Guidance to UKSAR Responders - COVID-19

Issue date: 28/10/21 version 4

This guidance, which has been agreed by the following SAR organisations represented on the UK Search and Rescue Medical Group (MCA, RNLI, MREW, MRS, ALSAR, BCRC, SLSGB) is based on Public Health England (PHE) Guidance[1] for First Responders, and the PPE guidance for ambulance services[2] . Section 3, (Resuscitation) has been revised with the support and guidance of the Resuscitation Council UK.

The guidance below should be read in conjunction with the information published by both these organisations, and has been written in recognition of the difficulties of providing clinical care in the operational search and rescue environment. This guidance does not supervene any organisation's policies. UKSAR organisations can use this guidance in conjunction with their own specific operational procedures, equipment and Personal Protective Equipment (PPE).

Changes in Version 4

- Emphasis on Dynamic risk assessment to determine the risk of virus transmission from the casualty during resuscitation and consequence of disease to the rescuer in the specific rescue situation.
- The default position being to perform compression only CPR.
- In those circumstances where the dynamic risk assessment of Viral transmission is deemed to be low, ventilations can be achieved through use of supraglottic airway devices, or Bag-Valve-Mask ventilation with airway adjuncts and a tight seal. Rescue breathes using Mouth-to-mouth or pocket masks should be avoided in all but exceptional circumstances.
- For cardiac arrest in children the UKSAR Medical Group recognises that chest compression only CPR may not be effective, and consideration may need to be given to providing ventilations with a suitable filtered ventilation device.

All organisations are reminded that undertaking ventilations in the current COVID-19 crisis carries a greater risk of virus transmission compared to no ventilations. Therefore, it is appropriate to undertake a dynamic risk assessment and proceed only if it is felt that the benefit outweighs the risk.

Where available AED's and supplemental oxygen via a face mask can be used with level 2 PPE as they are not considered AGP's. This is consistent with government advice and that of Health Protection Scotland and Public Health England:

1. Providing assistance

It is now understood that Covid-19 is endemic and we can expect a significant number of the UK population to be infected and/or infectious. Not all infected persons display symptoms, and therefore responders should assume casualties have the potential to infect their rescuers. Furthermore, rescuers may, themselves, be asymptomatically infected or infectious whilst responding.

When dealing with casualties social distancing should be maintained where possible and limit number of rescuers in contact with a casualty. Infection risk may increase if responding in a restricted space.

Rescuers and other responders should where practicable maintain social distancing. Avoid touching your face, wash your hands following contact with others and at the conclusion of operations. Wash your hands before taking breaks, smoking, eating or drinking. Consider hydration and sustenance before commencing any part of the operation where you may come into contact with casualties.

2. Approach to a casualty

The core of this guidance is based on an ability to perform a dynamic risk assessment of virus transmission, and thereby infection, based upon the risk of a casualty being infected with Covid-19 in the context of a specific rescue situation. See Appendix 1.

Whilst en-route to scene, responders should consider what information is available from other sources such as family members or tasking agencies and whether the context of the rescue suggests the casualty had been well prior to the incident. Given the asymptomatic period of infection these can only guide decisions rather than provide clear decision boundaries.

When arriving on scene there will be some situations where it is neither possible to delay first interventions, such as water rescue, nor to communicate with a casualty, such as reduced consciousness or inaccessibility in a technical rescue scenario.

Where such difficulties exist, we advocate donning level 2 PPE (see Appendix 3) immediately where practicable and administering the live saving intervention. Mitigating the risk during this phase, for example using simple positioning techniques when extracting or rescuing from water, such that as few rescuers as possible are exposed and the casualty is kept facing away from them so far as possible.

Once any immediate life-threatening risk has been addressed, as soon as possible, the responders should proceed to the dynamic risk assessment of the virus transmission risk specific to the rescue as detailed in Appendix 1.

For those casualties presenting with signs and symptoms of Covid-19 (dry cough, fever, shortness of breath, and/or recent loss in their sense of smell, as per Appendix 1) These casualties are considered "HIGH RISK"

- If the situation is stable, you should control the scene and wait for specialist responders from Ambulance or other statutory partner agencies. Serious consideration should be given as to whether the casualty can wait for treatment from a responding ambulance service in level 3 PPE . (see Appendix 3)

- If you do need to provide assistance to an individual who is symptomatic, wherever possible, place

the person in a safe, well ventilated place away from others. If there is no physically separate room, ask others who are not involved in providing assistance to stay at least 2 metres away from the individual where practicable. Avoid use of enclosed shelters/ bivi tents for casualties. This decision will be guided by increasingly cold, wet weather during the winter months.

