Recreational Water Safety Training in Oxford County

A Situational Assessment

Situational Assessment
Oxford County Public Health
August 2016

About Oxford County

Located in the heart of southwestern Ontario, Oxford County has a population of approximately 111,700 people across eight municipalities that are “growing stronger together” through a partnership-oriented, two-tier municipal government incorporated as the County of Oxford.

Oxford County is emerging as a leader in sustainable growth through the Future Oxford Community Sustainability Plan and County Council’s commitment to achieving 100% renewable energy by 2050 and becoming a zero waste community. Situated in one of Ontario’s richest areas for farmland, agriculture forms a cornerstone of the County’s economy, which boasts 55,000 jobs in a rapidly expanding commercial and industrial sector bolstered by its location at the crossroads of Highways 401 and 403. The County offers a thriving local arts, culture and culinary community, as well as conservation parks, natural areas and more than 100 kilometres of scenic trails.

The Oxford County Administration Building is located in Woodstock. Visit www.oxfordcounty.ca or follow our social media sites at www.oxfordcounty.ca/social. Oxford County’s Strategic Plan is at www.oxfordcounty.ca/strategicplan.

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Summary

The Ontario Public Health Standards have a requirement stating that boards of health are to provide education and training for owner/operators of recreational water facilities. The *Recreational Water Protocol* identifies potential components of a recreational water training program.

The purpose of this situational assessment was to evaluate the best method of providing recreational water safety training for recreational water facility operators in Oxford County. The situational assessment was multi-faceted and included an environmental scan and survey of other Ontario health units, a survey of Oxford County operators, and focus group interviews with the public health inspectors (PHIs) at Oxford County Public Health (Public Health).

In Ontario, 10 health units offer recreational water training. Most courses are free of charge, offered once a year during the spring, and are offered as in-person classes. The operator survey found operators preferred training in the morning or afternoon and during the spring, winter, or fall. Their most preferred topics included pool water chemistry, and public health legislation and regulations, and the majority of operators indicated they would likely attend a course if offered. During the focus groups, PHIs agreed offering a course could be valuable to operators in Oxford County, and conceded that an in-class course would allow for a more engaging learning environment.

Possible next steps going forward include designing an in-class course covering the topics outlined in the *Recreational Water Protocol* from an inspection stand point, preparing a thorough manual to provide as an additional resource, and exploring incentive and enforcement options.

Recreational Water Safety Training in Oxford County

Introduction

The Ontario Public Health Standards (OPHS) are published by the Ministry of Health and Long-Term Care (MOHLTC) under the authority of the *Health Protection and Promotion Act* to specify the mandatory health programs and services to be provided by boards of health.[1,2] To supplement the OPHS, the MOHLTC also releases program and topic specific protocols—documents which are to provide directions to boards of health on how to operationalize the requirements identified in the OPHS.

Under the Safe Water topic area of the Environmental Health Program Standards section in the OPHS, Requirement #9 states "the board of health shall provide education and training for owner/operators of recreational water facilities in accordance with the *Recreational Water Protocol*, *2008* (or as current)."[1(p.64)] The *Recreational Water Protocol*, updated in May 2016, was published to provide directions to the board of health on delivery of comprehensive recreational water programs aimed at preventing and reducing water-borne illness and injury. In addition to the surveillance and inspection of recreational water facilities and investigation of adverse events and complaints arising from these facilities, the protocol directs that a comprehensive recreational water program at the board of health should include "promoting awareness of safe use and operation of recreational water facilities, public beaches and waterfronts that are part of a recreational camp, and training of owner/operators of pools and spas."[3]

Protocols outline the minimum expectations for public health programs and services; it is up to the boards of health to develop programs and services adapted to address local needs.[3] Potential components of a recreational water training program identified in the *Recreational Water Protocol* include the following:[3]

- Public health legislation and regulations, as applicable;
- Prevention of illness, injury or death;
- Pool water chemistry;

- Sanitary operation of other amenities in the facility;
- Provision of safety equipment;
- Emergency procedures;
- Safety supervision; and
- Record keeping

In the past, Oxford County has outsourced the training of recreational water facility operators to Lowry School of Pool & Spa Chemistry, an external company based out of Newmarket, Ontario. The course was offered in 2011 at the Tillsonburg Community Centre and in 2013 at the Elmhurst Inn in Ingersoll. Topics covered included:

- Province-based pool & spa regulations
- Pool water maintenance
- Water balance, testing methods and adjusting procedures
- Communicable diseases & CT values
- Sanitizers
- Hot (Spa) Water Chemistry
- Filtration and Circulation

In 2013, the Lowry course cost $2339.10 for instruction and materials, with additional fees of $1346.11 incurred for renting the Elm Hurst Inn facility and providing refreshments. With potential changes in funding available for the Safe Water program area, this option might no longer be feasible and so other options are being sought to comply with the OPHS guidelines.

Purpose of Situational Assessment

The purpose of this situational assessment was to evaluate the best method of providing recreational water safety training for recreational water facility operators (hereinafter simply referred to as “operators”) in Oxford County. This report therefore aims to aid in determining the best approach to satisfying the requirements of the OPHS following the guidance of the *Recreational Water Protocol.*

Methods

The situational assessment was multi-faceted and included components to obtain perspectives on recreational water safety training from both internal and external stakeholders. The different components included an environmental scan and survey of other Ontario health units, a survey of Oxford County operators, and focus group interviews with the public health inspectors (PHIs) at Oxford County Public Health (Public Health).

An environmental scan of all 35 other health units in Ontario was conducted to determine the recreational water safety training methods provided for operators in their respective regions. Each individual health unit's website was searched to determine training course offerings and training material availability online. The health units found to offer a course via the online scan were called to verify whether training was still being provided to their operators; those not advertising courses online were also called to confirm they do not offer training. The health units identified as offering a recreational water training course were asked to participate in an online survey (FluidSurveys™) to obtain information regarding the logistics, feasibility, attendance, benefits, and drawbacks of providing various forms of training. Informed consent was received from participating health units both over the phone and prior to the start of the online survey.

The operators of Oxford County were also given a survey to assess their needs and interests in receiving recreational water safety training, and to gather input regarding preferred methods of course delivery. They were contacted by phone (and if unreachable, by e-mail or in-person upon routine inspection) to request their participation; if agreeable, they were sent the online survey (FluidSurveys™). Descriptive statistics were used to analyze results from both the other health unit and the operator surveys.

