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General correspondence

Put on your own oxygen mask before helping others: mitigating healthcare worker risk from COVID-19

As doctors, we have dealt with emergencies our entire careers. Every year during our training, we step out of our comfort zone and into new clinical challenges. It is not unusual to feel daunted or scared. In every single resuscitation attempt, advanced life support follows the same steps. We are trained that regardless of the situation, you fall back on your algorithms, and for a critical patient that means: airway, breathing, circulation and disability. We assess and reassess until the patient is better. We excel in an emergency because we respond with a calm demeanour that develops with years of training, dealing with the lesser known, and a drive for life-long learning.

We understand and can respond to an emergency, but there is no 'emergency' in a pandemic. In a pandemic, it is almost impossible to avoid completely the 'danger' in danger, response, send for help, airway, breathing, circulation, defibrillation (DRS ABCD) by virtue of the highly infectious nature of the disease. Although our training and skills will be vital in the coming months, what will prove more important will be taking the time to assess and mitigate risk.

In December 2019, a novel coronavirus was identified in Wuhan, China.[1] It was found to replicate in the upper respiratory tract with symptoms beginning on Days 5–10. By early 2020, the virus spread to 100 000 people in 100 countries, meeting the criteria for a global pandemic. According to the World Health Organization, cases are now 'accelerating', with over 4 million people infected worldwide by 11 May 2020.

Healthcare systems are struggling with the simple mathematics of supply and demand. Initial studies out of China suggest that 20% of the total infected will require medical care, with 14% having severe illness and 5% having critical illness.[2] Mortality is quoted at approximately 3% but is much higher in elderly and vulnerable populations.[3] The global health system is not equipped to manage the sheer volume of patients. Already in the United Kingdom, Italy, Iran and parts of the US triage systems have been enacted to inform decisions based on lack of resources.[4]

With COVID-19 spreading exponentially and our hospital systems becoming inundated the risks to healthcare workers are also 'accelerating'. Healthcare workers have been casualties in this pandemic, where in Italy around 20% ($n = 350$) have contracted the virus and already 51 have died.[5,6] Similarly, in China, up to 29% of the first COVID-19 infections were among healthcare workers.[7]

With the increase in risk, there also appears to be a rationing of potentially life-saving equipment. In the United Kingdom, the protective gear of healthcare workers was downgraded. In the United States, doctors have been advised to wear a single mask for the duration of their shift and the gold-standard N95 masks have been abandoned apart from in front-line workers. The collective sense of duty is evidenced in the United Kingdom, where retired doctors have been conscripted despite being at higher risk of complications or even death from COVID-19.

We must learn quickly from the countries that have managed to mitigate risk for their healthcare workers. In Hong Kong,[8] Singapore and the second wave of doctors recruited in Wuhan the risk of transmission of COVID-19 to a healthcare worker is zero.[9] Danger mitigation strategies involved wearing masks at all times, meticulous hand washing, and disinfecting surfaces between patients.[8] Where possible separate teams and separate whole hospitals were used to prevent spread between COVID-19 positive and negative inpatients. That in some countries transmission to doctors is zero, while in others doctors are dying is a call to action.

In this pandemic, it is essential that we as a profession rely on our training, our ability to learn quickly and our calm communication skills. Yet before all of this, we have to remember the principles of basic first aid. First look for danger, and if the risk in a certain situation is unacceptable, mitigate the risk. Instead of relying on our innate reaction to self-sacrifice, we must elevate the importance of personal protection. More than ever, it is our clinical imperative to minimise danger to ourselves, and our colleagues in order to be well enough to look after our patients.

As a global society, there is a health incentive to look after clinicians, by ensuring adequate personal protective equipment and training, minimising community COVID-19 and asymptomatic carriers within the hospital setting and having a global response that minimises

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the overall number of patients and maximises medical supplies. The many lives each individual doctor will treat in their long career depend on implementing all of these actions now.

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