

The COVID-19 pandemic: major risks to healthcare and other workers on the front line

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Since the first cluster of cases of coronavirus disease 2019 (COVID-19) infection was reported in Wuhan, China at the end of December 2019, reporting of cases has spread widely over the past 3 months to become a pandemic of crisis proportions and a rapidly increasing number of deaths, affecting virtually every country across the world. As of 30 March 2020, 724 000 cases have been reported globally, with almost 35 000 deaths. These numbers are accelerating, with a doubling about every 3–4 days. The spread outside China was initially to other countries in Asia, most notably the Republic of Korea, then to the Middle East, most notably Iran, then to southern Europe, most notably Italy and Spain, then further north in Europe, the UK and then to the most recent epicentre; the USA. At the time of writing, considerably fewer cases have been reported in many low-income and middle-income countries, such as in Africa, but numbers of cases and deaths are likely to rise sharply in these countries, especially where testing and healthcare facilities are limited.

While there has been regular tracking and reporting of total cases and deaths across the world, what is less well known is the contribution to these numbers from different types of workers through workplace exposure. Clearly, those workers involved in healthcare are at the front line in terms of risk of infection and death, as has been the case during many previous infectious disease epidemics, such as severe acute respiratory syndrome (SARS) and Ebola. A physically and mentally healthy and well-equipped healthcare workforce is vital to a country's capability to manage COVID-19 cases effectively and lessons can be learnt from the SARS epidemic to introduce novel working arrangements to help protect healthcare workers from infection.¹

Apart from the direct infection risks arising from close contact with patients and/or potentially infectious co-workers during

the COVID-19 pandemic, healthcare workers are also under increasing stress and mental health risks, as was the case with the SARS epidemic.² The number of infected and severely ill patients is escalating as well as the number of exposed healthcare workers who are under self-quarantine, either because they have been infected with COVID-19 or have been in contact with a case. This is leading to a much greater workload and stress for those left in the healthcare workforce and a serious weakening of the health service provided. Mental health risks are further exacerbated by reported shortages of protective equipment for healthcare workers in many parts of the world. There is an urgent need for measures to maintain the mental health of healthcare workers in such stressful situations.³

In addition to healthcare workers, there are many other types of workers who are at increased risk of COVID-19 infection through their work, usually from being in close proximity to members of the public. As one of the main early sources of COVID-19 infection were passengers on cruise ships or international flights, this means air and ship crews are at high risk, as shown in an investigation of 20 cases of COVID-19 among the crew of the Diamond Princess cruise ship.⁴ Other potentially important at-risk public-facing workers include emergency services personnel (eg, police and fire), workers employed in aged care, childcare or education, cleaners, those in the hospitality industry, and public transport and taxi drivers, to name but a few.

Apart from the direct health effects on workers from COVID-19 infection, there will be many flow-on effects which will have an impact on workers' health. These include the strict home isolation orders and major restrictions on gatherings in most countries in response to the pandemic, resulting in declining business confidence and a sharp downturn in the global economy. The economic effects of the COVID-19 pandemic are likely to be much worse than the global financial crisis of 2007–2008. Contributing to these economic effects are the temporary closing of many factories and businesses, and the reduction in the workforce at other businesses (eg, dine-in restaurants shifting to take-away/delivery only),

resulting in many workers losing their jobs, at least temporarily.

These economic impacts are affecting the most vulnerable workers in society; those in less skilled, low paid and precarious jobs, those in the informal sector and who have little or no financial savings or reserves. Lack of employment, even when temporary, can lead to mental health decline,⁵ and these effects are very likely to be exacerbated by the sudden, unexpected and widespread onset of the COVID-19 pandemic and associated job losses. Even among those fortunate workers who are still employed, prolonged teleworking may lead to mental health problems due to long-term social isolation and lack of workplace interaction.

Amid this gloom, there may be some beneficial longer-term impacts on workplaces. The measures being introduced in workplaces to protect workers from contracting COVID-19 may lead to better preparedness in the future for other infections by increases in historically low vaccination rates,⁶ better personal hygiene at work and work organisation involving greater physical distancing. Viral infections (eg, seasonal influenza) have been shown to have a negative impact on worker health and business productivity, through such outcomes as higher sickness absence rates.⁷ Furthermore, some of the workplace changes introduced due to the COVID-19 crisis, such as the replacement of face-to-face meetings and conferences with online and virtual assemblies are likely to be maintained. This can lead to positive environmental effects through less traffic congestion and lower carbon emissions from reduced motor vehicle and aircraft travel.

More research is needed on the risks to health from COVID-19 among healthcare and other workers at high risk of infection. The revised WHO minimum data set for surveillance of COVID-19 cases contains a question about whether the case is a healthcare worker, defined as any job in a healthcare setting. Unfortunately, there are no variables being collected to identify other high-risk occupations and work activities.⁸ A useful resource for occupational health researchers is the COVID-19 Open Research Dataset, known as CORD-19, which is an open access database containing collated COVID-19 published articles and prepublication research from preprint resources. At *Occupational and Environmental Medicine*, we encourage the global occupational health research community to submit papers on worker health risks from the COVID-19 pandemic. We have much to learn.

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