

Medical care and first aid: an interassociation consensus framework for organised non-elite sport during the COVID-19 pandemic

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ABSTRACT

The cessation of amateur and recreational sport has had significant implications globally, impacting economic, social and health facets of population well-being. As a result, there is pressure to resume sport at all levels. The ongoing prevalence of SARS-CoV-2 and subsequent 'second waves' require urgent best practice guidelines to be developed to return recreational (non-elite) sports as quickly as possible while prioritising the well-being of the participants and support staff.

This guidance document describes the need for such advice and the process of collating available evidence. Expert opinion is integrated into this document to provide uniform and pragmatic recommendations, thereby optimising on-field and field-side safety for all involved persons, including coaches, first responders and participants.

The nature of SARS-CoV-2 transmission means that the use of some procedures performed during emergency care and resuscitation could potentially be hazardous, necessitating the need for guidance on the use of personal protective equipment, the allocation of predetermined areas to manage potentially infective cases and the governance and audit of the process.

available online⁵ and serves as an accompaniment to recently published consensus guidelines for elite sport.²⁻⁴

OBJECTIVES

Many professional sports leagues and competitions have resumed after a COVID-19 lockdown. These elite levels of sport may operate under different circumstances from normal, the most notable of which is the absence of spectators. Acknowledging the physical, social and financial benefits of sports participation, some non-elite sport have followed suit and resumed under modified conditions, but a significantly high prevalence of the SARS-CoV-2 virus remains in many communities and countries. Even in areas where the rise in COVID-19 cases has initially been contained, subsequent waves of infection have been reported.⁶⁻⁸ At elite level, with greater resources and jurisdiction over professional players, the ability to mitigate the risk of infection is greater. These include the introduction of the concept of the 'biologically safe environment' or 'bio bubble', precompetition medical examinations, readily available medical care and regular diagnostic testing such as reverse transcription polymerase chain reaction (RT-PCR) tests and enzyme-linked immunosorbent assay (ELISA) antibody tests for SARS-CoV-2.⁹⁻¹¹ Without these additional and stringent protective interventions, players and medical support teams at the non-elite level are at greater danger of contracting and transmitting SARS-CoV-2. In such environments, pitch-side preparation and precautions assume even greater importance than at the elite level. This guidance seeks to set minimum standards by which the safest possible environment can be created for the return of non-elite sport.

BACKGROUND

Recent recommendations to mitigate the risk of COVID-19 (the clinical illness caused by SARS-CoV-2) in sport are personnel, resource and investigation intense.¹⁻⁴ They are primarily aimed for the higher echelons of sport, in which organisations have more resources available. It is recognised that the level of medical provision/first aid below the elite level varies between different governing bodies, sporting levels, settings and countries. Standardised guidance could help to mitigate the risk of COVID-19 spread in these sporting environments.

An iterative process was performed working with high-profile sports and exercise medicine (SEM) organisations and SEM clinicians to establish best practice recommendations. This was with particular consideration for the resources likely to be available at the non-elite level of organised sport to maintain pitch-side safety for clinicians, first aiders and participants. This paper describes the process of formulating the guidance for non-elite sport made

STAKEHOLDER INVOLVEMENT

Similar to the process followed for the elite sport interassociation consensus, which used Public Health England (PHE) policy and the UK Government guidance on return to sport and recreation,^{2-4,12} agreement was sought from high-profile UK sports associations and SEM bodies, supported by international SEM institutes. Recommendations were devised for pitch-side emergency care based on published data specific to COVID-19. Where this was not available, expert



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Table 1 Example of a self-screening check list prior to each session

Confirm the below statements in relation to your current personal circumstances (completed by a parent for those under age 18 years)	Check Negative	Check Positive
A high temperature (above 37.8°C)* ⁴⁰	<input type="checkbox"/>	<input type="checkbox"/>
A new continuous cough	<input type="checkbox"/>	<input type="checkbox"/>
Shortness of breath	<input type="checkbox"/>	<input type="checkbox"/>
A sore throat	<input type="checkbox"/>	<input type="checkbox"/>
Loss of or change in sense of taste or smell	<input type="checkbox"/>	<input type="checkbox"/>
Feeling generally unwell	<input type="checkbox"/>	<input type="checkbox"/>
Persistent tiredness	<input type="checkbox"/>	<input type="checkbox"/>
Been in close contact with/living with a suspected or confirmed case of COVID-19 in the previous 2 weeks	<input type="checkbox"/>	<input type="checkbox"/>
Travel from a high-risk region in the last 2 weeks ^{19,41}	<input type="checkbox"/>	<input type="checkbox"/>

*Some clubs may wish to include on site temperature checking of participants as part of their standard operating procedure.

UK and international SEM bodies: The English Institute of Sport, The Scottish Institute of Sport, Federation Internationale de Football Association, the South African Rugby Union and Wits Sport and Health, University of the Witwatersrand, South Africa.

The target users are medical support teams and first aiders operating field side in non-elite sport, across all sporting codes, as well as their educating bodies. These recommendations provide structures where healthcare professionals (HCPs) are provided (tier 1) and emergency care is provided by first aid responders (tier 2). These may include lower league professional teams, amateur leagues, universities and schools.