Two focus groups were held at Public Health with the PHIs responsible for carrying out routine inspections of all public recreational water facilities and ensuring compliance with the mandatory regulations. Each focus group was conducted with the objective of obtaining input regarding recreational water training methods including topics and format, and hearing general thoughts about having a course offered at Public Health. To ensure accuracy when reporting the findings, both focus groups were recorded and subsequently transcribed. Thematic analysis was conducted to establish a pattern or theme of ideas regarding recreational water training.

Results

Environmental Scan and Survey of Other Health Units

From the environmental scan of the 35 other health units in Ontario, it was determined that the following 10 offer recreational water safety training:

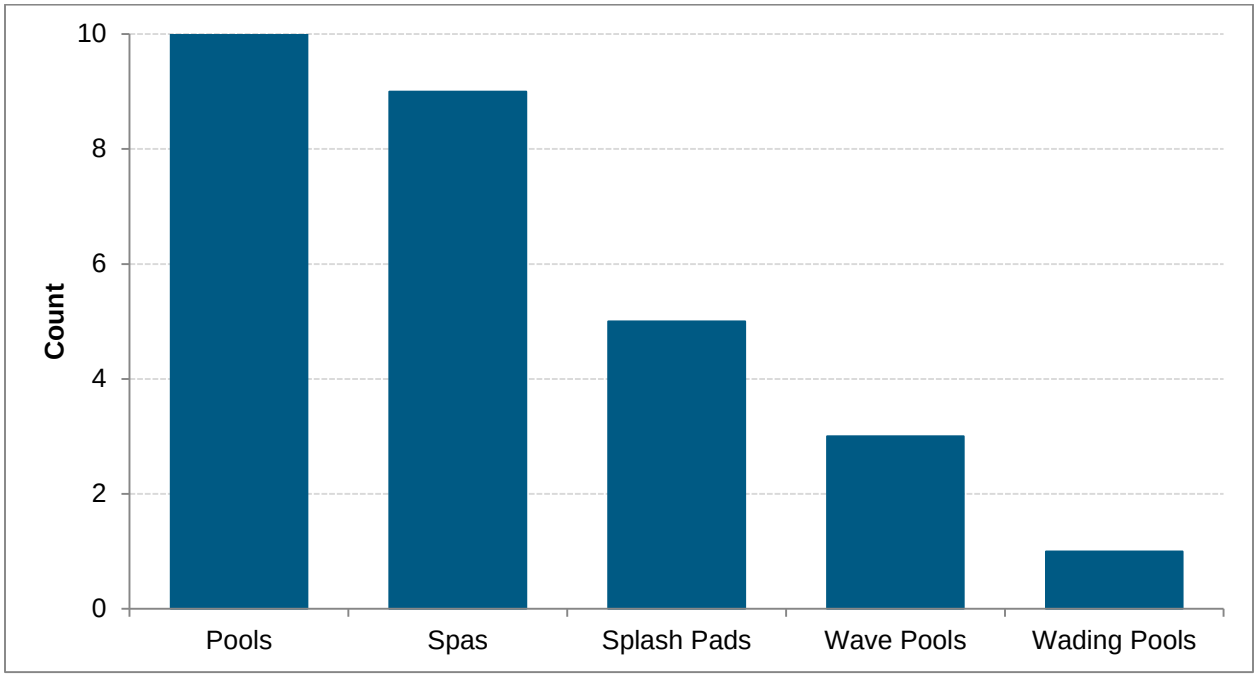
- Brant County Public Health
- Durham Region Health Department
- Halton Region Public Heath
- Hastings Prince Edward Public Health
- Huron County Health Unit
- Lambton Public Health
- Middlesex-London Health Unit
- Niagara Region Public Health
- Region of Waterloo Public Health
- Windsor-Essex County Health Unit

Though not asked to complete a survey, respondents from other health units in Ontario not offering a course provided valuable insight during the environmental scan phone calls. Many, like Public Health, have relied on bringing in third party training using their Safe Water program enhanced funding. A few of the health units that used to offer a course, but no longer do, indicated they found the same operators repeatedly kept coming back year after year, until fewer people started coming and they offered it less frequently. One respondent suggested their health unit brought in third party experts who better understood the mechanics and technical aspects of pool operation and could thus better answer operators' questions.

Of the ten respondents offering training, nine delivered their course in-person and one delivered their training via an online course. For all nine health units offering the course in-person, PHIs were the instructors.

All ten health units provided education and training on pools, nine health units provided education and training on spas, and five health units provided education and training on splash pads (Figure 1). A few also provided training on wave pools and wading pools.

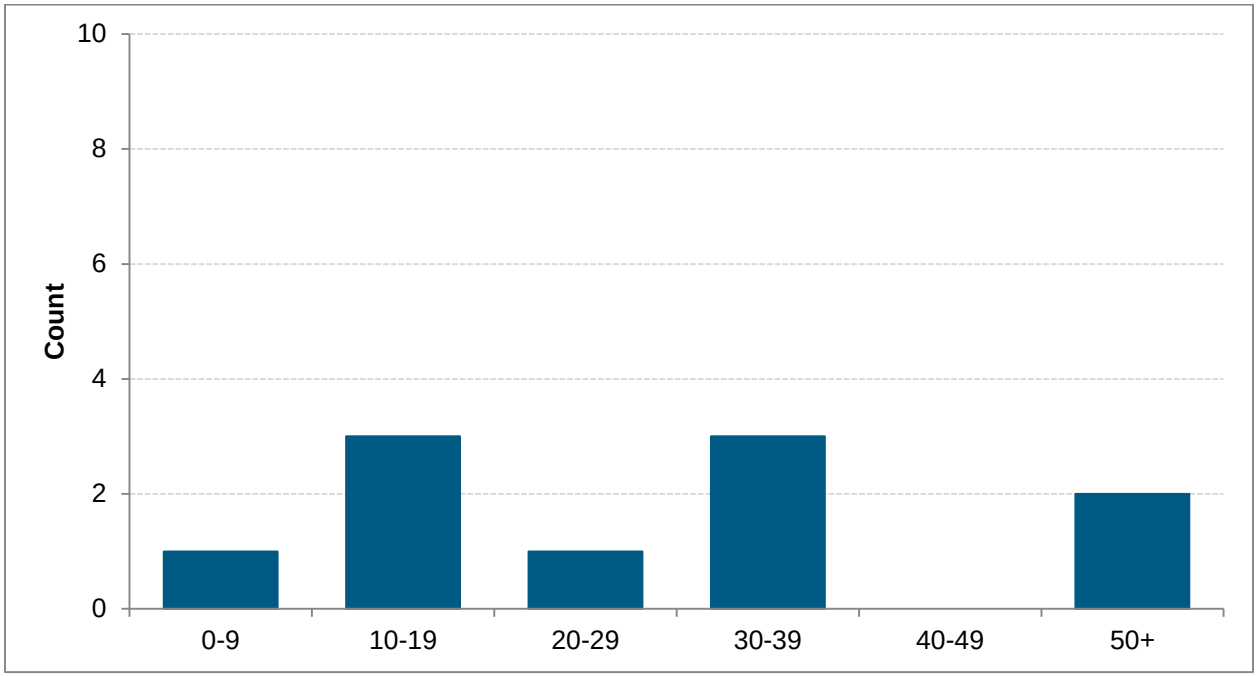
Figure 1. Type of recreational water facility information covered in training courses.



