LIFESAVING SOCIETY®
SOCIÉTÉ DE SAUVETAGE
The Lifeguarding Experts
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: how quickly the person is removed from the water, and 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 much media attention on how dangerous the virus can be, however, several things must be considered:

- 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.
- Proper personal equipment, hand hygiene and screening at sites can help decrease the risk to rescuers.
- Rescuers should always assess the risk of providing care. This includes an assessment of their own health status – senior rescuers with other health problems are more likely to contract severe forms of the disease, and during times with high infection rates should consider doing other duties that does not involve direct public interaction.
- Employers have the duty to provide appropriate protective equipment so that rescuers can respond safely.

Since risk aversion is impossible, any attempt at first aid or resuscitation, may result in self-contamination. As there is no one-size-fits-all solutions to how we manage this new issue, this document will provide principles to ensure staff 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 (great 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 lay-rescuer training organizations are recommending a shift in resuscitation procedures to using compression-only CPR.

As drowning is a hypoxic event, delay in ventilation increases the likelihood that the victim's condition will deteriorate or they may not survive. 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 mask[1]) should not be performed (viral filters must remain dry to be effective).

Rescuers should put on gloves for all first aid interventions or at the latest, immediately after removing a victim from the water. Rescuers should wear masks[2] 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.

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.

[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.

[2] Ibid

4. If family members or close contacts are nearby and trained, it is reasonable to see if they would be willing to provide the ventilations – as there is an increased likelihood that they are already infected themselves.

Rescuers should properly discard all protective equipment after the rescue and wash their hands before continuing with their duties.

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 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 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 masks[3] with 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.
- Victims should be encouraged to wear a mask if tolerated.

Rescuers should properly discard all protective equipment after the rescue and wash their hands before continuing with their duties.

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.

[3] Appendix A description, classification and application.

Appendix

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

References

- American Heart & Stroke, *BLS Healthcare Provider Adult Cardiac Arrest Algorithm for Suspected or Confirmed COVID-19 Patients*, Updated April 2020.
- American Heart & Stroke, *Interim Guidance for Basic and Advanced Life Support in Adults, Children, and Neonates with Suspected or Confirmed COVID-19*, April 9, 2020.
- American Heart Association, *Training Memo: Optional Instructional Changes during COVID-19 Outbreak,* March 10, 2020.
- American Red Cross, *COVID-19 Guidance, Web: April 2020.*
- American Red Cross, *Manikin Decontamination and Use,* April 2020.
- BC Centre for Disease Control and BC Ministry of Health, *Coronavirus COVID-19: Respiratory Protection for Health care Workers Caring for Potential or Confirmed COVID-19 Patients, March 6, 2020.*
- Campbell & Kahwash, *Complement Inhibition for COVID-19*, American Heart Association Journals, Web: April 20, 2020.
- Centers for Disease Control (CDC) and Prevention and National Institute for Occupational Safety and Health (NOSH), *Infographic - Understanding the Difference, Surgical mask, N95 Respirator,* April 2020.
- Ellis & Associates, *Aquatic Industry Update April 29, 2020*, Web: April 29, 2020.
- European Centre for Disease Prevention and Control (ECDC), *Guidance for wearing and removing personal protective equipment in healthcare settings for the care of patients with suspected or confirmed COVID-19.* February 2020.
- European Resuscitation Council, *European Resuscitation Council COVID-19 Guidelines*, Web: April 24, 2020.
- Heart & Stroke Foundation, *Modification to Hands-Only CPR during COVID-19 pandemic,* April 2020.
- International Drowning Researchers Alliance (IDRA), International Lifesaving Federation - Medical Committee (ILS-MC) and International Maritime Rescue Federation (IMRF), *Resuscitation of the Drown Person in the Era of COVID-19 Disease: Recommendations, Identification of Research Needs and Global Call to Action,* April 21, 2020.
- International Liaison Committee on Resuscitation (ILCOR), *International Liaison Committee on Resuscitation (ILCOR) COVID-19 infection risk to rescuers from patients in cardiac arrest*. Web: March 30, 2020.
- Lifesaving Society Canada, Ontario Branch. Cleaning, decontamination, and safe water management of aquatic facilities. April 29, 2020.

- Royal Life Saving Society Australia. COVID-19 Pandemic and the Case for Re-opening Aquatic Centres and Swim Schools Web: April 30, 2020.
- Shared Health Manitoba, *Provincial Requirements for Personal Protective Equipment (PPE).* April 21, 2020.
- Salvi, Sundeep, Review Article: *In this pandemic and panic of COVID-19 what should doctors know about masks and respirators?* April 2020.
- StarGuard Elite, Justing Sempsrott, Webinar: *COVID-19 Update, April 29 2020.*
- United States Lifesaving Association, *Lifeguarding and COVID-19*, April 2020.
- Water Research Australia, *Factssheet: SARS-CoV-2 - Water and Sanitation*, March 5, 2020.
- World Health Organization, *Interim Guidance: Infection prevention and control during health care when COVID-19 is suspected,* March 19, 2020
- World Health Organization, *Glove Use Information Leaflet,* August 2009.

Approval

- Approved by the Lifesaving Society Canada Board of Directors on 16 July 2020.

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 use, and workers follow established protocols for its use.