- Provide level 2 PPE (see Appendix 3) to those rescuers who need to be within 2m of the casualty, and place an un-valved facemask onto the casualty also.

- Limit the number of rescue personnel who have contact with the symptomatic individual.

- If possible, stay upwind of the casualty.

- Ensure rigorous hygiene on doffing of PPE

For those casualties NOT presenting with signs and symptoms of Covid-19

Remember that the casualty could be infective but not showing symptoms, and so follow basic safety measures. These casualties are considered "MEDIUM RISK" as their covid-19 status is unknown.

- Render aid, but remembering social distancing should be maintained where possible and limit number of rescuers in contact with a casualty.

- If the SAR organisation has a plentiful supply of PPE masks, then rescuers and casualty would benefit from both wearing masks, based on the fact that not all those infected with Covid-19 are symptomatic. However, it is a fact that in SAR organisations PPE may not be plentiful, and therefore based on the risk assessment in Appendix 1, along with consideration of the SAR environment and required task, it can be that an un-valved mask or face covering is just provided to all casualties whether showing symptoms or not, to limit the spread of any infection to rescuers. In a masks' absence, an improvised covering may confer some protection. This allows rescuers to carry out associated tasks uninhibited in the normal way, e.g. extractions or carry outs.

- Avoid enclosed or confined spaces as far as possible.

- SAR responders should not be attempting to diagnose COVID-19 cases. If there is concern that someone you are managing may be infected, **call NHS 111 or 999 / Ambulance control**

Any rescuer with symptoms of COVID-19 post rescue (dry cough, fever, shortness of breath and/ or recent loss of sense of smell) must self-isolate at home away from family occupants, **follow NHS advice and inform your organisation.**

3. Resuscitation

Guidance on how to resuscitate has been provided sector by sector. In the home, resuscitation may have been started by a member of the household who is likely to have been exposed to the same level of infectivity. In the hospital setting, PPE will be available and teams can plan their response accordingly. It is unlikely that either assumption holds true for UKSAR operations. Recent discussions on whether or not chest compressions and supplemental oxygen via a face mask are an aerosol-generating procedure (AGP) have identified that there is an inadequate evidence base to state with any degree of certainty for or against this concept but on the balance of probability present a low risk for the transmission of the virus if it is present.

It is recognised that in a perfect world level 3 PPE would provide maximum protection for the rescuer. However, as with many other aspects of SAR environmental medicine, level 3 PPE is not usually available or feasible for the immediate environment the response occurs in (see section 4). Balancing the risk to rescuers versus the usually open-air environment, the operational challenges, and the availability and use of level 3 PPE for SAR teams, level 2 PPE is advocated for resuscitation procedures unless level 3 PPE is available and safe to be used in the operational environment.

As SAR organisations practice at varying levels of the PHEM framework, rather than confuse with multiple resuscitation algorithms, a flow chart detailing modifications in basic life support is detailed in Appendix 2, from which each organisation can vary their practice accordingly.

- In the absence of level 3 (AGP) PPE, all resuscitation must take place with rescuers in level 2 (non AGP) PPE. (see Appendix 3)

- In all cases, a swift risk assessment should be performed taking into account the amount of enclosed environment around the patient, environmental air flow, the likelihood of viral infection in the casualty, underlying health conditions of the rescuer, and the vaccination status of the rescuer and casualty (if known). The rescuer should then decide how to act in the circumstance in which they find themselves.

- In children and infants, the cause of cardiac arrest is more likely to be of a respiratory origin (asphyxial), rather than cardiac. Chest compression only CPR is likely to be less effective, with ventilations being a key intervention for survival. If the decision is made to perform ventilations in these circumstances, then consideration should be given to:
    - Use of supraglottic airway device or Bag-Valve-Mask (BVM) as opposed to direct forms of ventilation (mouth-to-mouth, pocket mask) if possible
    - Using a suitable ventilation aid that utilises a filter between the device and the rescuer – bearing in mind the advice contained in Appendix 3.

- In adults do not deliver rescue breaths using mouth-to-mouth or pocket masks. Use a supraglottic airway device if available. If using a BVM, ensure a tight seal and use airway adjuncts to facilitate safe ventilation.

