



## Scientific Advisory Council Answers COVID-19 and Aquatics

### **Questions to be addressed:**

The emergence of the coronavirus disease 2019 (COVID-19) pandemic has raised questions among aquatic facilities, lifeguards and instructors about the operation of aquatic facilities, education of lifeguards and lifeguarding rescues and resuscitation, and delivery of American Red Cross courses. This document provides guidance to Red Cross instructors, aquatic facility operators, and students. In addition, lifeguarding students may have questions about alterations to rescues and resuscitation during the COVID-19 public health emergency.

The recommendations in this document are based on the latest information from the Centers for Disease Control and Prevention (CDC). Aquatic facility operators and lifeguards should be aware that state and local officials may put in place orders that would further affect operations.

1. When is it safe for our aquatic facility to re-open?
2. What are the general aquatic-related COVID transmission risks?
3. In planning to open what policies and procedures should be in place?
4. Upon reopening, what social distancing measures should be applied to changing areas, pool deck areas, and swimming areas?
5. Upon reopening, which activities should be allowed and what precautions should be taken for each?
6. What precautions should be put in place for people at higher risk of serious disease?
7. What screening measures should be utilized for patrons and staff entering the facility?
8. What personal protective measures should be utilized by patrons and staff within the facility?
9. Are there any COVID-specific changes which should be made to pool/hot-tub cleaning and maintenance operations?
10. What cleaning methods should be used for facilities?
11. What practices should be employed to improve the safety of lifeguards during in-service training?
12. What personal protective measures should be employed by lifeguards responding to medical emergencies?
13. What adaptations should be employed by lifeguards performing rescues?
14. What adaptations to resuscitation should be made?

**Answer:**

**1. When is it safe for our aquatic facility to re-open?**

Many municipalities are beginning to allow the reopening of businesses and public spaces, with large regional variability in terms of timelines and policies. The federal government released the “Opening Up America Again” guidelines, which outline a phased approach to reopening municipalities. This framework is then adapted by state and local authorities. These guidelines in combination with state and local authority’s orders should be reviewed by facility leadership to determine if the region in which their facility functions has met the guidelines criteria for beginning reopening and if their facilities can open while meeting restrictions in place. If the decision is made to begin reopening, the primary factor which will guide the facility’s timeline and policies is the physical space available to allow for proper distancing. This topic is covered in more detail throughout this document. A secondary factor will be understanding the steps and modifications lifeguards will need to make and whether those can be implemented.

**2. What are the general aquatic-related COVID transmission risks?**

There is currently no evidence to suggest that COVID-19 is spread person to person via the water in environments such as pools or spas. The primary spread in these environments would be by close proximity of individuals, which is often encountered during recreation or exercise activities. Additionally, close quarters such as facility classrooms, locker rooms, and other common spaces are potential environments for increased risk of disease transmission. There is also risk of transmission for lifeguards during rescues and removals from the water where the guard may be in close proximity to the victim. Lastly, while not the primary method of transmission, there is the possibility of transmission via surfaces at the facilities.

**3. In planning to open what policies and procedures should be in place?**

As a facility plans to reopen it is vital to have the proper policies and procedures in place that address operations, emergencies, staff, and patrons. These should include at a minimum as appropriate:

- Policies and procedures for social distancing and the use of personal protective equipment at work.
- Policies and procedures for sanitizing and disinfecting common and high-traffic areas.
- Policies and procedures related to symptom screening, such as temperature checks and questionnaires.
- Policies and procedures for addressing a sick staff member or patron including approaches to closing, cleaning and notification of local public health.
- Policies and procedures to assign specific staff to monitoring social distancing and wearing face coverings and prohibition of lifeguards who are watching bathers from participation in these activities which can be distracting.

- Policies and procedures related to testing for COVID-19.
- Policies and procedures for responding should an employee develop symptoms of, or test positive for, COVID-19 while at work, such as procedures for isolating the ill employee, performing contact tracing and deep cleaning the workplace and requirements that must be met for the employee to return to work.
- Policies and procedures related to business travel.
- Policies and procedures related to sick leave.
- Policies and procedures related to teleworking.

