Much has already been written about the effect of COVID-19 on vulnerable groups, including older people and those with underlying health conditions. Yet there is another vulnerable group that is rarely mentioned in this pandemic: healthcare workers.

Although the exact numbers are not yet clear, thousands of healthcare workers worldwide have caught COVID-19 and many have lost their lives.

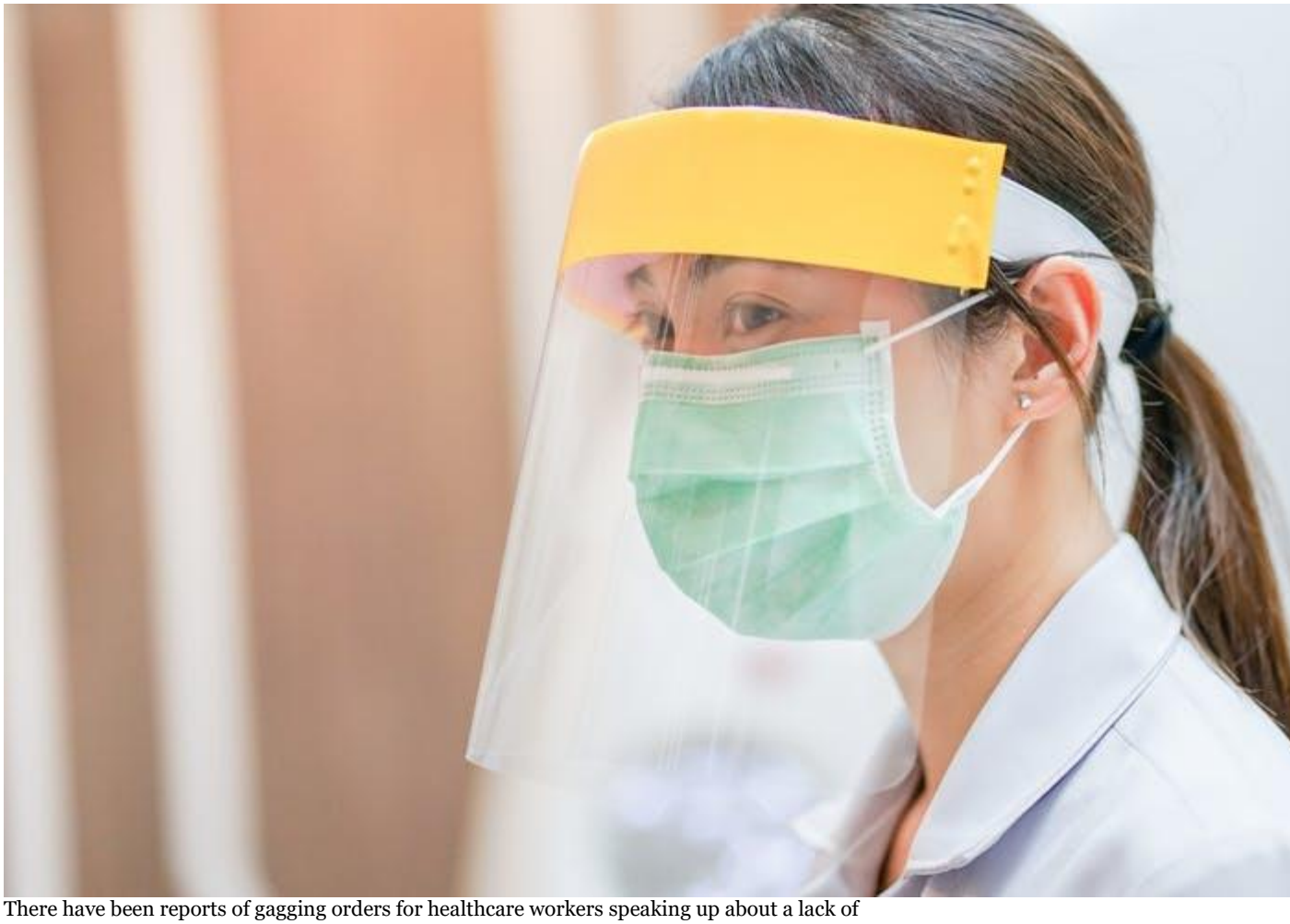
We are two infectious disease doctors, currently caring for people with COVID-19 on specialist wards in Liverpool, England. This means that we, like many healthcare workers around the world, already have an intimate experience of the COVID-19 pandemic. We would like to share our reflections on the health, social and psychological impacts of the COVID-19 pandemic on healthcare workers.