- If performing compression only CPR, cover the mouth and nose of the casualty with a mask or cover before commencing. If available attach an AED at the earliest opportunity. If available, supplemental oxygen may be delivered via a face mask – ideally this is placed over the casualty's mouth and nose at a convenient moment when chest compressions are temporarily not being performed.

- There is no significantly increased risk of explosion or fire when an AED is used in conjunction with supplemental oxygen via face mask provided:

    - It is not an enclosed space that will concentrate the oxygen levels. (In the open air there will negligible if any increase in the oxygen concentration in the immediate vicinity of the AED pads).

    - The AED pads are securely placed on a dry chest, with minimal opportunity for charge leakage or electrical sparks.

- If appropriate level 2 PPE is not available, Defibrillation-only resuscitation should be considered. In this instance, also covering the victim's face with a mask or improvised cover may offer some additional protection.

- Where neither defibrillation nor level 2 (non AGP) PPE are available, responders should await the arrival of statutory emergency service colleagues with appropriate equipment.

- Where this is not viable, rescuers should consider recognition of life extinct under the UKSAR unified criteria

4. Personal Protective Equipment (PPE) and rescue equipment

Level 3 PPE is highly unlikely to be available or appropriate for the SAR environment. This is because level 3 PPE requires appropriate fit-testing of FFP3 masks and limitations in their use such as shaving within 8 hours may not be practicable within the SAR operational environment. An adequately sealed FFP3 mask provides some restriction to breathing and would likely impact on the ability of the wearer to undertake SAR activities particularly in wet and/or very cold environments. Any organisation seeking to equip itself with FFP3 masks in order to undertake full resuscitation should consider all these limitations, as well as scarcity of supply. It is worthy of note that SAR Aircraft are able to attain Level 3 PPE, and thus are able to offer advanced interventions on casualties.

Therefore, Level 2 PPE (see Appendix 3) is recommended as the base level of PPE for SAR casualty care, unless it is established that the casualty poses no or medium risk of Covid (See Appendix 1), and then Level 1 PPE can be considered. Level 2 PPE in a SAR environment constitutes the use of eye protection (safety glasses, goggles, visor or face shield), ideally a FFP2 mask, (if not a Type IIR fluid resistant surgical mask) and medical gloves when dealing with casualties. Dispose of gloves after use and clean eye wear after use in line with organisational protocols, end ensure rigorous doffing hygiene.

In the open air, keeping a 2 metre distance from the casualty, keeping upwind, limiting time with the casualty and strict hygiene controls are the principal means of protection.

Medical aprons are impractical in the SAR environment; waterproof clothing such as foul or wet

weather gear or drysuits will provide a practical alternative and can be cleaned after the incident. When worn as protection these should be zipped up fully and cuffs tightened. Waterproof clothing and alike however is not appropriate protection for level 3 PPE.

Standard decontamination protocols should be followed after any contact with casualties. Foul/wet weather clothing must be washed down or laundered as appropriate after contact with a suspected infected casualty and workwear and overalls must be hot-laundered with detergent following manufacturers guidance.

Where possible keep unused equipment at least 2 metres and upwind from casualty until required, for example; stretcher, first aid kit, technical rescue equipment, which will help to avoid unnecessary potential contamination.

Limit the number of people in contact with any equipment used, both during the incident and when packing down and cleaning.

Following all incidents any equipment which may have been contaminated must be cleaned with suitable decontamination materials.

As well as casualty care and rescue equipment, laminated maps, operations guides and other equipment such as radios, compasses, binoculars etc. must also be cleaned if used.

Where practicable, clean kit before re-stowing on vehicle/craft or transport in suitable bags back to station for cleaning. Consideration should be given when doffing a potentially contaminated 'head over' item of PPE such as drysuits or PFDs.

If rescuers have come into contact with a casualty, non-disposable PPE should be wiped down and overalls removed before travel, separated in a bag and hot washed as per manufacturers guidance.

Equipment should be decontaminated in line with normal protocols and Government guidance.

Wash your hands thoroughly with soap and water after taking off each layer of PPE or handling equipment. Water, soap and a suitable container should be carried for this purpose. Hand washing can be supplemented by the use of hand gels but bear in mind that these are only effective if hands are washed clean first. Vigorous hand washing for no less than 20 seconds is the most effective control. Do not touch your face.

