

PEDIATRIC RESUSCITATION FOR SUSPECTED OR CONFIRMED COVID-19 PATIENTS

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General Considerations

AEROSOLIZATION → CONTAMINATION RISK!

EQUIPMENT AND DRUGS

1. Effective Team Communication:
DNR Decision, Limit Personnel, Task Distribution

2. Wear PPE When Approaching the Victim (ACCORDING TO RISK LEVEL):
Put on/remove PPE safely [AVOID SELF-CONTAMINATION]

3. Minimise Exposure During Aerosol Generating Procedures like CPR, In-Line Suctioning, Ventilation, ETI, SGA, Tracheostomy, Disconnecting Ventilatory Circuit.

Airway Approach
+ FM + Clear Plastic Drape
+ 2nd Generation SGA
+ (Video)laryngoscope
+ Cuffed ETT + stylet and 5/10mL syringe
+ Surgical Tape

4. Early Supplemental O₂:
cover the patient's mouth with a surgical mask when using Nasal Cannula or FM.

5. Ventilation: Use a BMD with a Clear Plastic Drape and a Viral Filter between the mask and bag. Create a FM tight seal and consider SGA use [PREVENT LEAKAGE AND AEROSOLIZATION]

6. ETI as Preferred Airway Approach: Rapid Sequence ETI with a cuffed ETT by an Experienced Professional [LOWER RISK OF AEROSOLIZATION]

Bag-Mask Device or Mapleson C circuit with High Quality Filters (HME AND HEPA filters)

Venous Catheters and Intraosseous Needles

Monitor + Mechanical Ventilator
+ Ventilator Circuit with High Quality Filter at the End of the Expiratory Limb
+ Capnography

7. Early Rhythm Analysis and Defibrillation in case of High Likelihood of Primary Shockable Rhythm [EARLY ROSC MAY PREVENT NEED FOR FURTHER RESUSCITATION MEASURES WHICH GENERATE AEROSOLS]

8. In the Absence of Trained Airway Manager, Rescuers Should Use SGA [PREVENT LEAKAGE AND AEROSOLIZATION]

9. Dispose of and Disinfect All Equipment Used During CPR [ACCORDING TO LOCAL RECOMMENDATIONS]

External Defibrillator

Resuscitation Drugs
Adrenaline 10 mcg.kg⁻¹
Amiodarone 5 mg.kg⁻¹

CONSIDER CREATING A SPECIFIC INTUBATION TROLLEY OR A BAG INSIDE THE EMERGENCY CART

PEDIATRIC CARDIAC ARREST ALGORITHM

Reversible Causes (4H's e 4T's)

- ✓ Hypoxia
- ✓ Hypovolemia
- ✓ Hydroelectrolytic (imbalance)
- ✓ Hypothermia
- ✓ Toxins
- ✓ Thromboembolism
- ✓ Tamponade, cardiac
- ✓ Tension Pneumothorax

Unresponsive
Not Breathing Normally

DO NOT APPROACH THE VICTIM'S MOUTH OR NOSE!
ASSESS BREATHING VISUALLY OR BY PLACING A HAND ON THE BELLY [OPTIONAL]!

Check pulse during 10 sec
• Brachial (infant)
• Carotid (>1 year)
• Femoral (any age)

CALL AN AVAILABLE COMPETENT PROVIDER

CALL RESUSCITATION TEAM!
After 1min of CPR first, if alone

ALERT FOR SUSPECTED/CONFIRMED COVID-19 INFECTION!

AIRWAY APPROACH

CONSULT FLOWCHART PEDIATRIC AIRWAY APPROACH IN COVID-19 PANDEMIC

UNLESS A PRIMARY CARDIAC ORIGIN IS LIKELY, OPEN THE AIRWAY AND PROVIDE RESCUE BREATHS USING APPROPRIATE EQUIPMENT

DO NOT DO MOUTH-TO-MOUTH RESCUE BREATHING

USE ONLY THE AIRWAYS SKILLS FOR WHICH YOU ARE TRAINED

Start CPR
[If Pulse < 60/min + Poor Perfusion Signs]
High Quality Compressions (100 - 120cpm)
(5 initial breaths)

NO CHEST COMPRESSIONS OR AIRWAY PROCEDURES WITHOUT RESCUERS ADEQUATE PPE AND A SURGICAL MASK OVER THE CHILD!

STOP COMPRESSIONS ONLY DURING ETI!

EARLY MONITORING OF PATIENT'S CARDIAC ARREST RHYTHM

Assess Rhythm

Shockable
(VF; Pulseless VT)

1 Shock
4 J/ Kg

Immediately resume
CPR 2 min
(MINIMISE INTERRUPTIONS)

Adrenaline 10 mcg.kg⁻¹ IV/IO
Every 3-5 min
Consider Amiodarone 5 mg.kg⁻¹
IV/IO after 3th and 5th shock

ROSC

POST - CPR TREATMENT

ABCDE Approach

Control Oxygenation and Ventilation
(Aim for SpO₂ 94 – 98%)
Investigate and treat precipitating cause
ICU Transport

Non - Shockable
(PEA, Asystole)

Immediately resume
CPR for 2 min
(MINIMISE INTERRUPTIONS)

Adrenaline 10 mcg.kg⁻¹ IV/IO
every 3-5min

VENTILATION OF AN INTUBATED PATIENT DURING ALS AT OPERATING ROOM OR ICU



Maintain mechanical ventilation or switch to hand ventilation, depending on availability of help and effectiveness of ventilation efforts.



MINIMISE CLOSED CIRCUIT DISCONNECTIONS!

- To switch to Hand Ventilation at ICU you may need to use a Mapleson C Circuit:
 1. Clamp ETT and stop the ventilator before disconnecting;
 2. Disconnect breathing circuit distally to high quality filter;
 3. Connect with Mapleson C circuit.



Avoid Overventilation [ACCORDING TO AGE] to prevent:

- ↑ Intrathoracic Pressure (↓ Venous Return)
- Respiratory Alkalosis (↓ Cerebral Blood Flow)