

“No. This isn’t just another Flu”: COVID19 and the NHS

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This article should be prefaced in so far as COVID19 is an evolving clinical entity with evidence-bases changing on an almost daily basis. There are current, valiant, efforts from our Department of Health in the UK to better educate the public and fellow scientists on all matters pertaining to this novel coronavirus¹. Further data and research will enlighten us as to the true scale of the pandemic as well as novel treatment options, diagnostic criteria and early detection.

It is important to frame the current ‘COVID19 situation’ in terms of what we currently know and what we, as a profession, are concerned about.

Shortly, it is anticipated that the entire healthcare system in the United Kingdom will undergo a colossal surge in attendances and admissions to hospital, with many requiring medical intervention and subsequent mechanical ventilation. We will likely have never seen anything like this in our lifetimes.^{2,3,4}

A great many people will face a stark reduction in healthcare availability. Hospitals and their staff will be under incredible pressure. The aim of all public health efforts is to reduce the impact of this as much as possible.¹

We have gleaned much in terms of guidance and warnings from our colleagues in Asia and Europe, specifically Italy and China. Distressingly, our colleagues in Italy have described their caseload of COVID19 patients as a ‘Tsunami’.³

Patients, staff and the general public are asking whether COVID19 is like the “usual flu” which has a global mortality of 200K-650K per year (WHO)⁵. Given the current, comparatively low death ‘numbers’ seen with COVID⁶, some are tempted to brush off the concern over the virus as ‘media hype’ or worse, a conspiracy. The simple answer to this is, “No - COVID19 is not like the usual seasonal flu”.

This short article seeks to outline the need to be rationally apprehensive about the evolving pandemic and its likely effects on our speciality.

1. There are similarities between Flu symptoms and COVID19 symptoms. Fever and a new cough predominate the symptoms associated with COVID19. You can review the major clinical features at www.propofology.com/covid19 as well as in the UK's new cross-specialty webpage⁴.
2. The current estimated replication rate of COVID19 is approximately 2x that of flu. For every one person infected with COVID19, they will likely infect 2-3 others.⁷ It sits with a R value of approximately 2.3, vs the common flu which has a value of just >1.
3. Seasonal flu has an estimated mortality of 0.1%⁷. Approximately two billion people are infected worldwide every year, with a mortality figure between 250,000 to 650,000⁵. No one is dismissing the magnitude of this figure, but the two pathogens are distinct and not dependent on one another. The mortality figure or magnitude of one disease should not obfuscate the need for immediate action on another.
4. The current mortality rate for COVID19 could be approximately 3.8-4.1% based on an average of the mortality rates seen per identified cases. These figures are changing daily. In other forums it has been detailed as being approximately 0.3-1%. This remains unconfirmed quite simply because we do not have a complete data set, nor the long time frame for understanding this statistic more completely.¹⁷ While the true mortality of COVID19 will take some time to fully understand, the data we have so far indicates that the crude mortality ratio (the number of reported deaths divided by the reported cases) is between 3-4%, the infection mortality rate (the number of reported deaths divided by the number of infections) will be lower. For seasonal influenza, mortality is usually well below 0.1%. However, mortality is, to a large extent, determined by access to and quality of health care.⁷
5. We will have a vaccine for COVID19 but it will not likely be available for some time. This could be up to 18 months away.^{8,9} Nevertheless, there is a high possibility that this virus could be a mutating virus, like the flu, with annual variations. This perhaps explains the need to attempt to curtail its rampant spread.¹⁶
6. The NHS is relatively well equipped to account for seasonal flu. Despite our current, serious, healthcare pressures in the UK, we deal with serious flu cases in an expedient way. We also have vaccination programmes, which may not negate one's risk of acquiring flu, but can lessen the risk and also reduce the severity of a patient's symptoms.
7. Other healthcare presentations **do not go away** when patients who have suspected COVID19 present to hospital. The NHS runs at a very high 'occupancy' rate with respect to hospital beds and intensive care capacity at baseline. Any further pressure on this system can be seriously problematic and potentially catastrophic. Further pressures such as COVID19 have an additive effect on a healthcare system which is already at capacity.
8. There appears to be a younger cohort of patients affected by COVID19 compared with seasonal flu. Whilst it is no doubt the case that the majority of fatalities will be vulnerable patient groups and the elderly, this is a worrying statistic as the personal healthcare burden of their admission (and likely critical care interaction) has not yet been fully realised.