5. Body Recovery

As with all body recovery, consideration should be given to securing the scene while awaiting specially equipped partner organisations.

Where SAR responders are required to facilitate such a recovery, rescuers should follow all the preceding guidance. Bodies must be packaged and transported in a body bag as soon as possible to protect responders. Until packaged the number of responders in contact with the body should be limited.

Once the body is sealed inside a water proof body bag consideration, where practicable, should be given to decontaminating the exterior of the bag to reduce the risk to other rescuers.

6. Civil resilience and mutual aid

Where assistance falls into SAR activity the above protocols should be used. If taskings are not aligned to core activities the tasking organisation should provide appropriate PPE and protocols for the tasking.

7. References

1. https://www.gov.uk/government/publications/novel-coronavirus-2019-ncov-interim-guidance-for-first-responders/interim-guidance-for-first-responders-and-others-in-close-contact-with-symptomatic-people-with-potential-2019-ncov *Accessed Oct 2021*

2. https://www.gov.uk/government/publications/covid-19-guidance-for-ambulance-trusts *Accessed Oct 2021*

3. https://hpspubsrepo.blob.core.windows.net/hps-website/nss/3055/documents/1_agp-sbar.pdf *Accessed Oct 2021*

4. https://www.gov.uk/government/publications/wuhan-novel-coronavirus-infection-prevention-and-control/covid-19-infection-prevention-and-control-guidance-aerosol-generating-procedures *Accessed Oct 2021*

5. Shrimpton, A., Brown, J., Cook, T.M. and Pickering, A.E. (2021), Airway procedures: the importance of distinguishing between high risk and aerosol generation. Anaesthesia, 76: 28-29. https://doi.org/10.1111/anae.15383

6. Shrimpton, A.J., Brown, J.M., Gregson, F.K.A., Cook, T.M., Scott, D.A., McGain, F., Humphries, R.S., Dhillon, R.S., Reid, J.P., Hamilton, F., Bzdek, B.R., Pickering, A.E. and (2021), Quantitative evaluation of aerosol generation during manual facemask ventilation. Anaesthesia. https://doi.org/10.1111/anae.15599

INITIAL APPROACH AND ASSESSMENT

Appendix 1

UKSAR Covid-19 Guidance v4 28.10.21

Initial Call Out / En Route to Scene

Any existing information as to "Covid state" of patient in particular for "Missing / Despondent persons"?

Can you obtain any information about casualty's "Covid state" as assets approach scene?

If any information exists – who do you need to share that with?

Immediate Risk to Life?

Environmental or cABC reasons

YES

NO

Don Level 2 PPE* immediately

and deal with the problem as Team Members try and gain further information on "Covid state"

Risk Assessment of Possible Covid Status of Patient

Assess risk to SAR Personnel – This must be done. Is the casualty:

Known to be Covid positive,

OR

Exhibiting – (Outside the immediate context of the rescue – such as a drowning, hanging)
Acute respiratory distress syndrome
(Difficulty in breathing, Fast breathing, A fast heart rate, Muscle fatigue and weakness, Cough, Fever, Headaches, Mental confusion Discoloration in skin or nails, Decreased blood pressure)

OR

Has a high temperature (of 37.8°C or higher)
OR at least one of the following which must be of acute onset:
persistent cough (with or without sputum), hoarseness, nasal discharge or congestion, shortness of breath, sore throat, wheezing or sneezing, loss of sense of smell.

YES to ANY of above = HIGH RISK

Consider if you need to treat or can await the arrival of the Ambulance Service?

IF TREATING:
Minimum Level 2 PPE* must be worn
Place un-valved mask on patient

Further Considerations:
Minimal SAR personnel performing casualty care
Minimise total team attending
Kit dump away from casualty site, use runners
Bystanders MUST leave scene
Advise responding assets of casualty Covid status
Do not use "Bivi" type shelter unless necessary for clinical reasons
Where possible treat in fresh air

NO to ALL = MEDIUM RISK

Level 1 PPE* appropriate
Gloves
Consider un-valved mask for patient

Further Considerations:
Minimal SAR personnel performing casualty care
Minimise total team attending
Kit dump away from casualty site – use runners
Rescue maintaining social distancing as much as possible
All bystanders to maintain social distance
Advise responding assets of casualty Covid status