DEVELOPMENT AND METHODS

Guidance documents from PHE, The Health and Safety Executive (UK) and the UK Government were collated along

Table 2 Safe practices and personal protective equipment

Personal hygiene	Optimal personal hygiene should be practised at all times by all individuals within the sporting environment. Ensure regular handwashing with soap and water and, where this is not available, the use of alcohol hand sanitiser (minimum 70% concentration) is advised. ^{17,24,42} When coughing or sneezing, the use of a tissue disposed of in a sealed bin or, where no tissues are available, the crook of an elbow. Organisations/clubs should consider a complete ban on chewing gum as it is either spat out or taken out and rolled into a ball and thus poses a high risk of cross-contamination. Spitting and open emptying/clearing of the nose should be forbidden. No sharing of water bottles; each participant should bring their own labelled water bottle for personal use and their own alcohol hand sanitiser and use this frequently throughout the session.
Personal protective equipment	It is acknowledged that in a sporting environment donning appropriate PPE can be practically challenging; therefore, it is recommended to conduct a thorough risk assessment considering amendments or alterations that may be situation and sport specific, including medical support personnel already wearing PPE in anticipation of any potential scenario. It is prudent to consider the risk of transmission from patient to responder and responder to patient, in addition to donning times, before any mitigation is made. No decision to reduce PPE should adversely impact the care provided or cause unnecessary delay in an emergency situation. Ensure hands are cleaned thoroughly with soap and water or 70% alcohol sanitiser, before putting on and after removal of PPE. In all circumstances where some form of PPE is used, the safe removal is a critical consideration to avoid self-contamination. ²⁴ Correct discarding of all PPE and contaminated equipment as per the country/local authorities' clinical waste policy, ²³ which will require a clinical waste bin and appropriate disposal procedure. Please refer to table 6 regarding single use, sessional use and reusable PPE guidance. ²⁵ Where HCPs and first aiders are provided, ensure the appropriate type and quantity of PPE ² availability at all times (table 6, figure 2) and that appropriate training (including donning and doffing) ^{43,44} is accessible. PPE must reflect all potential medical and first aid situations that may arise through the course of related sporting activity. Adherence to government physical distancing restrictions (preferably 2 m) at all times except in delivery of medical care where appropriate PPE is provided. ⁴⁵ Importantly, no one is expected to provide care that jeopardises their own personal health or safety. In an emergency situation, where suitable PPE is not available, the responder must consider the potential risks to both themselves and the participant and decide what level of care they feel is reasonable, or what level of care they are able to provide in the absence of PPE. This may include providing no assistance at all until the ambulance arrives or until appropriate PPE is made available. ²⁸
Environmental hygiene	Minimise the use of any shared equipment. Implementation of systematic cleaning protocols with the appropriate cleaning products and techniques for both the environment and equipment (first aid and sporting). ^{23,25} Where this is not practical, clean duplicate equipment should be made available. When training or medical equipment sharing is unavoidable, it must be cleaned between use by each participant as must all users' hands. Cleaning all shared equipment such as balls before each session. Train outdoors at all times when practically possible or use well-ventilated indoor facilities. Removing and replacing gumshields should be kept to a minimum in order to reduce hand contamination; hands need to be cleaned before and after replacing the gumshield; storage should be in a sealed container or cleaning solution.
Social distancing	Do not breach the government-issued physical distancing guidance unless strictly necessary, for example, emergency care. Avoid face-to-face situations where possible, even if maintaining physical distancing, as this is a higher risk for transmission. A face-covering cloth or fabric mask has been shown to be an effective way to prevent viral transmission in a community context ⁴⁶ and should apply to a community sports setting. It should be a recommendation for players and support staff/volunteers. Although a lack of scientific evidence for the benefits of wearing masks, especially during exercise, has resulted in some conflicting advice, ^{47,48} the wearing of masks to protect others in the same (sporting) environment should be encouraged wherever possible and should be compulsory for all medical and support staff and for athletes moving to and from training/matches and in the change room. Where possible, mask use should be encouraged during training unless it impairs breathing, as opposed to merely being uncomfortable.

HCPs, healthcare professionals; PPE, personal protective equipment.

opinion was obtained. An expert was defined as a medical specialist in SEM, cardiology, respiratory medicine, paediatrics or epidemiology, who works with elite athletes and has had at least 10 years' experience in their field.

The process was facilitated by the medical education lead of the Football Association using an iterative process, over a period of several months during mid-2020, building off consecutive contributions by each participant, submitted in an edited document via email. The following UK sporting associations were represented: The English Football Association, The English Rugby Football League, The Scottish Football Association, The Lawn Tennis Association, The Welsh Rugby Union and Scottish Rugby, supported by these

with those published from other international sporting bodies and those from relevant UK Royal Colleges updated to reflect COVID-19 changes. A thorough search of peer-reviewed papers was conducted during the periods June–August 2020, using the MEDLINE database. Search terms used were 'SARS-CoV-2' OR 'COVID-19' OR 'Coronavirus', AND 'emergency first-aid', OR 'sports first-aid OR 'personal protective equipment', OR 'sport', OR 'athlete', OR 'sport and recreation', OR 'return to training', OR 'exercise', OR 'trauma care', OR 'resuscitation', OR 'cardiovascular', OR 'respiratory', OR 'first aid', OR 'sanitisation'

Cardiac investigations/referral for ALL regular exercisers & amateur athletes prior to return to training

(adapted from Bhatia et al.)

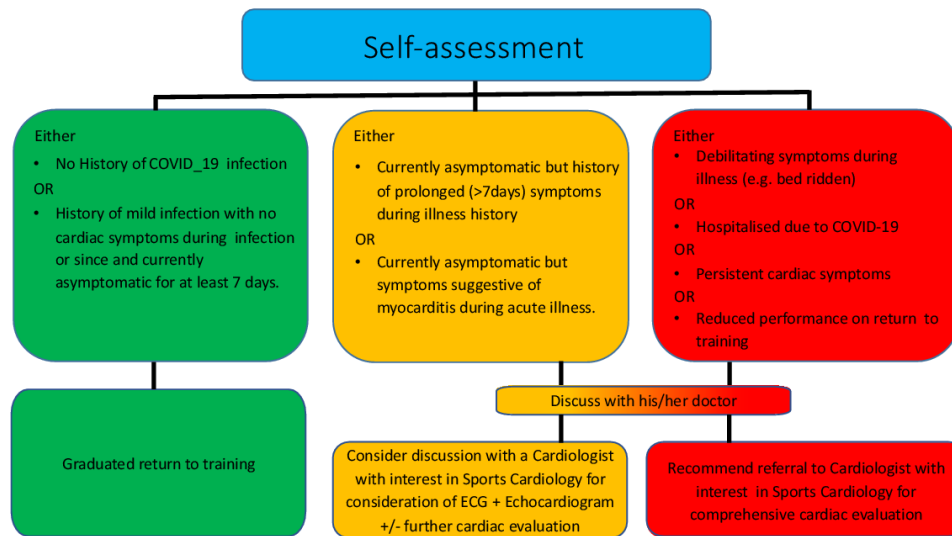


Figure 1 Cardiac investigations/referral for all regular exercisers and amateur athletes prior to returning to training. This protocol has been endorsed by Cardiac Risk in the Young.⁴⁹

