

# Masks in the mountains: how a UK search and rescue team prepared for COVID-19

William Robert Kitchen 

When a person becomes ill, injured or lost in a remote part of the UK — the climber who falls thirty metres down a mountainside; a hiker with chest pain in the middle of a national park; the walking group lost on the fells in appalling weather in the depths of winter — the job of locating, treating and evacuating that casualty will often fall to a mountain rescue team such as my own, based in the Holme Valley in West Yorkshire. Always on call and consisting of unpaid volunteers trained in search and rescue techniques and emergency medical care, these teams will respond regardless of the weather or the time of day.

'PPE' is not a new term for us as a service. Our operating environment has always been dangerous. Until recently though, our PPE was the equipment that kept us safe from extreme temperatures, falling rocks and torrential rain: our climbing harnesses, helmets and cold weather gear. We always wear medical gloves when treating patients, but people with dangerous respiratory tract infections do not tend to go hiking. Droplet and aerosol precautions are therefore historically alien to us.

The spread of COVID-19 in March forced drastic changes to how we work. As my Team's Infection Prevention and Control Lead, I knew that the challenge facing us was immense. The guidance available from Public Health England and the National Health Service (NHS) was very much intended for indoor environments. The standard fluid resistant surgical mask, apron, visor and gloves would not suffice. Rain would rapidly render a surgical mask wet and ineffective, so we would need to change masks frequently. Wind might blow contaminated aprons up into our faces. We instead use our full top and bottom waterproofs as PPE, washing and rewaterproofing them after each incident. Medical gloves can be torn by thorns, so we wear two pairs to provide additional protection. To add a further layer of complexity, we still need to wear our existing 'mountain PPE', much of which is too expensive to not reuse. Complex decontamination routines were therefore needed for these items, many

of which are delicate and would be damaged by standard disinfectants. Similar decontamination procedures were also drawn up for our off-road ambulances, stretchers and other equipment.

And, how would we safely remove our PPE? There are no sinks in the hills, making hand washing impossible. Copious quantities of alcohol gel would be needed instead. Due to shortages in March, we had to source this from a generous local distillery. Recognising the risk posed by our lack of experience with enhanced medical PPE, we instituted a buddy-led doffing system. All PPE removal was directly supervised by a 'clean' rescuer, reading aloud the doffing steps from a checklist and ensuring that nothing was missed. We hoped that this would minimise any cognitive overload, reducing the probability of mistakes being made.

To further improve our resilience the team was split in half, with only one half responding to each callout. Any COVID-19 exposure would therefore result in a maximum of half of the team being placed into quarantine, allowing our service to remain operational. This was at the expense of manpower though, which had already been reduced by a fifth because of the need to protect clinically vulnerable members of the team by taking them off-call.

Aerosol generating procedures (AGPs) and cardiopulmonary resuscitation (CPR) presented a difficult dilemma. While we are a professional emergency service, our internally trained medical responders, known as 'casualty carers', are all volunteers. Access to FFP3 (filtering face piece 3) masks and fit testing was limited at the beginning of the pandemic, so in the interests of safety for the providers, a national decision was made to withdraw AGPs from casualty carers' scope of practice. We, therefore, switched to compression-only CPR and defibrillation. While there is debate over whether these procedures are also AGPs, we work exclusively outside, and it was assumed that the excellent ventilation would keep the risk of infection very low.

For the first 4 weeks of lockdown, mountain rescue teams nationwide were mostly very quiet. The public did indeed 'stay home'. Towards the end of April though,

our callout rates rose rapidly, driven by large numbers of people recognising that walking in the hills and on the moors is a relatively safe way to exercise during a pandemic. Our neighbouring teams in the Peak District were even busier than we were, attending 360% more incidents during the second half of May compared with the same period in 2019. While exhausting, the high callout rate allowed us to identify our weaknesses and rapidly refine our procedures. The heat while wearing our PPE in the summer sun was almost unbearable, so lighter waterproofs were sourced. To prevent our masks being destroyed by rainwater, a team member and his family together created homemade waterproof covers for our masks, keeping them dry.

Mountain rescue doctors and paramedics who were previously fit tested for their NHS duties are still largely the only personnel performing AGPs. Strong relationships with our local ambulance services, air ambulances and other prehospital care providers have meant that fit tested clinicians have always been available to teams with no fit tested personnel. Discussions about our next steps regarding AGPs are ongoing across the organisation.

As for all healthcare providers, it has certainly been a difficult few months for us. Hopefully things will return to normal over the next year or two but, regardless of what comes next, we will continue to be there for those who are lost, injured or taken unwell in the outdoors.

**Twitter** William Robert Kitchen @WillKitchen96

**Contributors** WRK is the sole author of the submitted work.

**Funding** The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

**Competing interests** None declared.

**Patient consent for publication** Not required.

**Provenance and peer review** Not commissioned; externally peer reviewed.

© Author(s) (or their employer(s)) 2021. No commercial re-use. See rights and permissions. Published by BMJ.

**Handling editor** Caroline Leech



**To cite** Kitchen WR. *Emerg Med J* 2021;**38**:248.

Received 26 August 2020

Revised 7 October 2020

Accepted 30 November 2020

Published Online First 21 December 2020

*Emerg Med J* 2021;**38**:248.

doi:10.1136/emermed-2020-210580

**ORCID iD**

William Robert Kitchen <http://orcid.org/0000-0002-7453-510X>

**Correspondence to** William Robert Kitchen, The Holme Valley Mountain Rescue Team, Marsden HD7 6EY, UK; [william.kitchen@holmevalleymrt.org.uk](mailto:william.kitchen@holmevalleymrt.org.uk)

