



RESUSCITATION & COVID-19

LIFE SUPPORT TRAINING CENTER

King Faisal Specialist Hospital & Research Centre (Riyadh)

THE ERA OF COVID-19

- The COVID-19 Pandemic has brought forth new challenges on a global scale, most obviously in the healthcare industry.
- Healthcare professionals must navigate several uncertainties as the medical and scientific community learn about the full nature of this new virus.
- As transmission rates and patient deaths climb, staff members must consider how to safely resuscitate a confirmed/suspected COVID-19 patient to improve outcomes and quality of life, whilst keeping themselves and others safe.
- Drawing from both KFSHRC policies and the American Health Association's guidelines, the LSTC has prepared this resource to guide staff on how to manage a resuscitation with confirmed/suspected COVID-19 patients.

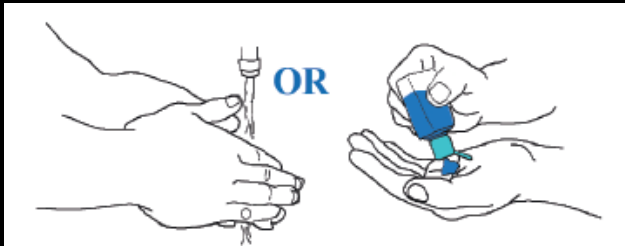
EXPANDING RESUSCITATION PRINCIPLES

- Just to be clear, the Basic and Advanced Cardiac Life Support treatment algorithms remain largely intact, with a few extra steps to help adapt to the threat of COVID-19.
- So these guidelines will expand and complement previous training, **not replace established principles.**
- All new components have one goal in mind: to prevent staff exposure.

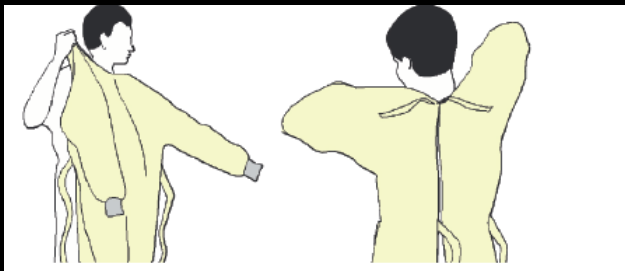
STAFF SAFETY – PERSONAL PROTECTIVE EQUIPMENT

In line with KFSHRC policies, all care must begin with wearing PPE. The sequence of wearing PPE is:

1. Perform hand hygiene



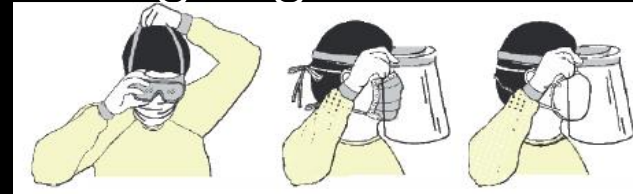
2. Wear gown



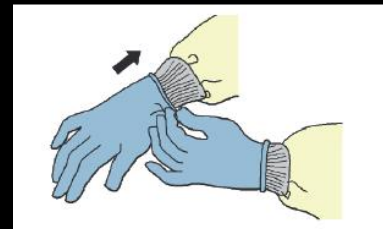
3. Apply appropriate mask or respirator



4. Wear goggles or face shield



5. Wear Gloves



BASIC LIFE SUPPORT ASSESSMENT

If the patient collapses or presents in such a way that you are gravely concerned:

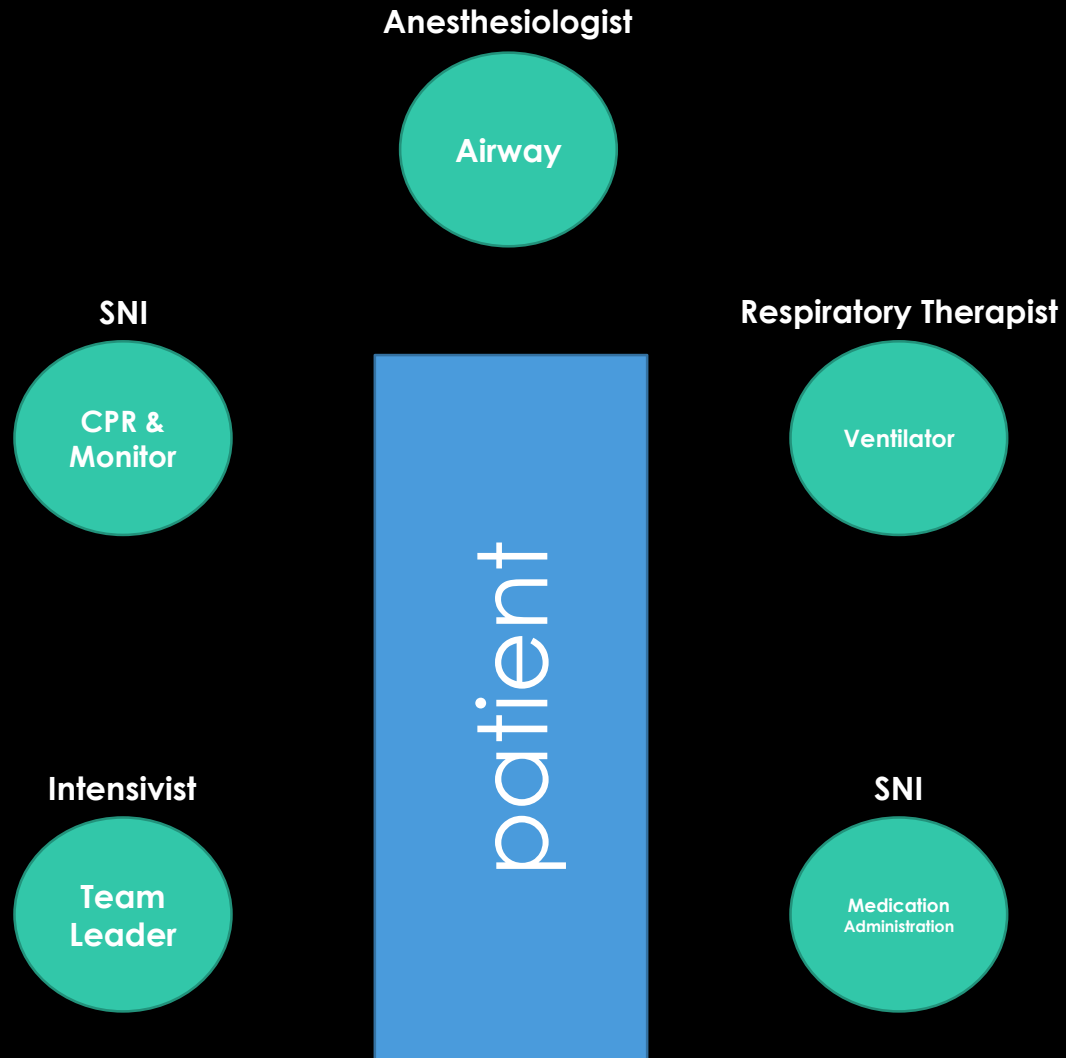
1. Ensure the scene is safe
2. Tap the patient to assess responsiveness
3. If unresponsive, call for help
4. Check for pulse and breathing for 5-10 seconds
5. If pulse and breathing are absent, activate a code and ask for the defibrillator (crash cart will remain outside of the room or area)
6. Attach the leads and monitor. If patient is not intubated, place a mask or cloth over their mouth

**For
codes,
Main
building:
2222**

THE RESUSCITATION TEAM

- For all teams, apply crowd control principles and limit personnel in the area. Upon the code team's arrival, the first responding staff should provide a handover and exit the room.
- There are assigned COVID ICU consultant intensivists (team leaders), and consultant anesthesiologists for COVID confirmed/suspected patients.
- As the code team arrives, the personnel to enter the room should include the team leader physician/intensivist, anesthesiologist, two RNs and one RT.
- Other team members, including the pharmacist, RT, EMT (paramedic too if needed), nurse supervisor etc. should wait outside. One RN should be in full PPE to be prepared to relieve staff and act as a runner.
- Try to limit the amount of personnel within the room or area.