OR ‘decontamination’. The references of each paper were examined for additional relevant articles.

Evidence was sought to provide insight into the transmission of SARS-CoV-2, the protective effects of a range of personal protective equipment (PPE) and practices, incubation periods postinfection, potential systemic effects of COVID-19 (especially respiratory and cardiac) and return-to-sport guidelines.

Current evidence was strongest for the respiratory and cardiovascular implications of COVID-19,^{13 14} although in non-sporting populations. The unique context of sport in the COVID-19 pandemic has meant that little published evidence exists regarding best practice so expert opinion was sought from experienced field-side clinicians against this novel epidemiological backdrop. External clinical review was provided by UK and internationally based SEM experts asked to critically evaluate the guidance, provide further recommendations and, where required, suggest additional source references. The recommendations were shared with

the author group for consideration in the next revision. All co-authors agreed on the final guidance. The reliance on expert opinion is a necessary limitation of this document, and as such will necessitate regular updating as new evidence emerges. The high infectivity of SARS-CoV-2, the exponential surge in cases worldwide, the potential severity of infection and the impending resumption of all levels of sport, necessitated urgent guidance despite these limitations. Even without robust data, facilitating best practice that protects participants and avoids disease transmission outweighs the risks of medical and first aid staff acting without protection, risking their health and their ability to provide ongoing care for those in the sporting environment. Importantly, many of the recommendations may be appropriately applied in future epidemics.

Managing participants’ welfare in non-elite sport may vary considerably from elite level, where stricter guidance and more defined parameters are maintained in a controlled environment. Nevertheless, it remains the responsibility of all first aid and healthcare providers to remain up to date with PPE recommendations and return to participation, regional or devolved national, public health and government authority guidance on COVID-19 guidelines and updates.

Participant risk reduction

Advise participants to complete a self-screening questionnaire prior to attendance (table 1) as a means of minimising those with possible COVID-19 or suspected COVID-19 attending a training session or competition. This aims to minimise transmission risk through sporting activity and may be pencil and paper or electronic app based.

Governance

- ▶ Appoint a COVID-19 compliance officer who must be responsible for implementing and recording all recommended protocols.

Table 3 Classification of aerosol-generating procedures (AGPs)

AGP procedures	Not currently considered AGP
Cardiopulmonary resuscitation. ³⁴⁻³⁶	The use of a nebuliser.
Airway management: any suction of upper airway, use of airway adjuncts and emergency surgical airway procedures. ³⁴	High flow oxygen administration via face mask.
Breathing management: any form of manual ventilation (mouth-to-mouth ventilation is not recommended in the current circumstance). Bag valve mask using a viral filter is preferable. ⁵⁰	Simple airway opening techniques (head tilt chin lift/jaw thrust).
Medical emergencies in the context of reduced and impaired consciousness levels (eg, head injuries), with a risk of airway compromise, that would require the above interventions.	Medical emergencies that do not involve actual or potential airway compromise.
Nose, mouth and throat procedures such as managing epistaxis or oral lacerations. ^{26 27}	Nasopharyngeal swabbing.

Table 4 Potential situations and injuries that can occur during sport with associated PPE guidance

Risk	Injuries that may present in the non-elite sports settings and guidance on management	PPE level
	Maintaining social distancing as advised	1
Not maintaining social distance	Simple airway manoeuvres—manual in-line stabilisation (MILS) for suspected cervical spine injuries.	2
With face-to-face contact risk	An airway can become compromised for many reasons; one of the most common in the sporting setting is due to loss of consciousness resulting in the risk of the participants tongue occluding their own airway. A simple head tilt chin lift, in the absence of any suspected head or neck injury, or jaw thrust can be applied after first ensuring there is nothing occluding the participants airway. All other airway interventions are level 3.	
	Wounds and bleeding	2
	Wounds that are open but do not involve the oral or nasal cavities are not classed as AGPs. However, keep other participants/parents away from the area. Use a spill kit if available, using the PPE in the kit and follow the instructions provided. If no spill kit is available, place paper towels/roll onto the spill and seek further advice from emergency services when they arrive.	
	Soft tissue injuries and fractures	2
	Include soft tissue injuries to the upper and lower limbs. Excluding those injuries with C-spine or facial involvement.	
	Head injuries/medical emergencies that do not involve the airway	2
	Are not considered AGPs and can be dealt with as normal by a first aider with appropriate training. If no first aider is present, then the coach can assist from a distance where practically possible until a parent, a household member or the first aider or ambulance arrive (will vary dependent on club EAP).	
	Cardiac arrest*	2
	Cardiac arrest <i>with</i> face covered (towel or non-rebreather mask acceptable) including continuous compressions and use of automated external defibrillator (AED).	
Not maintaining social distance	Loss of consciousness (LOC)	3
With face-to-face contact risk	If the mechanism of an injury involving LOC has not been witnessed, one must assume that a head/neck injury is present until proven otherwise. MILS will be required. In these circumstances, there is potential for an airway compromise, particularly when a participant has lost consciousness or has an altered level of consciousness.	
And potential risk of AGPs	Airway compromise	3
	Any airway intervention beyond simple airway manoeuvres including all ventilatory support. Tier 2 first aid responders on recognising airway difficulty should immediately call for medical assistance because an ambulance will be essential.	
	Choking*	3
	Another form of airway compromise is choking. If the participant is choking then the responder should approach the participant from behind and follow the choking algorithm ⁵¹ (up to five back slaps, followed by up to five abdominal thrust, repeated until the airway is clear). Please note: emphasis on care when checking the airway between sets is advised as this is an AGP especially in scenarios where level 3 PPE is not available to mitigate the additional risk.	
	Nasal or oral wounds with the potential for spitting, coughing or sneezing would be considered a potential for an AGP and a higher level of PPE required for any management. ^{27,51}	3
	For tier 2 first aid responders on approaching nasal or oral wounds, ensure more than the government advised social distance is maintained from the participant by all concerned and seek urgent medical assistance. Where parents or household members are close by, they can be allowed to assist, and the first responder can advise from a safe distance. Postural drainage positions, such as leaning forwards or side lying with the head facing towards the ground can help drain fluids from the face or nose. This can be considered if injuries allow, while awaiting medical help from those in appropriate PPE or the emergency services. If the participant is unconscious, then the recovery position should be used.	
	Complicated head injury with potential for airway compromise	3
	Where additional airway management is required beyond simple airway opening, such as adjuncts or suction, this would then be classed as AGP.	
	Cardiac arrest*	3
	Without covered compressions (adults and adolescents 30:2, children 15:2), AED and airway interventions.	

