Implementation of a Drowning Surveillance System for Ohio Public Pools

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The State of Drowning

In the U.S., 10 people die from unintentional drowning every day.

In Ohio, drowning is a leading cause of unintentional injury deaths for children under age 15.

In 2010, Ohio saw 93 drowning deaths, 36 hospitalizations, and 189 drowning-related emergency department visits.

However, these statistics do not fully reflect the burden of drowning.

Underreporting of drowning morbidity/mortality due to:
- Variations in drowning-related terminology
- Lack of reporting requirements and infrastructure
- Inconsistent use of ICD-10 codes for drowning injuries
Gaps in the Data

ICD-10 codes W65-W74 identify the mechanism of drowning, but...

Drownings are often multifaceted

Where?
- About 17% of drowning deaths occur in pools
- Still, 27% of locations are “unspecified”

Why?
- Adults and children lack swimming ability
- Yet, even experienced swimmers are at risk

How?
- Physical measures are in place for prevention
- But, circumstances leading to a drowning are relatively unknown
What did ODH do to address the problem?

- Initiated surveillance pilot project to better understand injuries and drowning incidents at public pools
- Developed Public Pool and Spa Injury Incident Report Form
- Piloted form with 23 Local Health Districts (LHDs) during 2015 outdoor swim season
## Case Definitions

Survival of a drowning incident due to water rescue, resuscitation, and/or medical treatment by a trained medical professional

<table>
<thead>
<tr>
<th>Drowning</th>
<th>Pool-Related Injury</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fatal Drowning</td>
<td>Mild Injury</td>
</tr>
<tr>
<td>Non-Fatal Drowning</td>
<td>Severe Injury</td>
</tr>
</tbody>
</table>

*Refers to incidents occurring while recreating or working at a pool or spa within a project-participating LHD jurisdiction*
### Project Results: Non-Fatal Drownings

ODH received 85 reports of pool-related incidents from 9 of 23 pilot-participating LHDs, representing 18 licensed public swimming pools out of a possible 2,758.

47 of 85 incident reports met the case definition for Non-Fatal Drowning.

<table>
<thead>
<tr>
<th>Who?</th>
<th>What?</th>
<th>When?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most victims were:</td>
<td>All incidents included water rescue (100%):</td>
<td>Incidents occurred:</td>
</tr>
<tr>
<td>✓ White (70%)</td>
<td>✓ w/ Resuscitation (2%)</td>
<td>✓ June (40%) / July (49%)</td>
</tr>
<tr>
<td>✓ Male (77%)</td>
<td>✓ w/ Medical Tx (15%)</td>
<td>✓ Afternoon / evening hours of pool operation (94%)</td>
</tr>
<tr>
<td>✓ 5-9 years of age (68%)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Project Results: Non-Fatal Drownings

**Where?**
- Most incidents occurred in outdoor pools (81%):
  - Main Pool (23%)
  - Diving Board (30%)
  - Slide Feature (17%)

**Why?**
- Water rescues indicated for:
  - Swimmers in distress (61%)
  - Patrons lacking swimming ability (28%)

**How?**
- Most reports (52%) missing information about enclosure
- Enclosure not secure at time of incident (2%)
Project Results: Evaluation

A survey was distributed to all pilot-participating LHDs for project feedback

Response Rate = 78%

✓ *Simplicity*  ➔ Almost all (90%) survey-responding LHDs indicated simple flow of the report form and relative ease of submission

✓ *Usefulness*  ➔ Most indicated that report forms were somewhat / very useful (52.6%)

✓ *Acceptability*  ➔ Most indicated interest in continued surveillance activities (88.9%)
Project Challenges

What were the most significant project barriers?

- Liability Concerns
- Lack of Authority
- Completion Time
- Unguarded Pools
Project Implications

Where do we go from here?

- Surveillance of public swimming pool-related incidents proved feasible and useful
- Data will help determine prevention strategies and necessary policy changes
- Surveillance efforts will be continued during summer 2016 and beyond
Acknowledgments

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Questions?

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