

Guideline

Royal North Shore Hospital (RNSH)

Modifications to Adult Basic and Advanced Life Support during the COVID-19 pandemic – The Protected Code Blue

Facility Risk Level: Low

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Summary	Royal North Shore Hospital Modifications to Adult Basic and Advanced Life Support during the COVID-19 pandemic – the Protected Code Blue.
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Endorsed By	Resuscitation and Emergency Response Committee (RERC)
Sector/Service	NSLHD – Royal North Shore Hospital
Audience	All clinical staff caring the adult COVID-19 patient group
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Related Policy/s	<ul style="list-style-type: none">-Basic Life Support Adult – North Shore Ryde Service PR2009_365-RNSH Code Blue Manual-Between the Flags Clinical Emergency Response System for RNSH PR2013_060-RNSH COVID-19 Emergency Airway Management and Tracheal Intubation Guideline (Facility Risk level low)-COVID-19 Risk Stratification PPE Guidelines
Key Words	COVID-19, protected code blue, basic life support, advanced life support, compressions, defibrillation
Status	Active

<i>Guideline Name</i>	Royal North Shore Hospital (RNSH) - Modifications to Adult Basic and Advanced Life Support during the COVID-19 pandemic – The Protected Code Blue - Facility Risk Level: Low		
<i>Document ID</i>		<i>Version No.</i>	
<i>Date Published</i>	28/04/2020	<i>Page No.</i>	1 of 8

Background

During cardiopulmonary resuscitation (CPR), various aerosol generating procedures (AGPs) occur (see Table 1). In response to the COVID-19 pandemic, resuscitation guidelines have been modified to protect healthcare workers against airborne viral transmission during cardiac arrest resuscitation attempts.

Patients with confirmed, suspected or possible COVID-19 should receive modified Basic and Advanced Life Support (BLS and ALS) according to this guideline. These modifications to the CPR process are referred to as the **Protected Code Blue** (see Appendix 1).

This guideline is based on current evidence; however, it is important to note that the situation with COVID-19 is rapidly evolving and clinical advice may change.

1. General Recommendations

- 1.1. Early risk assessment should occur in all patients to identify the likelihood that they have COVID-19. Patients should then be categorised **into Proven/Probable, Possible, Low Likelihood or Very Low Likelihood** according to the *RNSH COVID-19 Risk Stratification PPE Guidelines*.
- 1.2. All undifferentiated patients requiring CPR are to be treated as **Possible** COVID-19 patients until a risk assessment has been performed. These patients should be treated according to this Protected Code Blue guideline.
- 1.3. During Protected Code Blue Basic Life Support, patients receive compression-only CPR and no bag-valve-mask (BVM) ventilation. This highlights the importance of early COVID-19 risk stratification and early recognition and response to clinical deterioration.
- 1.4. Chest compressions and defibrillation are not considered AGPs and can be delivered with staff members in existing levels of PPE. Other components of resuscitation are considered AGPs (see Table 1) and should not be performed until all team members in the room are wearing Contact and Droplet and Airborne PPE (see Table 2). Face shields and hats should be considered by team members during AGPs and may be worn at clinicians' discretion.
- 1.5. The number of staff entering the room should be limited.
- 1.6. Patients in the **Low Likelihood or Very Low Likelihood** groups should receive BLS and ALS as per standard resuscitation guidelines (Appendix 2). Staff entering the room should wear standard precautions as a minimum, and risk assess PPE requirements as per Infection Prevention and Control guidelines.
- 1.7. Priority should be placed on determining the appropriateness of CPR for every patient admitted to RNSH prior to any deterioration in their clinical state. A Resuscitation Plan should be completed at the earliest available opportunity in the patient's admission.

Guideline Name			
Document ID		Version No.	
Date Published		Page No.	2 of 8

Table 1: AGPs that may occur during CPR

AGPs that may occur during CPR
Laryngoscopy and tracheal intubation
Bag-Valve-Mask (BVM) ventilation via facemask or supraglottic airway
Ventilation
Coughing
Tracheal suctioning
Front-of-neck airway procedures including cricothyroidotomy
Chest compressions and Defibrillation are NOT regarded as AGPs

Table 2: Contact and Droplet and Airborne Precautions PPE

Contact and Droplet and Airborne Precautions PPE
Impervious long-sleeve gown
Gloves
P2/N95 mask (perform mask fit-check)
Eye protection

2. Modifications to Basic Life Support during PROTECTED CODE BLUE

Danger: An assessment of danger should occur according to the standard BLS pathway. Limit the number of staff entering the room.

Response: Assess for response. If unresponsive, send for help.

Send for help: Activate the emergency button if present. Dial 2222. Caller must state 'PROTECTED CODE BLUE adult, location'.