COVID-19 Code Response Team Recommendation



PRIORITIZE INTUBATION

- It is imperative to prioritize early intubation. Limit the use of the bag-mask device to reduce COVID-19 exposure, and proceed to intubating the patient and attaching them to a ventilator (**closed circuit system**). If the equipment is immediately available, intubate the patient first. If not, initiate CPR, and then pause chest compressions to intubate, then continue with CPR thereafter.
- If there is a delay in intubation, employ a 2-person bag-mask technique (1st person uses a two-handed EC grip, while 2nd person ventilates the patient).
- Intubation should be conducted in a negative pressure room if feasible. It should be performed by the anesthesiologist by way of videolaryngoscopy with rapid sequence induction (RSI). Attach to a ventilator circuit thereafter.
- All bag-mask devices and ventilator circuits should have viral/bacterial filters.

MECHANICAL CHEST COMPRESSIONS

- To minimize staff exposure and include the quality of compressions, a mechanical chest compression device should be used when possible.
- There are two mechanical compression devices located at the designated COVID ICUs located at the Eastwing building.
- **Training in the device's use is mandatory to reduce the risk of injury.** Training must be completed prior to the use of the mechanical compression device.

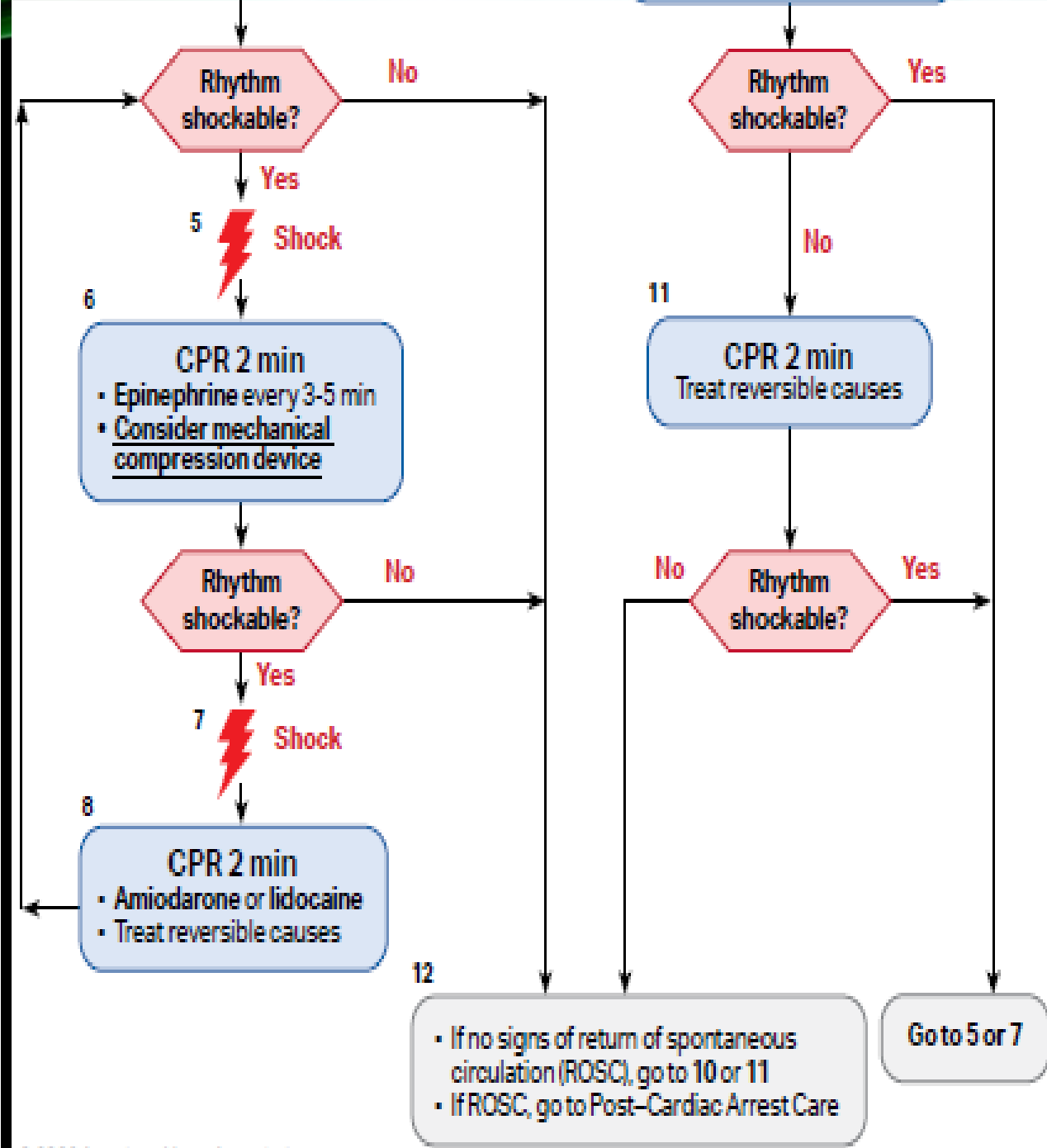
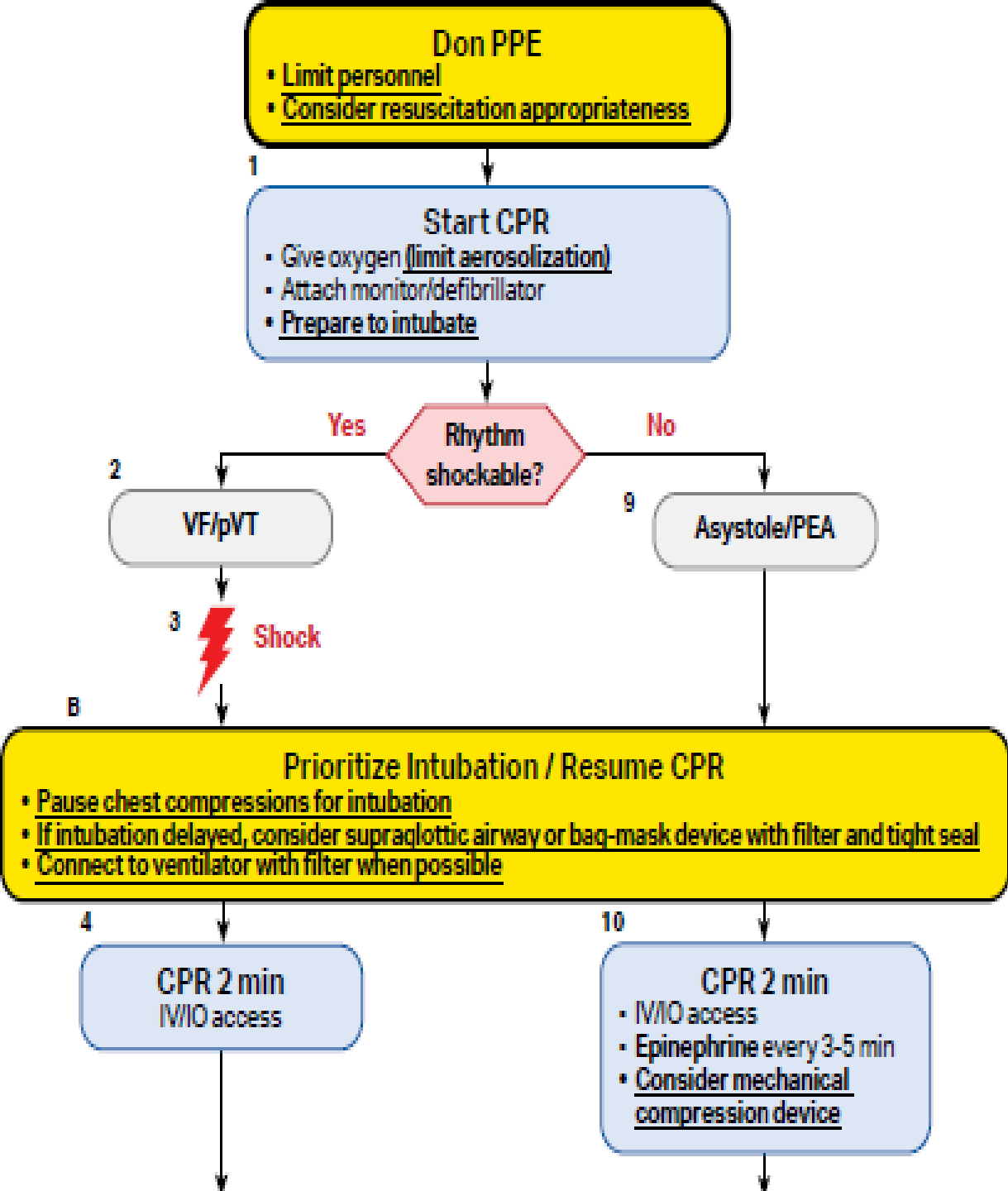
ADVANCED CARDIAC LIFE SUPPORT ALGORITHM (ADULT)

