

EDITORIAL

Covid-19 and workers' protection: lessons to learn, and lessons overlooked

Up to 9 January 2021, the Health and Safety Executive (HSE) in Great Britain had had reports (excluding those before 10 April 2020) of 21 622 cases of covid-19 (including 254 deaths) in workers where there was 'reasonable evidence' to suggest causation by occupational exposure [1]. These data trends broadly shadow the reports from the community at large in the second wave as they did in the first wave, and are likely underestimates [2]. The proportion of these reports attributed to health and social work activities was 78% in the first wave of reporting (until August) and therefore higher than the 55% in the second wave (from September). Conversely, education and manufacturing combined accounted for less than 2% of all first wave reports, but around 15% of all second wave reports. This has been attributed in part to the re-opening of the general economy in July [1]. After a year of the pandemic it is timely to reflect on the important lessons relating to worker protection.

The greatest concern in primary prevention of covid-19 at work has probably been the persisting underestimation of the risk of airborne spread and hence the inadequacy of precautionary protection, in spite of past lessons. Lessons had been learnt from other viral epidemics and outbreaks. SARS-CoV, MERS-CoV and now SARS-CoV-2 are all betacoronaviruses. The spread of SARS (SARS-CoV) in Hong Kong in 2002/03 raised significant concern due to the high fatality rate and its potential for onward transmission. While initially there were failings in the management of SARS-CoV in hospital settings it was learned during that time that besides patients being isolated, healthcare workers (HCW) had to be provided with filtering face piece (FFP) respirators as minimum respiratory protective equipment (RPE). Although SARS-CoV did not exhibit as significant a level of community transmission as covid-19 (caused by SARS-CoV-2), guidance based on evidence and consensus and co-authored by Professor Jonathan Van-Tam (Deputy Chief Medical Officer) recognized that transmission of SARS coronavirus was by 'droplet/aerosol' [3]. Moreover, that guidance prescribed FFP3 respirators (rather than merely a surgical face mask) as RPE for HCW. Furthermore, this best practice guideline was explicitly not limited to so-called aerosol-generating procedures (AGP) [3]. The MERS-CoV outbreak in South Korea in 2015 was predominantly nosocomially spread

from infected patients to HCW and other inpatients with very limited onward community transmission [4]. Nevertheless, Public Health England (PHE) guidance on personal protective equipment (PPE) for HCW caring for patients with MERS-CoV included the use of FFP respirators as well as full gowns [5]. Since betacoronaviruses in both those epidemics which had much more limited community transmission than covid-19 had a recognized potential to spread readily nosocomially, this should have suggested that a virus as infectious as SARS-CoV-2 would do so even more readily. Therefore appropriate precautions against airborne transmission at least as stringent as for those earlier betacoronavirus epidemics (therefore including FFP as PPE for all HCW) should have been warranted for protection against SARS-CoV-2.

In the hierarchy of control, it is acknowledged that control measures such as work practices, barriers and adequate ventilation should feature ahead of PPE [6]. However, the scale of the covid-19 pandemic clearly overtook any prospect of adequate measures to re-engineer hospitals and other workplaces to meet the need; hence, PPE was the 'last line of defence'. Research commissioned by the HSE long before the pandemic and showing the overwhelming superiority of FFPs over surgical face masks in protecting against viral aerosols was not acted upon [7]. The HSE's extant guidance before the pandemic recommending FFPs as minimum protection against biological agents seems to remain tacitly eschewed [8] in spite of calls to apply precautionary principles [8,9] in PPE especially in respect of HCWs.

Furthermore, as the pandemic progressed there has been an increasing body of evidence and shifting consensus towards the importance of aerosol spread of the SARS-CoV-2 virus [10]. Epidemiologic research [11] has shown a higher risk of contracting covid-19 amongst 'front-line' HCW for whom PHE guidance advises surgical masks as 'protection' than those who work in intensive care facilities who tend to be much better protected and for whom PHE essentially recommends FFPs [12]. Indeed, PHE's conclusion that HCW do not warrant FFP protection from potential covid-19 patients' coughing and talking is at best based on absence of evidence rather than of evidence of absence of risk.