AGP, aerosol-generating procedure; EAP, emergency action plan; PPE, personal protective equipment.

- ▶ Conduct an emergency and first aid risk assessment, amending emergency action plans (EAPs) to mitigate identified risks; include modifications to the emergency/first aid kit, provision of PPE and plans should individuals present with symptoms in a session.
- ▶ All HCPs and first aid responders should be aware of all EAPs before entering the environment for the first time.
- ▶ Attempts should be made to identify individuals involved in the sporting environment who may be considered to be at a higher risk of severe COVID-19 infections¹⁵ and mitigation strategies applied as appropriate.
- ▶ Para-sport athletes and those participants with underlying health conditions are recommended to undertake a preparticipation check with an HCP to determine their own personal risk, health and vulnerability.

- ▶ Organisations should keep a clear record of who was present on site to support national track and trace systems in the event of a positive COVID-19 case.
- ▶ Refer to [table 2](#) for guiding principles on making an environment COVID-19 safe.

Isolation procedures

Should a participant return a positive response to any of the criteria in [table 1](#), they should stay home and follow the government issued self-isolation guidance as applicable.¹⁶

If a participant develops or displays COVID-19 symptoms during a session, they should be separated from the wider group for broader public safety and placed in an identified quarantine zone. If they require medical assistance, emergency services should be called. If they are well enough to travel home, they should do so in their own

Table 5 Designated medical areas for tier 1

Wherever possible, each training and playing facility should have two designated medical areas coded as either non-AGP or AGP zones. Preferably these should be well-ventilated individual rooms; if this is not achievable, they need to be clearly marked with a minimum of 2 m between zones separating the areas.

Non-AGP area This is the general medical room and is to be used for all non-AGPs, assessment or examination and essential treatment of participants.	AGP area This is to be used for: ▶ AGPs. ▶ Urgent assessment or management of a suspected infected participant.
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Considerations for both areas

- ▶ Appropriate PPE must be worn once entering the area, and it should be adequately disinfected/disposed of following use
- ▶ If an AGP is occurring and areas are not in separate rooms, everyone not in level 3 PPE must leave the room immediately, and appropriate ventilation and cleaning must occur prior to the non-AGP area being reinstated²²
- ▶ Emergency medical equipment should be situated immediately outside the AGP area, and taken in as needed, to avoid unnecessary contamination

AGP, aerosol-generating procedure.

Table 6 Definition of situational personal protective equipment level requirements (also refer to figure 2)

Situation	Gloves	Apron	Fluid-resistant long-armed gown/coveralls	Fabric / cloth mask*	Fluid-resistant surgical face mask type IIR†	Filtering face piece respirator 3 (FFP3) mask‡	Goggles/full face visor in addition to personal spectacles
	Single use§	Single use§	Sessional use¶	Sessional use¶	Sessional use¶	Sessional use reusable**	Sessional use Reusable**
Non-medical scenario where social distancing may be breached ⁴⁷ including at training	x	x	x	✓	x	x	x
Level 1 Where government-advised distancing may not be maintained at all times	x	x	x	x	✓	x	x
Level 2 Within 2 m, which may include face-to-face contact for emergency/first aid management of all individuals	✓	✓	x	x	✓	x	✓
Level 3/AGP Aerosol-generating procedure (AGP or high potential for aerosol)	✓	x	✓	x	x	✓	✓

*Three layers: first water absorbent cotton, second filter layer and third is water resistant.⁴⁷ A face covering or cloth mask is not the same as a type IIR surgical face mask; it is consequently not sufficient to form part of a club's EAP.

†When using a type IIR fluid-repellent surgical face mask, you should mould the metal strap of the mask over the bridge of the nose and make sure the mask fits snugly under the chin, around or across any facial hair if present. Can be worn without removal for up to a 4-hour session; must be changed if visibly soiled, damp or damaged.

‡The WHO does recommend FFP2 mask as an alternative to FFP3.⁴⁷ FFP3 is adopted by this framework in line with PHE. Each individual requiring use of an FFP mask must ensure they have a mask that is compatible to their face shape. Each mask requires a 'fit-testing' process to be conducted to ensure no aerosol leakage occurs through the seal. Facial hair does impact the efficacy of the masks, and alternative arrangements may need to be considered in these circumstances.⁴⁹

§Single use: equipment that must be changed after each contact.²⁹

¶Sessional use: worn for a period of time when undertaking duties in a specific clinical care setting/exposure environment; a session ends when the responder leaves this defined remit; however, masks should be disposed of if they become moist, damaged or visibly soiled.²⁹

**Reusable equipment appropriately decontaminated to PHE standards that can be reused.⁵²

EAP, emergency action plan; PHE, Public Health England.