The majority (n=5) of health units offered a training course once per year, whereas the other health units offered a course twice per year (n=3) or once every other year (n=1). The online course, on the other hand, was available on a continual basis throughout the year. A few of the health units (n=2) also indicated that if there were demand for it, they would offer the course more often during the year. Although, the courses offered at the health units varied in duration, the majority ran for 3 or 3.5 hours (n=4 and n=2, respectively). One health unit offered a 3.5 hour half-day course covering pools only or a 7 hour course covering pools, spas, splash pads and wading pools. The remaining health units offered courses that ran for 2 hours (n=1), 5 hours (n=1), or 6 hours (n=1). The health unit offering the course online indicated that course length varied depending on operators' ability level.

The majority (n=6) of courses offered at the health units were free of charge, whereas some courses offered by health units had a fee for attendees ranging between $20 and $40 ($20, n=2; $25, n=1; $40, n=1). When asked about course attendance, there was a fairly distributed response with number of participants ranging from 0-9 to over 50 (Figure 2). At the time of this survey, one health unit still had not yet run their course because not enough participants had registered to their training. See appendix A for a summary of course logistics based on health unit classification (urban center, rural/urban mix, mainly rural).

Figure 2. Average number of attendees attending training courses.



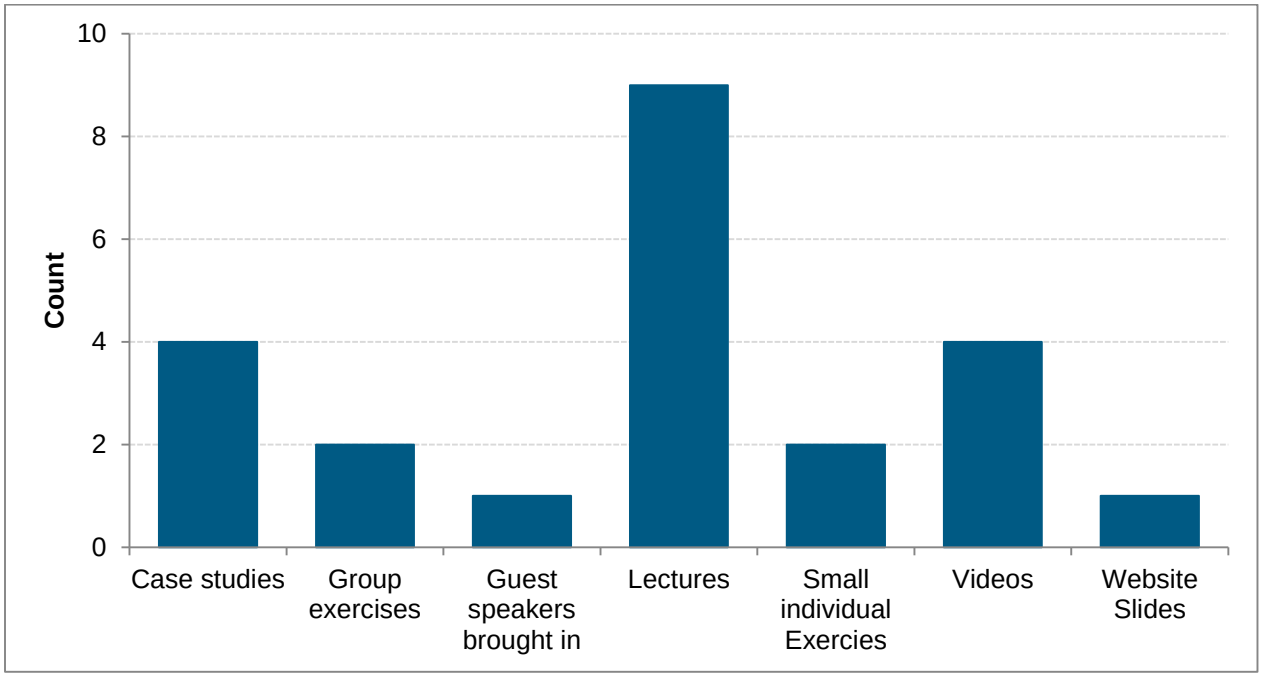
The health units use attendance only (n=7), comprehension of course material (n=1), or both attendance and comprehension (n=2) to evaluate participants' completion of the training course. All three health units that evaluate participants' understanding of course material do so by administering a quiz after the course has been completed. The majority of courses (n=6) offered by health units have 100% of registered participants successfully complete it each year, whereas the other health units (n=3) offering courses reported a 75-99% successful completion rate. One health unit did not respond to this question because at the time of this survey, they had not yet been able to run their course due to limited interest, as mentioned above.

Eight of the ten health units that indicated they provided an incentive for attendees who completed the training course, offered a certificate after successful completion of the course. In addition, health units offered items such as operator guides, pool bag with supplies, and a chance to win a free pool test kit. The certificates that were offered did not have an expiry date, so operators were not required to renew their certification.

Apart from the online course which used website slides to deliver training, the rest of the health units used a lecture style of course delivery to conduct their training. These health units used a variety of teaching methods such as video screenings, case study briefings, and both individual

and small group exercises (Figure 3) to educate their attendees. One health unit also specified they used multiple choice and true/false questions throughout their course to keep operators engaged.

Figure 3. Teaching strategies used to deliver course content at training courses.



When asked to describe the depth of their courses, five health units indicated their training was basic, one indicated it was advanced, one indicated they offer both basic and advanced, and the other three specified their training was somewhere in between depending on the level of the operators attending. Additionally, all ten health units' courses cover all of the topics advised in the *Recreational Water Protocol*.