Airway: If not already in place, apply a simple oxygen mask (e.g. Hudson mask) or non-rebreather mask with reservoir bag and commence oxygen at 15L/min. This oxygen flow rate is not considered to be an AGP.

Breathing: **Look** only when assessing breathing. **Do not listen or feel for breathing. Do not perform BVM ventilation during BLS.**

Compressions:

Chest compressions are NOT regarded as an AGP. Continuous chest compressions should occur, with no pauses and no BVM ventilation (compression-only CPR).

Defibrillation: Defibrillation is NOT regarded as an AGP. A defibrillator should be attached as soon as available and the prompts followed in AED mode. If a shock is indicated, turn the oxygen off for the delivery of the shock and restart the oxygen after the shock is delivered.

<i>Guideline Name</i>			
<i>Document ID</i>		<i>Version No.</i>	
<i>Date Published</i>		<i>Page No.</i>	3 of 8

3. Modifications to Advanced Life Support during PROTECTED CODE BLUE

- 3.1. Airway management and tracheal intubation must be carried out by the most experienced airway operator and guided by the *Royal North Shore Hospital COVID-19 Emergency Airway Management and Tracheal Intubation Guideline*.
- 3.2. A definitive airway (endotracheal tube; ETT or supraglottic airway; SGA), should be placed early, by an experienced airway operator. This is to minimise the use of BVM ventilation which carries the risk of aerosol generation. The choice between ETT and SGA should be made by an experienced airway operator.
- 3.3. Chest compressions should be paused for tracheal intubation or SGA insertion, for a maximum of 30 seconds. Care should be taken not to ventilate the patient until the SGA is correctly placed and cuff (if present) inflated, or the ETT cuff is inflated. A viral filter should be inserted between the ETT/SGA and the self-inflating bag or ventilator circuit.
- 3.4. Tracheal intubation should be attempted TWICE ONLY, and if unsuccessful, a SGA should be placed.
- 3.5. After two unsuccessful attempts at tracheal intubation, further attempts should only be made if a more senior airway operator arrives, or a new piece of equipment (e.g. a video-laryngoscope) becomes available.
- 3.6. BVM ventilation should only be performed by an experienced airway operator when attempts to place a definitive airway have failed. It should be performed as a two-person technique, with the airway operator holding the mask with two hands and another team member carefully squeezing the bag. An oropharyngeal airway should be considered to aid BVM ventilation in these circumstances.
- 3.7. Ventilation via ETT, SGA or BVM should be performed at a ratio of 30 compressions to two ventilations (**30:2**) until patient is established on mechanical ventilation via ETT.
- 3.8. It is recommended that the breathing circuit is left connected to the ETT or SGA during defibrillation.

4. References

- RNSH COVID-19 Risk Stratification PPE Guidelines. Accessed 4 May 2020 via <http://intranet.nslhd.health.nsw.gov.au/ClinicalNet/cgu/QSP/AS/covid19/Pages/PP E.aspx>
- Resuscitation Council UK (2020) Resuscitation Council UK Statement on COVID-19 in relation to CPR and resuscitation in healthcare settings <https://www.resus.org.uk/media/statements/resuscitation-council-uk-statements-on-covid-19-coronavirus-cpr-and-resuscitation/covid-healthcare/>, Accessed on: 2 April 2020.
- Royal North Shore Hospital COVID-19 Emergency Airway Management and Tracheal Intubation Guideline.

