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# Reducing medical error during a pandemic

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## Abstract

On 30 January 2020, the WHO declared the coronavirus disease 2019 (COVID-19) a public health emergency of international concern. By 11 March 2020, it was designated a pandemic owing to its rapid worldwide spread. In this short article we provide some information that might be useful and help equip colleagues to reduce medical error during a pandemic.

We advocate a systems-based approach, rather than an individual's sole responsibility, and, look at ways to provide safer healthcare.

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## Introduction

At time of writing (1 April 2020), we are in the midst of a pandemic: COVID-19 currently affects 203 countries, with 638,146 cases and 30,105 confirmed deaths.<sup>1–3</sup> The annual estimated cost of avoidable medical errors in the UK has been quoted as £1bn and is the third leading cause of death in the US.<sup>4,5</sup> The potential risk for medical errors in the current climate is potentially even more likely. Prior to COVID-19, medical error was seen as a global priority that prompted the first “World Patient Safety Day” by the WHO on September 17th, 2019. The intention is to make healthcare safer, to raise global awareness of patient safety, and, to encourage people to show their commitment (to “speak up for patient safety”).

During emergency situations, several inter-connecting themes have been identified as impacting on the quality of care and its timely delivery. These include organisational sys-

tems, workload, time pressure, teamwork, individual human factors, and case complexity.<sup>6</sup>

In the remainder of this article, we provide an overview of specific individual human factors (HF) and working within the hierarchy during a pandemic.

## Clinical preparation in advance: what can you do?

Simulation training is an established training tool used in the military, aviation, and civilian settings (Fig. 1). It facilitates kinaesthetic learning but is also a highly effective way to learn from mistakes and failures in a safe environment. There is evidence to support that simulators are effective in improving clinical skills as well as non-technical skills.<sup>7</sup> Courses that include HF training include: European Trauma Course; NOTSS (Non-Technical Skills for Surgeons); START (Systematic Training in Acute Illness Recognition and Treatment for Surgery) Course. Training exercises, in a military context, reduce the risk of ‘skill fade’; candidates on the LIVEX (live training during an exercise period) pilot in 2015 found

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Fig. 1. Airbus A380 Simulator. Full motion high technology simulators are used every 6 months in aviation to assess and train airline pilots in both technical and non-technical skills.

it a suitable means to ensure operational preparedness was maintained.<sup>8</sup> This is particularly pertinent in the military medical setting when a HOSPEX (hospital exercise simulation) is employed (Fig. 2a and b).<sup>9</sup> This can be adapted

to a particular threat, such as the Ebola crisis seen in Op GRITROCK, and, many of the lessons are relevant to COVID-19.<sup>10</sup>

The Royal College of Surgeons in Ireland offers a Human Factors MSc and PhD programmes are increasingly being offered across the UK.

### What you can do now

The Royal College of Surgeons of England is sharing educational material with its members online such as the START course that includes a HF section. The Intensive Care Society has set up a webpage dedicated to the pandemic with up to date guidance/resources.

There is an opportunity to learn from the lessons of other countries via podcasts<sup>11</sup> and webinars.<sup>12</sup> Social media platforms such as Twitter, Facebook, and Instagram have been used to good effect in the past; for example, providing information for disaster response between authorities and the public during the 2010 Haitian earthquake.<sup>13</sup> It has been suggested, that social media may have a useful role over the more traditional means of reporting to track emergence of disease trends and outbreaks.<sup>14–16</sup> Analysis of social media use over a 14 week period during the Ebola outbreak identified it as a potential source of surveillance to enhance detection, preparedness, and, the public health response during a crisis (used in addition to traditional surveillance approach).<sup>17</sup> On 29 March 2020 the UK's Information Commissioner's Office (ICO) provided advice to the government that it can use anonymised mobile phone data in the fight against coronavirus. Similar measures have been taken by other nations to help track the likely spread of the virus.<sup>18</sup>



Fig. 2. (a) HOSPEX (Hospital Exercise Simulation). (b) HOSPEX (Hospital Exercise Simulation).



