



LIFESAVING SOCIETY®
SOCIÉTÉ DE SAUVETAGE

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Les experts en surveillance aquatique

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Information Bulletin

COVID-19 Resuscitation & First Aid Recommendations

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Background

When the process of drowning begins, the outcomes are often fatal. Unlike other injuries and many diseases, survival from drowning is determined almost exclusively at the scene of the incident and depends on two variable factors: 1) how quickly the person is removed from the water, and 2) how quickly effective resuscitation is performed.

In the COVID-19 era, lifeguards now face a decision about how to balance their own safety while providing life-saving care. There is evolving and clear evidence on how dangerous the SARS-CoV-2 virus can be, however, several things must be considered with first aid and resuscitation situations, including:

- Individuals with moderate or severe infections are unlikely to be participating in water-related activities.
- Most individuals who become infected will experience only mild or no symptoms.
- Access and wear of properly fitted personal equipment, good hand hygiene, health screening at recreation sites, and adherence to widely accepted COVID-19 protocols can significantly decrease exposure to the SARS-CoV-2 virus and therefore risks to rescuers.
- Rescuers should always assess the risk of providing care, this includes an assessment of their own health status. Evidence shows that persons (rescuers) with underlying health problems and older staff are more likely to develop severe forms of COVID-19. During times of high community infection rates, staff at higher risk should be reassigned to duties that do not involve direct public interaction.
- Employers have the duty to provide appropriate protective equipment so that employees can respond safely.

Since complete risk aversion to SARS-CoV-2 is impossible in a public setting, any attempt at first aid or resuscitation comes with a risk of coronavirus contamination. As there is no one-size-fits-all solution on how best to manage this new reality, this document provides principles to mitigate risk for improved safety.

Implementation

Levels of Risk and Personal Protective Equipment (PPE)

Due to the nature of COVID-19 as an aerosol transmitted pathogen, first aid protocols have been categorized into low-risk and high-risk categories. High-risk protocols include all treatments that are aerosol generating, while non-aerosol generating protocols fall under the low-risk category.

Rescuers don PPE in accordance with the level of risk they encounter. Identified high-risk (aerosol-generating) protocols include:

- Chest compressions
- Ventilations
- High-flow oxygen administration (greater than 5 lpm)
- Suction
- Abdominal thrusts and back blows

All rescuers within 2 meters of the victim must don appropriate PPE for high-risk protocols (Appendix A).

Mitigating Risk of Infection When Administering CPR for a Drowning Victim

In consideration of rescuer safety, many training organizations are recommending a shift in resuscitation procedures to using compression-only CPR.

As drowning is a hypoxic event, any delay in ventilation increases the likelihood that the victim's condition will deteriorate, thereby increasing the likelihood of mortality. Drowning is considered a "special circumstance" where ventilations should be prioritized to positively affect victim outcome.

Due to the risk of transmission, mouth-to-mouth ventilations and in-water ventilations (with or without a mask¹) should not be performed. All rescue masks should have a viral filter, which must remain dry. Wet viral filters perforate and break easily leading to unsafe direct air exposure.

Rescuers should wear gloves for all first aid interventions or at the latest, immediately after removing a victim from the water. Unless precluded by circumstances, such as the retrieval of a drowning victim, rescuers should always wear a properly fitted mask.

Recent laboratory studies show tightly fitted masks, including approved medical procedure masks and double-masking, reduces exposure to aerosols. It should be noted that double-masking might impede breathing or obstruct peripheral vision for some wearers, and knotting or tucking can change the shape of the mask such that it no longer fully covers both the nose and the mouth of persons with larger faces (CDC February, 2021). It is also reasonable for rescuers to wear face shields with eye protection when performing first aid, if available.

During a resuscitation event, rescuers should minimize the number of people in direct contact with the victim. Likewise, rescuers should also minimize all touchpoints to reduce the likelihood of disease transmission. Gloves combined with an outlook of minimizing all points of contact including with self, mitigate the chance of disease transmission.

¹ Masks provide protection from aerosol transmission of disease, please see Appendix A for a description and classification of the commonly available masks and the appropriate application.