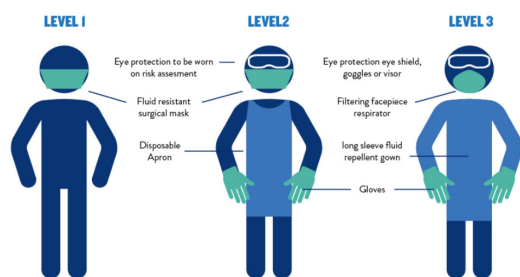


Figure 2 Illustration of personal protective equipment (permission to use from the Lawn Tennis Association (LTA)).

vehicle or with a household member. Participants should follow close contact principles and seek COVID-19 testing based on local availability and guidance. Other participants and coaches present would not need to automatically quarantine unless they developed symptoms, provided they have been compliant with physical distancing precautions.¹⁷

For children, it is recommended a member of their household remains nearby at sessions; thereby, in cases of illness or injury, the child can be taken to a place of safety at the earliest opportunity. If there is no parental/guardian support at the training venue, adequate first aid should be applied, and the child placed in the identified quarantine zone until an appointed emergency contact can collect them. For illness or injury concerning adult participants, if safe to do

Box 1 Cardiac arrest changes for adults and youth (also refer to figures 3 and 4 for algorithms)

Summary of changes for adults

- ▶ In the absence of level 3 PPE commence compressions with a cover over the participant’s face so as to minimise delay. Examples: a non-rebreather mask with oxygen attached (for HCPs) or a towel (for first aid responders.) The towel should provide sufficient cover to cover the patient’s mouth and nose while still permitting breathing to restart following successful resuscitation.³²
- ▶ HCPs should consider the use of bag mask ventilation with a viral filter³⁴ where rescue breathing is required.
- ▶ If rescue breathing is considered outside the scope of first aid practice during the pandemic due to the high risk of viral transmission, perform chest compressions only.^{34–36} Compression-only CPR may be as effective as combined ventilation and compression in the first few minutes after cardiac arrest.³⁴
- ▶ All other participants and individuals involved in the training session should be asked to vacate the vicinity if they are not involved in the resuscitation.
- ▶ Responders are ideally already in level 2 PPE if available, and all other helpers are advised the same (or should apply quickly to not delay treatment) while awaiting support responders who are in level 3 PPE (this may require awaiting an ambulance) to provide rescue breathing.
- ▶ After performing compression-only CPR, all rescuers should wash their hands (and face if no mask or eye protection worn) and should also seek advice from the local healthcare advice service or club medical adviser if later concerned about COVID-19 symptoms.

Summary of changes for those under 18 years of age

- ▶ If the decision is made to perform rescue breathing, the responder should use a face shield or pocket mask with a one-way filter valve.^{41–43}
- ▶ For HCPs, a bag valve mask with viral filter is preferable.⁴¹
- ▶ Providing rescue breaths will increase the risk of transmitting the COVID-19 virus, either to the rescuer or the participant. However, this risk is small compared with the risk of taking no action as this will result in certain cardiac arrest and the death of the child.^{43,54}
- ▶ Early chest compressions (with face coverings as above), AED application and ensuring medical help/emergency services are alerted.
- ▶ Regarding transmission, if rescue breathing has been used during a resuscitation, there are no additional actions to be taken other than to monitor for symptoms of possible COVID-19 over the following 14 days, assuming the individual did not subsequently test positive.⁴⁸

so, they should leave the facility without coming into contact with anyone. Where shared journeys are unavoidable, a face mask should be worn. All individuals should access relevant medical support as needed.

Participants returning to sports training who have had COVID-19 infection

Participants returning to sport after prolonged absence and those with confirmed or suspected COVID-19 infection should undergo a clinical assessment including a detailed history and examination by a medical professional. For the majority of participants who rely on their own means, we recommend a self-assessment algorithm that reflects the principles of the assessment of elite athletes, as suggested by Bhatia *et al.*¹⁸ This is a pragmatic approach that balances the likelihood of cardiac sequelae from the COVID-19 infection - and potential limitations of detailed cardiac testing in this population. It is necessary in order to encourage individuals back to safe exercise and avoid unnecessary anxiety and investigations in already overburdened healthcare systems (figure 1).

Following COVID-19 infection, participants should self-isolate for 10 days¹⁹ and not engage in exercise until they have been symptom free for 7 days.²⁰ Participants experiencing cardiac symptoms including an elevated resting heart rate after the acute infection has resolved should seek specialist medical attention prior to return to exercise.^{18 20} On gradual return to training,²¹ self-monitoring for the occurrence of cardiac symptoms such as chest pain, palpitations, breathlessness disproportionate to the level of activity, exertional dizziness and syncope (figure 1) and monitoring for arrhythmias through a heart rate monitor (for those who have one available) is pragmatic. Participants with new symptoms or irregularities in their heart rhythm should cease exercise and liaise with their doctor. For those who never experienced symptoms, no cardiac evaluation is necessary prior to resumption of training, unless they develop new symptoms on a return to physical exertion.¹⁸

GUIDANCE FOR NON-ELITE CLUBS WITH DESIGNATED HCPs: TIER 1

Clinicians with a duty of care acting as a registered therapist or doctor should follow national public health guidance, conducting their own risk assessment and ensure they follow full PPE guidance as above.

