <https://www.drowningresearch.ca/>.
- . **2021.** *Ontario Non-Fatal Drowning Report, 2021*. Toronto : Lifesaving Society Ontario, 2021.
- . **2021.** *Recreational Boating-Related Fatalities in Canada, 2008–2017*. Toronto : DPRC, 2021.
- . **2021.** Special query on variables related to the Coalition’s definition of supervised settings. *Canadian Drowning Prevention Plan, 8th edition*. Toronto : Drowning Prevention Research Centre Canada, 2021.
- FNIGC. 2022.** *First Nations Information Governance Centre*. [Online] March 22, 2022. <https://fnigc.ca/ocap-training/>.
- Government of Canada. 2021.** *Drowning related deaths and injuries (2021-12-20)*. [Health-Infobase via <https://health-infobase.canada.ca/datalab/drowning-blog.html> ] 2021.
- Health Canada. 2001.** *Unintentional and intentional injury profile for Aboriginal people in Canada 1990-1999*. Ottawa : Health Canada, 2001.
- Indigenous Services Canada. 2021.** Indigenous Services Canada. *Indigenous Services Canada*. [Online] 2021. <https://www.sac-isc.gc.ca/eng/1602010609492/1602010631711>.
- Lifesaving Society. 2011.** *English and Mandarin focus group research*. Toronto : Lifesaving Society, 2011.
- . **2020.** *National Drowning Report 2020 Edition*. Toronto : Lifesaving Society, 2020.
- . **2010.** *The influence of ethnicity on aquatic participation and drowning in Canada*. Toronto : Lifesaving Society, 2010.
- . **2016.** *The influence of ethnicity on tweens’ swimming and water safety in Canada*. Toronto : Lifesaving Society, 2016.
- . **2019.** *Thomcliffe Swim to Survive Project*. Toronto : Lifesaving Society, 2019.
- Nunavut Government.** *Setting the Course: Climate Change Impacts and Adaptation in Nunavut*. [Online] [https://www.climatechangenunavut.ca/sites/default/files/3154-315\\_climate\\_english\\_reduced\\_size\\_1\\_0.pdf](https://www.climatechangenunavut.ca/sites/default/files/3154-315_climate_english_reduced_size_1_0.pdf).
- Parachute. 2021.** [Online] Nov 2021. [Cited: Mar 21, 2022.] <https://parachute.ca/en/injury-topic/drowning/>.
- . **2022.** Parachute Canada. [Online] 2022. <https://parachute.ca/en/injury-topic/drowning/>.
- . **2015.** *The cost of injury in Canada*. Toronto : Parachute Canada, 2015.
- . **2021.** *The cost of injury in Canada*. Toronto : Parachute Canada, 2021.
- Pike I, Richmond S, Rothman L. & Macpherson A. (eds). 2015.** *Canadian injury prevention resource*. Toronto : Parachute, 2015.
- Red Cross. 2000.** *An analysis of water-related fatalities in Canada for 1998*. s.l. : Canadian Red Cross, 2000.
- . **2010.** *Drownings and other water-related injuries in Canada 10 years of research*. Ottawa : Canadian Red Cross, 2010.
- S. Beerman, J.J.L.M Bierens, T. Clemens, D. Meddings, A. Rahman, D. Szpilman. 2019.** Clarification and Categorization of Non-fatal Drowning: A draft Position Statement for review and input by the global drowning community. *World Health Organization*. [Online] 2019. [https://www.who.int/violence\\_injury\\_prevention/drowning/non-fataldrowning/en/](https://www.who.int/violence_injury_prevention/drowning/non-fataldrowning/en/).
- Transport Canada. 2022.** *Mandatory Wear Observations: Summer 2021*. Ottawa : Transport Canada, 2022.
- WHO. 2014.** *Global report on drowning: preventing a leading killer*. Geneva : World Health Organization, 2014.
- Women and Gender Equality Canada. 2021.** “GBA+: Beyond Sex and Gender”. [Online] Women and Gender Equality Canada, 2021. <https://women-gender-equality.canada.ca/en/gender-based-analysis-plus.html>.

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