Five of the ten health units have evaluated their training course and noted in many of their responses that course attendees found the training course to be "interesting" and "useful." One of the health units offering the course conducted a thorough evaluation in June 2012 and found that the information sessions were effective at increasing operator knowledge about important components of pool and spa operation and safety. They found that operators' self-reported intentions to change were higher once completing their course. Another health unit evaluated course participants' barriers to properly maintaining their pools or spas and found that along with "workload and time constraints," a commonly cited barrier that operators' cited included "skill or knowledge levels." Thus, after implementing training to address these latter barriers, an

evaluation of this health unit's training course showed to increase knowledge level thus providing validation of the usefulness of a course.

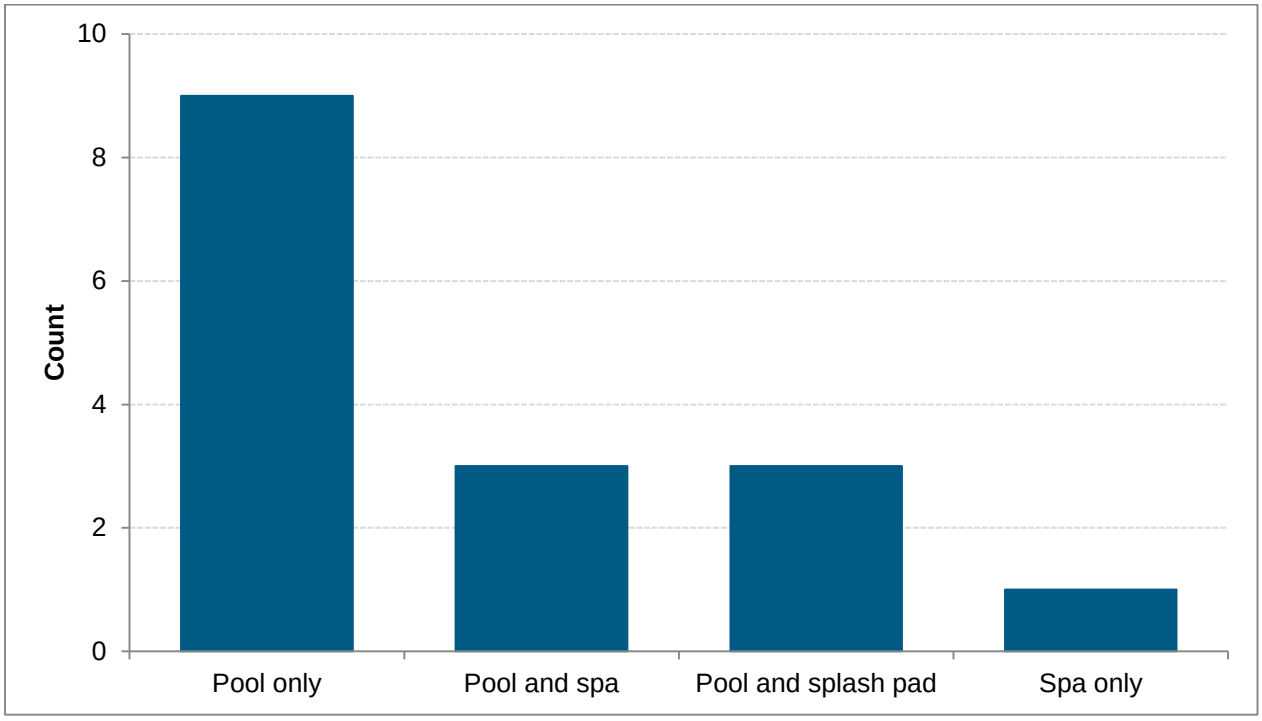
Given the chance to provide additional comments and suggestions to health units planning to create a course, it was advised to make the training as interactive as possible with practical work example. One respondent suggested having the training hosted at a location where there is a pool facility so participants can physically see the proper equipment (e.g., pump room, emergency equipment). If this is not possible, showing videos and giving real examples was also a recommendation. It was also recommended that the course be revised each year with recent cases and annual infractions and compliance concerns. It was advised to market the course each year using a mail out—even after offering it the first time—to promote attendance, although it was noted to expect a decrease in operators.

The other health units also noted the resources required to run a training course, and recommended ensuring that adequate PHI and support staff would be available to monitor the course, prepare certificates, and ensure the training materials stay up to date for those repeat attendees. Offering perks like free parking and offering lunch and snacks were suggestions for increasing turn out. To supplement the training, a recommendation was made to offer a detailed manual to operators so that they had a referral source once their course was complete.

Survey of Oxford Operators

In total, 16 out of the 27 operators in Oxford County responded to the online survey for a response rate of 59%. Results showed that 15 of the 16 respondents operated facilities that had at least a pool, whereas 1 respondent operated a facility with only a spa. Of the 15 respondents with a pool, nine were operators of pool-only facilities, three had both a pool and spa at their facilities, and three had both a pool and a splash pad (Figure 4).

Figure 4. Types of recreational water facilities operated by survey respondents.



Seven operators specified that they had attended a recreational water safety training course in the past; the other eight indicated they had never received any formal training. All those who have taken courses attended them in-person through the following organizations:

- Acapulco Pools Limited (Kitchener, ON)
- Lifesaving Society
- Lowry School of Pool and Spa Chemistry
- Ontario Recreational Facility Association (ORFA)
- National Swimming Pool Foundation
- Taylor Technologies
- YMCA

The majority of operators agreed that the topics covered during their training were appropriate, the course was an appropriate length, and the method of course delivery was effective. Some of the operators even indicated that they received a formal certified pool operator (CPO) designation through their training.

Operators were asked for their preferences regarding logistics and method of course delivery. The majority (n=6) indicated they would prefer winter courses, followed closely by the spring and fall (n=5 each) courses; summer was the least preferred time for a course (n=2) (Figure 5). One of the facilities with interest in splash pad training specified training throughout the year would be preferred due to their high turnover of part-time maintenance workers. Most operators preferred to receive training in the afternoon (n=8), followed by the morning (n=7), then the evening (n=4). Multiple selections were possible, so two operators indicated either morning or afternoon would work, and two selected either afternoon or evening.

Eight operators indicated they would prefer an online training (self-directed) course and seven specified they preferred an in-person (facilitated) course. Ten operators preferred the training to occur all at once, while five preferred it be spread out over multiple sessions and in terms of preferred teaching strategies (multiple selections possible), the most common responses were participation (n=9), group exercises (n=8), and videos (n=8) (Figure 6).

