Drowning Research & Prevention in Canada

2010 BC Injury Prevention Conference
That Was Then...

KNOW THE HAZARDS

Boating Safety Wear a PFD/lifejacket

Dangers of Cold Water SWIM WITH A BUDDY Ice Safety
What we thought we knew ...

- Percentage of the boaters who drowned who were not wearing or improperly wearing a PFD/lifejacket at the time of the incident.
  - 1997 – 70%
  - 1998 – 73%
What we have learned...

Recreational Boating Drownings by use of a PFD, Canada 1991-2000

1991-1995 (n=728)
- Worn properly: 23%
- Worn improperly: 12%
- Present, not worn: 20%
- Not present: 27%
- Unknown: 14%
- Not worn, unknown if present: 4%

1996-2000 (n=634)
- Worn properly: 22%
- Worn improperly: 24%
- Present, not worn: 13%
- Not present: 29%
- Unknown: 11%
- Not worn, unknown if present: 11%

* Personal flotation device or lifejacket
† Not fastened or inappropriate size

Source: The Canadian Red Cross Society & the Canadian Surveillance System for Water-Related Fatalities, 2003

Canadian Red Cross
Trend Reports

Canadian Red Cross

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Haddon Matrix Model

- Personal
- Environment
- Equipment
  - Prepare
  - Stay Safe
  - Survive
Personal Factors: Who is at risk?
Overview, Module 1

Toddlers, Teens and Adult Males
Overview, Module 1

Rates vs. Numbers

Males 1991-1995 (n=2,120)
Males 1996-2000 (n=1,771)
Females 1991-1995 (n=426)
Females 1996-2000 (n=354)

<table>
<thead>
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<td>25-34</td>
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<td>71</td>
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Overview, Module 1

Rates vs. Numbers

<table>
<thead>
<tr>
<th>Year</th>
<th>Water-related injuries other than drownings</th>
<th>Land &amp; air transport drownings</th>
<th>Drownings, all other</th>
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<tbody>
<tr>
<td>1991</td>
<td>2.32</td>
<td>1.99</td>
<td>557</td>
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<td>1992</td>
<td>2.15</td>
<td>1.73</td>
<td>492</td>
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<td>1993</td>
<td>2.30</td>
<td>1.74</td>
<td>499</td>
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<tr>
<td>1994</td>
<td>2.16</td>
<td>1.71</td>
<td>497</td>
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<td>1995</td>
<td>2.16</td>
<td>1.71</td>
<td>502</td>
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<td>1996</td>
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<td>1.63</td>
<td>483</td>
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<td>1997</td>
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<td>1.48</td>
<td>445</td>
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<td>423</td>
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<td>1999</td>
<td>1.65</td>
<td>1.33</td>
<td>405</td>
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<td>2000</td>
<td>1.54</td>
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<td>369</td>
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</table>
Environmental Factors
Overview, Module 1

Drownings by Region & Type of Body of Water, Canada 1991-2000 (n=4671)

Ontario (n=1,349)
- Lake (n=287)
- Ocean (n=50)
- Other/Unknown* (n=57)
- Bathtub (n=98)
- Swimming pool (n=121)
- River (n=364)
- Other/Unknown* (n=84)
- Hot tub 1% (n=9)
- Bathtub (n=127)
- Swimming pool (n=120)

Prairies (n=763)
- Lake (n=384)
- Other/Unknown* (n=62)
- Hot tub 1% (n=11)
- Bathtub (n=64)
- Swimming pool (n=36)
- River (n=206)
- Other/Unknown* (n=8)
- 50%
- 27%

Quebec (n=977)
- Lake (n=701)
- Other/Unknown* (n=84)
- Hot tub 1% (n=9)
- Bathtub (n=127)
- Swimming pool (n=120)
- 52%
- 9%
Drownings by Region & Type of Body of Water, Canada 1991-2000 (n=4671)
Overview, Module 1
Rate & Number of Home Swimming Pool Toddler* by Body of Water, Canada 1991-2000

Type of body of water
- Lake (n=110)
- Ocean (n=11)
- River (n=56)
- Hot tub 2% (n=8)
- Sewage lagoon 1% (n=6)
- Bathtub (n=58)

Type of pool
- In-ground pool (n=26)
- Above-ground pool (n=38)
- Unspecified pool (n=58)