Delivery of emergency care in the non-elite setting: tier 1

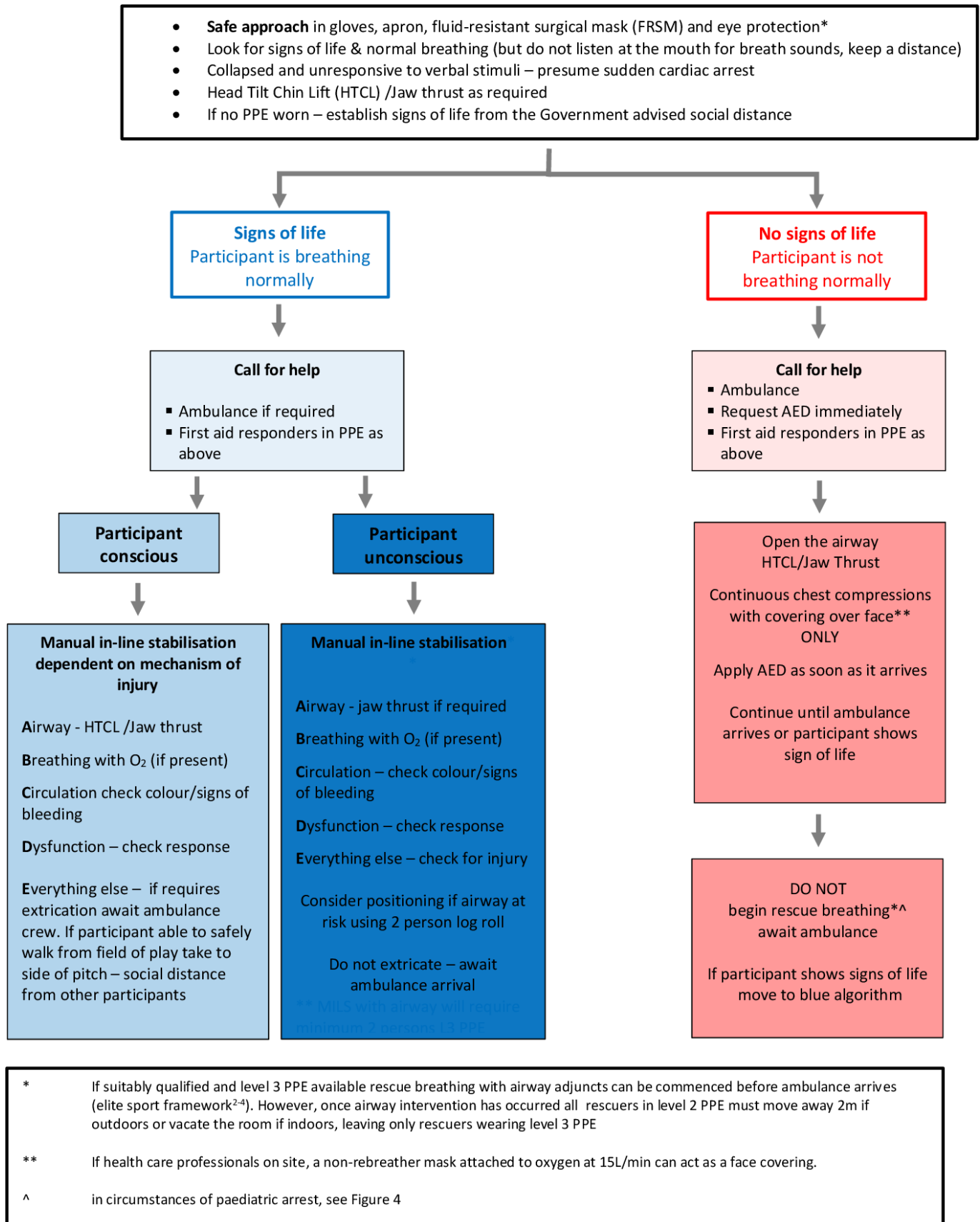
HCPs are expected to provide care equivalent to their level of training, which may include advanced first aid and thus potentially aerosol-generating ventilatory support.

Aerosol-generating procedures (AGPs) are recognised to be a high source of virus transmission requiring level 3 PPE. Sports-related medical care includes many scenarios that are or have the potential to become AGPs (table 3). Once an AGP is commenced, all involved that are not in level 3 PPE must step back 2m when outdoors and vacate the room when indoors.²²

Table 7 COVID-19 update on first aid requirements

First aid qualifications	First aiders should ensure their qualifications are up to date and refer to their respective educating body regarding extensions during the COVID-19 pandemic. ^{30–32}
First aid kits	First aid kits should reflect the additional items that ensure safety during this COVID-19 pandemic inclusive of PPE and consideration should be applied to what items will become single use.
First aid rooms	First aiders are not recommended to provide any treatments or interventions beyond the emergency first aid outlined in this document during the COVID-19 pandemic, and club emergency action plans should outline the same. All non-essential treatment should be provided by the local healthcare provider. In the case of an emergency procedure during training, this should ideally be undertaken by the emergency services on arrival at the training ground. In the absence of suitable PPE in a tier 2 club emergency situation, the responder must consider the potential risks and decide what level of care they feel is reasonable and what level of care they are able to provide.

PPE, personal protective equipment.



* If suitably qualified and level 3 PPE available rescue breathing with airway adjuncts can be commenced before ambulance arrives (elite sport framework²⁻⁴). However, once airway intervention has occurred all rescuers in level 2 PPE must move away 2m if outdoors or vacate the room if indoors, leaving only rescuers wearing level 3 PPE

** If health care professionals on site, a non-rebreather mask attached to oxygen at 15L/min can act as a face covering.

^ in circumstances of paediatric arrest, see Figure 4

Figure 3 Adult emergency and first aid care algorithm for non-elite sport during COVID-19 in absence of level 3 PPE. PPE, personal protective equipment.

