# Infraction patterns identified during routine inspections in public pools in Peel Region, Ontario, Canada, 2023-2025

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## Introduction

Public swimming pools play a significant role in supporting physical activity and promoting increased life satisfaction and well-being.

Maintenance, disinfection, and operational deficiencies of public pools cause non-compliance with regulations, leading to potential public health risks.

Improper pool maintenance is associated with recreational water illnesses (RWI), such as *Cryptosporidium* infection.

Exposure to other health hazards, such as physical and chemical hazards, increases risks to RWI and injuries.

## Objectives

- Identifying most common categories of reported infractions and distribution of non-compliance during routine inspections of public pools in Peel Region, Ontario, Canada.
- Determining distribution of most frequently occurring violations in the region to educate pool operators and bathers.

## Methods

Requested and received public pool inspection data from Peel Region dated from 2023 to 2025

Inspection dataset cleaned and transformed prior to analysis, only Class A and Class B pools included.

Stratification of dataset per pool classification and pool setting (indoor and outdoor)

Descriptive analysis conducted to determine infraction patterns and trends across all public pools in Peel Region.

Version 4.5.2

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## Results

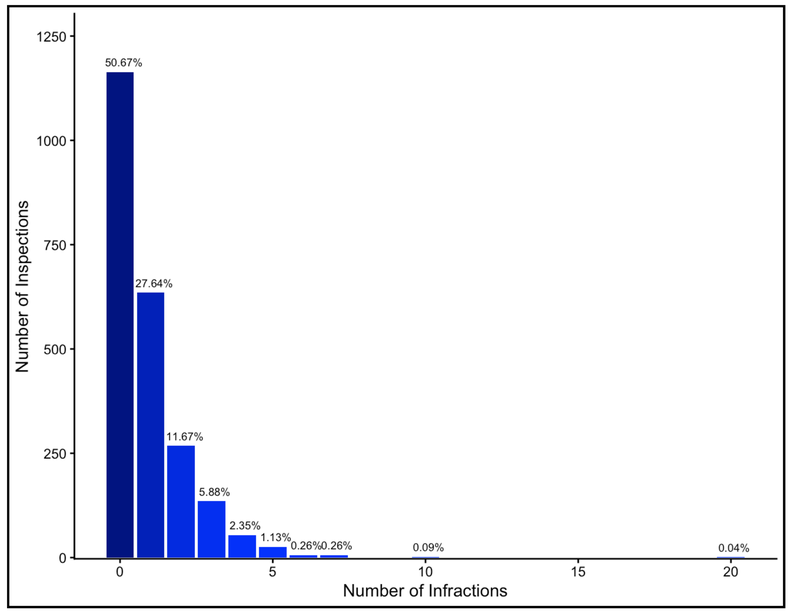



**Fig. 1.** Distribution of infractions cited per inspection in public pools, Peel Region, Ontario, Canada, 2023-2025.

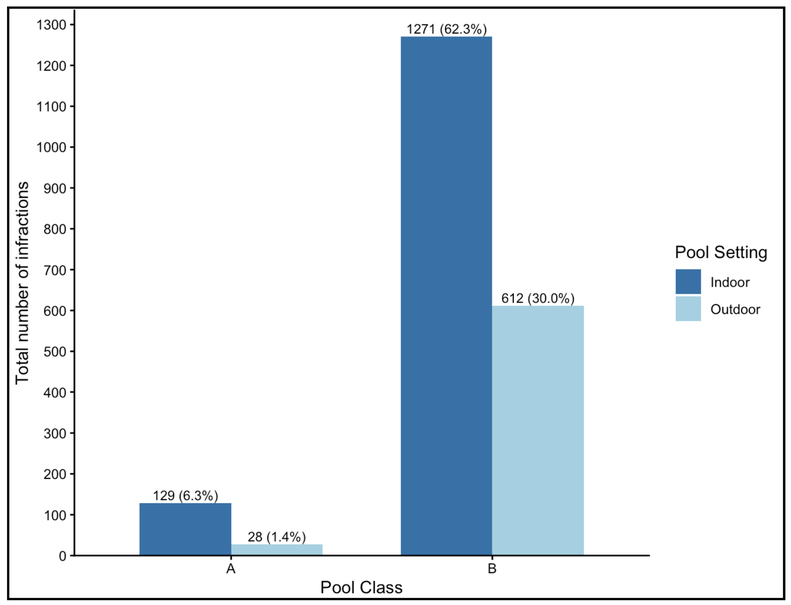



**Fig. 2.** Distribution of total infractions, stratified by pool classification and setting, Peel Region, Ontario, Canada, 2023-2025.

**Table 1.** Distribution of infractions by inspection category, stratified by pool classification, Peel Region, Ontario, Canada, 2023-2025.

| Inspection category | Class A | Class B | Total |
|---|---|---|---|
| Checks, Tests, & Record Keeping | 41 (26.1%) | 648 (34.4%) | 689 (33.8%) |
| Water Quality | 31 (19.7%) | 376 (20.0%) | 407 (20.0%) |
| Safety Equipment | 16 (10.2%) | 298 (15.8%) | 314 (15.4%) |
| Operation | 45 (28.7%) | 259 (13.8%) | 304 (14.9%) |
| Notices And Markings | 15 (9.6%) | 123 (6.5%) | 138 (6.8%) |
| Supervision | 7 (4.5%) | 101 (5.4%) | 108 (5.3%) |
| Health Hazard | 2 (1.3%) | 78 (4.1%) | 80 (3.9%) |
| **Total** | **157 (100.0%)** | **1,883 (100.0%)** | **2,040 (100.0%)** |

## Discussion

- Class B pools had a higher overall number of cited infractions due to inconsistent oversight and monitoring practices.
- Indoor pools contributed to more total cited infractions for both classifications, whereas outdoor pools had a higher mean number of infractions per individual inspection.
- Water chemistry-related infractions were most commonly cited for both classifications, suggesting inappropriate disinfection concentration and pH levels as prevalent issues in public pool maintenance.
- Record-keeping and documentation deficiencies were commonly cited in Class B public pools, suggesting less oversight and reduced staffing may contribute to inaccurate records and non-compliance with the regulation.
- Class A pools were frequently cited for failure to maintain equipment and facilities in a sanitary condition, possibly due to higher bather load and year-round aquatic programs.

## Future Directions

- Integrate routine inspection data with RWI surveillance data to assess specific infractions translate into measurable public outcomes.
- Incorporate additional facility types (e.g., spas and wading pools) to provide a more comprehensive understanding of factors affecting compliance and infraction patterns in other recreational water facilities.

## References

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