* for PPE levels see Appendix 3

BLS MODIFICATIONS - COVID+ PATIENT

Appendix 2

UKSAR Covid-19 Guidance v4 28.10.21

Virus Transmission Risk:
Dynamic risk assessment should be performed to determine the risk of virus transmission from the casualty and consequence of disease to the rescuer in the specific rescue situation:

HIGH RISK FACTORS

- Rescuers partially vaccinated/ no vaccination
- Confined space with low ventilation e.g. Bathroom inside a house
- More than 15 minutes contact time
- Close proximity to the casualty (less than 2metres)
- Casualty who is coughing &/or sneezing (i.e. Generating high velocity aerosols and droplets)
- No face mask, airway device/ adjunct, or face covering for the casualty.
- No PPE for rescuer

LOW RISK FACTORS

- Rescuers fully vaccinated with appropriate boosters
- Outdoors and unconfined space
- Ventilated area
- Appropriate PPE for the risk and procedure
- Surgical Face mask, airway device/adjunct or face covering for the casualty
- Distance maintained from the casualty
- Reduced contact time with the casualty (less than 15minutes)

Proceed with your DRcABC approach as trained but consider:

D

Keep rescuer's face away from patient's mouth and nose at all times

Patient's mouth and nose to be covered with facemask, oxygen mask or BVM where possible

You MUST risk assess the situation as normal, **PLUS: Don Level 2 PPE**

Maintain kit and personnel "upwind" of the casualty site where possible

A

Be aware of fluid, vomit etc. near / from patient's mouth and / or nose

Airway adjuncts and suction may be used if risk of virus transmission deemed low

If airway obstruction is present, try to remove by rolling onto side, facing away from rescuers

B

****DO NOT give any rescue breaths or ventillations via a pocket mask or mouth to mouth.**

Supplemental free-flow oxygen via a face mask can be used during resuscitation.

If low risk of virus transmission, BVM and / or supraglottic airway devices can be used.

C

If no normal breathing or no signs of life, cover the mouth and nose of the victim with a mask or as per "B"

COMPRESSION ONLY CPR default if high risk of viral transmission & level 3 PPE is not availble

If available, attach an AED and follow the instructions of the AED

E

Protect from the weather / environment but **DO NOT use "bivi tent" or similar** that would cause an enclosed space around the rescuers and patient

Conduct secondary survey for other injuries as appropriate with as little patient contact as is practically possible in the circumstances of the rescue

+

Further Considerations:

**** Dynamic risk assessment for oxygen and ventilation in children and infants**

Extraction plan and liaison with Ambulance Service

Further resources to scene such as Mechanical CPR device

Can Ambulance Service / SAR Aircraft takeover in Level 3 PPE?

Consideration to termination of resuscitation and Recognition of Life Extinct

On Call Advice available to your Team via radio / telephone

UKSAR SUGGESTED PPE LEVELS

Appendix 3

UKSAR Covid-19 Guidance v4 28.10.21

LEVEL 1 PPE
Medium risk of Covid 19 +

Disposable gloves

Waterproof jacket, cuffs fastened securely and zipped to neck or foul weather suit or immersion suit or drysuit

Eye protection may be disposable or reusable – helicopter goggles, helmet with visor, safety goggles or full face shield.

Consider Type IIR fluid-resistant, un-valved surgical mask or improvised face covering for the casualty.

LEVEL 2 PPE
High risk of Covid 19 +

Disposable gloves

Waterproof jacket, cuffs fastened securely and zipped to neck or foul weather suit or immersion suit or drysuit

Eye protection may be disposable or reusable – helicopter goggles, helmet with visor, safety goggles or full face shield.

FFP2 mask ideally, if not Type IIR fluid-resistant surgical mask, for rescuer and casualty. Casualty's mask must be un-valved.

LEVEL 3 PPE
High risk of Covid 19 +

This level is unlikely to be achievable or practical in the SAR environment, but personnel equipped with this may be available via responding Ambulance Service / SAR Aircraft

Disposable gloves

Disposable fluid-repellent coverall or gown (not simply waterproofs)

Eye protection may be disposable or reusable – helicopter goggles, helmet with visor, safety goggles or full face shield. Caution in spectacle-type eyeware which may offer inadequate peripheral protection.

Filtering facepiece (FFP3) respirator, wearer having been formally fit-tested, freshly shaved, and worn within manufacturer's direction for use.