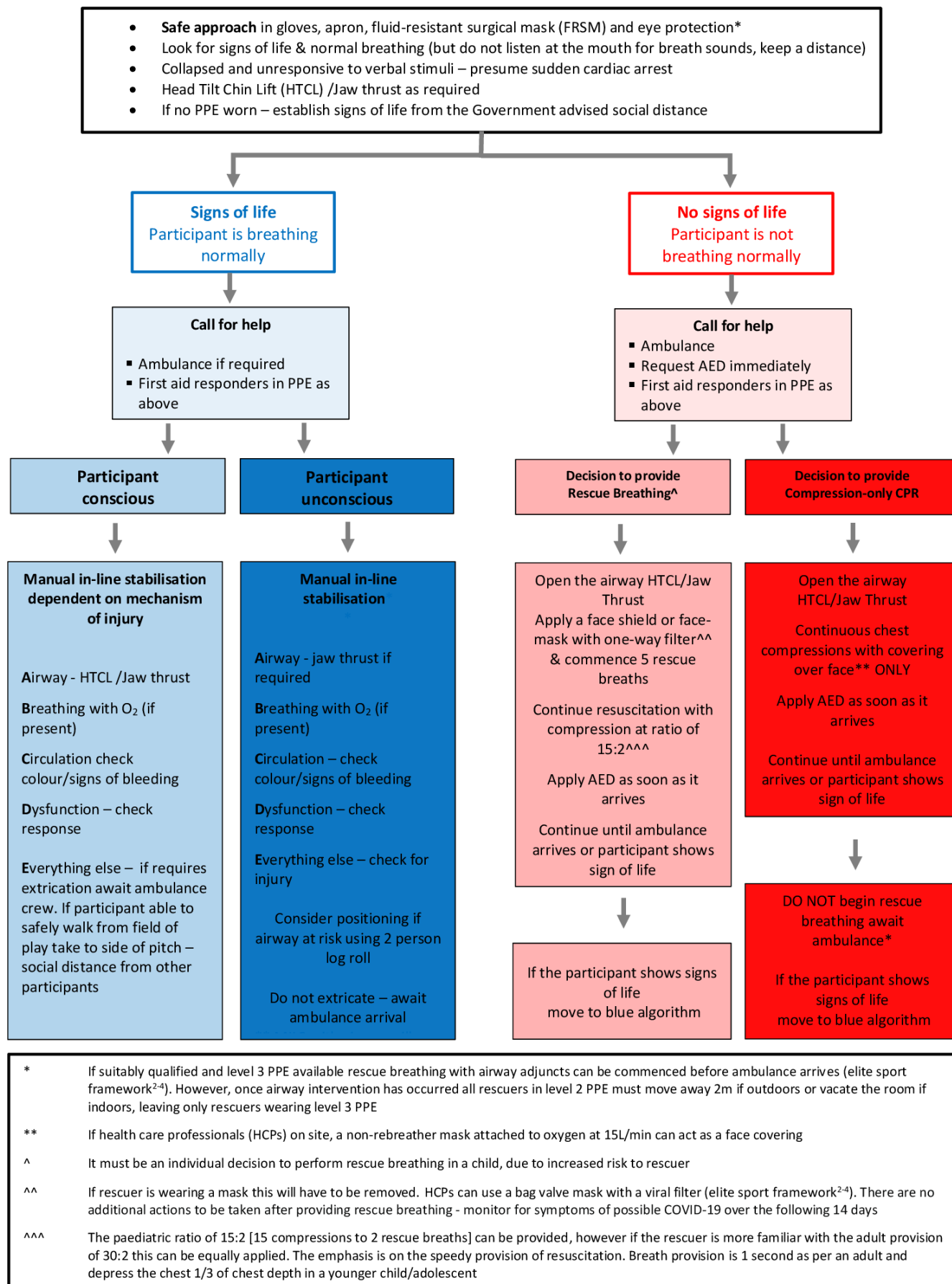


Figure 4 Paediatric emergency and first aid care algorithm for non-elite sport during COVID-19 in absence of level 3 PPE. AED, automated external defibrillator; CPR, cardiopulmonary resuscitation; PPE, personal protective equipment.

Table 8 Summary of the key recommendations for non-elite sport first aid and medical care in a COVID-19 environment

Recommendation	Intervention	Tasks
Governance and preparation	Appoint a COVID-19 compliance officer. First aid requirements	Conduct a risk assessment. Create standard operating procedures/protocols for individual situations (emergency action plan). Educate HCPs, players and support staff. Record positive cases, contacts and tracing. Update training to include COVID-19 protocols. Upgrade first aid kits with appropriate PPE.
Participant risk reduction	Self-screening by participants. Mask wearing.	Self-screening checklist. Temperature check. Travelling to and from training. In changing rooms. During training, unless breathing is hampered.
Isolation procedures	At home: identify symptoms and possible contacts. At training: develop or display symptoms. Suspected contact with a positive case ▶ Distancing maintained and asymptomatic. ▶ Possible close contact or symptomatic. Children.	Self-isolate as per guidance. Place in quarantine zone, assess need for medical assistance. No need for isolation. Self-isolate. To be collected by guardian. Apply first aid if needed before guardians arrive.
Personal protection	Optimise personal hygiene. PPE. Cardiac arrest.	Handwashing, sanitising, respiratory etiquette and gumshield hygiene. Situation-specific risk assessment. Responder-ready in appropriate PPE. Safe removal and disposal procedures rehearsed and implemented. Use of appropriate PPE, mask with one-way filter valve or bag valve mask for rescue breathing (children)/ face covering adults. Postresuscitation sanitising. Testing and monitoring of symptoms postexposure.
Group protection	Environment. Equipment. Treatment areas.	Train outdoors or in well-ventilated area. Avoid sharing equipment. Sanitise equipment between sessions. Allocate non-AGP and AGP areas. Consider appropriate sanitising, PPE and equipment storage.

