Guidance for Adult Advanced Life Support in a patient confirmed or suspected with COVID-19

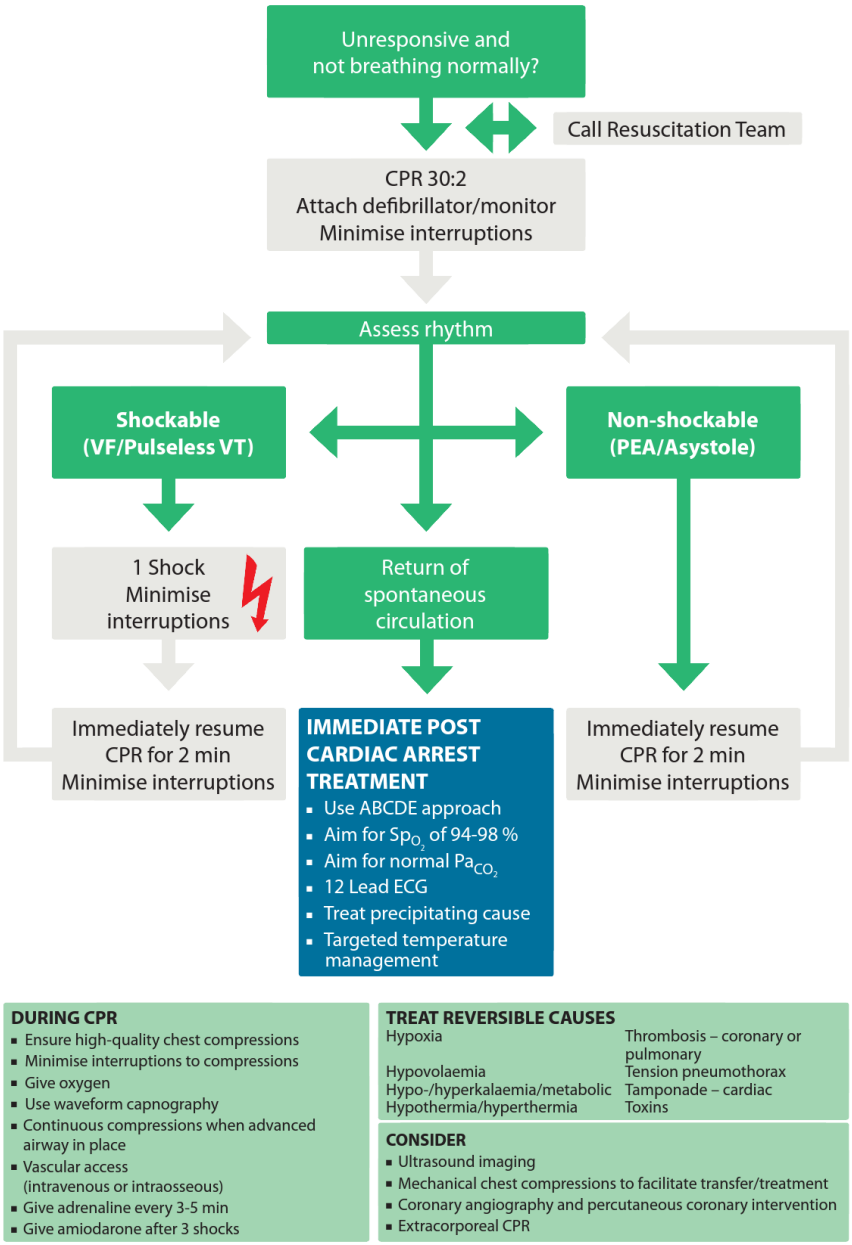
3rd April 2020

This guidance is based on consensus recommendations and best practice advice. This is an interim guide that will change and be updated with emerging evidence and recommendations.

This is the current **European Resuscitation Council** Advanced life Support Algorithm.

In view of the current pandemic, there are certain modifications to this algorithm that can be recommended.

Resuscitation Council UK has currently published a guidance on resuscitation in COVID19 https://www.resus.org.uk/_resources/assets/attachment/full/0/36193.pdf



Basic principles of CPR remain the same and any attempt at resuscitation is better than no attempt. The risk to the rescuer has increased immensely and it is extremely important to consider the potential harm to the resuscitation provider (rescuer), colleagues and the wider community if the rescuer were to be infected with COVID-19.[1]

Preparation-

Have a COVID Resuscitation trolley/pack ready.
Include an impermeable transparent sheet to cover the patient's face.
Keep 4-6 sets of personal protective equipment along with it.

Personal Protective Equipment (PPE) - Currently accepted guidance should be followed when resuscitating a patient in cardiac arrest. The relevant levels of personal protective equipment recommended in Sri Lanka is stated below.[4]

PPE for direct patient care (PPE DPC)	Mask - NIOSH approved N95 or FFP2 standard or equivalent Impermeable gown Gloves - 2 pairs Eye protection (goggles or face shield) Surgical hood/cap Covered shoes & fluid resistant shoe covers or boots
PPE for aerosol generating procedures (AGP PPE)	Mask - NIOSH approved N95 or FFP2 standard or equivalent Impermeable gown Gloves - 2 pairs Eye protection (goggles or face shield) Surgical hood/cap Covered shoes & fluid resistant shoe covers or boots Apron

All efforts should be taken to **avoid unexpected and unnecessary efforts at CPR**.