Figure 5. Preferences regarding time of year for course delivery.

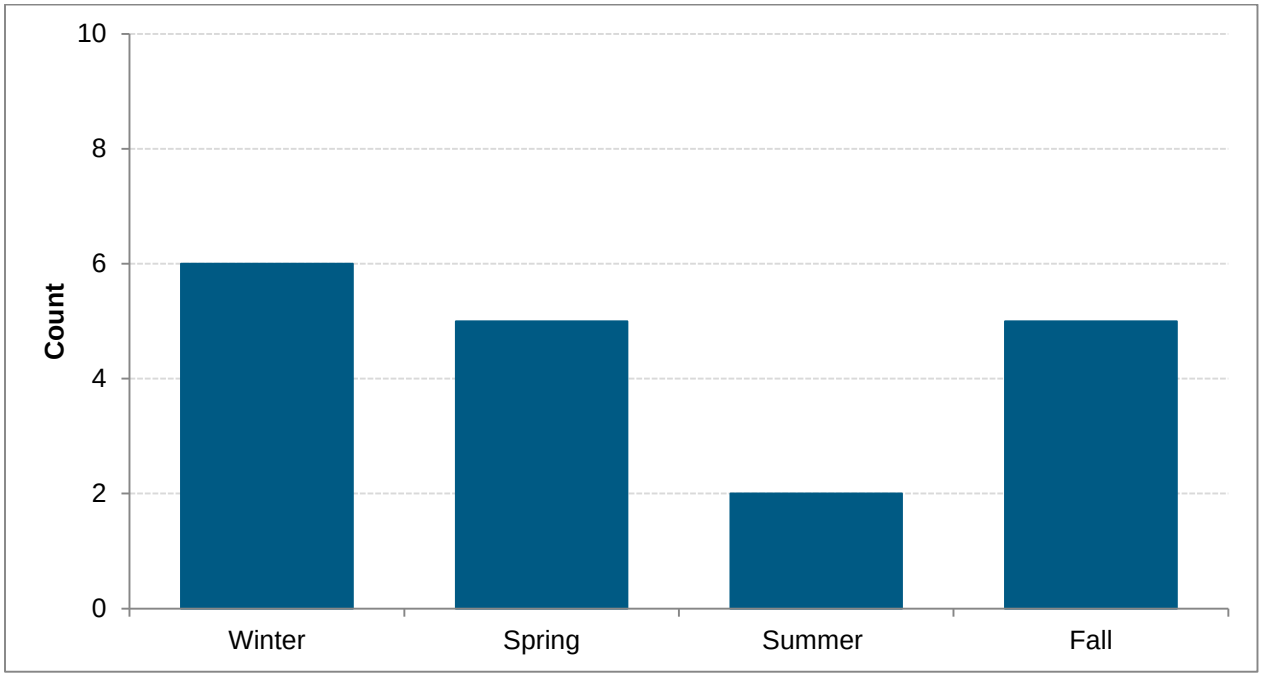
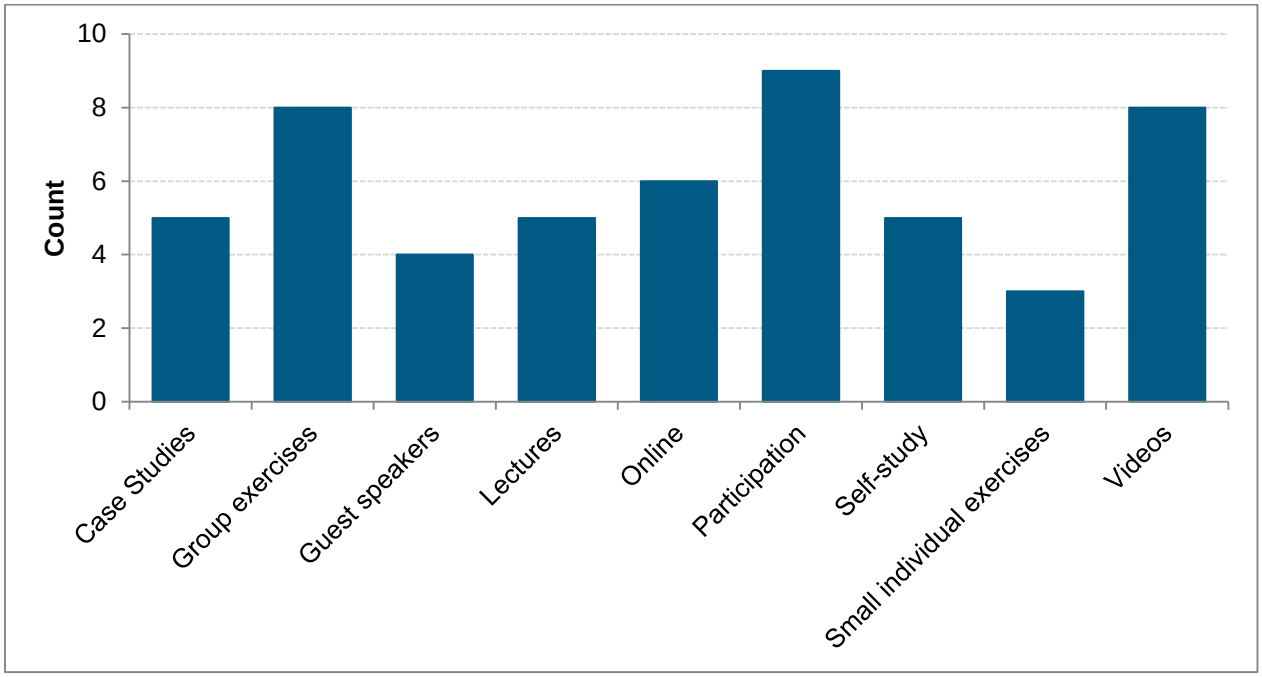


Figure 6. Preferences regarding teaching strategies.



The most common responses regarding particular topics operators would like to learn more about were pool water chemistry (n=13), public health legislation and regulations (n=10), emergency procedures (n=7), record keeping (n=7), and provision of safety equipment (n=6) (Figure 7). When asked the likelihood of attending a course if one were to be developed and offered at Public Health, the majority responded that they were very likely (n=6) or likely (n=6) to attend (Figure 8).

Figure 7. Preferences regarding topics covered.