Issues with PPE

In the UK, the NHS has an older workforce than other sectors. This includes a higher proportion of staff with chronic illnesses or volunteers returning from retirement who are more vulnerable to severe COVID-19 disease. We must do as much as we can to protect all healthcare workers from unnecessary and avoidable harm.

While working on our specialist wards in Liverpool, we have heard consistent concerns from NHS frontline staff relating to the lack of COVID-19 testing for healthcare workers and the notable shortcomings in personal protective equipment (PPE).

The unease relating to PPE is understandable. Inadequate staff training and understanding, shortage of PPE and confused PPE guidance and messaging have contributed to infections and deaths in healthcare workers in other countries. There have even been reports of "gagging" orders for healthcare workers against speaking out about PPE shortages in the NHS. If proven, such despicable actions should be condemned.



There have been reports of gagging orders for healthcare workers speaking up about a lack of PPE. pang_oasis/Shutterstock

Talking to colleagues delivering social care, it is clear to us that the concerns relating to PPE extend beyond hospitals and clinics to the community. Staff in nursing and residential homes and working in "supported living" accommodation desperately need PPE too.

Staff shortages related to COVID-19 are now a stark challenge to our healthcare system. Up to a quarter of the NHS workforce in the UK is currently absent because of illness or being in self-isolation. It is likely that the issues surrounding PPE and testing, and fears of COVID-19 will compound this, especially when combined with longer working hours and increase demand on health services.

We have also noted restricted access to family doctors and repeat prescriptions as an indirect effect of the COVID-19 outbreak, which may exacerbate staff absence. This affects not only the public but also healthcare workers.

There are also concerns among healthcare workers that the extra strain on healthcare systems will mean that people with illnesses unrelated to COVID-19 may suffer substandard care. A similar pattern was seen in 2014

in West Africa with an estimated 10,000 excess HIV, malaria and tuberculosis deaths in Guinea, Liberia and Sierra Leone during the Ebola outbreak.

Social and economic impact

The predicted economic effect of COVID-19 on productivity rates and the social impacts of distancing measures have been written about extensively. But what about the social and economic effects on individual healthcare workers and their households?

In the UK, even before the COVID-19 pandemic, the NHS relied heavily on locum healthcare professionals to fill gaps in the workforce. Like any other so-called "zero hours" contract workers, locum staff will suffer income loss as a result of isolation measures, and they may not have recourse to social protection.

It is also likely that COVID-19, like other pandemic infections, such as tuberculosis, will affect people inequitably. Such infections typify the medical poverty trap in which poorer people are more likely to have severe disease and worse outcomes.

The announcement by the UK government that retired healthcare professionals will be brought out of retirement to help out during the crisis, should be cause for worry. While they will undoubtedly bring valuable experience and expertise, a significant proportion will also be vulnerable to severe COVID-19 disease.

There is also some disillusionment among our colleagues in the UK and elsewhere at the amount of funding that can be rapidly mobilised to address COVID-19. Before this pandemic, such funds were supposedly unavailable even to deliver basic care and services for those most in need.

The NHS recently declared COVID-19 a "level 4" emergency. This resulted in all "non-essential" services, such as outpatient clinics and planned operations, being cancelled and healthcare workers annual leave being postponed. Being discouraged or even prevented from taking leave could affect healthcare workers, causing fatigue and stress.

Also, many healthcare workers, like us, have children or older relatives to care for. Increasing work demands mean that our feelings of duty towards our patients are sometimes in direct conflict with our duties to friends, family members and other dependants.

Mental health

Healthcare workers are only human. We experience the same COVID-19-related fear and anxiety as anyone else. This might be fear that we or our friends and family will have to self-isolate or quarantine, or become ill. But there is also the fear of caring for people with COVID-19, some of whom will die.