**4. Upon reopening, what social distancing and other measures should be applied to changing areas, pool deck areas, and swimming areas?**

Once the decision is made to reopen as allowed by state and local authorities, modifications of operations, facility changes and installation and signage will need to be planned and implemented. The plans for social distancing, occupancy limits, group size limitations and additional actions should consider state and local orders and guidance.

- Lifeguards who are actively lifeguarding should not be expected to monitor handwashing, use of face coverings or social distancing. This responsibility should be assigned to another staff member.
- Current recommendations for proper distancing should be taken into consideration to determine capacities for the facility, locker-rooms, classrooms, offices, food service areas (as allowed to be opened) and pools and spas.
- All appropriate measures should be taken to allow for proper distancing throughout a facility. This also includes instructions for bathers to keep separated and for no contact between bathers.
- Additionally, deck organization of chairs and social areas should be reconfigured to adhere to these recommended distances.
- Provide physical cues or guides (for example, lane lines in the water or chairs and tables on the deck) and visual cues (for example, tape or decals on the decks, floors, or sidewalks) and signs to ensure that staff, patrons, and swimmers stay at least 6 feet apart, especially for all areas where lines may form, such as entrances to facility and locker rooms.
- Staggering use of communal spaces and water areas may provide an additional method to maintain social distancing and limit group sizes and overall occupancy.
- Sufficient facilities for hand hygiene need to be provided. Supplies should include soap, hand sanitizer with at least 60 percent alcohol (for staff and older children who can safely use hand sanitizer), paper towels, tissues, and no-touch trash cans.

- Facilities should ensure that there are hand sanitizer stations throughout the facility to supplement hand washing areas and locations where hand washing is not immediately available, including but not limited to:
  - Facility entrance
  - Exiting the water
  - Areas for food service
  - Entrance to classrooms, meeting rooms, staff break areas, locker rooms and changing facilities.
  
- Processes and directions to patrons should be established to avoid sharing of objects to include:
  - Discouraging people from sharing items that are difficult to clean, sanitize, or disinfect or that are meant to come in contact with the face (for example, goggles, nose clips, and snorkels).
  - Ensuring adequate equipment for patrons and swimmers for the day or limiting use of equipment by one group of users at a time to allow sufficient time for cleaning and disinfecting between use.
  - Place signage throughout the facility to address at a minimum the following:
    - At entry to facility screening criteria and questions
    - Cloth face covering requirements
    - Encourage hand hygiene and covering your cough and sneeze
    - Social distancing requirements including bather separation and no contact between bathers
    - Modification of normal procedures and activities
      - Limitations on bathers
      - Changes in swim lanes
      - Alterations in exits and entrances to facilities, rooms, food service areas and facility
      - Closure of areas

The CDC has templates which can be used to help create facility signage.

**5. Upon reopening, which activities should be allowed and what precautions should be taken for each?**

Resuming facility activities should be dependent upon the facility's ability to properly adhere to state and local orders and good practices which include but are not limited to adjusting the numbers of patrons, distancing patrons for each activity, and adaptation of operational approaches. Some examples include:

- If lap swimming occurs at the facility, reconfiguration of lane usage may be necessary based on lane width and proximity.
- If organized aquatic exercise courses occur at the facility, the number of participants should be determined by the available exercise area to allow for proper distancing.

- Swim lessons and swim practice may be conducted only if the available space and skill of the swimmers allow for proper distancing between instructors and participants.
- Activities such as water polo, which necessitate close proximity of participants, should not commence upon re-opening.

**6. What precautions should be put in place for people at higher risk of serious disease?**

Facilities should consider process to provide protections for patrons at higher risk of serious disease which can include:

- Specific times reserved for those at risk of more serious disease (ie, early morning hours, prior to arrival of other patrons with a lesser risk of serious disease)
- Segregated areas and classes for those at risk of more serious disease

**7. What screening measures should be utilized for patrons and staff entering the facility?**

Staff should be asked to self-screen each day prior to coming to the facility and if they have any symptoms or a temperature above 100.4 should not come to work and only return upon meeting facility return to work guidance. Facilities may wish to consider also asking patrons who are scheduled (i.e. attending a class) to self-screen.