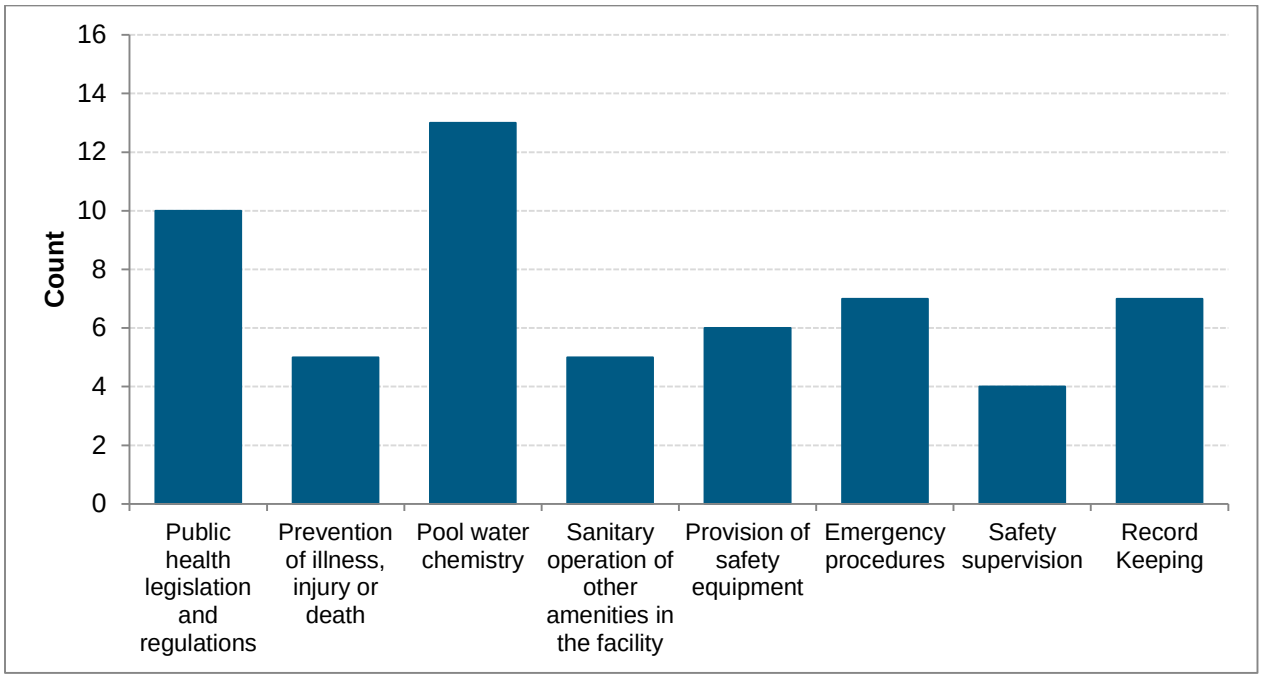
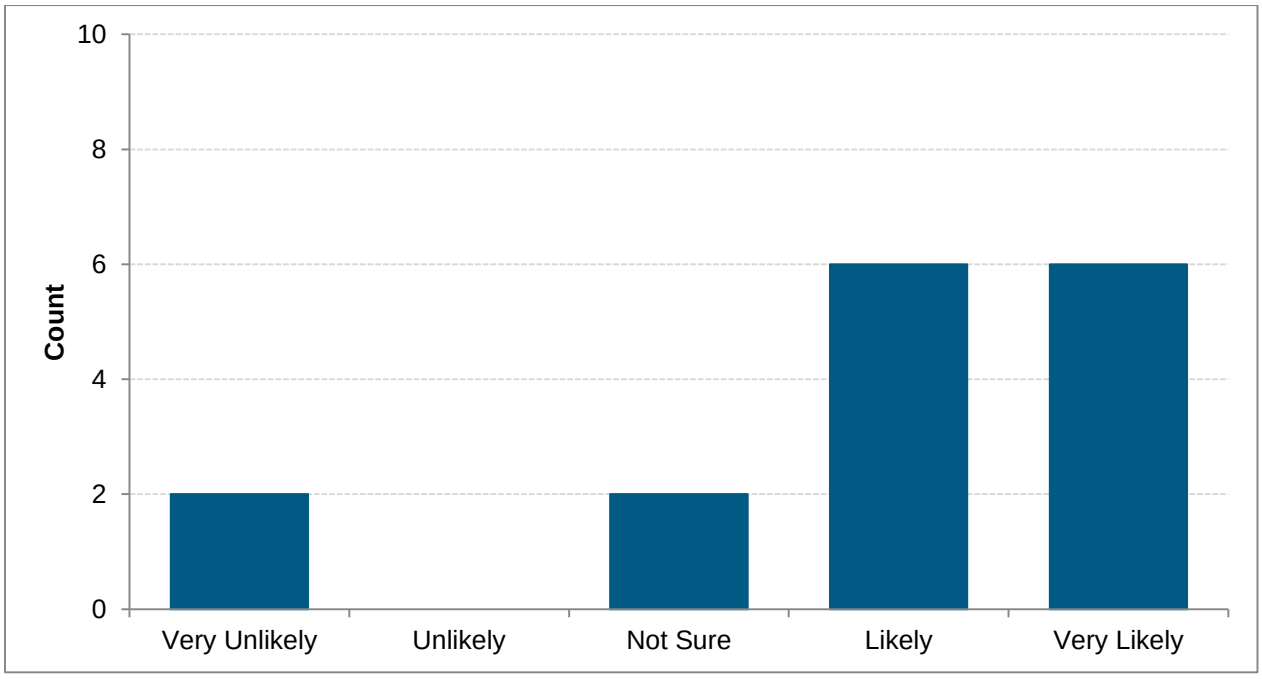


Figure 8. Likelihood of attending a course offered at Oxford County Public Health.



Additional comments provided by respondents at the end of the survey provided helpful insight into the development of a training course. Overall, the operators were thankful for the health unit looking into the possibility of offering a course. One stated that they had “been waiting for a local training opportunity” for their staff, and another respondent wrote they thought “it would be beneficial for Public Health to facilitate this course in the coming years.”

Providing specific feedback on potential course content, one operator suggested that all aspects of running a public facility should be incorporated. According to the operator this included learning how a pool runs mechanically to maintaining proper pool chemistry and safety. A recommendation was also made to be “mindful of budget restraints” of the attending organizations. Additional feedback included another operator explaining that an afternoon/evening course would work best for part-time employees (students). It was also requested that the course be offered at an actual pool facility central to operators: one operator responding to the survey even offered to host the course and aid in its development.

Focus Group

Two focus groups were held at Oxford County Public Health and each lasted approximately 30 minutes in length. Five PHIs participated in the first focus group and four participated in the second focus group.