The GMC and the BMA provide guidance on social media use by the medical profession and respect and confidentiality for patients as well as colleagues remains of paramount importance.<sup>19,20</sup> The authors have recently written an article (in press) on the potential advantages and perils of using social media in medicine.<sup>21</sup>

Optimisation and empowering a team can be reinforced at a brief: encouraging situational awareness; asking others to look out for you; taking regular breaks to rest and to eat; staying well hydrated; and, to stop if anything doesn't seem quite right.<sup>22,23</sup>

### Assertive followership

Although a systems-based approach is advocated, to have the best effect still requires good HF integration. A key element of flight simulators is not just how the crew interacts with the system, but also with each other. The need for subordinate crew members to challenge authority by asking questions, expressing concerns, or airing vulnerabilities without the fear of retribution or humiliation is encouraged and taught to enhance Flight Safety. Consequently, to enable effective systems-based medical training, a challenge culture of assertive followership is a vital element, not only to enhance learning but to reduce medical error. However, for a challenge culture to be effective requires the whole organisation to adopt and encourage this culture, with those in positions of authority actively flattening the hierarchy by championing and adopting such open practices.

There were significant lessons learnt from the medical response request for Military Aid to Civilian Authorities (MACA) seen in the 2017 terrorist attacks. There was a clear need for Command and Control (C2), with a senior decision maker working in teams with the application of an ethos of mutual support.<sup>24</sup> While there is a requirement to have this C2 approach, clinical teams should strive for a flattened hierarchy to allow junior team members to give their opinion without fear of retribution and this should be included in any team brief.

The C2 element was of particular relevance when a single point of contact (SPOC) is established, which in turn reduces the bandwidth of other team members, regular situation reports (SITREPs) are briefed to ensure that every team member is informed and can add value during this update.<sup>24</sup>

In order to ensure absolute trust between the care deliverers and the policy makers at this time, there must be transparency and also an opportunity for open discussion.<sup>25,26</sup> There are multiple anecdotal incidents from around the world of frontline care givers having different views to the system managers and politicians as to how well systems are preparing or coping. Consequently, both views should be balanced so that decisions are based on reality, and, where there is doubt, an abundance of caution is advisable

from a risk reduction perspective, given the poor outcomes for healthcare workers in many countries thus far.

### Self care

There are several factors that are under our control: self-care (hydration, eating regular healthy meals, exercise), staying in touch with loved ones, and, sleep.<sup>27–30</sup>

The Military employ a buddy-buddy system to ensure that self-care is maintained and correct application of personal protective equipment.<sup>31</sup> This was one of the lessons learnt from Operation GRITROCK that ensured if someone was tired or under the influence of other HF Performance Influencing Factors, a safe environment was maintained. The buddy-buddy system was not just to monitor discrete tasks but also to allow each clinician to maintain a good standard of self-care and highlight potential errors and allow mitigation.

The debrief session is an excellent opportunity to recognise or address the psychological or emotional needs of the clinical team, and, in dealing with terrorism or pandemics, this burden can be quite significant.<sup>24</sup> This increases significantly if there is an expectant death category added to triage, particularly when services are overwhelmed, as seen in the recent COVID-19 response in Italy.<sup>32</sup>

### “Toxic captain”/difficult senior colleague

It is especially important, during these highly stressful times, that all medical professionals are aware of the importance of how they treat their team. For high-functioning teams to work effectively members need to feel safe to speak up. Team members report that they know when the atmosphere is right for ‘psychological safety’: when the team feels like a family. To enable this, leaders must constantly self-monitor and ask for open feedback. Are they empowering others, encouraging questions or, just as importantly, apologising for any overbearing behaviour? Leaders must also challenge colleagues whom they feel are not adopting appropriate behaviours and coach a more appropriate response.

### Conclusion

The current situation has presented challenges to the workforce in terms of adapting to a new way of working, clinical redeployment, and concern for our own and our loved ones' health. Many frontline colleagues are being separated from family members for fear of virus transmission. All formal assessments such as MRCS and FRCS examinations have been suspended. There is also an intense daily exposure to politics and politicians. Given previous responses, for example to the junior doctors' contract, there is a degree of scepticism and mistrust about the handling of the situation.

COVID-19 is affecting all us, our extended families and all those we serve. We must continue to adapt to these new ways of working: within our levels of competency, to deliver safe patient care, and, to minimise the potential for error.

### Ethics statement/confirmation of patients' permission

Not required.

### Conflict of interest

We have no conflicts of interest.

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