Facilities should screen all patrons and staff upon entering. Screening questions should ask if the person has had any of the following over the past 24 hours, and if any of these are present the staff or patron should be excluded from entry:

- Temperature is or has been greater than 100.4 degrees Fahrenheit (38 Celsius)
- Coughing
- Shortness of breath or difficulty breathing
- Chills
- Repeated shaking with chills
- Muscle pain
- Headache
- Sore throat
- New loss of taste or smell
- Close contact with person with any of the above symptoms or known COVID-19

Temperature checks at a facility entrance may be considered based on local/regional guidelines/regulations and available resources. If the decision is made to perform temperature checks, proper personal protective equipment (PPE) should be worn by screening staff and cleaning of thermometers after each patron screening should adhere to CDC guidelines.

**8. What personal protective measures should be utilized by patrons and staff within the facility?**

As recommended by CDC, the wearing of cloth face coverings by all patrons and staff at the facility is considered good practice. Mandating cloth face coverings for all patrons should follow local regulations and practices. All staff should be mandated to wear cloth face coverings while at facilities. The general use of N95 masks during normal business operations is unnecessary. It should be recognized that visitors will need to lower masks when entering the water and when eating and drinking. Staff will also need to lower their masks for eating and drinking and any water activities including rescues.

Staff should wear disposable gloves when fulfilling duties requiring close contact with patrons and their personal belongings, such as cash payments, checking identification, and using shared writing utensils. Efforts should be taken by facilities to minimize these interactions through the use of contact-free payments, patron-swiping of entrance cards and discontinuation of sign in systems where not absolutely necessary. After removal of gloves staff should perform hand hygiene.

Staff should wear appropriate PPE when cleaning surfaces, collecting shared-use items such as pool equipment, fitness equipment, towels, and chairs. Shared-use systems for equipment, chairs, and towels should be minimized or discontinued if possible.

**9. Are there any COVID-specific changes which should be made to pool/hot-tub cleaning and maintenance operations?**

During this time of unknowns, scientists feel that free chlorine and bromine as primary disinfectants are adequate to deactivate SARS-CoV-2 at acceptable levels. Using chlorine at the ideal levels of free chlorine from 2 ppm to 4 ppm with a maximum of 10 ppm would be recommended. This would help ensure that all areas of circulating water in the swimming pool or spa are disinfected. Using bromine at the ideal levels of 4 ppm to 6 ppm with a maximum of 8 ppm would also be recommended. Cyanuric acid should not be used in spas or therapy pools at any time. If cyanuric acid is used in an outdoor swimming pool, the ideal range is 30 to 50 ppm and the chlorine levels should be maintained at the higher end of ideal. Testing of the disinfectant level and pH should be done on a frequent basis and in as many different areas around the pool/spa water to ensure adequate distribution of disinfectants. The ideal pH range would be from 7.4 to 7.6 for proper disinfection rates.

**10. What cleaning methods should be used for facilities?**

Facilities should refer to the Environmental Protection Agency website List N: Disinfectants for Use Against SARS-CoV-2. Refer to your Certified Pool Operator to ensure that the disinfectants are safe for use in contact with chlorinated pool water and consulting with the company or engineer that designed the aquatic venue to decide which are appropriate for the all areas of the facility. When using these agents follow manufacturer recommended PPE and processes.

Facilities should put in place procedures for cleaning and disinfecting frequently touched surfaces at least daily and shared objects each time they are used. These include but are not limited to:

- Handrails, slides, and structures for climbing or playing
- Lounge chairs, tabletops, pool noodles, and kickboards
- Door handles and surfaces of restrooms, handwashing stations, diaper-changing stations, and showers

Procedures should also be established for:

- Systems so that furniture (for example, lounge chairs) that needs to be cleaned and disinfected is kept separate from already cleaned and disinfected furniture.
- Labeling containers for used equipment that has not yet been cleaned and disinfected and containers for cleaned and disinfected equipment.
- Laundering towels and clothing according to the manufacturer's instructions. Use the warmest appropriate water temperature and dry items completely.
- Protecting shared furniture, equipment, towels, and clothing that has been cleaned and disinfected from becoming contaminated before use.
- Ensuring safe and correct use and storage of disinfectants, including storing products securely away from children.