Overall, there was agreement among the PHIs that offering a course at Public Health could be valuable to operators in Oxford County. It was suggested there is a “need for it” and that in general, the PHIs “could improve the knowledge amongst operators” on how to run their facilities. When discussing which method of training delivery would be better between online or in-class, many pros and cons were raised for each. A big advantage of online courses, according to the PHIs, was that they offered flexibility to the operators and would require fewer resources (time, instructors) than conducting an in-class course. Ultimately, however, the PHIs conceded that an in-class course would be a more engaging learning environment for operators. To accommodate as many operators as possible, the PHIs agreed that a course should be offered multiple times a year during the spring or fall, and not during the busy summer season for recreational water facilities. Regarding format of delivery, it was suggested it may be beneficial if training were offered at an actual recreational water facility to provide a visual demonstration of a facility in compliance with the OPHS regulations (e.g., proper signage, functioning equipment, etc.). If this is not feasible, using videos was recommended as an

alternative method to provide a visual demonstration of a facility in compliance with the OPHS regulations.

When discussing possible course content and reviewing the topics outlined in the *Recreational Water Protocol*, there was agreement that the PHIs could cover all areas to some extent. The PHIs specified they would feel comfortable teaching about the regulations and what is required to keep a pool in compliance under the topics from an inspection stand-point, noting that operators would "benefit greatly from learning about pool and spa legislation." They also agreed that it could be beneficial to provide some insight as to why the different parameters are important from a public health lens. The PHIs suggested that the regulations around pool chemistry would be particularly important to cover as many operators seem to struggle in this area. There was some expression of concern, however, about getting into the more technical aspects of pool operation, such as how to remedy a chemistry imbalance. The PHIs expressed that this type of training is outside the scope of their expertise and responsibility and should be left to a third party company specializing in these areas. They also agreed the course must be advertised in a clear and careful way not to represent it in this way. There was also agreement that it would be key to provide a good manual for operators to refer to following the training.

All the PHIs indicated that they would likely require additional education, such as taking a pool operator training course, if they were deemed responsible for teaching a course to operators. Some PHIs had taken pool operator courses previously and found the course very useful, but would want to take it again as a refresher.

The PHIs also raised some concerns about attendance and ensuring those operators who are actually in need of additional training are the ones actually showing up to the course. As one PHI voiced, "my only concern is that the good pool operators would be the ones to attend…I want to make sure the ones who don't understand, are [the ones] coming [to these courses]." An additional concern was that PHIs felt as though past education provided to certain operators during routine inspections were ineffective in changing non-compliant pool operation practices, so they questioned whether or not providing a course at Public Health would be any more successful than their past on-site training. These concerns lead into a discussion about incentive and enforcement options available to the PHIs to attract more operators to take the course. The PHIs suggested that it would be beneficial if short-form wording were to become an option for enforcing recreational water regulations similar to what is available to enforce food safety regulations. If short-form wording were to become available a ticket could be issued upon

inspection, rather than the current *Provincial Offenses Act* part III summons process which involves going through the court system. The incentive to take the course would then be that the operator "may not get as many tickets because [they] would have been educated." The PHIs suggested short-form wording could indirectly increase attendance at the training course, as they could put in an actual order at the inspection to take the training course. Providing incentives, such as entering course registrants into a draw for a chance to win a pool test kit to attendees was also suggested as a method to increase course attendance.

Discussion and Recommendations

The results from this multi-faceted situational assessment showed that there were many overlapping preferences with regards to recreational water safety training methods. When making a decision about how to meet the OPHS requirement regarding recreational water training, there has to be careful consideration of all the stakeholders' opinions and preferences identified in the surveys and focus groups. Ideally, preferences of every stakeholder will be met to the maximal extent possible; however, in reaching this end, there will also have to be some compromise.

Regarding method of course delivery, there was an equal split in preference of the operators between an online course and an in-class course. However, the PHIs acknowledged that an in-class course may be more beneficial for the operators and thus suggested this option may be the best to pursue. Operators, PHIs, and other health units all suggested that training should be as interactive as possible with case studies, practical examples, and opportunities for participation. It was suggested that delivering the course at an actual recreational water facility could provide operators with visual instruction using the actual equipment, record keeping, and chemical testing required under the recreational water regulations. However, depending on the number of operators enrolled in the course and the location of the facility, this option may not be the most feasible. Instead, videos could be used an alternative method to supplement the lectures as a means to enhance operator learning.

To ensure optimal attendance, it was suggested that any future course be offered at a date and time that works best for operators. In this regard, consensus was that the best time of the year to offer the course would be the early spring because it was right before the busy pool season for seasonal operators. This would also allow for the knowledge acquired from the course to be applied into practice right away. Having the course offered during the work day (morning or

afternoon) was preferred over the evenings, and it was suggested by other health units that a 3 to 3.5 hour course would be an appropriate length to cover the material. Offering the course on a couple different dates or polling operators to determine their preferred date and time prior to the course could also be options to obtain optimal attendance.

The PHIs agreed they can teach all of the topics outlined in the *Recreational Water Protocol*, from an inspection stand-point, to help operators understand what is being looked for to keep their facilities in compliance. It was agreed that a training course also provides an excellent opportunity to share the public health relevance of the regulations. The operators indicated they were interested in learning more about each of the topics from the protocol, especially the public health legislation and regulations, and pool chemistry topics. This correlates with past infraction records from the years 2011-2015 which indicate the highest number of infractions occur in the areas of water testing, record keeping, and water chemistry (see appendix B for complete infraction analysis). In their evaluation, one of the other Ontario health units offering the course found “skill or knowledge level” as a significant barrier to operators properly maintaining their facility, and providing operator training was shown to increase knowledge level. The limited literature available on operator training also supports the usefulness of a course in reducing infractions and limiting immediate closures per inspection.[4,5,6]

Operators, PHIs, and other health units all suggested the provision of a good manual for operators to refer to following the training session would be beneficial. As agreed upon by the PHIs, those operators wishing to receive further technical direction on how to operate a pool should be advised to take further training through an external company specializing in these areas (e.g., Lowry School of Pool and Spa Chemistry).