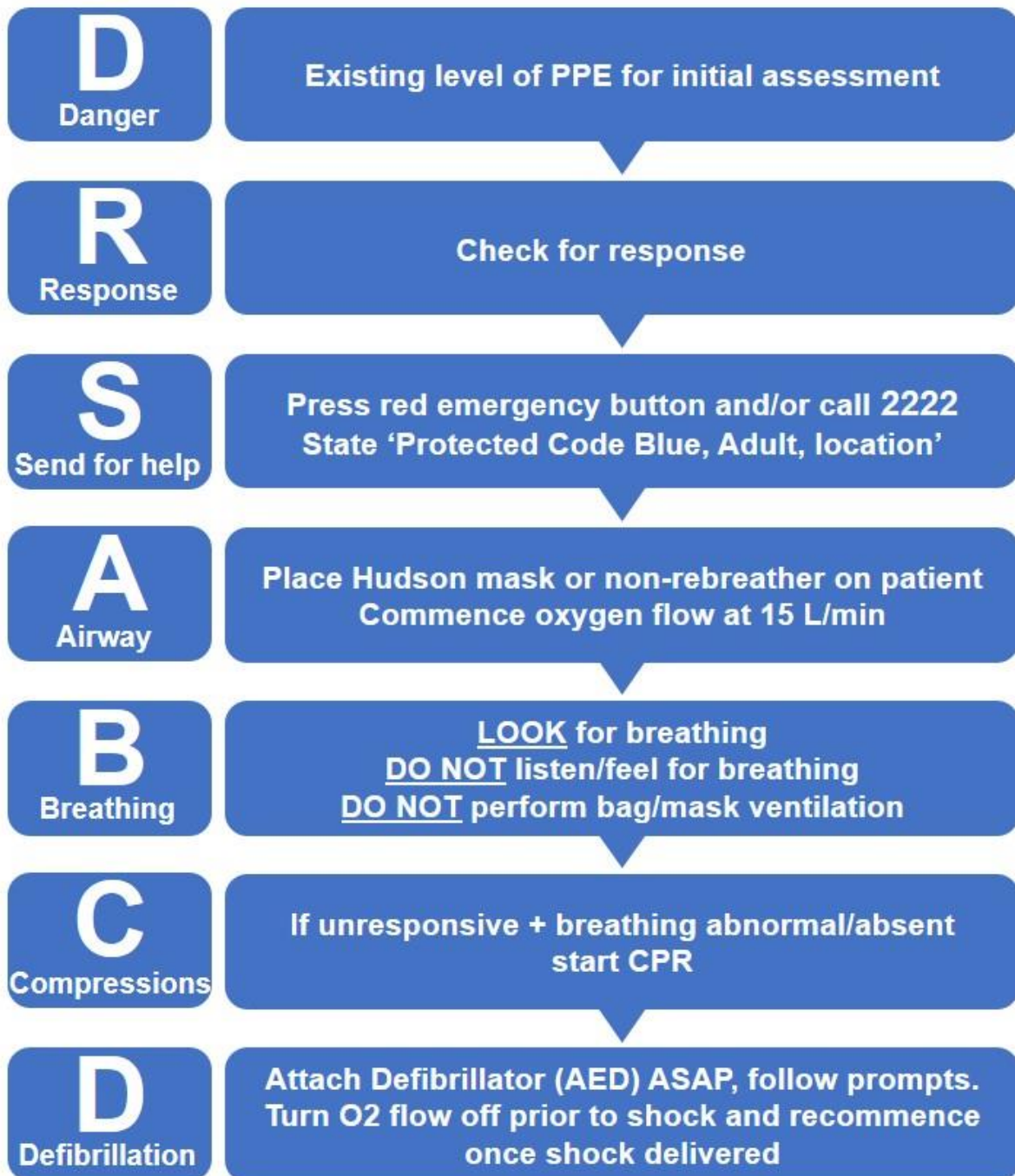
Guideline Name		Version No.	
Document ID		Page No.	4 of 8
Date Published			

- Australian Government Department of Health. Guidance on the use of personal protective equipment (PPE) in hospitals during the COVID-19 outbreak.
<https://www.health.gov.au/resources/publications/guidance-on-the-use-of-personal-protective-equipment-ppe-in-hospitals-during-the-covid-19-outbreak>
Accessed 27/04/2020.

<i>Guideline Name</i>			
<i>Document ID</i>		<i>Version No.</i>	
<i>Date Published</i>		<i>Page No.</i>	5 of 8

Appendix 1: Adult Protected Code Blue Basic Life Support Algorithm

RNSH Basic Life Support PROTECTED CODE BLUE



RNSH Modifications to Adult Basic and Advanced Life Support – COVID-19 –
 Version 1.5 Approved by RERC April 2020

Guideline Name			
Document ID		Version No.	
Date Published		Page No.	6 of 8

Appendix 2: Basic Life Support for Adults

Basic Life Support

D Dangers?

R Responsive?

S Send for help


A Open Airway

B Normal Breathing?



C Start CPR
30 compressions : 2 breaths

D Attach Defibrillator (AED)
as soon as available, follow prompts

Continue CPR until responsiveness or normal breathing return



January 2016




Guideline Name		Version No.	
Document ID		Page No.	7 of 8
Date Published			

Appendix 3: Adult Protected Code Blue Cognitive Aid



PROTECTED CODE BLUE


FIRST RESPONDERS (in existing level of PPE)


Compression-only
CPR




Attach NRB or
O2 mask 15 L/min



For defib:
Turn off O2
(unless SGA/ETT)






**No airway management until
all personnel in room have**


Contact + Droplet + Airborne PPE and Buddy Checked

Eye protection + N95/P2 mask + long-sleeved impervious gown + gloves




ADVANCED AIRWAY OPERATOR


Early
ETT / SGA
(Supraglottic
Airway)




Pause CPR
while securing
airway
(aim < 30 sec)




BVM for rescue
PPV only:
2-hands +
2-people



Viral filter
on
ETT/SGA





Inflate cuff before PPV

Use 30 : 2 ratio (with ETT / SGA / BVM)

30:2

Guideline Name			
Document ID	Version No.		
Date Published	Page No.	8 of 8	