#### **11. What practices should be employed to improve the safety of lifeguards during in-service training?**

Facilities should optimize distance learning and limit class sizes as per local guidelines. Classroom settings should maintain proper social distancing of at least 6 feet. Additionally, current COVID-19 specific recertification updates should be reviewed to determine the need for courses and to determine which type of courses (live vs virtual) will suffice.

All participants should be pre-screened upon arrival and use cloth face coverings when out of the water. Each participant should have their own cloth face covering.

Each instructor and student should have their own manikin, educational equipment and disposable equipment. All manikins and shared instruction materials should be decontaminated between use. For manikin cleaning and disinfection follow manufacturer's guidelines. In addition, the Red Cross provides general guidance on manikin decontamination.

When social distancing requirements are in place based on state and local orders, only training which allows for this distance and without contact between students and instructors can be conducted. If social distancing requirements are relaxed for this type of training, efforts should still be in place to minimize close proximity and contact of students and instructors to those activities which cannot be performed without this close

contact. Contact rescues and team-based CPR training can still be conducted with all of the above caveats.

The Red Cross has developed social distancing guidance for resuscitation education and “Interim Virtual Skills Training” for portions of its Lifeguarding courses. Facilities with access to instructor updates should review this material when planning and implementing courses.

**12. What personal protective measures should be employed by lifeguards responding to medical emergencies?**

With entrance screening, all patrons and staff can be at a lower risk for having active COVID infection, with the caveat that there is a chance for asymptomatic carriers. With this knowledge, if a patron or staff member presents for medical care, a distance of 6 feet should be maintained between the provider and patron, if feasible, for initial history taking for non-emergent conditions and for where no care may be needed. The patron should be wearing a face covering if they are in the facility. If they are not wearing a face covering, they should be asked to put their face covering on or provided one if the condition permits. Screening for COVID-19 symptoms should be included in the history.

If it is necessary to make direct contact with a patron or staff member for a medical emergency, the number of providers should be kept to the minimum required to provide proper care. PPE should be chosen based on the person’s condition.

For care provided to patrons or staff who have developed symptoms concerning for COVID-19, or who, based on information obtained are possible COVID-19 patients, in addition to the above precautions, providers should wear a simple face mask, eye protection gloves and gown. If aerosol generating procedures (i.e. suctioning, intubation, etc.) are anticipated, then providers should wear an N-95 mask. It is important to emphasize to providers that care should not commence on persons suspected of being infected with COVID-19 until all proper PPE is donned. For persons with possible or confirmed COVID-19 who are in cardiac arrest, one can consider immediate defibrillation, before donning PPE or donning additional PPE in situations where the provider assesses that benefits may exceed the risks.

**13. What adaptations should be employed by lifeguards performing rescues?**

For aquatic rescues, every effort should be made to minimize direct contact and face-to-face interactions with patients and to allow lifeguards to continue wearing a face covering. It is recognized that when lifeguards enter the water face coverings will need to be removed. When facilities open, they need to recognize that there may be situations in which lifeguards will need to perform in-water rescues that will require removal of their face coverings.

Maneuvers to reach the person while remaining on the deck, by way of extending or throwing a rescue device, should be prioritized if conditions permit. For rescues requiring



entry into the water by the lifeguard, the use of equipment to distance the rescuer from victim should be employed if feasible.

If direct contact is necessary based on the person's condition, employing a rear approach and rescue to return the person to the deck is ideal, to minimize rescuer exposure to the person's face without protection.

For removal from the water, if possible, this should be performed by personnel on the deck who are wearing face coverings or PPE as indicated.

Facilities incorporating in-water resuscitation (IWR) (providing positive pressure ventilations in the water) should consider temporarily discontinuing this practice on the basis that it requires the use of mouth-to-mouth or mouth-to-mask ventilations without the degree of protection that would be recommended during the current public health emergency. Filters for pocket masks will vary greatly and may either not function in water or are a simple one-way valve that has not been tested for protection against COVID-19 transmission. Modifying rescue protocols to rapidly extricate the patient to the deck and initiate ventilations with a bag-valve-mask (BVM) and in-line HEPA filter is currently the best practice to ensure rescuer and staff safety. When applying BVM ventilations, emphasis should be given to maintaining a two-handed mask seal throughout ventilations and compressions.