9. The NHS has one of the lowest numbers of critical care beds per 100,000 of the population in Europe. Associated with that statistic is the relatively low numbers of specialists who can skillfully operate the complex machinery in the Intensive Care Unit. Whilst efforts are underway to urgently 'upskill' practitioners in generic skills pertaining to critical care⁴, this is unlikely to diminish the intense workload on this group of specialist practitioners, many of whom will fall ill themselves during the pandemic. In Italy, currently 8% of infected cases are healthcare workers.²
10. The burden of illness on healthcare workers could be quite high¹⁰. This means that there may not be staff to look after the numbers of patients that are presenting. The government has given advice to self-isolate for 14 days¹¹ in the event that you or anyone in your household becomes unwell with a fever or a new, persistent cough. If this is truly borne out, the impact on already 'tight'¹² NHS staffing levels will be profound.
11. From the AAGBI's seminar on COVID19, we have learned that the hospitalisation rate for COVID19 is around 12% of cases and 2% of cases will be critically ill².
12. A government spokesperson has said that in a worst case scenario, 80% of the population would be infected with COVID19.¹³ In this worse case scenario, with a population in the UK of 66.44 million in 2018, 53.15 million people might be infected. Combined with the evolving figures of 12% of cases requiring hospitalisation = 6.37 million and 1 million needing intensive care over the pandemic period.
13. Prior to expanding ICU capacity, we had approximately 4,000 ICU beds in the UK, with approximately 80% (likely more) currently filled with patients who are in hospital for causes other than COVID19.^{13,14} There are a variety of reasons why we have a relatively low number of ICU beds in the UK. The more efficient we have become in providing critical care, the less funding has been provided. This efficiency by intensive care units has perhaps also left ICU bed numbers exposed to 'cost improvement programmes' that have reduced their numbers over the years. Rapid discharge of COVID19-negative patients in current ICU bed spaces has been enacted; there has been an unprecedented rush to do this. This might highlight the fact that critical care bed need has now superseded all other priorities. We have also been able to procure resources that have previously been held up by management decisions or by 'cost-saving' decisions. Many governance and bureaucratic processes are being lessened during this crisis period.
14. Whilst many focus on the 'death rate' for COVID19 - a more concerning issue is the effect on the healthcare service provision to the entire population. We have already seen **regular** General Practice (GP) in the community effectively cease with emergency, telephone triage ongoing by these specialist practitioners. With nearly 300 million healthcare interactions per year in GP vs around 23 million A&E attendances, this is a cause of significant concern.^{14,15}
15. Emergency departments at this early stage of the pandemic are seemingly much quieter. Anecdotally, we would say that there has been a substantial reduction in A&E attendances when the government announced social distancing measures. We are forced to reflect on the true role of emergency departments vs increased investment in our stretched community healthcare services. Those who would have attended the emergency department might be balancing exposure risk against their actual need for emergency healthcare provision.

16. Even if the aforementioned statistics prove wrong, they would need to prove wrong in a magnitude of extraordinary, if not incredulous, proportions for this pandemic not to have a very serious, if not devastating, toll on the healthcare service and Intensive Care.

Given these concerning statistics, it is virtually certain that the NHS, like Italy and China, will have to utilise non-ICU clinicians within the critical care environment. Now is the time to try to educate oneself as much as possible about the impending situation within the NHS and upskill as much as possible. As our colleagues at the RCOA, FICM, AAGBI and ICS have said, "The difficulty of working with different people, in a different environment, with different equipment, looking after different people in different dress (PPE) should not be underestimated."²

It is our hope that this article explains why COVID19 needs to be taken extremely seriously by us all and not dismissed as 'just another flu'.

References:

1. <https://www.gov.uk/guidance/coronavirus-covid-19-information-for-the-public>
2. <https://anaesthetists.org/Home/Education-events/Events/Event-Details/eventDateId/267>
3. <https://jamanetwork.com/journals/jama/fullarticle/2763188>
4. <https://icmanaesthesiacovid-19.org/cross-skilling>
5. [https://www.who.int/news-room/fact-sheets/detail/influenza-\(seasonal\)](https://www.who.int/news-room/fact-sheets/detail/influenza-(seasonal))
6. [https://www.thelancet.com/journals/laninf/article/PIIS1473-3099\(20\)30195-X/fulltext](https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(20)30195-X/fulltext)
7. https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200306-sitrep-46-covid-19.pdf?sfvrsn=96b04adf_2
8. <https://www.nih.gov/news-events/news-releases/nih-clinical-trial-investigational-vaccine-covid-19-be-gins>
9. <https://www.newscientist.com/article/2237742-how-soon-will-we-have-a-coronavirus-vaccine-the-race-against-covid-19/>
10. [https://www.thelancet.com/pdfs/journals/lanres/PIIS2213-2600\(20\)30066-7.pdf](https://www.thelancet.com/pdfs/journals/lanres/PIIS2213-2600(20)30066-7.pdf)
11. <https://www.publichealth.hscni.net/news/covid-19-coronavirus>
12. <https://www.theguardian.com/society/2019/nov/19/nine-in-10-nhs-bosses-say-staffing-crisis-endangering-patients>
13. <https://www.independent.co.uk/news/health/coronavirus-news-latest-deaths-uk-infection-flu-a9360271.html>
14. <https://www.england.nhs.uk/statistics/statistical-work-areas/critical-care-capacity/>
15. <http://researchbriefings.files.parliament.uk/documents/SN06964/SN06964.pdf>
16. <https://towardsdatascience.com/machine-learning-for-biology-how-will-covid-19-mutate-next-4df93cfa544>
17. <https://www.worldometers.info/coronavirus/coronavirus-death-rate/>