Early detection & prevention of deterioration is emphasised as good practice.
In COVID suspected/confirmed patients - there should be a specific plan for management especially with regard to escalation, intubation, CPR and post resuscitation care.
All patients admitted to hospital- should have clearly defined goals of care.

Important!

- Minimum staff should be with the patient.
- Only minimal equipment which are essential should be allowed in the vicinity
- Preferably have a 'gate keeper' at the door of the room/cubicle/bay/ point of entry to minimise the number of unprotected health care worker entering the particular clinical area.
- We recommend a **maximum of 4 ALS providers** to attend to the patient.
- Time keeping to be done by a person outside the resuscitation area.
- The 'gate keeper' and/or 'runner' to **write the names/roles of the resuscitation team member on their gown** before they enter the resuscitation bay. The runner can also act as the buddy to confirm proper donning.

Confirmation of Cardiac Arrest
First responder should confirm **absence of respiration visually from a distance and feel for carotid pulse only**
Look listen & feel for breathing is not recommended

Call for help indicating that it is a **COVID cardiac arrest**

The response to the cardiac arrest by the first responder would depend on how well protected he are with personal protective equipment (PPE).

If the **first responder is not appropriately donned in PPE for direct patient care (DPC)**
He should wear a surgical mask, apron, gloves, eye protection
Bring the necessary equipment to the patient's bedside
Connect the patient to the monitor/defibrillator

This is until the other team members arrive in appropriate PPE for direct patient care (PPE DPC) & aerosol generating procedures (PPE AGP).

If patient is already on oxygen via nasal prongs or face mask, **cover the face with an impermeable (clear/transparent) sheet**.
If not on face mask, we suggest that a face mask (Hudson mask) be applied and the impermeable sheet be placed over that.

Bag mask ventilation to be done only after team members appropriately donned in PPE arrive.

If the **first responder is donned in AGP PPE or PPE for direct patient care (PPE DPC)**

Start chest compressions* immediately.

It has been documented in literature that the respirator (N95/FFP2 etc) tends to loosen at the nose with chest compressions. Therefore the fit of the respirator should be checked well before starting chest compressions.

*Existing evidence does not confirm or exclude chest compressions & defibrillation as an aerosol generating procedure.[1]

After attaching the monitor, **assess the rhythm**.

If the rhythm is **shockable** -

If **self adhesive pads** are used for defibrillation-
Switch off the oxygen
Deliver up to 3 consecutive or repeated shocks
Deliver the 1st DC shock (biphasic 150J/as per manufacturer's recommendation) and look for the return of a perfusing rhythm.
If still a shockable rhythm, repeat delivering shocks (biphasic 270 J) up to a maximum of 3 shocks, looking for possible return of a perfusing rhythm in between.
Do not wait for 2 minutes in between shocks, unless a team member with suitable PPE has arrived, in which case chest compression can be started.

If **paddles** are being used for defibrillation, the existing evidence/recommendation as of now is conflicting. We appreciate that the provider will be significantly closer to the patient than with the self adhesive pads. Therefore, we suggest that a **shock should not be delivered with paddles without a PPE for direct patient care.**

If the rhythm is **non shockable**, the first responder is not protected for direct patient care, we recommend to wait for the rest of the team to arrive properly donned in PPE.

Once the suitably donned resuscitation team is available, chest compressions can be started but the first responder should leave the room to properly don in PPE & return to join the resuscitation team.

Intubation

Intubation becomes the priority as soon as a team member with expertise to intubate arrive in AGP PPE and all members are suitably protected.

The impermeable face cover should be carefully removed in a manner so that the side which was in contact with the patient's face is folded on itself and discarded suitably in to a bio hazard collector.

Refer the 'Interim intubation guideline for confirmed or suspected COVID-19 patient published by the College of Anaesthesiologists & Intensivists of Sri Lanka (https://resuslanka.org/intubation-interim-guideline-covid-19-anascol-v1-03-04-2020-2/)

Once intubated, resuscitation is to continue according to the standard ERC ALS algorithm and the reversible causes (4 Hs & 4 Ts) should be addressed and treated as early as possible. Obtain senior help early.
There should be continuous communication among team members during resuscitation including decision to terminate. Team dynamics are crucial and communication should be loud enough to be heard over personal protective wear.
The member at the door should function to closely monitor the process to prevent any breach of infection control practices.

When return of spontaneous circulation occurs, post resuscitation care should be carried out as per ERC guidelines. ICU team should be notified early using the standard SBAR approach.

Disposal of biohazard material & cleaning of equipment that were used during resuscitation should be done according to the current disinfection guidelines and supervised by the infection control team/representative.
The resuscitation team should doff carefully without self contamination.

A team debrief should be carried out to identify any issues which should then be forwarded to the respective authorities. Ensure to provide psychological support to the team members post procedure.

References

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4. http://www.epid.gov.lk/web/images/pdf/Circulars/Corona_virus/guidance-on-the-rational-use-of-personal-protective-equipment.pdf

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