The AHA guidelines remain largely intact for cardiac arrest in confirmed/suspected COVID-19 patients.

Non-shockable arrest rhythm (asystole/PEA)

- **Don PPE gear** prior to entering room/area
- **Intubate patient immediately or as soon as possible**
- Two-minute CPR cycle.
- Prepare and administer epinephrine 1mg (repeat 3-5 minutes).
- Reassess rhythm.
- If persistent, two-minute CPR cycle.
- Consider reversible causes, and initiate treatment accordingly.
- Continue algorithm and drug therapy.

***ALGORITHM FIGURE SHOWN IN NEXT PAGE**

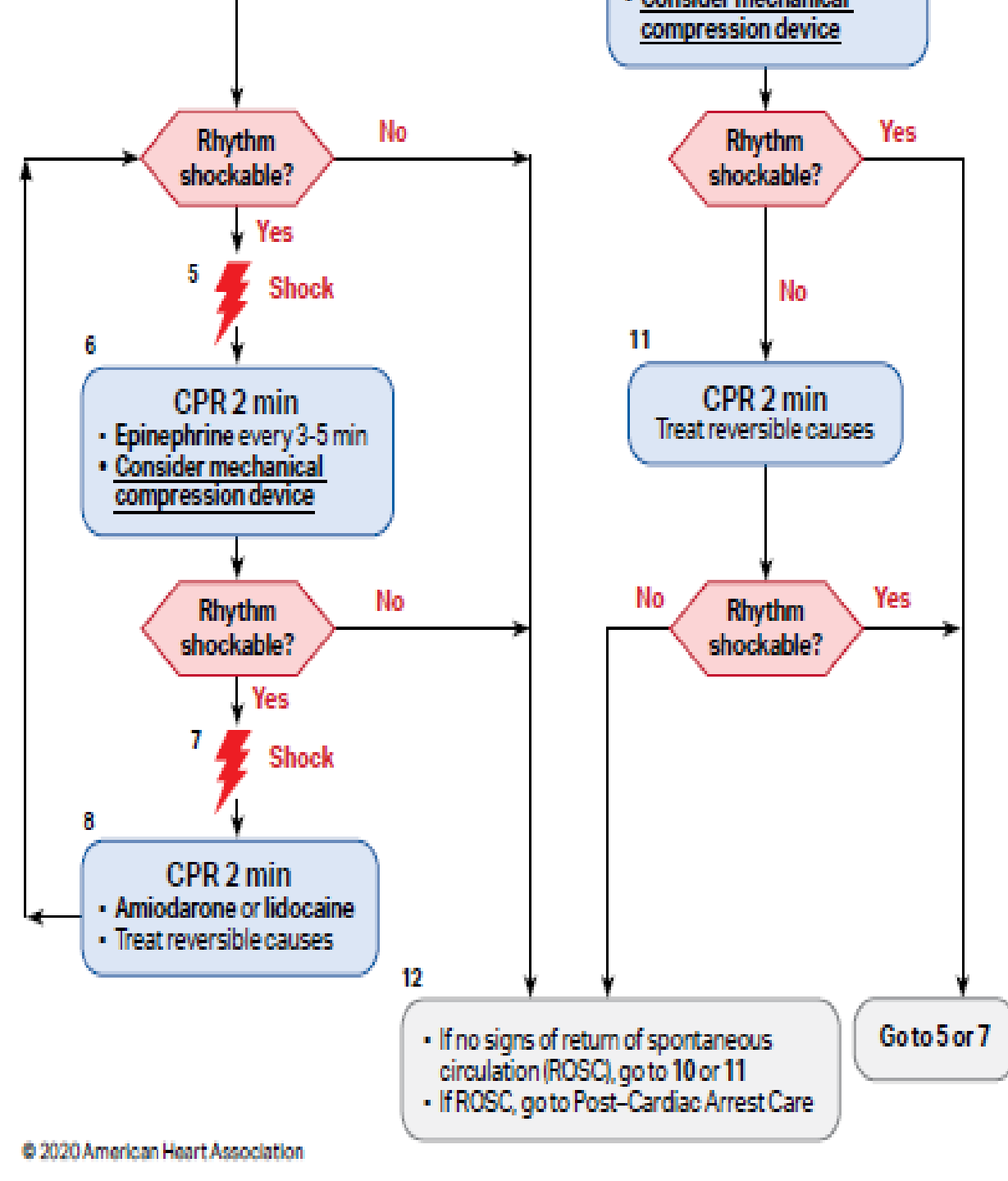
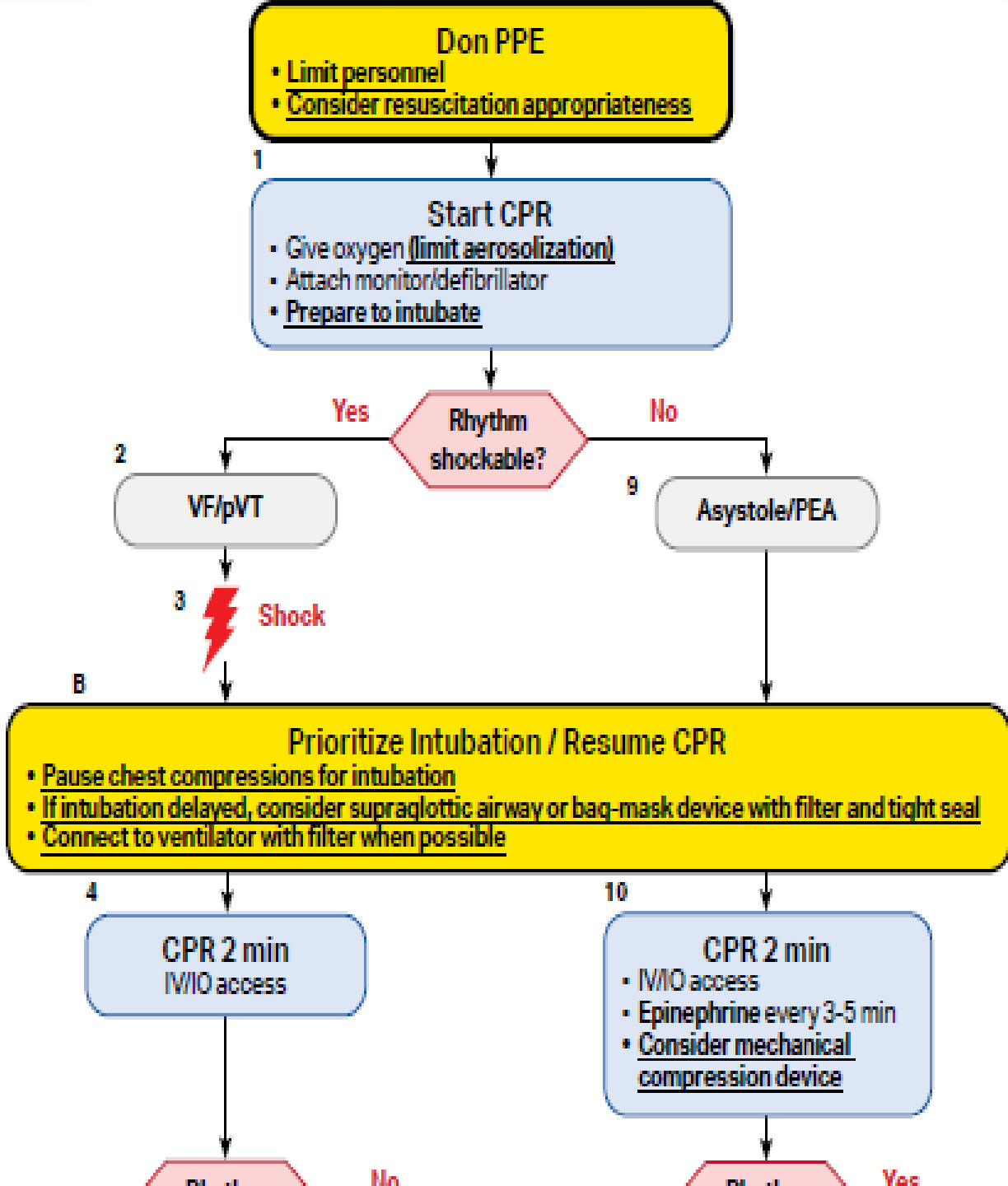