Besides concerns about HCWs, data from the first wave have shown the significantly increased risk

associated with a range of occupations such as social carers, bus, minicab and taxi drivers, security personnel, and other elementary occupations [13]. Further protection for all such workers may be warranted [6,7] beyond current 'covid-secure' measures especially with potentially more transmissible new variants [14]. It is likely that such lack of FFP provision has contributed to the risk of covid-19 in workers [8].

Primary prevention in the context of covid-19 would have required risk assessment at 'source', yet the essential early capacity to test not just the community and patients but workers was initially lacking [7]. Having now built up the capacity this needs to be maintained and applied strategically, in spite of vaccination, to identify and break chains of transmission especially of new variants [14].

Vaccination now offers a good prospect of primary prevention through adequately persistent immunity. The Joint Committee on Vaccination and Immunisation's recommendations [15] allocated the second highest priority to 'front-line health and social care workers' and seems to have deferred to politicians as regards the protection of other workers (e.g. public transport drivers and teachers) rather than taking a more comprehensive evidence-based account of occupational risk. Had front-line healthcare workers been prioritized when immunization roll out commenced at the beginning of December 2020, this may have better maintained the functioning of the NHS in the face of soaring admissions and staff sickness or isolation.

Secondary prevention in occupational health relies on robust methods of surveillance, and prompt action to prevent disease once occurrences have been identified. However, the legally mandated reporting mechanisms have probably substantially under-estimated the burden of occupational ill-health and thus ignored opportunities for learning lessons and prevention especially outside health and social care [2]. In healthcare settings the discouragement of reporting staff who contracted covid-19 while wearing surgical masks as 'protection' following PHE guidance [12] may miss opportunities for investigation [2] such as by backward tracing and viral genotyping to determine routes of nosocomial spread, and hence better ways of prevention.

As regards 'tertiary prevention', it has been estimated that about 10% of people infected with covid-19 may have significant post-acute or chronic symptoms persisting beyond 12 weeks, a condition often referred to colloquially as 'long covid' [16,17]. In a substantial proportion of cases these symptoms are disabling and involve prolonged absence from work [18]. Initiatives to set up special clinics and rehabilitation facilities for such patients [17] are welcomed. The importance of timely and professionally supervised rehabilitation back to a safe work environment is essential to mitigate a legacy of long-term worklessness and consequent lack of physical,

mental and social well-being. Policies at work need to facilitate such rehabilitation and ensure support and understanding from managerial staff [18].

Sadly, there will be an immense cost to pay for the UK's past disinvestment in systemic resilience, abandonment of a policy of viral elimination, as well as inadequate protection. Covid-19 has taught us many things we did not know and which we shall have to provide for in future. Regrettably, the pandemic has also reminded us of lessons and guidance which were overlooked and sidelined and likely resulted in workers' ill-health and deaths which might have been prevented. The abandonment of a UK objective to eradicate the virus and the restriction of the vaccination programme to adults may lead the pandemic to subside into an endemic infection for years. This may carry the risk of variants with different clinical features or reduced protection by current vaccines. Therefore, vigilance, protection and preparedness for such eventualities remain essential. Workplaces, especially in the NHS, must strengthen their capacity to test, (geno)type, (back)track and trace. Occupational health services and hygiene measures including barriers, ventilation and higher grade PPE will continue to be needed on a much greater scale than before the onset of the pandemic. In light of the risk of future pandemics it is imperative that healthcare facilities are reviewed in due course and upgraded to have self-contained areas for the isolation of cases where optimum ventilatory support can be provided, and with the ability to rapidly expand these areas as required to assist with outbreak control without compromising the safety of staff.

Raymond M. Agius[®]

Emeritus Professor of Occupational and Environmental Medicine, The University of Manchester, Manchester M13 9PL, UK
e-mail: rmagius@doctors.org.uk

Nathalie MacDermott

Academic Clinical Lecturer in Paediatric Infectious Diseases, King's College London, London SE1 7EU, UK

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