Personal Protective Equipment Matrix

NO CONTACT	DIRECT CONTACT	
2m physical distancing is maintained between the rescuer and victim	**LOW-RISK** Non-aerosol-generating treatment 2m physical distancing will compromise victim outcome	**HIGH-RISK** Aerosol-generating treatment 2m physical distancing will compromise victim outcome
RESCUER: face shield/goggles, gloves, surgical mask **VICTIM:** surgical mask	**RESCUER:** face shield/goggles, gloves, surgical mask **VICTIM:** surgical mask	**RESCUER:** face shield/goggles, gloves, N95/surgical mask, gown **VICTIM:** BVM with viral filter & continuous seal **OR** Pocket mask with viral filter & continuous seal **OR** Non-rebreather face mask with supplemental oxygen and open airway **OR** Pocket mask with viral filter and head strap **OR** Surgical mask (compression-only CPR) **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).

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 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 reserved for hospital use. It is important to note that they 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 questions.

Primary Assessment

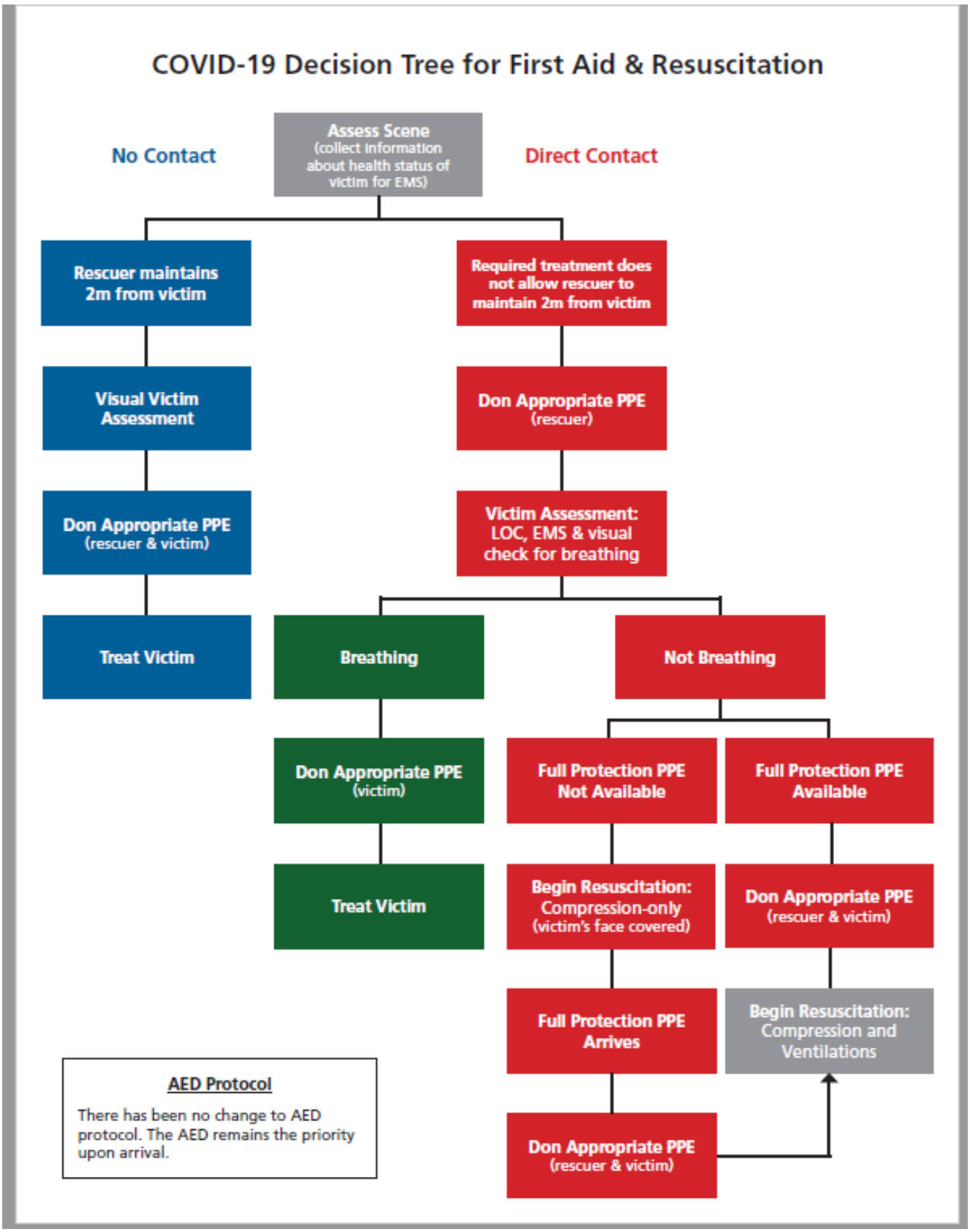
- Maintain physical distancing (2m) whenever possible.
- Determine if the victim's condition requires the lifeguard to make direct contact with the victim. (For clarity on 'no contact' as compared to 'direct contact' first aid treatment, see the COVID-19 Decision Tree for First Aid and Resuscitation 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
No Contact
Assess Scene
(collect information about health status of victim for EMS)
Direct Contact
Rescuer maintains 2m from victim
Visual Victim Assessment
Don Appropriate PPE
(rescuer & victim)
Treat Victim
Required treatment does not allow rescuer to maintain 2m from victim
Don Appropriate PPE
(rescuer)
Victim Assessment: LOC, EMS & visual check for breathing
Breathing
Don Appropriate PPE
(victim)
Treat Victim
Not Breathing
Full Protection PPE Not Available
Full Protection PPE Available
Begin Resuscitation: Compression-only
(victim's face covered)
Don Appropriate PPE
(rescuer & victim)
Full Protection PPE Arrives
Begin Resuscitation: Compression and Ventilations
Don Appropriate PPE
(rescuer & victim)
AED Protocol
There has been no change to AED protocol. The AED remains the priority upon arrival.