#### **14. What adaptations to resuscitation should be made?**

There are currently no specific data on COVID-19 transmission in the setting of cardiac resuscitation. Based on studies of other disease transmission, it is reasonable to conclude that chest compressions and cardiopulmonary resuscitation have the potential to generate aerosols.

While there would be a risk of disease transmission when performing CPR on a person with COVID-19, compression-only CPR may be associated with a decreased risk of transmitting the virus compared to CPR with rescue breathing. In addition, placing a cloth face covering over the victim's face can further reduce the risk of virus transmission during CPR.

For all drowning victims and pediatric patients, the benefit of positive pressure ventilations in addition to compressions should not be overlooked. Adequate PPE and resuscitation equipment to safely perform CPR with ventilations must be available prior to facilities opening.

CPR with ventilations has been shown to have a benefit compared with compression-only CPR for adults with a non-hypoxic cardiac arrest. However, due to the risk of virus transmission during intubation and ventilation, consideration should be made in facility procedures for performing compression-only CPR until needed PPE is available, with a face covering on the victim.

## Scientific Advisory Council Answer COVID-19 and Aquatics

As feasible, limit personnel in the resuscitation area to only essential personnel.

Ventilations should be performed using a BVM with high-efficiency particulate air (HEPA) filtration in the exhalation path per manufacturer recommendations as feasible. BVM ventilation provides distancing of the provider's face from the victim's face, providing the best protection from transmission. While ventilations using a pocket mask with a one-way valve does provide protection compared with mouth to mouth ventilations, it puts the provider in close contact with the victim and does not facilitate the use of a HEPA filter. BVM ventilation is best delivered with two rescuers, but in the absence of sufficient rescuers a BVM can be used by one provider.

## Scientific Advisory Council Answer COVID-19 and Aquatics

### **References:**

#### ARC SAC

Scientific Advisory Council Answer SARS-CoV-2 and COVID-19

Scientific Advisory Council COVID-19 Instructor Information

Scientific Advisory Council Answer COVID-19 and Resuscitation

#### Other References

Anesthesia Patient Safety Foundation <https://www.apsf.org/novel-coronavirus-covid-19-resource-center/>

Coronavirus Disease 2019 (COVID-19). Center for Disease Control and Preventions (CDC). Available at: <https://www.cdc.gov/coronavirus/2019-ncov/index.html>. Accessed May 18, 2020

Centers for Disease Control (CDC) Interim Infection Prevention and Control Recommendations for Patients with Suspected or Confirmed Coronavirus Disease 2019 (COVID-19) in Healthcare Settings. <https://www.cdc.gov/coronavirus/2019-ncov/hcp/infection-control-recommendations.html> Accessed May 18, 2020

CDC Considerations for Public Pools, Hot Tubs, and Water Playgrounds During COVID-19. <https://www.cdc.gov/coronavirus/2019-ncov/community/parks-rec/aquatic-venues.html> Accessed May 18, 2020

International Liaison Committee on Resuscitation COVID-19 infection risk to rescuers from patients in cardiac arrest (draft) <https://costr.ilcor.org/document/covid-19-infection-risk-to-rescuers-from-patients-in-cardiac-arrest>

Chen N, Zhou M, Dong X, et al. Epidemiological and clinical characteristics of 99 cases of 2019 novel coronavirus pneumonia in Wuhan, China: a descriptive study. Lancet. January 2020. doi:10.1016/S0140-6736(20)30211-7.

<https://health.mil/News/In-the-Spotlight/Coronavirus>

<https://health.mil/News/Articles/2020/01/24/Coronavirus> Centers for Disease Control (CDC) Interim Guidance for Emergency Medical Services (EMS) Systems and 911 Public Safety Answering Points (PSAPs) for COVID-19 in the United States from the CDC. <https://www.cdc.gov/coronavirus/2019-ncov/hcp/guidance-for-ems.html>

Rabenau HF1, Kampf G, Cinatl J, Doerr HW. Efficacy of various disinfectants against SARS coronavirus. J Hosp Infect. 2005 Oct;61(2):107-11.