A survey of nearly 1,300 healthcare workers treating people with COVID-19 in hospitals in China showed high rates of depression, distress, anxiety and insomnia. In Liverpool, we and our teams have also had sleepless nights. On sharing our stories, it is obvious that some of our insomnia relates to guilt. This can be guilt over potential transmission from us, healthcare workers, to vulnerable patients because of inadequate or inappropriate PPE, or being off work and untested for the virus.

Guilt, anger, anxiety, fear, shame and depression were all shown to lead to resignations and poor work performance in healthcare workers during the Sars outbreak. Sadly, in our personal experience, a stiff upper-lip mentality persists among the medical profession, especially in the UK.

Although not actively discouraged, an environment in which our feelings and fears can be shared is not actively nurtured. Indeed, there have been reports of suicide in healthcare workers in Europe during the COVID-19 pandemic. This is unacceptable. Sometimes the best response is not to keep calm and carry on, but to speak out.

We will see "burnout" among healthcare workers during this pandemic. Many healthcare workers are working to excess and performing activities outside of their normal duties. These extra duties might include providing palliative care or managing ventilators of patients with lungs that are failing because of COVID-19.

As the response to the pandemic has mounted, the unpredictability associated with our work has been immense. Healthcare workers are trained to deal with change and stressful scenarios in the short-term, but facing these circumstances repeatedly is foreign to many of us. This creates a notable problem, especially given that it is unclear how long the surge in sick people needing care will last and when the peak in new cases and deaths will be. What's more, we have realised that healthcare workers, whether junior or senior, are all in the same boat. We are being asked to manage a disease that is new not just to us but to everyone on the planet.

Amid escalating clinical demands, we are having to learn rapidly. We are learning everything from the natural history, structure and transmission of SARS-CoV-2, the virus that causes the disease, to the symptoms, signs, diagnosis and treatment of COVID-19. All of us are reading and writing

reams of new articles and guidelines to equip ourselves and others with the knowledge.

A better understanding will help us provide the best care to those affected and the best chance of prevention to those not yet affected. Also, many of us are involved in COVID-19 research; this further stretches our time and workload close to breaking point.

Difficult decisions

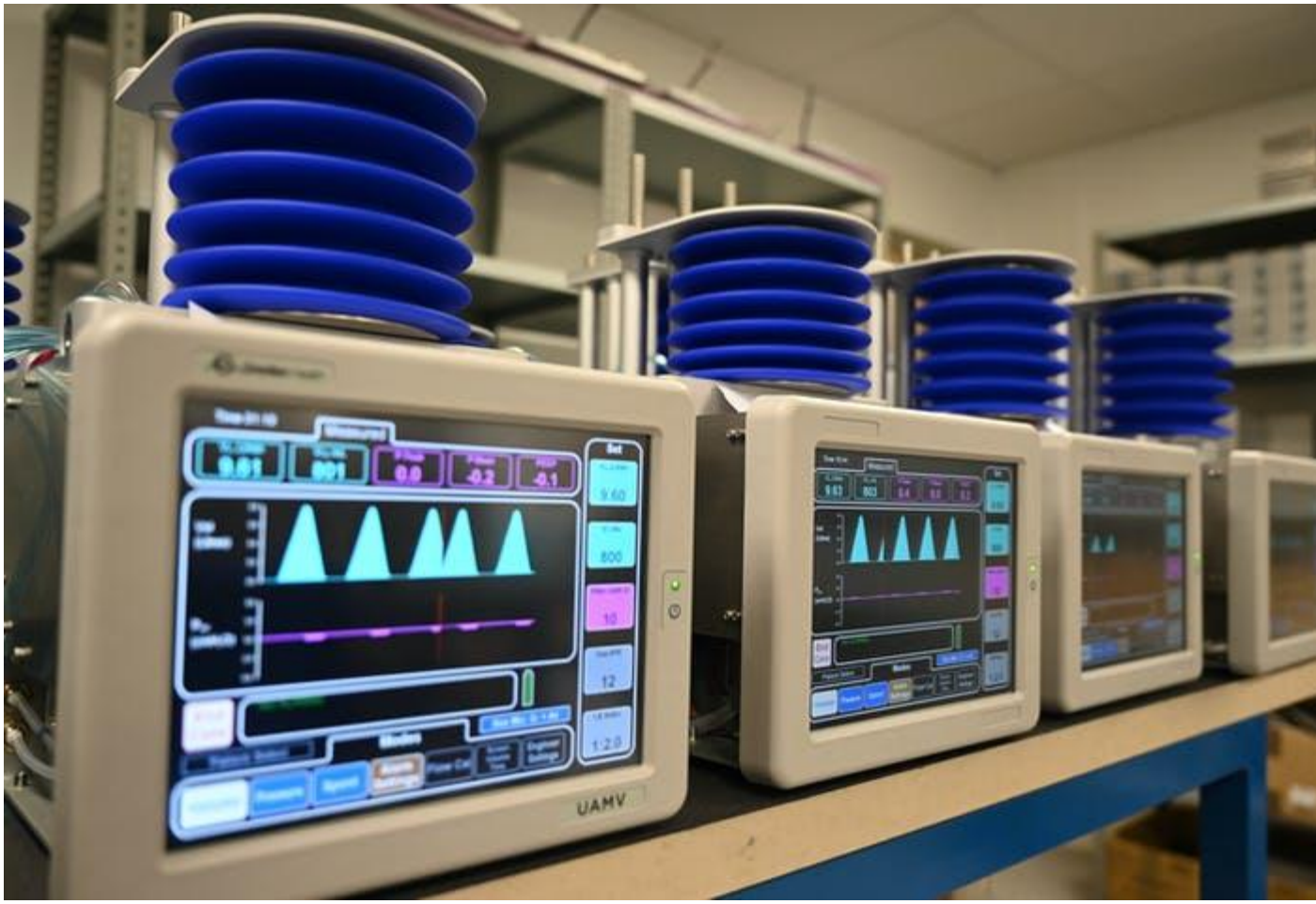
The vast majority of people with COVID-19 will have mild symptoms and quickly get back to full health. Yet it would be remiss of us not to mention the great taboo: death.

