

# Beach Water Monitoring Programs in Ontario: An Assessment of Publicly Available Information and Variations in Communication



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## Background

Recreational use of water, in natural environments remains a significant element in consideration of good health [1]. Within the province of Ontario relevant legislation sets out standards which public health units adhere to,

- Outlining monitoring processes and communication methods
- Delivering guidance on the administration distinct requisites to mitigate the risk of waterborne illness and injury pertaining to the use of recreational water, in various applications [2][3].

Health units are often responsible for deciding how to implement these techniques and to what level when designing a beach monitoring program. This multidisciplinary management system involves numerous stakeholders, leading to:

- variations in application,
- implementation, and
- communication of beach water quality testing and result procedures.

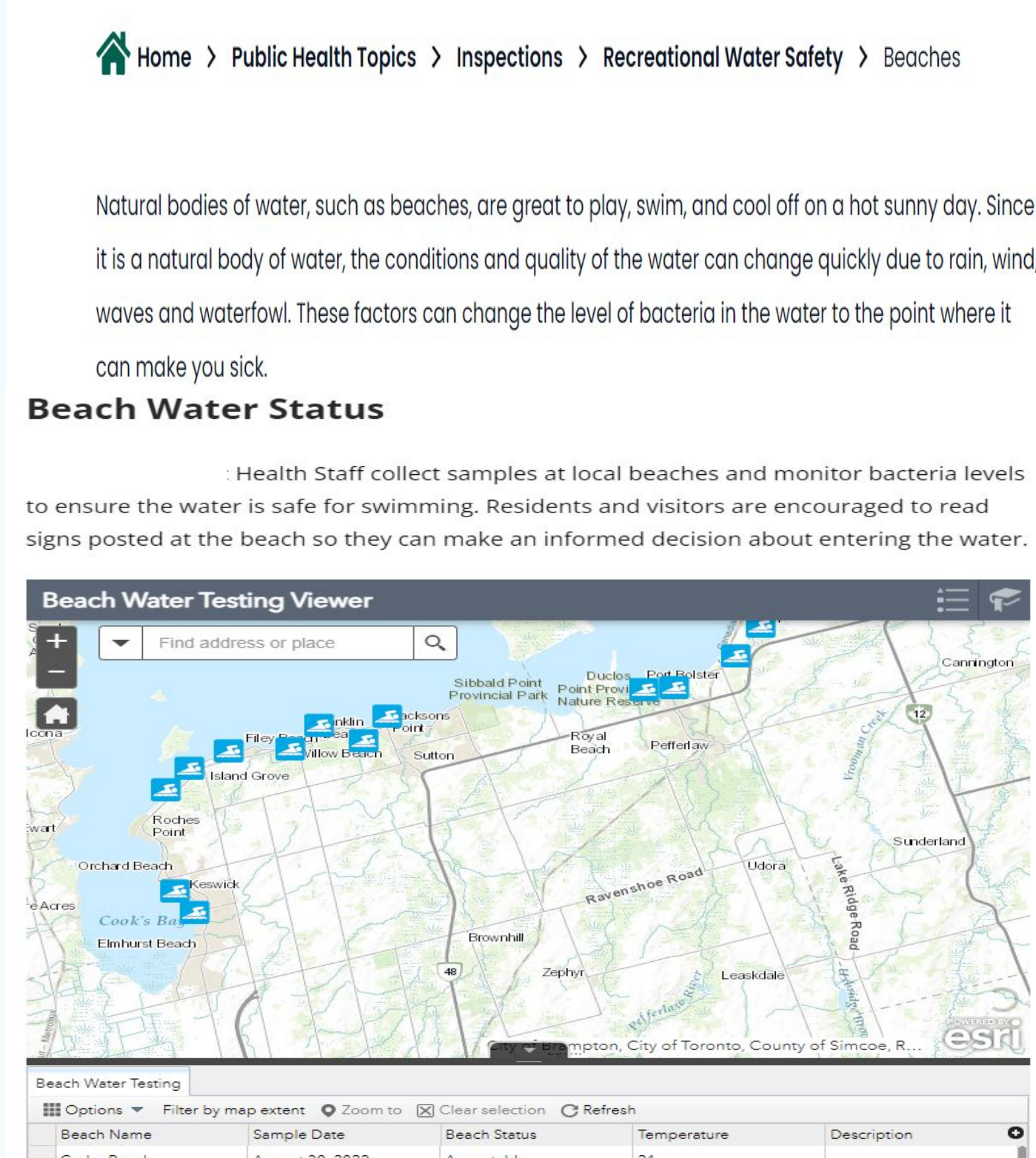
Assessment of actions to communicate risk are vastly necessary but rarely carried out [4].