To minimize exposure to the rescuer, the following are ventilation techniques in order of preference:

1. Bag-valve-mask (BVM) with a viral filter; two rescuers with one rescuer maintaining a tight seal during ventilations and compressions.
2. If no BVM is available, or insufficient training, rescuers may consider mouth-to-mask ventilations with a viral filter; two rescuers with one rescuer maintaining a tight seal during ventilations and compressions.
3. If only one rescuer is responding, a pocket mask with a viral filter and head strap may be tightly placed on the victim's face to create a seal.
4. If family members or close contacts, known to be from the victim's 'bubble' are nearby and trained, it is reasonable to see if they would be willing to provide ventilations – as there is an increased likelihood that disease transmission has already occurred.

Following a rescue, the treatment scene should remain quarantined. On egress from the treatment scene, rescuers should eliminate the possible carriage of contaminants by: properly discarding all used protective equipment; isolating all equipment that must be disinfected; arranging for the disinfection of the treatment scene; and following all personal hygiene protocols immediately after the rescue.

Mitigating Risk of Infection When Administering CPR for a Non-Drowning Victim

If there is no history of drowning, it is reasonable for the rescuer to do compression-only CPR until the arrival of appropriate equipment (if not immediately available). During compression-only CPR, rescuers may use a protective covering over the victim's mouth and nose such as a light fabric (e.g. thin towel or light clothing). When the equipment arrives, use the same precautions as for a drowning victim.

Lifeguards not on duty with no access to personal protective equipment should place a protective light covering over the victim's mouth/nose and perform compression-only CPR.

Mitigating Risk of Infection When Administering First Aid

When administering first aid, apply the following principles to help reduce the risk of disease transmission. These principles do not replace first aid assessment and treatment skills, but rather provide supplemental considerations for use throughout the rescue process.

- Rescuers should put on gloves for all first aid interventions or at the latest, immediately after removing a victim from the water.
- It would be reasonable for rescuers to wear masks² and eye protection when performing first aid, if available.
- Maintain physical distancing (2 m) whenever possible.
- Rescuers should minimize the number of people in direct contact with the victim. Likewise, rescuers should also minimize all touchpoints, to reduce the likelihood of disease transmission. Gloves combined with an outlook of minimizing all points of contact including with self, mitigate the chance of disease transmission.
- Victims should be encouraged to wear a mask if tolerated.

² Appendix A description, classification and application.

Following a rescue, the treatment scene should remain quarantined. On egress from the treatment scene, rescuers should eliminate the possible carriage of contaminants by: properly discarding all used protective equipment; isolating all equipment that must be disinfected; arranging for the disinfection of the treatment scene; and following all personal hygiene protocols immediately after the rescue.

Definitions

- **Coronavirus:** Coronaviruses are a large family of viruses, which may cause illness in animals or humans. In humans, several coronaviruses are known to cause respiratory infections ranging from the common cold to more severe diseases such as Middle East Respiratory Syndrome (MERS) and Severe Acute Respiratory Syndrome (SARS). The most recently discovered coronavirus causes coronavirus disease COVID-19.
- **COVID-19:** COVID-19 is the infectious disease caused by the most recently discovered coronavirus. This new virus and disease were unknown before the outbreak began in Wuhan, China, in December 2019. As of January 2020 COVID-19 was declared a pandemic, affecting countries worldwide.

Appendix

- Appendix A: Personal Protective Equipment
- Appendix B: Principles for Mitigating Risk of Infection When Administering First Aid and Resuscitation

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Approval

- Approved by the Lifesaving Society Canada Board of Directors on 15 May 2020.
- Revised and approved by Lifesaving Society Canada's Board of Directors on 16 July 2020.
- Revised and approved by Lifesaving Society Canada's Board of Directors on 26 April 2021

Disclaimer

Lifesaving Society Canada's National Safety Standards are developed using Coroners' recommendations, the latest evidence-based research, and reflect the aquatics industry's best practices at the time the publication was approved.

In the rapidly changing COVID-19 era, Lifesaving Society Canada will update the COVID-19 Information Bulletins as evidence-based research becomes available. The information contained within this document does not replace or supersede local, provincial/territorial or federal health authority guidelines.