The high rate of severe COVID-19 disease we are seeing in vulnerable people means that we have to make difficult decisions early. Initial assessments, often made when a patient arrives at a hospital, include the severity of illness and a decision regarding mechanical ventilation and ICU admission. People who are not suitable for mechanical ventilation or ICU tend to be people in whom cardiopulmonary resuscitation (CPR) would also be futile.

In the context of COVID-19, people in the community, especially vulnerable people, have been encouraged by their GPs to discuss their wishes surrounding CPR, including with their families. These discussions, while sometimes difficult, would greatly support any future decisions were they to be admitted to hospital. But when the rationale for this has been inadequately explained it has, understandably, caused anguish and upset.

Healthcare workers have to make difficult decisions every day. The COVID-19 outbreak is leading to previously unseen levels of demands on resources. This means that decisions relating to ICU and CPR will necessarily prioritise those who are most likely to survive and have the most potential years of life. We are concerned that there is the potential for this to lead to "moral injury" of colleagues, especially in the most overstretched hospitals and ICUs.

Moral injury represents "perpetrating, failing to prevent, bearing witness to, or learning about acts that transgress deeply held moral beliefs and expectations". It's a situation in which, because of competition for limited resources, healthcare workers are not able to say: "We did everything we could." Instead, they have to say: "We did what we could with the available resources." Even experienced staff have expressed sadness and fear about the possibility of having to choose which patient gets a ventilator and ICU bed due to an overwhelmed health system. Let's hope we never have to make such decisions.



Ventilators are in short supply. Neil Hall/EPA

Long-lasting effects?

For all the reasons above, it seems clear to us that working in healthcare during the COVID-19 pandemic will be associated with both short- and long-lasting psychological effects. For some of us, this might include post-traumatic stress disorder. Healthcare workers need to recognise this.

Rather than being invincible, we are actually highly vulnerable. We are already at higher risk of drug and alcohol abuse than workers from other sectors. This risk may ramp up during a pandemic as did mental and social illnesses during the Sars outbreak.

Healthcare workers signing up to respond to the 2014 West African Ebola outbreak were screened for character traits associated with resilience before being deployed. There is no such resilience screening for the COVID-19 response.

We have a keen sense of a duty of care for the mental and physical health of our patients. We would do well to remember that we also have a duty of care to ourselves.