## Methodology

**Data collection** using websites of all 34 public beach water monitoring programs in Ontario.

- A list of 29 questions were developed and used to extract information from each health unit website.

## Beaches



- Digital archive websites, emails or phone calls were used when data was not available on a health unit's website.

**Data analysis** was conducted using Microsoft Excel version 16.30.

## Objectives

We aimed to analyze existing beach water quality monitoring programs:

- Using available material accessible to the public
- Assessing adherence to the *Ontario Operational Approaches for Recreational Water Quality, 2018* and the *Recreational Water Protocol, 2019*
- Comparing monitoring programs across health units
- Evaluating best practices and areas of non-compliance
- Proposing recommendations for effective and efficient communication and information presentation with consideration to public perception

**\*Criteria was developed in consultation with Swim Drink Fish Canada, Swim Global Project and Lifesaving Society Canada\***

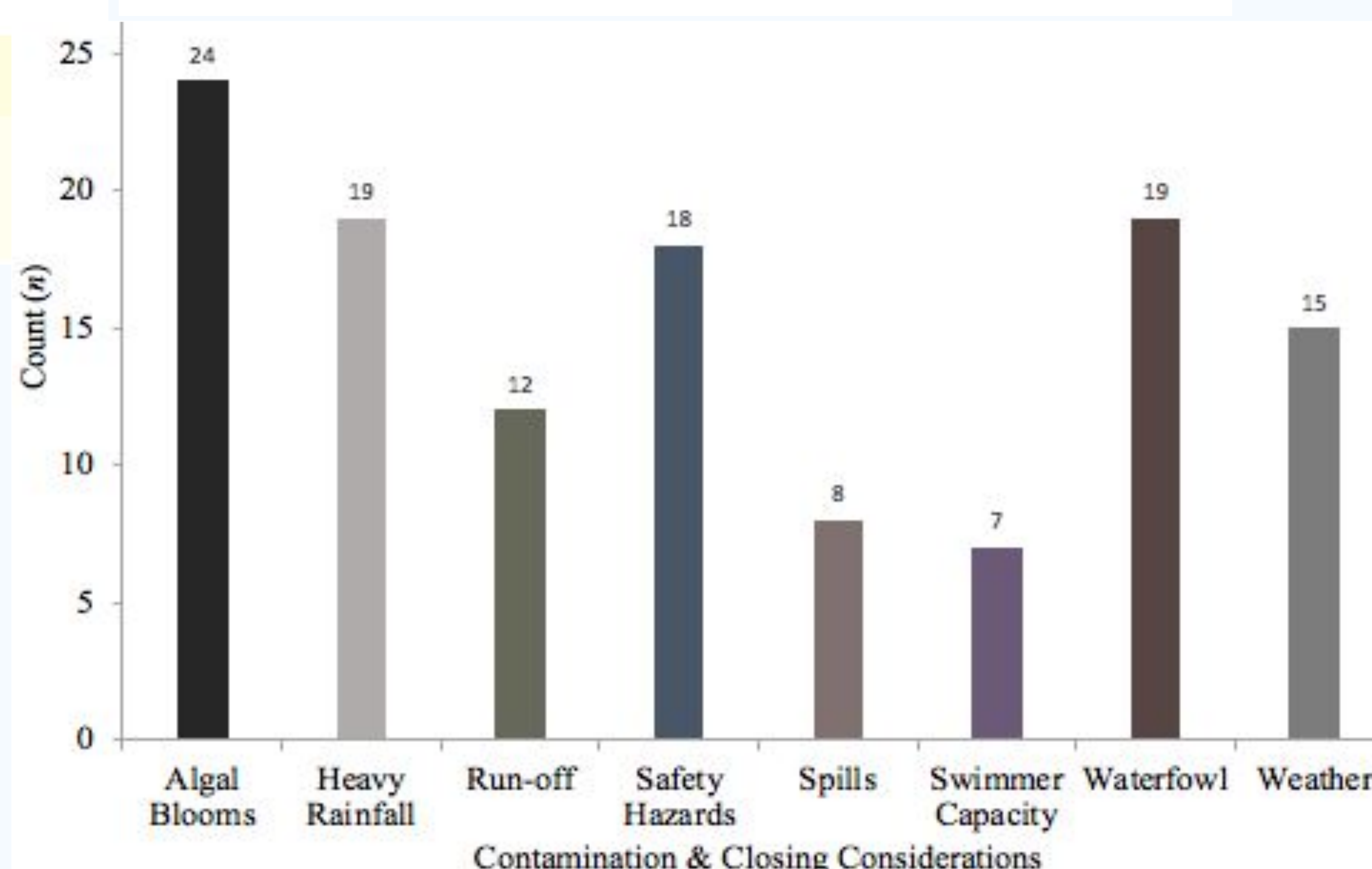
## Results

**The study population is public health units in Ontario [n = 34]**

The highlighted results below evaluate factors of availability and accessibility of information, modes of communication and overall beach water sampling and management procedures.

**Table 1.**  
*Evaluating Beach Water Monitoring/Management Programs in Health Units*

Variables	Totals	
	Count (n)	%
Number of "Click-Throughs" to Reach Beach Page		
2 or less	14	41.18
3 or more	20	58.82
Testing Day & When Posted Disclosed		
Fully disclosed	4	11.76
Partially disclosed	8	23.53
Undisclosed	22	64.71
Accordance to F.A.I.R. Principles		
Yes	8	23.53
Partially	19	55.88
No	7	20.59
Where are Past Results Available		
Monitoring body	6	17.65
Swim Guide	28	82.35
Direct or General Contact Available to Monitoring Team		
Direct contact	12	35.29
General contact	22	64.71
How Algae Monitored (If Applicable)		
Part of program	5	14.71
Visual confirmation	12	35.29
If reported	9	26.47
Not indicated	8	23.53



- **Algal blooms** was the top factor recorded, with 24 health units out of the 34 total (70.59%).



## Discussion & Recommendations

Variations in presentation and communication of information was seen throughout the results strongly implying that there are existing inconsistencies in beach water quality communication. The ability to readily access the information:

- Noted that 58.82% of the total number of health units required 3 or more "click-throughs" to reach the beach webpage from their homepage. The quantity and quality of information distributed:
- Varied with the majority of health units (n = 22, 64.71%) not disclosing their testing day, nor the date when results are posted.
- Partial accordance with F.A.I.R. principles was most commonly viewed, with 19 health units, over half (55.88%), falling into this category. The outlets of information sharing differed as:
- Past results were available on Swim Guide for 28 health units (82.35%) at the time of the study.
- Most health units (n = 22, 64.71%) provided general contact information on their websites with 12 health units (35.29%) having a direct contact to their water monitoring teams.

- The present methods and means of communication should be improved to increase program effectiveness.
- **Future studies** are needed to assess how the public accesses and prefers to obtain information about beach water quality during the bathing season.

## References

1. World Health Organization. Recreational Waters [Internet]. World Health Organization; Accessed March 2024, [\[https://www.who.int/teams/environment-climate-change-and-health/water-s-anitation-and-health/water-safety-and-quality/recreational-waters\]](https://www.who.int/teams/environment-climate-change-and-health/water-s-anitation-and-health/water-safety-and-quality/recreational-waters)
2. Ministry of Health and Long-Term Care. Operational Approaches for Recreational Water Guideline, 2018 [Internet]. Ministry of Health and Long-Term Care; 2018. Accessed March 2024, [\[https://files.health.gov.on.ca/en/pro/programs/publichealth/oph\\_standards/docs/protocols\\_guidelines/Operational\\_Approaches\\_to\\_Rec\\_Water\\_Guideline\\_2018\\_en.pdf\]](https://files.health.gov.on.ca/en/pro/programs/publichealth/oph_standards/docs/protocols_guidelines/Operational_Approaches_to_Rec_Water_Guideline_2018_en.pdf)
3. Ministry of Health and Long-Term Care. Recreational Water Protocol, 2019 [Internet]. Government of Ontario; 2019. Accessed March 2024, [\[https://files.ontario.ca/moh-recreational-water-protocol-en-2019.pdf\]](https://files.ontario.ca/moh-recreational-water-protocol-en-2019.pdf)
4. Parkin, R. T., Embrey, M. A., Hunter, P. R. Communicating water-related health risks: Lessons Learned and Emerging Issues. *J. Am. Water Works Assoc.* 2003; 95(7): 58–66.