* Infants are < 1 year old; toddlers are 1-4 years old  † Excludes land & air transport drownings  § “Lake” includes pond & reservoir  ¶ Including pail 4, multiple-unit home pool 3, cistern 3, ditch 3, pit 3, toilet 2, water trough 2, rut 2, sump hole 2,  & 1 each of non-residential private pool, canal, septic tank, duck pond, lumber conditioning plant, & garbage can

Source: The Canadian Red Cross Society & the Canadian Surveillance System for Water-Related Fatalities, 2005
Overview, Module 1

High Risk Environments and Groups
Overview, Module 1

Infant and Toddler Drownings

Bathtub Drownings

Boating

Persons with Epilepsy (Seizure Disorders)

Swimming Pool Drownings

Snowmobiling

Road Traffic

Canadian Red Cross
This is Now...

- Swim with a Buddy
- Know the Hazards
- Wear a PFD/lifejacket

- Actively Supervise Children
- Currents, cold water, backyard pool
- Wear a PFD/lifejacket
This is Now…

- Dangers of Cold Water
- Swim to Safety
- Boating Safety
- No Alcohol
- Ice Safety
- Ice fishing and Snowmobiling
Priorities for Prevention

Key Activities

• Boating, 38%
• Activities on Ice, 22% (Snowmobiling- 55%; other vehicles -11%; non-motorized activities- 34%)
• Falls into water, 14%
Ice & Cold Water, Module 2

Key Messages

- Prepare for cold water survival
- Swim to the shore wearing a PFD/lifejacket
Snowmobiling

- Carry self rescue equipment
- Wear flotation gear
- Hypothermia gear
Priorities for Prevention

- Powered boating 62% of boating fatalities
- Peak age, males 25-74 years
Boating and Power Boats, Module 3

- Personal Behavior
  - Alcohol consumption

- Environmental Conditions
  - Boaters need to understand the value of preparing for a safe trip

- Equipment
  - Wear safety equipment during boating
Priorities for Prevention

- Canoeing
- Males 15-24 years of age
Key Messages

• Personal Behavior
  – Alcohol consumption, overestimation of skill level.

• Environmental Conditions
  – Knowledge of the location- weather, rapids, cold water

• Equipment
  – Wear safety equipment during boating
Fishing, Module 5

Priorities for Prevention

• Fishing is the # 1 activity in drownings in Canada;
• Recreational fishing accounted for 77% of the fishing immersion deaths
• Of fishing deaths, 84% were related to fishing from a boat
Fishing, Module 5

• **Personal**
  – Alcohol was involved in at least 34% of cases
  – 58% were weak or non-swimmers
  – 83% were experienced boaters

• **Equipment**
  – 11% were wearing flotation devices properly
Fishing, Module 5

Fishing Immersion Deaths* During Boating by Risk Factors
Canada 1991-2000 (n=738)

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Daily Living</th>
<th>Occupational</th>
<th>Recreational</th>
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</thead>
<tbody>
<tr>
<td>Rough water</td>
<td>32</td>
<td>23</td>
<td>45</td>
</tr>
<tr>
<td>Strong winds</td>
<td>20</td>
<td>24</td>
<td>40</td>
</tr>
<tr>
<td>Standing up in boat +</td>
<td>3</td>
<td>0</td>
<td>15</td>
</tr>
<tr>
<td>Overloaded boat</td>
<td>7</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Engine Failure</td>
<td>1</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Urinating</td>
<td>0</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Abrupt turn</td>
<td>0</td>
<td>0</td>
<td>3</td>
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</tbody>
</table>

*Includes drowning and immersion hypothermia deaths, excludes other non-drowning fatalities + Other than to urinate

Source: The Canadian Red Cross & the Canadian Surveillance System for Water-Related Fatalities, 2009
Fishing, Module 5

Key Messages

Know the Risks
Wear the PFD/Lifejacket

….no one wakes up expecting to drown later that day.
Observations

Knowing how people drown is the first step in prevention and program development.

A combination of preventative measures could save several thousand lives over a decade.
Partnerships

- Coroner Service
- Media
- Law Enforcement
- Injury Prevention Associations
The Future

- Review of Historical Numbers

- Matching Equipment Innovations to Incidents

- Reaching the public
Public Education

Water Safety Starts with You

Watch children around the water at all times

Check with your local pool for Red Cross Swim programs.

Red Cross Swim

Canadian Red Cross

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Special Projects
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redcross.ca/swimming&watersafety/drowningresearch