Appendix A Personal Protective Equipment

Most PPE components come in different sizes and it is important to stress that PPE does not follow a one-size-fits-all principle. A proper PPE fit is essential to obtain protection; a non-suitable size will not protect its wearer. Employers must ensure that PPE is available in proper sizes, is clean, workers are trained on its proper fit and use, and workers follow established protocols for its use.

Personal Protective Equipment Matrix

NO CONTACT	DIRECT CONTACT	
<p>2m physical distancing is maintained between the rescuer and victim</p>	<p>LOW-RISK Non-aerosol-generating treatment</p> <p>2m physical distancing will compromise victim outcome</p>	<p>HIGH-RISK Aerosol-generating treatment</p> <p>2m physical distancing will compromise victim outcome</p>
<p>RESCUER: face shield/goggles, gloves, surgical mask</p> <p>VICTIM: surgical mask</p>	<p>RESCUER: face shield/goggles, gloves, surgical mask</p> <p>VICTIM: surgical mask</p>	<p>RESCUER: face shield/goggles, gloves, N95/surgical mask, gown</p> <p>VICTIM: BVM with viral filter & continuous seal <u>OR</u> Pocket mask with viral filter & continuous seal <u>OR</u> Non-rebreather face mask with supplemental oxygen and open airway <u>OR</u> Pocket mask with viral filter and head strap <u>OR</u> Surgical mask (compression-only CPR)</p> <p>NOTE: When continuous seal cannot be maintained during compressions, a pocket mask with a head strap to maintain a seal must be put over the victim's mouth and nose (i.e. while the AED is being applied).</p>

Oxygen

The use of high flow oxygen is considered high-risk as it generates aerosols and therefore should be reserved for:

- Victims in need of resuscitation
- Children and infant victims
- Drowning victims

Suction

The use of suction is considered high-risk as it generates aerosols. Clearing an airway using suction is not recommended at this time. Instead, roll the victim to allow drainage and utilize a finger sweep (with proper PPE) if required.

Personal Protective Equipment for Lifeguards

Most PPE components come in different sizes and it is important to stress that PPE does not follow a one-size-fits-all principle. A proper PPE fit is essential to obtain protection; a non-suitable size will not protect its wearer. Employers must ensure that PPE is available in proper sizes, is clean, workers are trained on its proper fit and use; fit testing where required, and workers follow established protocols for its use.

- Staff should be trained in the appropriate use and fitting of PPE.
- Staff responding to first aid incidents should don appropriate PPE depending on the nature of the incident and care being provided.
- In-water rescuers should be given time to dry off and don PPE before assisting with victim care

Respiratory Protection for Rescuers

Masks: Description, Classification and Application

Masks reduce the transmission of aerosolized droplets and protects from contracting aerosol route infection from others by 75%-80%.

- Masks should not be worn in the water by lifeguards and patrons. Masks must be dry to be effective.
- While N95 medical masks are preferred, they may not be readily available at this time as they are currently prioritized for medical use. It is important to note that N95 masks must be individually fit tested.
- If lifeguards are unable to maintain the required 2m distance while on deck and providing safety supervision and rule enforcement of bathers, provide non-surgical mask or cloth face coverings.

Masks that provide protection from aerosol transmission of disease include:

- **Respirator:** a device designed to protect the wearer from inhaling hazardous atmospheres, including fumes, vapours, gases and particulate matter such as dusts and airborne microorganisms. An example would be an N95 mask.
- **Bag-Valve-Mask** with Viral Filter (e.g. HEPA): The viral filter or high-efficiency particulate air (HEPA) filter minimizes the risk of virus spread during ventilations. Viral filters must remain in their original packaging and be dry to be effective.
- **Pocket Mask** with a Viral Filter (e.g. HEPA): The viral filter or high-efficiency particulate air (HEPA) filter minimizes the risk of virus spread during ventilations. Viral filters must remain in their original packaging and be dry to be effective.

- **Surgical Mask** (3-layered): reduces transmission of aerosol by 50% and protects from contracting aerosol route infection from others by 75%-80%. Surgical masks must be dry to be effective.
- **Non-medical mask or cloth face coverings:** Non-medical masks and cloth face coverings may slow the spread of the virus and help people who may have the virus and do not know it from transmitting it to others. Cloth face coverings can be made from household items. Wearing cloth face coverings in public settings where other social distancing measures are difficult to maintain.