ADVANCED CARDIAC LIFE SUPPORT ALGORITHM (ADULT)

Shockable arrest rhythm (VF/pVT)

- **Don PPE gear** prior to entering the room or area.
 - deliver unsynchronized shock (200J).
 - **Intubate the patient immediately or as soon as possible.**
 - Two-minute CPR cycle.
 - Prepare epinephrine 1mg.
 - Reassess, if persistent arrhythmia, deliver unsynchronized shock (300J).
 - Two-minute CPR cycle.
- Administer epinephrine (repeat 3-5 minutes), prepare amiodarone 300mg or lidocaine 1-1.5mg/kg.
 - Reassess, if persistent arrhythmia, deliver unsynchronized shock (360J).
 - Two-minute CPR cycle. Administer amiodarone or lidocaine, and prepare epinephrine 1mg.
 - Continue algorithm and drug therapy accordingly.

***ALGORITHM FIGURE SHOWN IN NEXT PAGE**



RETURN OF SPONTANEOUS CIRCULATION & TRANSPORTATION

- Once ROSC is achieved, **as the patient is already intubated**, ensure the endotracheal tube remains in place via 5-point auscultation, inspecting chest rise, and monitoring oxygen saturation and wave capnography levels (as the tube may have dislodged during chest compressions).
- Stabilize the patient's circulation – administer 1-2 liters of normal saline or ringers lactate (if targeted temperature management protocols are initiated, fluids should be 4°C to help achieve a body core temperature of 32-36°C).
- Perform 12-lead EKG and diagnostic tests (chest x-ray, laboratory tests) as per departmental protocols.
- Once stabilized, the patient will be transported by a core Paramedic Team.
- Team members should be debriefed to discuss any issues, concerns, and lessons learned.

ADAPTING TO THE COVID-19 ERA

Once again, the new resuscitation policies and guidelines have been developed with one goal in mind: preventing staff exposure. To summarize:

1. Wearing PPE is the first step to patient care, and resuscitation is no exception.
2. Limit the amount of staff in the room or area – the designated code team is structured around this principle.
3. Intubate the patient first or as soon as possible, and attach to a ventilator (**closed circuit system**) Utilize a mechanical compression device when feasible – there are two devices located by the COVID ICUs.
4. The Basic and Advanced Life Support algorithms remain largely intact, so previous training remains useful.
5. The room or area should be cleaned afterwards as per Environmental Services and Infection Control protocols.
6. **It is recommended that the KFSHRC organization consider utilizing the Lifepak 15's capability to audio record the events of a code, thus removing the need for a recorder personnel to be present in the area.**

A FINAL MESSAGE

Healthcare professionals are the frontline heroes in the COVID-19 Pandemic; however, this service shouldn't come at the cost of one's own health and mental wellbeing.

These guidelines have been developed to prevent exposure in order to keep patients, staff members, and their loved ones safe.