Possible next steps going forward include designing an in-class course covering the topics outlined in the *Recreational Water Protocol* from an inspection stand point, and preparing a thorough manual to provide operators with an additional education resource. Furthermore, consideration can be made as to how to make teaching materials more accessible to those operators who prefer to receive training online. With the limited enforcement options available to PHIs upon inspections of recreational water facilities, there is opportunity for advocacy at the provincial level for establishment of set fines and short form wording for offences under O. Regulation 565 (Public Pools) and O. Regulation 428/05 (Public Spas). This would give PHIs a tool to encourage those operators not running facilities in compliance to take further training. Currently, the MOHLTC is undertaking a review of the regulations under the *Health Protection*

and Promotion Act that govern food and water safety in Ontario, with updates expected to be released in 2017. An enforcement strategy used by Toronto Public Health that may be worth considering at Public Health would be to implement a program which requires public pool and spa operators to post inspection reports, issued by the Medical Officer of Health, in a clearly visible place near the entrance of the facility.

Conclusions

There is consensus between the other health units in Ontario, the operators in Oxford County, and the PHIs at Oxford County Public Health that the provision of a course would be beneficial. Public recreational water facilities can pose a significant health and safety risk to the public if not maintained according to regulations. The offering of a recreational water safety training course offers a real opportunity to ensure the safe operation of the recreational water facilities in Oxford County.

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Appendix A: Logistics of Health Unit Courses

Peer Group	Course Delivery	Course Frequency	Course Duration	Course Cost	Average # Participants
Urban Centers	In-Person	Twice per year	5 hours	Free	30-39
	In-Person	Twice per year (more with demand)	3.5 hours (pool only) or 7 hours (pools, spas, splash pads)	$25 for half or full day	30-39
	In-Person	Once per year	6 hours	$40	30-39
Urban/Rural Mix	Online	Continuous (online)	Dependent on operator	Free	10-19
	In-Person	Once per year	3 hours	Free	20-29
	In-Person	Once every other year	3.5 hours	$20	10-19
	In-Person	Twice per year	3 hours	Free	50+
	In-Person	Once per year	3 hours	Free	50+
	In-Person	Once per year	6 hours	$40	30-39
Mainly Rural	In-person	Once per year	2 hours	Free	Course not yet ran

Appendix B: Infraction Analysis

Category	2011	2012	2013	2014	2015
Signs and Markings	**21**	**11**	**5**	**6**	**5**
Admission standards signs posted at facility entrance and two other locations within pool enclosure	1	3	0	2	2
7 point rule sign posted	3	2	1	0	0
Pool rules notices displayed with complete information	1	0	2	3	0
Emergency telephone sign posted and complete list of emergency contacts	2	0	1	0	0
Written emergency, and operational procedures and instructions available at the pool	3	2	0	0	1
Shallow water/No diving signs (pool depth <2.5 meters)	2	1	0	0	0
Shower signs posted at each shower and every entrance to the deck used by bathers (Every bather shall take a shower)	5	1	0	1	0
Depth markings present in appropriate locations	4	0	1	0	1
Class B Pool safety supervision signs posted in letters at least 25 mm high	0	1	0	0	1
Black disc (150 mm in diameter) on white background affixed to bottom of pool at its deepest point	0	1	0	0	0
Safety Equipment	**16**	**7**	**10**	**5**	**10**
Safety equipment available and in good repair (2 buoyant throwing aids with attached rope half width of pool + 3 meters, spine boards and straps, fully supplied first aid box)	11	6	8	2	5

Emergency stop button requirements met	2	0	0	1	0
Emergency telephone, cellular phone, or radio device is present and operational	3	1	2	2	5
Water Chemistry/Balance	**27**	**29**	**35**	**21**	**13**
Sufficient supply of chemicals and testing kits	2	0	4	1	0
Chemical feeder/adjustable dosing device is used to administer chlorine, chlorine compound or a bromine compound	3	0	1	1	2
Total alkalinity at a minimum of 80 mg/L (80 ppm)	10	7	4	2	5
Free available chlorine (FAC) a minimum of 0.5 mg/L (0.5 ppm); stabilized FAC at a minimum of 1.0 mg/L (1.0 ppm) when used with cyanurate stabilization	2	2	5	2	0
Total bromine (Br) residual at a minimum of 2 mg/L (2.0 ppm)	1	0	1	3	0
Free available chlorine (FAC) or total bromine within range of 5-10 mg/L	3	4	5	2	1
pH between 7.2 and 7.8	3	9	9	6	1
Cyanuric acid is not greater than 60 mg/L (60 ppm)	3	1	3	3	1
Water clarity satisfactory; black disk clearly visible 9 meters away	0	6	2	1	0
Safe storage and handling of chemicals	0	0	1	0	2
Oxidation Reduction Potential (ORP) value is a minimum of 700 mV (if equipped with automatic sensing device)	0	0	0	0	1
Safety supervision	**0**	**0**	**0**	**0**	**2**

Safety supervision requirements met (lifeguard/bather ratio)	0	0	0	0	2
Water Testing and Record Keeping	**19**	**21**	**15**	**16**	**20**
Daily records completed and signed	9	8	6	9	14
FAC or total bromine residual and pH are tested and recorded before and during pool operation (if no automatic sensing device)	4	8	5	4	5
Manual testing recorded once a day for pools with automatic sensing devices (pH, FAC and total CL or Br only)	3	0	1	0	1
Ground fault circuit interrupter (GFCI) tested daily before pool/spa is open	0	0	0	1	0
Drain and outlet covers are secure and inspected at least once in every 30 days	3	5	3	2	0
Pool and Surrounding Area Operation and Maintenance	**21**	**9**	**26**	**22**	**16**
Continuous operation of all equipment and chemical feeders	1	0	3	0	1
Decks, surfaces, walls, sanitary facilities, and adjoining areas kept in safe and sanitary condition free from hazards	7	2	10	14	6
Recirculation system of water facility is in good working condition	1	1	2	0	0
Recirculating system equipped with a disinfection system capable of inactivating cysts/oocsyts e.g. UV light & turbidity meter	2	0	0	0	0
Back-flow preventers in good working order	1	0	0	0	0
Water meter registers the volume of make-up water (30 litres per bather per day to a max of 20% (spa >4000L)	0	2	3	3	2
Make-up water requirements met	0	0	1	1	5

Exposed piping within pool enclosure is properly colour-coded	7	2	2	2	0
Equalizer fittings rendered inoperable	2	1	1	2	0
Perimeter pool drain is kept free from debris	0	0	1	0	2
Water facility inaccessible when closed	0	0	2	0	0
Spa water heater equipped with an operational tamper-proof upper limit cut-off switch	0	1	0	0	0
Suction system equipped with a vacuum release mechanism	0	0	1	0	0

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