AGP, aerosol-generating procedure; HCP, healthcare professional; PPE, personal protective equipment.

The response time for a medical emergency needs to be appropriately risk assessed with the addition of time taken to don appropriate PPE; this is imperative when considering airway interventions, chest compressions and all clinically relevant scenarios (table 4). As time is critical in determining successful outcomes, it is recommended that staff should either be wearing or have access to appropriate levels of PPE in a time frame that will not detrimentally affect the outcome of the clinical situation. Individual donning times will vary according to experience and the availability of ‘donning buddies’.

Medical treatment rooms in the non-elite setting: tier 1

If treatment rooms are used, physical distancing must be followed (table 5). The environment must be maintained to public health standards after each participant.²³ Non-essential manual therapy is not recommended. When performing essential physiotherapy or soft tissue treatment appropriate PPE must be worn throughout. Should a participant require an assessment of their head, inclusive of face, mouth or nose, HCPs must wear, in addition to the PPE above, a fluid resistant visor or goggles²³ (level 2, table 6). Personal spectacles are not considered equivalent. This needs to be a part of the club EAP.

Optimised pitch side emergency first aid cover should consist of:

- ▶ One appropriately trained responder (appropriately trained responders are those HCPs with any relevant and valid additional qualification in sports emergency or first aid training provision) in level 2 PPE with the ability to don level 3 with minimal delay, if required. For example, having additional available PPE on person or in the emergency pitch side bag.

- ▶ One appropriately trained responder (appropriately trained responders are those HCPs with any relevant and valid additional qualification in sports emergency or first aid training provision) who is either already wearing or has immediate access to level 3 PPE and can respond immediately.
- ▶ Additional support personnel that can don the appropriate level of PPE to assist in a medical emergency with minimal delay, when required.
- ▶ Additional (support) personnel that can don the appropriate level of PPE to assist with extrication.
- ▶ Please note: where a risk assessment of club facilities, emergency equipment and staffing levels concludes that level 3 PPE is beyond their clinical scope of care this should be clearly reflected in the club medical EAP. A detailed course of action that should include calling for an ambulance and providing the care that can be provided until the ambulance arrives.

GUIDANCE FOR NON-ELITE CLUBS WITH DESIGNATED FIRST AID RESPONDERS: TIER 2

First aid falls into two parts:

1. Those who respond because of an emergency arising in front of them (lay-responder) including sports coaches.
2. Allied HCPs contracted solely as first aiders or designated first aid responders with a duty of care (workplace first aiders).

The first duty of care as first aider or coach is to themselves, and it is imperative that all advised precautions are taken.²⁴⁻²⁷ The vast majority of incidents encountered in training may be managed with sensible planning allowing treatment to occur effectively without breaching physical distances. However, delivery of emergency first

aid may necessitate the responder to breach advised social distancing guidance with a potentially injured participant, and this may include cardiopulmonary resuscitation (CPR). In the first instance, when a participant requires assistance, ideally a member of their household can aid them. All others should physically distance unless a life or limb-threatening injury necessitates emergency care.

If a first aider is present, they should be equipped with the appropriate PPE in the event that they need to compromise physical distancing to provide assistance. First aiders need to remain up to date on first aid procedure during the pandemic (table 7).²⁸

The advice for lay people and coaches with no formal duty of care or role in first aid delivery deviates slightly from those with a clearly defined pre-arranged role.²⁷ Please refer to your club health and safety officer and your club's EAP for COVID-19 changes, as well as this guidance to inform your planning and sessions.

Additional information for designated first aid responders in the non-elite sports setting: tier 2

Participant contact occurring while delivering emergency first aid care will need to follow PPE guidance,^{29–32} in line with public health recommendations:

- ▶ The use of PPE is both to protect the responder from the participant and to protect the participant from the responder.
- ▶ Where it is *not* possible to always maintain the government advised physical distance from a participant, the responder should wear PPE as advised under as per table 6.

GUIDANCE FOR NON-ELITE SPORT MEDICAL AND FIRST AID RESPONDERS IN ON-FIELD EMERGENCY SITUATIONS

It must be remembered one can never be certain that a participant does not have COVID-19, even in absence of symptoms. The following guidance is based on risk mitigation and the assumption that someone could be infected during all medical and first aid provision.

Cardiopulmonary resuscitation

Cardiac function may be compromised by COVID-19, and sudden cardiac arrest is a medical emergency that can occur during sports participation.³³ Therefore, each club must amend their EAP, carefully considering updated precautions for this period.

Some resuscitation advisory groups differ regarding chest compressions as AGPs due to limited data and uncertainty regarding risk.^{2, 3, 34–38} The group felt it prudent to follow the most protective advice in these unprecedented times. Automated external defibrillators (AEDs) are not considered as AGPs and considering most sports environments use AEDs, the sport guidance has been adapted to suit the needs.

Special considerations for all non-elite youth (under 18 years) sport

It is very likely in the sports setting that the child participant is well known to the responder and to avoid performing ventilatory support might not be an option they wish to make, despite the increased risk. As most common causes of cardiac arrest in children differ from those in adults, ventilation can be imperative to the chance of survival.³⁹ For those not trained in paediatric resuscitation, the adult process can be followed. Ensuring treatment is provided quickly is most important.

For other injuries that occur in non-elite sport settings, appropriate management and advised PPE during the COVID-19 pandemic, refer to box 1.

CONCLUSIONS

Any sporting event involving individuals in close proximity taking place during the COVID-19 pandemic significantly increases the risk of viral transmission. This non-elite guidance format is deliberately aimed at scenarios where there may be less regulation, support and medical expertise making implementing risk reduction more challenging (see table 8 for summary of key points). In addition, emphasis is placed on management protocols where only first aid responder rather than HCP expertise is accessible. Modifications to recommendations may be required depending on the specific sport, setting and resources, while acknowledging the need to accede to regional and national authority regulations.

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