Eye Protection

Where possible, face-shields or personal protective goggles may be used. Both face shields and personal protective goggles prevent virus exposure to the eye mucosa. Protective goggles must fit the user's facial features and be compatible with the respiratory protection. Corrective lenses or safety glasses do not provide adequate protection. Protective eyewear may be reused once disinfected.

Hand Protection

Non-latex medical exam gloves should be used. Practice hand hygiene after gloves are removed.

Full Protection

Where possible, long-sleeved water-resistant gowns should be used to prevent body contamination. If water-resistant gowns are not available, remove and launder all clothing once treatment is finished. For both options, practice personal hygiene following use.

Keeping Personal Protective Equipment Organized, Clean and Dry

As certain PPE (such as masks) must remain dry to be effective, it is strongly recommended that PPE storage protocols be added to facility safety plans. For example:

- Each lifeguard will have first contact PPE on their person including gloves and 2 surgical masks. The gloves and surgical masks may be kept in a re-sealable zip-top bag to avoid getting wet.
- Each focal point will have a dry storage container that includes PPE for 2 rescuers and a bystander, resuscitation equipment (BVM with viral filter, etc.), hand sanitizer and disinfection wipes.

Personal Protective Equipment Disinfection

Proper disposal of single-use equipment and proper disinfection of reusable equipment is necessary for ensuring the safety of both staff and patrons. For proper disinfection of reusable equipment, see manufacturer's specifications. Where no specifications exist, the following ratios are recommended.

The Centres for Disease Control and Prevention (CDC) recommend a 1:10 dilution ratio for household bleach, or a 1:20 ratio for commercial sodium hypochlorite solution to disinfect PPE, then let air dry. Typically, 1 to 10 minutes contact time is recommended.

Appendix B

Principles for Mitigating Risk of Infection When Administering First Aid and Resuscitation

The purpose of this section is to assist lifeguards in assessing risk at each step of the rescue process. These principles do not replace lifeguard skills acquired in Standard First Aid. They provide supplemental considerations for use throughout the process to assist in mitigating risk.

Scene Assessment

- Maintain physical distancing (2 m) whenever possible.
- Collect information about the health status of the victim with regard to COVID-19.
 - It is important to pass this information on to EMS, allowing them to provide optimal treatment to the victim.
 - This information may be obtained from the victim, the victim's caregiver, bystanders, etc.
 - Determining the victim's health status and the potential for COVID-19 infection can be accomplished by asking common COVID screening questions.

Primary Assessment

- Maintain physical distancing (2m) whenever possible.
- Determine if the victim's condition requires the lifeguard to make direct contact with the victim. (For clarity on 'no contact' as compared to 'direct contact' first aid treatment, see the [COVID-19 Decision Tree for First Aid and Resuscitation](#) below.)
 - Alternative options may include a caregiver or family member of the victim administering first aid treatment with lifeguard direction (i.e. direct pressure to a wound, cleaning and bandaging, providing ventilation when resuscitation is required, etc.)
 - Don the PPE appropriate to the level of victim contact and first aid treatment required. Both rescuer & victim should don PPE (see Appendix A).
- When victim history indicates positive or suspected COVID-19, inform EMS.
- Regardless of direct or indirect contact, proper hand hygiene is important following all first aid treatment.
 - Proper hand hygiene includes washing with soap and water or hand sanitizer (60% alcohol or higher) for 20 seconds.

Secondary Assessment

- Maintain physical distancing (2m) whenever possible.
 - Only take vital signs that can be observed from a distance (i.e., skin colour, visual breathing check) or are required for victim treatment decisions (i.e., skin temperature of a possible heat stroke victim).

Post Rescue Process

- Take care to remove and dispose of PPE in a safe manner.
- Disinfect all surfaces that may have come in contact with the victim or rescuer during treatment (i.e. chair, clipboard, pen, etc.).
- Where required, practice personal decontamination and disinfect equipment (see COVID 19 Information Bulletin - Cleaning, Decontamination and Safe Water Management of Aquatic Facilities).

COVID-19 Decision Tree for First Aid & Resuscitation

